Gordon Institute of Business Science
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The moderating role of loyalty programmes and personalised pricing between customer satisfaction and customer loyalty in the South African telecommunication industry

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

1 November 2022

ABSTRACT

The customer loyalty (CL) landscape has changed with advances in technology. In an increasingly competitive and regulated telecommunications sector (telco), it is imperative for telco companies (telcos) to maintain customer relationships through customer satisfaction (CS) and CL. In order to address CL, telcos invest significantly in loyalty programs (LPs), furthermore through advancements in data collection, telcos are able to offer personalised pricing (PP) to customers in the hopes of positively influencing CL. However, the effectiveness of these offerings and their components have produced mixed results within the extensive LP and developing PP literature. This study used a descripto-explanatory quantitative research approach that tested the moderating effects of LPs and PP on a sample of 214 SA telco respondents. The research found a positive relationship between CS and CL, which concurs with the existing findings within the telco industry. The results of the overall constructs of LPs and PP did not find moderating effects on the relationship between CS and CL. However, looking further into LPs and PP components, significant positive moderation exists through interactions of LPs' financial and social benefits, as well as PP special treatment on components of CL. Telcos may leverage these findings to prioritise and improve their offerings to customers to enhance CS and CL, as well as gain the most benefit from their investments.

KEYWORDS

Customer satisfaction, customer loyalty, loyalty program, personalised, personalised pricing, telecommunications

DECLARATION

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

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1 November 2022

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CHAPTER 1: RESEARCH PROBLEM AND PURPOSE

1.1 Background to the research problem

This research project studies how loyalty programs (LP) and personalised pricing (PP) moderates the role of customer satisfaction (CS) and customer loyalty (CL) in the South African (SA) telecommunications (telco) industry. A descripto-explanatory quantitative research was conducted. The data that was collected from SA telco respondents via an online survey was empirically analysed to provide statistically significant results to answer the research questions put forward from the literature review.

The results contribute to the understanding of the interaction of the variables in the SA telco context. By testing the moderating effects of LP and PP the results add to the theoretical contribution of CS and CL literature, and highlight the developments of LP and PP which may be used in business practice to improve CS and CL.

The first chapter introduces the background context to the research problem, sets out the research objectives and significance of the study, both theoretically and business implications as highlighted in the research problem.

The Broadband Commission for Sustainable Development advocates for lower-income groups in developing countries to gain connectivity. This need has been heightened by Covid-19 whence the issue of affordability has been exacerbated for lower-income customers (Broadband Commission, 2021). The South African (SA) telecommunications (telco) sector plays a critical role in connectivity (ICASA, 2021; Morgan & Govender, 2017). However, telecommunication companies (telcos) face increased complexity in pricing, fed by rising policy concerns (Díaz, 2017), which was evidenced in SA with the #DataMustFall public campaign against high data prices (Prior, 2020).

As the environment becomes increasingly competitive, for telcos to raise market share, increase profits and reduce operating costs, telcos should find innovative ways to retain their customers, creative pricing strategies may be one of them (Izogo, 2016; Ofori et al., 2018).

Previous switching barriers have been negated, such as losing one's number which used to play a pivotal role in customers choosing not to switch networks,(Díaz, 2017). Due to this mobile number portability (MNP), where customers may switch networks

whilst retaining their number, there is an increasing difficulty for telcos to retain customers (Patharia & Pandey, 2021). Nevertheless, the introduction of dual-SIM mobile phones provides customers with the flexibility to easily switch between networks (Andersson & Göller, 2018). Customers often switch between networks that provide the best prices and services, and this functionality is attractive to customers, particularly in emerging markets (Andersson & Göller, 2018). In Morgan and Govender's (2017) survey of telco users in SA, 50% of their survey respondents indicated they had multiple network subscriptions. The development of technology such as dual-SIM enables multi-SIM customers to choose the best prices and encourages competition amongst telcos Through this, customers may benefit from the discounted offers, which in turn may hurt company profits (Capponi et al., 2021). Due to telcos' strategic pricing response, these interactions likely result in a contradictory increased price for the customer (Andersson & Göller, 2018), resulting in a negative impact on customers and telcos in the long term (Bombaij and Dekimpe, 2020; Esteves & Resende, 2019).

These paradoxical effects and intricate balance within the telco environment need to be understood by the regulators for policy considerations, safeguarding the wellbeing of all stakeholders. In order to gain a sense of customer feedback, CS may be used as a measure; "CS has also become a key performance indicator for regulators whose policies have been oriented to the removal of switching barriers, the promotion of competition and the improvement of customer perception of the regulatory system" (Díaz, 2017, p. 76).

1.2 Research problem

Technological advances, and environmental developments have intensified competition, particularly within telcos of emerging markets, placing telcos profits under pressure, progressively telcos need to foster customer relationships in order to retain their customers (Ofori et al. 2018). CL is often suggested as a method to retain customers (Gustafsson et al., 2005).

Customer retention is vital for telcos, and although telcos have introduced LPs to retain customers, it is becoming increasingly difficult for telcos to employ effective customer retention strategies and remain competitive (Capponi et al., 2021). Companies will benefit from a deeper understanding of LPs to gain the most benefit from investments (Evanschitzky et al., 2012). From the extant literature, LP is

dominated by other industries, such as the retail industry (Bombaij & Dekimpe, 2020); this practice is similar in SA where the retail industry has the highest LP usage (Truth, 2021). Literature review studies in the last three to four decades have concentrated on other industries (Belli et al, 2020; Chen et al., 2021), as LP literature focusing on the telco industry was not found. Expanding into the telco industry and its nuances will add to the existing gap on LP literature.

In terms of LP usage data, collated by Truth (2021), show "two thirds of economically active South Africans use loyalty programmes" (Truth, 2021, p. 9). Pick 'n Pay SmartShopper is most used LP in SA (Truth, 2021). Retailers dominate the Top 10, with FNB eBucks the only non-retailer in the Top 10. The leading SA telco players relaunched their loyalty programmes in 2020, where Vodacom's VodaBucks and MTN's YelloBucks made it to the Top 25 LPs in SA for 2021 (Truth, 2021). Vodacom's VodaBucks rewards programme has benefited twenty-seven million customers, allowing customers to earn VodaBucks and spend across a variety of categories from fashion and household to travel.

SA's Mobile Virtual Network Operator (MVNO) market is experiencing rapid growth with new market entrants enabling telco services (ITWeb, 2022). As large retailers such as Shopright enter the MVNO space offering telco services, in addition to well established financial service such as FNB, Standard Bank and in September 2022 Capitec, these entrants may apply a different approach to the current SA telco LP landscape. How the retailer and banking industry leverage off their existing winning LPs with the emergence of their telco offering and whether the interplay will disrupt the telco LP space is a developing situation, and consequently an understanding of how current telco LPs are affecting CS and CL is pivotal to the success of existing telcos.

The need for LP evolution has been heightened by the global Covid-19 pandemic. Customer's behaviour has changed during the pandemic, with partial increased reliance on LP benefits. Furthermore, the changing data legislation as well as customer awareness and knowledge of the value of their privacy and data has further spurred the need for evolution (Chen et al., 2021; Truth, 2021). Success has been seen when using the customer data to add value to the customer (Truth, 2021), whilst being cognisant of data and privacy issues, as echoed by Bombaij and Dekimpe

(2020). These developments should be monitored by telcos to ensure they continue to see benefits from LP and PP efforts.

Truth (2021) reiterates the importance of developing LPs in a rapidly changing marketing environment through personalisation of services, and highlights the global recognition of UK's Vodafone VeryMe that offers personalised rewards to customer's mobiles, successfully shifting positive brand sentiment. Technological advances and digitisation have increased telcos access to information and customer behaviour data, allowing companies to tailor personalised prices and offers to customers.

Bombaij and Dekimpe (2020) posit that CL translates into company performance. There are multiple dimensions to CL, and to better understand the complexity of CL the drivers need to be considered, such as CS (Gustafsson et al., 2005). Capponi et al. (2021) suggested customers leave due to lack of CS, mostly due to service attributes such as quality and prices. If CS is a key retention factor, additional focus can be placed on offering better prices (Gustafsson et al., 2005).

In Patharia and Pandey's (2021) review of factors affecting CS and CL in telcos over the last three decades, CL is most often the dependent variable, and CS is an antecedent of CL. Results from articles that considered price structure as an independent variable on each CS or CL were inconsistent, where the reviewers recommended price structure to be further tested (Patharia & Pandey, 2021). In the SA context, Morgan and Govender (2017) found that CS has a statistically significant positive relationship with CL; however, they did not consider price in their review. Interestingly, Morgan and Govender (2017) note that telcos can introduce promotional activities, and consider differentiation through pricing for CL. Consequently, it is key to understand how pricing strategies through mechanisms of LPs and PP may affect the relationship between CS and CL in the telco industry. As there are inconsistent findings in the telco context, moderation analysis is compelling (Memon et al., 2019).

1.3 Research objectives

The research objectives were to explain the relationship between SA customers and telcos, using evidence from customer satisfaction and customer loyalty data, and how these are moderated or influenced by constructs such as loyalty programs and personalised pricing. With the large investments and continuous developments by

telcos into loyalty programs and personalised pricing, the research aims to test whether loyalty programs and personalised pricing have a positive effect on customer satisfaction and customer loyalty.

1.4 Significance of the study

In the competitive telco environment, an understanding of topics of CS, CL and its influencing factors are crucial within the research literature (Díaz, 2017; Patharia & Pandey, 2021), and within business practice (Morgan & Govender, 2017). Within the telco industry there have been an increasing number of articles that investigate the determinants of CS, and/ or CL within developing and emerging market contexts (Du Preez, 2020, Dhasan et al., 2021). However, pricing promotional strategies within the telco context have not been extensively studied, or provided conclusive findings (Patharia & Pandey, 2021). Therefore, the interaction of PP on the relationship between CS and CL should be further investigated using moderation, which analyses the direction and size of influence of the interaction (Hayes, 2012).

LPs are designed to influence and increase CL (Evanschitzky et al., 2012; Kim et al., 2021) and repeat behaviour (Chen et al., 2021). Since the introduction of LPs, there has been extensive development on LP literature and its influencing factors; however, this has focused on other industries (Belli et al., 2022; Kim et al., 2021) and not mentioned LPs within telco. An additional benefit of LPs is the large amounts of data generated (Chen et al., 2021), together with digital advancements and companies' elevated ability to offer PP to customers. Ranked second in the Truth, 2021 top LP financial services industry category is Discovery, SA’s leading health insurer, which have successfully used the significant amounts of data collated to drive healthy behavioural change through their Vitality LP (Discovery Limited, 2021).

The main research objective was to bridge the gap between the overarching themes of CS, CL, LP and PP, and to gain a better understanding of the interplay thereof in the telco industry. Therefore, the researcher tested the moderating effect of LP and PP on the relationship between CS and CL in the SA telco industry. The research aimed to provide empirical evidence within the South African context to gain a better understanding of how LPs and PP moderates the relationship between CS and CL, as this understanding is key for telco strategies and ultimately affects the telco customer. Additionally, findings add consideration to possible policy regulation by ICASA.

1.5 Scope and delimitations

The scope of the research is SA telcos and the loyalty programs and personalised pricing the SA telcos employ, focusing on customer satisfaction and customer loyalty relationships. The delimitations of the study are noted in the following paragraphs.

The study focused on LPs in the SA telco industry, which reflects the maturity and relatively minimal competition present in comparison to successful SA LP's of retailers and financial service providers. Aspects of these award-winning LP design components may be replicated in the telco space; however, they were not considered within the scope of the study.

Although switching costs have been somewhat mitigated with MNP in the telco industry, switching costs remain relevant in the customers telco relationship. However, customer's prior telco relationships and switching barriers are not analysed in the research.

Customers may have more than one sim and a comparison of customers experience on different providers concurrently may be beneficial, however only the main telco provider relationship is investigated further.

1.6 Conclusion

This chapter provided the background context to the research problem and significance of the research objectives. Overview of the remaining research proposal is structured as follows: Chapter 2 provides the detailed literature review and theoretical background of the key constructs CS, CL, LP and PP, leading to the research questions in Chapter 3. Chapter 4 follows with the detailed research design and supporting research methodology. Chapter 5 informs the method and findings. Discussion and conclusions are presented in Chapter 6 and 7 respectively.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive theoretical background to the key constructs and the relationships between them. The constructs of CS and CL have been well researched within the telco context, and attention was placed on the key theoretical underpinnings, followed by the significant findings from literature evidenced within the relevant telco context. Whereas LP as a construct has been well researched within literature focused on the retail industry and growing developments in other industries, it has not been well researched in the telco industry. Additionally, PP is explored to address the development of digitisation and enhanced telco offerings to customers.

As noted in the research purpose, there is vast CS-CL literature concentrating on the telco industry, which has been investigated in various emerging and developing country contexts (Izogo, 2016; Díaz, 2017; Morgan & Govender, 2017; Karugu, 2018; Ofori et al., 2018; Du Preez, 2020, Dhasan et al., 2021). CS is important as it is often the beginning of CL (Díaz, 2017). Morgan and Govender (2017) found that CS is the most significant of CL in SA. CL results in an increase in customer retention (Gustafsson et al., 2005; Ofari et al., 2018) and repeat purchases (Chen et al., 2021, Ooi et al., 2022). Furthermore, LPs and PP are also effective in increasing customer retention (Capponi et al., 2021). These findings are valuable for establishing empirically the added considerations of LP's and PP within SA.

2.2 Customer Satisfaction (CS)

2.2.1 CS theoretical background

To define CS from expectation and expectancy disconfirmation theory, customers have an expectation of a product or service, and after the use of the product or service customers make a judgement by comparing the gap between expectations and performance. Satisfaction is increased when performance is above expectations - positive disconfirmation; and decreased when performance is below expectations - negative disconfirmation (Oliver, 1980). Through an accumulation of such disconfirmations, a level of satisfaction or dissatisfaction is attained, which forms a basis of customers' subsequent behaviour (Oliver, 1980).

The customer's immediate perception of the product or service post exposure is the perceived quality, whereas CS is the accumulation of such positive or negative perceptions (Díaz, 2017). Perceived value reflects the measure between the perceived quality of a product or service with the price thereof (Díaz, 2017). Service quality and perceived value were found to mostly influence CS in telco (Díaz, 2017; Du Preez, 2020)

2.2.2 CS in telco

There are different antecedents investigated across telco literature that influence CS, such as perceived quality perceived value and customer expectations (Díaz, 2017), as well as brand image and perceived value (Morgan & Govender, 2017), reliability (Du Preez, 2020) and customer brand engagement (Ooi et al., 2022). Amongst the many CS antecedents tested in telco, service quality and perceived quality appear to have the most contention. Ooi et al. (2022) found service quality to not positively affect CS (in Malaysia), contradicting Ofori et al. (2018) who found service quality to be significant on CS (in Ghana). Although these findings are from different countries, in SA Morgan and Govender (2017) did not find that perceived quality significantly affected CS. However, Du Preez (2020) found that customers were least satisfied with the service quality in SA telco and that managers should look at improving the service quality to surpass customers' expectations and improve CS. These contradictory findings on CS, even from SA, require further investigation.

The authors do however concur that CS subsequently leads to CL, evidenced by other findings (Morgan and Govender, 2017; Ofari, 2018; Ooi, 2022). Izogo (2016) recommended that future studies highlight the gap to test the mediating role of CS amongst other antecedents on CL. Subsequently the researcher proposed to investigate how moderators interact with the influence of CS and CL within SA telco.

2.3 Customer Loyalty (CL)

2.3.1 CL theoretical background

Extant literature does not define a single view of CL, however there is consensus on the multidimensional construct of CL consisting of attitudinal, intentional and behavioural loyalty (Belli et al., 2022), whereby customers favour a company amongst competition (Gremler et al., 2020; Kim et al., 2021).

Seminal work by Oliver (1999) proposed loyalty phases starting with cognitive loyalty phase where a brand is preferred based on information, affective loyalty where a liking to a brand develops, conative loyalty where there is behavioural intention to repurchase the brand and then lastly action loyalty with the action of repeated purchases (Oliver, 1999). Although the theory is dated, these key conceptual dimensions are interwoven through developments in recent marketing literature classifying loyalty constructs into attitudinal, intentional and behavioural dimensions (Belli et al., 2022; Kim et al., 2021).

Attitudinal loyalty may be expressed as emotive, stemming from customer's mind set and previous experience with the company (Chen et al., 2021). Attitudinal loyalty is developed from a positive evaluation of their relationship with the company, this evaluation distinguishes attitudinal from other loyalty dimensions (Belli et al., 2022). Attitudinal loyalty measures the customer's psychological attachments towards the company (Izogo, 2016). Intentional or conative loyalty derives from customers' willingness to act or repurchase (Gremler et al., 2020).

Contrastingly behavioural loyalty is actionable as seen through repeated purchases, this observable characteristic translates into results that may be reflected in company performance (Belli et al., 2022; Evanschitzky et al., 2012). Whilst behavioural loyalty may develop without attitudinal changes, behaviour may also be influenced by external factors, such as convenience (Patharia & Pandey, 2021), which distinguishes behavioural loyalty from internal attitudinal evaluation (Belli et al., 2022).

Majority of articles have tested loyalty as a composite of attitudinal and behavioural loyalty (Patharia & Pandey, 2021). With a few articles in the telco industry concentrating on attitudinal loyalty (Izogo, 2016; Ooi et al., 2022). However as the research proposal focuses on the action of customer repeat purchases through the mechanisms of LP and PP, behavioural loyalty remains relevant. The sentiment for behavioural loyalty is shared by Morgan and Govender (2017) where attitudinal loyalty results in few directly linked empirical data with results that are generalisable across brands and products. Interestingly Evanschitzky et al., 2012 differentiates CL through company loyalty where customers choose a company over a competitor, which is attitudinal in nature, in contrast to program loyalty which is more economic in nature driving the behaviour of purchases.

2.3.2 CL in telco

The following key variables from the extensive literature on CL have been noted for the purpose of the research, as demonstrated in Patharia and Pandey's (2021) extensive literature review of CL in telco in the last three decades note that LP discounts and customization may assist to develop repeat purchases, these repeat purchases being an indication of behavioural loyalty. Liu and Ansari (2020) posit that customer purchases are influenced by loyalty programs, pricing and promotional strategies amongst competing companies.

2.4 Loyalty Programmes (LP)

2.4.1 LP theoretical background

LPs are a marketing mechanism where customers are offered rewards and incentives that encourage repeat purchases to foster relationships and extend loyalty (Chen et al., 2021). Since American Airlines' introduced their LP in 1981, academic literature on LPs has developed rapidly (Belli et al., 2022; Kim et al., 2021). LPs have been studied in key industries such as retail, airline, hospitality and service industries such as financial services (Chen et al. 2021), and increased in popularity in companies (Evanschitzky et al., 2012). Introducing a LP with strategic designs can increase company performance (Chaudhuri et al., 2019). Managers should assess the marginal benefit of these large investments into various LPs (Audrain-Pontevia & Garnier, 2021; Evanschitzky et al., 2012). LP's play a significant role within companies to foster CL. To better understand LP's and its design influence the developed literature, the evolution of LP as a marketing tool and findings on effectiveness were explored to extend this knowledge to the telco industry.

There are a number of underlying theories and conceptual frameworks underpinning LPs (Chen et al., 2021; Kim et al., 2021). LPs and their various benefits are intended to enhance CL (Evanschitzky et al., 2012). Whilst CL constitutes the main dimensions of attitudinal and behavioural loyalty (Chaudhuri et al., 2019; Gremler et al., 2020), LPs are primarily intended to impact behavioural loyalty (Belli et al., 2022). These outcomes are supported by Chen et al. (2021), where afcompanying relationship-based mechanisms underpin LPs. Chen et al., (2021) further categorised inertia-based mechanisms underpinned by behavioural learning theory. Inertia-based mechanisms centre around repetition of actions, with LP rewards incentivising repeated purchases and reinforcing desired customer behaviours

(Chen et al., 2021). Customers weigh up the inputs, such as repeat purchases, versus the perceived value of LP rewards (Chen et al., 2021). Behavioural learning theory leverages the information of both previous and present behaviour to predict the future actions of the customer (Chen et al., 2021). Behaviours of customers may be influenced by the external environment, and notably future actions may be changed (Belli et al., 2022). These effects of LPs are understandably desirable by companies to drive desired customer behaviour, developing customer relationships with the company to enhance CS and CL.

2.4.2 Evolution of LP

As the literature has developed, LPs as a marketing tool has evolved together with technological advances and digitisation, which has facilitated the collection of data through customer behaviour, allowing LPs to tailor offers and deliver highly personalised rewards (Chen et al., 2021). As customers choose between LPs for optimal benefits, loyalty is not necessarily increased (Bombaij & Dekimpe, 2020). This echoes Evanschitzky et al.'s (2012) findings, indicating LPs enhance program loyalty. Furthermore, repeat behaviour and accumulation of rewards leads to increased switching costs (Chen et al., 2021), LPs act as a switching cost barrier shown to increase CL (Evanschitzky et al., 2012). Within the telco context, switching costs may act as a barrier to reduce porting to another network through MNP or remaining one of the chosen networks when dual SIM customers choose between multiple network providers.

Interestingly, Kim et al. (2021) proposed distinguishing the customer relationship between key customer relational stages requiring nuanced strategies (such as design characteristics as noted by Bellie et al. (2022)). Chen et al. (2021) concurred, indicating that LP characteristics are notably more important in early stages than mature stages. The relational stages approach appears to clarify the reasons for multiple theories and possible contradictory findings of effectiveness of LPs (Kim et al., 2021). These stages are reminiscent of the multiple phases of loyalty as proposed by Oliver (1999), therefore it is valuable to assess whether the design characteristics of a LP are effective in influencing CL stages and in what manner.

2.4.3 Effectiveness of LPs

LPs are intended to increase CL, however the effectiveness of LPs has not received consensus (Belli et al., 2022; Chaudhuri et al., 2019; Kim et al., 2021). Belli et al.

(2022) findings indicate effectiveness of LPs is dependent on a number of LP design characteristics of structure, reward content and delivery (Belli et al., 2022). Where Audrain-Pontevia and Garnier's (2020) findings indicate benefits should be prioritised to enhance CL.

Critical LP elements can include financial bonds like offering discounts, up-grades, or redemptions of points or currency for rewards (Shammout, 2020). These differ slightly from monetary benefits, proposed by Audrain-Pontevia & Garnier (2021), which are often at the core of LPs where customers come to expect the utilitarian benefit of savings from LPs.

Exploration benefits assist customers to discover new products (Audrain-Pontevia & Garnier, 2021). As telcos are continuously introducing new products, exploration benefits may be useful for both the customer and the company to drive desirable customer behaviour. This may be done though making interactions easier to navigate (Victor et al., 2019).

Social benefits from belonging to a community were found to be the most significant benefit of loyalty, and this may be further achieved through personalisation (Audrain-Pontevia & Garnier, 2021). Concurring findings from Evanschitzky et al. (2012) indicating that social benefits drive program loyalty, as social benefits that are personalised are difficult for competitors to replicate.

Tiers encourage customers to move up the tier structure for added benefits (Audrain-Pontevia & Garnier, 2021). This is extended by Hollingshead (2021), who proposed customers may spend or change behaviour to improve and maintain their tier status. Tiers drive customer behaviour as well as build towards points or redemptions which accumulate and may act as a switching barrier to customers. However Belli et al, (2020) did not find tiers to enhance CL.

Customer engagement is encouraged through inclusion of social benefits or tier status, and may be further amplified by personalisation. It was found that neither monetary nor exploratory benefits had a direct effect on loyalty, whereas social benefits should be prioritised to enhance CL (Audrain-Pontevia & Garnier, 2021). LP benefits such as special offers and services are able to cater to both emotive and action (company loyalty and program loyalty) and are beneficial (Evanschitzky et al.,

2012). Offerings such as discounts are easy to imitate; however, creating social benefits are not as replicable by a competitor.

2.4.4 LP in telco

Reviews by Belli et al. (2022), Bombaij and Dekimpe (2020), Chen et al. (2021) and Kim et al. (2021) concentrated on other industries, and did not mention LPs in the telco industry. Chen et al.'s (2021) literature review proposed future LP research be conducted on online contexts. This can be a digital extension, encompassing mobile networks, which will include telcos. Yeboah-Asiamah et al. (2016) found in Ghana that telcos that used lucky draws positively correlated to each of the phases of loyalty in the sequence as proposed by Oliver (1999) being cognitive, affective, conative, and lastly behavioural loyalty. Interestingly, lucky draws do not directly positively relate to the last stage being behavioural loyalty (Yeboah-Asiamah et al., 2016). As there are inconclusive findings and various components to the constructs LP, further understanding of the moderating effects thereof is needed.

Telcos marketing and investment into LP's provide an added benefit of large amount of customer data generated allowing companies to use data to improve customer relationships (Audrain-Pontevia & Garnier, 2020). This data may be used for enhanced personalised offerings to customers.

2.5 Personalised Pricing (PP)

2.5.1 PP theoretical background

Digital advances have facilitated companies' ability to collect big data Li et al. (2020), and analyse abundant amounts of data at negligible costs (Laussel & Resende, 2022). This capability enables companies to use the valuable data to gain insight on a unique customer's initial preference or purchase behaviour (Laussel & Resende, 2022; Li et al., 2020) to offer customers customised behaviour-based pricing (Esteves & Resende, 2019; Li et al., 2020). "Technology driven pricing strategies like dynamic pricing have become very common across different industries all over the world" (Victor et al., 2019, p. 74). The differentiating factor from LPs, being a non-standardised marketing strategy, companies are able to "deliver timely, targeted and local informative advertising in an unprecedented way" (Esteves & Resende, 2019, p. 240). These exciting developments probe further investigation into the effectiveness of personalisation developments on CL. The term personalised pricing will be used to

include behaviour-based pricing, customised, dynamic pricing in this research proposal.

2.5.2 Effectiveness of PP

Personalsed solutions are increasingly recognised and used to increase CL, however may be difficult to establish which elements to employ and are effective (Ofori, et al., 2018). With the rapid developments of the construct of price into PP, there are an emerging number of studies whom have tested the effects of PP such as Esteves (2014), Esteves and Resende (2019), Lausse and Resende (2022) and Zhou et al. (2020).

Purchase satisfaction increases with fair prices and relevant product recommendations, conversely offering reasonable prices improve price elasticity for customers to purchase and increase satisfaction (Victor et al., 2019). Customers with CL are less price elastic to take advantage of discounts by competitors (Ofori, et al., 2018)

Esteves (2014) postulates companies who have information on their customers may successfully use PP, firstly in retention strategies to avoid clients switching to competitors, and secondly to react to competitors by pricing lower to customers who have used competitor services. Zhou et al. (2020) proposed that using PP does not increase company profits in certain market conditions and may hurt online retailer's company profit. Contrastingly, when increased competition is expected to benefit customers with lower prices and reduced company profits, companies take advantage of PP strategies and customers end up paying higher than average prices, which resulting in the company's profits increasing (Esteves & Resende, 2019). Similarly, Lausse and Resende (2022) posited that PP and company profit results are not consistently better than competing companies through the short and long term; however, PP may be an effective strategy to increase loyalty and retention of their customers. Lausse and Resende (2022) noted the limitations of their findings were dependent on specific industry features, and therefore an investigation into the telco industry is warranted.

PP involves offering prices strategically targeted at individuals to encourage desired customer behaviours, with the PP prompting customers to purchase timeously or products at the PP (Karugu, 2018), whereas personalised products cater to customers' needs through different or tailored product offerings (Lephale, 2021). An

extension of the personalisation into structural bonds offering value adds from the accumulation of customer data to tailor solutions to the customer Baloglu & Bai (2021). Structural bonds require higher investments and act as a switching barrier as they are not easily replicated by competitors (Shammout, 2020). Lastly personalised special treatments non price related such as offers for being a member of the LP privileges, invites to special events, gifts on birthdays etc. (Belli et al, 2020; Evanschitzky et al., 2012).

The different choices customers make depend on the awareness and amount of information available and differences of LP, price and promotions of the competing companies (Liu & Ansari, 2020), and this influences the customers purchase behaviour (Victor et al., 2019).

2.5.3 PP in telco

Considering the construct of price alone in the telco industry, there are ambiguous findings. Dhasan et al. (2021) found no significant relationship between competitive promotional pricing and CL in the Thai telco industry. Additionally a significant relationship was found between PP and customer brand equity of telco in Nairobi (Karugu, 2018). In comparison, Mvele et al. (2019) established promotional offers to have a significant influence on a customer having multiple network subscriptions, as customers are then able to choose the network with the best promotional offer. Dhasan et al. (2021) concurs as “few studies have considered promotional packages as antecedents … or as mediators, by measuring the direct and indirect relationships towards customer loyalty” (p. 229). Lephale, (2021) found PP to be positively related to CL to which they recommended the moderating effect thereof be tested.

Personalisation is increasing, and the importance of attention to financial, social, and structural bonds has shown to be successful in hospitality (Baloglu & Bai, 2021). Victor et al., (2019) investigating personalisation developments of online consumers highlighting the evolution through generational differences. These developments of PP from other industries can be adopted in an increasingly competitive telco environment, as PP is designed to encourage targeted individual behaviour, with the desired customer behaviours linking to CL, therefore further understanding of the moderating effect of PP in telco is necessary.

2.6 Conclusion

The literature review of Chapter 2 provided a comprehensive overview the definitions of CS and CL. In addition the chapter discussed LP and how developments have evolved into PP, as well as the effectiveness of each of LP and PP. The relationships between these constructs give rise to the research questions as hypothesized in Chapter 3.

CHAPTER 3: RESEARCH QUESTION

3.1 Introduction

From the established literature discussed in Chapter 2 this chapter puts forward the research question and proposed hypotheses.

The theoretical background and relationships explored in the literature review between the constructs CS, CL, LP and PP warrant further investigation. As extensive literature has tested the relationship between CS and CL, none have been found to test the moderating effect of LP and PP on CS and CL, especially in the telco context. This research concentrates on the SA telco industry. A moderator is any variable that affects the association between two or more other variables (Dawson, 2013), "that affects the direction and/or strength of the relationship between an independent and dependent variable" (Baron & Kenny, 1986, p.1). The researcher proposed to test whether LP and PP positively affects the association between CS and CL.

