Investigating the factors influencing customer loyalty within South Africa's ICT industry

RD Brown

https://orcid.org/0000-0002-6871-2915

Mini-dissertation accepted in partial fulfilment of the requirements for the degree *Master of Business Administration* at the North-West University

Supervisor: Dr JD Landsberg

Graduation: April 2024

Acknowledgements

I want to thank our heavenly Father for providing me with this wonderful opportunity to pursue my MBA degree and for giving me the strength, endurance, and knowledge to finish this lifelong dream of mine within two years. Nothing would be possible without God, and I owe my life to Him. The following Bible verse is close to my heart, and I read it in challenging times: "But as for you, be strong and do not give up, for your work will be rewarded" (2 Chronicles 15:7).

Secondly, I want to thank my wonderful and loving wife, Liann Brown, for supporting me throughout this challenging journey. Without her support and love, I would not have made it. I love you and thank you for being there for me through the best and worst times. I will always be there for you and give you and our children one day my unconditional love. Everything I do is for you and will always be that way. You are my rock, best friend, and partner for the rest of my time. You inspire me to be a better man every day for you. I promise to love you each day more than the previous day, and this one is for you.

I want to thank my family for supporting me over the past few years. I would not have made it this far without your love and support. You all taught me what love, hard work, and kindness are in life.

Mom and Dad (Greer and Wayne Brown); thank you for raising me and teaching me that life is what you make of it. You granted me lifetime opportunities and were always there for me through thick and thin. Thank you for all the sacrifices you made for me and Je-Nicque; we would not have been the people we are today without you two. I also want to thank Je-Nicque, my sister, for all your love and support; you are becoming a wonderful woman, one who is positive, loving, and humble.

I want to thank Ilene, Bruce and Je-Vaine Scholtz for all your love and support. You were always there for us and never turned your back, even for a second when times were tough. I also want to thank my grandmas, Lettie Garson, Irene Brown and then my grandpa, Norman Brown, for raising us all and teaching us all the most significant values anyone can ask for. Lastly, I want to thank my new family, my mother-in-law

Ann Le Roux, Conrad and Marli Taljaard, Dedre and Ruan Pekelharing, and Granny Elsa for providing Liann and me with unconditional love and support.

A special thanks to MiRO's management and directors, Philip Schoeman (Head of Product), Jonathan Newton (Commercial Director), and Marco de Ru (Managing Director), for supporting and believing in me throughout the last two years. Without you, I would not have had such an excellent opportunity. You taught me everything I know about business, and I admire your hard work, ethics, and leadership. I want to become as strong of a leader as you three are, as I am blessed to have you three as leaders.

I also want to thank the product management team for supporting me and this journey. You guys were rocks during my studies. Thank you and continue to be such great people in the workplace and life.

I want to thank the NWU business school team, especially my study leader, Dr. Johann Landsberg, for all your advice. You helped me throughout this challenging journey and stood by me throughout the difficult times. I also want to thank my MBA team, the Business Conquerors; I was blessed to have made lifelong friends. A special thanks also goes to Cecile van Zyl for the language editing and ensuring my dissertation is of high standards.

I want to thank all the participants who agreed to participate in this study. The information provides insightful ideas and further assists the industry to grow and be sustainable as it is such a fundamental sector.

Lastly, I thank and apologise to the person who will read this very long but hopefully informative dissertation that can make a slight difference in life and the industry.

Abstract

The study investigates the factors influencing client loyalty within South Africa's information and communication technology (ICT) industry. The ICT industry is vast, meaning the focus will be on telecommunication providers within the country. The study aims to provide a comprehensive overview of all the various factors that contribute to the loyalty levels of consumers and determine what challenging aspects internet service providers (ISPs) face daily and how to overcome them.

Connectivity is an essential part of the new digitalisation world, and the pandemic has significantly boosted the telecommunication industry, as many companies have had to adapt and convert all their operations to online platforms, meaning a significant spike in connectivity occurred as many individuals had to work from home. After the pandemic, the need for connectivity remained high; however, with the demand that increased, competition also increased at a rapid pace, causing a price war within the telecommunication industry. The study includes literature evidence that there are many opportunities still within the telecommunication space; however, ISPs must focus on aspects such as the four marketing Ps (price, place, promotion and product) as well as the four marketing Cs (customer, convenience, communication, and cost) to understand the market, the clients and demand.

The study is based on a qualitative research approach. All data was obtained through interviews with several managers and directors of well-established ISPs servicing connectivity to multiple provinces within South Africa. Only six interviews were required to obtain the information to address the topic. The data was collected through semi-structured face-to-face interviews and analysed through coding and categorisation.

The interview data was divided into several main themes, including the industry's growth, client loyalty, price sensitivity, service quality and challenging problems within the sector. Each main theme consisted of several sub-themes contributing to the study's overall objective.

The study revealed that several factors contribute toward client loyalty and that ISPs should remain focused on what they are good at, have a growing mindset, adapt to any circumstances, and invest in future technologies to ensure they have a competitive edge. Furthermore, the study also indicated that the competition is significantly high, weak infrastructure affects service delivery, price sensitivity is high among South Africans, and the price war between ISPs is here to stay. The difference is that there is a silver lining as ISPs are becoming more creative to ensure they grow and develop despite all the challenges.

Furthermore, the study also includes several objectives, such as South Africa's weak infrastructure affecting service delivery, high poverty levels that slow down the development of the country's ICT expansion, the lack of ICT skills, competition levels and how it affects clients' decision-making, the effects of the global chipset shortage and price sensitivity levels. The study's objectives addressed the overall research question. They provided enough evidence to state that aspects of price, service quality, relationships, trust, personalised services, diversification, and many more are vital to improving client loyalty.

Keywords: Client loyalty, telecommunication, service quality, ISP, price sensitivity, ICT, wireless and fibre

Table of Contents

List of Tables

List of Figures

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 Introduction and background

The information and communication technology (ICT) industry plays a crucial role in the development and economic growth of both developed and industrialised countries (Afawubo & Noglo 2022: 6). Studies have shown that the positive impact of ICT on a country's economy is significant, including the improvement of the population's quality of life, increased productivity, and facilitating conducting business (Appiah-Otoo & Song, 2021:3; Bahrini & Qaffas, 2019:2). Moon (2021) highlights that during the COVID-19 pandemic, broadband connectivity became a vital driver for sustained economic activity. It enabled businesses to continue their daily operations, reducing the risk of job loss during the crisis.

The concept of ICT refers to the integration of information and communication technologies. Its purpose is to collect, store, manage, and transmit data (Ţurcanu 2017:77). The ICT industry includes three main groups of activities which are manufacturing, ICT trade and ICT service industry. These groups include computers, electronic, and optical products, telecommunication services, computer programming and information services (Keček *et al*., 2016:134-135). Internet service providers (ISPs) fall under telecommunications services and offer various internet packages at different speeds to customers for a monthly fee (Chiou, 2004:685; Madushanka *et al.,* 2020:19). According to Molatelo *et al.* (2022:15) the ICT sector plays a significant role in countries' economic growth, as evidenced by its contribution of approximately R93 billion, or 3 percent, to South Africa's GDP. The ICT sector has grown significantly since the global pandemic, as all businesses required internet to continue with their operations.

Many businesses had to adopt a work-from-home strategy for their employees. The demand for connectivity in South Africa skyrocketed overnight. Data traffic spiked as people turned to the internet for work, entertainment, and online education (Moyo *et al*., 2021:1). To meet this demand, service providers needed to quickly deploy affordable connectivity solutions that could onboard new clients while maintaining existing ones (Moyo *et al*., 2021:1). It has not been easy, but South Africa's service

providers have risen to the challenge and helped keep businesses moving forward (Moyo *et al*., 2021:2).

The COVID-19 pandemic highlighted how important wireless internet connectivity is as it allowed people worldwide to keep track of the virus's spread, which assisted the healthcare industry immensely. In addition, connectivity has been and will continue to be essential in enabling businesses, schools, and various sectors to operate efficiently, ultimately leading to economic growth (Saeed *et al*., 2020:6). Mobile phones and internet connectivity have become very popular and essential in today's day and age. As a result, they contributed heavily toward infrastructure investments made by other countries, which ultimately led to the gross domestic product (GDP) of South Africa improving significantly (Jorgenson *et al*., 2016:385). However, mobile phones and data comes at a price.

As per Chinembiri (2020:1) and Gillwald *et al*. (2018:6), it is evident that mobile data prices in South Africa are exorbitantly high, and unfortunately, only 50 percent of the population can access the internet. The telecommunication industry in South Africa is divided into two critical markets, the business-to-business (B2B) and business-to-customer (B2C), with two primary infrastructures – fixed network and wireless. Fixed networks, which typically include digital subscriber lines (DSL) and fibre, and wireless networks, which usually comprise routers or connectivity devices that can take a SIM card (Gao, 2021:1113), are the two main types of infrastructures used.

Moreover, in addition to the two primary types of infrastructure, the telecommunication sector continually develops innovative technologies each year, rapidly expanding its technology landscape. These newly released technologies assist telecom service providers in rebuilding and redesigning their networks and business strategies (Dhir *et al*., 2020:49). Furthermore, information technology, digitalisation and mobile connectivity are effective drivers for the growth of the telecom industry, especially in countries such as South Africa (Dhir *et al*., 2020:49).

In South Africa the telecommunication sector has grown tremendously over the years due to the increasing internet penetration, companies wanting to communicate internationally, customer demand, requirements for improved network coverage in

rural areas and high mobile penetration. South Africa's mobile networks, in 2005, had approximately 27.76 million users, which increased to approximately 91.7 million users during the years. This means significant mobile and smartphone consumer growth in South Africa's telecom sector, especially in internet services, low-cost services, and mobile data. However, despite this significant spike in demand, South African consumers require effective services and high-speed data at reasonable prices that must be regulated continuously (Dhir *et al*., 2020:49).

The Independent Communications Authority of South Africa (ICASA) is taking strict initiatives to regulate connectivity prices to ensure consumer protection against abnormally high prices. The South African Telecommunications Regulatory Authority (SATRA) and the Department of Communications (DoC) provide significant support to ensure the development of internet connectivity throughout the country so that all citizens and businesses have access to basic connectivity services, 3G/4G and 5G coverage and improved infrastructure for smartphone adoption and usage (Dhir *et al*., 2020:49).

Many consumers in South Africa need help with the high data prices set by telecom operators, which could decrease subscribers. People seem unwilling to pay the high data fees, which could create a market opportunity for ISPs or Wireless Internet Service Providers (WISPs) to offer affordable and quality data services. This could lead to an increased demand for fibre and fixed broadband, which could benefit both businesses and consumers. It is essential to have access to reliable and affordable data services, and several ISPs and WISPs are stepping up to meet this need (Gao, 2021:1113).

An article by Gao (2021:1124) sheds light on how South Africa's ICT sector is experiencing significant changes. The primary fibre providers are now extending their services to many parts of the country, even in areas with lower-income populations. They offer more affordable monthly packages, which is excellent news for South Africa. However, this expansion is creating obstacles for smaller WISPs that operate on a smaller scale. To compete with larger ISPs and offer low rates to their customers, these WISPs need support and assistance.

Some prominent telecom players in South Africa include Vodacom, MTN, Airtel Africa, Cell C and Telcom SA. South Africa also announced the launch of the new 5G services, and Helios Towers agreed to build over 1000 towers to ensure the wide spread of 5G connectivity throughout the country. Some large mobile operators have also provided international fibre connectivity and fibre backbone networks (Dhir *et al*., 2020:49).

The intense competition within the South African ICT market has sparked a price war, prompting service providers to explore ways to foster customer loyalty (Gao, 2021:1122). According to Chiou (2004:686), client satisfaction is a crucial factor in establishing loyalty towards a particular brand, company, or product. This preliminary literature review aims to explore the terms ICT and connectivity, with a focus on customer loyalty and how the marketing Ps (price, product, place, and promotion) can help an ISP or WISP achieve exceptional levels of customer satisfaction. By examining the existing literature on this topic, the review seeks to provide insight into the factors that influence customer loyalty in the ICT industry and how service providers can leverage these factors to improve customer retention and satisfaction.

Competition in the South African ICT market is fierce, with an ongoing price war in progress. Service providers must understand why customers are loyal to them to remain competitive. Customer satisfaction is critical for loyalty toward a particular brand, company, or product (Azizan & Yusr, 2019:97; Chiou, 2004:686). Service providers can use the marketing mix to achieve exceptional customer satisfaction. The marketing mix is a set of variables consisting of price, product, place, and promotion that are referred to as the four Ps of marketing (Riyadi & Rangkuti, 2016: 519).

However, despite the great value the 4Ps marketing mix provides companies, it is more focused on the seller or marketer. Therefore, the 4Ps were transformed into the 4Cs, which are more client and consumer oriented. The 4Cs marketing mix includes customer solutions, costs, convenience, and communication. This new strategy can be described as the company seeing themselves as selling the products or services, and customers see themselves as purchasing value or a solution that can satisfy their needs and solve their problems (Ozturkoglu, 2016:7).

Since literature is sparce, this study will be investigating the loyalty levels of consumers towards their internet service providers and the loyalty between service providers toward their ICT distributors in South Africa. To measure these loyalty levels, aspects such as customer satisfaction, service quality, pricing structures, and connectivity availability will be focused on. Throughout the years, the ICT industry in South Africa has grown and evolved significantly, and the country has managed to become one of the leading ICT markets in Africa with a booming mobile industry, increased internet penetration and a spike in e-commerce activities.

The South African government has taken numerous initiatives to boost the ICT industry, which aims to provide affordable and accessible broadband to all South Africans in all regions. However, despite all these efforts, several challenges still need to be addressed, such as high data costs, low ICT literacy levels and weak infrastructure, to name a few. Overall, this study aims to provide valuable insights into the loyalty of customers and service providers. By understanding the numerous factors affecting loyalty levels, the researcher can identify areas where improvements can be made, ultimately leading to a sustainable and more effective ICT industry in South Africa.

1.2 Problem statement

The study will primarily focus on internet service providers as the ICT industry is exceptionally vast. The main constraint that will be analysed throughout the study is the lack of client loyalty within the ICT industry among customers and businesses, which is mainly due to price sensitivity. Even when the provided services are effective and beneficial, customers tend to switch service providers for better pricing (Morgan & Govender, 2017:3). South Africa has the most sophisticated telecommunication infrastructure compared to other African countries (David & Grobler, 2020:1415). However, despite having more sophisticated infrastructures, the country needs help with numerous challenges, such as poor network quality and high mobile data costs. These challenges directly affect customers' service quality expectations as it ultimately creates high frustration levels due to their daily communication needs and requirements not being fulfilled (Mpwanya & Muapi, 2019:68).

According to Morgan and Govender (2017:2), client loyalty could decrease if the services provided do not meet the client's requirements or if the client can find better quality services from another provider. In South Africa, many consumers would like better services and prices offered by internet service providers. Consequently, customers do not develop loyalty towards these providers as they can quickly switch to a more dependable service provider with superior quality standards (SA Telco Sentiment Index, 2019).

Furthermore, because no tying contracts are within the mobile prepaid marketing in South Africa, consumers can quickly and easily change between various internet service providers, ultimately decreasing loyalty. The client satisfaction levels and maintaining loyalty are mainly based on the cost of the client moving to an alternative service provider (Mntande *et al*., 2022:2).

In South Africa, the affordability of ICT equipment is a crucial factor that influences the demand for connectivity. As a low-income country, expensive products and services can reduce the demand for ICT services (Gillwald *et al*., 2018:6). Broadband internet connectivity is an affordable communication service, but the costs of physical networking equipment and data remain high. According to Gillwald *et al*. (2018:7), approximately 36 percent of South Africans cannot afford smart devices, and 15 percent of the population considers connectivity too costly.

Additionally, approximately 47 percent of South Africans limit their usage of internet connectivity due to the high cost of data. For service providers, the inability of South Africans to afford connectivity services presents a significant challenge. This struggle to keep up with low market prices and the expense of improving infrastructure is highlighted by Mothobi and Gillwald (2018:4).

South Africa has ranked 148th on the affordability scale of mobile data prices. The average cost for 1 Gbps of data in the country is approximately R88.00, more expensive than neighbouring countries such as Nigeria, Kenya, Tanzania and Rwanda. The price per MB is significantly higher for South African citizens who cannot afford bulk data deals. Mobile rates for larger data packages, such as 60 to 80 Gbps, have become more affordable, but are bought mainly by wealthier South Africans. The

poor communities cannot afford data costs, creating a significant barrier to accessing reliable connectivity used for online learning and many more (Mailula, 2022:2).

The lack of ICT adoption among small-to-medium businesses (SMEs), particularly in rural areas, is a secondary constraint that ICT providers face. Informal settlements typically have underdeveloped infrastructure compared to urban areas, making deploying ICT infrastructure challenging for service providers (Bvuma & Marnewick, 2020:1-2). The main problem is the lack of connectivity, as these small businesses cannot operate effectively. However, due to limited infrastructure such as electricity, providing connectivity comes at a higher price since solar solutions and expensive batteries must be accounted for over and above the connectivity equipment. This issue ties back to the problem of affordability. It becomes challenging for service providers to offer affordable ICT equipment and rates if the expenditures are substantially higher than a typical urban ICT installation (Gillwald *et al*., 2018:6). Another challenging obstacle is the lack of ICT skills due to a deficiency of knowledge on operating the equipment, understanding its importance, and how businesses and personal lives can benefit from it (Bvuma & Marnewick, 2020:9-10).

Access to technology, specifically connectivity, is unequal in South Africa, especially in rural areas. Due to the pandemic, many educational institutions, including schools, were forced to provide education online to pupils. This was a significant challenge as many of South Africa's rural areas have limited internet and power supply access, meaning these schools were somewhat left behind during the digital revolutions. Educational institutions use several online tools to ensure education continues as usual. These tools include Microsoft Teams, Zoom, Blackboard and many more. These tools can only be utilised effectively if both the school or university and the pupil have access to stable internet connectivity and power supply, which comes back to the problem, as many of these rural communities do not have access to these luxuries. The online teaching process was beneficial for some, but challenging to others, causing learners in rural areas to fall behind in their well-deserved educational rights (Mhlanga *et al*., 2022:12).

The global semiconductor shortage has caused significant supply chain issues for ICT products, leading to a backlog in production. According to Tripathi (2022:17-18),

semiconductors are materials with electrical properties between conductors and insulators, including chips, optoelectronics, and sensors. Chipsets, which consist of electrical circuits made of transistors on a silicon surface, are essential in executing calculations on digital data to create outputs required for the operation of all ICT equipment.

Furthermore, due to the worldwide pandemic, a significant supply chain disruption occurred, severely affecting the telecoms industry in all countries. The semiconductor sector that manufactured microcontrollers, processors and chipsets experienced a bottleneck as most technology products require it. The chipset shortage rolled over to 2022, causing telecommunication companies to struggle to acquire stock, meaning they could not provide the necessary connectivity. This shortage is still experienced in 2023, and it is hampering the development of new innovative technologies such as 5G, IoT and many other trends within the telecommunication space (Yang, 2022:6).
The shortage of semiconductors has increased the cost of ICT equipment and the lead times for ICT goods have increased to 20 weeks, creating a considerable backlog (PWC, 2020). This global issue has affected various industries and has become a significant problem that requires immediate attention.

In South Africa, the main issue the people face is the high level of price sensitivity due to the ongoing economic challenges. The citizens require affordable ICT services while expecting exceptional customer service from their service providers (Dhir et al., 2020:49). However, several aspects need improvement to provide these services at affordable rates, such as the South African infrastructure, availability of equipment, skills, and education of ICT employees and customers, decreased poverty levels, and readiness to adopt new ICT equipment. Despite the constraints and issues faced by the industry, ICT service providers need to maintain customer loyalty. This study will contribute to knowledge of client loyalty within the ICT sector as few studies have determined what keeps clients loyal.

1.3 Research objectives

1.3.1 Primary objective

Investigating the factors influencing customer loyalty within South Africa's ICT industry. The following secondary objectives have been identified to achieve the above-mentioned primary objective.

1.3.2 Secondary objectives

Objective 1: To determine the impact of underdeveloped infrastructure on adopting ICT technology in South Africa.
Objective 2: To investigate the effect of high poverty rates on ICT expansion within South Africa.
Objective 3: To establish the impact of the lack of skills among ICT employees on the quality of service.
Objective 4: To investigate how competitive the connectivity market in South Africa is and how it affects the decision-making of the service provider and consumer.
Objective 5: To investigate the effect of global chipset shortages on service providers and distributors in South Africa.
Objective 6: To investigate how price-sensitive the South African market is toward connectivity packages.

1.4 Primary research question

Based on the primary research objective, a primary research question arises:
What factors influence customer loyalty within South Africa's ICT industry?

1.5 Research design and methodology

1.5.1 Research paradigm

Interpretivism is a study that aims to focus comprehensively on various aspects and variables of a particular topic or concept. Furthermore, interpretivism motivates that no person is the same and cannot be examined with only one method. People have their own opinions and assumptions regarding a concept. Interpretivism also considers

multiple cultures, circumstances, social differences, and experiences (Alharahsheh *et al*., 2020:41).

The interpretivism research paradigm focuses on human differences rather than the topic at hand. The researcher also indicated levels of empathy throughout the study to ensure that one completely understands the topic's point of view. The interpretive philosophy is used in organisations or management research, especially in marketing, human resource, and company behaviour (Saunders *et al*., 2009:137).

The research paradigm within the study was based on a blended approach of interpretivism, as there were face-to-face and online interviews with participants through platforms such as Zoom and Microsoft Teams. The participant chose the method of the interview to ensure higher convenience levels. The blended approach was critical for the researcher to obtain valuable information on customer loyalty within South Africa's ICT industry without any limitation on geographical demarcation.

1.5.2 Research approach

An inductive research approach refers to the collection of raw data by conducting several interviews with a target sample. The main objective was to attain helpful information and insight relating to different participants' experiences. Once the raw data was obtained, it was the responsibility of the researcher to transcribe and record this data into valuable information, which can ultimately lead to a formulation of a theory expressed as a conceptual framework (Saunders *et al*., 2009:146).

With an inductive research approach, the sole objective is the subject's experience, which drives the entire analysis. Furthermore, the inductive research approach is specifically intended to analyse raw data readings and generate a conception of the topic (Azungah, 2018:391 & Thomas, 2006:238).

The research approach of this study is inductive, as the researcher has obtained a significant amount of raw data from the different participants who have agreed to participate. Once the data was attained, the researcher exploited the raw data and

transformed it into valuable information, which, in turn, assisted in creating a theory or concept of the topic.

1.5.3 Research strategy

Within the qualitative study, the researcher focused on how the participants experienced the topic at hand from their point of view. The primary data collection method was the researcher because of all the interviews conducted with the participants (Teherani *et al*., 2015:669). Qualitative research is a method or way to describe and understand specific human behaviour, intentions, motives, and opinions on a topic (Draper, 2004:644).

Face-to-face (FTF) or online interviews through online platforms have been used as instruments, leading to this study being a semi-structured interview format. Furthermore, semi-structured interviews are known as synchronous communication, which refers to the live interview between the participant and the researcher. Benefits of live interviews are social cues such as body language, voice expressions and many more. This method led to the researcher gaining more information than bargained on. However, the valuable information gained was only possible due to the positive and relaxed interview environment (Opdenakker, 2006:3-4).

The semi-structured interviews consisted of 14 questions regarding the client loyalty topic. These types of interviews are flexible, as they focus on the *why* aspect instead of the *how* element, ultimately making it a popular and preferred method (Fylan, 2005:65-66). Lastly, due to the nature of this study and the topic, semi-structured meetings were conducted by asking open-ended questions to ensure the participants could completely express their feelings and opinions and for the researcher to obtain valuable insights.

1.5.4 Study population and sampling

Conducting a research study necessitates the collection of raw data from different individuals, which can only be achieved by reaching out to them and inquiring about their perspectives and beliefs. The target population signifies a particular group of

individuals within a specific field, whereas the study population refers to a subset of a specific target population. The sample frame, on the other hand, is a comprehensive list of individuals from which a sample section is drawn. The sample represents a distinct segment of the study population (Greener, 2008:47-48).

The target population for this study was businesses within the ICT industry. Due to the industry's broad scope, the study specifically concentrated on ISPs and WISPs that adhere to the POPI Act.

Greener (2008:48) suggests the use of two main approaches for selecting a sample: non-probability and probability sampling techniques. Non-probability sampling involves deliberately selecting desirable groups or individuals, rather than relying on random chance. In contrast, probability sampling relies entirely on the random selection of participants from a target population.

This study utilised a non-probability purposive sample. Purposive sampling involved the researcher exercising his discretion to select a specific sample, a method commonly used in qualitative research designs, when dealing with small groups or populations.

The study participants involved individuals holding key positions within businesses operating in the ISP and WISP sectors and consisted of directors, operations managers, and technology managers. The study targeted mid- and higher-level management, as these individuals possess valuable insights into their different companies' overall status and performance.

The following section covers the inclusion and exclusion criteria that were used in the study.

Inclusion and exclusion criteria play an essential role in identifying specific characteristics and attributes of the participants in the study. These criteria are of utmost importance in ensuring the research is of good quality and precision (Connelly, 2020:125).

The study's inclusion criteria for participant selection were as follows:

- WISPs and ISPs considered for participation in this ICT research study were required to comply with South Africa's POPI Act.
- WISPs and ISPs had to be operating within the borders of South Africa.
- Only companies registered with the Independent Communications Authority of South Africa (ICASA) were considered.
- Businesses with a minimum of over 100 monthly subscribers were considered.
- The businesses must have been operating within the connectivity market for at least two years.
- Participants had to hold positions in middle management or higher, as they typically possessed more insights into the company's sales and overall status.

The study's exclusion criteria for participant selection were as follows:

- VoIP, security, or software ICT businesses were not allowed to participate.
- Companies located outside South Africa were not allowed to participate, as the research focused on ICT loyalty challenges within the country.
- Companies not registered with ICASA were excluded from participation.
- WISPs and ISPs that do not comply with South Africa's POPI Act were not permitted to take part.
- Companies with fewer than 100 subscribers were not included.
- Companies with less than two years of experience in the connectivity market were excluded.
- Installers, technicians, and sales personnel were not allowed to participate, as their roles typically do not provide a comprehensive overview of the company's overall status.

The Protection of Personal Information Act (POPIA) assures the lawful processing and collecting of personal information within South Africa's borders. On 1 July 2021, the POPIA Act number 4 came into force, and it carries significant consequences for all parties involved if the collection, processing, and storage of personal information are not handled appropriately. The POPIA establishes distinct roles and responsibilities for those involved in the collection, use, transfer, and storage of personal data. These roles encompass the responsible party, the researcher, and the operator, who

processes personal information on behalf of the responsible party. Additionally, the organisation appoints an information officer, who is responsible for ensuring ongoing compliance with the POPIA regulations. Lastly, the data subject refers to the individual who participates in the research (Adams *et al*., 2021:1).

Moreover, the researcher conducting this study is committed to adhering to all the rules and regulations stipulated in the new POPI Act. The researcher obtained a list of potential participants from the researcher's organisation, wherein clients have willingly and voluntarily registered. The researcher filtered the list to narrow down the selection, specifically focusing on WISPs and ISP clients. From this filtered group, the researcher further narrowed the sample to include only mid-level management or higher positions. Once the population sample was determined, the researcher conducted interviews with a group of six participants selected from the list. The researcher maintained no prior relationship with any of the chosen participants to safeguard the integrity and trustworthiness of the data collected during the research.

In this study, a total of six participants were interviewed to avoid data saturation. Data saturation refers to the gathering of sufficient data, allowing for the transcription of valuable information. Excessive information may cause data saturation that does not contribute any new value to the study (Fusch *et al*., 2015:1408).

The last tactic employed to guarantee the data's internal validity was adequate participation in the data collection process. It's never easy to determine how many people need to be interviewed because it depends on the subject. As a general guideline, the date and the new information should feel saturated. When a researcher continually sees or hears the same things and no new information emerges from the newly gathered data, this is known as saturation (Fusch et al., 2015:1408, Merriam, 2009:219). To fully comprehend the phenomenon, sufficient time should be dedicated to collecting data and then firmly searching for deviations. In this study, data saturation was achieved after seven participants were interviewed.

Lastly, the researcher holds the role of a product manager at an ICT distributor that provides connectivity products to various WISPs and ISPs in South Africa. The potential conflict of interest was considered to be low as the selected participants for

the study did not have any existing relationship with the researcher, despite their registration with the ICT distributor.

The following section focuses on the development of a measuring instrument to collect the required data for the study.

1.5.5 Data analysis techniques

Data collection instruments are vital as they assist the researcher in determining all the data required to ensure the primary and secondary objectives are met (Oliver & Mahon, 2006:423). Interviews and observations are crucial instruments when conducting a qualitative study (Merriam & Tisdell, 2015:137).

This study was based on raw data from the specifically chosen sample within the ICT population group. The researcher depended on the cooperation of the participants that agreed to be part of the study, as they were required to share experiences, knowledge, and perspectives.

Finally, the researcher used a semi-structured interview by asking 14 relevant questions focused on the topic. These interviews assisted the researcher in obtaining valuable data from all the participants, which helped address the primary and secondary objectives of the study.

1.5.6 Collection of data

Data collection of smaller sample sizes, thorough investigations and qualitative interviews are used within interpretivism methods (Saunders *et al*., 2007:140). Data collection helps the researchers discover a phenomenon and various themes, and creates a conceptual framework (Saunders *et al*., 2019:153).

The researcher performed semi-structured interviews with the participants through either online meeting platforms or in person. The researcher obeyed the POPIA rules and regulations to ensure that all data collected is safe, secure, anonymous, and

confidential. The researcher will never provide personal details to a third party (Adams *et al*., 2021:1).

Before an interview was conducted, the researcher contacted the participant through an email format, ultimately asking the participant permission to take part and adding the interview questions, permission documents, POPIA information and more clarity about the study. Once the participant provided consent to take part, a date and time that were convenient for the participant were set up by the researcher.

Before an interview starts, the interviewer introduces himself and thanks the participant for his/her time and consideration. Once the introduction was complete, the researcher explained the topic and informed the participants that the meeting was recorded for transcribing purposes, but all information would be kept entirely confidential. The researcher also reminded the participant that participation in the study is not compulsory and that he or she may leave the interview at any time or even withdraw from the study.

1.5.7 Statistical analysis

As all the data was obtained through the semi-structured interviews, it was transcribed into valuable and applicable information to assist the researcher with the study's primary and secondary objectives. The processing of the data within a qualitative study relies on how the researcher portrays the findings. There are three methods. The findings have been written in the following ways: Using a narrative to express the situation, determining the primary themes of the interview, and lastly, how many times the primary themes were discussed during the interviews (Kumar, 2018:401).
Furthermore, content analysis refers to analysing all the interview content to obtain the essential themes. There are several steps the researcher had to follow to accomplish the study analysis (Kumar, 2018:402).

Step 1: Pinpoint and label the primary themes.
Step 2: Give each central theme a unique code, as these codes will allow the researcher to count the number of times a theme appears within the interview.

Step 3: Categorise all the answers under each theme. Once the themes were determined due to the study's thematic analysis, the researcher used a qualitative computer program named ATLAS.ti to provide valuable conclusions.
Step 4: Incorporate themes and feedback from all the participants into a complete and comprehensive report.

1.5.8 Trustworthiness of the study

Trustworthiness refers to whether the data obtained by the researcher, through specific methods, provides trustworthy findings. The findings will remain consistent even if numerous other researchers would have repeated the study. There are numerous threats to trustworthiness, such as biased opinions and participant and research errors (Saunders *et al.*,2009:192).

Construct validity signifies how the research methods measure the findings the researcher obtained (Saunders *et al.*,2009:193).

Trustworthiness in qualitative research is vital, and there are numerous criteria for the trustworthiness of findings. These criteria include credibility, dependability, transferability, and confirmability (Nowell *et al.*, 2017:4).

Credibility refers to the researcher providing all the findings to the study participants to confirm whether the results are valid and correct (Bryman *et al.*, 2015:44). Transferability was reached due to the data saturation.
Dependability means that the researcher guarantees that the research process is recorded, traceable, and well-documented for future study references (Bryman *et al.*, 2014:45). After the interviews were conducted, the researcher transcribed the data into usable and valuable information, which was then sent to the participant for final approval. This ensures that the transcripts are accurate and allows the participant to amend any of the information.

Transferability refers to the transfer of data from one study to another and is used to compare similarities between current and future studies (Bryman *et al.*, 2015:44). The

researcher ensured that the process is well documented and safely stored to ensure the data is reliable, trustworthy, and accurate.

Confirmability means the researchers' results and interpretations are captured correctly from all the raw data and not influenced by personal beliefs or values (Bryman *et al.*, 2014:45). The study went through an ethical clearance process, and the researcher's study leader ensured that all the captured data is accurate and transcribed accordingly.

1.5.9 Ethical considerations

This study has numerous ethical considerations because human participants are involved throughout the process. There were also ethical dilemmas such as insider research, including power differential and when the researcher has an established relationship with the participant. It is vital to obtain approval from the ethics board before any interviews are conducted to obtain the data (Fleming & Zegwaard, 2018:209-210).

Informed consent is essential to this study, specifically when humans are the core element of the study. The study participants had access to the interview questions and how the data would be utilised before the interview was conducted. The participants provided a signed consent form to participate in the study. The participants also knew and understood their rights to withdraw from the study (Fleming & Zegwaard, 2018:209-210).
The informed aspect included the following information (Fleming & Zegwaard, 2018:209-210).

- Researcher details and introduction.
- The reason why the study is being conducted.
- The type of data that was obtained from all the different participants.
- How the data was collected.
- The levels of commitment that are required from the participants.
- How the data is transcribed and used within the study.
- All the potential risks involved when participating.

The consent aspect included the following (Fleming & Zegwaard, 2018:209-211).

- The information about the participant's rights to withdraw their information at any given time or stage of the study.
- The certainty that the information provided is confidential and that everything will be anonymous.
- The understanding is that all information provided belongs to the participant.
- The right to request the data throughout the study.
- The right to request more in-depth information regarding the study.
- The contact details of the researcher, study leader and ethics committee chair.

Table 1: Possible ethical issues and solutions

Ethical issues that might occur	Solution provided by the researcher
The participants in the study may feel that the topic is not worth their time and attention.	The topic is specifically chosen to assist internet providers with the opportunity to learn more about the overall client loyalty levels within the telecommunication space. It could provide them with new ideas on increasing loyalty among their clients, especially in the stressful economic times experienced.
An ethical issue that could potentially provide a concerning element for the participants is the researcher using the company's laptop to store, share and transcribe the data provided.	To ensure high levels of confidentiality, the information was safely stored on a secure and private laptop to avoid any information being leaked. The answers provided by the participants are not sensitive at all, meaning they will not harm the company in any way. All transcripts are also written in an anonymous way to ensure the safe keep of the company's information.
The last ethical issue that participants could be concerned about is providing information that could assist competitors in gaining an advantage.	The researcher specifically compiled a list of questions that aimed not to gain sensitive information. Furthermore, each participant was provided with all the POPIA information to ensure they were comfortable and knew their rights regarding privacy. Both parties also signed a confidentiality agreement, and an official electronic copy was provided to the participant. The withdrawal of the information was clearly stated in the interviews and the consent forms, allowing them to not participate in the study at any stage.

The study followed strict ethical standards of academic research. The researcher obtained ethical clearance from the North-West University ethical committee (reference number: NWU-00590-23-A4) as well as permission from his company's director to interview service providers. The population identified received all the information regarding the study, including the interview questions, consent form and study information, before any interviews were conducted. Once the participant accepted the proposal, the researcher discussed and set up the date and time that suited the participant. The participant also had all the information regarding the POPI Act and how to withdraw from the study. The participants' privacy was respected, and no personal information was used during transcribing. The study was also written in a non-bias and neutral way, but still provided the necessary answers to address the research question and objectives.

1.5.10 The purpose and contribution of the study

The study investigates several factors influencing client loyalty within the ICT industry, specifically focusing on the telecommunication sector. The aim is to determine clarity within an industry with low loyalty levels. Furthermore, this study will significantly contribute to the ICT industry as few studies have determined what keeps clients loyal. The participants and readers will also benefit from all the various factors that create higher loyalty levels, which could lead to a more sustainable and prosperous environment for ISPs and WISPs. Furthermore, another contribution that this study will provide the reader is new trends within the telecommunication sector. It also provides valuable information regarding price sensitivity, high competition, and innovative ways ISPs pursue to overcome chipset shortages and weak infrastructure within South Africa.

1.5.11 Limitations of the study

The main limitation of this study is the geographical demarcation, meaning the study will purely focus on ISPs and WISPs within South Africa's borders. International and other African ISPs and WISPs are not included in the study. This limitation causes the research to be more realistic, affordable, and attainable.

Furthermore, only small and medium sized WISPs and ISPs in South Africa were interviewed, and large operators such as MTN, Vodacom and Cell-C were excluded. The objective was to obtain essential information regarding client loyalty among smaller companies. By only interviewing smaller ISPs and WISPs, information such as the competitiveness of the connectivity market and price sensitivity levels was successfully obtained.

1.6 Chapter layout

Chapter 1: Nature and scope of the study

The first chapter focuses on the introduction of the ICT industry, specifically focusing on the telecommunication sector. The chapter aims to explain the importance of the industry, including the state that it is in. The second part focuses on the sector's problem, which investigates all the industry's obstacles, including low loyalty levels, high price sensitivity, competition, and weak ICT infrastructure in South Africa. The third part provides details of the primary and secondary objectives for the study and the overall research question on hand. The last sections provide more information regarding the purpose of the study, limitations at hand and the assumptions.

Chapter 2: Literature review and theoretical foundation

Chapter 2 investigates the background of ICT and how it contributes to South Africa's economy. Furthermore, the chapter also states factors to consider if a country wants to improve its ICT infrastructure. Aspects such as the state of South Africa's internet connectivity, internet service providers and the industry's regulatory body are also discussed. The challenges of adopting ICT in SA and the opportunities that ICT provides are also focused on in this chapter. Furthermore, factors such as service quality, competitive levels and client loyalty in South Africa are also determined. Lastly, factors influencing client loyalty, such as the 4Ps and 4Cs of marketing, are thoroughly covered.

Chapter 3: Research design and methods

This chapter thoroughly explained the research design and methods used to obtain practical answers focusing on the research question and objectives. This chapter also provides the philosophical assumptions that support the study and determines the

study under the interpretive research paradigm. Finally, the chapter focuses on a detailed explanation of this study's data collection and analysis.

Chapter 4: Analysis and Interpretation

The fourth chapter focuses on the qualitative data obtained throughout all the various interviews. Furthermore, a computer-aided qualitative data analysis software, Atlas.ti, is a tool to analyse the data.

Chapter 5: Summary, conclusion, and recommendations

The final chapter provides an overall summary of the main findings. A thorough conclusion provides several recommendations for future studies on a similar topic.

1.7 Definitions of terms

Information and communication technology (ICT)

ICT is utilising digital technology and internet protocol (IP) convergence products to retrieve, incorporate, assess, and generate information and data to operate in a knowledgeable civilisation. ICT transforms everything in modern society, including how all individuals live, work, and learn (Anderson *et al.*, 2002:2). ICT improves the livelihood of all individuals and increases productivity within the private, public, and educational sectors. A few good examples of products and services used in the ICT category are televisions, phones, computers, networking equipment such as routers and portable modems, video conferencing systems, and smart home devices (Meade & Islam, 2015:1106).

Internet protocol (IP)

Internet protocol (IP) links connectivity devices across several different networks. Therefore, IP is implemented in systems such as routers, creating connectivity between networks. IP protocol data units (PDUs) transmit data to other PDUs, typically installed at homes or businesses, ultimately connecting routers to create Wi-Fi or connectivity (Stallings, 1996:96).

ICT infrastructure

ICT infrastructure is known as telecommunications, internet connectivity, and broadcasting of radio and television networks. Data is transmitted, stored, and delivered to a specific location. Furthermore, types of ICT infrastructure are networking and computer equipment and software to effectively perform internet applications such as e-business, e-education, and e-banking. ICT infrastructure provides endless opportunities to perform business globally (Hanafizadeh *et al.*,2009:388-389).

Customer satisfaction

Customer satisfaction is a specific service or product's overall happiness or disappointment. Ultimately, customer satisfaction is comparing the quality of the service or product and the end-users' expectations (Hasfar *et al.*, 2020:87).

Customer loyalty

Customer loyalty is the commitment levels of clients toward a brand or a specific company. Furthermore, customer loyalty is when clients' resistance levels are solid and high toward competitive products or companies. Customer satisfaction needs to be high to ensure loyalty levels from customers because, if customers are satisfied with the products or services, long-term relationships are formed, causing the client to purchase products and services (Arslan, 2020:11) continuously.

4Ps of marketing

A marketing mix is an essential tool within a marketing strategy that companies use to market the marketing objectives within a specific target market. The marketing mix is highly influential as it develops the theory and actual practice, making it easier to implement. The marketing mix consists of 4 elements, also known as the 4Ps: product, price, promotion, and place (Malau, 2020:58).

Product refers to the services and products sold to clients. Several aspects draw clients to a specific product or service, such as features, quality, brand name, and warranty (Ehmke *et al.*, 2005:2, Karim *et al.,* 2021: 233).

According to Ehmke *et al.* (2005:2), **price** is the amount companies charge clients for a particular product or service. Providing the correct price is a difficult task because if

the price is too high, companies are at risk of being less competitive. If it is too low, it becomes exceptionally challenging to grow the company or brand (Ngugi *et al.,* 2020:654).

Place refers to the specific channels utilised to get the services and products to the client. The place will heavily influence the success rates of a product or service. Therefore, investing a significant amount of time and resources in the location is essential to ensure it is within reach of the target market (Ehmke *et al.*, 2005:3; Jain & Jain, 2020:244).

Lastly, **promotion** refers to the advertising element of products or services. This element is essential as it is used to get the word out in the market about what products and services a company offers. The main idea of this aspect is to ensure clients understand the product or service, how it is used to improve their lives or business environment, and why they need it (Ehmke *et al.*, 2005:4; Karim *et al*., 2021: 23).

Business-to-business (B2B) and business-to-customer (B2C)

Business-to-business (B2B) utilises web-based technologies to purchase, sell or exchange information between two or more businesses. The transactions of B2B take place directly between businesses or through outsourced parties, which assists in matching buyers and sellers. Business-to-customers (B2C) provide information, products, services, and after-sales services, such as support, directly to customers or end-users (Jewels & Timbrell, 2001:5-6).

Connectivity

Connectivity ensures a connection of technology systems to ensure interaction between them to use the full functionality of technology devices (Pivoto *et al.*, 2021:180).

Telecom operators

Telecommunication operators provide subscribed mobile users with internet connectivity and other connectivity services (Chivandire *et al.*, 2019:15). Furthermore, these operators contribute heavily to a country's economy by providing businesses and

people with effective digital communication, thereby increasing productivity, and creating an innovative environment (Chivandire *et al.*, 2019:4).

Wireless technology

Wireless technology consists of many applications, such as remotely controlling devices and radio frequencies transmitting data for connectivity. The wireless equipment utilises the electromagnetic energy in our airwaves that can send signals to remote places, meaning less physical infrastructure is required. These wireless devices use different frequencies that send different speeds to the endpoint (Hira, 2012:28).

Fibre connectivity

Fibre option is the science of transmitting light through a fine glass tunnel within a cable. Fibre connectivity provides various benefits, such as ultra-high and reliable data speeds, less interference, more security, and not creating any sparks or shorts, which is effective, especially in high explosion areas (Curran & Shirk, 2015:1).

Wireless internet service provider (WISP)

Wireless internet service providers (WISPs) are smaller companies providing internet to rural areas that large telecommunication companies do not yet serve. WISPs use more cost-efficient wireless equipment or radios to build their connectivity networks to provide internet to a specific community or area (Hasan *et al.*, 2015:3).

Internet service provider (ISP)

The core aspect of internet service providers (ISPs) is to provide steady and fast internet to their subscribers. However, these large ISPs have several challenges, such as providing connectivity to their increasingly large customer base, meaning infrastructure needs to be sufficient. They also struggle with supporting many clients and offering high-data services to meet market demand (Rababah, 2015:2).

1.8 Conclusion

Overall, Chapter 1 thoroughly explains the introduction and background of the study. The chapter also focuses on the problem statement of the topic. Furthermore, the

chapter also includes the primary research objectives and the overall research question. The chapter further offered a brief overview of the design and methodology of the research for this study and the statistical analyses, which include how the data will be obtained throughout the process. Lastly, the chapter included the ethical considerations and trustworthiness of the study to ensure that all processes are strictly followed.

Chapter 2 will review the relevant literature regarding the ICT industry, specifically focusing on the telecommunication industry. The literature review will provide valuable evidence that will address the objectives of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to ICT (information and communication technology)

Many countries have undergone a significant digital transformation in the last decade. Every household in more developed countries had access to fast internet connectivity, as mobile operators provided LTE services that offered high-speed connectivity for mobile phones at that time (Grzybowski, 2022:1). The significant ICT investments within the telecommunication industry led to an increasing demand for people requiring reliable and fast internet services, leading to a spike in innovative internet services. These internet services ultimately changed how media, retail, and many other industries conduct business. With the internet being available, several social media and online platforms emerged, leading to a higher demand for connectivity. Furthermore, having access to mobile internet improves living standards, especially in developing countries (Grzybowski, 2022:1).

ICT is a term that includes any communication between multiple devices or applications, which typically includes cellular phones, computers, networking equipment, software, satellite communication systems, and many more. ICT covers various processes, which include the storage, retrieval, conversion, and transmission of incoming and outgoing information, which could then be used to automate several different processes and controls (Adeleye & Eboagu, 2019:32).

ICT allows countries to bypass traditional human capabilities by exploiting new technologies to improve productivity and output. Furthermore, ICT is a fundamental aspect of economic growth due to the high increase in productivity and output levels. Unfortunately, Africa has not yet harvested all these ICT possibilities due to the slow adoption of ICT infrastructure, which is caused by weak technology knowledge within these countries (Bariu, 2020:2).

The ICT sector plays a vital role in a country’s economy as it creates a more efficient environment and provides communication, creating high productivity levels for businesses. Furthermore, the four primary functions that ICT systems offer are computation, communication, storage, and display of information to improve the time

and effectiveness of processes (Gati *et al*., 2019:1). Furthermore, several underdeveloped countries within Sub-Saharan Africa struggle to adopt ICT convergence technologies due to weak power supply levels, slow economic transformation, and inadequate infrastructure and telecommunication density. However, the telecommunications sector, specifically internet connectivity, has advanced due to the high demand for information sharing. Despite the growth in connectivity, it remains a challenge as internet connectivity technology systems are costly and not always accessible to all regions and countries (Saba & David, 2020:2).

The internet is an international network of multiple IPs (internet protocol communications) consisting of everything online, including social media, video communications, and many more (Kozyreva et al., 2020:104). Smart mobile phones were later developed, allowing individuals to access the internet from anywhere with a stable connection. Furthermore, within mobile communication, the first generation of the internet was called 1G, followed by the second generation of connectivity, 2G (Gowda *et al*., 2020:4407). As technology progressed, faster connection speeds were required to run applications on phones and computers, which caused the third-generation connectivity technology, 3G, to appear. In recent years, the fourth generation (4G) was utilised through wireless broadband connectivity, which ultimately provided much faster speeds for high bandwidth consumption applications. The world is exploring 5G and 6G connectivity, typically air-fibre technologies (Gowda *et al*., 2020:4408).

Without stable, fast, and reliable internet connectivity, a country has no IoT (internet of things). With the ever-growing demand for onboarding new innovative technologies, businesses, homes, and individuals require fast internet connectivity solutions (Azcarraga & Peña, 2019:1).

2.2 Theoretical framework

The following theories are included within the study as they specifically focus on improving customer loyalty. The expectation-confirmation theory (ECT) is an essential concept that focuses on the customer's behaviour and post-purchase intentions. Furthermore, the theory proposes that clients’ satisfaction or dissatisfaction will drive

their decision to repurchase, complain, and make future investments. Any company needs to monitor the satisfaction levels of clients as it assists with the predictability of consumers and helps with improving marketing activities according to their requirements (Hossain & Quaddus, 2012: 443).

The disconfirmation theory of satisfaction focuses on the consistency of customer satisfaction. The three stages, namely dissatisfaction, satisfaction, and delight, are fundamental elements of this theory and must be understood to ensure the effective management of clients. Furthermore, the theory explains that no client will ever be the same. However, businesses must try to know the three stages and their competitors in the market. These satisfaction levels are impacted by service or product quality, which ultimately determines the overall levels of loyalty among clients (Mahmood *et al*., 2018:136-139).

Furthermore, the switching cost theory is aligned with the product lifecycle and the product evolution cycle paradigms. The theory presents the financial and perceived costs of clients moving to an alternative service provider. These costs directly impact a client's loyalty, satisfaction and repurchase intentions. If the costs are well managed and monitored constantly, it could provide the company with more accurate client behaviour and overall success and sustainability for the business (Mishra, 2019:99).
The following section focuses on the factors that must be considered to improve a country's ICT infrastructure.

2.3 Factors to consider improving a country's ICT infrastructure

Education is essential to a country's development within the ICT sector. An effective education system causes a more productive employment environment and sustainable livelihoods (Ponelis & Holmner, 2015: 165). Furthermore, education allows citizens to obtain more specialised occupations, improving the country's economic circumstances. A society with educated knowledge can identify opportunities, produce more effectively, transform circumstances, and use available information to build a stronger society (Ponelis & Holmner, 2015: 165).

A significant **ICT infrastructure** gap between South Africa's rural and urban areas makes it challenging to provide all citizens with equal and adequate opportunities to adapt to all the new technological advancements. Poor ICT infrastructure in these rural areas leads to weak internet connectivity, causing significant challenges for people and businesses to be effective (Blom & Uwizeyimana, 2020:208).

Furthermore, approximately 64.7 percent of South African households have at least one family member who has internet access, whether at home, at a workplace, or an internet cafe. Within the rural areas of South Africa, only 46 percent have access to devices that can connect to the internet. In contrast, in the metro areas, 67.5 percent have access, and in the urban areas, over 63.7 percent. The Gauteng Province has the highest internet connection, with approximately 74.6 percent having access to the internet and 16.7 percent having internet connectivity within the household. Within the rural areas in Gauteng, only 46.2 percent have internet access at home, indicating more continuous development in urban and metro areas than in rural areas (Blom & Uwizeyimana, 2020:216).

A significant factor for a country such as South Africa to consider ensuring the continuous improvement of the ICT industry is investing in providing stable and uninterrupted power. Reliable electricity is essential because ICT systems rely on a stable power grid, as all these technology systems require power to work effectively. Approximately 84.7 percent of South Africans have access to electricity, meaning that there are around 15.3 percent who do not have any access to power. However, even though 84.7 percent of South Africans have access to power, the power grid in South Africa is significantly unstable, meaning they do not have access to an uninterrupted power supply. Without a reliable infrastructure of electricity, it will remain challenging for South Africa to address the sizeable digital gap, leading to a standstill in ICT adoption and development within the country (Blom & Uwizeyimana, 2020:216).

About 55.5 percent of the South African population, equivalent to 30.3 million individuals, fall below the national poverty line (World Bank, 2020:1-2). Due to South Africa's high poverty levels, many cannot afford to purchase data or fixed broadband internet, which means that they have no way to access the internet. This is a significant problem, as many also do not have internet-enabled devices and knowledge, which

are all linked back to the country's poverty rate. South Africa ranked 33rd out of 46 African countries regarding data per gigabyte (GB) costs in 2020 (Chinembiri, 2020:1).