In order to further understand the relationship between CS and CL, a moderator assists to explore whether the relationship remains constant (Figure 1), or is affected by a third construct, (Hair et al., 2021). As such, the CS and CL relationship is not the same for all customers, but the relationship can be affected or moderated by another construct which can change the direction, and the strength of the relationship (Hair et al., 2021) in Figure 1. Memon et al, 2019 and Dawson, 2014 strongly advise that the hypothesis needs to specify the direction of the interaction, i.e. whether the moderator increases or decreases the relationship between the two variables.

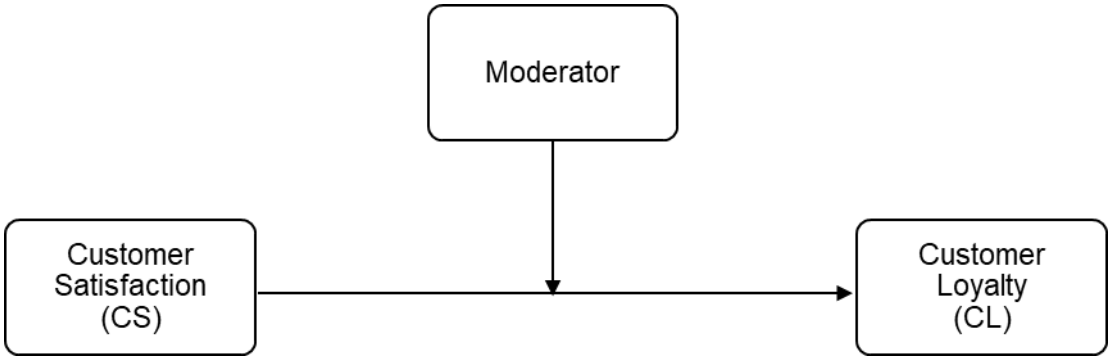


Fig 1. Moderation conceptual model (adapted from Hair et al., 2021)

From extensive investment into LP's (Evanschitzky et al., 2012), LP design elements and development of use of data allowing PP to enhance customer relationships (Liu

& Ansari, 2020), the research hypothesises LP's, PP's have a positive influence on the relationship between CS and CL.

3.2 Research question

The research questions and following hypothesis were proposed.

3.2.1 RQ1: Is there a significant relationship between CS and CL?

Research question 1 aims to establish the relationship between CS and CL. A number of articles have found a positive relationship between CS and CL within telcos (Diaz, 2017; Morgan and Govender 2017; Ofori et al., 2018, Ooi et al., 2022). However it is worth noting Izogo (2015) raises that antecedents of CL such as CS has been over researched, yet there are a handful of studies which found modest explanatory power, this finding is supported by Patharia and Pandey's (2021) review of factors affecting CS and CL in telcos over the last two decades, and therefore further evidence in this regard is required. Research question 1 is hypothesized as
Hypothesis 1 H1: There is a significant relationship between CS and CL.

3.2.2 RQ2: Is there a significant relationship between CS and LP?

LP promotions often affect CS (Belli et al's, 2021). However Mogale's (2020) research in the SA banking industry did not find a significant relationship between LP and CS. Therefore the proposed hypotheses for this RQ is to test whether there is a significant relationship between CS and LP by testing
Hypothesis 2 H2: There is a significant relationship between CS and LP.

3.2.3 RQ3: Is there a significant relationship between LP and CL?

Belli et al's (2021) meta-analysis of LP literature have found strong evidence of LP enhancing CL. LP's are effective on both attitudinal and behavioural elements of CL, however more on behavioural loyalty (Belli et al. 2022). Shammout (2020) find all relational aspects of LP's financial, social and structural bonds important predictors of attitudinal and behavioural loyalty. Therefore, the following hypothesis is proposed to confirm the findings and answer the RQ

Hypothesis 3 H3: There is a significant relationship between LP and CL.

3.2.4 RQ4: Is there a significant relationship between CS and PP?

Gustafsson et al., (2005) put forward that additional focus can be placed by offering better prices for CS. As pricing and CS have been found to have significant relationship's with one effecting the other and conversely by (Victor et al., 2019) the goal of the hypothesis was to confirm this relationship within SA telco by testing
Hypothesis 4 H4: There is a significant relationship between CS and PP.

3.2.5 RQ5: Is there a significant relationship between PP and CL?

Lephale (2021) found that personalisation directly affected both loyalty dimensions of attitudinal and behavioural loyalty, therefore the hypothesis aims to validate this finding within the SA telco context of this research.
Hypothesis 5 H5: There is a significant relationship between PP and CL.

3.2.6 RQ6: Does LP positively moderate the relationship between CS and CL?

Belli et al's (2021) identified moderators of LP effectiveness dependent on various LP design characteristics such as structure, reward content and delivery, as well as across industries (Belli et al,2021). Similar findings of LP by Lephale, (2021) whom recommended investigating further the mediating or moderating effect of LP's on CS and CL. This is further suggested by Mogale (2020) to explore LP elements moderating role on CS and driving LP effectiveness. Since LP's are designed to improve CL (Chen et al., 2021) the RQ has been hypothesized as
Hypothesis 6 H6: LP positively moderates the relationship between CS and CL. (Figure 2)

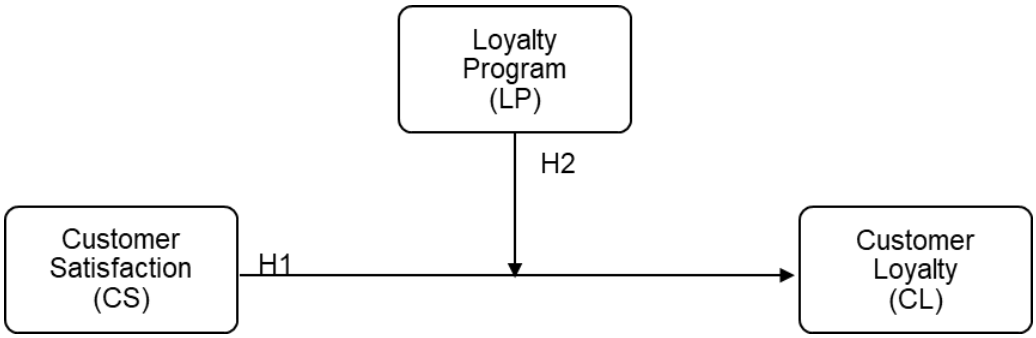


Fig 2. Conceptual model of moderator LP on CS and CL

3.2.7 RQ7: Does PP positively moderate the relationship between CS and CL?

Lephale (2021) found PP to have a significant relationship with CL in SA telco industry, they suggested that further research test the moderating effects of PP, therefore the RQ has been hypothesized as

Hypothesis 7 H7: PP positively moderates the relationship between CS and CL (Figure 3)

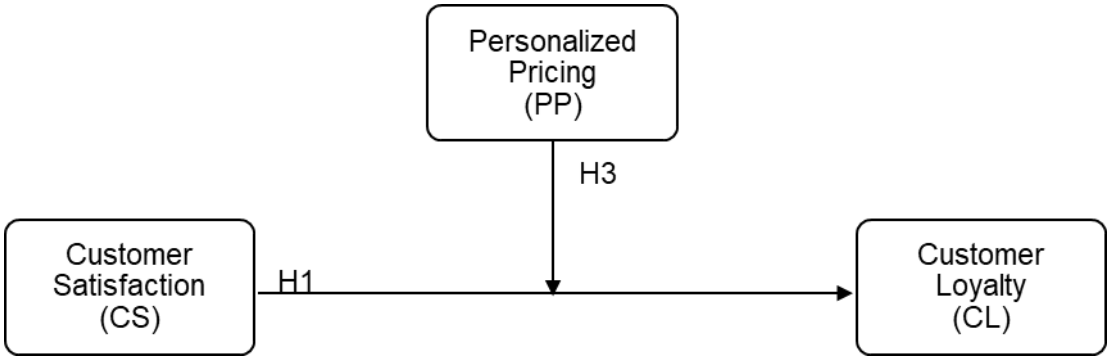


Fig 3. Conceptual model of moderator PP on CS and CL

To summarise and consolidate the hypotheses that seek to answer the RQ put forward, a conceptual model was developed (Figure 4):

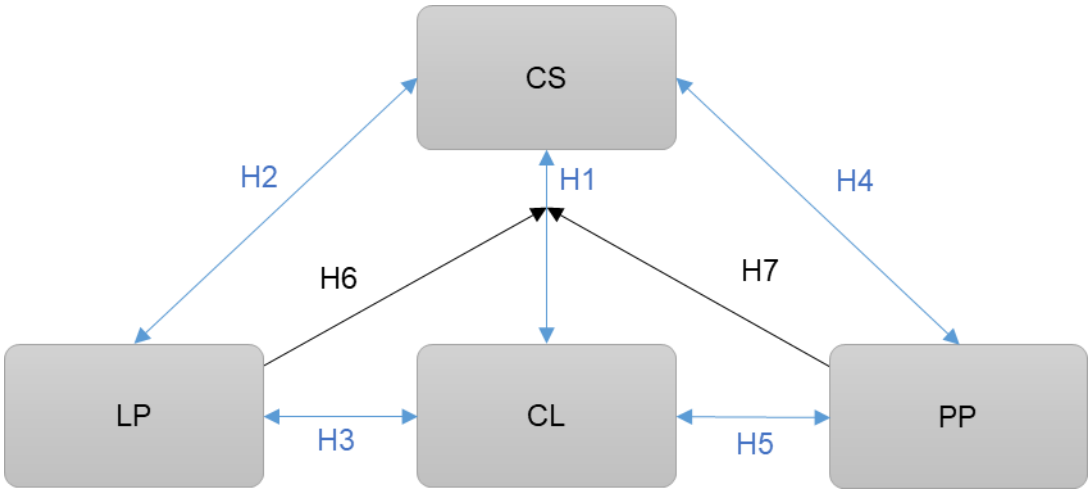


Fig 4. Authors own consolidated conceptual model

3.3 Conclusion

After establishing the theoretical and business need (Chapter 2) this chapter posed the research question and hypotheses tests (Chapter 3). To test these hypotheses the following chapters provide the detailed research methodology and design

analysis (Chapter 4). The analysis results were quantified (Chapter 5), thereafter the discussion of results (Chapter 6) and lastly the conclusion (Chapter 7).

CHAPTER 4: RESEARCH METHODOLOGY DESIGN

4.1 Introduction

Chapter 4 defines the choice of research design and methodology of the study. The chapter provides an overview of the analysis approach, the data analysis, statistical methods and quality controls used to test the hypotheses from Chapter 3. The chapter ends with the research study limitation considerations.

4.2 Research design

4.2.1 Purpose of research design

The purpose of the research design aimed to collect empirical evidence and apply data and statistical analysis to test the hypotheses proposed in order to answer the research questions, which was to determine whether significant relationships exist between the constructs, and significant positive moderating effects of LP and PP on the relationship between CS and CL, as put forward from the literature review.

The research design was descripto-explanatory, as the researcher used data collected and descriptive statistics to explore the relationship between CS and CL.

Furthermore, the researcher aimed to determine the moderating effects of LP and PP “that affects the direction and/or strength of the relationship between an independent and dependent variable” (Baron & Kenny, 1986, p.1) on the relationship between CS and CL, and the strength of interaction between the variables.

4.2.2 Research philosophy

Positivism tests hypotheses generated from theories through empirical analysis (Lephale, 2021). Positivism philosophical approach was used, which is consistent with the literature as exhibited in Dash and Dash’s (2019) literature review of relevant articles over three decades on telco customer churn analysis, demonstrating the dominance of quantitative methods reflecting a positivist view. The research questions arising from literature were tested through hypotheses and empirical evidence was provided to explain the relationships and strength between the constructs CS, CL, LP and PP.

4.2.3 Research approach

The approach is deductive as the research seeks to verify theories instead of inductive through generating theory (Dash & Dash, 2019). As there has been

extensive literature defining the constructs of CS, CL within telco (Patharia and Pandey, 2021), LPs (Belli et al., 2022; Chen et al., 2021; Kim et al., 2021) and PP (Esteves & Resende, 2019; Laussel & Resende, 2022; Li et al., 2020) by testing whether LPs and PP have a moderating effect on the relationship of CS and CL. The approach is deductive, as the research seeks to verify theories instead of generating theory (Dash & Dash 2019). The research follows a deductive approach from the data collected to explain whether the relationship in the existing literature holds true through quantitative research. Quantitative research is the dominant method looking at CS, CL, LP and PP within telco (Diaz, 2017; Du Preez, 2020; Izogo, 2016; Morgan and Govender 2017; Ofori et al., 2018, Ooi et al., 2022)

4.2.4 Methodological choices

Patharia and Pandey (2021) stated most CS-CL telco papers reviewed were quantitative. Additionally Chen et al.'s (2021) review on LP found significant majority of articles were quantitative. Existing constructs were used that were defined in literature, employing a mono-methodological choice by gathering quantitative data on each of the constructs, CS, CL, LP and PP, to answer the RQ, explaining the statistical relationship between the variables and to test the hypotheses proposed (Saunders & Lewis 2018). The RQ considers the moderating effects of LP and PP on the relationship between CS and CL. The choice of moderator in variable (LP, PP), affects the association between two or more other variables (CS and CL) (Dawson, 2013),

4.2.5 Research strategy

Data was collected via online survey questionnaire consisting of standardised questions; an existing set of survey questions were sourced from relevant articles which also employed the survey research strategy (Dhasan et al., 2021; Díaz, 2017; Du Preez, 2020; Izogo, 2016; Morgan and Govender 2017; Ofori et al., 2018, Ooi et al., 2022). Survey distribution via digital channels enabled efficient reach of participants within the time horizon, the online survey was convenient for respondents to access over internet-enabled devices. The survey research strategy is popular as it is a cost-effective manner in which to collect data on a large scale (Saunders & Lewis, 2018).

4.2.6 Time horizon

The survey research strategy had an additional advantage as the process could be better managed within the time horizon (Saunders & Lewis 2018). In addition, telcos have different seasonal promotions such as summer campaigns, Black Friday or festive campaigns, and therefore a snapshot in time enabled fairer comparisons of the telcos, removing the aspect of seasonal promotions. These led to the data collection time horizon being cross sectional, with the data collected at a snapshot in time instead of tracking the data and changes over time (Saunders & Lewis 2018). The survey was made available over a period of 5 weeks (in which the researcher reached the targeted number of responses). Cross sectional time horizon was also the indicated time horizon in each of the survey articles listed (Dhasan et al., 2021; Díaz, 2017; Du Preez, 2020; Izogo, 2016; Morgan and Govender 2017; Ofori et al., 2018, Ooi et al., 2022). Using data from the same sample at a point in time is also more conducive to factor in analysis for variable reduction as described later (Yong & Pearce, 2013).

4.3 Research methodology

4.3.1 Population

The population group consisted of customers who had the characteristics to assist with the RQ. As the RQ aimed to understand how LPs and PP moderate the relationship between CS and CL of telco customers, the population group consisted of individuals who had an active mobile cellular subscription and were exposed to telcos' LPs and PP. Personalisation strategies are highly prevalent in the SA telco industry (Lephale, 2021), with the prominent telco players featuring in SA's top LP landscape, as reiterated in Chapter 1. As per ICASA (2021), there are 64 million active mobile cellular users as of the 30th of September 2020. The reason for the high number of active subscriptions is that an individual may have more than one subscription and use multiple networks at a time (Mvele et al., 2019). For the purposes of this study, the population was further filtered by age to respondents who were 18 years or older and who consented to participate in the survey.

4.3.2 Unit of analysis

The unit of analysis included individual customers who were over the age of 18 and who had an active mobile cellular subscription in South Africa and had interacted with LPs and/or PP made available by telcos.

Prior studies have narrowed down the target population by restricting the study to a small geographical area, such as Du Preez (2020) who limited their study to customers in the North-West province, SA; Karugu (2018) who limited their study to regions in Kenya and Mvele et al (2019) who limited their study to Urban areas in Cameroon. However, SA has comprehensive network coverage, national population of inhabitants within range of 3G coverage (irrespective of whether or not they are subscribers) was at 99.8% in 2020 (ICASA, 2021), including the rural population of all provinces, where coverage fell between 99%-100%. Therefore, the unit of analysis for the study was not limited to individuals in a specific geographic area within SA.

4.3.3 Sampling method and size

The researcher did not have access to data from telcos, and the Protection of Personal Information Act (POPI Act) prevents the sharing of data, therefore the researcher was unable to obtain the full list of the population, and with no sampling frame probabilistic sampling was not performed. Therefore, non-probabilistic sampling was employed, wherein one does not have the probability of selecting a unit from the population (Saunders & Lewis, 2018).

The researcher identified individuals in their network who have a telco, which in turn have LPs and PP. The researcher purposively distributed the survey questionnaire to these individuals. These individuals were requested to redistribute the questionnaire to additional individuals who have similar engagements with telcos. To obtain the maximum number of responses within the research time frame, convenience sampling techniques were employed; this had a risk that the respondents were concentrated to the researcher's network and therefore not statistically representative of the population. Although the appropriateness of convenience sampling is a concern by Bono and McNamara (2017) and Köhler et al. (2017), the researcher included qualifying questions in the survey, of whether the respondent has engaged with the telco's LP and PP, which were used to filter the data for inclusion on qualifying responses.

Dawson (2014) noted that sample size is dependent on various factors, with 137-154 to be sufficient for statistical analysis. In a similar study of CL in the SA telco industry, Morgan and Govender (2017) obtained 112 responses, and Du Preez (2020), a study of customer service in the SA telco industry, obtained 300 responses. For

consideration, the number of valid responses obtained in Nigeria by Izogo (2016) were 138, in Ghana by Yeboah-Asiamah et al. (2013) were 227, and by Ofori et al. (2018) were 253. Based on these studies in the sub-Saharan Africa telco industry context, responses range between 112 and 254, with an average of approximately 200. The researcher targeted 200 responses for this study and was able to obtain 214 responses.

4.3.4 Measurement instrument

Following the deductive research approach the researcher leveraged off existing literature to create the survey. The survey consisted of structured close-ended questions. The researcher collated questions from articles which are directly applicable to CS and CL within the telco context, as well as LPs and PP. The statements were used as is, or were adjusted to better fit the research purpose. The statements were measured using the 5-point Likert scale ranging from 1 - Strongly Disagree to 5 - Strongly Agree, several articles have used the same measurement scale and approach (Díaz, 2017; Dhasan et al., 2021; Du Preez, 2020; Izogo, 2016; Morgan & Govender 2017; Ofori et al., 2018). The characteristics of the data inform the choice of analysis (Köhler et al., 2017), moderator variables may be measured on the Likert scale for moderation analysis (Hair et al., 2021).

Careful consideration was taken when selecting questions and the questions were adapted where necessary (Bono & McNamara, 2017). Noting that most of the research has been examined in other contexts (Izogo, 2016), questions from studies that have been tested in sub-Saharan Africa were favoured. Questions were taken verbatim where possible. To ensure relevance of questions that needed to be adapted, the researcher followed a similar approach to Ofori et al., (2018), who went through the process of adapting questions from literature to the telco context, and these were revised after receiving recommendations by subject matter expert reviewers. These questions were submitted for GIBS ethical clearance before proceeding with data gathering.

4.3.4.1 Pilot study

Once ethical clearance was obtained and may be found in Appendix 1, the researcher conducted a pilot study to validate the instrument. The pilot study consisted of ten respondents and allowed an opportunity to evaluate the suitability of the questionnaire, including wording and strucure as well as inconsistencies that

were then adjusted (Yeboah-Asiamah et al., 2013). The pilot study also obtained general feedback on difficult to understand questions, the survey length and overall questionnaire experience, allowing the researcher to adjust wording and the order of questions where necessary, as well as gain an indication of the general completion time (10 min – 15 min), which was added to the final survey to provide survey participants with an estimation of time required to complete the survey. The pilot respondents requested the selection “Not Sure” to added to the “Yes” or “No” questions. The 10 pilot responses were excluded from the final study.

4.3.4.2 Survey structure

The survey was created using Google Forms and made available for respondents. using an online link. The respondents were directed to the introductory letter, explaining the purpose of the research, and detailing the informed consent, confidential disclosure, and the estimated time to complete the survey. Participation in the survey was voluntary and respondents were able to withdraw at any time without penalty. No personal identifiable information was requested in the survey to ensure anonymity. The researcher and supervisor details were made available for any queries.

After the introductory letter, the survey consisted of five separate sections; only the section headings were provided, starting with a General section, followed by sections for each of the constructs measured, namely Customer Satisfaction, Customer Loyalty, Personalised Pricing and Loyalty Program.

The first General section included qualifying questions to ensure that respondents were 18 years or older. Additionally, questions on their telco provider (adopted from Du Preez, 2020), and the use of LPs and PP, as well as the LP design (adopted from Mogale, 2020), were included. The Customer Satisfaction section included questions around satisfaction with their Telco (Du Preez, 2020), and satisfaction regarding tariffs and promotions (Díaz, 2017). The Customer Loyalty section included attitudinal and behavioural loyalty (Lephale, 2021), and company and program loyalty (Evanschitzky et al., 2012). The Personalised Pricing section included questions on personalised pricing (Karugu, 2018), awareness about dynamic pricing (Victor et al., 2019), product personalisation (Lephale, 2021), structural bonds and program special treatment (Evanschitzky et al., 2012). Lastly, the Loyalty Program section included questions on Tier status (Hollingshead, 2021), financial bonds

(Shammout, 2020), as well as monetary, exploration and social benefits (Audrain-Pontevia & Garnier, 2020).

The Customer Satisfaction, Customer Loyalty, Personalised Pricing and Loyalty Program sections consisted of statements adopted from prior literature and requested respondents to select on a 5-point Likert scale whether they Strongly Disagree (5); Disagree (4); Neither Agree nor Disagree (3); Agree (2) or Strongly Agree (1). Furthermore, the Customer Satisfaction section included a question where respondents were asked to select whether they were Very Unsatisfied (5); Unsatisfied (4); Neither Satisfied nor Unsatisfied (3); Satisfied (2) or Very Satisfied (1).

A copy of the survey may be found in Appendix 2.

4.3.5 Data gathering process

After ethical clearance and pilot study adjustments, the survey was ready for distribution in August 2022. The questionnaire consisted of questions that validated the criteria of the target population, specifically active mobile subscription with a South Africa telco and having exposure to LPs and PP. The survey questionnaire was presented in Google Forms, which has the functionality to make all questions mandatory, this ensured that respondents answered every question. Furthermore, Google Forms allowed the researcher to code the Likert responses numerically beforehand and download the responses to Microsoft Excel, allowing for easier analysis of the data.

The survey link was distributed via the direct messaging platform WhatsApp. The researcher leveraged their network for initial responses, and asked their network to share the survey link further to obtain more responses via snowball sampling. Thereafter, there were continuous follow ups to encourage response rate and sharing. The survey link was also shared via the online social media channels LinkedIn and Facebook. The results of the data gathering process are provided in Chapter 5.

As per the MBA requirements to store the data, the data collected has been stored on Google Drive, a protected cloud-base storage platform, which may only be accessed via secure user and password.

4.4 Data analysis

4.4.1 Analysis approach

The researcher applied data cleaning techniques to the raw Microsoft Excel data. Overall filters for missing data and outliers were checked. Graphs were created in Microsoft Excel for descriptive statistics. These are presented in Chapter 5. The clean data was imported to IBM SPSS version 28, the statistical software used to perform various statistical tests on the dataset. SPSS may be used to easily visualise the distribution and summarise frequencies (Yeboah-Asiamah et al., 2013). In addition, the SPSS add on PROCESS macro v4.1 by Preacher and Hayes, which assists with moderation models (MODEL 1), was employed to test moderation analyses (Hayes, 2022). The PROCESS macro add in was retrieved from https://www.processmacro.org/index.html. PROCESS is preferred as the macro does not require additional variable transformations to perform the moderation analysis (Hayes, 2012). The macro may be used in SPSS, which aides with continuity from the descriptive and initial statistical tests.

The majority of questions were in Likert scale, these variables were treated as ordinal Köhler et al. (2017) and the researcher used the mean of variables (Dawson, 2014). The moderators were Likert scale, which are suitable to be assessed in PROCESS moderation tests.

4.4.2 Quality controls

As per Hair et al., (2021) variables should be assessed for validity and reliability, these are described in detail below.

4.4.2.1 Validity

Firstly, correlations between variables were considered and questions were removed that had low correlation, where the r-value should be at least 0.30 (greater than 0.3 or less than -0.3 significance) (Yong & Pearce, 2013). A bi-variate correlation tests the individual questions and the strength of the relationship to the construct total. The item total score was calculated per respondent, the sum of the individual questions within the same construct to obtain a construct total. The individual questions were tested for significance relative to the construct total. Question were valid when Pearson Correlation was significant with the Sig. value less than 0.05. The results for validity are detailed in Chapter 5.

Pearson correlation assessments are required for Principal Components Analysis which are discussed in the variable reduction section 4.4.2.4 later (Winter et al., 2016). Reliability testing is required after the constructs are validated (Yong & Pearce, 2012).

4.4.2.2 Reliability

Cronbach's alpha test is widely used to test for validity and internal consistency of the responses, and the reliability of the variables used (Dhasan et al., 2021; Du Preez, 2020; Izogo, 2016; Morgan & Govender 2017). The higher the Cronbach alpha value, the higher the consistency of the individual variables (Ofori et al., 2018), a minimum Cronbach alpha value of 0.7 is acceptable (Hair et al., 2021).

4.4.2.3 Model fit

To assess the appropriateness of data for hypothesis testing, the underlying assumptions of statistical tests are tested. The following assumptions are required to be satisfied for PROCESS moderation analysis Normality, Independence and Homoscedasticity.

Many statistical methods require the underlying data source to be normally distributed, and should therefore be assessed for normality. However, regression analysis is robust to normality (Cain et al., 2017). Skewness tells us whether the data is symmetrical, and Kurtosis tells us the shape of the curve, how flat or peaked (Cain et al., 2017). Using Skewness and Kurtosis to test for normality, the researcher calculated the z-score (statistic – 0 / standard error) compared to the standard normal distribution. For samples greater than 200, z score value greater than 2.58 or less than -2.58 at $p < 0.01$ significance level (Ghasemi & Zahediasl, 2012).

Homoscedasticity is the assumption of equal variances, and is done through a residual plot (Su 2012). These assumptions are tested in order to proceed with the PROCESS moderation analysis.

4.4.2.4 Variable reduction

As the researcher used questions from various sources to support each of the constructs, there were a large number of variables. Exploratory Factor Analysis (EFA) is often a first step in establishing new scales and metrics (Yong & Pearce, 2013). The same analyses approach was taken to assess telco CL (Dhasan et al., 2021; Izogo, 2016).

The recommended sample size for factor analysis is 200 (Yong & Pearce, 2013), which was met with the final research sample size of 214.

To determine whether the variables were suitable for factor analysis KMO and Bartlett's test for sphericity were conducted. KMO assesses the completeness of responses, when KMO of Sampling Adequacy values are above 0.50 (Yong & Pearce, 2013). Bartlett's Test of Sphericity assesses whether there were patterned relationships amongst the variables, and were significant when the significance level was less than 0.05 (Yong & Pearce, 2013).

Thereafter, the number of components were assessed through Principal Components Analysis (PCA), where the total variance is explained by the least number of components (Yong & Pearce, 2013). Kaiser's criterion specifies a cut off eigenvalue of 1, which determines the number of components to retain (Yong & Pearce, 2013). These may be confirmed in a scree plot, which is reliable for sample sizes greater than 200.

Variables should be designated to components. Varimax minimises the number of variables that have high loadings on each factor and suppresses smaller variables further (Yong & Pearce, 2013). The rotated factor-loading output displays the factor-loadings and aides with ease of interpretation. The factor-loadings indicate how much the variable has contributed to the factor, the strength of the relationship and designate the component (Yong & Pearce, 2013). Common variables are designated to components, these components however may be difficult to name descriptively (Yong & Pearce, 2013).

4.4.3 Hypotheses testing

Morgan and Govender (2017) used multiple linear regression to explore CL in the SA telco sector and to test relevance of CS and CL amongst other variables, since the research focuses on the two variables, CS and CL, a simple linear regression was employed. To assess the moderating effect of LP and PP on the relationship between CS and CL, a moderation analyses was performed.

4.4.3.1 Spearman's Correlation

Spearman's correlation measures monotonicity and is applicable across normal and non-normal distributions (Winter et al., 2016). Additionally Winter et al. (2016)

demonstrated Spearman's outperform Pearson's correlation in terms of bias, variability and robustness.

Spearman's correlation is used when both variables are measured on a ranked scale, such as in our survey with the Likert scale (Elis, 2010). The correlation coefficient rho (denoted by r_s) is provided in the correlation matrix.

Cohen's effect sizes for correlations between two variables assist with interpreting r_s with the following bounds small (+/-0.1), medium (+/-0.3) and large (+/-0.5) (Elis, 2010).

4.4.3.2 Moderation analysis

Moderation is based on established theoretical literature provided in Chapter 2 and hypothesised in Chapter 3 (Memon et al., 2019). The moderation analysis aims to test whether a moderator variable may affect the sign and size of the relationship between a casual variable CS and the outcome variable CL through ordinary least squares regression (Baron & Kenny, 1986; Dawson, 2014).

Conceptual model

The conceptual model from Chapter 3 depicts how the moderator's interaction with CS affect the relationship between CS and CL (Figure 5).