The COVID-19 pandemic also caused many to work and learn from home. However, people in rural areas could not keep up with the data prices, and to make things even worse, many lost their jobs, causing a more extensive problem regarding the cost of connectivity. Therefore, it is highly suggested that the government must assist the citizens in need by providing more costly connectivity packages to ensure everyone stays connected, which will lead to high productivity levels remaining high (Dube, 2020:148-147).

2.4 State of South Africa's internet connectivity

South Africa's telecommunication industry revenue has increased by approximately 3.94 percent, from R 200.2 billion that the industry accumulated in 2021 to R 208.1 billion in 2022 (ICASA, 2023: 19). Mobile services revenue also indicated an increase of around 7.07 percent, whereas fixed broadband decreased by 10.97 percent and fixed line revenue decreased by 14.49 percent. The decrease in fixed line and fixed broadband was due to the high demand for mobile services in 2022 (ICASA, 2023: 19).

Unfortunately, despite the increase the industry is experiencing, many South Africans do not have access to reliable internet sources and technology, such as mobile phones and laptops, due to poverty and an unreliable power grid source (Hardman *et al*., 2022:4). The poverty levels in South Africa are high. However, more than 36 million out of the 59.39 million people do have mobile phones at their disposal, but due to the frequent power outages in South Africa, reliable internet connectivity and access is not always guaranteed. (Hardman *et al*., 2022:4).

The fourth industrial revolution (4IR) is currently in progress, and it entails new ways in which innovative technology is embedded in people's everyday lives. Technology and humans work in collaboration (Mhlanga & Moloi, 2020:2). The 4IR is the combination of technologies to shape a new digital world. These technologies include artificial intelligence (AI) systems, robotics, linked sensors, virtual and augmented

realities, data storage and transmission, energy capture, and many more (Mhlanga & Moloi, 2020:2).

However, despite the significant change and exciting possibilities of the 4IR, South Africa has too many rural areas that lack basic ICT infrastructure, such as internet connectivity, making it challenging to adopt the 4IR. These rural areas do not have access to reliable and stable internet connectivity, ultimately causing a problem with performing remote work, education, and many more (Mhlanga & Moloi, 2020:7).

2.5 Internet service providers in South Africa

Internet service providers (ISPs) are established companies that provide internet connectivity packages to subscribers for a monthly fee at various data speeds and rates (Ali, 2020:8). These ISPs use fixed broadband services, which are wireless networks, to connect their home and business clients. The infrastructure consists of a wireless base station connected to a fibre provider. This part of the infrastructure sends the data to the end-user premises (Ali, 2020:13-14). At the premises, client premises equipment (CPE) typically receives the data and sends it to an access point or router to which the client will connect to access the internet (Ali, 2020:13-14).

Due to technological advancements, high-speed internet (HSI) services are in high demand. ISPs have slowly moved to fibre optic solutions to ensure clients can access higher and stable data rates. These ISPs use two methods: Fibre to the home (FTTH) and fibre to the node (FTTN). Furthermore, FTTH is when the service provider installs a fibre line directly in the business or home, connected to the optical network unit (ONU), which then connects through an ethernet cable to a fibre router for a direct internet connection. The second method is FTTN, and here, ISPs connect a fibre line to a public access point for end-users to connect to public Wi-Fi (Ali, 2020:13-14).

In South Africa's ICT industry, the structure consists of several different large telecom companies and many broadcasting service providers. Within the telecoms market, there are numerous fixed-line network operators such as Telkom and Neotel, and within the mobile networks space, large companies such as MTN, Vodacom, Cell-C, and Virgin Mobile. Approximately 14 small operators obtained rights for under-serviced

area licenses (USALs) to provide telecommunications facilities in areas with tele-density below 5 percent and inadequate commercial viability (Akande & Belle, 2014:2).

Over 250 ISPs in South Africa are issued with an ICASA license to provide connectivity services to homes and businesses. However, these large firms have the capital to invest in sophisticated technology, making it challenging for smaller ISPs to enter the market or stay competitive (Akande & Belle, 2014:2).

2.6 Regulator of South Africa's telecommunication industry

The Independent Communications Authority of South Africa (ICASA) regulates all wireless applications within South Africa. ICASA's central vision is to ensure a fair playing field when transmitting data wirelessly and by controlling the industry to ensure that wireless transmissions for the private market do not cause interference with government wireless applications (Pau, 2011:133).

ICASA provided South Africa's ISPs with a specific range of radio frequency spectra (RFS) in which they can operate. RFS supports communication services such as mobile services, Wi-Fi, and fixed broadband (Mailula, 2022:1-2).

ICASA regulates all electronic communication methods, postal services, and broadcasting within the public. The regulator's responsibility is to collect statistics and information on South Africa's ICT industry and to monitor and report unethical instances of frequency usage. The authority also ensures South African citizens access to affordable and effective fixed broadband internet services (ICASA, 2023:8).

2.7 Challenges of adopting ICT in South Africa

It is no secret that South Africa faces several hurdles when adopting ICT successfully. One of the main issues is the high cost of **ICT infrastructure**, which makes it difficult for ISPs to extend their services to rural areas. Unfortunately, due to the costs associated with improving ICT infrastructure, many South Africans cannot afford the monthly connectivity packages offered by ISPs. As a result, ISPs have been forced to switch off subscriptions, leaving a significant number of people without access to the internet (Akande & Belle, 2014:4).

The second challenge in improving the ICT industry within South Africa is **politics and cultural diversity**. Unfortunately, due to its political history, South Africa has an uneven distribution of wealth and infrastructure within the country. The rural areas remain untouched, whereas the urban areas have undergone tremendous technological adoption throughout the years (Akande & Belle, 2014:4).
The third challenge for South Africa to adopt ICT is the need for more **skills** and knowledge. ICT is an essential tool to reduce the gap within the digital divide between the poor and the rich. There is also a strong relationship between ICT skills and adoption. The skills and knowledge are essential to determine whether the adoption part will be accepted or rejected (Akande & Belle, 2014:4).

Security is also a significant challenge within South Africa, specifically regarding cyber-security. The ICT industry deals with numerous information and data of individuals and businesses, and unfortunately, vulnerabilities do occur, causing data leakages that can harm the parties involved (Akande & Belle, 2014:4).

The **ICT industry changes rapidly** every year, making adopting it challenging for South Africa. The issue is keeping up with the new technology when the country is already lagging behind all other first-world countries. ICT systems are complex, making it challenging to master newly released technologies, especially in a country where skills and knowledge are not up to the required standards (Akande & Belle, 2014:5).

2.8 Opportunities that ICT provides South Africa

Improving the ICT industry within a country enhances the youth's learning opportunities. Many who needed access to information could quickly obtain information, which was once difficult. It also promotes entrepreneurship and teaches the youth of today 21st-century skills, which are in high demand. This will ultimately assist with skills development, leading to complex job opportunities (Ndibalema, 2020:247-248).

Furthermore, the ICT sector is essential as it assists in reducing a country's poverty rate, enhancing numerous health and educational services, and creating new income sources for the previously disadvantaged. The overall objective of the ICT industry is

to drive a country's economic development and improve aspects such as social development and promote human rights and democracy (Fernández-Portillo *et al*., 2019:1). If a country wants to obtain sustainable economic growth, it must invest in providing connectivity to rural areas, provide the necessary training, and use the ICT tools to its full capabilities. Connectivity, human capital, and a wide spread of stable internet connectivity positively impact a country's GDP development (Fernández-Portillo *et al*., 2019:9).

Another opportunity that ICT provides a country is the improvement of labour productivity levels, as traditional tasks can be done much more effectively (Akande & Belle, 2014:4). It is known that ICT assists in reducing transaction costs of companies, improve and promote efficiency, increase service and product quality, improve customer satisfaction levels and assists in increasing profitability rates, which all contribute to a country's economy (Zhu *et al*., 2021:3470).

2.9 Internet service quality in South Africa

South Africa's broadband implementation and adoption rate were slow throughout the years, but since 2003, broadband connectivity has started to grow. Most internet access within homes or businesses is traditional asymmetric digital subscriber line (ADSL) connections. However, mobile dongles and 3G USB modems have become popular because the mobile solution is reasonably cost-effective (Chetty *et al*., 2013:3).

Furthermore, these mobile routers require less maintenance than the traditional fixed connectivity method. In terms of internet costs, uncapped connectivity packages remain expensive, meaning many users still have capped plans of 1GB monthly for fixed-line access. The internet speeds range from one to 40 Mbps. With mobile networks such as long-term evolution (LTE) or 4G, the connectivity speeds can reach up to 60 Mbps, but unfortunately, most users only really obtain speeds of around 15 Mbps (Chetty *et al*., 2013:3).

Fibre deployments, on the other hand, are becoming very popular in South Africa due to technology overcoming numerous challenges and drawbacks such as theft of copper cable, noise reduction, lightning strikes, and the loss of sending data over

longer distances. Rural areas have been struggling with slow and unreliable broadband connectivity, making fibre solutions a preferred solution to this specific problem (Oki & Lawrence, 2022:113-116).

The problem with having a fibre solution in rural areas is that it is significantly costly to deploy fibre in these areas, and the physical terrain also makes it challenging for ISPs. In South Africa, it is more common to see fibre deployments within all the urban areas and less in rural areas, thereby creating a connectivity gap between them. Unfortunately, fast internet connectivity is in high demand, as data, voice, and video applications require higher than typical throughput rates (Oki & Lawrence, 2022:113-116).

2.10 State of competitiveness in South Africa

South Africa's telecommunication industry has grown tremendously throughout the years due to the demand for connectivity to access Google, social media platforms, conduct business and many more. The sector has also played an influential role in South Africa's economic growth; however, despite all the positive aspects, several challenges are faced, specifically regarding the competition of the market, market concentration and regulatory enforcement (Sutherland, 2021:1-3).

Regarding the sector's competitiveness, South Africa's telecommunications industry has a few prominent players that ultimately dominate the market. These large organisations provide several services, such as fixed-line and mobile connectivity, internet connectivity and numerous data service packages. This then tilts the market power toward these players, providing individuals and businesses with less flexibility, ultimately leading to higher prices and fewer consumer choices (Sutherland, 2021:4-5).

The primary regulator, ICASA, oversees issuing licenses to service providers, regulating data rates, and promoting competition within the market. The problem is that many ISPs feel that ICASA does not operate effectively and does not address the industry's anti-competitive behaviours (Sutherland, 2021:1-4).

Another significant issue is market concentration, specifically with the large players controlling the marketing, making it challenging for smaller ISP to enter or stay competitive. The Competition Commission has failed to create a fair playing field within the telecommunications industry (Sutherland, 2021:1-3-7).

Furthermore, throughout the years, the telecommunications industry has rapidly changed as many service providers adopted advanced technologies such as 4G and 5G (Sutherland, 2021:2). However, due to the infrastructure within South Africa not being up to standard, it remains challenging to roll out these technologies. The affordability of broadband connectivity also challenges many ISPs as many cannot afford these data packages, specifically within the rural and underserved areas in South Africa (Sutherland, 2021:11-12).

2.11 Client loyalty in South Africa in the telecommunications industry

Customer loyalty refers to the continued buying behaviour of a client. There are several types of loyalty. Spurious loyalty means frequent customer visits with no strong attitude towards the brand. Latent loyalty is experienced by customers who view the brand favourably but are unable to accomplish frequent repeat purchase, due to a lack of resources such as time and funds. True loyalty is the most preferred state where the customer exhibits consistent repeat purchases along with a strong positive attitude for the brand (Paul *et al*., 2023:2-3).

Loyalty also ultimately refers to the repetitive purchasing of a service or product from one company or service provider (Lina, 2022:22). Customer satisfaction refers to a product or service exceeding a client's expectations, causing them to feel positive about the experience (Saraswati, 2022:29). Several studies have indicated that there is a positive correlation between customer satisfaction and loyalty within many different industries (Khan *et al*., 2022:6).

On a global scale, specifically focusing on the telecommunication industry, client satisfaction is positively correlated with the loyalty levels of clients toward a company. Clients who are satisfied with a service tend to stay loyal to their service provider. It is expensive for companies to acquire new clients and build relationships, making it essential to keep loyalty levels high, as that will cause an increase in revenue. The overall profits of an organisation will typically increase depending on how long it can continue to serve a loyal client (Shava, 2021:72).

Several factors drive customer loyalty, as some customers require affordable connectivity services, driving them to use service provider X. In contrast, others require fast and more reliable connectivity services, driving them to use service provider Y. This ultimately makes customers less loyal to a particular brand or service provider. Therefore, service providers seek different ways to improve customer loyalty levels. However, customer loyalty typically fades if clients use multiple service providers, specifically if their needs are satisfied. Furthermore, the telecommunication industry competition rate is significantly high, and the margins of service providers are lowering each day as the price sensitivity levels among end-users are increasing rapidly, causing lower loyalty levels within South Africa (Morgan & Govender, 2017:3).

The concept of switching behaviour refers to customers moving from one supplier to another due to similar products and services. Switching occurs when consumers dismiss their relationship with one supplier to onboard another supplier offering similar selling propositions (Panama *et al*., 2023:21). Within the telecommunications sector it is seen that the Gen Y group is more loyal toward their service providers. Generation-Y typically chooses a service provider that provides them with loyalty programs, and personalised solutions (Chuah et al., 2017:125).

2.12 Factors influencing client loyalty

A marketing mix is a systematic strategy a company can utilise to ensure the sustainability of the business succeeds. The strategy links to tactical marketing focusing on aspects such as the product, place, price, and promotion, also known as the 4Ps. It is known that a marketing mix is positively correlated to a customer's loyalty levels (Simanjuntak *et al*., 2020:451-452).

Furthermore, a marketing mix consists of several aspects that assist with choosing a strategic decision to ensure a company acquires an advantage within a highly competitive environment. Studies have also shown that price, place, product, and promotion correlate positively with customer loyalty and satisfaction (Jain & Jain, 2020:244; Karim *et al*., 2021: 233; Ngugi *et al.,* 2020:654 and Verma & Singh, 2017:124-126). The following section covers all the various aspects of the 4Ps of a marketing mix.

2.13 4Ps marketing mix

2.13.1 Price

Price is an attribute of what a particular service or product will cost the customer (Ngugi et al., 2020:654). However, the pricing model between services and products is different, as product pricing indicates the proportion of a product against other competitors. In contrast, pricing service is connected to several elements, such as sales targets, market, and product lifecycle. Clients typically look for the best market price and choose services and products with lower prices, even if they cause discomfort. Therefore, if companies want higher loyalty levels, they must build their pricing structures according to a customer's value and treat customers well (Hachim *et al*., 2022:111).

Furthermore, the price of a service or product is considered an essential aspect of the four Ps within the marketing mix. Pricing is a valuable tool that an organisation can use to achieve optimal success levels, higher productivity among employees and overall client satisfaction (Išoraitė, 2016:27). Price is defined as the amount a business charges its clients for performed services or products. Offering the correct price is a challenging task because if a price is too high, it causes a company to outprice itself within the market, ultimately causing it to be less competitive. However, if the pricing is too low, it could lead to the company experiencing slower growth rates (Ehmke *et al*., 2005:2), as price is considered as the most significant measurement of repurchase intentions by customers Karim *et al.,* 2021: 234).

There are multiple pricing implementation methods that organisations can use to obtain a price strategy that fits their objective and structure. Cost-plus, value basis, competitive pricing, input size, discount, unprofitability, and psychological pricing are methods a company can use when deciding on a price strategy (Išoraitė, 2016:32).
The cost-plus method is a fixed percentage of a company's margin on its product range. This fixed margin will vary depending on the production costs of the products. The value basis refers to the customer's opinion of how much the product or service must be. For this pricing strategy, quality, support, and service are crucial in the customer's opinion of the service or product price. If the service is up to high standards,

customers do not mind spending more, as they know they will receive high-quality after-sale services if something goes wrong (Išoraitė, 2016:32).

When businesses set their prices based on what competitors are charging, it is called a competitive pricing strategy. On the other hand, input size prices rely on the market price for goods and services. This market price can limit a company's ability to set prices as they would like since they have less control over the market than consumers. This means customers have more bargaining power regarding pricing than the suppliers themselves (Išoraitė, 2016:32).

Discount strategies are a popular way for businesses to attract new customers and expand their market share. However, it is essential to be cautious when implementing these strategies to ensure they do not become unprofitable. Unprofitable price strategies involve selling products at a loss, which can be risky. Another effective strategy is the psychological approach, commonly used in the retail industry. This strategy focuses on consumer behaviour by offering more attractive prices on product labels. Overall, businesses must carefully consider their pricing strategies to ensure they are profitable and effective in attracting customers (Išoraitė, 2016:32).

When it comes to pricing and service, this study places a strong emphasis on value-based pricing. In the telecommunication industry, consumers are especially sensitive to pricing regarding connectivity. As a result, most consumers tend to stick with service providers that offer lower rates rather than switching to more advanced providers that offer faster connection speeds and better services. This is according to research by Lommerud and Sørgard (2002:57).

2.13.2 Place

The distribution or place plays a crucial role in the marketing process. It represents a group of independent organisations that work together to make a product easily accessible for customers to use or consume. This ensures that the customer can quickly obtain the product they need, and that the product reaches a larger audience. The distribution process is essential to marketing and must be done correctly to ensure a successful product launch (Hachim *et al*., 2022:111).

When looking for a product or service, one must consider where to receive it. Choosing the right place can make all the difference in finding the best service at the right time. Selecting the right place is crucial for accessing high-quality services. It is worth noting that a good store image attracts attention and generates interest and contact with potential customers. Therefore, when searching for a product or service, take the time to consider the place where one can receive it and the benefits that come with choosing the right location (Hachim *et al*., 2022:111).

Additionally, it is essential to consider where the products will be distributed, or the service will take place. This can significantly impact the success of the business and the satisfaction of customers (Wu & Li, 2017:77).

2.13.3 Promotion

Promotion is a tool companies utilise to persuade clients to purchase their service and product (Wu & Li, 2017:77). When promoting a product or service, it is essential to consider all the different ways to get the word out. Advertising, word-of-mouth, point-of-sale shows, and public relations are all effective methods, but it is essential to remember that these strategies can quickly become outdated. To ensure that the company or service provider reaches the target audience and closes the information gap between buyers and sellers, staying up to date with the latest trends and technologies in promotion is essential (Hachim *et al*., 2022:111).

When an organisation wants to communicate with its target market, it engages in a promotion process. This process includes a promotional component that helps determine the best strategy. The main goal of promotion is to inform customers about the products and services an organisation offers and to create positive attitudes towards them. Ultimately, this leads to customers preferring these offerings during the decision-making process when making a purchase (Darmawan & Grenier, 2021:78).

2.13.4 Product

The product element within the marketing mix refers to goods or services that an organisation offers to its clients. The product can also be defined as something

provided to customers for attention, acquisition or consumption that typically fulfils a particular need, including physical objects, services, people, places, companies, and ideas (Khan, 2014:97).

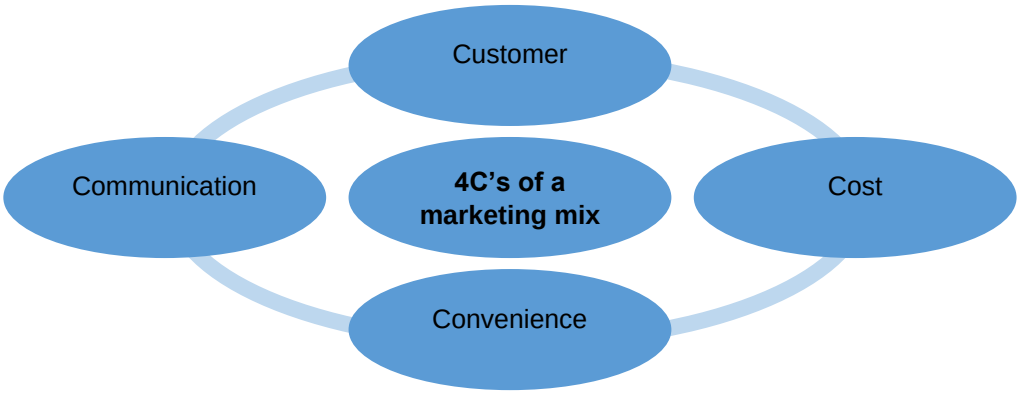
A core product can be defined as problem-solving services or beneficial aspects it withholds when a client purchases a product. The actual product refers to the parts, quality levels, physical design, available features, brand name, packaging and many more, which are all combined to ensure the core benefits are provided. The augmented product refers to warranties, guarantees, after-sale service, installation and many more (Khan, 2014:97-98).

Aspects such as brand trust provide high levels of consumer trust, and an essential factor of client loyalty is brand trust. Many consumers are also willing to spend more on a certain brand or company as they have developed trust over time. The reason for the loyalty is that these customers believe that the brand, service, or company provides them with an element of uniqueness, function, and quality that a competitive product, service or company cannot offer (Azizan & Yusr, 2019:97).

Companies use a second method as a marketing tool: the 4Cs marketing mix strategy, which focuses on the customer as an essential aspect. The 4Cs marketing mix directly affects the customer's overall decision in a highly competitive environment as it proposes what products they purchase or utilise. This marketing mix includes the client's value, cost, communication, and convenience (Siripipattanakul *et al*., 2022:32).

2.14 4Cs marketing mix

Figure 1: 4Cs marketing mix



Source: (Asiaktewen & Ibrahim, 2019:116)

2.14.1 Customer

In the 4Cs marketing mix, the customer always comes first, and aspects such as customer service and support centres are practical tools marketers can utilise to obtain a broader customer base. A business must improve client loyalty and satisfaction (Siripipattanakul *et al*., 2022:33).

Furthermore, Asiaktewen and Ibrahim (2019:116) also stated that customers must obtain the highest priority, unlike the typical marketing mix where the product is an essential aspect. This aspect focuses on providing products and services based on the customer's requirements. When companies focus on this aspect, they typically customise solutions according to the application, and every application is different, meaning a unique solution is required. This method works effectively for smaller target markets, whereas the traditional marketing mix is typically used in large to macro-markets.

2.14.2 Convenience

Convenience refers to the ease the client experiences in obtaining a particular service or product and is an essential marketing strategy for any business. Making it more convenient for customers is a compelling competitive advantage (Siripipattanakul *et al*., 2022:33). According to Asiaktewen and Ibrahim (2019:116), when a company has

a specific target market, the convenience of a customer acquiring a specific product or service is vital for a company's success.

2.14.3 Communication

Effective communication is an essential aspect that ensures successful marketing campaigns. Furthermore, a bidirectional communication strategy within the marketing mix refers to the relationship between a company and its clients. Effective marketing includes client engagement in product or brand development and is crucial to achieving success. Therefore, employing the appropriate communication strategies with clients is vital as it assists with promoting the company's excellence and influences customer decisions. Aspects such as recommendations, word-of-mouth and reviews are essential communication methods that can also be utilised for a company to achieve new avenues and growth levels. Marketers must build stronger client relationships by improving communication skills (Siripipattanakul *et al*., 2022:33).

2.14.4 Cost

The cost concept is equivalent to the pricing model in the 4Ps marketing mix. Cost is an essential driver for a client's decision-making, and therefore, being part of the 4Cs marketing mix. Implementing the correct costs is vital and must be based on clients' value for a particular product or service. Companies must do proper research on the target market and then decide the cost of the product or service, as it will align them with what products and services to utilise on their side (Asiaktewen & Ibrahim, 2019:116). Furthermore, price is an essential component of the cost required to meet a client's needs or requirements. Therefore, pricing strategies for the products or services must be cost-effective, and the services and products must be equal to the value of the price (Siripipattanakul *et al*., 2022:33).

2.15 Conclusion

It is interesting to note that South Africa has the most advanced ICT infrastructure compared to other African countries (Deen-Swarray *et al*., 2012:11). However, several challenges still need to be addressed. For instance, there are problems with service

quality and high connectivity rates, which make it difficult for many South Africans to afford these services (Mpwanya & Van Heerden, 2016:439; Gillwald *et al*., 2018:7). These challenges have a direct impact on clients' expectations of quality of service, which can lead to dissatisfaction with customer requirements (Mpwanya & Letsoalo, 2019:68). There is still much work to be done to ensure that everyone in South Africa has access to reliable and affordable ICT services.

The telecommunication industry is growing at a fast rate. However, factors such as education, ICT infrastructure, and weak power grids make it challenging for the industry to grow and develop within South Africa. South Africa also has a high poverty rate, meaning many individuals cannot afford reliable and stable connectivity packages, which slows down the industry's growth.

Overall, client loyalty is the central theme, and according to the literature, loyalty levels are positively correlated to client satisfaction. If consumers are satisfied, they tend to remain with the service provider. Therefore, ISPs must focus on factors such as the marketing mix to improve customer loyalty. The following chapter focuses on the study's research methodology and how all data will be obtained to answer the research topic of the study ultimately.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Chapter 3 focuses on the reviewed literature regarding the ICT industry, specifically on elements within the telecommunication sector. Chapter 4 will thoroughly explain the research design and methodology utilised for this study. The chapter starts with a discussion of the interpretive paradigm, which is insightful for studying complex social phenomena. It aims to generate practical insights by adopting an interpretive approach. It further focuses on the research approach used and why a qualitative method is helpful in this study.

Furthermore, the study also aims to identify and explain the targeted population and the sampling techniques and sizes used. The following section continues with the data collection techniques and procedures used to interpret the data. Lastly, the chapter concludes with an insightful explanation of the trustworthiness issues applicable to this study.

The research onion is an effective tool and strategy used to pave a clear path to provide direction on how the study will be approached (Melnikovas, 2018:33). Furthermore, the research onion consists of six layers. According to Saunders *et al*. (2016:162-164), a research onion is an effective tool to determine a research design by following the design flow of the six different layers (Melnikovas, 2018:33-34). Figure 1 is adapted from the research onion, as Saunders *et al*. (2016:164) depict it.

Layer 1: Research philosophy

The research philosophy formulates the foundation of the research by defining ontology.

Layer 2: Approach theory development

The research approach theory development consists of three levels: deduction, induction, and abduction. Deduction means when the research is based on an existing theory that can be used in the new study. Induction is when the research is accordant with observation and data collection obtained through a chosen population sample.

Furthermore, it is based on the descriptions and analysis to compile a research theory. Lastly, abduction refers to observing an empirical phenomenon, which comes down to the best guess or conclusion using all the available evidence and existing resources.

Layer 3: Methodological choice

The methodological choice layer is where the researcher decides whether the study should be qualitative, quantitative, or mixed.

Layer 4: Strategy

The strategy layer assisted the researcher in collecting the raw data and analysing all the incoming data from the population.

Layer 5: Time horizons

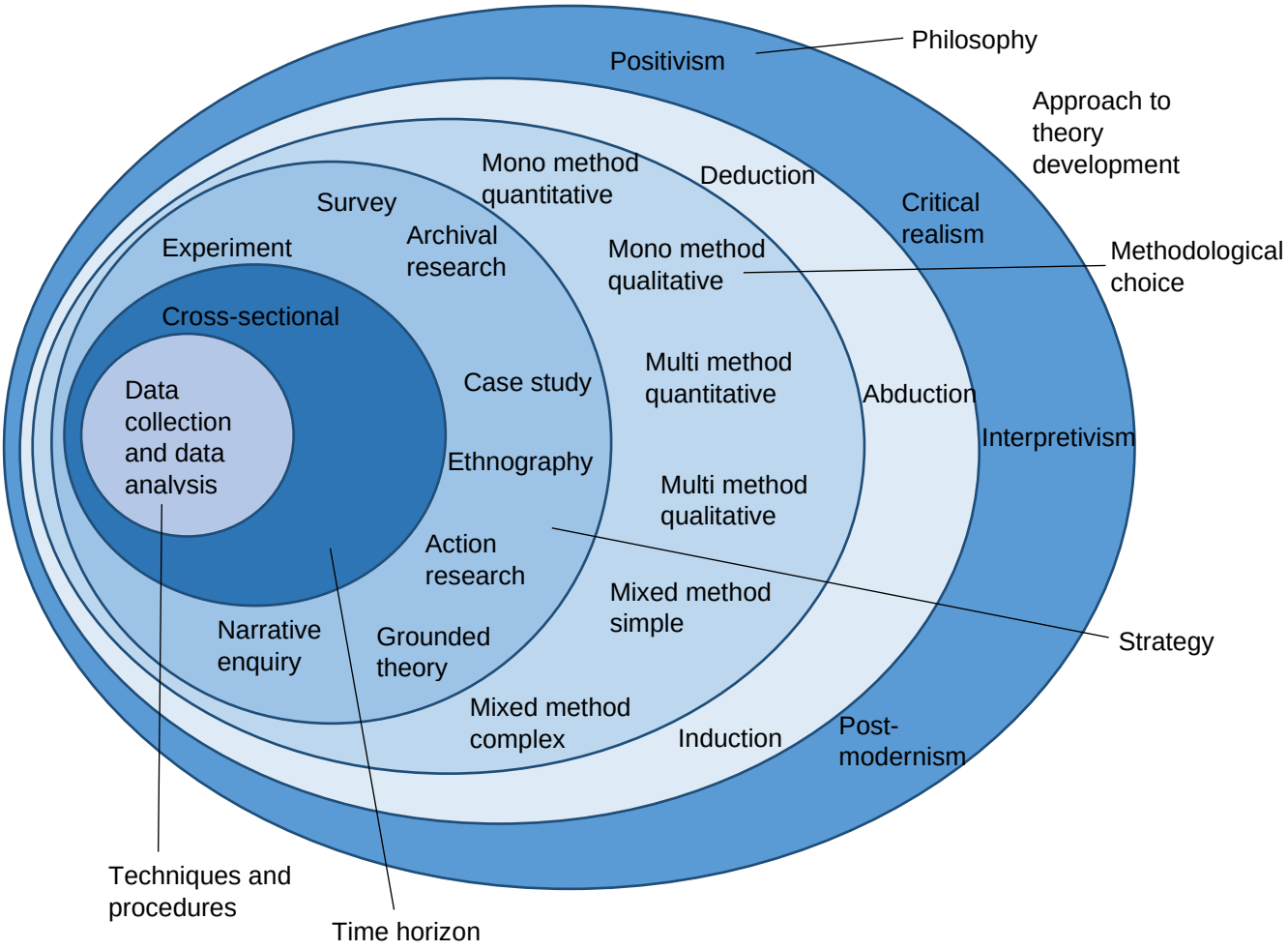
This layer defined the longevity of the research. It could either be cross-sectional or longitudinal. Cross-sectional studies were typically used for short-term studies, while longitudinal studies involved collecting data over a long period.

Layer 6: Techniques and procedures

Techniques and procedures are data collection and analysis tools the researcher can use throughout the study.

The following section will cover the research onion in more detail. Only relevant information within the onion will be used for this study's research design.

Figure 2: Depiction of the research onion



Source: Saunders *et al.* (2016:164)

3.2 Research paradigm

Within social research, the paradigm refers to the philosophical assumptions or beliefs that direct the actions and define the researcher's worldview. Furthermore, the term paradigm was used to debate several shared generalisations, beliefs, and personal values of specialists regarding the nature of reality and knowledge. Paradigms consist of practical tools to solve specific research problems; therefore, paradigms function as heuristics within social research studies (Kaushik & Walsh, 2019:1).

According to Kumatongo and Muzata, (2021:16), research paradigms are overall and general viewpoints or ideologies. Furthermore, it is a set of shared beliefs regarding specific problems and how it is understood and addressed. Research paradigms also

refer to the way scientists respond to the three questions of ontology, epistemology, and methodological questions. A research paradigm is typically categorised as positivism, interpretivism, post-positivism, ideology, constructivism, and pragmatism (Kumatongo & Muzata, 2021:16).

Interpretivism concentrates on in-depth variables and factors related to the topic, and it refers to the fact that no human being is the same and cannot be explored and examined in the same manner. It considers that there are differences in cultures, circumstances, and beliefs. Interpretivism is characterised by a focus on obtaining rich and diverse insights, in contrast to positivism's emphasis on establishing definitive and universally applicable laws independent of certain key variables and factors (Alharahsheh *et al*., 2020:41-42).

Interpretivism emphasises qualitative research. There are several critiques regarding the reliability of qualitative research; the overall framework remains effective in assessing the validity of the data obtained, which increases overall confidence in the research and data. Furthermore, the credibility of qualitative research is based on whether the data and findings are consistent and according to reality (Junjie & Yingxin, 2022:12).

The interpretive paradigm was considered adequate and correct for this study as it allows the researcher to gain and obtain a thorough understanding of what levels of loyalty are currently within the ICT industry, focusing specifically on the telecommunication sector in South Africa. This paradigm also provides the researcher with knowledge on how to go about obtaining this understanding. An interpretive research paradigm was therefore chosen for this study.

3.3 Research approach

A research approach refers to all the various techniques and methods involved in conducting a research study (Mishra & Alok, 2022:1), meaning the official choice the researcher must consider is to determine whether the study is a quantitative, qualitative or mixed method, meaning a combination between qualitative and quantitative (Saunders *et al*.,2016:162).

A qualitative research method is used to obtain raw data through live interviews with participants using open-ended questions (Bengtsson, 2016:13). A qualitative research approach is descriptive. It focuses on investigating the different perspectives of individuals. This approach is based on being practical and is essential to use when little existing information is available (Lorenzetti, 2007:4).

An inductive research approach begins with observation, and the findings presume and conclude the implication of the findings that introduced the theory (Dalati, 2021:96). For this reason, an inductive research approach was chosen to perform interviews with individuals within the ICT industry, to obtain information regarding the problem and possible solutions (Dalati, 2021:96). An inductive research approach is a tool to collect raw data by conducting interviews with a specific target sample. The aim is to gather raw data and transform it into worthy research information, which leads to the formulation of a theory (Saunders *et al*., 2009:146).

3.4 Research design

Once a research method has been determined, a research design is compiled to create direction for the study and the researcher. Furthermore, a research design is an action plan to answer the study's research questions. The plan will define the objectives directly linked to addressing the research questions. A research design will depict how the researcher will collect the required data from the target sample and how to analyse the obtained information. The design also assists with illustrating all possible constraints the study may uphold (Saunders *et al*., 2016:162).

An effective research design can only be prepared if the study's research problem is clear and concise. The main goal of a research design is a procedure in which the researcher combines multiple components of the study consistently and logically. Furthermore, it assists in the outline for data collection, measurement, and analysis (Mishra & Alok, 2022:7-8).

3.5 Study population sampling and participants

When conducting a research study, a target population is essential, and it is not always possible to collect relevant data or valuable information as the target population is typically too large. Therefore, for this study, the researcher decided to perform convenience sampling. Convenience sampling refers to non-probability selection and is generally used in qualitative research studies. This technique selects specific individuals in the field or industry, and the researcher must be able to motivate why these participants were chosen at the start (Stratton, 2021:373).

Sample size justification applies in qualitative research studies and should be based on the consideration that the cost of obtaining information from participants does not lead to new valuable information. This is commonly known as data saturation, which refers to new information duplicating the older obtained information throughout the interviews (Lakens, 2022:25-26). Data saturation is reached when a researcher continually identifies the same data, with new information emerging from the newly gathered data (Fusch *et al.,* 2015:1408, Merriam, 2009:219).

A research population comprises individuals with similar characteristics and interests (Siamah *et al*., 2017:1607). A target population is an entire group used to obtain the required information (Siamah *et al*., 2017:16011). The research population for this study comprised a few owners, directors and managers working in the telecommunication industry for specific ISPs in South Africa.

For a research study to be successful with a qualitative interview method, the researcher must compile a compelling interview with participants and evoke details, emotions, and facts to ensure the data obtained provides rich and valuable information about their events, experiences, and opinions. Furthermore, the researcher must create a trustful environment for the participants to ensure they provide insightful and honest feedback. It is essential for the researcher not to be biased in the interviews to ensure that all information is obtained respectfully and is trustworthy (Mirick & Wladkowski, 2019:3061).

The trustworthiness of the research results is empirical for qualitative research studies. The researcher needs to utilise respondent validation as it explores the credibility of the results. Furthermore, participant validation typically requires that the research participants are invited to provide feedback on the data during and after the research has been completed. Participant validation is a contested approach (Slettebø, 2021:2). This research study interviewed directors, owners and high-level managers working for small and medium sized ISPs. The higher-level managers were chosen because they know more about the company's direction and general industry challenges. These ISPs are also based in many South African provinces, including the Western Cape, North West, Free State, and Kwa-Zulu-Natal.

3.6 Data collection procedure

When it comes to data collection, the cost is an essential factor that needs to be kept in mind, as it decides whether a participant must be interviewed through a remote application or in person. Remote interviews provide a significant advantage as the researcher can obtain data from many different areas, and more interviews can be conducted in less time than in-person interviews (Rahman, 2015:12).

In interpretivism, smaller sample data collection, comprehensive investigations, and qualitative interviews are commonly utilised (Saunders *et al*., 2007:140). This aids researchers in uncovering phenomena, identifying patterns, and building a conceptual framework (Saunders *et al*., 2019:153).

The researcher conducted semi-structured interviews with all participants who agreed to participate in the study in person or through online meeting platforms. Additionally, they will adhere to the POPIA regulations to ensure the confidentiality and security of all collected information. The researcher will not share personal or contact details with any third party, as emphasised by Adams *et al*. (2021:1).

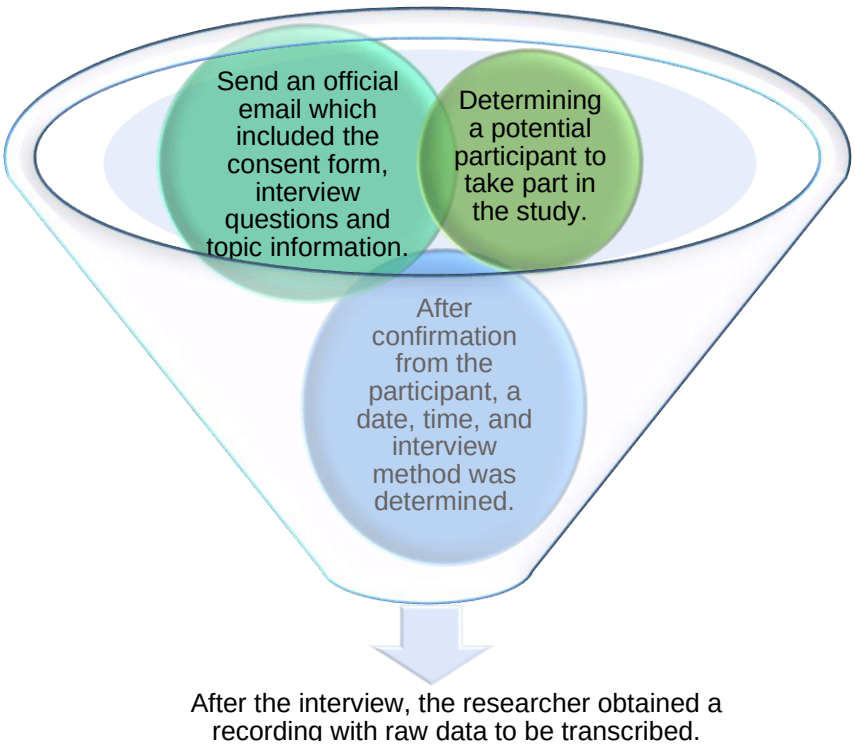
All the data was obtained through MS Teams, a virtual meeting platform, as many participants did not prefer face-to-face interviews simply due to time constraints. Although all the data was gathered virtually, the option for in-person interviews was on the table. Furthermore, due to cost constraints, many participants in provinces other

than Gauteng automatically qualified for virtual interviews. The online interviews were thorough and took approximately one hour. This gave the participants enough time to answer all 14 questions thoroughly.

Before any interviews, a consent form, interview questions and study topic were sent to ensure the participant had enough time to review all the necessary information. The researcher did a follow-up call to determine whether the participant wanted to participate in the study. All the data obtained was stored on a separate hard drive to ensure high levels of security. The forms of data included the recording of the interview and the transcripts.

The following figure indicates the data collection process of the study. The main aspects of the data collection process are included in the figure, such as determining potential participants, making contact and scheduling a date and time that suits the participant.

Figure 3: Data collection process



3.7 Data analysis

The data analysis process aims to identify specific patterns in the data, which helps to gain a deeper understanding of the subject matter. Qualitative data analysis involves

a detailed examination of language and nonverbal communication to uncover individuals' underlying meanings and perspectives. To conduct this type of analysis, the researcher transcribes the recorded data and organises it into themes and categories. The transcription output is also checked against the original recording to ensure the accuracy and reliability of the content.

Creswell's steps of thematic data analysis are commonly used to analyse qualitative data. These steps involve a systematic approach to identifying themes and patterns in the data. The final analysis is typically done using qualitative analysis software known as ATLAS.ti, which assisted in organising the data thematically. This approach is widely used in qualitative research as it provides a structured and systematic method to analyse data (Creswell & Creswell, 2017:31).

The Creswell steps include the following:

- **Assigning initial codes:** The initial code is typically a word or phrase with a positive link to the participant's words.
- **Creating main themes:** The main themes are essential as they categorise all the different sub-themes of the findings.
- **Creating categories:** All the various codes created are added to a central theme to ensure that all the data is well-categorised.
- **Moving from categories to main themes:** Each category is moved to the central theme that makes the most sense.
- Once all the main themes were filtered correctly, the researcher could provide valuable information regarding the findings, ultimately taking raw data and converting it into informative information.

3.8 Trustworthiness

In qualitative research, trustworthiness indicates a measure of confidence and credibility that can be placed in a study's relevant findings, analyses, and conclusions. Trustworthiness in qualitative research is essential, as it addresses the reliability and validity of the research process (King & Stahl, 2020:26).

To ensure trustworthiness in the qualitative research of this study, the following strategies and criteria were utilised:

Credibility: This is the degree to which the research findings accurately reflect the participants' actual experiences and perspectives (King & Stahl, 2020:26-27). Credibility in the overall research process is strengthened by utilising multiple data sources and providing detailed descriptions of the participants' perspectives and experiences (King & Stahl, 2020:26-27). To ensure the credibility in the research proposal, the proposal underwent peer debriefing, where an experienced study supervisor evaluated its content.

Transferability: This refers to the degree to which the study's findings can be transferred and applied within different contexts or settings of other research. The researcher can enhance transferability by providing sufficient contextual information and describing the participants and the research setting in detail (Creswell & Creswell, 2018:314; King & Stahl, 2020:27). In this study, the researcher provided full, detailed descriptions of methods and procedures used to enhance the transferability.

Dependability: Dependability refers to the stability and consistency of the research process and findings over time and across different researchers. To attain dependability, the researcher must be transparent in recording their research methods and ensure the process is clear and replicable (King & Stahl, 2020:27-28). To ensure dependability in this research study, both the researcher and study supervisor thoroughly analysed the data, and consensus discussions were conducted with the study supervisor to establish mutual agreement on the identified themes and methods. This collaborative approach helped to achieve consistency in the interpretation of the data and to analyse whether the outcomes can be repeated (Chowdhury, 2015:146,150; Creswell & Creswell, 2018:314).

Confirmability: This refers to the degree of objectivity and impartiality demonstrated by the researcher throughout the study. To ensure confirmability, the researcher had to be vigilant about personal biases and take necessary measures to minimise its influence on data analysis and interpretation (King & Stahl, 2020:28).

The researcher consulted the supervisor in this study to check and validate the research processes. The voice recordings were transcribed, and independent coding was performed to compare the transcripts and coding with the researcher's work. This

process aims to ensure impartiality and reduce the potential for researcher bias (Chowdhury, 2015:146,150; Creswell & Creswell, 2018:314).

Overall, trustworthiness is vital to the integrity of qualitative research and provides surety that the findings are valid and reliable (King & Stahl, 2020:28).

3.9 Ethical considerations

Research involves an ethical and moral element, necessitating the researcher to maintain professional and ethical standards, even when participants may not be fully aware of or concerned about ethical considerations (Neuman, 2011:145). The researcher applied for ethical clearance from the North-West University (NWU) to address these ethical concerns in this study. Additionally, written permission letters were sent to all the potential participants, requesting their consent to participate in the study. Before the interviews, consent forms were provided to selected participants via email for their signature and approval. The researcher ensured participants of voluntary participation and granted the right to withdraw from the study at any stage without repercussions. Moreover, the researcher safeguarded the participants, ensuring that no risk was posed to them, and confidentiality was strictly maintained throughout the research process. The anonymity, confidentiality and right to withdraw from the study at any time were clearly explained to each participant before and during the interviews.

3.9.1 Informed consent

When collecting data from participants, it is essential to prioritise voluntary informed consent and to uphold the privacy and confidentiality of all the participants involved in the study (Fleming & Zegwaard, 2018:209-210). In this study, the researcher fully briefed participants on the research objectives and willingly agreed to participate by signing the informed consent form (see Appendix A). This form displayed the North-West University's official letterhead and included the researcher's and the research supervisor's names and contact information.

3.10 Summary

This chapter provided a comprehensive explanation of the research design and methodology of the study. Furthermore, the chapter also provided information regarding the research paradigm, followed by the approach. The study population and the type of participants were also thoroughly discussed, as well as the data collection procedures. Lastly, the trustworthiness and ethical considerations were the last part of the chapter and are essential as they prove that the study has taken all steps and procedures to ensure an ethical outcome of the study.

The following chapter will focus on the findings of all the data obtained from the study participants.

CHAPTER 4: ANALYSIS AND INTERPRETATION

4.1 Introduction

Chapter 3 focused on the research design and methodology for this study. This chapter analyses the qualitative data obtained from six participants using semi-structured interviews. Furthermore, the chapter starts by describing data analysis and the literature integration. Data gathering is also discussed, including the data collection methods, the study sample, the data collection process, and the data analysis of the information obtained.

4.2 Structure and overview of themes

The empirical findings in the study were based on five different themes through the perceptions of managers, owners and directors of ISPs in South Africa who participated in the study. This discussion on empirical findings assists in answering the research question and objectives. Furthermore, this chapter contains the results of the empirical research for the following questions within the table. Each question is assigned one of the five themes.

Table 2: The relationship between the research questions and themes

Research questions	Codes	Description
Tell me more about your specific business, what areas you operate in, and where the company's focus lies. Is it on fibre or wireless or a bit of both?	• Wireless medium • Fibre medium • Combined medium • Return on investment on fibre • Return on investment on wireless	ISPs deliver connectivity to customers through various mediums, such as fibre optic cables known as fibre-to-the-home (FTTH) or wireless using different frequencies. Some ISPs make use of both mediums to stay competitive.
How many employees are employed in your company, and are you expanding and growing under challenging economic circumstances?	• Company growth • Number of employees • Operating areas	The ICT market is heavily competitive, and many factors such as crime, weak economy, high levels of competition, theft, load-shedding, limited ISM bands, mass deployment of fibre and many more hinder them from growing. After the pandemic, the growth has slowed as many

Research questions	Codes	Description
		individuals no longer work from home, meaning the spike phase has ended. The company usually grows if they employ more employees, indicating that they are slowly but surely growing under the current circumstances.
What is your specific role in the management of the organisation?	• Management role within the company	The higher-level management has more direction for the company, therefore being the reason for interviewing directors, IT managers, owners and many more. The higher-level management has an insight into all financial aspects and the company's future direction, such as what medium (wireless or fibre) should they focus on going forward.
What are the essential efforts of your business to increase customer loyalty levels?	• Factors/efforts to Increase client loyalty	There are several factors that ISPs can implement to ensure they increase client loyalty. These factors typically fall within the marketing mix, which includes price, place, product, and promotion. The 4Cs also play an essential part and focus on the client's perspective. These aspects include customer, convenience, communication, and cost. Service also helps increase clients' loyalty levels for an ISP, as many clients would pay more for connectivity; if it works effectively and there is a problem, the ISP is there to assist.
To what extent would you say the loyalty levels of your customers are toward your company, and how often would they move to an alternative service provider?	• Perceived current customer loyalty levels • Reasons for customers to return	ISPs must know their current clientele base's loyalty levels to know whether their services and prices are correct. Some ISPs' prices are higher than the competition; however, due to their outstanding services and being there for the client, they remain the clientele base. They will have clients moving over to other fibre providers. However, they must know why the clients left them and how to get them back on the books. Some ISPs will provide a counteroffer to their clients to ensure they maintain their loyalty.

Research questions	Codes	Description
Is customer loyalty affected by the services and products that your company provides?	• Connectivity products affecting client loyalty • Connectivity services affecting client loyalty	Loyalty strongly correlates with a company's service; if the service is ineffective, a client is likely to look for alternative providers. Furthermore, the products ISPs use to deliver the connectivity are also essential because if it is inferior, it will lead to weak data and service delivery, ultimately causing clients to lose faith and decrease their loyalty toward the ISP.
Is South Africa's current physical infrastructure challenging your company to fulfil specific responsibilities and services?	• Physical infrastructure and problems hindering service delivery • Aspects of fighting against weak physical infrastructure	Many obstacles prevent ISPs from delivering high-quality services to their clients. These obstacles include weak road infrastructure, load shedding, underdeveloped communities, and construction. The ISPs require constant power to ensure they can provide connectivity, and without it, customers will experience downtime regarding their internet. They must purchase expensive batteries and solar panels to ensure their internet towers are online. The problem is that these batteries and solar panels attract crime, such as theft. The roads are also making it challenging for ISPs to visit their towers or serve clients in rural areas, meaning they require large vehicles that can handle the terrain. This also increases the maintenance costs of their cars.
To what level are South Africa's poverty rates affecting the expansion of the ICT industry, and do these price sensitivity levels affect the services and products you provide to clients? In your opinion, are there still many opportunities for connectivity in	• Challenges experienced in the telecommunication space • Price sensitivity among end-users • The impact of theft • Rural opportunities despite high poverty levels	South Africa struggles with high poverty and inflation rates, making end-users price-sensitive toward connectivity. Furthermore, many individuals need help to afford a monthly connectivity contract with an ISP. However, despite these lower-income individuals not being able to afford monthly connectivity packages or mobile data services, the ISPs have found ways, such as rural hotspots where they can purchase data at affordable rates for specific periods to ensure they can connect with the world to apply for jobs and

Research questions	Codes	Description
South Africa's rural areas?		reach out to friends and family. Therefore, there is a massive opportunity in rural areas regarding connectivity, as that is unfortunately where the mass of the population lives. Lastly, the price sensitivity levels cause high theft crimes in South Africa, which means that batteries and solar panels are typically stolen. This is a significant problem for ISPs as they need to purchase expensive backup power equipment to ensure they provide seamless connectivity. Although ISPs must ensure their towers are constantly online, the end-users do not allow them to increase their prices so they can absorb the costs.
How often do your employees undergo training, and do you feel training is necessary to provide high-quality services effectively and consistently?	• Impact of customer training on high service levels • Impact of employee training on high service levels	The knowledge about connectivity needs to be revised. Therefore, ISPS must teach their customers more about the industry for end-users to protect themselves from untrustworthy connectivity packages. Many of the connectivity packages promise high bandwidth speeds that are unthrottled. However, customers are experiencing an unpleasant time with these large connectivity operators as they are not providing the service as promised in the marketing. Furthermore, marketing around fibre is very effective, causing end-user demand to be higher for fibre services and wireless mediums. Regarding employee training, South Africa's professionals have a tremendous knowledge gap in ICT equipment. This is because the industry is too fast, meaning new technologies constantly enter the market, ultimately causing ISPs to struggle to keep up. Furthermore, many ISPs do not have the luxury to send their employees to technology training sessions as they cannot afford not to have them in the field.