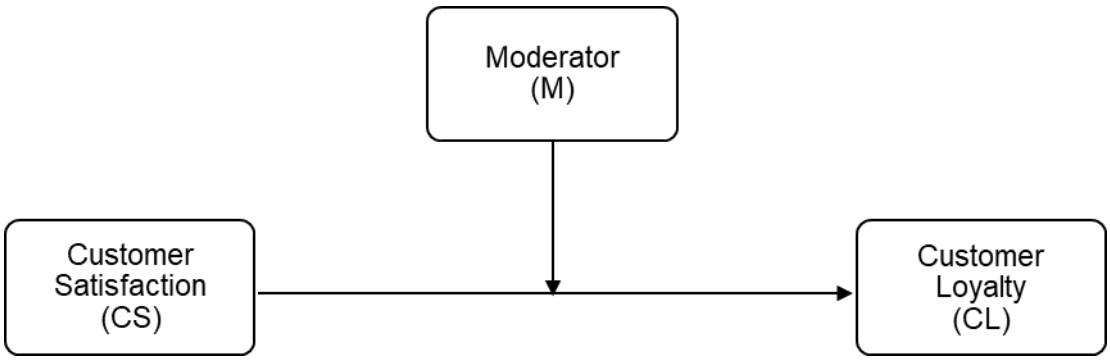


Fig 5. Moderation analysis (adapted from Hair et al., 2021)

Moderation looks at the interaction of the effect of the moderator, and assessing the significance and then the effect size of the interaction term on the relationship between CS and CL. The conceptual model alone does not depict the statistical tests that are employed to test the relationships, by looking at the product interaction term M*CS, the adaptation of the moderation statistical model as per Hayes (2012) and Hair et al., (2021) has been described further in Figure 6 by adding in the relationship

denoted by c_1, c_2 and c_3 (substituting the outcome variable Y with CL and causal variable X with CS, ignoring indirect effects and error terms).

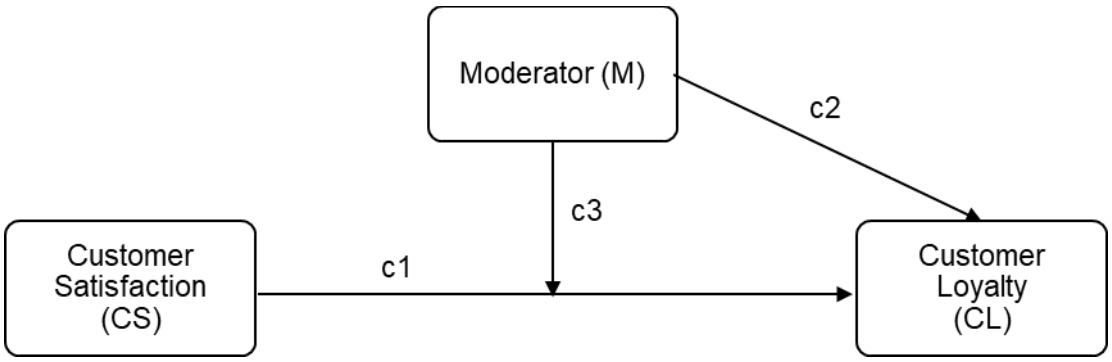


Fig 6. Moderation analysis depicting interaction relationship (adapted from Hair et al., 2021)

Statistical model

The statistical model equation may be represented as:

$$CL = c_1 CS + c_2 M + c_3 (M * CS) \quad \text{(Equation 1)}$$

Factoring out CS and rewritten as

$$CL = (c_1 + c_3 M) CS + c_2 M \quad \text{(Equation 2)}$$

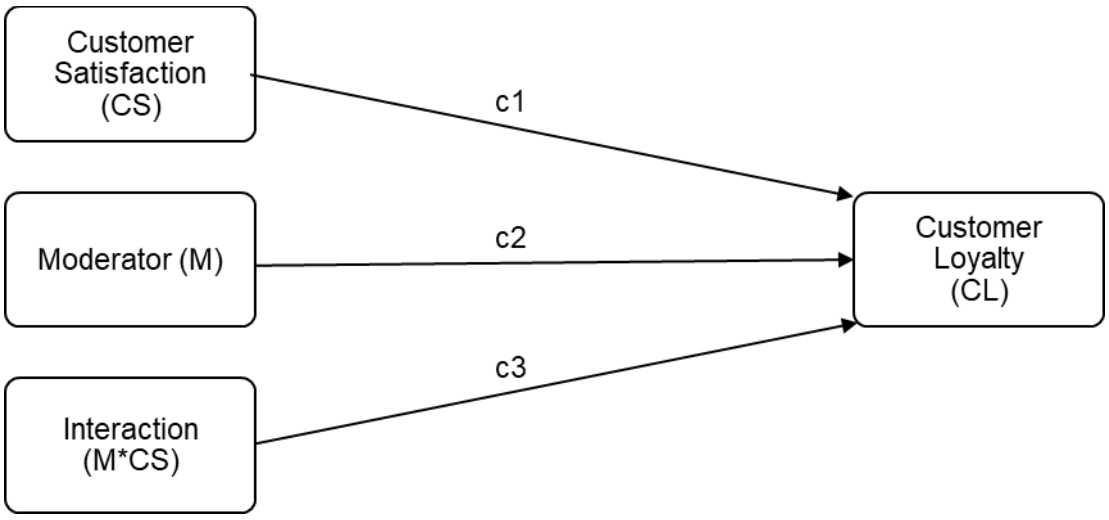


Fig 7. Statistical model of moderation analysis (adapted from Hayes, 2012)

From equation (2) "The effect of CS on CL is a function of the moderator M, this function($c_1 + c_3 M$), is the conditional effect of CS on CL or simple slope for CS. It estimates how much two cases that differ by one unit on CS are estimated to differ

on CL when M equals some specific value" (Hayes, 2012, p. 4). The model effect size and R square should be reported (Memon et al., 2019).

Moderation analyses focuses on the significance of the interaction term (Memon et al., 2019; Dawson, 2014). To establish whether the effect c_3 is statistically different from zero, two tests were considered, firstly a null hypothesis for statistical significance and secondly looking at the confidence intervals (Hayes, 2012).

The PROCESS macro Model 1 was used to test the moderation analyses, in addition to the model output, PROCESS provides data visualisation syntax for the line slope results of the three moderator levels:

- Low: (Mean – std deviation) one standard deviation below the average
- Moderate: (Mean) the average
- High: (Mean + std deviation) one standard deviation above the mean.

Slope analysis

Commonly graphical representation of the slopes aides with the interpretation of the moderation results (Dawson, 2014; Hair et al., 2021), with Memon et al., 2019 stating slope tests must be reported. A positive moderating effect will have a steeper line slope, depicted by the "High Moderator" line in Figure 8, where the relationship between CS and CL becomes stronger at higher levels of the moderator. Conversely for lower levels of the moderator, the slope becomes flatter in "Low Moderator", or the relationship weaker. Therefore, the difference in slope between the line graphs provides an indication of the strength of the relationship.

As the slopes between the lines differ, it shows at which levels of the moderator the effect is strongest. If the slopes are similar, the level of effect is similar across all levels of the moderator (Hayes, 2012).

Interpreting the slope lines demonstrates the relationship between CS and CL as positive and are significantly different from one another (Dawson, 2014). Positive coefficients of the interaction mean the relationship becomes more positive as the moderator increases (Dawson, 2014). The higher the interaction of the moderator and CS, the stronger the relationship between CS and CL, there is visual evidence of moderating effects when the slope lines differ between different levels of the moderator.

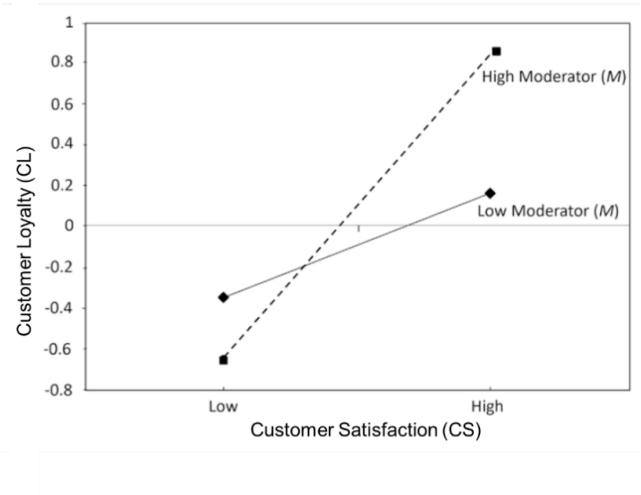


Fig 8. Slope analysis (adapted from Hair et al., 2021)

4.5 Limitations

As there are many constructs and theories that influence CL, based on the gap in research in the telco industry the researcher has focused on testing CS, LP and PP. Therefore, other factors that affect these constructs may not wholly be incorporated and may be considered to affect the relationships and significance of the research findings.

As the researcher has sourced questions from different papers, questions which were not applicable to the study were not included, and the resulting components may not be reflective of the original paper purpose. It remains important to bear in mind the differences in measurement between studies that may affect the results, as noted by Gustafsson et al. (2005), results should be interpreted accordingly, especially if there may appear to be a contradiction with another study.

Due to time restrictions, a cross-sectional study was used (Yeboah-Asiamah et al., 2013). As suggested by Ofori et al. (2018) a longitudinal study can assist in providing insights into relationships between the constructs over time, and this limitation is emphasised by Bono and McNamara (2017) causal relationships between variables cannot be measured. However, an understanding of how LPs and PP moderates the relationship of CS and CL is still valuable. Longitudinal studies may be beneficial to

assess a customer's attitudinal assessments, whereas over time, switching costs may come into play (Evanschitzky et al., 2012)

As with convenience sampling, and although the post was made available on social media and redistributed to reach as wide an audience, the responses may be skewed or biased towards the researcher's network and may not be a representative sample, therefore the generalisation of the findings need to be interpreted, given this limitation (Izogo, 2016). When presented with the survey questionnaire, respondents may exhibit bias and provide unreliable information (Saunders & Lewis, 2018).

Limitations of PROCESS moderation analysis is that the analysis uses observed variables and therefore linear model outcome prediction measurement errors may occur (Hayes, 2012).

A limitation noted by Dawson (2014) of slope analysis is that the chosen slope lines (Low, Moderate and High) are arbitrary based on the mean and standard deviation of the sample size, whereas more meaningful points may be chosen or there is no need for a slope analysis.

4.6 Conclusion

This chapter details the research methodology and design employed to test the hypotheses posed. Chapter 4 provides the foundational background for the following chapter to deliver the results from the research methodology and data analyses described here.

CHAPTER 5: RESULTS

5.1 Introduction

Chapter 5 discusses the data collection process, data preparation outcomes and provides an overview of the data by way of descriptive data. Following Chapter 4 the chapter focuses on the results of the data analysis and statistical analysis, as well as provides the results from testing the hypotheses from Chapter 3.

5.2 Data collection

The pilot study of ten respondents were not included in the final survey results. The first set of responses from the researcher's network and initial snowballing collected 79 responses. Several rounds of reminders and extending the survey to online social media channels LinkedIn and Facebook increased the responses to 173. With the last set of individual reminders the final number of 214 responses was achieved. All respondents were valid respondents as they were above the age of 18 and had at least one telco sim; therefore no respondents were removed. The final number of valid responses was 214.

5.3 Data analysis

The data was made available on google forms and downloaded to a Microsoft Excel file, which was used for initial data cleaning. Simple computational calculations were performed, such as the sum of questions within a construct to obtain the item total score described in more detail under validity, and the mean of variables.

The questions were coded with appropriate labels. The descriptive text answers were coded to numeric to assist with ease of data analysis. The code book can be found in Appendix 3. The remaining questions were measured on a 5-point Likert scale and no further data cleaning was required.

The telco provider question allowed respondents to input an "Other" option to specify the network provider they were on if their network was not in the given selection. The responses were then categorised, resulting in another telco provider added, "FNB Connect", thereafter the grouped category enabled numeric coding. Additionally, the subscription type also had an "Other" option, where the input text "Topup" was mapped to "Contract" as an existing category.

Google survey has the functionality to request respondents to answer all questions, therefore there were no missing values. No responses were removed due to missing data. The final number of valid responses remained at 214.

5.4 Descriptive data

Descriptive data provides an overview of the respondent's telco relationship, with their telco LP and PP, and the detailed results are presented below.

The respondents' main telco provider selected was Vodacom (47%), followed by MTN (32%), Telkom (12%), FNB Connect (5%) and lastly Cell C (4%) as depicted in Figure 9.

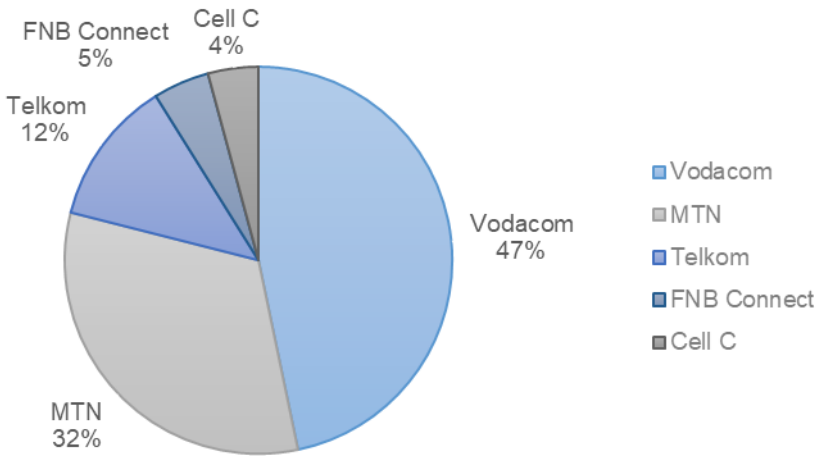


Fig 9. Main telco provider

The respondents were with their main telco provider for the following durations: Less than 1 year (2%), 1 to 3 years (8%), 4 to 6 years (21%), 7 to 9 years (12%), with the majority of respondents being with their main telco provider for 10 years or longer (57%) (Figure 10).

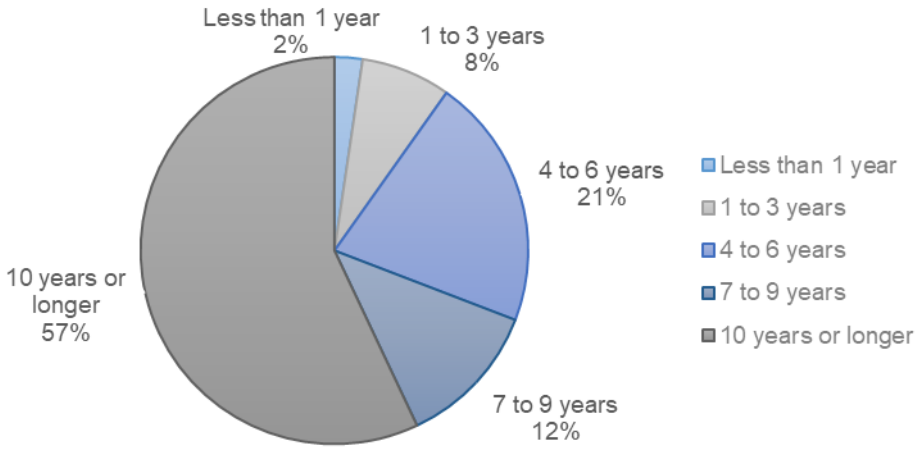


Fig 10. Duration with main telco provider

The most popular subscription type was Contract (61%), Prepaid (35%), followed by a smaller proportion of Data only sim (3%), Wireless internet router (1%) and Other (0.5%); the one respondent who selected “Other” provided the input “Both contract and prepaid”, although only the main telco provider subscription type should have been selected (Figure 11).

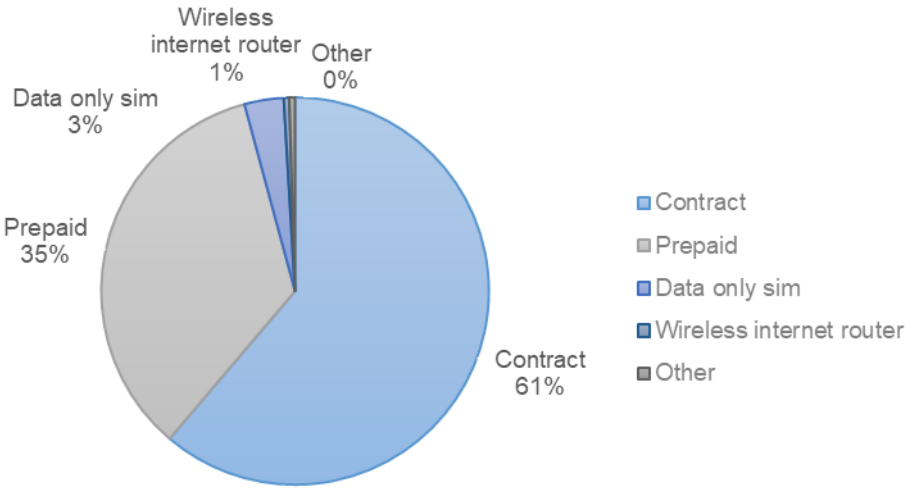


Fig 11. Subscription type

The majority, 68% of respondents, only had one telco provider, and 32% of respondents had more than one telco (Figure 12).

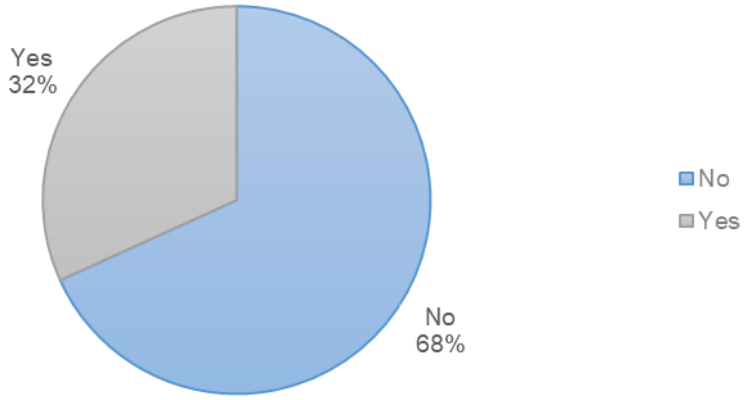


Fig 12. Respondents with one or more than one telco

The following figures are related to their telco's LP. More than half of respondents (55%) indicated they made use of their telco's LP, with 40% indicating No and 5% were Not Sure (Figure 13).

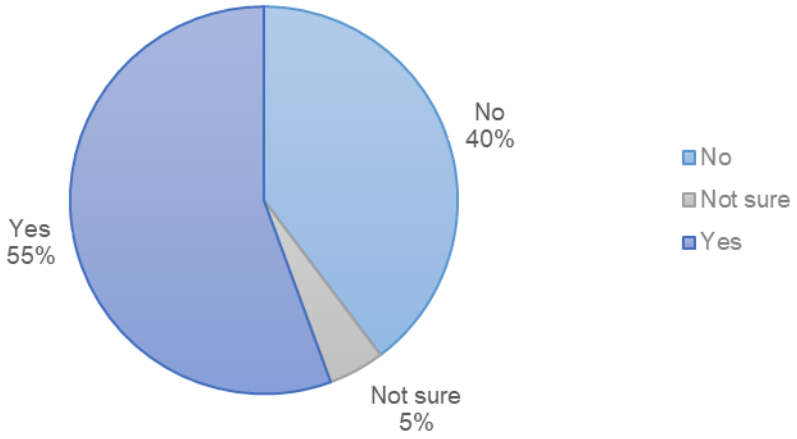


Fig 13. Use of Loyalty Program

The respondents were further asked if their telco's LP had a tier structure, 12% indicated Yes, 23% responded No, and the majority, 65%, were Not sure (Figure 14).

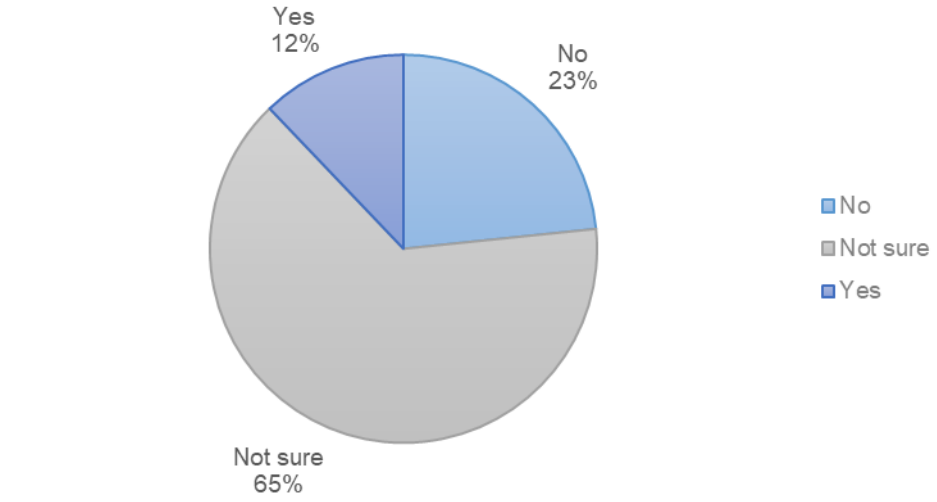


Fig 14. Loyalty program tier structure

The majority of respondents (51%) indicated they did not make use of the benefits of their LP rewards, those that did indicated that they made use of the telco points or "currency" by redeeming them for Cash (25%), Discount on goods (14%), Exclusive benefits (6%) and lastly redeeming them from the telco (4%) as depicted in Figure 15.

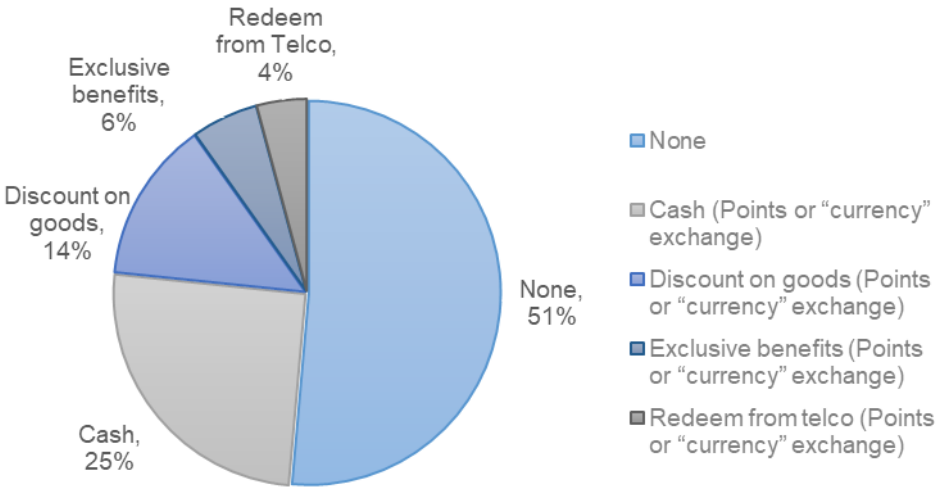


Fig 15. Loyalty program reward type

Lastly, the respondents were asked whether they made use of a telco that offered personalised pricing, 52% of respondents responded Yes, with 39% No, and 9% indicating Not sure (Figure 16).

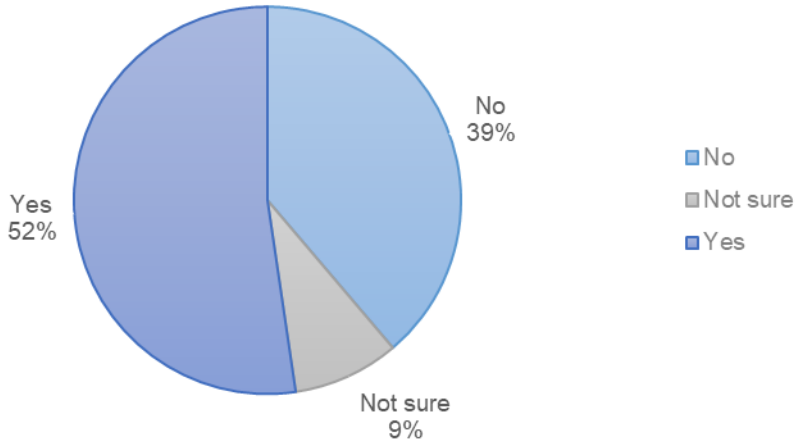


Fig 16. Use of Personalised Pricing

5.5 Statistical analysis

5.5.1 Validity

To assess the validity of the questions for the proposed constructs of CS, CL, LP and PP, we tested whether each question was valid through a Pearson correlation test, thereafter we tested whether the constructs were valid through the KMO and Bartlett's test for sphericity.

The results of the Pearson correlation test are shown below

5.5.1.1 Customer Satisfaction

Individual CS questions were tested for significance relative to the construct CS, the results in the Table 1 show for each of the individual CS questions the Pearson Correlation test Sig. value is <0.001, therefore each of the questions were significant towards the construct total (CS_TOT the sum of the individual CS questions).

Table 1. Results of CS validity per question

CS Question	Pearson Correlation CS_TOT	Sig. (2-tailed)
CS_S1	.831**	<0.001
CS_S2	.846**	<0.001
CS_S3	.844**	<0.001
CS_TP1	.772**	<0.001
CS_TP2	.775**	<0.001
CS_TOT	1	

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

5.5.1.2 Customer Loyalty

Individual CL questions were tested for significance relative to the construct CL, the results in the Table 2 show for each of the individual CL questions the Pearson Correlation test Sig. value was <0.001, therefore each of the questions were significant towards the construct total (CL_TOT: the sum of the individual CL questions).

Table 2. Results of CL validity per question

CL Question	Pearson Correlation CL_TOT	Sig. (2-tailed)
CL_AL1	.844**	<0.001
CL_AL2	.832**	<0.001
CL_AL3	.840**	<0.001
CL_AL4	.696**	<0.001
CL_BL1	.460**	<0.001
CL_BL2	.579**	<0.001
CL_BL3	.640**	<0.001

CL_BL4	.633**	<0.001
CL_CL1	.721**	<0.001
CL_CL2	.853**	<0.001
CL_CL3	.760**	<0.001
CL_PL1	.648**	<0.001
CL_PL2	.696**	<0.001
CL_PL3	.649**	<0.001
CL_TOT	1	

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

5.5.1.3 Loyalty Program

Individual LP questions were tested for significance relative to the construct LP, the results in the Table 3 show for each of the individual LP questions the Pearson Correlation test Sig. value was <0.001, therefore each of the questions were significant towards the construct total (LP_TOT: the sum of the individual LP questions).

Table 3. Results of LP validity per question

LP Question	Pearson Correlation LP_TOT	Sig. (2-tailed)
LP_T1	.587**	<0.001
LP_T2	.631**	<0.001
LP_T3	.672**	<0.001
LP_T4	.622**	<0.001
LP_F1	.605**	<0.001
LP_F2	.519**	<0.001

LP_F3	.440**	<0.001
LP_F4	.467**	<0.001
LP_M1	.769**	<0.001
LP_M2	.727**	<0.001
LP_M3	.731**	<0.001
LP_E1	.771**	<0.001
LP_E2	.762**	<0.001
LP_E3	.753**	<0.001
LP_S1	.699**	<0.001
LP_S2	.728**	<0.001
LP_S3	.703**	<0.001
LP_TOT	1	

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

5.5.1.4 Personalised Pricing

Individual PP questions were tested for significance relative to the construct PP, the results in the Table 4 show for each of the individual PP questions the Pearson Correlation test Sig. value was <0.001, therefore each of the questions were significant towards the construct total (PP_TOT: the sum of the individual PP questions).

Table 4. Results of PP validity per question

PP Question	Pearson Correlation PP_TOT	Sig. (2-tailed)
PP_PP1	.644**	<0.001
PP_PP2	.674**	<0.001

PP_PP3	.618**	<0.001
PP_PP4	.617**	<0.001
PP_PP5	.673**	<0.001
PP_A1	.238**	<0.001
PP_A2	.288**	<0.001
PP_A3	.400**	<0.001
PP_P1	.632**	<0.001
PP_P2	.619**	<0.001
PP_P3	.542**	<0.001
PP_P4	.786**	<0.001
PP_P5	.710**	<0.001
PP_SB1	.685**	<0.001
PP_SB2	.728**	<0.001
PP_ST1	.672**	<0.001
PP_ST2	.658**	<0.001
PP_ST3	.614**	<0.001
PP_TOT	1	

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

Therefore, each of the individual questions were valid for the construct CS, CL, LP and PP. Thereafter the validity of the construct CS, CL, LP and PP were tested with KMO and Bartlett's test for sphericity.

KMO and Bartlett's test for sphericity is significant when the following conditions are met:

1) Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) Sig. value is greater than 0.5 (Yong & Pearce, 2013)

2) Bartlett's Test of Sphericity Sig. value is less than 0.05 (Yong & Pearce, 2013).

From the Table 5, it can be seen that each of the constructs CS, CL, LP, PP were significant as the KMO values for each construct, CS = 0.7502, CL = 0.9070, LP = 0.8789 and PP = 0.8620, were each greater than 0.5.

Furthermore, each constructs Bartlett's Test of Sphericity Sig. value is 0.0000, which was less than 0.05. Therefore, each of the constructs CS, CL, LP, PP were valid.

Table 5. Results of KMO and Bartlett's test for sphericity per construct

		CS	**CL**	**LP**	**PP**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.7502	0.9070	0.8789	0.8620
Bartlett's Test of Sphericity	Approx. Chi-Square	727.56	2,380.14	2,908.67	2,421.74
	Df	10	91	136	153
	Sig.	0.0000	0.0000	0.0000	0.0000

In summary, from the Pearson correlation test each of the individual questions per construct were valid, and from KMO and Bartlett's test for sphericity each construct was valid.

5.5.2 Reliability

Cronbach's Alpha was used to assess the internal consistency of the individual questions for the underlying construct to test whether the Likert scale is reliable.

Reliability is achieved when the Cronbach's Alpha value is greater than 0.70 (Hair et al., 2021). Table 6 shows results for each construct has a Cronbach's Alpha > 0.7 indicating the questions per construct are reliable.

Table 6. Results of Cronbach's Alpha per construct

Reliability Statistics			
Construct	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
CS	0.866	0.873	5
CL	0.921	0.922	14
LP	0.902	0.901	19
PP	0.901	0.896	18

As each constructs Cronbach's Alpha was greater than 0.70, in addition as for each of the constructs deleting questions did not improve the construct Cronbach's Alpha, all the questions per construct were included. The constructs CS, CL, LP and PP were reliable.

5.5.3 Variable reduction

Exploratory Factor Analysis reduces the number of variables to component factors for which the most variance in the original variables are explained, the eigenvalue 1 rule determines how many components to extract.

The exploratory factor results are summarised in Table 7, followed by detailed results per construct:

Table 7. Result of exploratory factor analysis

Construct	**Number of components extracted**	**Eigenvalue**	**Total Variance Explained**
CS	1	3.34	66.75%
CL	2	2.12	66.18%
LP	4	1.73	75.28%
PP	4	1.21	69.74%

Extraction Method: Principal Component Analysis.

5.5.3.1 Customer Satisfaction

For the construct CS, one component was extracted, representing 66.75% of the variance. Therefore, all individual questions were included as one component for CS.

5.5.3.2 Customer Loyalty

The exploratory factor analysis for the construct CL extracted two components as seen in the scree plot (Figure 17), these components represent 66.18% of the variance (Table 7).

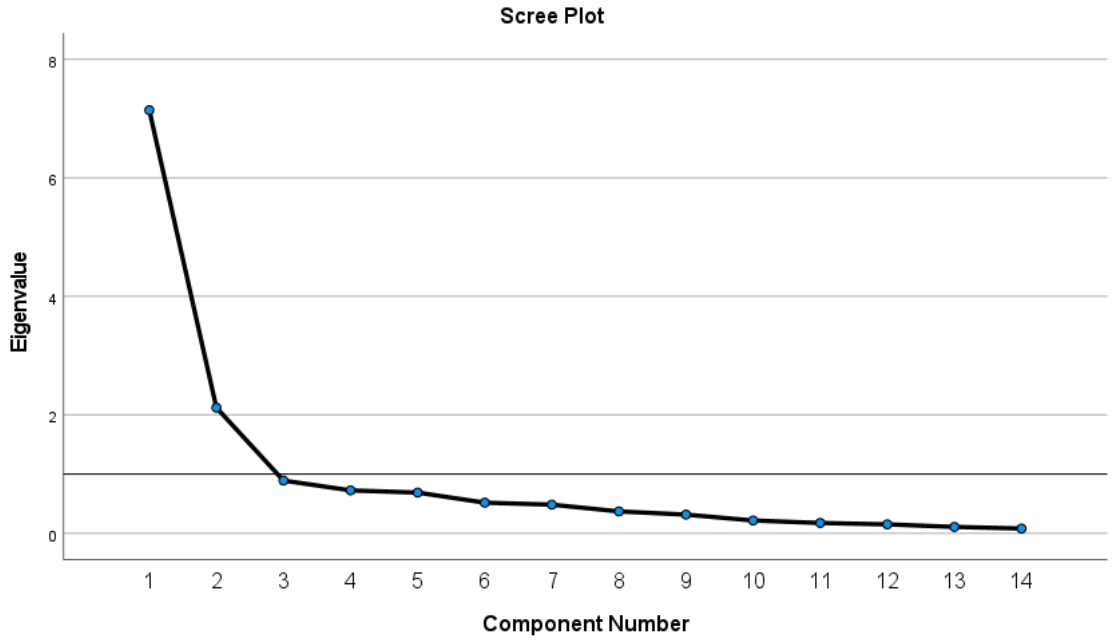


Fig 17. Customer Loyalty exploratory factor analysis scree plot

The rotated component matrix displayed in Table 8. The absolute values of the loadings are taken into consideration as the signs indicate the direction of the correlation and not the magnitude of the factor loading (Yong & Pearce, 2013).

The individual question factor loadings were assessed, the component for which the factor loading is loaded the highest is the component the question is grouped by. The component in which the individual question factor was loaded and the highest were grouped together. The rotation analysis assists with ease of interpreting the loadings.

Table 8. Customer Loyalty factor analysis rotated component matrix

Rotated Component Matrix[a]

	Component		Grouped Component
	1	2	
CL_AL1	0.819		1 = CL_Loy
CL_AL2	0.859		1 = CL_Loy
CL_AL3	0.827		1 = CL_Loy
CL_AL4	0.797		1 = CL_Loy
CL_BL1	0.584		1 = CL_Loy
CL_BL2		0.688	2 = CL_Pro
CL_BL3	0.612		1 = CL_Loy
CL_BL4	0.685		1 = CL_Loy
CL_CL1	0.728		1 = CL_Loy
CL_CL2	0.823		1 = CL_Loy
CL_CL3	0.738		1 = CL_Loy
CL_PL1		0.896	2 = CL_Pro
CL_PL2		0.908	2 = CL_Pro
CL_PL3		0.898	2 = CL_Pro

All the questions had a coefficient value of above 0.5. The following two components for CL were identified: program loyalty (CL_Pro) was identified as a distinct component two, and the remaining customer loyalty questions grouped together in component one as loyalty (CL_Loy).

5.5.3.3 Loyalty Program

The exploratory factor analysis for the construct LP extracted four components as can be seen in the scree plot depicted in Figure 18.

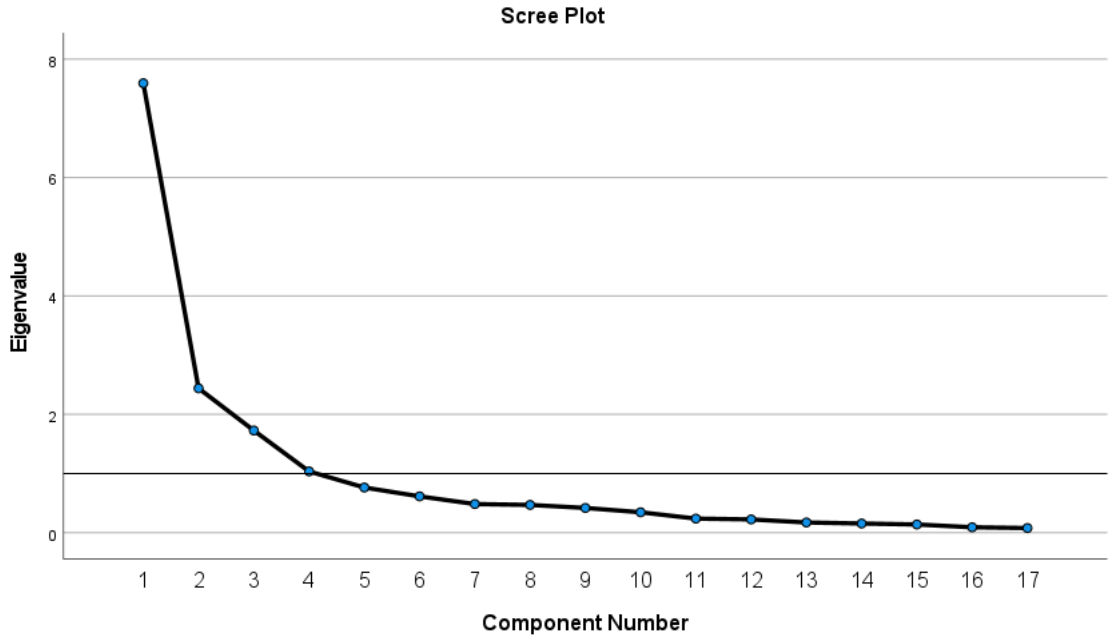


Fig 18. Loyalty Program exploratory factor analysis scree plot

All the questions had a coefficient value of above 0.5, and the communalities value for the constructs were good to excellent (Table 9). The exploratory factor analysis for the construct LP extracted four components, representing 75.28% of the variance. From the rotated component matrix the following component labels were identified and renamed according to their commonalities: Tier (LP_Tier), Financial (LP_Fin), Benefits (LP_Ben) and Social (LP_Soc).

Table 9. Loyalty Program rotated component matrix

Rotated Component Matrix[a]					
	Component				Grouped Component
	1	2	3	4	
LP_T1		0.859			2 = LP_Tier
LP_T2		0.935			2 = LP_Tier
LP_T3		0.910			2 = LP_Tier
LP_T4		0.832			2 = LP_Tier
LP_F1			0.571		3 = LP_FIn

LP_F2			0.775		3 = LP_FIn
LP_F3			0.813		3 = LP_FIn
LP_F4			0.794		3 = LP_FIn
LP_M1	0.756				1 = LP_Ben
LP_M2	0.767				1 = LP_Ben
LP_M3	0.728				1 = LP_Ben
LP_E1	0.821				1 = LP_Ben
LP_E2	0.843				1 = LP_Ben
LP_E3	0.855				1 = LP_Ben
LP_S1				0.609	4 = LP_Soc
LP_S2				0.810	4 = LP_Soc
LP_S3				0.809	4 = LP_Soc

5.5.3.4 Personalised Pricing

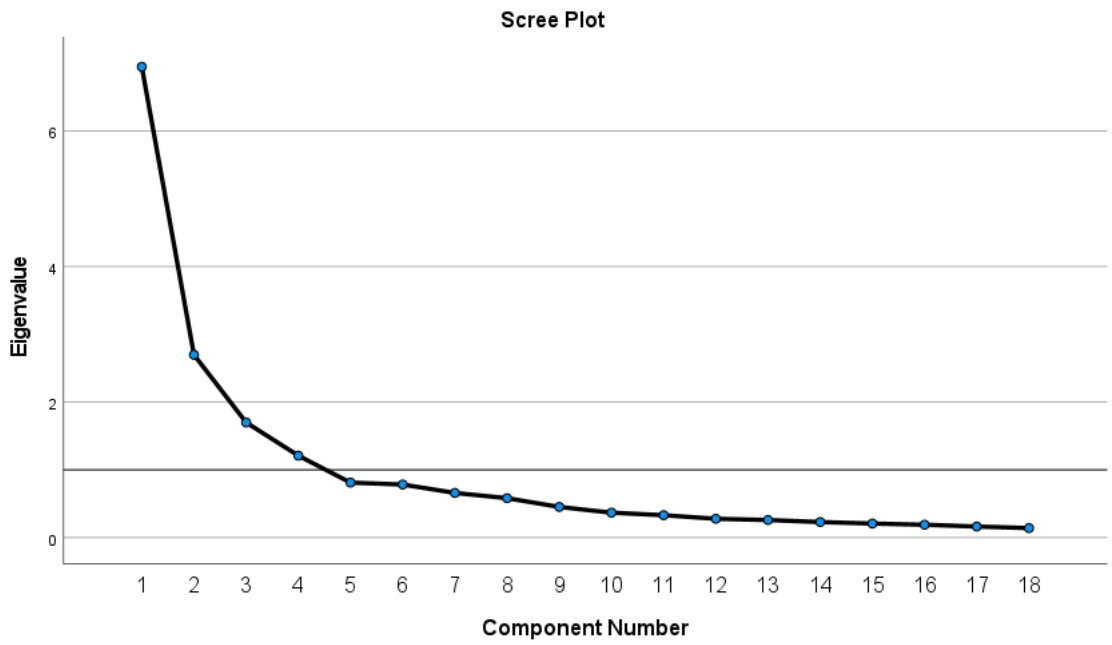


Fig 19. Personalised Pricing exploratory factor analysis scree plot

The exploratory factor analysis for the construct PP extracted four components, which represent 69.74% of the variance. The extraction of four components are confirmed in the scree plot depicted in Figure 19.

From the rotated component matrix the following component labels were identified and renamed according to their commonalities: Pricing (PP_Pri), Product (PP_Pro), Awareness (PP_Aware) and Special (PP_Spe).

All the questions had a coefficient value of above 0.6 and the communalities value for the constructs were good to excellent (Table 10).

Table 10. Personalised pricing rotated component matrix

Rotated Component Matrix[a]					
	Component				Grouped Component
	1	2	3	4	
PP_PP1		0.723			2 = PP_Pri
PP_PP2		0.758			2 = PP_Pri
PP_PP3		0.823			2 = PP_Pri
PP_PP4		0.764			2 = PP_Pri
PP_PP5		0.796			2 = PP_Pri
PP_A1				0.889	4 = PP_Aware
PP_A2				0.915	4 = PP_Aware
PP_A3				0.672	4 = PP_Aware
PP_P1			0.650		3 = PP_Pro
PP_P2			0.736		3 = PP_Pro
PP_P3			0.778		3 = PP_Pro
PP_P4			0.643		3 = PP_Pro
PP_P5			0.623		3 = PP_Pro
PP_SB1	0.762				1 = PP_Spe
PP_SB2	0.627				1 = PP_Spe
PP_ST1	0.846				1 = PP_Spe
PP_ST2	0.872				1 = PP_Spe
PP_ST3	0.860				1 = PP_Spe

In summary, from the exploratory factor analysis the following components were extracted, the report will be based on the components as presented in Table 11.

Table 11. Extracted components from exploratory factor analysis

	CS	CL	LP	PP
1	Customer Satisfaction (CS)	Loyalty (CL_Loy)	Tier (LP_Tier)	Pricing (PP_Pri)
2		Program Loyalty (CL_Pro)	Financial (LP_Fin)	Awareness (PP_Aware)
3			Benefits (LP_Ben)	Product (PP_Prod)
4			Social (LP_Soc)	Special (PP_Spe)

5.6 Descriptive statistics

5.5.1 Descriptive statistics

The descriptive statistics for the components are listed in Table 12, namely the mean, median, standard deviation and variance, which assist to measure the spread or variability.

Table 12. Descriptive statistics

Descriptive Statistics					
	N	Mean	Median	Std. Deviation	Variance
CS_Sat	214	3.47	3.60	0.81	0.66
CL_Loy	214	3.71	3.75	0.83	0.69
CL_Pro	214	2.68	2.75	1.02	1.04
PP_Pri	214	3.27	3.40	0.97	0.94
PP_Aware	214	4.28	4.33	0.78	0.60
PP_Prod	214	2.86	2.80	0.90	0.80

PP_Spe	214	2.33	2.20	0.95	0.90
LP_Tier	214	2.27	2.00	1.23	1.50
LP_Fin	214	2.48	2.50	0.96	0.92
LP_Ben	214	2.44	2.50	1.09	1.19
LP_Soc	214	2.51	2.67	1.09	1.18

From Table 12 the standard deviation range between 0.78 and 1.02 indicate spread and by how much with variance range between 0.6 and 1.5. Individual question descriptives were reviewed without anything further to note.

5.5.2 Assumptions

The sample size of 214 was sufficient as it was over the recommended sample size of 137-154 as per Dawson (2014) and meets the targeted sample size of similar studies (Izogo, 2016; Morgan & Govender, 2017; Yeboah-Asiamah et al.,2013).

The assumptions for moderation analysis include Normality, Independence and Homoscedasticity (Hayes, 2012)

5.5.2.1 Normality

Overall normality tests were performed per component and per construct below using skewness and kurtosis. For sample sizes greater than 200, it is recommended to use $p < 0.01$ significance level, where z scores range between -2.58 and + 2.58 (Ghasemi & Zahediasl, 2012)

The constructs CS, CL, LP and PP skewness and kurtosis calculated z scores ranged between -2.58 and + 2.58 at $p < 0.01$ significance level as detailed in the Table 13. Therefore the constructs CS, CL, PP and LP are normally distributed.

The skewness and kurtosis values for each of the components ranged between -2.58 and +2.58, and therefore follow a normal distribution, with the exception of

PP_Awareness, LP_TierStatus and LP_Benefits, (Table 13), which are discussed further below.

The component PP_Awareness is negatively skewed, while LP_TierStatus is positively skewed.

The component PP_Awareness had positive kurtosis, with a fatter tail relative to the normal distribution with the same variance (Cain et al., 2017). Conversely, LP_Benefits had a negative kurtosis.

Table 13. Results for Skewness and Kurtosis tests

	Skewness			**Kurtosis**		
	Statistic	Std. Error	z-score	Statistic	Std. Error	z-score
CS	-0.226	0.166	-1.3614	-0.015	0.331	-0.0453
CL	-0.194	0.166	-1.1687	-0.064	0.331	-0.1934
PP	0.105	0.166	0.6325	-0.045	0.331	-0.136
LP	0.184	0.166	1.1084	-0.459	0.331	-1.3867
CL_Loy	-0.418	0.17	-2.518	-0.049	0.33	-0.148
CL_Pro	0.282	0.17	1.6988	-0.358	0.33	-1.082
PP_Pri	-0.329	0.17	-1.982	-0.254	0.33	-0.767
PP_Aware	-1.166	0.17	-7.024	1.752	0.33	5.293
PP_Prod	0.06	0.17	0.3614	-0.155	0.33	-0.468
PP_Spe	0.334	0.17	2.012	-0.615	0.33	-1.858
LP_Tier	0.621	0.17	3.741	-0.699	0.33	-2.112
LP_Fin	0.194	0.17	1.1687	-0.62	0.33	-1.873
LP_Ben	0.183	0.17	1.1024	-0.883	0.33	-2.668
LP_Soc	0.186	0.17	1.1205	-0.667	0.33	-2.015

The components PP_Aware, LP_Tier and LP_Ben did not satisfy the assumption of normality; however, regression analysis as required in the hypotheses was robust enough to allow for these components distribution deviation for normality.

5.5.2.2 Collinearity

Collinearity between the components and variance inflation were tested for the dependent variable CL_Loy and CL_Pro.

Variance inflation factors indicates that a variable is redundant with the other variable. As can be seen in Table 14, none of the components have a variance inflation factor (VIF) larger than 10, therefore components did not exhibit collinearity.

Table 14. Collinearity tests dependent Variable: CL_Loy

Coefficients							
Model	Unstandardized Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.674	.233		2.889	.004		
CS_Sat	.726	.050	.714	14.672	<.001	.722	1.385
PP_Pri	.092	.045	.108	2.041	.043	.616	1.624
PP_Aware	-.007	.047	-.006	-.143	.886	.874	1.144
PP_Prod	.031	.059	.034	.533	.594	.418	2.390
PP_Spe	-.011	.051	-.013	-.224	.823	.507	1.971
LP_Tier	-.075	.033	-.112	-2.311	.022	.732	1.366
LP_Fin	.090	.043	.104	2.115	.036	.701	1.426
LP_Ben	-.046	.046	-.061	-.996	.320	.460	2.173
LP_Soc	.093	.047	.122	1.964	.051	.441	2.268

Table 15. Collinearity tests dependent Variable: CL_Pro

Coefficients							
Model	Unstandardized Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

(Constant)	-.361	.336		-1.074	.284		
CS_Sat	.323	.071	.258	4.532	<.001	.722	1.385
PP_Pri	-.009	.065	-.008	-.131	.896	.616	1.624
PP_Aware	-.036	.068	-.028	-.537	.592	.874	1.144
PP_Prod	.400	.085	.352	4.704	<.001	.418	2.390
PP_Spe	-.040	.073	-.037	-.542	.588	.507	1.971
LP_Tier	.109	.047	.131	2.311	.022	.732	1.366
LP_Fin	.127	.061	.120	2.072	.040	.701	1.426
LP_Ben	-.018	.067	-.019	-.265	.791	.460	2.173
LP_Soc	.211	.068	.226	3.094	.002	.441	2.268

Since the p-value is <.001 and is less than our chosen significance level 0.05, we reject the null hypothesis, and conclude that there is a significant association between CS and CL_Loy, CL_Pro.

5.5.2.3 Independence

Table 16. Chi-square test results CS and LP

Chi-Square Tests	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	945.228[a]	972	.725
Likelihood Ratio	580.788	972	1.000
Linear-by-Linear Association	14.348	1	<.001
N of Valid Cases	214		

a. 1045 cells (100.0%) have expected count less than 5. The minimum expected count is .00.

Table 17. Chi-squared test results CS and PP

Chi-Square Tests	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1126.173[a]	990	.002
Likelihood Ratio	581.054	990	1.000
Linear-by-Linear Association	36.936	1	<.001
N of Valid Cases	214		
a. 1064 cells (100.0%) have expected count less than 5. The minimum expected count is .00.			

Since the Pearson Chi-Square p-value was not less than our chosen significance level of 0.001, the null hypothesis was not rejected, and there was no significant association between CS and LP, PP. From the Chi-square test of independence results, the variables CS and LP, PP are independent (Table 16 and 17).

5.5.2.4 Homoscedasticity

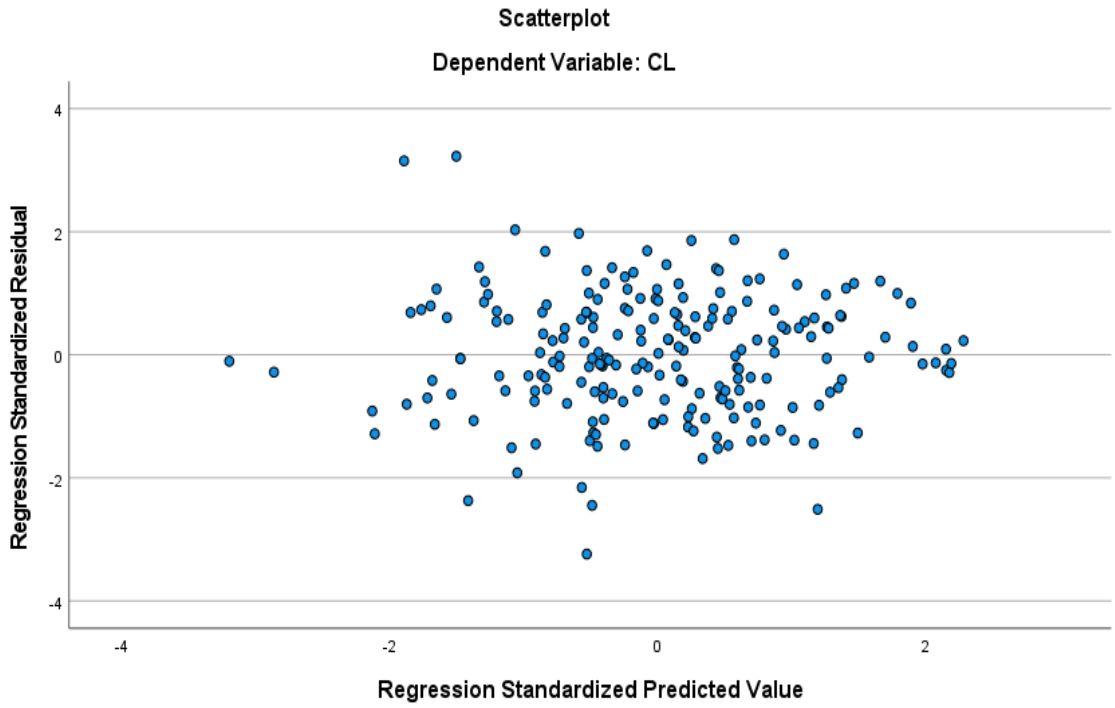


Fig 20. Homoscedasticity

The scatter plot of the residuals exhibit randomness, therefore the assumption of homoscedasticity has been met (Figure 20).

5.5 Hypotheses testing

This section provides the results of the hypotheses testing. Spearman's correlation test was performed for each of Hypothesis 1 to 5, thereafter moderation analysis to test Hypothesis 6 and 7. The results for the constructs, as well as the components determined from the factor analysis are provided.

5.5.1 Hypothesis 1 results

The study hypothesises that there is a relationship between CS and CL, with results presented in Table 18.

H0: There is no significant relationship between CS and CL
H1: There is a significant relationship between CS and CL.

Table 18. Spearman's correlation summary between CS and CL

Spearman's correlation	r_S	Sig. (2-tailed)	Outcome
CS and CL	.763**	<.001	Reject H0
CS and CL_Loy	.766**	<.001	Reject H0
CS and CL_Pro	.480**	<.001	Reject H0

The correlation results (Table 18) between the two constructs CS and CL have an r value of 0.763, additionally the sig value <0.001 is significant. Cohen's which measures the quality of the prediction indicates the effect of the relationship to be a large.

The correlation between the two components CS and CL_Loy have a r value of 0.766, between CS and CL_Pro r value of 0.480. Both are significant with sig value <0.001.

5.5.2 Hypothesis 2 results

The study hypothesises that there is a relationship between CS and LP.

H0: There is no significant relationship between CS and LP
H2: There is a significant relationship between CS and LP

Table 19. Spearman's correlation summary between CS and LP

Spearman's correlation	r_S	Sig. (2-tailed)	Outcome
CS and LP_Soc	.363**	<.001	Reject H0
CS and LP	.254**	<.001	Reject H0
CS and LP_Ben	.246**	<.001	Reject H0
CS and LP_Fin	0.139*	0.042	Reject H0
CS and LP_Tier	0.069	0.314	Do not reject H0

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

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

The correlation results (Table 19) between CS and each of LP_Soc (r = 0.363), LP (r = 0. 254) and LP_Ben (r = 0. 246) are significant with sig value <0.001. Cohen's quality of the prediction indicates the effect of the relationship to range between moderate to small. Therefore we reject the null hypothesis and conclude there is a significant relationship between CS and LP Soc, a significant relationship between CS and LP, and a significant relationship between CS and LP_Ben.

The correlation between CS and LP_Fin have an r value of 0.139 which is significant at the 0.05 level. Cohen's measures of the quality of the prediction indicates the effect of the relationship to be a small. Therefore we reject the null hypothesis and conclude there is a significant positive relationship between CS and LP_Fin.

Lastly, the correlation between CS and LP_Tier has an r value of 0.069 which is not significant. Therefore we do not reject the null hypothesis and conclude there is no significant relationship between CS and LP_Tier. Since CS does not have a relationship with LP_Tier, LP_Tier does not satisfy the assumption required for moderation analysis.

5.5.3 Hypothesis 3 results

H0: There is no significant relationship between LP and CL

H3: There is a significant relationship between LP and CL

Table 20. Spearman's correlation summary between LP and CL

Spearman's correlation	r_s	**Sig. (2-tailed)**	**Outcome**
LP and CL	.437**	<.001	Reject H0
LP and CL_Loy	.282**	<.001	Reject H0
LP and CL_Pro	.546**	<.001	Reject H0
LP_Tier and CL	.189**	<.001	Reject H0

LP_Tier and CL_Pro	.324**	<.001	Reject H0
LP_Fin and CL	.312**	<.001	Reject H0
LP_Fin and CL_Loy	.225**	<.001	Reject H0
LP_Fin and CL_Pro	.385**	<.001	Reject H0
LP_Ben and CL	.371**	<.001	Reject H0
LP_Ben and CL_Loy	.248**	<.001	Reject H0
LP_Ben and CL_Pro	.451**	<.001	Reject H0
LP_Soc and CL	.512**	<.001	Reject H0
LP_Soc and CL_Loy	.395**	<.001	Reject H0
LP_Soc and CL_Pro	.542**	<.001	Reject H0
LP_Tier and CL_Loy	0.051	0.461	Do not reject H0

The correlation results (Table 20) between LP_Tier and CL_Loy have an r value of 0.051 which is not significant as the sig value of 0.461 is greater than 0.05. Therefore we do not reject the null hypothesis and conclude there is a no relationship between LP_Tier and CL_Loy.

With the exception of LP_Tier and CL_Loy, each of the tested correlations are significant with sig value <0.001. Cohen's measures of the quality of the prediction indicates the effect of the relationships to range from small to moderate. Therefore we reject the null hypothesis and conclude there is a significant positive relationship between each of the remaining components.

5.5.4 Hypothesis 4 results

H0: There is no significant relationship between CS and PP

H4: There is a significant relationship between CS and PP

Table 21. Spearman's correlation summary between CS and PP

Spearman's correlation	r_S	Sig. (2-tailed)	Outcome
CS and PP	.338**	<.001	Reject H0
CS and PP_Prod	.421**	<.001	Reject H0
CS and PP_Spe	.267**	<.001	Reject H0
CS and PP_Pri	.173*	0.011	Reject H0
CS and PP_Aware	.152*	0.027	Reject H0

The correlation results (Table 21) between PP_Pri and CS have an r value of .173, and PP_Aware and CS have an r value of .152, both are significant as sig value is less than 0.05 level. Therefore we reject the null hypothesis and conclude there is a relationship between PP_Pri and CS and PP_Aware and CS.

With the exception of PP_Pri and CS as well as PP_Aware and CS, each of the tested correlations are significant with sig value <0.001. Cohen's measures of the quality of the prediction indicates the effect of the relationships to range from small to moderate. Therefore we reject the null hypothesis and conclude there is a significant positive relationship between each of the remaining components.

5.5.5 Hypothesis 5 results

H0: There is no significant relationship between PP and CL

H5: There is a significant relationship between PP and CL

Table 22. Spearman's correlation summary between PP and CL

Spearman's correlation	r_S	Sig. (2-tailed)	Outcome
PP and CL	.496**	<.001	Reject H0
PP and CL_Loy	.379**	<.001	Reject H0
PP and CL_Pro	.556**	<.001	Reject H0

PP_Pri and CL	.304**	<.001	Reject H0
PP_Pri and CL_Loy	.229**	<.001	Reject H0
PP_Pri and CL_Pro	.352**	<.001	Reject H0
PP_Prod and CL	.560**	<.001	Reject H0
PP_Prod and CL_Loy	.434**	<.001	Reject H0
PP_Prod and CL_Pro	.607**	<.001	Reject H0
PP_Spe and CL	.400**	<.001	Reject H0
PP_Spe and CL_Loy	.295**	<.001	Reject H0
PP_Spe and CL_Pro	.467**	<.001	Reject H0
PP_Aware and CL	.158*	0.021	Reject H0
PP_Aware and CL_Loy	.164*	0.016	Reject H0
PP_Aware and CL_Pro	0.109	0.112	Do not reject H0

The correlation results (Table 22) of PP_Aware are not significant as the sig value is greater than 0.05. Therefore we do not reject the null hypothesis and conclude there is a no relationship between PP_Aware and CL_Pro.

With the exception of PP_Aware and CL_Pro, each of the tested correlations are significant with sig value <0.001. Cohen's measures of the quality of the prediction indicates the effect of the relationships to range from small to large. Therefore we reject the null hypothesis and conclude there is a significant positive relationship between each of the remaining components.