Research questions	Codes	Description
		Many sized ISPs would instead implement in-house training to ensure employees have the necessary knowledge to perform high-level services and solve problems quickly and effectively.
How competitive is the ICT market in South Africa currently, and is it affecting the prices and margins your company offers clients? Furthermore, is the mass deployment of fibre infrastructure affecting WISPs to compete effectively?	• Competition levels within the telecommunication industry • Mass fibre mass deployment affecting WISPs • Connectivity price war	The competition levels within the telecommunication space is fierce as mobile operators, WISPs, and fibre providers are trying to obtain some market share. Between these providers is a massive price war, as end-users typically go for the service provider that has the best price due to the weak economic circumstances. Many individuals and businesses will stay with the service provider no matter the medium they use if the connectivity is stable and the services are effective. The mass deployment of fibre infrastructure also places pressure on WISPs in terms of pricing, data capacity and marketing. Every end-user knows about fibre and wants it. The challenge that WISPs have is that only premium wireless equipment can really provide fibre-like speeds; however, that comes at a cost that the ISP must absorb. WISPs absorb the equipment costs because the large fibre provider has the capital to provide free installation and equipment, placing strain on WISPs as they do not have the time to wait for that investment to return. Furthermore, fibre can be found in most urban areas and sometimes in rural areas; however, the benefit that WISPs have is that it takes much longer to deploy due to specific approval requirements, it takes longer to show a return on investment, and fibre cannot reach difficult rural areas where wireless mediums can.
How did the global chipset shortages	• Global chipset shortage hindering	The global chipset shortage affects everyone across the globe. Most

Research questions	Codes	Description
affect your company's business, and how did you overcome this challenge or mitigate it for the time being?	ISPs from obtaining their usual product to provide excellent services	technology equipment requires chipsets to operate. Distributors and ISPs could not purchase connectivity equipment during the pandemic. This leads to them using alternative products they are unfamiliar with or digging into their cashflow to purchase more equipment when possible. This affects the client, ISP, and distributor, specifically regarding relationship, pricing, and availability. The lack of chipsets also causes equipment to be sold at a higher price, causing the end-user to pay more for connectivity and ISPs to absorb the installation costs.
How price sensitive is your current clientele base regarding internet connectivity, and will they move if the pricing is slightly less competitive? Furthermore, how important are product prices from local distributors to service providers, and will these prices ultimately affect end-users' decision-making?	• Price sensitivity levels of current clientele • Importance of ISP service price to end-users • Importance of distribution prices for equipment	Price sensitivity levels are high in South Africa due to the high unemployment rate and increasing levels of uncertainty. Therefore, this leads clients to seek alternative internet service providers offering affordable packages. Many South Africans worked from home during the pandemic, which led to spending more on connectivity packages as higher bandwidth data was required. However, many returned to the office, leading to fewer bandwidth requirements and end-users moving to more cost-effective packages to save money. Furthermore, many WISPs are losing clients due to the high fibre availability at highly affordable rates. WISPs typically provide more expensive connectivity packages because they can provide services and a personal touch when there is a problem, whereas fibre providers cannot. Due to weak services, many clients would move to alternative fibre providers in their area just to return to their previous WISP. However, some end-users would stay as the connectivity package is less, meaning they save money. These

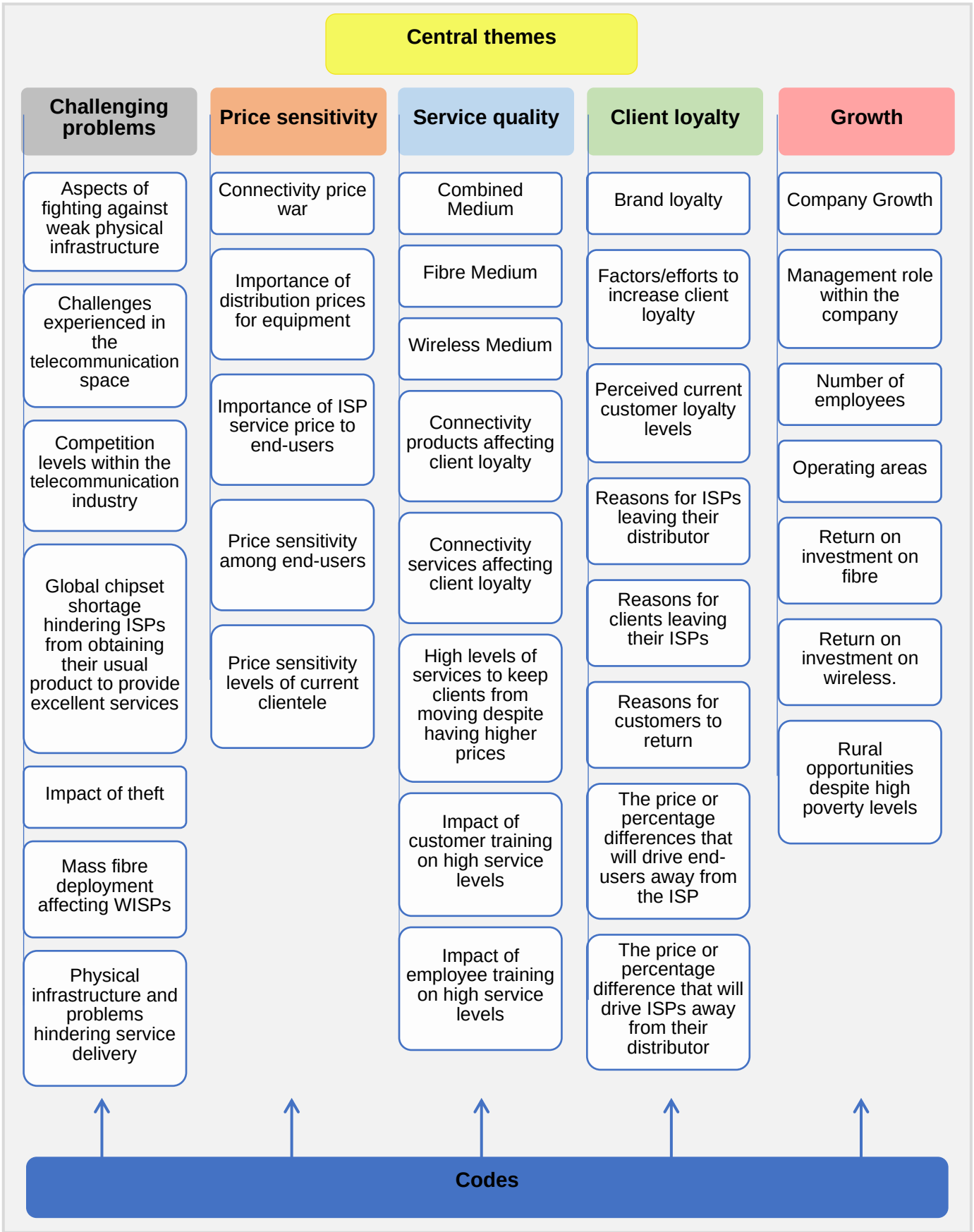
Research questions	Codes	Description
		end-users do not care about the service, only looking for the best deal. The pricing of connectivity packages is highly important for an ISP, and, if that ISP is out by R100, they could potentially lose a client if the loyalty is not high or the services are not that effective. The prices from distributors, who import all the various connectivity equipment, are essential, as many smaller WISPs must absorb the installation and equipment costs to ensure they obtain the business. If the pricing from the distributor is too high, it will cause a more extended return on investment for the WISP. Also, suppose the pricing from the distributor is out due to fluctuating exchange rates or equipment cost increases. In that case, it causes end-users not to purchase an additional product or solution from the ISP because it is too expensive.
In your opinion, will clients typically stay with internet service providers if they deliver excellent after-sales services but still offer higher rates?	• High levels of services to keep clients from moving despite having higher prices • Connectivity services affecting client loyalty • Brand loyalty	With the new digital age, stable connectivity is essential to performing business and connecting with others. The problem is that many large internet operators cannot provide high-quality services, even on fibre, as the number of customers they need to serve is too large. Therefore, smaller and local WISPs have a significant advantage as they specialise in relationship building and high-quality services to ensure the client is always connected. This means that many end-users would rather pay more for their connectivity packages from WISPs to benefit from their services when things go wrong.

Research questions	Codes	Description
What would be the leading causes of a client leaving a service provider and the same with a service provider leaving a local distributor? If price is one of the significant causes, what would be the overall percentage to make a client leave a service provider and a service provider their distributor?	• Reasons for clients leaving their ISPs • Reasons for ISPs leaving their distributor • The price or percentage differences that will drive end-users away from the ISP • The price or percentage difference that will drive ISPs away from their distributor	End-users would leave an ISP for several reasons, such as too high prices, weak service delivery, ineffective bandwidth data, and not living up to their promises. Furthermore, there are also many reasons for ISPs to leave their local distributors, and these, once again, include less competitive pricing, weak technical assistance, weak stock availability, long waiting times, and poor return and service departments. Pricing is a major cause for clients to move to another provider and the same with ISPs to an alternative distributor. Some ISPs and end-users will move if the pricing is out by a couple of 100 rands. However, many ISPs and end-users value the services and support more than pricing, meaning they will remain with the ISP or supplier if the pricing is slightly higher, as long as the other party provides the required services.

Table 3: Result Themes

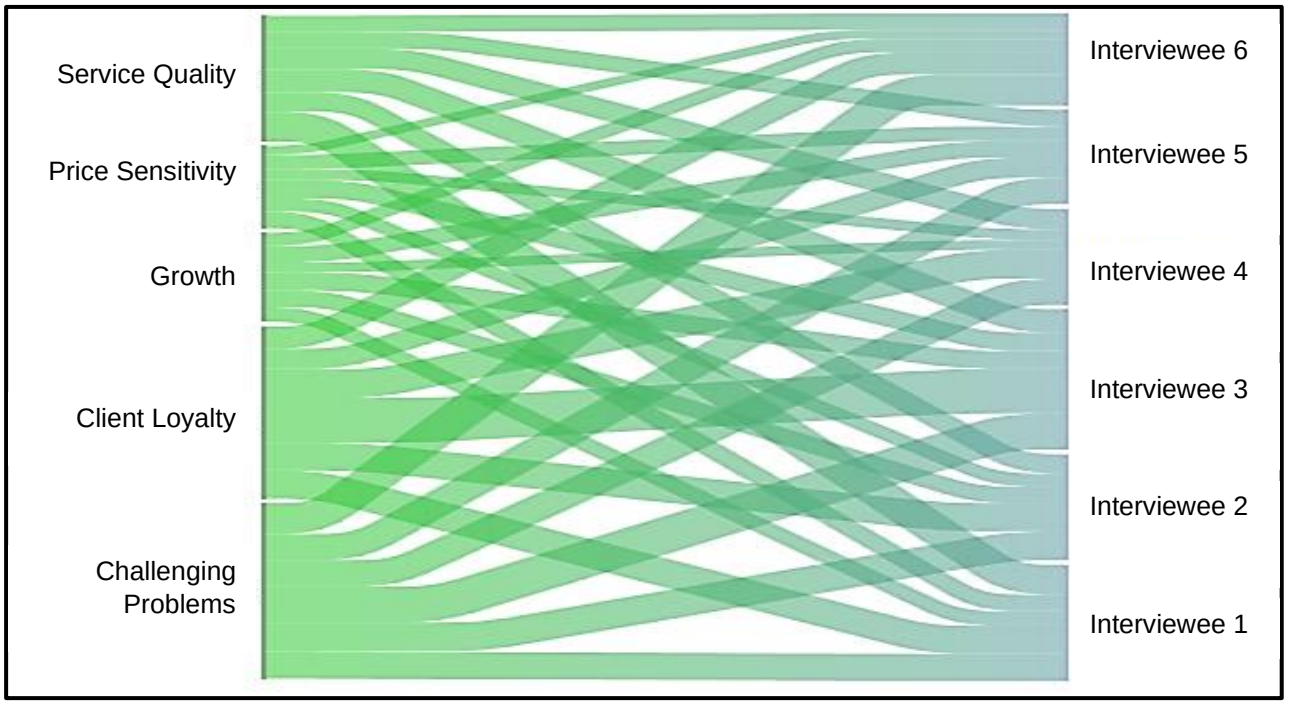
Central themes	Colour of the central theme
Client loyalty	
Price sensitivity	
Service quality	
Challenging problems	
Growth	

Figure 4: Central Themes



4.3 Data saturation

Figure 5: Data saturation evidence



The graph above clearly indicates that the researcher reached data saturation after only conducting six interviews. As seen in the diagram, all six Participants expressed strong opinions on every central theme of the study. Each interview was approximately an hour long, ultimately leading to the researcher gathering enough data to address the primary and secondary objectives.

Table 4: Themes contribution per participant

Main themes	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals codes
Challenging problems	15,49 percent	16,43 percent	20,66 percent	15,02 percent	15,02 percent	17,37 percent	213
Client loyalty	16,27 percent	16,27 percent	25,84 percent	16,75 percent	11,96 percent	12,92 percent	209
Growth	16,67 percent	18,52 percent	20,37 percent	11,11 percent	18,52 percent	14,81 percent	108
Price sensitivity	20,00 percent	16,00 percent	22,00 percent	13,00 percent	18,00 percent	11,00 percent	100
Service quality	23,68 percent	15,13 percent	18,42 percent	16,45 percent	13,16 percent	13,16 percent	152

Main themes	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals codes
Totals per participant	141	128	170	117	115	111	782
Total percentage contribution per participant	73,16 percent	70,24 percent	92,55 percent	59,17 percent	66,14 percent	58,74 percent	

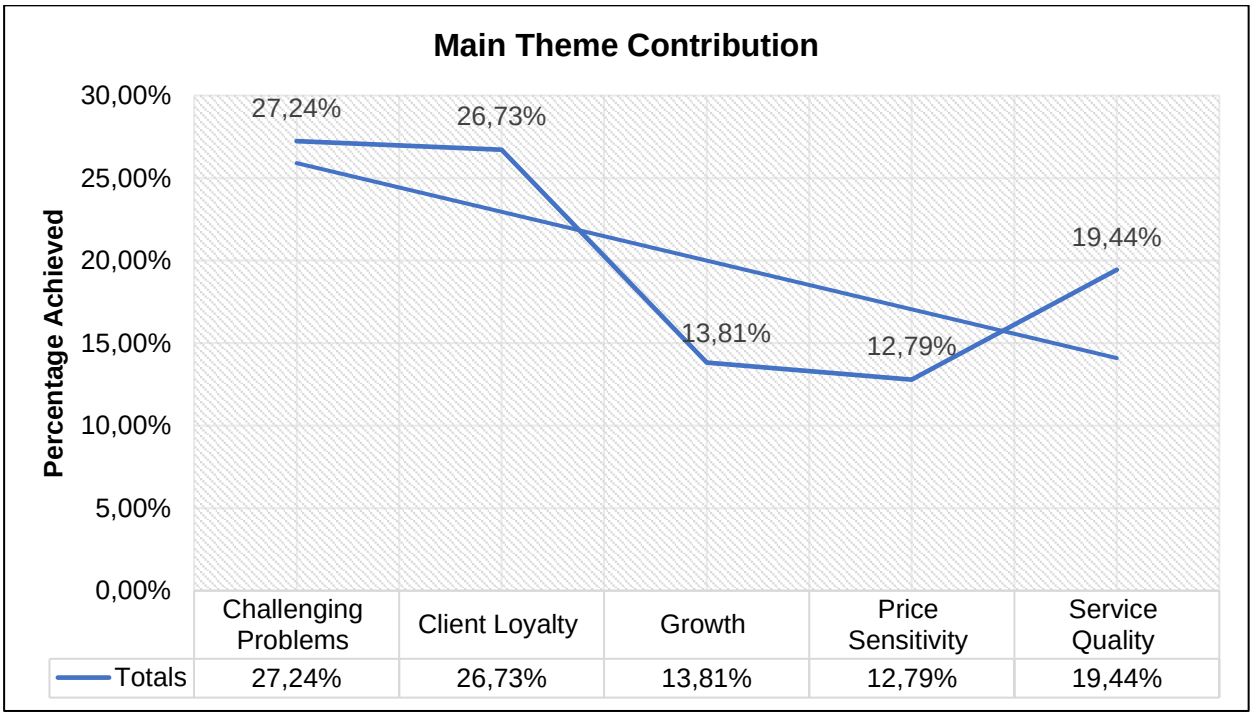
All the obtained raw data was coded in ATLAS.ti, which provided valuable data, as seen in the graph above, focusing on the contribution per participant on each central theme. The combined contributions to each theme were 782 times among all the participants. The study had five main themes: challenging problems, client loyalty, growth, price sensitivity and service quality. As seen in the graph above, Participant 1 (ITW1) contributed 15.49 percent to challenging problems, 16.27 percent to client loyalty, 16.67 percent to growth, 20 percent to price sensitivity and 23.68 percent to service quality.

Participant 2 (ITW2) contributed 16.43 percent to challenging problems, 16.27 percent to client loyalty, 18.52 percent to growth, 16 percent to price sensitivity and 15.13 percent to service quality. Participant 3 (ITW3) contributed 20.66 percent to challenging problems, 25.84 percent to client loyalty, 20.37 percent to growth, 22 percent to price sensitivity, and 18.42 percent to service quality.
Participant 3 (ITW4) contributed 15.02 percent to challenging problems, 16.75 percent to client loyalty, 11.11 percent to growth, 13 percent to price sensitivity and 16.45 percent to service quality. Participant 5 (ITW5) contributed 15.02 percent to challenging problems, 11.96 percent to client loyalty, 18.52 percent to growth, 18 percent to price sensitivity and 13.16 percent to service quality. Lastly, Participant 6 (ITW6) contributed 17.37 percent challenging problems, 12.92 percent to client loyalty, 14.81 percent to growth, 11 percent to price sensitivity and 13.16 percent to service quality.

Participants 1, 2 and 3 indicated the highest contribution levels. ITW1 had an overall contribution rate of 73.16 percent, and ITW2 contributed 70.24 percent. ITW3's contribution rate was 92.55 percent, indicating the highest out of all the participants.

As per the findings in the table below, the themes discussed the most are the challenging problems, with a total contribution rate of 27.24 percent. The second highest theme within the findings is client loyalty, with an overall contribution rate of 26.73 percent. The service quality theme ranked third in the study, with a contribution rate of 19.44 percent. Lastly, the growth theme had a 13.81 percent contribution rate, and the lowest theme was price sensitivity, which had a contribution rate of 12.79 percent.

Table 5: Main theme contribution



4.4 Challenging problems within South Africa's telecommunication industry

The telecommunication industry in South Africa experiences several challenges that hinder ISPs from performing their services effectively. This central theme comprises seven codes that correlate and contribute to this problem. These codes are:

- Aspects of fighting against weak physical infrastructure.
- Challenges experienced in the telecommunication space.
- Competition levels within the telecommunication industry.
- Global chipset shortage hindering ISPs from obtaining their usual product to provide excellent services.

- Impact of theft.
- Mass fibre deployment affecting WISPs.
- Physical infrastructure and problems hindering service delivery.

4.4.1 Code results

Table 6: Code results

Code	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals Codes
Aspects to fight against weak physical infrastructure.	16,67 percent	11,11 percent	22,22 percent	11,11 percent	27,78 percent	11,11 percent	18
Challenges experienced in the telecommunication space	12,36 percent	15,73 percent	25,84 percent	16,85 percent	13,48 percent	15,73 percent	89
Competition levels within the telecommunication industry.	11,11 percent	22,22 percent	11,11 percent	11,11 percent	19,44 percent	25,00 percent	36
Global chipset shortage hindering ISPs from obtaining their usual product to provide excellent services.	21,43 percent	17,86 percent	10,71 percent	10,71 percent	10,71 percent	28,57 percent	28
Impact of theft	20,00 percent	10,00 percent	20,00 percent	20,00 percent	20,00 percent	10,00 percent	10
Physical infrastructure and problems hindering service delivery	20,00 percent	8,00 percent	36,00 percent	20,00 percent	4,00 percent	12,00 percent	25

The table above includes the contribution ratios of each participant toward the sub-topic of the central theme *challenging problems within South Africa's telecommunication industry*.

4.4.1.1 Aspects of fighting against weak physical infrastructure

South Africa's power supply is volatile and worsening as time goes by, and without a constant power supply, telecommunication service providers cannot provide connectivity. Therefore, the country will continue to struggle to improve its digital footprint (Blom & Uwizeyimana, 2020:216).

South Africa's low penetration of connectivity causes a significant digital divide, and the lack of infrastructure contributes to the slow growth of the ICT industry. Many South Africans still do not have access to stable internet as there is a lack of ICT infrastructure (Akande & Van Belle, 2014:5).

Within the results of the data obtained from the six participants, three mentioned several aspects regarding how their businesses fight against South Africa's weak physical infrastructure. The participants were asked whether South Africa's current physical infrastructure is challenging their company to complete specific services. Some participants mentioned that, due to the high levels of load shedding, they were forced to invest in solar systems with lithium batteries for their towers to ensure constant connectivity.

They are still connected to the power grid as it assists them with installing fewer solar panels and batteries. Furthermore, some participants mentioned having generators to ensure the system stays online and end-users do not experience any downtime in their connectivity. One participant mentioned that around 90 percent of all their towers are off the grid, which helps them with the tremendous amount of power outages in their area. Should it be cloudy for a few days, they use Eskom power; if the grid power is unavailable, they will use the generators to ensure zero downtime in connectivity.
Regarding physical infrastructure, such as weak roads, many WISPs do not struggle as much because they use wireless connectivity equipment, meaning they do not have to trench to specific locations. They choose specific isolated sites that are sufficient for them to work in, apply for approvals from the municipality and then put up towers to commence with the wireless base station roll-out.

The following are some quotes where participants reveal aspects they use to fight against weak infrastructure.

“Regarding backup power, we do have solar and lithium batteries at most of our towers, but we are also connected to the grid power” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Our downtime is kept to an absolute minimum 90 percent of our network is totally off the grid” (Participant 4: MS Teams interview. 18 Jul.,10.00).
“We do not struggle with weak infrastructure because we prominently focus on wireless; therefore, it doesn’t matter to us” (Participant 5: MS Teams interview. 05 Jul.,10:56).

4.4.1.2 Challenges experienced in the telecommunication space

There were several challenges located in the results provided by the participants. All six participants mentioned a few problems they are experiencing within the telecommunication space. The first was to obtain adequate new employees, especially in smaller towns. The challenge is that as soon as they train these new employees, they move to the urban areas with more opportunities, causing them to waste their time on training. Furthermore, regarding South Africa’s weak economy, they see that the younger generation is more likely to move over to another ISP due to price. They typically need to choose whether they want price, speed, or quality; unfortunately, the ISPs cannot provide all three.

The fibre network operators (FNOs) have also moved into the smaller towns, causing havoc in deploying fibre lines and causing many end-users to take fibre packages. Also, the larger fibre operators in the town caused the smaller local ISPs to lose quite a few clients to the competition. The participant also mentioned that staying profitable is becoming more challenging, especially with rising costs and competition increases. Some ISPs also struggle to send employees for training at the distributors, as these trainings typically take time, which is the one thing they do not have. The smaller ISPs do not have the resources to send employees for a training week. They require everyone to be onboard and assist with their current clientele.

Participant 4 mentioned that they focus more on fibre applications; however, deploying fibre lines takes time and wayleave approvals from the area municipality. Furthermore, they also require permission from the community to ensure they buy into the connectivity deployment. Fibre deployment also requires resources in terms of labour, which is expensive, as the ISPs need to trench cables and, to do so, they must dig up the ground within the community to lay out the fibre lines.
Participant 3 mentioned that external factors such as fuel prices and load shedding negatively affect the business, making it difficult to stay profitable. The loyalty among end-users is incredibly delicate, as end-users are sceptical and need help to trust easily, making it challenging to build relationships. Another challenge mentioned is that end-users do not understand and appreciate the after-sales services they provide. They do not realise that the service turn-around time they provide is much faster than what the larger operators can provide due to the volume of customers they need to cater for.

Another challenge that participant 3 mentioned was that the wireless spectrums are becoming very congested as infrastructure develops within the country. This affects the service the ISPs provide to customers. Until ICASA decides to open more spectrum for WISPs, providing high data service packages to compete with fibre will remain challenging.

The cost of equipment is also prohibitive to implement, and due to the high crime levels, the WISPs need to install reliable security systems at their towers to ensure the safety of the tower's equipment. The problem is that this creates a more extended return on investment (ROI) for the ISP, meaning they must provide higher service costs to compensate for the other areas.

The giant telecom operators are causing market disruption, continuously lowering the connectivity prices to ensure they increase their market share. The challenging problem is that smaller ISPs also need to provide more competitive connectivity prices but still provide the same high levels of services. End-users do not expect the larger operators to provide them with high-quality service. However, they expect it from the smaller ISPs, creating an unfair environment. End-users and businesses are also

trying to cut several costs, meaning they do not want a fixed contract, meaning they can cancel their connectivity any time.

Participant 4 mentioned a significant challenge: getting the correct paperwork from the workmen's compensation. The admin behind obtaining the necessary documentation is a significant problem, and due to the weak service levels, they could not access one of their high sites for around two and a half years because they required all the safety files.

In terms of obtaining effective employees, participant 4 also mentioned that they struggle to obtain new effective employees. As soon as they receive certification training, they leave the small town to look for work in the urban areas. Furthermore, participant 4 mentioned that prepaid services are not worth it for them as many clients purchase five rands of data. Then, if it does not work effectively, they reach out to our call centre, causing our technicians to work many of these problems, which takes up too much of their time.

Participant 5 mentioned that wireless equipment is expensive and cannot compete against fibre in terms of speed. ICASA has opened new spectra, such as the lower 6GHz, giving WISPs a better chance to compete with speeds. However, fibre speeds are still dominant in this area. Furthermore, they also struggle with lighting within their area, as once the equipment is struck by lightning, it completely breaks, meaning the ISP needs to swap out the equipment, which takes time. The weak exchange rate is also a significant problem as it causes the equipment prices to increase, which causes a ripple effect on the customer. They must provide free installation for clients, meaning the ISP must cover the installation and equipment costs.