The spearman correlation results of the constructs are summarized in Figure 22 below

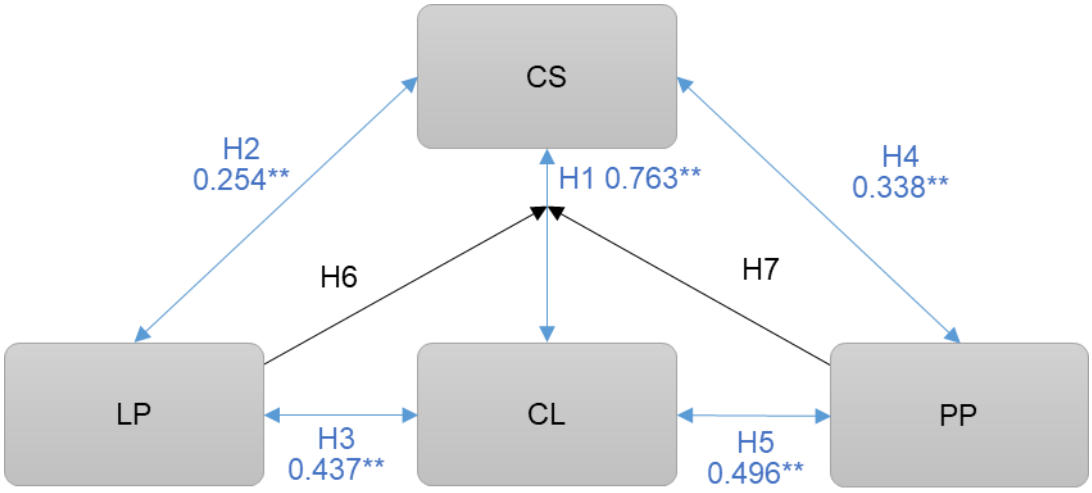


Fig 21 Summary Spearman correlation results

5.5.6 Hypothesis 6 results

The study hypothesized that LP has a positive moderator effect on the relationship between CS and CL.

H0: LP does not positively moderate the relationship between CS and CL

H6: LP positively moderates the relationship between CS and CL

CL has been distinguished between the two components Loyalty (CL_Loy) and Program Loyalty (CL_Pro), tests for each of these dependent variables were conducted. For the moderator LP, each of the three components, Financial bonds (LP_Fin), Benefits (LP_Ben) and Social benefits (LP_Soc) were tested, resulting in twelce tests in total for Hypothesis 6.

It is concluded from Section 5.5 Hypothesis 2 results since LP_Tier does not have a significant relationship with CS, LP_Tier does not satisfy the assumption for a moderation analysis.

The results for the constructs CL and LP are shown. Thereafter, only the component results which are significant are provided in detail in this Chapter, followed by a summary of all component results. The detailed components results output may be found in Appendix 5.

Memon et al (2019) advised the model effect size and R square should be reported, which can be found in the the Model Summary. Thereafter the coefficients per

variable, as well as the p-value and lower and upper confidence intervals (LLCI and ULCI) are provided to assess significance. The tests were concluded with a slope analysis to visualise the results.

5.5.6.1 Customer Loyalty

LP - moderating effect

H0a: LP does not positively moderate the relationship between CS and CL

H6a: LP positively moderates the relationship between CS and CL

The PROCESS results testing the moderating effect of LP on the relationship between CS and CL are provided.

The model summary F (3,210) = 145.3348 with an R square of 0.6749 and p = 0.0000 is a significant model as p-level < 0.05, with 67.49% of the variance explained by the exogenous factors CS, LP and the interaction variable CS* LP (Table 23).

Table 23. PROCESS moderation results of LP on CS and CL

R	R-square	MSE	F	df1	df2	P
0.8215	0.6749	0.1965	145.3348	3	210	0.0000

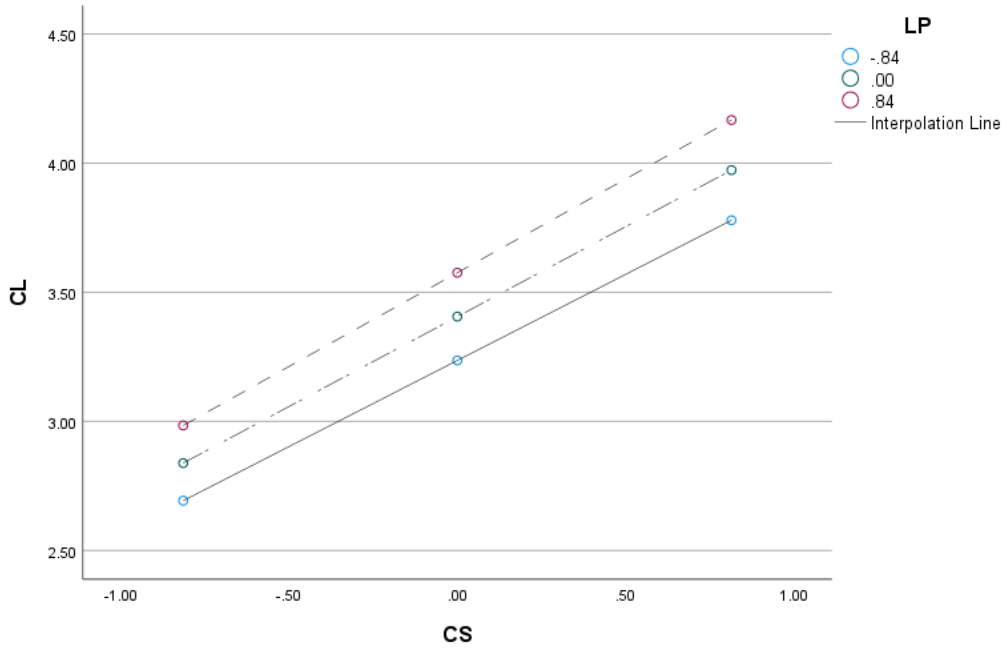
The model summary results (Table 24) interaction variable of CS and LP has a p-value of 0.4166 and is not significant at a 95% confidence interval as the p-value is not less than 0.05. Furthermore, there were zero lies between the LLCI and ULCI, therefore we fail to reject the null hypothesis and conclude that LP has no moderation effect on the relationship between CS and CL.

Table 24. Moderation model summary of LP on CS and CL

Model	Coefficients	Std. Error	t	P	LLCI	ULCI
Constant	3.406	0.0313	108.9747	0.0000	3.3444	3.4676
CS	0.6974	0.0387	18.0315	0.0000	0.6212	0.7737
LP	0.2034	0.0379	5.3736	0.0000	0.1288	0.278

CS* LP	0.0356	0.0437	0.814	0.4166	-0.0506	0.1217

Fig 22. PROCESS slope analysis of LP on CS and CL



From the slope analysis in Figure 22 we can see that there is a positive relationship between CS and CL. The model results indicate no significant moderating effects of LP on CL, as can be seen by the consistent slopes between the Low (Mean – std deviation), Moderate (Mean) or High (Mean+std deviation) lines.

5.5.6.2 Loyalty

Social (LP_Soc) - moderating effect

H0b: LP_Soc does not positively moderate the relationship between CS and CL_Loy

H2b: LP_Soc positively moderates the relationship between CS and CL_Loy

The PROCESS results testing the moderating effect of LP_Soc on the relationship between CS and CL_Loy are provided in Table 25.

The model summary in Table 25 F (3,210) = 121.3853 with an R-square of 0.6342 and p = 0.0000 is a significant model as p level < 0.05 with 63.42% of the variance explained by the factors CS, LP_Soc and the interaction variable CS*LP_Soc.

Table 25. PROCESS moderation results of LP_Soc on CS and CL_Loy

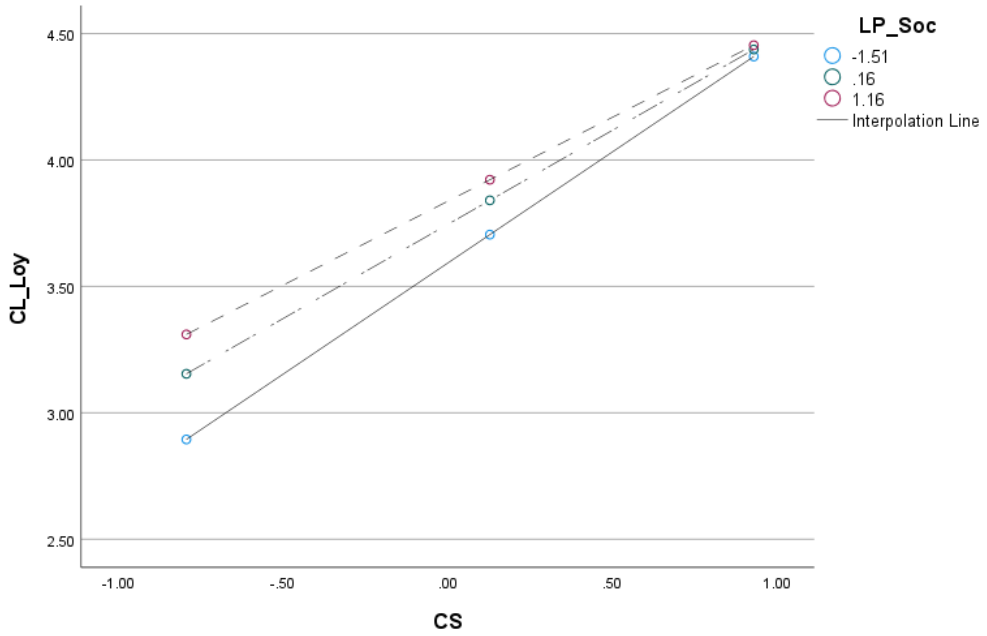
R	R-square	MSE	F	df1	df2	P
0.7964	0.6342	0.2542	121.3853	3	210	0

The model summary results in Table 26 show interaction variable CS and LP_Soc p value of 0.043 is significant as the p value is less than 0.05. Furthermore zero is not within the lower and upper confidence intervals LLCI and ULCI, therefore the indirect effect is significantly different from zero. Hence we reject the null hypothesis and conclude that LP_Soc has a moderation effect on the relationship between CS and CL_Loy.

Table 26. Moderation model summary of LP_Soc on CS and CL_Loy

Model	Coefficients	Std. Error	T	P	LLCI	ULCI
Constant	0.1625	0.3753	0.4329	0.6655	-0.5773	0.9023
CS	0.9614	0.109	8.8186	0.0000	0.7465	1.1764
LP_Soc	0.3723	0.1459	2.5514	0.0114	0.0846	0.6599
CS* LP_Soc	-0.0808	0.0397	-2.0361	0.0430	-0.1590	-0.0026

Fig 23. PROCESS slope analysis of LP_Soc on CS and CL_Loy



From Figure 23 there is clear evidence of the moderating effect, as the slopes differ between the Low (Mean – std deviation), Moderate (Mean) and High (Mean+std deviation) lines.

Negative moderating effect of the moderator, at higher levels of LP_Soc, the weaker the relationship between CS and CL_Loy with the flatter slope, at lower levels of Moderator the relationship between CS and CL_Loy is stronger.

5.5.6.3 Program loyalty

LP - moderating effect

H0c: LP does not positively moderate the relationship between CS and CL

H2c: LP positively moderates the relationship between CS and CL

The PROCESS results testing the moderating effect of LP on the relationship between CS and CL_Pro are provided.

The results in Table 27 F (3,210) = 57.1576 with an R-square of 0.4495 and p = 0.0000 is a significant model as p level < 0.05 with 44.95% of the variance explained by the factors CS, LP and the interaction variable CS*LP.

Table 27. PROCESS moderation results of LP on CS and CL_Pro

R	R-square	MSE	F	df1	df2	P
0.6704	0. 4495	0. 5780	57.1576	3	210	0.0000

The model summary in table 28 interaction variable CS and LP p value of 0.047 is significant as the p value is less than 0.05. Furthermore zero is not within the lower and upper confidence intervals LLCI and ULCI, therefore the indirect effect is significantly different from zero. Hence we reject the null hypothesis and conclude that LP has a moderation effect on the relationship between CS and CL_Pro. As the coeffecients are positive, the relationship is positive.

Table 28. Moderation model summary of LP on CS and CL_Pro

Model	Coefficients	Std. Error	T	P	LLCI	ULCI
Constant	2.6525	0.0536	49.4798	0.0000	2.5468	2.7581
CS	0.4929	0.0663	7.4295	0.0000	0.3621	0.6236
LP	0.5259	0.0649	8.1008	0.0000	0.398	0.6539
CS*LP	0.1497	0.0749	1.9977	0.047	0.002	0.2974

Fig 24. PROCESS graph of the moderating effect of LP on CS and CL_Pro

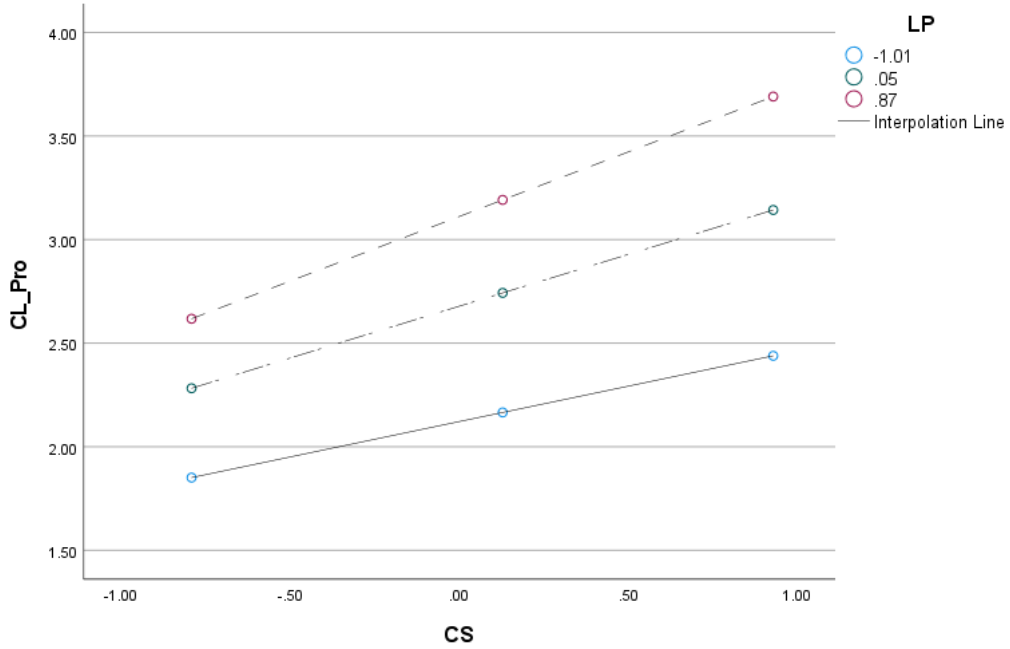


Figure 24 depicts evidence of the moderating effect, as the slopes differ between the Low (Mean – std deviation), Moderate (Mean) and High (Mean+std deviation) lines. Positive moderating effect of the moderator, at higher levels of LP_Soc, the stronger the relationship between CS and CL_Pro with the steeper slope, at lower levels of moderator the relationship between CS and CL_Loy is weaker and flatter. The lower R-square explains the lower differentia in slope in comparison to LP_Soc on CS and CL_Loy.

Financial bonds - moderating effect

H0d: LP_Fin does not positively moderate the relationship between CS and CL_Pro

H2d: LP_Fin positively moderates the relationship between CS and CL_Pro

The PROCESS results testing the moderating effect of LP_Fin on the relationship between CS and CL_Pro are provided.

The results in Table 29 F (3,210) = 39.5319 with a R-square of 0.3609 and p = 0.0000 is a significant model as p level < 0.05 with 36.09% of CL_Pro variance explained by the exogenous factors CS, LP_Fin and the interaction variable CS*LP_Fin).

Table 29. PROCESS moderation results of *LP_Fin on CS and CL_Pro*

R	**R-square**	**MSE**	**F**	**df1**	**df2**	**P**
0.6008	0.3609	0.671	39.5319	3	210	0.0000

Table 30 results CS and LP_Fin interaction variable p value is 0.0308 which is less than 0.05, furthermore zero is not within the lower and upper confidence intervals LLCI and ULCI, the indirect effect is significantly different from zero. Therefore we do not reject the null hypothesis and conclude that LP_Fin has a moderation effect on the relationship between CS and CL_Pro.

Table 30. Moderation model summary of *LP_Fin on CS and CL_Pro*

Model	**Coefficients**	**Std. Error**	**T**	**P**	**LLCI**	**ULCI**
Constant	1.0995	0.6242	1.7614	0.0796	-0.131	2.3299
CS	0.2222	0.1775	1.2517	0.2121	-0.1277	0.5721
LP_Fin	-0.1873	0.242	-0.7738	0.4399	-0.6644	0.2899
CS*LP_Fin	0.146	0.0672	2.1743	0.0308	0.0136	0.2784

Fig 25. PROCESS slope analysis of LP_Fin on CS and CL_Pro

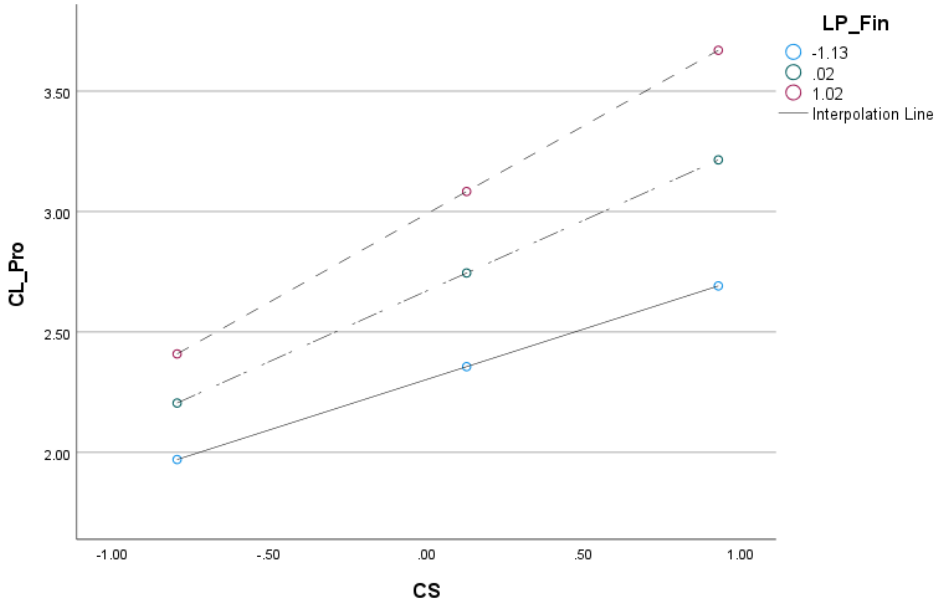


Figure 25 depicts there is evidence of the moderating effect, as the slope of the Low (Mean – std deviation), moderate (Mean) or High (Mean+std deviation) differs. Positive moderating effect of the moderator, at higher levels of LP_Soc, the stronger the relationship between CS and CL_Pro with the steeper slope, at lower levels of moderator the relationship between CS and CL_Loy is weaker and flatter. The lower R-square explains the lower differentia in slope in comparison to LP_Soc on CS and CL_Loy.

5.5.6.4 Summary results hypothesis 6

Table 31 summarizes the output of all the CL and LP components. All the components results output per number (#) may be found in Appendix 5.

Table 31. PROCESS Hypothesis 6 summary results

#	Outcome	Moderator	Interaction	Coeff	p	LLCI	ULCI	Moderating effect
1	CL	LP	LP*CS	0.04	0.42	-0.05	0.12	No
2	CL_Loy	LP	LP*CS	-0.01	0.84	-0.11	0.09	No
3	CL_Pro	LP	LP*CS	0.15	0.05	0.00	0.30	Yes
4	CL	LP_Fin	LP_Fin*CS	0.00	0.97	-0.07	0.07	No
5	CL_Loy	LP_Fin	LP_Fin*CS	-0.06	0.17	-0.14	0.03	No

6	CL_Pro	LP_Fin	LP_Fin*CS	0.15	0.03	0.01	0.28	Yes
7	CL	LP_Ben	LP_Ben*CS	0.04	0.25	-0.03	0.11	No
8	CL_Loy	LP_Ben	LP_Ben*CS	0.01	0.80	-0.07	0.09	No
9	CL_Pro	LP_Ben	LP_Ben*CS	0.12	0.06	-0.01	0.24	No
10	CL	LP_Soc	LP_Soc*CS	-0.04	0.25	-0.11	0.03	No
11	CL_Loy	LP_Soc	LP_Soc*CS	-0.08	0.04	-0.16	-0.00	Yes
12	CL_Pro	LP_Soc	LP_Soc*CS	0.06	0.32	-0.06	0.19	No

5.5.7 Hypothesis 7 results

The study hypothesizes that Personalised Pricing (PP) has a positive moderator effect on the relationship between CS and CL.

H0: Personalised Pricing (PP) does not moderate the relationship between CS and CL

H3: Personalised Pricing (PP) positively moderates the relationship between CS and CL

CL has been distinguished between the two components Loyalty (CL_Loy) and Program Loyalty (CL_Pro), tests for each of these dependent variables were conducted. For the moderator PP, each of the four components, Pricing (PP_Pri), Awareness (PP_Aware), Product (PP_Prod) and Specialized treatment PP_Spe were tested, resulting in fifteen tests in totals for Hypothesis 3.

The results for the constructs CL and PP are shown. Thereafter only the component results which are significant are displayed in detail in this Chapter, followed by a summary of all component results. All the components results output may be found in Appendix 5.

5.5.7.1 Customer Loyalty

PP - moderating effect

H0a: Personalised Pricing (PP) does not moderate the relationship between CS and CL

H7a: Personalised Pricing (PP) positively moderates the relationship between CS and CL

The PROCESS results testing the moderating effect of PP on the relationship between CS and CL are provided.

The model summary F (3,210) = 149.6712 with a R square of 0.6813 and p = 0.0000 is a significant model as p level < 0.05, with 68.13% of the variance explained by the exogenous factors CS, PP and the interaction variable CS* PP (Table 32).

Table 32. PROCESS moderation results of PP on CS and CL

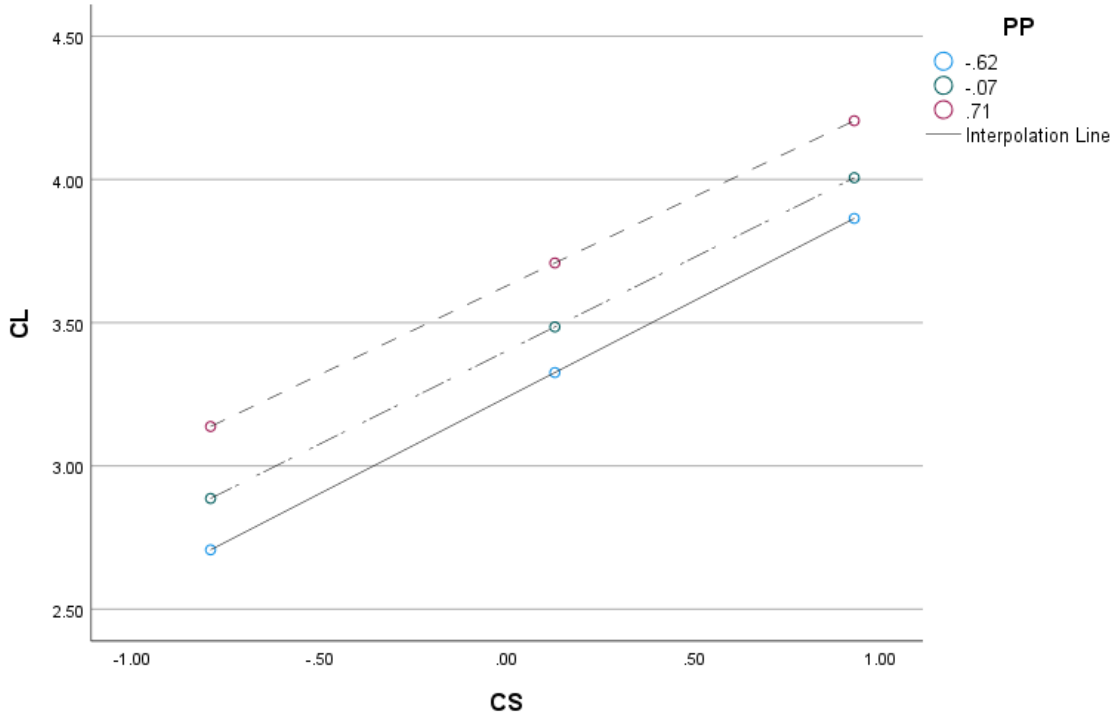
R	R-square	MSE	F	df1	df2	P
0.8254	0.6813	0.1926	149.6712	3	210	0.0000

The model summary in Table 33 interaction variable of CS and PP has a p-value of 0.367 is not significant at a 95% confidence interval as the p-value is not less than 0.05. Furthermore, zero lies between LLCI and ULCI, therefore we fail to reject the null hypothesis and conclude that PP has no moderation effect on the relationship between CS and CL.

Table 33. Moderation model summary of PP on CS and CL

Model	Coefficients	Std. Error	t	P	LLCI	ULCI
Constant	3.4212	0.032	108.28	0.0000	3.3589	3.4835
CS	0.6484	0.041	15.885	0.0000	0.568	0.7289
PP	0.292	0.049	5.9668	0.0000	0.1955	0.3884
CS* PP	-0.0391	0.043	-0.904	0.367	-0.124	0.0461

Fig 26. PROCESS slope analysis of PP on CS and CL



From Figure 26 the slope of the Low (Mean – std deviation), moderate (Mean) or High (Mean+std deviation) can be seen to remain consistent, PP no moderating effect on the relationship between CS and CL.

Specialised - moderating effect

H0b:PP_Spe relationship between CS and CL

H7b: PP_Spe positively moderates the relationship between CS and CL

The PROCESS results testing the moderating effect of PP_ Spe on the relationship between CS and CL are provided.

The model summary F (3,210) = 139.187 with an R square of 0. 6654 and p = 0.0000 is a significant model as p level < 0.05 with 66.54% of the variance explained by the exogenous factors CS, PP_Spe and the interaction variable CS*PP_Spe (Table 38).

Table 34. PROCESS moderation results of PP_ Spe on CS and CL

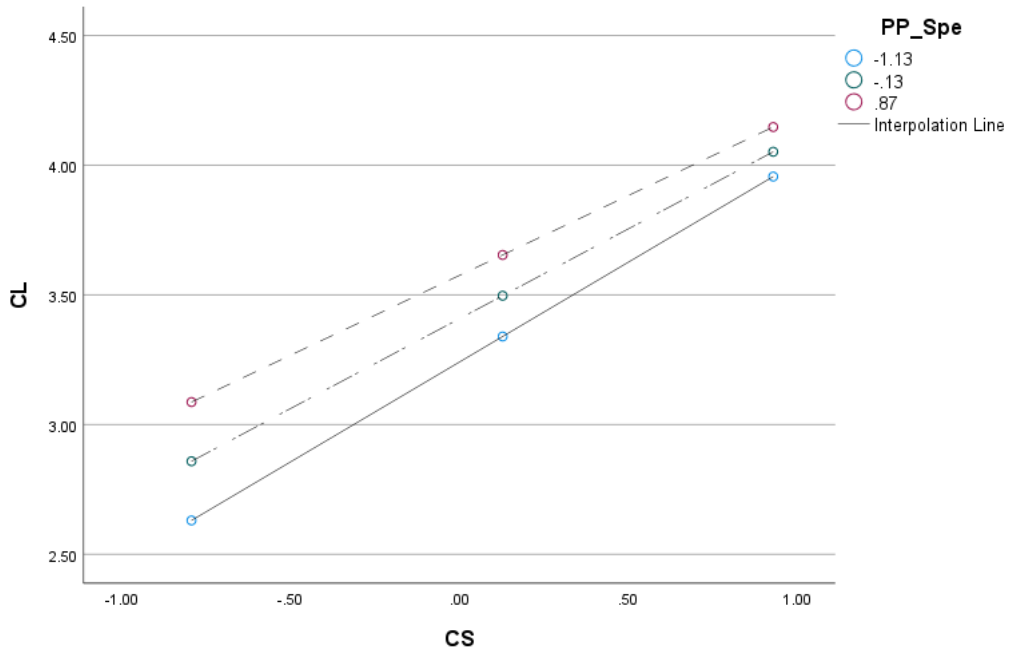
R	R-square	MSE	F	df1	df2	P
0.8157	0.6654	0.2022	139.187	3	210	0

The interaction variable of CS and PP_ Spe has a p-value of 0.0356 is significant as the p-value is less than 0.05. Furthermore, zero lies between LLCI and ULCI, therefore we do not reject the null hypothesis and conclude that PP_Spe has no moderation effect on the relationship between CS and CL (Table 35).

Table 35. Moderation model summary PP_ Spe on CS and CL

Model	Coefficients	Std. Error	T	P	LLCI	ULCI
Constant	3.4303	0.0319	107.5209	0	3.3674	3.4931
CS	0.6835	0.0404	16.9267	0	0.6039	0.7631
PP_Spe	0.1671	0.035	4.7751	0	0.0981	0.2361
CS* PP_ Spe	-0.0772	0.0365	-2.1149	0.0356	-0.1492	-0.0052

Fig 27. PROCESS graph of the moderating effect of PP_ Spe on CS and CL



From Figure 27, you can see slight variation in slope of the Low (Mean – std deviation), moderate (Mean) or High (Mean+std deviation).

5.5.7.2 Loyalty (CL_Loy)

Specialised - moderating effect

H0c: PP_Spe does not moderate the relationship between CS and CL_Loy

H3c: PP_Spe positively moderates the relationship between CS and CL_Loy

The PROCESS results testing the moderating effect of SP_Spec on the relationship between CS and CL_Loy are provided.

The model summary F (3,210) = 122.0966 with a R square of 0.6356 and p = 0.0000 is a significant model as p level < 0.05 with 63.56% of CL_Loy variance explained by the exogenous factors CS, SP_Spec and the interaction variable CS*SP_Spec) (Table 36).

Table 36. PROCESS moderation results of PP_Spe on CS and CL_Loy

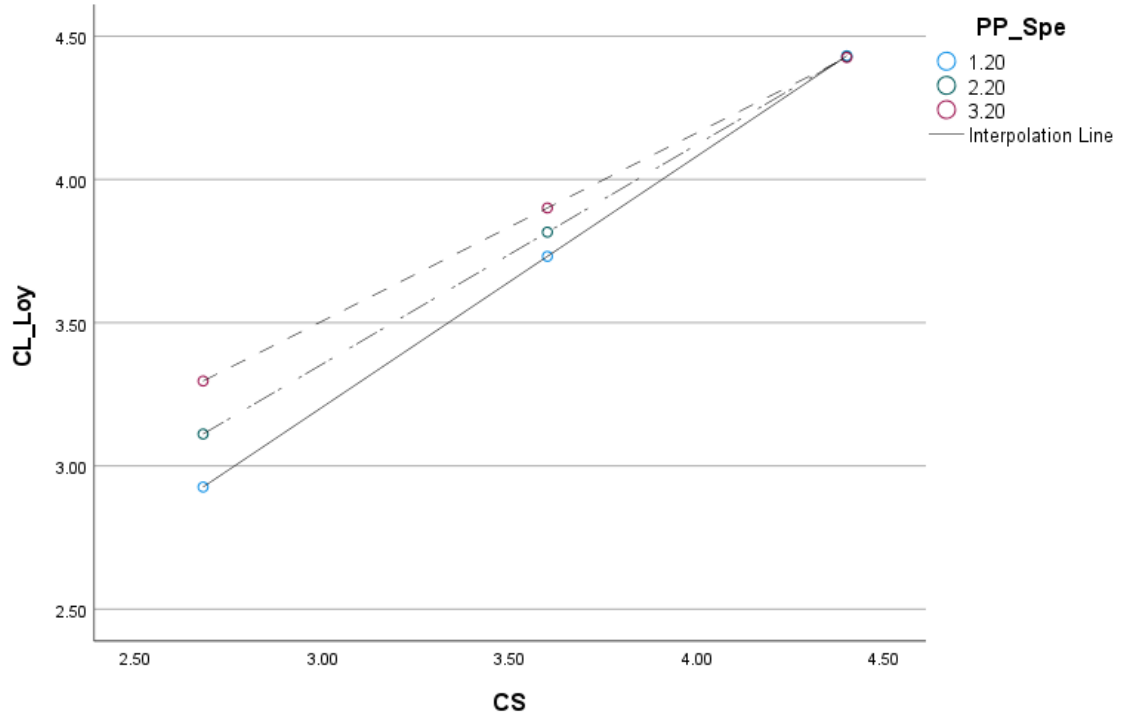
R	R-square	MSE	F	df1	df2	P
0.7972	0.6356	0.2533	122.0966	3	210	0

The interaction variable of CS and SP_Spec is significant with p values less than 0.05. The CS and SP_Spec interaction variable p-value is 0.0081. Furthermore, zero is not within the lower and upper confidence intervals LLCI and ULCI. Therefore, we do not reject the null hypothesis and conclude that SP_Spec has a moderation effect on the relationship between CS and CL_Loy (Table 37).

Table 37. Moderation model summary PP_Spe on CS and CL_Loy

Model	Coefficients	Std. Error	T	P	LLCI	ULCI
Constant	0.0073	0.3517	0.0208	0.9835	-0.6859	0.7005
CS	1.0064	0.0981	10.2613	0	0.8131	1.1997
SP_Spec	0.4779	0.1555	3.0732	0.0024	0.1713	0.7844
CS*SP_Spec	-0.1093	0.0408	-2.6751	0.0081	-0.1898	-0.0287

Fig 28. PROCESS graph of the moderating effect of PP_Spe on CS and CL_Loy



From Figure 28 there is evidence of the moderating effect, as the slope of the Low (Mean – std deviation), moderate (Mean) or High (Mean+std deviation) differs.

5.5.7.3 Summary results hypothesis 7

Table 38 summarizes the output of all the CL and PP components. All the components results output may be found in Appendix 5.

Table 38. PROCESS Hypothesis 7 summary results

#	Outcome	Moderator	Interaction	Coeff	p	LLCI	ULCI	Moderating effect
13	CL	PP	PP*CS	-0.04	0.37	-0.12	0.05	No
14	CL_Loy	PP	PP*CS	-0.07	0.14	-0.17	0.02	No
15	CL_Pro	PP	PP*CS	0.05	0.54	-0.11	0.20	No
16	CL	PP_Prod	PP_Prod*CS	-0.01	0.85	-0.07	0.06	No
17	CL_Loy	PP_Prod	PP_Prod*CS	-0.04	0.31	-0.12	0.04	No

18	CL_Pro	PP_Prod	PP_Prod*CS	0.08	0.19	-0.04	0.20	No
19	CL	PP_Spe	PP_Spe*CS	-0.08	0.04	-0.15	-0.01	Yes
20	CL_Loy	PP_Spe	PP_Spe*CS	-0.11	0.01	-0.19	-0.03	Yes
21	CL_Pro	PP_Spe	PP_Spe*CS	0.00	0.96	-0.13	0.14	No
22	CL	PP_Aware	PP_Aware*CS	0.06	0.24	-0.04	0.16	No
23	CL_Loy	PP_Aware	PP_Aware*CS	0.04	0.44	-0.07	0.15	No
24	CL_Pro	PP_Aware	PP_Aware*CS	0.10	0.28	-0.08	0.29	No
25	CL	PP_Pri	PP_Pri*CS	-0.01	0.87	-0.07	0.06	No
26	CL_Loy	PP_Pri	PP_Pri*CS	-0.02	0.61	-0.09	0.05	No
27	CL_Pro	PP_Pri	PP_Pri*CS	0.03	0.65	-0.09	0.14	No

5.6 Conclusion

The detailed results from the data analysis and hypotheses have been provided in this chapter. The results from the hypotheses testing have been provided diagrammatically in Figure 29 as an extension of the consolidated conceptual model from Chapter 3.

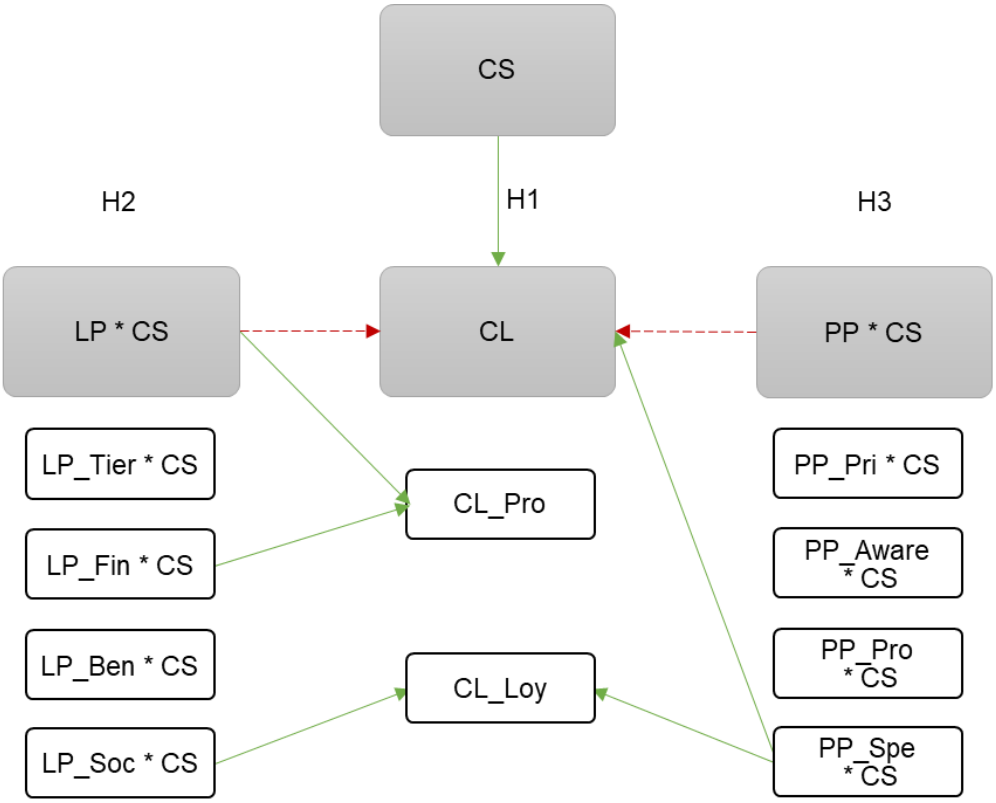


Fig 29 Extension of the consolidated conceptual model summary results

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

This chapter starts with a summary overview of findings of the relationship between CS, CL and the moderating effects of LP and PP, and the respective components as presented in Chapter 5. Chapter 6 discusses these results and incorporates the literature review contributions from Chapter 2 to provide discussion to the hypotheses proposed in Chapter 3 and tested in Chapter 5.

6.2 Overview of results

The results from the hypotheses testing have been provided diagrammatically in Figure 30 as an extension of the consolidated conceptual model from Chapter 3.

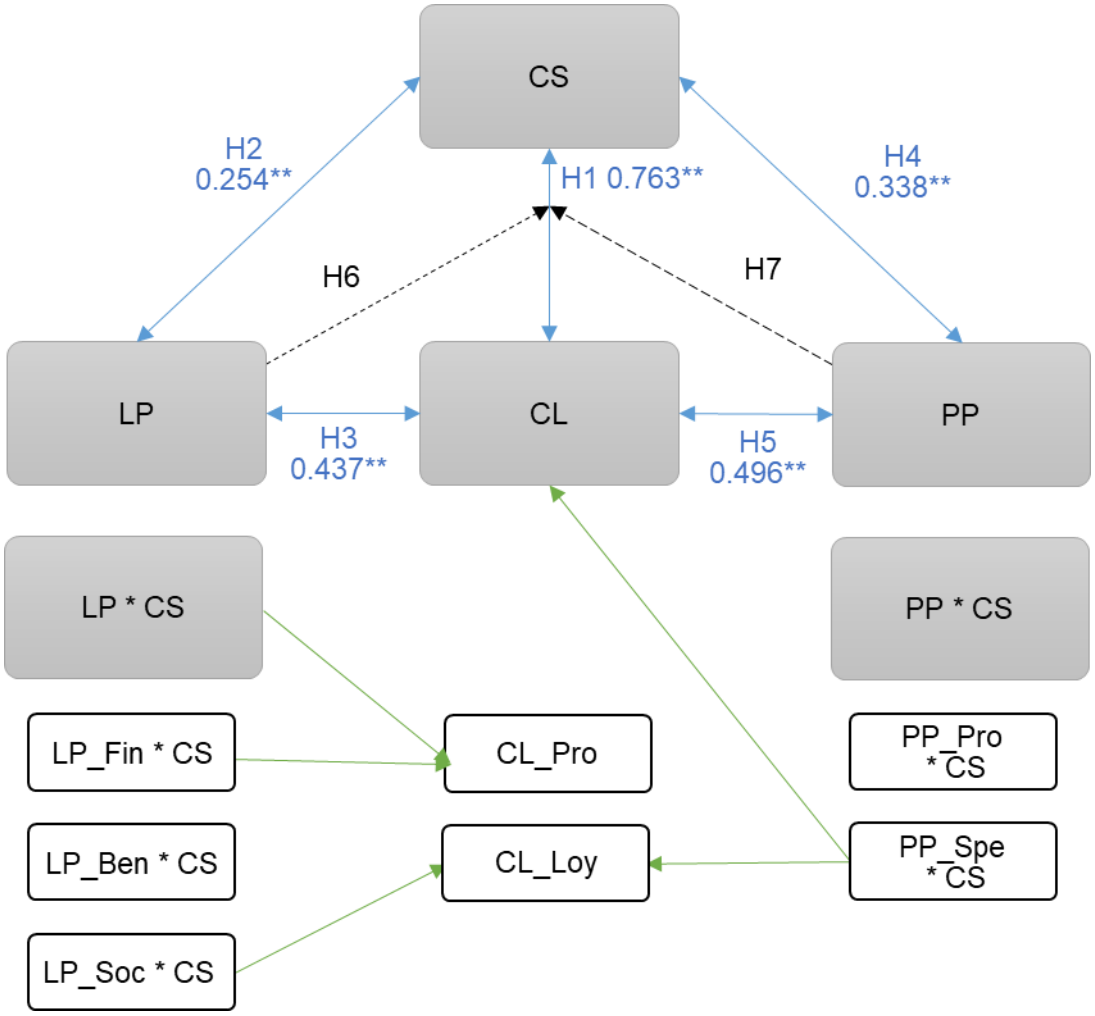


Fig 30. Summarised consolidated conceptual model findings

6.3 Descriptive discussion

From the general survey responses the researcher extracted data to provide a descriptive overview of the respondents that were provided in Chapter 5.

For respondent's main telco providers, Vodacom and MTN displayed the expected majority; however, the researcher's personal network had a concentration of customers of FNB Connect and may be the reason for the higher representation of FNB Connect relative to the SA population. Vodacom and MTN are also the two telco providers that are in the Top 25 LPs in SA.

Morgan and Govender's (2017) survey of telco users in SA showed that 50% of their survey respondents had multiple network subscriptions, which is a higher proportion than the survey results for this study. The survey results indicated 68% of respondents only had one telco provider, with 32% of respondents selecting more than one telco. This indicates a noticeable difference in the population surveyed. However, 32% is still a considerable proportion of customers. The survey assessed respondents on their main telco provider, however for respondents who had more than one telco subscription, it should be noted whether they were able to strictly answer questions solely focused on the one LP.

Although all customers belonged to a telco provider which offers a LP, a large proportion of customers indicated No (40%) or Not sure (5%) to using LPs, and respondents were Not sure (65%) whether the LP had a tier structure.

Even though respondents were on telcos, 51% of respondents indicated they did not use rewards, implying a low redemption rate. Furthermore, a large portion of customers stated No (39%) or Not sure (9%) that their telcos made use of personalised pricing.

These descriptives signposts low awareness around telco LP offerings, which questions whether the large investments are worthwhile, as there are few affirmative responses to telco LPs and PP's, and a majority of no reward usage. This may be due to bias indicated from the respondent population and may not be extended to the full population.

These descriptive results should be kept in mind with the discussion of the remaining sections and further aid the requirement for statistical analyses to assist with driving statistically significant findings.

6.4 Statistical analysis discussion

The statistical analyses included the measurement instrument response feedback quality controls that were assessed for validity and reliability and from dimension reduction the construct variables were reduced to components for assessment of assumptions and hypotheses testing.

6.4.1 Validity

Each of the individual questions from the survey were tested for validity relative to the construct via Pearson Correlation and each question was found to be valid pertaining to their construct.

Furthermore, each construct CS, CL, LP and PP were tested for validity with KMO and Bartlett's test for sphericity, with findings indicating each of the constructs were valid. Each question had a significant relationship with their construct total, therefore no questions were removed and validity of questions was established for each of the constructs CS, CL, LP and PP.

6.4.2 Reliability

Thereafter reliability testing was confirmed through evaluating Cronbach's alpha. Each of the constructs CS, CL, LP and PP were found to be reliable, and the detailed results analysis were provided in Chapter 5.

6.4.3 Variable reduction

The objective of factor analysis was to reduce the number of variables (Yong & Pearce, 2013). From Chapter 5, 54 questions from the survey were reduced to one to four components per construct.

Only construct headings were provided in the survey, yet from factor analysis, the emergence of the subcomponents mostly consisted of questions which were grouped together as per the original sources.

The exploratory factor analysis on the CS construct resulted in one component, grouping questions on telco CS and satisfaction on tariffs and promotions together.

From the variable reduction analysis, attitudinal and behavioural loyalty were grouped together with company loyalty and separate to program loyalty. As CL is often described as being distinguishable phases of attitudinal and behavioural which have been distinctly tested (Lephale, 2021; Yeboah-Asiamah et al., 2013).

Shammout's (2020) assessed these components separately, as LPs are usually designed to address different components, therefore a composite approach may not provide clear guidance for managerial use; their findings indicated relational bonds have different effects on attitudinal and behavioural loyalty, (Shammout, 2020). In addition, Shammout, (2020) noted that the composite view may cause multicollinearity, which was tested and found not to be an issue. These variables were grouped together with company loyalty, as per Evanschitzky et al. (2012) a customer being loyal to the LP may not necessarily mean they are loyal to the company. The factor analysis determined only program loyalty seen with being incentivised to stay was a distinct component separate from the other loyalty factors.

However, the vast majority of literature have tested CL on the composite level (Patharia & Pande, 2021). Therefore, CL was grouped into two components, namely Program Loyalty (CL_Pro) and Loyalty (CL_Loy) being attitudinal, behavioural and company loyalty.

The LP and PP components extracted remained separate as per source of questions, with the following loaded onto the same component. LP monetary benefit of savings and exploration benefits which assist customers to discover new products grouped together as benefits. PP structural bonds and program special treatment were grouped together.

6.4.4 Assumptions

The variables were confirmed to be independent, and did not violate assumptions of multi collinearity or homoscedasticity. Although with regards to normality, PP_Aware, LP_Tier and LP_Ben components were not normally distributed, real life data is often non-normal (Hair, 2014; Cain et al., 2017). The negatively skewed PP_Aware indicated that respondents were more likely to agree to being aware and may exhibit bias to having awareness around dynamic pricing, whereas the positive skewness of LP_Tier indicated less agreement with achieving higher tier statuses. LP_Ben had a flatter distribution with more respondents selecting agree or disagree, instead of neither.

The variables were assessed for the required assumptions, to proceed with the research hypotheses.

6.5 Research question discussions

6.5.1 RQ1 hypothesis discussion

H1: There is a significant relationship between CS and CL.

The first research question aimed to determine whether there is a significant relationship between CS and CL. From Spearman's correlation test the findings established a significant positive relationship between CS and CL, and CS was found to have a significant positive relationship on each of CL, loyalty and, to a lesser extent, program loyalty.

The results find customers that have positive disconfirmations on their expectations are likely to repeat their behaviour and exhibit behavioural loyalty, drive positive word of mouth, and increase attitudinal loyalty towards the company/telco. Therefore, customers who are more satisfied with their telco correspondingly have higher CL as corroborated by extant literature in the telco industry (Morgan and Govender, 2017; Ofori et al., 2018; Patharia & Pandey, 2021).

CS has significant relationship, however to a lesser extent, on program loyalty; this may be due to the low awareness around telco LPs indicated by the survey respondents (where only 55% of respondents indicated telco use of LP).

The results support the findings that CS is positively related to CL (Díaz, 2017; Evanschitzky et al., 2012). The importance for telcos to keep customers satisfied which leads to retention and repeat purchases displayed by CL (Lausse & Resende, 2022; Ofori et al. 2018). Therefore telcos should engage with customers to create awareness of the benefits offered, and gain a deeper understanding of customers' expectations and how best to meet them, to assist with CS and increase CL.

6.5.2 RQ2 hypothesis discussion

H2: There is a significant relationship between CS and LP

The second research question aimed to determine whether there is a significant relationship between CS and LP. From Spearman's correlation test the findings established a significant positive relationship between CS and LP.

Higher CS, from expectancy disconfirmation mean customers have positive evaluations of their expectations. Since there is a positive relationship between CS and LP it would be interesting to understand whether customers expect benefits from

telco LPs, such as proposed by Audrain-Pontevia and Garnier's (2021), customers come to expect utilitarian LP monetary benefits. However, there appears to be a lack of CS expectancy evaluations in this regard, as per the descriptive data only 55% indicated use of LPs. This raises the question whether customers lack expectation of LPs or that customers do not have expectations of LPs specifically. Nonetheless, the analysis findings found a significant relationship between CS and LP, with similar findings in existing literature with specific LP design elements, such as savings, which lead to higher CS, (Belli et al, 2020).

In particular LP tier structure did not have a significant relationship with CS, which concurs with Mogale's (2020) finding that LP design structure did not significantly influence CS in the SA banking industry. These findings are consistent with Belli et al,'s (2020) review of LP literature in that tier design does not increase CL.

Despite the fact that Hollingshead (2021) proposing customers may spend or change behaviour to improve and maintain their tier status, this does not result in CS Ofori noted that loyalty led to satisfaction, and that satisfied customers would purchase further (Ofori, 2016). Therefore agreeing to spending more on the tier status does not indicate that behaviour has changed to increase satisfaction, further purchases or loyalty.

Higher tiers may be achieved by encouraging desired behaviour such as repeat purchases; however, customers may also be demoted from tiers which may result in a negative evaluation and therefore lower levels of CS (Belli et al, 2020).

6.5.3 RQ3 hypothesis discussion

H3: There is a significant relationship between LP and CL.

The third research question aimed to determine whether there is a significant relationship between LP and CL. From Spearman's correlation test the findings established a significant positive relationship between LP and CL, therefore customers with higher CL also had higher agreement to LP. With the exception of the components LP_Tier and CL_Loy which did not have a significant relationship.

The results support Belli et al. (2022) with LP being effective on CL. These findings resemble the study by Mogale, (2020) of LP in the SA banking industry, finding LP relates to CS, and CS relates to bank loyalty. Lephale (2021) found a significant relationship of LP between each of attitudinal and behavioural loyalty in SA telco.

The hypothesis has added to further show the significance of LP with program loyalty, as put forward by Evanschitzky et al., (2012).

Each of the LP components were significantly related to program loyalty, and Evanschitzky et al., (2012) found financial benefits to be the most significant, which differs from the research regression results, prioritising social and benefits, where the most significant relationship in descending order Social (LP_Soc), Benefits (LP_Ben), Financial (LP_Fin) and lastly Tier (LP_Tier).

Similar findings in part as (Audrain-Pontevia & Garnier, 2021) who found social benefits the most significant, however also found monetary benefits of LP do not affect CL (Audrain-Pontevia & Garnier, 2021). Therefore the level of significance of LP design elements differ within literature review, nonetheless these elements were proven to be significant and should be taken note of.

Although tiers may increase social benefits of belonging to a tier, the research findings by Belli et al, 2020 concur that tiers do not significantly relate to CL. Therefore, focus should be placed on social inclusion within tiers in enhanced ways to improve loyalty outside of the LP.

Recommendations for managers to actively design LPs to encourage customer participation and to increase CL (Belli et al, 2020). Would it make sense to tier a telcos entire customer base and effectively treat each customer the same through a tiered structure? Understanding the customer's needs and purchase elasticity instead of pushing for conventional repeat purchase behaviour is important. Attention should be paid to other behaviours such as referrals and positive word of mouth or relationship length that are beneficial to the firm should.

LP is an economic benefit, CL is not strictly measured as such (although it can be through customer life time value) additional emphases on the relational aspects may enrich the CL relationship.

6.5.4 RQ4 hypothesis discussion

H4: There is a significant relationship between CS and PP.

The fourth research question aimed to determine whether there is a significant relationship between CS and PP. From Spearman's correlation test the findings established a significant positive relationship between CS and PP.

A positive relationship was expected between PP and CS, as the bi-directional influence between PP and CS were established (Victor et al., 2019). Which is supported by the hypothesis results.

PP has been found often tested with CL, as there is such strong evidence of the existing of CS and CL, this apparent disconnect of PP literature indicates that more studies of PP should also be tested against CS. This may highlight the biases created when investing and designing studies to test an important variable such as CL, but excluding CS.

There are papers that caution against personalised pricing. As competition increases telcos have placed large investments into promotional activities to increase customer experiences through personalisation in the attempts to drive customer behaviour. However, these were found to cause problems in driving customers to have increased various expectations (Izogo, 2016). This can make it more difficult for companies to compete and require further investment, creating a high cost cycle that may come with little economic benefit, or even hurt profits (Capponi et al., 2021). This may provide a reason as to why PP_Pri is only significant at the 0.05 level and not as significant as the other variables at the 0.01 level.

As expectations increase, the delivery of these expectations needs to be met, as this will result in positive evaluations and higher CS. In order to have an expectation, the customers should be aware of PP, as discussed earlier the component PP_Aware is negatively skewed indicating customers tended to agree to being aware. PP_Aware was also found to be significant, however to a lesser extent at the 0.05 level with CS.

The remaining personalised product recommendations and specialised treatments were significant against CS, hinting that customers look beyond the strictly monetary benefits to be satisfied, and expect more from their telco, telcos which may exhibit an understanding of the customers' expectations, around which products are best suited to them, and a developed offering beyond price may increase CS.

6.5.5 RQ5 hypothesis discussion

H5: There is a significant relationship between PP and CL.

The fifth research question aimed to determine whether there is a significant relationship between PP and CL. From Spearman's correlation test the findings

established a significant positive relationship between PP and CL, except for the component PP_Aware and CL_Loy.

PP is the ideal way of offering customers tailor made solutions. To this end, telcos may use PP's to retain customers and enhance CL (Esteves, 2014, Zhou et al., 2020). The findings indicate a positive relationship between PP and CL.

PP_Aware was not significantly related to the CL_Loy components, as Díaz (2017) had noted transparency of information leads to higher CL. Therefore, more should be done on ensuring awareness and encourage participation of customers, or this may be as a result of the underlying bias of respondents who want to appear to be aware, as explained earlier. Therefore, the mechanism in which customers are made aware and what information they are aware of requires additional attention from telcos in order to influence this and enhance CL further.

6.5.6 RQ6 hypothesis discussion

H6: LP positively moderates the relationship between CS and CL

The sixth research question seeks to understand the moderating effects, and influence of LP on the size and direction of the relationship between CS and CL.

The moderation analysis was done on each of the constructs, and the underlying components. Only variables which had a significant relationship with each other were tested, therefore LP_Tier was not tested for moderation as LP_Tier did not have a significant relationship with CS, as discussed in RQ2.

The results revealed no significance difference and evidence of moderation on a construct level. This aligns to findings that additional focus should be placed on LP design elements to drive the desired outcomes, as simply having a LP structure in place may not necessarily achieve the overall objective therefore more attention should be placed on design elements which are significant (Belli et al, 2020).

The significant moderation interactions and their outcomes are listed: Loyalty program on Program loyalty, Financial benefits on Program loyalty, and lastly Social benefits on Loyalty.

There are two interactions which significantly positively moderates Program loyalty. Evanschitzky et al.'s (2012) distinguishes program loyalty as being driven by

weighing up economic values of cost and benefit. LP have a significant positive moderation on program loyalty. In addition, LP financial benefits have a significant moderation on program loyalty.

Financial bonds include offering discounts, up-grades, or redemptions of points or currency for rewards (Shammout, 2020), which are designed with the purpose of economic benefits and increasing repurchase behaviour or program loyalty (Evanschitzky et al.'s ,2012). Therefore the results support findings by Evanschitzky et al.'s (2012) with LP moderating the relationship between CS and CL_Pro.

LP have a significant positive moderation on program loyalty, which may imply current LP design elements have likely focused on financial bonds. Since financial bonds are often the focus of LPs (Audrain-Pontevia & Garnier, 2021). Financial benefits have become part and parcel of LP's as customers come to expect these elements and are not a differentiator amongst competitors (Audrain-Pontevia & Garnier, 2021).

LP's should include more than financial bonds, and more needs to be understood whether financial benefits may extend loyalty into attitudinal, behavioural and company loyalty.

Social benefits were found to positively moderate the relationship between CS and CL_Loy (attitudinal, behaviour, and company). These findings concur with (Audrain-Pontevia's) findings that LP and LP_Soc are significant to CL. This is however in contradiction with the results from Evanschitzky et al., (2012) who found that social benefits impacted program loyalty and not company loyalty. The moderating effect of the components have provided evidence against Evanschitzky et al., 2012 in terms of outcome variable, however it does highlight that social benefits have been found to be significant in either case and therefore imperative for LP's and firms to offer both social benefits which speak to emotion as well as financial monetary benefits (Evanschitzky et al., 2012).

LP_Ben which include exploration benefits and monetary savings did not have a significant moderating effect on any of the CL components. This finding is similar to Audrain-Pontevia & Garnier, (2020) who did not find exploration benefits to have a direct effect on CL.

6.5.7 RQ7 hypothesis discussion

H7: PP positively moderates the relationship between CS and CL

This research question sought to understand the moderating effects, and influence of PP on the size and direction of the relationship between CS and CL.

Moderation analysis was done on each of the constructs, and the underlying components. Only variables that had a significant relationship with each other were tested, therefore PP_Pri and PP_Aware were not tested for moderation as they did not have a significant relationship with CS, as discussed in RQ4.

Personalised product offerings did not have significant moderating effects on the relationship between CS and CL. This finding is similar to Lephale (2021) whom found personalisation in SA telco directly related to attitudinal and behavioural loyalty, however did not exhibit moderating effects.

Belli et al, 2020 found that special treatment does not have positive effect on CL. Whereas Shammout (2020) found structural bonds relate positively to behavioural and attitudinal loyalty (Shammout, 2020). Our findings are aligned with Shammout (2020), with the component consisting of specialised treatment and structural bonds, denoted by PP_Spe, having positive moderating effect on the CL construct overall as well as CL_Loy the loyalty dimensions of attitudinal, behavioural and company loyalty.

The positive moderation results of PP_Spe are encouraging, and more focus should be placed on designing not only personalised offerings on price, but on structural offerings for the customers' needs, which could be a combination of price and product. Telcos should go above and beyond the conventional expectation of monetary benefits and provide investment to customers in trying to cater for their needs. This may be seem to be a longer term investment into building the customer relationship and looks beyond the immediate financial benefits. By building structural bonds, which may be in the form of price, product, and service, and providing solutions for the customer. These are built overtime and may become hard to break resulting in a build-up of high switching costs.

The longer a customer is with the telco, the more information and data is collected allowing telcos the opportunity to make use of the depth of data and explore solutions

which can cater for the customer's needs, building a stronger and mutually beneficial relationship.

6.6 Conclusion

Each of the research questions and hypothesis testing results were discussed in detail in this chapter through an integration of the literature findings and empirical results. Chapter 7, the final chapter discusses the contribution, implications and limitations of these findings.

CHAPTER 7: CONCLUSION

7.1 Introduction

The conclusion chapter highlights the principal findings and implications of the research for both business and theoretical contributions. The chapter lists the limitations and provides recommendations for future research and concludes the research project.

The purpose of the research project was to establish the moderating role of LP and PP between CS and CL in the SA telco industry. The significant relationships were established between each of the constructs in hypotheses one to five, leading into the two moderation analysis of moderators LP and then PP. These hypotheses were tested and discussed, with supporting significant moderating effects discussed in detail in Chapter 6.