Participant 5 also explained that providing clients with higher speeds is causing more problems for them as the end-users are running multiple speed tests, and if they always reach the speed, they call in to complain. Large homes typically require premium equipment, and if the pricing of the equipment is too high, it leads to them not purchasing it, as they still need to put mark-up, VAT, shipping costs and more on the equipment. Once again, this is where the exchange rate is negatively influencing them as an ISP. The higher prices are a significant problem, as the ISP needs to absorb the

cost of installation and equipment for the client, and the main problem is that the ISP cannot bind a client to a one- or two-year contract.

Participant 1 mentioned that with clients on a 20Mbps fibre package for approximately R150-250 per month, if that client experiences a problem, the ISP will lose money due to the expensive aspects such as fuel costs, the technician's time, and maintenance. Also, businesses and end-users can no longer be bound to a contract, meaning clients can come and go as they please, making it challenging for their business. Regarding equipment pricing, the participant explained that they must cover the installation costs to ensure they are competitive with the larger fibre providers.

Furthermore, a significant problem is providing a call centre service to clients. This is challenging because the call centre is not bringing in more money for the company as the product and service are already sold. This is a continuous expense for the company, and when an inferior product is used, the after-sale service increases, causing more work for the service team.

Participant 1 also mentioned that they struggle with load shedding in South Africa and that the problem is that the available batteries that ISPs use are not built for South Africa's environment. This is because the power outages occur a few times daily, ultimately not giving the batteries enough time to recharge for the next outage. Lithium batteries are an excellent alternative to ensure load shedding does not affect the towers. However, these batteries are expensive, and theft becomes a significant problem.

Furthermore, participant 1 also mentioned that they struggle with lighting damage, which causes the towers not to work, ultimately causing downtime in connectivity. The participant also mentioned that they would rather have ten large clients and keep them satisfied than a thousand customers on a fibre-to-the-home line because there is less support and fewer problems with business customers. The free installation of equipment is hurting their business as it is not sustainable.

This ISP is also struggling to obtain new employees as new potential employees are demanding work-from-home packages, making it difficult to obtain effective

employees. This is a problem as this ISP operates in Gauteng, meaning more potential employees should be available than in smaller towns. Also, employee training is a significant challenge for smaller ISPs as they need employees working in the field.
The participant mentioned that when they use the fibre infrastructure from other fibre providers, they do not have the control to ensure a problem gets fixed fast, as they depend on the FNO's infrastructure. Lastly, one challenge that stood out is the manufacturers now selling directly to the end-users through different platforms. This issue is because it cuts out the distribution and ISP channel, causing a higher competition rate within South Africa.

Participant 2 mentioned that the chipset shortage has hurt ISPs as they had to procure whatever equipment was available and spend more than they usually would. ISPs invested much capital as they needed stock on hand due to the uncertainty of stock availability. Furthermore, regarding rural connectivity, security in those areas is a significant problem, making it challenging for ISPs to serve those areas. Vandalism and theft are reasons why ISPs typically do not provide connectivity in rural areas.
The following quotes stood out, where participants reveal several challenges experienced in the telecommunication sector.

“Regarding the product prices, we must absorb much of the cost on the hardware side” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“It is getting harder to stay profitable with costs rising and the price wars that have been happening. It makes it more challenging. Companies are starting to sweat” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“The problem is consumers expect Super Service from WISPs, which they don't expect from the corporates, which puts us in a very difficult situation” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“The repercussion of the lockdown is only eating us now. Before lockdown and during lockdown up until about six months ago, we had an average of at least ten new wireless customers sign up, witched slowed down to maybe three a month” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“The biggest issue now is the rand/dollar exchange rate, making it difficult to obtain stable prices for wireless equipment” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“We are not always in control if we sell connectivity using third-party fibre infrastructure, as we depend on how fast they can provide us with feedback” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.4.1.3 Competition levels within the telecommunication industry

South Africa’s telecommunication industry has a couple of large corporations that dominate the market, making it challenging for other ISPs to compete (Sutherland, 2021:1-4-5). Companies are deploying fibre rapidly in urban areas, causing an increase in competition within these areas (Oki & Lawrence, 2022:113-116).

All six participants contributed valuable opinions regarding the high competition levels within the telecommunication industry. Participant 1 mentioned that the telecommunication industry is highly competitive, and pricing will always decline, making it challenging for ISPs. Furthermore, for an ISP to stay competitive, they either need to provide more speed or reduce their pricing to remain competitive. However, the problem is that an ISP reaches a point where the end-user only requires a little speed, meaning the ISP must cut the package price to maintain the client. The fibre providers are installing billions of rands worth of fibre cables in the ground and pushing the marketing of fibre, causing everyone to want fibre for their home or business.
Participant 2 mentioned that it is becoming significantly challenging to remain profitable with the industry’s rising costs and price wars. However, this is not only a threat to smaller ISPs but also to large operators. The weak power grid is advantageous for ISPs with solar-related power solutions installed at their towers. Load shedding is making it worse for mobile network operators (MNOs) as they require immense capital to install power solutions such as solar, inverters and batteries at all the various towers across the country. The more the MNOs struggle, the better it is for smaller ISPs with backup power solutions at their towers, as clients require constant connectivity.

Furthermore, the ICT industry is incredibly competitive, and a race to the bottom of the price war continues with this trend. The fibre network providers (FNOs) have moved into the town like an absolute army and finished with the fibre lines within a month or two, providing the ISPs with insufficient time to counter-act effectively. These large FNOs moved in without any regard for what ISP operates where; they probably just thought that all the ISPs would become clients of them. Another challenge regarding the competition levels is that one of the world's top wireless brands started to sell directly to end-users, causing difficulties for ISPs.

The third participant mentioned that their customers moved to a fibre service provider due to pricing and speed. However, they were not satisfied with the service and were forced to upgrade their package, ultimately paying more than they expected. The market is very competitive, and smaller ISPs must think outside the box, treat each client differently and adapt to challenging circumstances quickly.

Participant 4 mentioned that two competitors have moved into their town to provide fibre-to-the-home packages to end-users. The new service led to the wireless connectivity packages slowing down significantly. However, the ISPs have utilised the fibre network to obtain new clients. The connectivity market has been highly competitive with all the newcomers over the last few years. However, the one benefit of the local ISP is that they know the challenges within the area, know what the clients want and how to stay above the competition.

Participant 5 mentioned that in some areas where fibre has been deployed, business activity appears to decrease. The ISP has also lost numerous clients due to two large fibre operators that moved into the town, which hurt the business. The participant also mentioned that the amount of competition in their small town has increased tremendously, ultimately leading to customers having too many options. Furthermore, the significant fibre providers offer free installation and equipment, causing the ISPs in the town to compete with a similar offering, which is significantly challenging, as these smaller ISPs do not have the capital to implement such an offering. Clients move over too quickly, meaning, if an ISP offers free equipment and installation, they require at least a year to absorb those costs.

Participant 6 mentioned that most ISPs are bottom feeders, fighting for small-margin scraps instead of providing better services. It is so competitive that the industry is not the survival of the fittest but the survival of the fastest. This means the ISP that can obtain an area first typically obtains the most clients. Furthermore, the larger ISPs with significant financial strength will obtain around 50 to 60 percent of the customers in the area. In contrast, newer and smaller ISPs will generally obtain around 15 to 25 percent of clients in the area if their services and pricing are competitive. The industry is also highly competitive due to the number of ISPs clients can choose. Some local ISPs obtain their clients in their town due to loyalty, but if the end-users do not know the local ISPs, they will typically sign up with the larger operators. Furthermore, an ISP must have an affordable package option and effective services to be competitive in the industry. The one positive aspect is that some clients do not move over due to the efforts that go into switching over to a new ISP.

The following quotes stood out, where participants revealed the competition levels within the industry.

“It is very competitive, and that is why all the smaller WISPs need to think outside the box, approach customers differently, and adapt to all circumstances” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“It is competitive; we normally say it is not survival of the fittest but survival of the fastest” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.4.1.4 Global chipset shortage hindering ISPs from obtaining their usual product to provide excellent services

The worldwide chipset shortage caused a significant supply chain shortage, which caused technology providers not to be able to serve their clients. This disruption has impacted the telecommunication industry as these companies could not procure enough stock to provide constant connectivity to their clients. Furthermore, this caused companies to lose many opportunities during a spike in connectivity (Yang, 2022:6).
Participant 1 mentioned that the global chipset shortage affected their business negatively as they needed to purchase and use different brands of products as they

could not procure their usual brand during this shortage period. The shortage problem affected the Wi-Fi products more than anything else, causing them not to use their usual Wi-Fi access points. This was a significant issue for them as they could not provide the high levels of support they used to due to the unfamiliarity of the new products. They needed to re-train the employees to provide adequate support to the clients. Furthermore, even with the shortage ending, they still have various brands in the field and must keep track of all these devices. Unfortunately, they cannot just swap the products, as the equipment costs a lot.

Participant 2 mentioned that the chipset shortage was hugely frustrating for their company, as they use a specific product range. Once the shortage occurred, they could not procure their preferred kit. It is much easier to run a successful ISP if everything, including the equipment, is standardised. The problem is that the new products caused them to retrain all their employees. Also, managing all the different brands was and still is a nightmare, as each brand has a different management platform, causing more difficulties in terms of admin. Therefore, this led to an overstock of equipment when it became available, negatively affecting the company's cashflow.
Participant 3 expressed that the global chipset shortage affected their business negatively, as they needed to come up with different ideas to ensure the customer still obtained an effective solution. At times, they re-used older equipment that is still working until they could obtain new equipment. They also purchase second-hand equipment to ensure they can install equipment at sites.

The fourth participant mentioned that the chipset shortage affected their company negatively. They tried to keep as much stock on hand as possible; however, when they could not obtain their preferred brand, they had to procure and use unfamiliar brands, which were difficult to service and manage.

Participant 5 expressed that the chipset shortage hindered their ability to install preferred products and that they had to move over to unfamiliar brands, which they were uncomfortable with. The company spent over R500 000 to convert its wireless infrastructure to a brand in stock to ensure it could provide sustainable business. The challenge was that they needed to train all the employees, which took time and even more capital.

Lastly, participant 6 mentioned that the chipset shortage affected them negatively as they could not purchase bulk quantities when they eventually became available as they needed to stick to their budget. They lost several deals because they could not procure specific products for clients. Furthermore, the company reached a point where they were forced to purchase different brands to ensure it could fulfil customer needs. The chipset shortage cost the company a lot of money and reputation, increasing their installation time.

They were unfamiliar with the products and had to wait patiently for stock to arrive. However, despite all the negative aspects, it did provide them with a different way of thinking, as the company needed to adapt and change the strategy to ensure they obtained new clients. It also strained the company's relationship with their distributor, as they started purchasing from any distributor with stock. The participant also mentioned a phase during the chipset shortage period where they could not install new products as no stock was available. There were also many scammers during this time, which caused many ISPs to lose money.

The following quotes stood out, where participants revealed regarding the global chipset shortage.

"It was hugely frustrating; for example, we have specific products that we use, and we couldn't get our preferred kits during this period and had to use whatever was available" (Participant 2: MS Teams interview. 12 Jul.,15:55).

"The chipset shortage had a massive effect on our company" (Participant 4: MS Teams interview. 18 Jul.,10.00).

"The chipset shortage ultimately hindered our ability to install specific products, and we had to move to unfamiliar brands" (Participant 5: MS Teams interview. 05 Jul.,10:56).

4.4.1.5 Impact of theft

Participant 1 acknowledged that they experience several difficulties regarding keeping their wireless towers and equipment safe. However, despite the higher rate of equipment theft in more rural areas, they have challenged this problem by engaging with the community to ensure they understand why the towers are critical to be online, providing them with connectivity.

Participant 2 expressed that they struggle with vandalism at their towers, which ultimately causes downtime in connectivity and increases customer frustration. The destruction and theft became so severe that they needed to upgrade their security systems by installing electric fences, cameras, and alarms to combat this problem.

Furthermore, participant 4 emphasised the importance of learning from previous theft experiences, especially when solar panels and batteries are involved. They implement more security at these sites, and unfortunately, all these extra measures cost a lot of money, making it challenging for them to drop their prices. These security systems allow them to be more online than larger internet operators within their area.

Participant 5 mentioned that they do not offer free connectivity to rural areas because as soon as something is free, people do not value it. They start looking after the equipment once they pay for the connectivity, and less theft occurs. They have seen a direct correlation between reducing theft due to the community's collaboration and end-users paying for their connectivity. They have experienced equipment damage and loss when they provide free connectivity services.

Lastly, participant 6 mentioned that they do not use solar panels as they attract high theft levels, especially in rural areas. Furthermore, once there are solar panels and batteries, the equipment typically gets stolen, which causes even more downtime in those areas. South Africa's power supply is significantly weak, causing service providers to implement solar systems at their towers, which consist of solar panels and batteries; however, it is challenging to maintain due to the high levels of theft of these power systems (Heyns *et al*., 2021:7).

The following quotes stood out, where participants revealed theft and crime within the telecommunication sector.

“We also struggle with vandalism at our towers, which causes downtime and a lot of frustration for customers” (Participant 3: MS Teams interview. 06 Jul.,09:07).
“It is challenging from time to time, due to our working environment, regarding the safety of your equipment” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“We do not have solar panels on the sites due to the high poverty rates; there is a lot of tower theft, especially when there are solar panels and batteries. If theft occurs, the downtime of connectivity is even longer” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.4.1.6 Mass fibre mass deployment affecting WISPs

Several network operators within South Africa have committed to deploying fibre cables to provide FTTH in large cities, including Johannesburg, Durban, Port Elizabeth, Pretoria, Bloemfontein, and Cape Town (Oki & Lawrence, 2022:115).

Participant 1 mentioned that the mass deployment of fibre causes aggressive pricing strategies from these larger operators. This ultimately leads to the manipulation of market prices to the lowest it has ever been, which causes all end-users to expect lower prices. The mass deployment of fibre infrastructure affects WISPs as they cannot provide services at the expected marketing price, which is incredibly low and simultaneously provide good services and fast speeds.

Participant 2 mentioned that the mass deployment of fibre is a challenge for their company within Ladysmith simply because many end-users demand fibre for their business or home, and the problem is that it is becoming widely available in most areas. The fibre network providers (FNOs) have created a perception that fibre is the only option if one requires fast and reliable internet, which ultimately causes them to lose clients to these fibre operators. Furthermore, the speed at which the fibre infrastructure was deployed in Ladysmith was so fast that it did not provide WISPs enough time to counteract effectively. Typically, smaller ISPs have never considered

deploying fibre infrastructure in smaller towns, as wireless usually works effectively. However, with the new competition coming in with fibre, most WISPs in the city were forced to innovate and adapt to the situation. Unfortunately, the long-term impact is unknown and will only be seen in the next few years.
Participant 3 mentioned that the larger service operators have much more capital to spend as they have financial backing. These large operators are currently manipulating the prices and constantly driving the market prices down, making it challenging for smaller ISPs to compete. Furthermore, the fibre theme is marketed exceptionally well and is focused on cost-effectiveness instead of the benefits and negatives behind fibre.

Participant 5 expressed that the mass deployment of infrastructure negatively and positively affects their business. They provide fibre packages using third-party fibre infrastructure, allowing them to onboard more clients. However, on the negative side, they lost many clients to the larger fibre operators.

Lastly, participant 6 also mentioned that the mass deployment of infrastructure heavily affected their wireless business as clients constantly moved to the competition, predominantly because they offer fibre solutions.

The following quotes stood out, where participants revealed regarding mass fibre infrastructure.

“The mass deployment of fibre was a wake-up call to the wisps. I think many WISPS had been running for years and didn't have to innovate or do much. Then suddenly get hit with FNOs in their town” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“They are pushing down prices, making it challenging for smaller WISPs to compete” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“The mass deployment of fibre infrastructure does affect the WISPs to compete effectively” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“Cutting everyone's throats by doing that and being super aggressive regarding pricing and just focusing on the pricing. Because, on the one hand, you are manipulating the

market price down and simultaneously making customers accustomed to that low price" (Participant 1: MS Teams interview. 07 Jul.,08:27).

4.4.1.7 Physical infrastructure and problems hindering service delivery

Unfortunately, the low penetration of broadband connectivity in South Africa could be due to the country's insufficient infrastructure investments throughout the years, ultimately hindering ISPs' ability to provide connectivity for everyone (Oki & Lawrence, 2022:114).

The first participant expressed concerns regarding the weak physical infrastructure hindering them from providing effective services. The road construction is currently causing outages on their fibre lines as many of these construction companies dig up the ground without any concern for fibre, causing significant downtime. Other factors, such as rats, are also causing damaging problems as they chew through the fibre lines. The participant also mentioned that many companies are fighting for infrastructure pace on the roads, and many of them ultimately trench over existing fibre lines, which could cause a breakage of the line. Participant 2 expressed concern regarding the overly long lead times regarding wayleave approvals from the municipality. This places their business strategies, timelines and roll-out of fibre on hold, which causes them to lose potential client deals. Furthermore, participant 3 mentioned that they struggle with limited infrastructure in rural areas, making it challenging to expand their business and provide services.

Participant 4 mentioned they have solar-powered high sites but remain dependent on grid power on cloudy days. Unfortunately, South Africa's grid power is too unstable to carry during the cloudy days, which causes downtime for them. Furthermore, power surges and dips caused by load shedding damage their expensive inverters, causing them to lose the warranty and then they must replace the unit. Data centres also experience technical difficulties from time to time, causing them not to have any control over the process, ultimately leading to them having to wait until problems are sorted out.

Lastly, participant 5 mentioned that they struggle with road conditions, especially in rural areas. They must make use of large vehicles to get to specific sites. However, physical infrastructure is less challenging as they predominantly use wireless mediums. Furthermore, participant 6 expressed concerns regarding the volatile and expensive fuel costs, vehicle maintenance due to weak road infrastructure and having limited ICASA ISM bands to work with, making it challenging to provide adequate connectivity services.

The following quotes stood out, where participants revealed how South Africa's physical infrastructure hinders their ability to provide effective services.

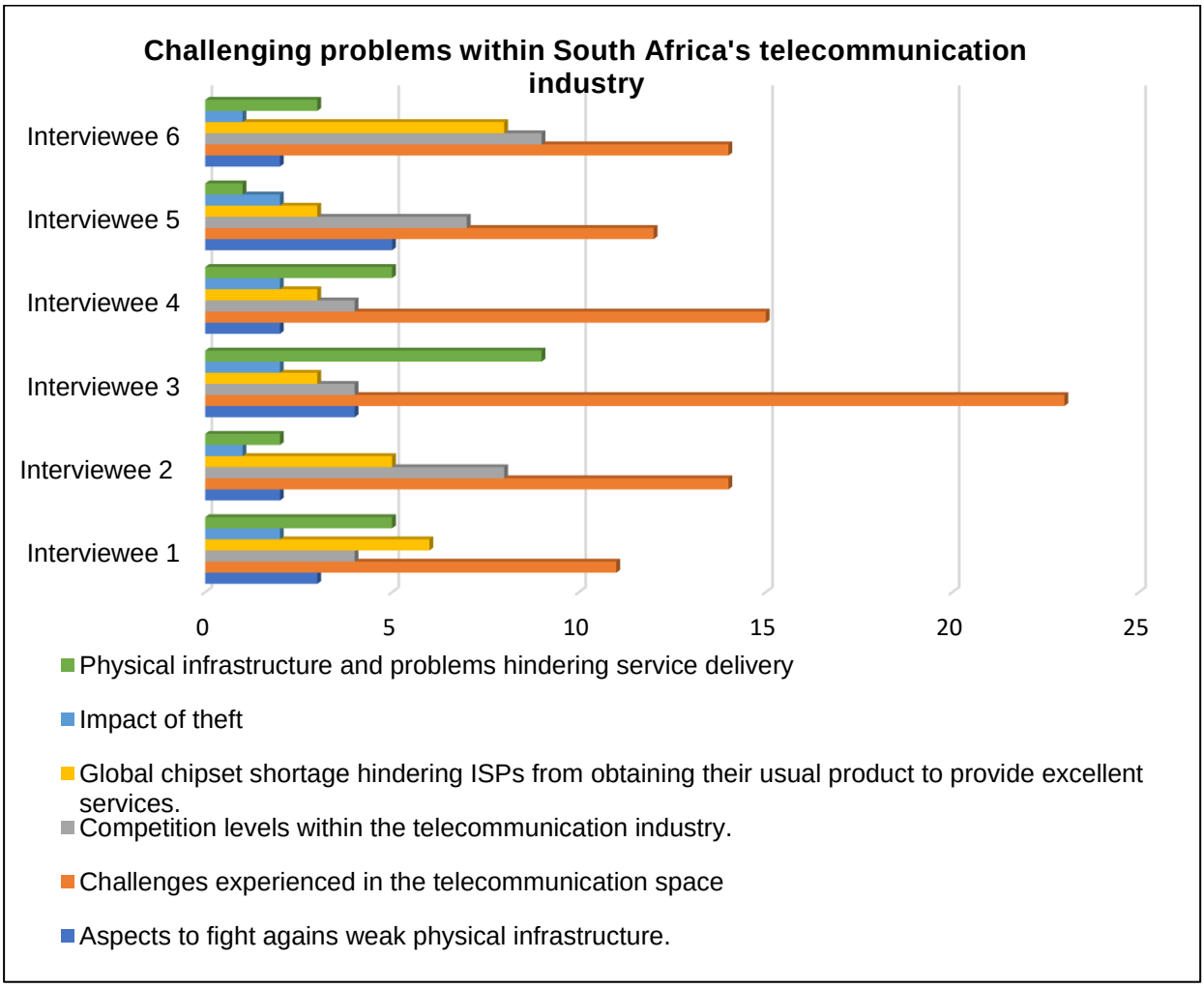
"Load-shedding is one of our biggest challenges as we need to start the generators every time there is load shedding" (Participant 6: MS Teams interview. 08 Jul.,14:29).

The roads in the rural areas are deficient and create a slight challenge, but it is less challenging because we are wireless" (Participant 1: MS Teams interview. 07 Jul.,08:27).

"In the smaller towns, that's levitated, meaning when load shedding occurs, it causes a lot of power surges and dips, which harms the inverter systems and causes towers to be offline, which is one of our most significant issues" (Participant 4: MS Teams interview. 18 Jul.,10.00).

The figure below concludes that all participants have expressed their opinions regarding the challenging problems within South Africa's telecommunication industry.

Figure 6: Topic contribution to challenging problems within South Africa's telecommunication industry



Participants 3 and 4 expressed the most regarding challenges faced within the telecommunication space. In comparison, participants 1 and 5 did not have as many challenges within the space. Regarding chipset shortages, participants 1 and 6 expressed the most regarding the after-affect problem. Another area that stood out is the infrastructure, and participants 1, 3 and 5 had the most challenges regarding weak infrastructure. The next theme focuses on the price sensitivity levels within the industry and how they affect ISPs.

4.5 Price sensitivity within South Africa's telecommunication industry

The telecommunication sector is undergoing a continuous competition rate, causing service providers to lower their prices to remain competitive. South Africa's consumer

market is also becoming remarkably price-sensitive, which causes consumers to move over to ISPs with the best and most attractive prices for their connectivity packages. The increasing price sensitivity levels do impact customer loyalty to a severe extent (Morgan & Govender, 2017:3).

This central theme comprises five codes that correlate and contribute to this problem. These codes are namely:

- Connectivity price war
- Importance of distribution prices for equipment
- Importance of ISP service price to end-users
- Price sensitivity among end-users
- Price sensitivity levels of current clientele

4.5.1 Code results

The table below indicates the contribution rates of each participant.

Table 7: Contribution rates per participant on price sensitivity

	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Total Codes
Connectivity price war	25,00 percent	16,67 percent	16,67 percent	0,00 percent	25,00 percent	16,67 percent	12
Importance of distribution prices on equipment	11,76 percent	11,76 percent	29,41 percent	17,65 percent	23,53 percent	5,88 percent	17
Importance of ISP price	11,11 percent	22,22 percent	11,11 percent	33,33 percent	22,22 percent	0,00 percent	9
Price sensitivity among end-users	18,18 percent	15,15 percent	27,27 percent	18,18 percent	12,12 percent	9,09 percent	33
Price sensitivity levels of current clientele	29,03 percent	16,13 percent	16,13 percent	6,45 percent	16,13 percent	16,13 percent	31

The table above includes the contribution ratios of each participant toward the sub-topic of the central theme *price sensitivity within South Africa's telecommunication industry.*

4.5.1.1 Connectivity price war

The telecommunication sector's consumers have high price sensitivity levels, leading customers to move to ISPs that provide the fastest speeds at lower prices and effective services. The increasing competition levels within the country have created an intense price war, which strains customer loyalty levels (Lommerud & Sørgard, 2002:57).

Participant 1 expressed that there is indeed a price war within the connectivity market and that fibre providers are artificially pushing down the market prices, ultimately hurting the industry in the long run. The larger providers are cutting prices aggressively to gain more market share. Furthermore, their company is aggressively counteracting fibre prices on an ad-hoc basis if clients have a problem with their current pricing. It is also essential for them as ISPs to be more creative, as competing against pricing is challenging, primarily when wireless competes with fibre. Therefore, it returns to how creative a WISP can get with their products.

Participant 2 mentioned that the worst decision an ISP can make is to participate in the industry price war, as it is ultimately a race to the bottom. A smaller ISP should gain business more effectively using its advantages, such as services. They had to reduce their prices to stay competitive at the start. The problem was that they reduced the pricing and increased their data speeds to ensure they did not lose more clients.
Furthermore, participant 3 mentioned that larger fibre operators are making it significantly challenging to remain competitive due to the market price and hurting the ICT industry. The ICT market is such a competitive environment due to the large fibre deployments in many areas, which are also offered at low prices. These operators are pushing down market prices, making it challenging for smaller WISPs to target the same clients and stay competitive.

Participant 5 mentioned that there is a massive price war currently occurring in the telecommunication market. However, the problem is that WISPs are fighting WISPs,

and WISPs are fighting the fibre operators, causing significant issues. Typically, the WISPs would challenge and counteract the fibre providers in the industry by trying to compete with pricing. In the end, everyone would have the exact pricing, and it would just be the packages that would be different.