7.2 Principal findings and theoretical contributions

Each of the significant relationships were established in hypotheses one to five, supporting the hypotheses put forward by literature.

The findings add to the literature by providing empirical results in one context, finding significant positive relationship between CS and CL, CS and LP, LP and CL as well as CS and PP and lastly PP and CL.

The moderating effects of LP and PP as constructs were not necessarily significant, however diving into the component level enabled a more detailed analysis and review of implications. This is supported from literature Belli et al, (2020) where the various design components of LP need to be considered, and prioritised for maximum benefit as they have differing influences. Therefore the research has provided empirical evidence in the SA telco context.

The research findings indicate financial bonds of customers expecting a financial reward as part of the program are loyal to the LP. Therefore financial design elements which are often at the forefront of LP design concepts improves in particular only the program loyalty. These findings concur and add to Evanschitzky et al.'s (2012) distinction of program loyalty. As firms want to maintain relationships and improve overall loyalty, additional attention of factors are warranted. Importantly the social aspect of LPs require attention as this component contributes towards overall loyalty, this is aligned to Audrain-

Pontevia & Garnier's (2020) findings. The research highlights the importance and significance of social elements in LP and PP design.

LPs are focused on economic benefits, these may be easier for customers to assess and weigh up the benefits in order to choose which offer provides them with the most benefit, in particular if they have multiple sims from different providers, each offering different promotion offerings, customers are able to do a quick comparison to evaluate.

Having personalised products and pricing alone are not significant, however if customers may recognize that they are obtaining special treatment, or understand the personalisation context to their needs this special treatment moderates loyalty. Structural bonds are a larger investment by firms, by adding structural ties to the financial and social benefits, customers feel the personalisation such as a combination of price, product and service offering more attractive to cater for the customer's specific needs. This is also more difficult for competitors to replicate as it has been built over time and tailored to the customer Evanschitzky et al. (2012)

Establishing social levels and in essence customer feel the solution has been personally designed to cater for their needs, instead of just being offered items. This may be due to that they do not have a comparative base to assess that their pricing differs. And build a relationship with the telco through customisation over many years.

7.3 Business and managerial implications

Although telco LP's have been awarded within the top 25 LP's in SA, as competition increases from other industries with more successful LP's entering the telco competitive environment, it is important to understand which levers within business telcos may employ to enhance their relationship with customers.

The moderating effects of LP and PP as a construct whole were not necessarily significant, therefore telcos simply providing LP and PP does not necessarily lead to desired CS and CL. Investments into generic offerings without understanding the research findings may be a large cost exercise.

Evanschitzky et al. (2012) caution managers to assume LPs will drive CL and should ensure their LPs do not solely focus on economic benefits, as these are imitable by

competitors and may result in LP wars similar to price wars, where firms incur increasing costs for little benefit (Capponi et al., 2021). A key take away from the research findings is for telcos to look beyond financial and monetary value, even though bearing in mind that LPs designed to increase CL will increase repeat purchases and drive profits in the long run. Audrain-Pontevia & Garnier (2020) note financial benefits are so common customers are expecting these benefits, therefore further differentiation amongst telcos is required in delivering these benefits.

Careful consideration should be given to the design elements an investment thereof to prioritise as they have different effects on CS and CL (Belli et al, 2020). The research results show social elements of LP's and personalised special treatment and structural bonds have a significant moderating effect on CS and CL.

Telcos will benefit by providing benefits which have social elements and specialised treatment, including building structural bonds on the financial and social benefits. These developments require telcos to understand customers' needs and additional investment to design LPs and PPs with these elements. This will ensure telcos provide offers which are mutually beneficial to their customers and build longer relationships.

Since there were no significant results from PP_Aware, PP_Pri and PP_Pro. Added focus may be on how these offerings are communicated with customers, whether the personalisation remains in the background, or the personalised/ added benefit is clearly communicated to the customer highlighting the special treatment. In addition customers are becoming increasingly aware of the usage of their data and have privacy concerns. In an increasingly digital world with abundant interactions simply offering personalised, (yet same type of) offers to the customer may not be sufficient (Shammout, 2020). As firms continuously develop to maintain customer relationships (Shammout, 2020).

Therefore telcos can employ foresight into the infrastructure and capabilities to develop beyond personalising their current offering to innovate and ensure they may support and deliver the evolvement of tailored solutions.

7.4 Limitations

There are various limitations noted from the collection of data, the resulting sample size of 214 although sufficient, may have benefitted from a larger number of responses. The sample population was not representative of the population, and findings should be have this taken into consideration with these discussions as noted in section 6.3. Additionally the respondents may have represented bias in their answers as displayed in the negatively skewed awareness variable.

Although there have been an increasingly number of studies focusing on telcos in the African context, (Izogo, 2016; Ofori et al., 2018) these findings are not necessarily transferable as the cultural context and additional factors such as economic levels should be taken into account.

Additionally the study is focused in the telco industry, as there are many LP's across various industries whom have significant influence on CS and LP, the findings should be interpreted with this in mind. Consideration of the type of customer behaviour and CS, CL nuances should be considered.

7.5 Future research recommendations

The delimitations which were noted may be investigated further, such as comparatives from customers whom have subscriptions from multiple telcos, and whether a particular providers LP and PP are more effective than another.

Additionally the extent to which switching costs play a role to customers remaining with their main telco provider for the length of time, or whether this is as a result of CS and CL. Therefore considering the vast number of other antecedents of CS and CL within telco such as service quality and how these interact may be explored further.

Furthermore demographic moderation and understanding differences between demographic and other descriptive variables such as prepaid versus contract behaviour may assist telcos to understand the different nuances of the customer groups.

The dominant main telco providers Vodacom and MTN span across the African continent, further research across multiple countries may provide learnings to the group, with the limitations of cultural context etc. noted above.

Due to the cross sectional nature of the survey, customer responses were based on the customer's perception at that point in time. Since telcos use LP and PP continuously, as well as host large promotions from time to time, such as summer campaigns, the effectiveness of these campaigns may be considered and researched over a longitudinal time frame.

7.6 Conclusion

From the research problem and literature review put forward, the research's objective was to test the moderating effects of LP and PP on CS and CL. Granting there have been respective areas of literature focus on each of the components and their relationships, assessing these constructs together within the SA telco context and their statistically analysing their interplay have resulted in significant findings. In better understanding which of the LP and PP components positively affect the relationship between CS and CL, these add to the literature contribution of these constructs and provide managerial implications in practice.

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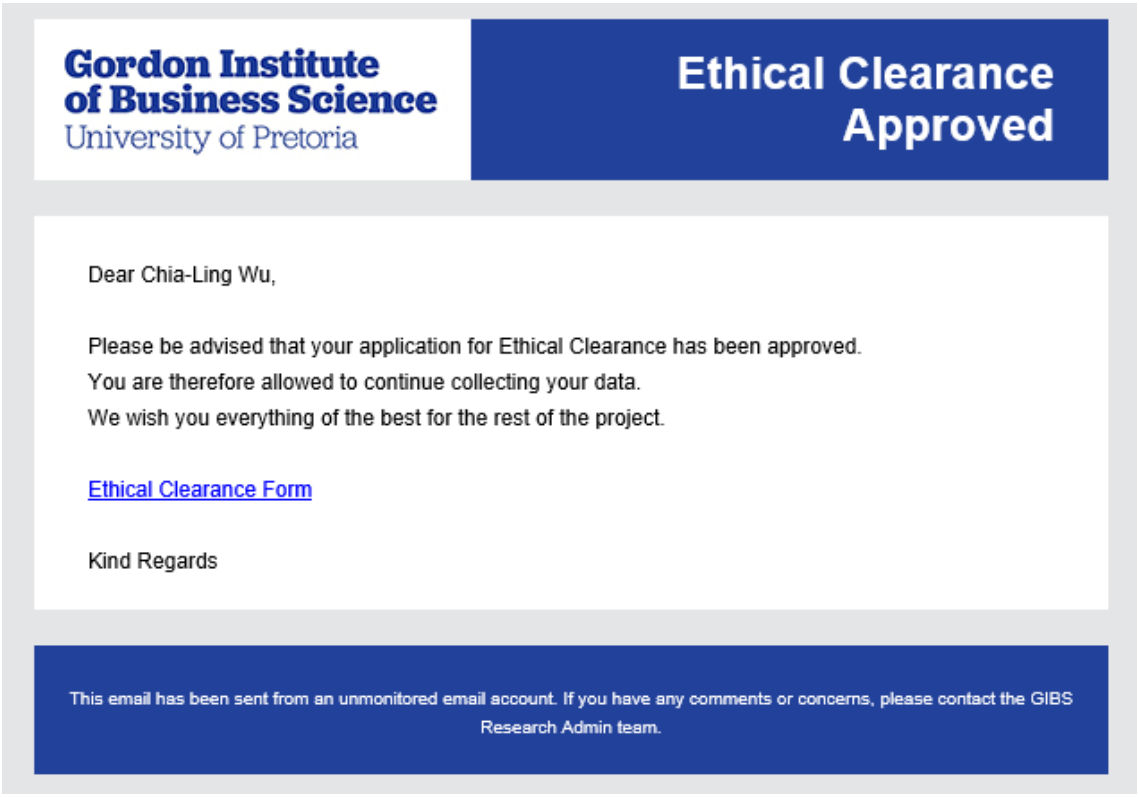
APPENDIX 1: ETHICAL CLEARANCE



Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Chia-Ling Wu,

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 2: SURVEY QUESTIONNAIRE

Section 1 General

Grouping	Source/ adapted from	Question	Code	Component grouping
Qualifier	Qualifier	Are you over the age of 18 years?	G1	Descriptives
Mobile service provider		Do you use mobile network loyalty programmes e.g. Vodacom (Just 4 you), MTN (MyMTNOffers), Telkom (Mo'Nice) reward points, currency "bucks" etc.?	G2	Descriptives
		Do you use mobile network providers offering personalised pricing e.g. Vodacom (Just 4 you), MTN (MyMTNOffers), Telkom (Mo'Nice) etc.?	G3	Descriptives
		Do you have more than one mobile network provider?	G4	Descriptives
	Du Preez (2020)	Which one of the following mobile network providers services do you mainly use?	G5	Descriptives
		For how long have you been with your mobile network provider?	G6	Descriptives
		Which type of subscription do you have with your mobile network provider?	G7	Descriptives

LP design	Mogale (2020)	Does your mobile network loyalty program have a tiered structure? A tiered structure relates to different levels, (for example: level 1 to 5 tiering or bronze to platinum tiering, etc.), where a particular tier is better than another (eg platinum is better than the bronze tier)?	LP_D1	Descriptives
		Which one of the following reward types provided by your network loyalty program do you make use of the most?	LP_D2	Descriptives

Section 2 Customer Satisfaction

Grouping	Source/ adapted from	Question	Code	Component grouping
Satisfaction	Du Preez (2020)	Overall, I am satisfied with the customer service provided by my mobile network provider	CS_S1	CS
		I think I made the right decision to make use of my mobile network provider	CS_S2	CS
		I feel good about using this mobile network provider	CS_S3	CS
Tariffs & promotions	Díaz (2017)	How satisfied or unsatisfied do you feel regarding The information regarding the tariffs and promotions	CS_TP1	CS

		How satisfied or unsatisfied do you feel regarding The easiness for understanding the characteristics of tariffs and promotions	CS_TP2	CS

Section 3 Customer Loyalty

Grouping	Source/ adapted from	Question	Code	Component grouping
Attitudinal loyalty	Lephale (2021)	I would recommend my network provider to those who seek my advice on such topics	CL_AL1	CL_Loy
		I would encourage my friends and family to use my network provider	CL_AL2	CL_Loy
		I would say positive things about my network provider to other people	CL_AL3	CL_Loy
		I intend to continue using my present network provider	CL_AL4	CL_Loy
Behavioural loyalty		I use my network provider on a regular basis	CL_BL1	CL_Loy
		My network provider incentivises me to stay	CL_BL2	CL_Pro
		I rarely consider switching to another network provider	CL_BL3	CL_Loy

		As long as the present service continues I doubt that I will change network provider	CL_BL4	CL_Loy
Company Loyalty	Evanschitzky et al. (2012)	I would repurchase products and services from this network provider	CL_CL1	CL_Loy
		I would recommend this network provider to friends and family	CL_CL2	CL_Loy
		This network provider is my first choice when it comes to purchasing products	CL_CL3	CL_Loy
Program Loyalty		I like the mobile network providers loyalty program more than other programs	CL_PL1	CL_Pro
		I would recommend the mobile network providers loyalty program to others	CL_PL2	CL_Pro
		I have a strong preference for the mobile network providers proposed loyalty program	CL_PL3	CL_Pro

Section 4 Personalised Pricing

Grouping	Source/ adapted from	Question	Code	Component grouping
		Personalised pricing prompts me to buy now rather than in future	PP_PP1	PP_Pri

Personalised pricing	Karugu (2018)	Personalised pricing makes me buy more products	PP_PP2	PP_Pri
		Personalised pricing results in customer retention	PP_PP3	PP_Pri
		Personalised pricing attracts new customers	PP_PP4	PP_Pri
		Personalised pricing makes me feel appreciated for being loyal	PP_PP5	PP_Pri
Awareness about Dynamic Pricing	Victor et al., 2019	I am aware that websites collect personal information through browser cookies	PP_A1	PP_Aware
		I am aware that websites use the information collected for personalised product recommendations and advertisements	PP_A2	PP_Aware
		I am aware that websites use the information collected for making changes in the price of the products	PP_A3	PP_Aware
Product Personalisation	Lephale (2021)	My network provider offers me products that satisfy my specific need	PP_P1	PP_Pro
		My network provider offers me products and services that I could not find with other network providers	PP_P2	PP_Pro
		If I changed a network provider, I would not get products as personalised as I have now	PP_P3	PP_Pro

		My network provider provides me with personalised products/ services tailored to my activity context	PP_P4	PP_Pro
		My network provider provides me with the kind of products/ services that I might like	PP_P5	PP_Pro
Structural Bonds	Baloglu & Bai (2021)	My network provider sometimes offers services to me that they do not offer to other customers	PP_SB1	PP_Spe
		My network provider provides customized products/ services to meet my needs	PP_SB2	PP_Spe
Program Special Treatment	Evanschitzky et al. (2012)	My network provider does services for me that they don't do for most customers	PP_ST1	PP_Spe
		I get discounts or special deals that most customers don't get	PP_ST2	PP_Spe
		I get better prices than most customers	PP_ST3	PP_Spe

Section 5 Loyalty Program

Grouping	Source/ adapted from	Question	Code	Component grouping
Tier Status	Hollingshead, 2021	I care about what tier of the loyalty program I am in	LP_T1	LP_Tier
		I will spend to achieve or maintain a tier status	LP_T2	LP_Tier
		I actively try to achieve higher tiers of the loyalty program through my spend	LP_T3	LP_Tier
		At times, I have increased my spend to get rewards from the loyalty program	LP_T4	LP_Tier
Financial bonds	Shammout, 2020	My mobile network provider provides discounts (or up-grades) for regular customers	LP_F1	LP_Fin
		My mobile network provider has presented me with free gifts to encourage my future purchases	LP_F2	LP_Fin
		My mobile provider provides a cumulative points program (reward program)	LP_F3	LP_Fin
		My mobile network provider offers rebates if I purchase more	LP_F4	LP_Fin
		I shop at a lower financial cost	LP_M1	LP_Ben

Monetary benefits	Audrain-Pontevia & Garnier (2020)	I save money	LP_M2	LP_Ben
		I spend less	LP_M3	LP_Ben
Exploration benefits		I discover products that I would not have discovered otherwise	LP_E1	LP_Ben
		I try new products	LP_E2	LP_Ben
		I discover new products	LP_E3	LP_Ben
Social benefits		I belong to a community of people who share the same values	LP_S1	LP_Soc
		I feel I share the same values as the brand	LP_S2	LP_Soc
		I feel close to the brand	LP_S3	LP_Soc

APPENDIX 3: CODE BOOK

5 point Likert scale question responses

Inputs	Mapping
1	Strongly Disagree
2	Disagree
3	Neither agree nor disagree
4	Agree
5	Strongly Agree

Inputs	Mapping
1	Very Unsatisfied
2	Unsatisfied
3	Neither satisfied nor unsatisfied
4	Satisfied
5	Very Satisfied

Which one of the following mobile network providers services do you mainly use?

Inputs	Mapping
Vodacom	Vodacom
MTN	MTN

Inputs Other	Mapping
FNB	FNB Connect
FNB Connect	FNB Connect

Telkom	Telkom
Cell C	Cell C

FNB Connect (piggy back off Cell C)	FNB Connect
Fnb connect	FNB Connect
Connect	FNB Connect

Which type of subscription do you have with your mobile network provider?

Inputs	Mapping
Prepaid	Prepaid
Contract	Contract
Data only sim	Data only sim
Wireless internet router	Wireless internet router

Inputs Other	Mapping
Top up	Contract
Top up contract	Contract
Both contract and prepaid	Other

APPENDIX 4: DECLARATION OF ADDITIONAL SERVICES

I, Nina Parry the Editor declare that I have only rendered the services as listed and detailed below as contracted by Chia-Ling Penny Wu in their fulfilment of the requirements for a Masters degree at the Gordon Institute of Business, a division of the University of Pretoria.

Detail of type of services rendered to the student, with the exception of Chapter 7:

- Fix typos, misspellings, and punctuation issues.
- Ensure that in-text references are in the correct style (APA) and are included in the end-text references.
- Ensure that your reference list is in the correct format.
- Ensure that your format/page layout is in line with the GIBS green pages.

FULL NAME: Nina Parry for Wordsmiths SA Pty Ltd

SIGNATURE:

EMAIL ADDRESS: aimee@wordsmiths-sa.com
CONTACT NUMBER: +2783 608 1049 (WhatsApp)
or +3161 275 1672 (Cell, outside SA)

APPENDIX 5: SPSS PROCESS RESULTS OUTPUT

1 SPSS Process Output: LP moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : LP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2
p
      .8215      .6749      .1965   145.3348     3.0000   210.0000
.0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4060      .0313   108.9747      .0000     3.3444     3.4676
CS            .6974      .0387    18.0315      .0000      .6212      .7737
LP            .2034      .0379     5.3736      .0000      .1288      .2780
Int_1         .0356      .0437      .8140      .4166     -.0506      .1217

Product terms key:
 Int_1    :        CS       x        LP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0010      .6626     1.0000   210.0000      .4166

----------
    Focal predict: CS       (X)
          Mod var: LP       (W)

Data for visualizing the conditional effect of the
focal predictor:
Paste text below into a SPSS syntax window and execute
to produce plot.

DATA LIST FREE/
   CS         LP         CL         .
BEGIN DATA.
     -.7920    -1.0085     2.6769
      .1280    -1.0085     3.2855
      .9280    -1.0085     3.8148
     -.7920      .0503     2.8625
      .1280      .0503     3.5057
      .9280      .0503     4.0651
     -.7920      .8738     3.0068
      .1280      .8738     3.6770
      .9280      .8738     4.2598
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY       LP       .

*********************** ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in
output:
  95.0000

NOTE: The following variables were mean centered prior
to analysis:
          LP       CS

------ END MATRIX -----
```

2 SPSS Process Output: LP moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : LP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2
p
      .7885      .6217      .2629   115.0567     3.0000   210.0000
.0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7074      .0362   102.5416      .0000     3.6361     3.7787
CS            .7792      .0447    17.4165      .0000      .6910      .8674
LP            .0744      .0438     1.6990      .0908     -.0119      .1607
Int_1        -.0101      .0505     -.1997      .8419     -.1097      .0895

Product terms key:
 Int_1    :        CS       x        LP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0001      .0399     1.0000   210.0000      .8419

----------
    Focal predict: CS       (X)
          Mod var: LP       (W)

Data for visualizing the conditional effect of the
focal predictor:
Paste text below into a SPSS syntax window and execute
to produce plot.

DATA LIST FREE/
   CS         LP         CL_Loy     .
BEGIN DATA.
     -.7920    -1.0085     3.0072
      .1280    -1.0085     3.7334
      .9280    -1.0085     4.3649
     -.7920      .0503     3.0944
      .1280      .0503     3.8108
      .9280      .0503     4.4338
     -.7920      .8738     3.1623
      .1280      .8738     3.8710
      .9280      .8738     4.4874
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY       LP       .

*********************** ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in
output:
  95.0000

NOTE: The following variables were mean centered prior
to analysis:
          LP       CS

------ END MATRIX -----
```

3 SPSS Process Output: LP moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : LP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6704      .4495      .5780    57.1576     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.6525      .0536    49.4798      .0000     2.5468     2.7581
CS           .4929      .0663     7.4295      .0000      .3621      .6236
LP           .5259      .0649     8.1008      .0000      .3980      .6539
Int_1        .1497      .0749     1.9977      .0470      .0020      .2974

Product terms key:
 Int_1    :        CS       x        LP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0105     3.9910     1.0000   210.0000      .0470
----------
    Focal predict: CS       (X)
          Mod var: LP       (W)

Conditional effects of the focal predictor at values of the moderator(s):

         LP     Effect         se          t          p       LLCI       ULCI
   -1.0085      .3419      .0991     3.4487      .0007      .1465      .5373
     .0503      .5004      .0666     7.5189      .0000      .3692      .6316
     .8738      .6237      .0945     6.5989      .0000      .4373      .8100

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
         LP     Effect         se          t          p       LLCI       ULCI
   -1.4203      .2803      .1238     2.2637      .0246      .0362      .5243
   -1.2410      .3071      .1127     2.7251      .0070      .0849      .5292
   -1.0617      .3339      .1021     3.2694      .0013      .1326      .5353
    -.8825      .3608      .0923     3.9071      .0001      .1787      .5428
    -.7032      .3876      .0835     4.6393      .0000      .2229      .5523
    -.5239      .4144      .0761     5.4441      .0000      .2644      .5645
    -.3447      .4413      .0705     6.2586      .0000      .3023      .5803
    -.1654      .4681      .0671     6.9719      .0000      .3357      .6005
     .0139      .4949      .0664     7.4566      .0000      .3641      .6258
     .1932      .5218      .0683     7.6399      .0000      .3871      .6564
     .3724      .5486      .0727     7.5473      .0000      .4053      .6919
     .5517      .5754      .0791     7.2707      .0000      .4194      .7315
     .7310      .6023      .0872     6.9063      .0000      .4304      .7742
     .9102      .6291      .0965     6.5211      .0000      .4389      .8193
    1.0895      .6559      .1066     6.1516      .0000      .4457      .8661
    1.2688      .6828      .1174     5.8135      .0000      .4512      .9143
    1.4481      .7096      .1288     5.5113      .0000      .4558      .9634
    1.6273      .7364      .1404     5.2438      .0000      .4596     1.0133
    1.8066      .7633      .1524     5.0080      .0000      .4628     1.0637
    1.9859      .7901      .1646     4.7999      .0000      .4656     1.1146
    2.1651      .8169      .1770     4.6158      .0000      .4680     1.1658
    2.3444      .8438      .1895     4.4525      .0000      .4702     1.2174

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS         LP         CL_Pro     .
BEGIN DATA.
     -.7920    -1.0085     1.8513
      .1280    -1.0085     2.1658
      .9280    -1.0085     2.4393
     -.7920      .0503     2.2826
      .1280      .0503     2.7430
      .9280      .0503     3.1433
     -.7920      .8738     2.6181
      .1280      .8738     3.1919
      .9280      .8738     3.6908
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY       LP       .

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
          LP       CS

------ END MATRIX -----
```

4 SPSS Process Output: LP_Fin moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : LP_Fin

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8170      .6675      .2009   140.5369     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4121      .0309   110.3251      .0000     3.3511     3.4730
CS            .7234      .0382    18.9317      .0000      .6481      .7987
LP_Fin        .1634      .0324     5.0393      .0000      .0995      .2273
Int_1         .0012      .0367      .0338      .9730     -.0712      .0737

Product terms key:
 Int_1    :        CS       x        LP_Fin

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0000      .0011     1.0000   210.0000      .9730
```

```
----------
    Focal predict: CS       (X)
          Mod var: LP_Fin   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Fin     CL         .
BEGIN DATA.
     -.7920    -1.1255     2.6564
      .1280    -1.1255     3.3206
      .9280    -1.1255     3.8982
     -.7920      .0245     2.8432
      .1280      .0245     3.5087
      .9280      .0245     4.0874
     -.7920     1.0245     3.0056
      .1280     1.0245     3.6723
      .9280     1.0245     4.2520
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
LP_Fin   .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Fin   CS

------ END MATRIX -----
```

5 SPSS Process Output: LP_Fin moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : LP_Fin

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7955      .6328      .2552   120.6388     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.7121      .0349   106.5040      .0000     3.6434     3.7808
CS           .7793      .0431    18.0974      .0000      .6944      .8642
LP_Fin       .1009      .0365     2.7614      .0063      .0289      .1730
Int_1       -.0567      .0414    -1.3682      .1727     -.1383      .0250

Product terms key:
 Int_1    :        CS       x        LP_Fin

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0033     1.8720     1.0000   210.0000      .1727
----------
```

```
    Focal predict: CS       (X)
          Mod var: LP_Fin   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Fin     CL_Loy     .
BEGIN DATA.
     -.7920    -1.1255     2.9308
      .1280    -1.1255     3.7064
      .9280    -1.1255     4.3809
     -.7920      .0245     3.0985
      .1280      .0245     3.8141
      .9280      .0245     4.4365
     -.7920     1.0245     3.2443
      .1280     1.0245     3.9078
      .9280     1.0245     4.4848
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY
LP_Fin   .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Fin   CS

------ END MATRIX -----
```

6 SPSS Process Output: LP_Fin moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : LP_Fin

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6008      .3609      .6710    39.5319     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.6621      .0565    47.1050      .0000     2.5507     2.7735
CS           .5836      .0698     8.3586      .0000      .4460      .7213
LP_Fin       .3197      .0593     5.3946      .0000      .2028      .4365
Int_1        .1460      .0672     2.1743      .0308      .0136      .2784

Product terms key:
 Int_1    :        CS       x        LP_Fin

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0144     4.7277     1.0000   210.0000      .0308
----------
    Focal predict: CS       (X)
          Mod var: LP_Fin   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     LP_Fin     Effect         se          t          p       LLCI       ULCI
    -1.1255      .4193      .1007     4.1657      .0000      .2209      .6177
     -.0245      .5872      .0699     8.3990      .0000      .4494      .7250
     1.0245      .7332      .1001     7.3233      .0000      .5358      .9306

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     LP_Fin     Effect         se          t          p       LLCI       ULCI
    -1.4755      .3682      .1187     3.1013      .0022      .1341      .6022
    -1.2850      .3960      .1086     3.6454      .0003      .1818      .6101
    -1.0945      .4238      .0992     4.2738      .0000      .2283      .6193
     -.9040      .4516      .0905     4.9891      .0000      .2732      .6301
     -.7136      .4794      .0830     5.7793      .0000      .3159      .6430
     -.5231      .5072      .0768     6.6055      .0000      .3559      .6586
     -.3326      .5350      .0724     7.3921      .0000      .3924      .6777
     -.1421      .5629      .0701     8.0339      .0000      .4247      .7010
      .0483      .5907      .0700     8.4337      .0000      .4526      .7287
      .2388      .6185      .0723     8.5529      .0000      .4759      .7610
      .4293      .6463      .0767     8.4282      .0000      .4951      .7975
      .6198      .6741      .0828     8.1397      .0000      .5108      .8374
      .8102      .7019      .0904     7.7684      .0000      .5238      .8800
     1.0007      .7297      .0990     7.3725      .0000      .5346      .9248
     1.1912      .7575      .1084     6.9865      .0000      .5438      .9713
     1.3817      .7854      .1185     6.6270      .0000      .5517     1.0190
     1.5722      .8132      .1291     6.3003      .0000      .5587     1.0676
     1.7626      .8410      .1400     6.0069      .0000      .5650     1.1170
     1.9531      .8688      .1512     5.7450      .0000      .5707     1.1669
     2.1436      .8966      .1627     5.5114      .0000      .5759     1.2173
     2.3341      .9244      .1743     5.3029      .0000      .5808     1.2681
     2.5245      .9522      .1861     5.1163      .0000      .5853     1.3191

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS         LP_Fin     CL_Pro     .
BEGIN DATA.
     -.7920    -1.1255     1.9703
      .1280    -1.1255     2.3560
      .9280    -1.1255     2.6914
     -.7920      .0245     2.2049
      .1280      .0245     2.7451
      .9280      .0245     3.2149
     -.7920     1.0245     2.4089
      .1280     1.0245     3.0835
      .9280     1.0245     3.6700
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY       LP_Fin   .

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
          LP_Fin   CS

------ END MATRIX -----
```

7 SPSS Process Output: LP_Ben moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : LP_Ben

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8105      .6569      .2074   134.0298     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4034      .0321   106.1798      .0000     3.3402     3.4666
CS            .7176      .0398    18.0405      .0000      .6392      .7960
LP_Ben        .1187      .0296     4.0121      .0001      .0604      .1770
Int_1         .0413      .0359     1.1487      .2520     -.0296      .1121

Product terms key:
 Int_1    :        CS       x        LP_Ben

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0022     1.3194     1.0000   210.0000      .2520
----------
```

```
    Focal predict: CS       (X)
          Mod var: LP_Ben   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Ben     CL         .
BEGIN DATA.
     -.7920    -1.4377     2.7115
      .1280    -1.4377     3.3171
      .9280    -1.4377     3.8437
     -.7920      .0623     2.8405
      .1280      .0623     3.5030
      .9280      .0623     4.0792
     -.7920     1.0623     2.9265
      .1280     1.0623     3.6270
      .9280     1.0623     4.2361
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
LP_Ben   .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Ben   CS

------ END MATRIX -----
```

8 SPSS Process Output: LP_Ben moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : LP_Ben

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7871      .6195      .2644   113.9878     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7034      .0362   102.3130      .0000     3.6321     3.7748
CS            .7867      .0449    17.5146      .0000      .6982      .8753
LP_Ben        .0415      .0334     1.2421      .2156     -.0244      .1073
Int_1         .0102      .0406      .2516      .8016     -.0698      .0902

Product terms key:
 Int_1    :        CS       x        LP_Ben

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0001      .0633     1.0000   210.0000      .8016
----------
```

```
    Focal predict: CS       (X)
          Mod var: LP_Ben   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Ben     CL_Loy     .
BEGIN DATA.
     -.7920    -1.4377     3.0323
      .1280    -1.4377     3.7426
      .9280    -1.4377     4.3603
     -.7920      .0623     3.0825
      .1280      .0623     3.8068
      .9280      .0623     4.4367
     -.7920     1.0623     3.1159
      .1280     1.0623     3.8496
      .9280     1.0623     4.4877
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY
LP_Ben   .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Ben   CS

------ END MATRIX -----
```

9 SPSS Process Output: LP_Ben moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : LP_Ben

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6131      .3759      .6552    42.1609     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.6534      .0570    46.5677      .0000     2.5411     2.7657
CS           .5447      .0707     7.7040      .0000      .4053      .6841
LP_Ben       .3116      .0526     5.9268      .0000      .2080      .4153
Int_1        .1189      .0639     1.8620      .0640     -.0070      .2448

Product terms key:
 Int_1    :        CS       x        LP_Ben

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0103     3.4672     1.0000   210.0000      .0640
----------
    Focal predict: CS       (X)
          Mod var: LP_Ben   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     LP_Ben     Effect         se          t          p       LLCI       ULCI
    -1.4377      .3738      .1094     3.4159      .0008      .1581      .5895
     -.0623      .5521      .0713     7.7478      .0000      .4117      .6926
     1.0623      .6711      .1033     6.4940      .0000      .4674      .8748

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     LP_Ben     Effect         se          t          p       LLCI       ULCI
    -1.4377      .3738      .1094     3.4159      .0008      .1581      .5895
    -1.2472      .3964      .1004     3.9484      .0001      .1985      .5944
    -1.0567      .4191      .0921     4.5499      .0000      .2375      .6006
     -.8663      .4417      .0848     5.2121      .0000      .2747      .6088
     -.6758      .4644      .0786     5.9082      .0000      .3094      .6193
     -.4853      .4870      .0740     6.5858      .0000      .3412      .6328
     -.2948      .5097      .0711     7.1682      .0000      .3695      .6498
     -.1044      .5323      .0703     7.5750      .0000      .3938      .6709
      .0861      .5550      .0715     7.7582      .0000      .4140      .6960
      .2766      .5776      .0748     7.7245      .0000      .4302      .7250
      .4671      .6003      .0798     7.5255      .0000      .4430      .7575
      .6575      .6229      .0862     7.2272      .0000      .4530      .7928
      .8480      .6456      .0938     6.8852      .0000      .4607      .8304
     1.0385      .6682      .1022     6.5368      .0000      .4667      .8698
     1.2290      .6909      .1114     6.2032      .0000      .4713      .9104
     1.4194      .7135      .1211     5.8942      .0000      .4749      .9522
     1.6099      .7362      .1312     5.6131      .0000      .4776      .9947
     1.8004      .7588      .1416     5.3600      .0000      .4797     1.0379
     1.9909      .7815      .1523     5.1327      .0000      .4813     1.0816
     2.1814      .8041      .1631     4.9290      .0000      .4825     1.1257
     2.3718      .8268      .1742     4.7462      .0000      .4834     1.1702
     2.5623      .8494      .1854     4.5817      .0000      .4840     1.2149

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS         LP_Ben     CL_Pro     .
BEGIN DATA.
     -.7920    -1.4377     1.9094
      .1280    -1.4377     2.2533
      .9280    -1.4377     2.5523
     -.7920      .0623     2.2356
      .1280      .0623     2.7435
      .9280      .0623     3.1853
     -.7920     1.0623     2.4530
      .1280     1.0623     3.0704
      .9280     1.0623     3.6072
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY       LP_Ben   .

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
          LP_Ben   CS

------ END MATRIX -----
```

10 SPSS Process Output: LP_Soc moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : LP_Soc

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8234      .6780      .1946   147.4082     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4246      .0320   106.8952      .0000     3.3615     3.4878
CS            .6718      .0397    16.9093      .0000      .5935      .7502
LP_Soc        .1717      .0299     5.7354      .0000      .1127      .2307
Int_1        -.0398      .0347    -1.1468      .2527     -.1083      .0286

Product terms key:
 Int_1    :        CS       x        LP_Soc

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0020     1.3153     1.0000   210.0000      .2527

----------
    Focal predict: CS       (X)
          Mod var: LP_Soc   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Soc     CL         .
BEGIN DATA.
     -.7920    -1.5093     2.5858
      .1280    -1.5093     3.2592
      .9280    -1.5093     3.8448
     -.7920      .1573     2.9245
      .1280      .1573     3.5369
      .9280      .1573     4.0693
     -.7920     1.1573     3.1277
      .1280     1.1573     3.7034
      .9280     1.1573     4.2040
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
LP_Soc   .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Soc   CS

------ END MATRIX -----
```

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : LP_Soc

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7964      .6342      .2542   121.3853     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.7308      .0366   101.8863      .0000     3.6586     3.8030
CS           .7587      .0454    16.7065      .0000      .6692      .8482
LP_Soc       .0917      .0342     2.6815      .0079      .0243      .1592
Int_1       -.0808      .0397    -2.0361      .0430     -.1590     -.0026

Product terms key:
 Int_1    :        CS       x        LP_Soc

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0072     4.1459     1.0000   210.0000      .0430
----------
    Focal predict: CS       (X)
          Mod var: LP_Soc   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     LP_Soc     Effect         se          t          p       LLCI       ULCI
    -1.5093      .8806      .0748    11.7740      .0000      .7332     1.0281
     .1573       .7460      .0459    16.2511      .0000      .6555      .8365
    1.1573       .6652      .0649    10.2462      .0000      .5372      .7931

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     LP_Soc     Effect         se          t          p       LLCI       ULCI
    -1.5093      .8806      .0748    11.7740      .0000      .7332     1.0281
    -1.3189      .8652      .0689    12.5504      .0000      .7293     1.0012
    -1.1284      .8499      .0634    13.3942      .0000      .7248      .9749
    -.9379       .8345      .0584    14.2836      .0000      .7193      .9496
    -.7474       .8191      .0540    15.1719      .0000      .7127      .9255
    -.5570       .8037      .0503    15.9773      .0000      .7045      .9028
    -.3665       .7883      .0475    16.5809      .0000      .6946      .8820
    -.1760       .7729      .0459    16.8478      .0000      .6825      .8633
     .0145       .7575      .0454    16.6773      .0000      .6680      .8471
     .2049       .7421      .0462    16.0574      .0000      .6510      .8332
     .3954       .7267      .0482    15.0778      .0000      .6317      .8217
     .5859       .7113      .0512    13.8852      .0000      .6103      .8123
     .7764       .6959      .0551    12.6219      .0000      .5873      .8046
     .9668       .6806      .0598    11.3899      .0000      .5628      .7983
    1.1573       .6652      .0649    10.2462      .0000      .5372      .7931
    1.3478       .6498      .0705     9.2142      .0000      .5108      .7888
    1.5383       .6344      .0765     8.2972      .0000      .4837      .7851
    1.7287       .6190      .0827     7.4884      .0000      .4560      .7819
    1.9192       .6036      .0891     6.7764      .0000      .4280      .7792
    2.1097       .5882      .0957     6.1493      .0000      .3996      .7768
    2.3002       .5728      .1024     5.5956      .0000      .3710      .7746
    2.4907       .5574      .1092     5.1048      .0000      .3422      .7727

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS         LP_Soc     CL_Loy     .
BEGIN DATA.
     -.7920    -1.5093     2.8949
      .1280    -1.5093     3.7051
      .9280    -1.5093     4.4096
     -.7920      .1573     3.1544
      .1280      .1573     3.8407
      .9280      .1573     4.4375
     -.7920     1.1573     3.3102
      .1280     1.1573     3.9221
      .9280     1.1573     4.4543
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY       LP_Soc    .

*********************** ANALYSIS NOTES AND ERRORS ************************
Level of confidence for all confidence intervals in output:  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.
NOTE: The following variables were mean centered prior to analysis:
          LP_Soc   CS
------ END MATRIX -----
```

12 SPSS Process Output: LP_Soc moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : LP_Soc

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6339      .4018      .6281    47.0131     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6592      .0576    46.2018      .0000     2.5458     2.7727
CS            .4548      .0714     6.3708      .0000      .3140      .5955
LP_Soc        .3715      .0538     6.9086      .0000      .2655      .4775
Int_1         .0626      .0624     1.0042      .3164     -.0603      .1856

Product terms key:
 Int_1    :        CS       x        LP_Soc

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0029     1.0084     1.0000   210.0000      .3164

----------
    Focal predict: CS       (X)
          Mod var: LP_Soc   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         LP_Soc     CL_Pro     .
BEGIN DATA.
     -.7920    -1.5093     1.8132
      .1280    -1.5093     2.1446
      .9280    -1.5093     2.4327
     -.7920      .1573     2.3497
      .1280      .1573     2.7772
      .9280      .1573     3.1488
     -.7920     1.1573     2.6716
      .1280     1.1573     3.1567
      .9280     1.1573     3.5785
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY
LP_Soc   .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          LP_Soc   CS

------ END MATRIX -----
```

13 SPSS Process Output: PP moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : PP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8254      .6813      .1926   149.6712     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4212      .0316   108.2816      .0000     3.3589     3.4835
CS            .6484      .0408    15.8854      .0000      .5680      .7289
PP            .2920      .0489     5.9668      .0000      .1955      .3884
Int_1        -.0391      .0432     -.9043      .3669     -.1242      .0461

Product terms key:
 Int_1    :        CS       x        PP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0012      .8178     1.0000   210.0000      .3669

----------
    Focal predict: CS       (X)
          Mod var: PP       (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS          PP          CL          .
BEGIN DATA.
     -.7920     -.6207     2.7072
      .1280     -.6207     3.3261
      .9280     -.6207     3.8642
     -.7920     -.0652     2.8866
      .1280     -.0652     3.4855
      .9280     -.0652     4.0063
     -.7920      .7126     3.1378
      .1280      .7126     3.7087
      .9280      .7126     4.2052
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY       PP
.

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP       CS

------ END MATRIX -----
```

14 SPSS Process Output: PP moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : PP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7956      .6330      .2551   120.7461     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7226      .0364   102.3810      .0000     3.6509     3.7943
CS            .7406      .0470    15.7647      .0000      .6479      .8332
PP            .1603      .0563     2.8470      .0049      .0493      .2713
Int_1        -.0740      .0497    -1.4891      .1380     -.1720      .0240

Product terms key:
 Int_1    :        CS       x        PP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0039     2.2174     1.0000   210.0000      .1380
----------
```

```
Focal predict: CS       (X)
          Mod var: PP       (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS          PP          CL_Loy     .
BEGIN DATA.
     -.7920     -.6207     3.0002
      .1280     -.6207     3.7238
      .9280     -.6207     4.3530
     -.7920     -.0652     3.1218
      .1280     -.0652     3.8076
      .9280     -.0652     4.4039
     -.7920      .7126     3.2921
      .1280      .7126     3.9249
      .9280      .7126     4.4752
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY       PP
.

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP       CS

------ END MATRIX -----
```

15 SPSS Process Output: PP moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : PP

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6349      .4031      .6267    47.2650     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6676      .0570    46.8041      .0000     2.5553     2.7800
CS            .4181      .0736     5.6782      .0000      .2730      .5633
PP            .6211      .0883     7.0361      .0000      .4471      .7951
Int_1         .0483      .0779      .6204      .5357     -.1053      .2019

Product terms key:
 Int_1    :        CS       x        PP

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0011      .3849     1.0000   210.0000      .5357
----------
```

```
Focal predict: CS       (X)
          Mod var: PP       (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS          PP          CL_Pro     .
BEGIN DATA.
     -.7920     -.6207     1.9747
      .1280     -.6207     2.3318
      .9280     -.6207     2.6423
     -.7920     -.0652     2.2985
      .1280     -.0652     2.6803
      .9280     -.0652     3.0123
     -.7920      .7126     2.7518
      .1280      .7126     3.1682
      .9280      .7126     3.5302
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY       PP
.

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP       CS

------ END MATRIX -----
```

16 SPSS Process Output: PP_Prod moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : PP_Prod

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8233      .6779      .1947   147.3205     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4143      .0323   105.6912      .0000     3.3507     3.4780
CS            .6400      .0420    15.2323      .0000      .5572      .7229
PP_Prod       .2191      .0383     5.7263      .0000      .1437      .2945
Int_1        -.0064      .0346     -.1837      .8544     -.0745      .0618

Product terms key:
 Int_1    :        CS       x        PP_Prod

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0001      .0337     1.0000   210.0000      .8544
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Prod  (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Prod    CL         .
BEGIN DATA.
     -.7920     -.8621     2.7143
      .1280     -.8621     3.3081
      .9280     -.8621     3.8245
     -.7920     -.0621     2.8935
      .1280     -.0621     3.4827
      .9280     -.0621     3.9951
     -.7920      .9379     3.1176
      .1280      .9379     3.7010
      .9280      .9379     4.2082
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
PP_Prod  .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Prod  CS

------ END MATRIX -----
```

17 SPSS Process Output: PP_Prod moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : PP_Prod

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7914      .6263      .2597   117.3264     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7192      .0373    99.6731      .0000     3.6456     3.7927
CS            .7480      .0485    15.4128      .0000      .6523      .8437
PP_Prod       .0979      .0442     2.2153      .0278      .0108      .1850
Int_1        -.0405      .0399    -1.0133      .3121     -.1192      .0383

Product terms key:
 Int_1    :        CS       x        PP_Prod

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0018     1.0267     1.0000   210.0000      .3121
----------
```

```
    Focal predict: CS       (X)
          Mod var: PP_Prod  (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Prod    CL_Loy     .
BEGIN DATA.
     -.7920     -.8621     3.0147
      .1280     -.8621     3.7350
      .9280     -.8621     4.3613
     -.7920     -.0621     3.1187
      .1280     -.0621     3.8092
      .9280     -.0621     4.4096
     -.7920      .9379     3.2486
      .1280      .9379     3.9019
      .9280      .9379     4.4699
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY
PP_Prod  .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Prod  CS

------ END MATRIX -----
```

18 SPSS Process Output: PP_Prod moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : PP_Prod

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6584      .4335      .5947    53.5682     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6523      .0565    46.9721      .0000     2.5410     2.7636
CS            .3700      .0734     5.0385      .0000      .2253      .5148
PP_Prod       .5220      .0669     7.8067      .0000      .3902      .6538
Int_1         .0789      .0604     1.3061      .1929     -.0402      .1980

Product terms key:
 Int_1    :        CS       x        PP_Prod

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0046     1.7060     1.0000   210.0000      .1929
----------
```

```
    Focal predict: CS       (X)
          Mod var: PP_Prod  (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Prod    CL_Pro     .
BEGIN DATA.
     -.7920     -.8621     1.9631
      .1280     -.8621     2.2409
      .9280     -.8621     2.4825
     -.7920     -.0621     2.3307
      .1280     -.0621     2.6666
      .9280     -.0621     2.9587
     -.7920      .9379     2.7902
      .1280      .9379     3.1987
      .9280      .9379     3.5540
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY
PP_Prod  .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Prod  CS

------ END MATRIX -----
```

19 SPSS Process Output: PP_Spe moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : PP_Spe

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8157      .6654      .2022   139.1870     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.4303      .0319   107.5209      .0000     3.3674     3.4931
CS           .6835      .0404    16.9267      .0000      .6039      .7631
PP_Spe       .1671      .0350     4.7751      .0000      .0981      .2361
Int_1       -.0772      .0365    -2.1149      .0356     -.1492     -.0052

Product terms key:
 Int_1    :        CS       x        PP_Spe

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0071     4.4729     1.0000   210.0000      .0356
----------
Focal predict: CS       (X)
          Mod var: PP_Spe   (W)

Conditional effects of the focal predictor at values of the moderator(s):

     PP_Spe     Effect         se          t          p       LLCI       ULCI
    -1.1318      .7708      .0525    14.6789      .0000      .6673      .8744
     -.1318      .6936      .0398    17.4171      .0000      .6151      .7721
      .8682      .6164      .0555    11.1085      .0000      .5070      .7258

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     PP_Spe     Effect         se          t          p       LLCI       ULCI
    -1.3318      .7863      .0575    13.6630      .0000      .6728      .8997
    -1.1413      .7716      .0527    14.6295      .0000      .6676      .8755
     -.9508      .7569      .0485    15.6191      .0000      .6613      .8524
     -.7603      .7422      .0448    16.5483      .0000      .6537      .8306
     -.5699      .7275      .0421    17.2847      .0000      .6445      .8104
     -.3794      .7127      .0403    17.6655      .0000      .6332      .7923
     -.1889      .6980      .0398    17.5547      .0000      .6197      .7764
      .0016      .6833      .0404    16.9196      .0000      .6037      .7630
      .1920      .6686      .0422    15.8579      .0000      .5855      .7518
      .3825      .6539      .0450    14.5455      .0000      .5653      .7426
      .5730      .6392      .0486    13.1549      .0000      .5434      .7350
      .7635      .6245      .0529    11.8067      .0000      .5202      .7288
      .9539      .6098      .0577    10.5654      .0000      .4960      .7236
     1.1444      .5951      .0629     9.4552      .0000      .4710      .7192
     1.3349      .5804      .0685     8.4767      .0000      .4454      .7154
     1.5254      .5657      .0742     7.6198      .0000      .4193      .7121
     1.7158      .5510      .0802     6.8703      .0000      .3929      .7091
     1.9063      .5363      .0863     6.2138      .0000      .3662      .7064
     2.0968      .5216      .0925     5.6368      .0000      .3392      .7040
     2.2873      .5069      .0989     5.1275      .0000      .3120      .7018
     2.4777      .4922      .1053     4.6759      .0000      .2847      .6997
     2.6682      .4775      .1117     4.2735      .0000      .2572      .6977

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS          PP_Spe      CL          .
BEGIN DATA.
     -.7920    -1.1318     2.6307
      .1280    -1.1318     3.3399
      .9280    -1.1318     3.9565
     -.7920     -.1318     2.8589
      .1280     -.1318     3.4971
      .9280     -.1318     4.0520
     -.7920      .8682     3.0871
      .1280      .8682     3.6542
      .9280      .8682     4.1474
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY       PP_Spe    .

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
          PP_Spe   CS

------ END MATRIX -----
```

20 SPSS Process Output: PP_Spe moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : PP_Spe

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7972      .6356      .2533   122.0966     3.0000   210.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.7311      .0357   104.5091      .0000     3.6608     3.8015
CS           .7516      .0452    16.6337      .0000      .6625      .8407
PP_Spe       .0985      .0392     2.5154      .0126      .0213      .1757
Int_1       -.1093      .0408    -2.6751      .0081     -.1898     -.0287

Product terms key:
 Int_1    :        CS       x        PP_Spe

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0124     7.1563     1.0000   210.0000      .0081
----------
Focal predict: CS       (X)
         Mod var: PP_Spe    (W)

Conditional effects of the focal predictor at values of the moderator(s):

     PP_Spe     Effect         se          t          p       LLCI       ULCI
    -1.1318      .8753      .0588    14.8944      .0000      .7594      .9911
     -.1318      .7660      .0446    17.1877      .0000      .6781      .8539
      .8682      .6567      .0621    10.5754      .0000      .5343      .7791

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:
     PP_Spe     Effect         se          t          p       LLCI       ULCI
    -1.3318      .8971      .0644    13.9307      .0000      .7702     1.0241
    -1.1413      .8763      .0590    14.8477      .0000      .7600      .9927
     -.9508      .8555      .0542    15.7763      .0000      .7486      .9624
     -.7603      .8347      .0502    16.6312      .0000      .7357      .9336
     -.5699      .8139      .0471    17.2805      .0000      .7210      .9067
     -.3794      .7931      .0452    17.5646      .0000      .7040      .8821
     -.1889      .7722      .0445    17.3544      .0000      .6845      .8600
      .0016      .7514      .0452    16.6259      .0000      .6623      .8405
      .1920      .7306      .0472    15.4842      .0000      .6376      .8236
      .3825      .7098      .0503    14.1084      .0000      .6106      .8090
      .5730      .6890      .0544    12.6703      .0000      .5818      .7962
      .7635      .6682      .0592    11.2879      .0000      .5515      .7849
      .9539      .6474      .0646    10.0225      .0000      .5200      .7747
     1.1444      .6265      .0704     8.8954      .0000      .4877      .7654
     1.3349      .6057      .0766     7.9053      .0000      .4547      .7568
     1.5254      .5849      .0831     7.0403      .0000      .4211      .7487
     1.7158      .5641      .0897     6.2853      .0000      .3872      .7410
     1.9063      .5433      .0966     5.6251      .0000      .3529      .7337
     2.0968      .5225      .1035     5.0456      .0000      .3183      .7266
     2.2873      .5017      .1106     4.5347      .0000      .2836      .7197
     2.4777      .4808      .1178     4.0821      .0001      .2486      .7130
     2.6682      .4600      .1250     3.6793      .0003      .2135      .7065

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CS         PP_Spe     CL_Loy     .
BEGIN DATA.
     -.7920    -1.1318     2.9265
      .1280    -1.1318     3.7317
      .9280    -1.1318     4.4320
     -.7920     -.1318     3.1115
      .1280     -.1318     3.8162
      .9280     -.1318     4.4290
     -.7920      .8682     3.2966
      .1280      .8682     3.9007
      .9280      .8682     4.4261
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY       PP_Spe   .

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: The following variables were mean centered prior to analysis:
         PP_Spe   CS

------ END MATRIX -----
```

21 SPSS Process Output: PP_Spe moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : PP_Spe

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .5891      .3470      .6856    37.1970     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6780      .0587    45.5919      .0000     2.5622     2.7938
CS            .5131      .0743     6.9021      .0000      .3666      .6597
PP_Spe        .3385      .0644     5.2551      .0000      .2115      .4655
Int_1         .0030      .0672      .0444      .9646     -.1295      .1355

Product terms key:
 Int_1    :        CS       x        PP_Spe

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0000      .0020     1.0000   210.0000      .9646
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Spe    (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS          PP_Spe      CL_Pro      .
BEGIN DATA.
     -.7920    -1.1318      1.8912
      .1280    -1.1318      2.3602
      .9280    -1.1318      2.7679
     -.7920     -.1318      2.2274
      .1280     -.1318      2.6991
      .9280     -.1318      3.1093
     -.7920      .8682      2.5635
      .1280      .8682      3.0380
      .9280      .8682      3.4506
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY
PP_Spe    .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Spe   CS

------ END MATRIX -----
```

22 SPSS Process Output: PP_Aware moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : PP_Aware

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7943      .6310      .2230   119.6829     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4051      .0328   103.6796      .0000     3.3404     3.4698
CS            .7361      .0412    17.8585      .0000      .6549      .8174
PP_Aware      .0534      .0449     1.1889      .2358     -.0352      .1420
Int_1         .0608      .0516     1.1794      .2396     -.0408      .1625

Product terms key:
 Int_1    :        CS       x        PP_Aware

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0024     1.3911     1.0000   210.0000      .2396
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Aware (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Aware   CL         .
BEGIN DATA.
     -.7920     -.9455     2.8172
      .1280     -.9455     3.4415
      .9280     -.9455     3.9844
     -.7920      .0545     2.8224
      .1280      .0545     3.5027
      .9280      .0545     4.0942
     -.7920      .7212     2.8259
      .1280      .7212     3.5435
      .9280      .7212     4.1675
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
PP_Aware .

********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Aware CS

------ END MATRIX -----
```

23 SPSS Process Output: PP_Aware moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : PP_Aware

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7862      .6181      .2654   113.3178     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7005      .0358   103.2930      .0000     3.6299     3.7712
CS            .7881      .0450    17.5277      .0000      .6995      .8768
PP_Aware      .0377      .0490      .7693      .4426     -.0589      .1343
Int_1         .0432      .0563      .7687      .4429     -.0677      .1542

Product terms key:
 Int_1    :        CS       x        PP_Aware

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0011      .5910     1.0000   210.0000      .4429
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Aware (W)

Data for visualizing the conditional effect of the focal
predictor:
Paste text below into a SPSS syntax window and execute
to produce plot.

DATA LIST FREE/
   CS         PP_Aware   CL_Loy     .
BEGIN DATA.
     -.7920     -.9455     3.0731
      .1280     -.9455     3.7606
      .9280     -.9455     4.3584
     -.7920      .0545     3.0766
      .1280      .0545     3.8038
      .9280      .0545     4.4362
     -.7920      .7212     3.0789
      .1280      .7212     3.8326
      .9280      .7212     4.4881
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY       PP_Aware .

*********************** ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in
output:
  95.0000

NOTE: The following variables were mean centered prior
to analysis:
          PP_Aware CS

------ END MATRIX -----
```

24 SPSS Process Output: PP_Aware moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : PP_Aware

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .5123      .2624      .7744    24.9043     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6665      .0612    43.5723      .0000     2.5458     2.7871
CS            .6061      .0768     7.8918      .0000      .4547      .7575
PP_Aware      .0927      .0837     1.1073      .2694     -.0723      .2577
Int_1         .1048      .0961     1.0903      .2768     -.0847      .2942

Product terms key:
 Int_1    :        CS       x        PP_Aware

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0042     1.1888     1.0000   210.0000      .2768
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Aware (W)

Data for visualizing the conditional effect of the focal
predictor:
Paste text below into a SPSS syntax window and execute to
produce plot.

DATA LIST FREE/
   CS         PP_Aware   CL_Pro     .
BEGIN DATA.
     -.7920     -.9455     2.1773
      .1280     -.9455     2.6438
      .9280     -.9455     3.0494
     -.7920      .0545     2.1870
      .1280      .0545     2.7499
      .9280      .0545     3.2394
     -.7920      .7212     2.1935
      .1280      .7212     2.8206
      .9280      .7212     3.3660
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY       PP_Aware .

*********************** ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in
output:
  95.0000

NOTE: The following variables were mean centered prior to
analysis:
          PP_Aware CS

------ END MATRIX -----
```

25 SPSS Process Output: PP_Pri moderating CS and CL

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL
    X  : CS
    W  : PP_Pri

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8097      .6556      .2081   133.2590     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.4132      .0317   107.5819      .0000     3.3507     3.4757
CS            .7120      .0396    17.9805      .0000      .6339      .7901
PP_Pri        .1381      .0333     4.1482      .0000      .0725      .2038
Int_1        -.0052      .0310     -.1684      .8665     -.0664      .0560

Product terms key:
 Int_1    :        CS       x        PP_Pri

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0000      .0283     1.0000   210.0000      .8665
----------
```

```
    Focal predict: CS       (X)
          Mod var: PP_Pri   (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Pri     CL         .
BEGIN DATA.
     -.7920     -.8738     2.7250
      .1280     -.8738     3.3842
      .9280     -.8738     3.9575
     -.7920      .1262     2.8673
      .1280      .1262     3.5217
      .9280      .1262     4.0908
     -.7920      .9262     2.9811
      .1280      .9262     3.6317
      .9280      .9262     4.1974
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL       BY
PP_Pri   .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Pri   CS

------ END MATRIX -----
```

26 SPSS Process Output: PP_Pri moderating CS and CL_Loy

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Loy
    X  : CS
    W  : PP_Pri

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Loy

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7919      .6272      .2591   117.7577     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7089      .0354   104.7742      .0000     3.6392     3.7787
CS            .7731      .0442    17.4985      .0000      .6860      .8602
PP_Pri        .0884      .0372     2.3804      .0182      .0152      .1617
Int_1        -.0177      .0346     -.5117      .6094     -.0860      .0505

Product terms key:
 Int_1    :        CS       x        PP_Pri

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0005      .2619     1.0000   210.0000      .6094
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Pri    (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Pri     CL_Loy     .
BEGIN DATA.
     -.7920     -.8738     3.0071
      .1280     -.8738     3.7326
      .9280     -.8738     4.3635
     -.7920      .1262     3.1096
      .1280      .1262     3.8188
      .9280      .1262     4.4355
     -.7920      .9262     3.1916
      .1280      .9262     3.8877
      .9280      .9262     4.4931
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Loy   BY
PP_Pri    .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Pri   CS

------ END MATRIX -----
```

27 SPSS Process Output: PP_Pri moderating CS and CL_Pro

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : CL_Pro
    X  : CS
    W  : PP_Pri

Sample
Size:  214

**************************************************************************
OUTCOME VARIABLE:
 CL_Pro

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .5613      .3150      .7191    32.1961     3.0000   210.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6739      .0590    45.3406      .0000     2.5576     2.7901
CS            .5592      .0736     7.5970      .0000      .4141      .7043
PP_Pri        .2624      .0619     4.2388      .0000      .1404      .3844
Int_1         .0260      .0577      .4509      .6525     -.0877      .1397

Product terms key:
 Int_1    :        CS       x        PP_Pri

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0007      .2033     1.0000   210.0000      .6525
----------
```

```
Focal predict: CS       (X)
          Mod var: PP_Pri    (W)

Data for visualizing the conditional
effect of the focal predictor:
Paste text below into a SPSS syntax window
and execute to produce plot.

DATA LIST FREE/
   CS         PP_Pri     CL_Pro     .
BEGIN DATA.
     -.7920     -.8738     2.0197
      .1280     -.8738     2.5133
      .9280     -.8738     2.9424
     -.7920      .1262     2.2615
      .1280      .1262     2.7790
      .9280      .1262     3.2289
     -.7920      .9262     2.4549
      .1280      .9262     2.9915
      .9280      .9262     3.4581
END DATA.
GRAPH/SCATTERPLOT=
 CS       WITH     CL_Pro   BY
PP_Pri    .

*********************** ANALYSIS NOTES AND
ERRORS ************************

Level of confidence for all confidence
intervals in output:
  95.0000

NOTE: The following variables were mean
centered prior to analysis:
          PP_Pri   CS

------ END MATRIX -----
```