Lastly, participant 6 mentioned that every ISP competes with low margins, making pricing an essential factor in equipment cost. Furthermore, the pricing issue also comes back to customer loyalty. The participant also expressed that they want to improve their services by sending employees to more training sessions to ensure they have the edge over the competition. However, there is already a price war, meaning they need all hands on deck to ensure they obtain the most with what they have.
The following quotes stood out, where participants revealed how the connectivity price war affects their business.

There is a price war, and the fibre providers are artificially pushing down the market to gain market share, which will hurt the market in the long run. Because the guys are just cutting each other's throats, do end up getting that market share" (Participant 1: MS Teams interview. 07 Jul.,08:27).

"The worst thing an ISP can do is get into a price war, as it is a race to the bottom. Win business with what you are good at" (Participant 2: MS Teams interview. 12 Jul.,15:55).

"They are making it so competitive that they are hurting the ICT industry" (Participant 3: MS Teams interview. 06 Jul.,09:07).

"There is a massive price war now; it is WISPs fighting each other and fighting against the fibre providers" (Participant 3: MS Teams interview. 06 Jul.,09:07).

"With the price war, every ISP is competing with low margins. Therefore, pricing is essential, and it comes back to where we will talk about customer loyalty and why price is becoming a general common topic" (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.5.1.2 Importance of distribution prices for equipment

All participants have expressed their opinions regarding the importance of the distribution price for equipment. Participant 1 mentioned that the pricing they receive from their local distributors directly impacts the client's decision to purchase more equipment. The price they pay directly impacts what they offer clients, and if the pricing is too high, the end-users would instead look for an alternative solution or provider to purchase the equipment or service from.

Participant 2 expressed the importance of distribution pricing for them as a service provider, as smaller ISPs must provide free installations and equipment to ensure they remain competitive. The higher the price is from the distributor, the longer it takes the ISP to absorb the equipment costs. Higher equipment prices affect the company's cashflow. Therefore, even a slight change in pricing creates a significant ripple effect regarding the return on investment of the equipment.

Participant 3 expressed that the pricing model is essential because they must absorb the equipment cost for every new user who signs up. The more affordable the equipment is, the faster the return on investment will be for the company. The pricing is also essential for the end-users because if the equipment is too expensive, end-users typically do not purchase additional products. The end-users would then instead look for a more affordable option. Therefore, if the prices from the distributors increase, it does not just affect the ISP but the end-users as well.

Participant 4 mentioned that distributor prices heavily affect the end-users' decisions and that ISPs are price-sensitive when it comes to distribution prices due to the free equipment that must be provided with every installation. Unfortunately, fibre-to-the-home providers offer free installations and free-to-use routers to ensure an increase in sign-ups.

Participant 5 expressed that if the distribution price increases by one per cent, it causes a ripple effect to the end-user. The problem with the increase is that someone must pay for it, and unfortunately, the ISPs have to absorb it. If there is a ten per cent increase, the client typically does not purchase the equipment and uses what they

have, which causes them to be unhappy with the ISP. Damaged equipment due to vandalism or lightning also strains ISPs because some equipment was purchased at an improved exchange rate. Once the incident occurs, the pricing increases due to external factors, making it challenging for ISPs as they need to pay for the difference. Furthermore, participant 6 also mentioned that local product prices from distributors are essential to obtain and keep a client on the books.

The following quotes stood out, where participants revealed the importance of equipment prices.

“It is important to us as the service provider because take the cost of the cost of CPE, and nowadays, just because of the environment, we must throw in a free install, or we've got to make it almost free” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“The cheaper we can get the equipment, the faster the return on investment starts” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Furthermore, distributor prices affect the end-user’s decision-making. This statement is because most of the Fibre ISPs provide free installation and equipment in the connectivity service” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“If distributors move the price by just one per cent, it is a ripple effect” (Participant 5: MS Teams interview. 05 Jul.,10:56).

4.5.1.3 Importance of ISP service price to end-users

Within South Africa, end-users look for the best price possible due to the challenging economic circumstances. Consumers are becoming more price-sensitive regarding connectivity prices and will quickly move to an alternative provider if the service and price are not according to their expectations (Morgan & Govender, 2017:3).

Participant 1 mentioned that the price they pay for products directly impacts whether the end-user accepts their services. Participant 2 expressed that it is challenging for them when they want to sell a product to the client, and the client can source it for a

more affordable price from platforms such as Takealot. The participant further mentioned that they try to remain competitive in terms of pricing for the equipment to ensure the clients do not procure from alternative online stores. Furthermore, participant 3 mentioned that end-users are price sensitive, especially within the harsh economic times we find ourselves in, meaning they are trying to cut costs. Unfortunately, when cutting costs, the internet is on top of that list.

Participant 4 mentioned that fibre providers offer free-to-use routers to ensure they sign up more clients, which ultimately creates a market that is significantly price-sensitive as they expect it to be free. Their company is transparent with the client and explains to the end-user that they will purchase the equipment. It is based on a month-to-month contract, but their service will be excellent. The company also provides a rent-to-own deal to their clients, which is added to the monthly subscription, meaning they do not have to pay a large lump sum for the initial installation. However, if they choose this option, it becomes a two-year contract for homes or businesses, as it provides us with security that they will not move over to an alternative provider.
Lastly, participant 5 mentioned that they do not cover the costs of the equipment inside the home. However, they cover the outdoor equipment, such as the subscriber unit. To ensure that they cover themselves, they let the client pay a once-off R350, but the equipment is the company's property, meaning should the client move over due to pricing, they can collect all the installed equipment.

The following quotes stood out, where participants revealed the importance of ISP prices within the market.

"Fibre-to-the-home providers offer these free-to-use routers and many other tactics to get clients to sign up" (Participant 4: MS Teams interview. 18 Jul.,10.00).

"We are affected by price sensitivity, because everyone is cutting costs everywhere that they can if you can save a few rands" (Participant 3: MS Teams interview. 06 Jul.,09:07).

4.5.1.4 Price sensitivity among end-users

Within the price sensitivity among end-users topic, all participants in the study had strong opinions. Participant 1 mentioned that price is the most essential aspect for an ISP because it costs a significant amount of capital to build a network compared to fibre. Customers, in general, are price-sensitive in South Africa, but strangely enough, the only aspect that changes is how they spend their money within rural areas. They do not have the money to sign up for monthly packages but can afford a daily pass to use data. Unfortunately, people living in rural areas are primarily used to mobile data offered by the operators. However, the data they offer is expensive, making rural hotspots an effective way to connect people at an affordable price. Fixed wireless broadband is less costly than mobile broadband, filling the gap for people in South Africa as an alternative connectivity method (Oki & Lawrence, 2022:114).

Furthermore, the participant mentioned that the ISP industry's market price will continue to decline and that an ISP, large or small, must either provide more data speeds or reduce their pricing to maintain the customer. The major problem is that there is a point where customers do not require more speed as the package that they have is sufficient for them, meaning that price sensitivity will continue to be a topic within the industry.

Participant 2 mentioned that customers want the best value for their money due to the difficult economic circumstances in South Africa. The poorer areas will continue to struggle for connectivity, so we changed the approach to how the medium is delivered. Many end-users in those areas prefer prepaid billing models as they do not always have a steady income to afford monthly packages. Furthermore, mobile internet providers have been charging extremely high prices for years, causing South Africans to become even more price-sensitive. These people can only afford to purchase data in small increments daily, allowing them to connect with others, such as friends or family, or even apply for work.

Participant 3 expressed that South African end-users have significant financial strains, making it challenging for ISPs to install the specific solution they require for the application. Therefore, they install solutions that are only sometimes suitable for the

application but are all the end-users can afford at that stage. South Africa's poverty rate remains problematic, as many end-users can afford a monthly subscription. However, they need help to afford the equipment, which significantly strains the ISPs as they must provide free equipment. If an ISP cannot offer free equipment, the client goes elsewhere, as they cannot afford to pay R3500 to R7000 for the connectivity equipment. Price sensitivity is a significant issue. To make the issue even worse, end-users are poorly educated regarding internet connectivity, meaning cheaper is not always better. End-users typically inform ISPs that they can procure a more cost-effective product faster from another platform; however, they do not understand how the product performs in real-life circumstances. Furthermore, due to the high price sensitivity levels, many clients are going for fibre offerings as the pricing of fibre packages is very low in the market, and the issue is that customers demand to pay less due to the low market price trend.

Participant 4 mentioned that they only target not price-sensitive clients due to their effective services. The client who wants to pay R240 per month instead of R250 is not the client they are pursuing to attract. This is because these sorts of clients will quickly move to an alternative ISP if the pricing of the package is slightly more cost-effective. Furthermore, poverty is a significant contributing factor in the expansion and growth of the telecommunication industry, as it is difficult to penetrate markets if the population does not have a fixed income. Service levels are the only way to provide higher prices to clients and maintain them. The clients who spend the least on their connectivity services typically expect premium services, which is challenging in the long run. Clients who hunt for bargains do not want to build relationships and do not want their services.

Participant 5 mentioned that it ultimately depends on what the end-users can afford. Due to the economic circumstances, they want to get the most out of the deal. They have developed a package that caters to end-users who cannot afford the premium packages and only require connectivity. These lower packages cost around R350 monthly, and the client receives an 8Mbps line.

Participant 6 expressed that times have changed, and customers would move to an alternative service provider to save a small amount every month, as they need to cut costs. The participant also elaborated that price sensitivity is challenging but differs

from area to area. This means the less fortunate areas are typically more price-sensitive. The lower standards measure (LSM) market price cannot be higher than R250 per month as that is all they can afford. Furthermore, this ISP tries to steer away from providing slower speed because, for them, it does not matter what medium they utilise; the bandwidth continues to remain the same. This means that they will provide affordable packages at higher bandwidth.

The following quotes stood out, where participants revealed their opinions regarding price sensitivity among end-users.

“So those consumers are more price sensitive. But when it comes to rural connectivity, the only change is how they spend their money; they might spend more per month with you than if you gave them a monthly bill” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“Price sensitivity is also an issue because people are uneducated on the internet” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Clients will easily change over to any competitor; if the price is slightly more cost-effective, they will move over” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“Clients want to get as much as possible for as little as possible. Unfortunately, that's our economic situation now. Everybody needs to turn the pennies around four times” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“Times have changed, and we are seeing that customers are moving to different ISPs to save R50 bucks and cutting costs wherever they can” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.5.1.5 Price sensitivity levels of current clientele

Participant 1 mentioned that the client price sensitivity levels are reasonably high and that some clients would leave them to pursue a more affordable package; however, they return due to the poor services provided by the other ISPs. Approximately two

clients left this ISP due to financial reasons. However, the focus is to provide high-quality services at a price, as this ISP does not want to participate in the current price war. Their home users pay higher monthly fees but remain with the company as the service levels are excellent. Ultimately, the current clientele is price-sensitive. However, a significant price difference must exist for them to move to an alternative service provider.

Participant 2 mentioned that their younger generation customer prioritises price and speed, and they would quickly move if another ISP could provide them with the correct speeds at a more affordable rate. Ultimately, clients leave if they find better price connectivity packages. Participant 3 also expressed that their clients would mainly leave due to pricing as price sensitivity is a reality, and all their clients are trying to save money. Their ISP lost around five per cent of their clients due to pricing, and the issue is that those clients do not always compare their services with the alternative service correctly.

Participant 5 mentioned that they try to convince their price-sensitive clients to stay with them by reminding them about their unique services, which they will not get from the alternative provider. Furthermore, they try to mitigate getting to the point where clients demand them to drop their pricing by monitoring the competitors' pricing. Participant 5 expressed that the economic circumstances affect the equipment prices and client expectations. They cannot compete with the lower fibre prices and lose clients because of pricing. However, not all their clients are price-sensitive, as they remain with them due to the high-quality services. Furthermore, the ISP also provided upgrade speeds to all their clients without additional costs to ensure they satisfy them and prevent them from looking at other packages.

Lastly, participant 6 mentioned that they must implement price increases regularly, which remains a sensitive subject to their clients. The ISP mentioned that the ideal market pricing is approximately R500 to R900 per month, and they saw that once they go over the barrier, they start to lose clients. However, many of their clients choose connectivity packages based on what they can afford, and not speed.
The following quotes stood out, where participants revealed how sensitive their current clientele base is.

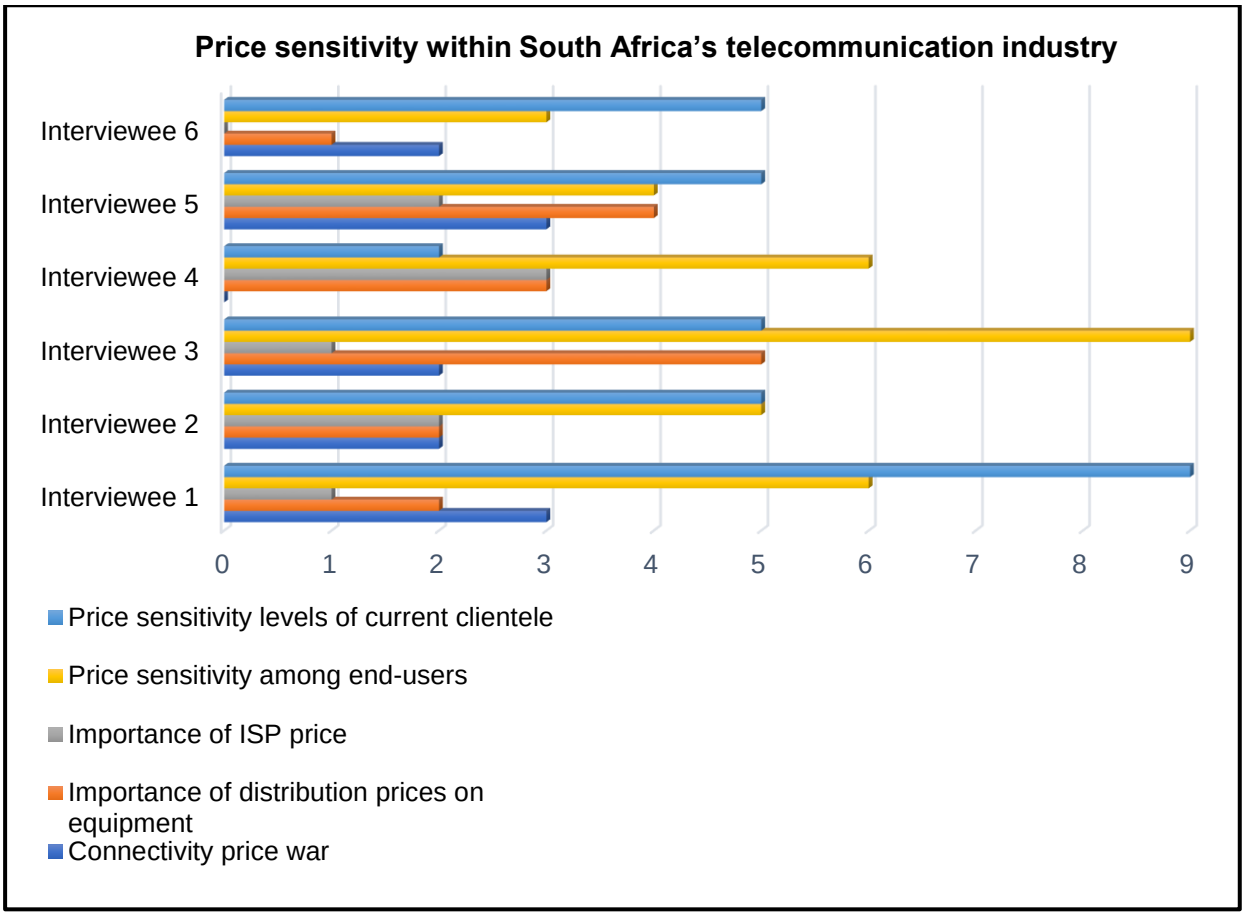
“We find the younger customers always looking at price only, specifically, price and speed” (Participant 2: MS Teams interview. 12 Jul.,15:55).
“I would say around 5 percent. We are losing one or two customers because of pricing” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Many of our customers or most of the customers who do come to us with that try and accommodate them with competitive pricing, but just reminding them of the service levels that they currently enjoy, that they're not going to get is mostly enough for them to reconsider going over” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Clients have indeed left us because of pricing; however, they usually return after 3 to 4 months due to weak levels of services the other ISP provided them” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“I think on the consumer side of things; a consumer is not going to leave, you know, four, or 5 percent or 10 percent, I think if it's like 20 or 25 percent price difference, the customer is not going to leave because it's 50 rands cheaper” (Participant 6: MS Teams interview. 08 Jul.,14:29).

Figure 7: Topic contribution on price sensitivity within South Africa's telecommunication industry



The graph above indicated that all participants contributed significantly toward the price sensitivity levels of their current clientele. However, participant 1 had the most contribution toward this topic. As for the price sensitivity levels of end-users, participants 1, 3 and 4 had the highest contribution ratios. Another topic that stood out was the price importance of distributors, where participants 3 and 5 stood out in ratio contribution.

The following section focuses on the theme service quality of ISPs in South Africa.

4.6 Service quality of ISPs

This central theme comprises eight codes that correlate and contribute to this problem. These codes are namely:

- Combined medium

- Fibre medium
- Wireless medium
- Connectivity products affecting client loyalty
- Connectivity services affecting client loyalty
- High levels of services to keep clients from moving despite having higher prices
- Impact of customer training on high service levels
- Impact of employee training on high service levels

4.6.1 Code results

Table 8: Contribution rates per participant on service quality of ISPs

	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Total Codes
Combined medium	7 percent	36 percent	7 percent	29 percent	0 percent	21 percent	14
Connectivity products affecting client loyalty	44 percent	11 percent	22 percent	11 percent	11 percent	0 percent	9
Connectivity services affecting client loyalty	10 percent	10 percent	10 percent	20 percent	50 percent	0 percent	10
Fibre medium	35 percent	10 percent	30 percent	5 percent	5 percent	15 percent	20
High levels of services to keep clients from moving despite higher prices	11 percent	22 percent	11 percent	25 percent	14 percent	17 percent	36
Impact of customer training on high service levels	42 percent	11 percent	26 percent	11 percent	5 percent	5 percent	19
Impact of employee training on high service levels	15 percent	11 percent	15 percent	19 percent	15 percent	26 percent	27
Wireless medium	45 percent	5 percent	25 percent	5 percent	15 percent	5 percent	20

The table above includes the contribution ratios of each participant toward the sub-topic of the central theme *service quality of ISPs*.

4.6.1.1 Combined medium

All the participants in this study, except for participant 5, focused on wireless in the beginning phase; however, due to the high levels of competition, all of them used a combined medium, meaning wireless and fibre, to ensure they signed up new clients and gain market share.

Participant 1 mentioned that they operate in both the fibre and wireless space, with a predominant focus on wireless. Participant 2 said that they started as a WISP. However, due to the competition levels, they started moving over to fibre by replacing all their microwave wireless links with fibre in 2017. They still use wireless, but their focus has shifted to fibre. However, they do not care about how the data is delivered – whether it is reliable, fast, and secure. Furthermore, participant 3 also mentioned that they operate in both the wireless and fibre space, focusing more on wireless.

Participant 4 said they offer holistic connectivity services, including satellite, wireless and fibre. They use fibre and wireless for their business clients, providing fibre as a primary medium and wireless as a backup, as companies cannot operate without the internet. This solution relieves clients as they know they have a redundancy medium available if something goes wrong.

Lastly, participant 6 mentioned that they have transitioned from providing only wireless solutions to offering fibre. This ISP upsells its fibre packages to all its wireless clients to ensure they do not move to an alternative fibre provider. They own fibre infrastructure, meaning they do not have to move all their clients to another fibre provider's fibre line.

The below quotes are the ones that stood out regarding the combined connectivity medium.

"I still love wireless equipment, but ultimately, it is about providing the best connection" (Participant 2: MS Teams interview. 12 Jul.,15:55).

“We have internet services, which we call holistic connectivity; we try to cater to every customer's need in terms of connectivity, whether via satellite or wireless internet or fibre connection or any upstream connection that suits a client's request” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“Our primary focus right now is providing connectivity and value-added services on top of the medium we supply to our customers” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.6.1.2 The fibre medium

Fibre providers are rapidly increasing their networks within South Africa, which is a positive aspect for end-users. However, many WISPs struggle to keep up with these larger ISPs as they provide marketing with significantly low prices, ultimately causing the industry to become cut-throat regarding pricing (Gao, 2021:1124).

Participant 1 mentioned that with the fibre medium, large companies sold their entire fibre-to-the-home customer base to other ISPs as it was not profitable to continue servicing these clients due to the aggressively low market prices. Their ISP uses fibre to reach a certain point, especially near the rural areas and then uses wireless equipment for the last mile deployments. Unfortunately, with both mediums, there are risks; for example, lighting typically strikes the wireless equipment. With fibre, construction companies dig up without research or concern about what is happening under the ground, ultimately damaging the fibre lines. Ultimately, with the fibre industry, there is a massive drive from fibre providers to capture market share by implementing low prices, significantly hurting the industry and other ISPs.

Due to socioeconomic and geographical constraints, many South Africans live in rural outbound areas, where fibre infrastructure is not found. Therefore, ISPs must use alternative broadband options to connect these rural areas to reduce the digital gap within the country (Oki & Lawrence, 2022:115).

Participant 2 mentioned that they transitioned from premium wireless links to direct fibre connectivity to their high sites to save costs. They started offering FTTH services

in 2019 to ensure they do not lose clients and leverage their fibre network. Furthermore, participant 3 mentioned that they chose wireless over fibre for some problematic areas that are far and challenging to reach with fibre. The distance of some applications and equipment limitations make fibre impractical to use in some areas. The participant further highlighted that the challenge with fibre in the industry is related to pricing, as clients find it challenging to compare fibre packages, and the main differentiator typically comes down to pricing.

Participant 4 mentioned that they lack fibre infrastructure and use a cooperative business model. They use the infrastructure of other FNOs to sign up clients. They focus on wireless but also allow clients to go for an FTTH service should they require it. Participant 5 emphasised that deploying fibre is not as cost-effective as one would think because it is labour-intensive due to the ground that needs to be dug up and fibre cables that must be trenched for far distances. However, they continue to do so as it brings in more clients.

Lastly, participant 6 operates as a reseller of fibre services, and they are their own FNO. This means that if they have fibre infrastructure in the requested area, they will use their network instead as they obtain more money. To ensure they do not lose clients in areas where they have not trenched, they resell the fibre of other FNOs. However, the margins are relatively low. The participant also mentioned that they firmly believe that fibre is the superior medium for connectivity as the speeds are fast, reliable, and stable. The only problem with using third-party fibre networks is that the ISP does not have complete control over the service quality and network, which could potentially harm their name, as they cannot address some problems promptly.
The below quotes stood out regarding the fibre medium.

We've seen big companies selling off their entire fibre to the home customer base to other ISPs because it's worth it for them" (Participant 1: MS Teams interview. 07 Jul.,08:27).

"We have used premium microwaves. However, it seemed logical that instead of spending much money on microwaves, we should try to get to our high sites with direct fibre connectivity" (Participant 2: MS Teams interview. 12 Jul.,15:55).

“Also, because of the distance and the necessary equipment, fibre is not feasible” (Participant 3: MS Teams interview. 06 Jul.,09:07).

Therefore, I think infrastructure is more of a challenge for the fibre service providers as they physically need to run fibre lines everywhere” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“We feel that fibre is the best medium to provide connectivity” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.6.1.3 The wireless medium

Participant 1 believes the wireless industry is much more profitable than the fibre industry. It prefers to utilise wireless solutions in areas lacking infrastructure or construction, as it could disrupt the fibre lines. The company uses wireless mediums for rural areas. The participant mentioned that some wireless products can compete against fibre speeds due to the technological advancements of wireless and new spectrums being available to use.

Participant 2 mentioned that to ensure they remain competitive and relevant, they re-created and developed their products to provide an effective service. The ISP made a strategic shift by purchasing and adopting premium wireless kits to deliver faster, more reliable speeds, meet the client’s demands and decrease the chance of losing a client to other fibre providers.

Participant 3 strongly believes in wireless internet services and has invested significant capital to build proper towers in suitable locations to provide wireless connectivity. Their primary strategy is to target the areas that do not have adequate infrastructure, as fibre providers would find it challenging to roll out in those areas, providing a golden opportunity for wireless. This ISP prefers wireless as it is more affordable, and the pace they can deploy is much faster than fibre deployments. Wireless is also effective in rural areas where they deploy Wi-Fi hotspots, as most individuals living in those areas do not have internet or power access.

Participant 4 started with dial-up internet in 2004, and throughout the years, they have upgraded their wireless infrastructure, which can be found in multiple geographical areas within South Africa. Participant 5 also mentioned that they focus on wireless, mainly in rural areas. They make sure the links they put up are short to ensure they can provide fast and reliable speeds. All these towers are put up in radios of 8km within the town, which will serve the entire area. Lastly, participant 6 highlighted that many of their wireless solutions provided them with many benefits, as they can roll out quickly and offer high speeds at competitive prices.

The below quotes stood out regarding the wireless medium.

“The wireless industry is more profitable than the fibre industry” (Participant 3: MS Teams interview. 06 Jul.,09:07).

It is more affordable to run wireless and much faster as well. We can install wireless equipment for four or five customers per day. Whereas with fibre, that's not possible. It's going to take forever to get everything there” (Participant 3: MS Teams interview. 06 Jul.,09:07).

We have seen that wireless can be successful if you can provide wireless speeds at fibre prices over a wireless medium” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.6.1.4 Connectivity products affecting client loyalty

The participant acknowledges that selling wireless packages to end-users and businesses is challenging due to the extensive marketing around fibre and all the offerings available from other fibre providers. However, customers will remain satisfied no matter the medium if the ISP delivers the speeds that were agreed upon and if the connectivity is reliable and always available. The participant further noted that customers are not brand aware due to the lack of knowledge regarding connectivity, so explaining to clients what wireless premium equipment is essential. Furthermore, the participant also mentioned that wireless technology has improved significantly,

improving the overall performance of the medium to ensure it can compete effectively. However, fibre continues to remain a more attractive solution for end-users.

Participant 3 confirms the importance of the products used for their applications, as product quality and reliability play an essential role in obtaining new clients and satisfying existing ones. The participant highlights that the risk of losing clients is high if they install inferior equipment that cannot deliver the expected service, ultimately causing the ISP to lose clients.

Participant 4 indicates that their product offering is all on their website to ensure high transparency with their clients. Also, it allows clients to choose between the various offerings. Furthermore, the participant also mentioned that their business does not offer as high-speed packages as the fibre providers, as they aim to provide their clients with what they need at a cost-effective rate. Participant 5 mentioned that they have adapted their product in such a way to ensure they can compete with the large fibre providers. Their clients will not get 50 to 100 Mbps line for R500 from them, as they will typically receive less speed, which will be adequate for their specific use at the same price. The client will also receive excellent after-sale services if anything goes wrong.

The quotes below are the ones that stood out regarding connectivity products affecting client loyalty.

I would say very much. If we install a product that is faulty or not up to standard, or if we over-promise and under-delivered, we can lose a client" (Participant 3: MS Teams interview. 06 Jul.,09:07).

It's more challenging to sell them wireless solutions, but once they are on the product, they don't care because if it works, it works" (Participant 1: MS Teams interview. 07 Jul.,08:27).

"In terms of our products, everything is on our website, and we will discuss customers' needs and help them decide what type of product they require" (Participant 4: MS Teams interview. 18 Jul.,10.00).

4.6.1.5 Connectivity services affecting client loyalty

Participant 1 mentioned a misconception in the telecommunication industry and among end-users that wireless is slower and more unreliable than fibre, which is not always the case due to new technology improvements. Participant 2 emphasised the importance of developing new products to remain competitive against all other ISPs in the market. The value proposition of their ISP is based on the local experts who can sort out any problem at any time. They use their local presence to gain market share, as larger providers cannot provide that personal touch.

Participant 3's company uses a proactive approach to manage client expectations. They conduct assessments for their clients and provide them with a few options based on what that client can afford. If the client cannot afford the premium solution, the ISP will provide them with a cost-effective offering, but they will make sure they keep their expectations realistic. They practise complete transparency with their clients, which helps with building long-lasting relationships.

Furthermore, participant 4 mentioned that they leverage fibre deployments and services, as they offer packages that the competitors in those areas cannot. They provide unique connectivity solutions to businesses and home users as they have the equipment. Participant 5 also mentioned that they only provide the client with what they need based on their requirements as some clients do not require 1Gbps speeds, but rather 10 or 20Mbps speeds. If the more minor package works, the client remains satisfied, and it allows them to upgrade in the future. Furthermore, to improve customer satisfaction, their entire clientele received a free upgrade without any additional costs, which assisted them from clients moving to an alternative provider. For example, if the client had a 5Mbps line, they made sure to upgrade that client to a 10Mbps line. This applied to old and newer clients.

4.6.1.6 High levels of services to keep clients from moving despite having higher prices

Participant 1 acknowledges that they are not the most cost-effective service provider in the market, as they do not want to be. Their clients are willing to pay the premium

prices this ISP provides as they deliver excellent services and reliable support. Many of their home users pay more than they would have paid for a fibre line; however, they can justify it by their service and always being there for them. They ensure they walk the extra mile for their clients, as support and reliability set them apart from the competition.

Participant 2 emphasised that latency is more important than internet speed and that ISPs must provide a reliable network to maintain and obtain new clients. Support and good service are essential, as clients typically move to an alternative provider if the service is not worth their pay. They, as ISPs, offer value instead of just low prices, as many competitors flood the market with low prices but cannot support those clients afterwards. Furthermore, the participant also mentioned that they know their clients personally and build relationships with them, which helps with maintaining them as a client. When a client has a problem, they also come up with a solution to ensure the client's issue is addressed quickly and effectively.

Participant 3 mentioned that most of their clients stay with them due to the excellent service they receive. They go above and beyond for clients and offer turnkey solutions. The clients who value quality and high-level services stay with them despite the higher pricing than larger fibre operators. The participant also mentioned that they identified an area to serve where there is not much competition. They also try to go to places where other providers are not, but it takes significant research. Furthermore, they pride themselves on providing a holistic service and adapting to each client's requirements, even outside their scope. The participant advised that WISPs must target clients willing to pay for top-tier services if the ISP wants to remain profitable.

Participant 4 admits that their connectivity services are more expensive than the large fibre operators and providers, but their price remains fair. They focus on providing personalised service levels to every customer and strive to make customers feel that they are not just another number. They also maintain and obtain loyalty from their clients due to their support services. The client knows that should something go wrong, the ISP will be there to address and fix their issue. The participant also stated that their clients are less likely to move to another provider if adequate service levels are. During the pandemic, many businesses needed their employees to work from home due to restrictions. This ISP assisted all their business clients with work-from-home packages

and set everything up for them to ensure no disruption within their businesses. Lastly, the clients willing to pay more for their connective fully understand the value they receive regarding service.

Participant 5 mentioned that clients are most likely willing to stay with them and pay premium prices for high-end applications and services. Some end-users see connectivity as a social status, meaning they are not that price-sensitive. This ISP is specifically taking on fibre providers with their services and being there for all their clients instead of competing with pricing, as it is a race to the bottom. This ISP also runs three daily shifts to ensure support is always available. It is essential to rotate the staff to keep them fresh and energised, to ensure they can take on any issue. They have a support WhatsApp line that clients can use to report any problems with their connectivity. This group is also an effective tool to send through any communication to ensure clients stay updated throughout any downtime.

Participant 6 mentioned that instead of adding more people to their support department, they try to determine the problem to avoid it in the future. The participant also mentioned that customer service is the main reason why their clients stay with them despite the higher prices they must pay. They try to explain to price-sensitive clients why they are more expensive to ensure they understand their value and that they will not receive the same levels from larger operators. The ISP emphasises personal customisation of applications, which assists them with obtaining more clients. The quotes below are the ones that stood out regarding connectivity products affecting client loyalty.

“Value is not necessarily made at a lower price; it is about giving them value something that works properly for what they need and understanding their needs and making sure you give them the right thing” (Participant 2: MS Teams interview. 12 Jul.,15:55).
“I would say most people stay if they know they're getting excellent service” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Most of our customers want personalized service levels; they don't want to speak to a robot or wait in an online queue for long. So, we have a smaller chunk of the pie. But

our customers are very loyal because they want specific services, and we can offer them those services" (Participant 3: MS Teams interview. 06 Jul.,09:07).

"We fight fibre with service; the happier we keep our clients, the less they will move to another provider" (Participant 5: MS Teams interview. 05 Jul.,10:56).
"We found that clients are willing to pay a premium price if it means that the service is reliable and that they have support" (Participant 1: MS Teams interview. 07 Jul.,08:27).

"I think some of our prices are of the highest in our area, especially on wireless medium, however, many of our clients are staying despite the higher price because they feel the support is effective" (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.6.1.7 Impact of customer training on high service levels

All participants in the study had strong opinions about education, as participant 1 highlighted that clients often assume fibre is a much superior medium to wireless due to the aggressive and effective marketing around it. Client education is vital, especially on the wireless side, to ensure they do not fall for all the marketing around fibre. This ISP thoroughly explains its wireless equipment and clearly states that it is carrier-grade. The ISP also trains every client on what to do when an issue arises; the skills include troubleshooting methods, as it reduces the number of technicians who must attend to the issue physically. They provide clients with checklists of fundamental issues they must address before contacting support. This ultimately helps clients sort out basic issues faster. By doing this, they save on costs for both their company and the end-users. If the client cannot fix the issue, the ISP has a WhatsApp group in which they promptly respond to any problems. If the problem cannot be fixed through the online support team, the ISP will send out a technician to the site.

Participant 2 mentioned that the end-users are not well educated on connectivity, as many think Wi-Fi is the internet, ultimately indicating their lack of knowledge about connectivity. Clients typically desire a seamless and reliable connectivity experience without wanting to deal with issues. The participant also emphasised that educating clients is essential to ensure they understand that they do not require 100Mbps, but 25Mbps will also suit their application.

Participant 3 stresses the importance of client education and that an ISP must spend more time educating the clients regarding issues, concepts and how the solution works. Some clients think they require only a router to have connectivity; however, they must understand the larger picture. Furthermore, the participant also mentioned that their clients do not understand the difference between Wi-Fi and the internet. If clients are well educated on handling issues, it will lead to cost savings for the ISP as they do not have to send a technician every time a problem occurs.

Participant 4 expressed concern regarding training clients so much that they no longer require the ISP, making the service levels irrelevant. The participant mentioned that every service call is a training session for a client. However, the client can deal with fundamental issues as it helps the ISP save time and money. Participant 5 emphasised that clients nowadays research before they purchase; however, their research is not thorough and does not compare apples with apples.

Lastly, participant 6 mentioned that training leads to effective client and employee communication. Their employees and clients receive thorough training to ensure they can sort out issues quickly and effectively without spending more money by sending technicians to the site. They also set realistic expectations for their clients to ensure they do not complain if the throughput feels slower than usual and not constantly doing a speed test.

The below quotes are the ones that stood out regarding customer training.
“We try and educate people, you know, you try and spend that time with people” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“Customer training is also essential; it is also an educational thing to teach them a little bit of troubleshooting so they don't end up phoning you for unnecessary stuff or stuff they could have solved themselves” (Participant 1: MS Teams interview. 07 Jul.,08:27).
“Once again, training provides them the skill to communicate effectively with the customers. Ultimately, we train our internal employees and customers, giving them realistic expectations about their connectivity” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.6.1.8 Impact of employee training on high service levels

Employee training has proven to lead to higher productivity levels within any business as it provides higher-quality services (Hanaysha, 2016:172).

Participant 1 believes that it is essential to provide training to employees to ensure higher service levels. This ISP prioritises the training based on the medium it is being focused on. Training on specific brands is also essential to ensure employees know exactly how to support the product in the field without needing assistance.

Participant 2 expressed that it is essential to train their employees, and every ISP must have fully trained employees. The main problem is to find people who are willing to be trained. It is challenging for them to send all their employees for training and must send them in batches, as they cannot afford not having any technicians there for a week. They want to provide more training to their employees, but time is always an issue. The ISP conducts much in-house training through multiple sessions. They spend time together, sharing issues that recently arise and work together to mitigate them in the future and learn from each other. The participant mentioned that an ISP would not grow and be sustainable without training. The industry's technology is changing rapidly, meaning that if an ISP does not provide enough training, it will get left behind and not be as effective as the competition.

Participant 3 mentioned that they provide training as often as possible, especially if technology changes, such as software updates or new product releases, to ensure they remain relevant. The faster the employees are updated and trained, the more accurate and effective support becomes, making it essential to provide training regularly. The participant also said that training directly correlates with high-quality services.

The participant believes in highly trained staff to provide effective services and that they have weekly in-house training sessions. Training for these ISPs is part of their unique selling proposition to ensure that their clients do not get stuck in an endless loop of transfers, as all their employees know what they are doing and how to sort out an issue. Service-level agreement (SLA) clients with specific needs are provided with

a particular technician to ensure their service requests are handled even quicker. For them, training is essential. However, it is not always possible to perform due to time constraints. Furthermore, around 90 percent of all support calls are not network-related as they are isolated to their specific sites, meaning that this ISP provides training to their clients to perform basic self-troubleshooting before reporting any problems.

The participant expressed that their company tries to provide monthly training to their employees. Most training occurs physically in the field to ensure they obtain hands-on training. Furthermore, the participant mentioned that training is essential for them as it helps them provide adequate services. Their technicians can handle most of the issues that arise as they are equipped with the necessary knowledge. They do not have specific technicians for specific issues, as they try to get all technicians on the same level.

Lastly, participant 6 mentioned that they try to educate the customers after installations to reduce the number of support calls. Regarding employee training, the ISP tries to provide constant training to their employees; however, due to time constraints, they do not always have enough time to provide training, as they cannot afford to send employees to training sessions at the distributors. The ISPs try to upskill their employees and recruit most of the time within the company to increase motivation. The market is constantly changing, meaning they have internal training focusing on new technologies and products to ensure they stay ahead of the competition. Training is essential for this ISP as it improves communication with the customers, making the waiting time for issues much shorter, which leads to higher customer satisfaction levels. The ISP also has documented training and SOPs to ensure that all employees know what to do and revisit the training should they be unsure about any procedure.
The below quotes are the ones that stood out regarding employee training.

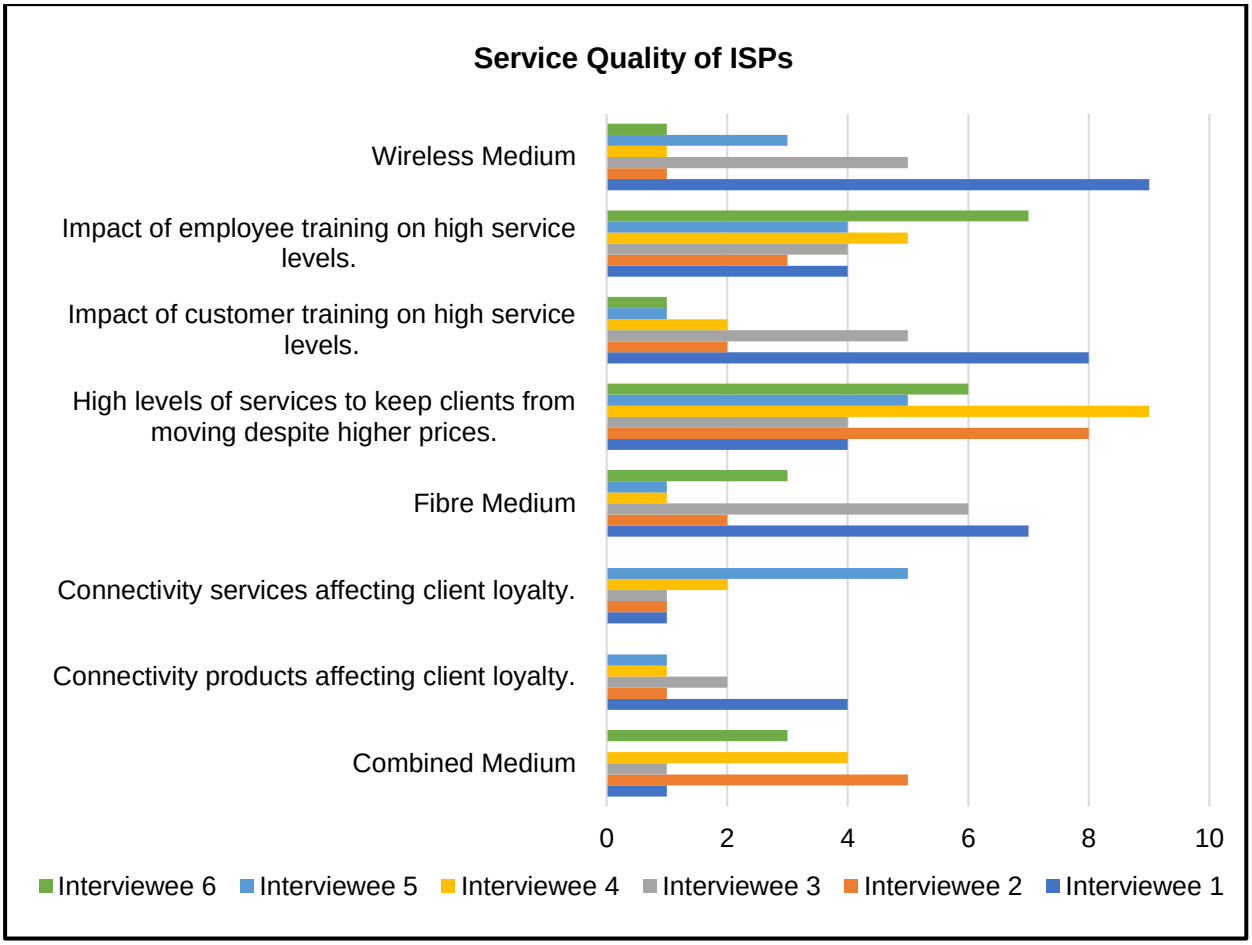
“The faster I can get everyone up to speed, the faster and the better and more accurately they can provide support and service to our customers. So yes, it is very important” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Training is essential as it helps us with providing effective services. We can send any of the technicians out to a problem, and all of them are equipped to solve any problem.

We do not have specific employees for specific issues; we try to get everyone on the same level" (Participant 5: MS Teams interview. 05 Jul.,10:56).

"Our market is changing so fast, so we try to train them on the new technologies and refresher courses just to stay ahead of the competition" (Participant 6: MS Teams interview. 08 Jul.,14:29).

Figure 8: Topic contribution on service quality of ISPs



The graph above indicates that all participants thoroughly believe in training to provide high service levels to clients, and participant 6 had the highest contribution ratio. Regarding client training and education, participants 4 and 6 had the highest ratios regarding contribution.

The following section focuses on client loyalty within South Africa's telecommunication industry and the importance thereof.

4.7 Client loyalty in the telecommunication industry

Customer loyalty is when clients commit to a company or brand due to the services they receive. The resistance levels are intense and will not move over to an alternative company. However, to ensure that customer loyalty remains high among clients, their satisfaction levels must be high, which could ultimately lead to a long-standing relationship (Arslan, 2020:11).

This central theme comprises eight codes that correlate and contribute to this problem. These codes are:

- Brand loyalty
- Factors/efforts to increase client loyalty
- Perceived current customer loyalty levels
- Reasons for ISPs leaving their distributor
- Reasons for clients leaving their ISPs
- Reasons for customers to return
- The price or percentage differences that will drive end-users away from the ISP
- The price or percentage difference that will drive ISPs away from their distributor

4.7.1 Code results

Table 9: Contribution rates per participant on client loyalty

	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals
Brand loyalty	38,89 percent	22,22 percent	11,11 percent	0,00 percent	16,67 percent	11,11 percent	18
Factors/efforts to increase client loyalty	12,00 percent	14,00 percent	31,00 percent	21,00 percent	11,00 percent	11,00 percent	100
Perceived current customer loyalty levels	9,09 percent	31,82 percent	18,18 percent	18,18 percent	9,09 percent	13,64 percent	22
Reason for ISPs leaving their distributor	0,00 percent	0,00 percent	21,05 percent	31,58 percent	36,84 percent	10,53 percent	19

	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals
Reasons for clients leaving	16,67 percent	16,67 percent	33,33 percent	6,67 percent	6,67 percent	20,00 percent	30
Reasons for customers to return	44,44 percent	33,33 percent	11,11 percent	0,00 percent	0,00 percent	11,11 percent	9
The price or percentage differences will drive end-users away	57,14 percent	14,29 percent	0,00 percent	14,29 percent	0,00 percent	14,29 percent	7
The price or percentage differences will drive ISPs away	14,29 percent	14,29 percent	42,86 percent	14,29 percent	0,00 percent	14,29 percent	7

The table above includes the contribution ratios of each participant toward the sub-topic of the central theme *client loyalty in the telecommunication industry*.

4.7.1.1 Brand loyalty

Brand trust is essential to high customer trust and contributes heavily to client loyalty. Many consumers are willing to spend more to obtain certain specialised high-level services. Customer trust forms when consumers feel that the brand, service, or company provides unique services that satisfy their needs, which other companies cannot offer (Azizan & Yusr, 2019:97).

Participant 1 believes that there is an aggressive price war, which causes less brand loyalty among end-users. These ISPs counteract the pricing in the market by lowering their wireless prices to ensure they maintain their clients' loyalty. To increase client loyalty, an ISP must be creative with its brands and products, as it plays an essential part in trust levels. Furthermore, regarding brand loyalty, this ISP has chosen a specific brand and distributor with which they build experience and a relationship to ensure that the services are always consistent and reliable, as the ISP’s employees know precisely how the products, brand, and distributor work.

Participant 2 warned other ISPs not to participate in the price war as it is a race to the bottom. The fibre providers typically reduce the selling prices and, at the same time, increase the speeds to ensure they maintain a competitive rate. Relationships with distributors are essential as they typically receive reasonable and trustworthy prices, meaning they do not shop around as the relationship levels are good.
The below quotes are the ones that stood out regarding brand loyalty.

“I know the guys at my distributor, and it's about having that relationship, need number one, number two, obviously, price. But if you've had a relationship for years, you get to the point where you trust that we are getting a reasonable price. And we don't shop around because of our good relationship with a distributor” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“The ISP knows a brand that works, a brand that they can trust and support. They tend to stick with that and rather try and find a way to make the business case work, you know, rather than switching a brand altogether” (Participant 1: MS Teams interview. 07 Jul.,08:27).

4.7.1.2 Factors/efforts to increase client loyalty

The table below includes aspects each Participant feels will increase client loyalty levels.

The 4Ps marketing mix is known to impact client loyalty levels positively (Simanjuntak *et al*., 2020:451-452). Furthermore, the marketing mix consists of the price of the product or service, the product being provided, promotion and place, which all contribute to higher customer loyalty levels (Verma & Singh, 2017:124-126). The 4CS marketing mix also contributes toward higher client loyalty levels and satisfaction rates, and it includes the client's value perception of the service or product, cost, communication, and convenience for them to use the service or product (Siripipattanakul *et al*., 2022:32).

Table 10: Aspects to increase client loyalty

Participant	Aspects to increase client loyalty
Participant 1	Providing adequate service, resolving problems when they occur, offering credit for the downtime of connectivity, proactive communication even when issues are meagre, providing reliable products that will provide the opportunity to supply reliable and effective service, high-speed and data throughputs, high-quality services, and support for problems
Participant 2	Providing excellent service and support, local presence for smaller towns is vital. It must be well marketed, offering the best value, quick problem resolution, technical expertise, comprehensive services, support, and product development.
Participant 3	Building trust with each client, word-of-mouth, transparency with clients to improve satisfaction, communication regarding changes or downtime, additional services based on the application, client referrals, and customised solutions.
Participant 4	Personalised service for each client, minimal downtime due to solar backup, redundancy wireless solutions provided, highly trained staff, accessible support that is hassle-free to use, competitive pricing, complete solutions, and offering different complementary solutions to make it easier for end-users.
Participant 5	Customer satisfaction is paramount; exceptional customer service is provided consistently, prompt issue resolution for every problem, personal touch for each application and client, meeting customer needs and ensuring they are not just numbers.
Participant 6	Constant communication with customers, providing credits for extended connectivity outages, being proactive with problems and communication, prioritising customer service, in-house technicians to ensure issues are dealt with promptly, and matching pricing to compete against the low market prices.

The below quotes are the ones that stood out regarding factors that influence client loyalty.

“We are very proactive in communicating with our customers” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“It starts with excellent service and support. A company must look after their customers, and we make it as easy as possible for them to get a hold of the company” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“We provide services like VOIP and CCTV just to diversify ourselves” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“Our downtime is kept to an absolute minimum 90 percent of our network is totally off the grid” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“It is giving the customer what they pay for and serving when there are issues” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“Internet is a necessity, like water and electricity. We feel that customer service is the most crucial part of our business, and that the customer is our priority” (Participant 5: MS Teams interview. 05 Jul.,10:56).

4.7.1.3 Perceived current customer loyalty levels

Participant 1 mentioned that they have very loyal customers, as since they started the company in 2018, they have only lost three clients. Two were due to pricing, and the third client left for financial reasons. The two who left due to pricing quickly realised that the service levels were inadequate and returned later.

Participant 2 expressed that many of their customers are older clients with high loyalty levels. Most of these customers have been with this ISP since they started the company many years ago. They advertise their local presence in their town, increasing their clients’ loyalty. All their customers know them, and they have seen that people living in smaller cities want to deal with a person or company they know. However, the younger generation is less loyal as they will move over due to pricing and comparing all the available packages the ISPs in the town provide. The older generation is less price-sensitive if they feel treated well and value the connectivity and services provided. This ISP’s client base is loyal as their clients think they are not just a number.

Participant 3 mentioned that their loyalty levels with current customers are high as they put much effort into building trust and a relationship with each client. They also make sure they spend time with their customers, which leads to them noticing that they also use their other services. Ultimately, once the client’s trust in an ISP is high enough,

they will also start using the other services. This ISP focuses on educating its customers to ensure they have the knowledge when looking at other deals and services.

Participant 4 mentioned that their company has an excellent customer retention rate, meaning some would leave due to pricing but soon return as the services provided at the new ISPs are inadequate. Furthermore, this ISP provides personal assistance and quick responses as their clients do not want robotic answers and a lack of service efforts, making them very loyal to them. This participant feels strongly that their personalised services are pivotal in the high loyalty levels they are experiencing with their current customer base.

Participant 5 mentioned that approximately 80 percent of their clients stayed with them, and the other 20 percent moved to an alternative provider due to pricing. However, 80 percent of the clients remain with this ISP due to the human touch they can provide and excellent services.

Participant 6 expressed that they try to accommodate their clients, even the late payers, as they typically provide the late payers with seven to eight days of leverage to ensure they provide adequate time to pay their account before their connectivity is switched off. Also, this ISP managed to win the hearts of its clients during the pandemic; the ISP was supportive, especially to the clients who struggled to pay. This ISP moved their package to a lower standard but significantly reduced the pricing for the time being, which means that they built a relationship and trusted with their clients, which was a crucial aspect for them as these clients eventually bounced back and returned to their higher premium packages.

The below quotes are the ones that stood out regarding perceived customer loyalty.
“A lot of them are very loyal. Customers have signed up and been with us since the company started years ago. The big thing in a small town is that “local is lekker” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“We have very loyal customers; we have only lost two or three customers since we started the company in 2018” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“We have a very good retention rate when it comes to customers. Very few customers migrate away from us” (Participant 4: MS Teams interview. 18 Jul.,10.00).

4.7.1.4 Reasons for ISPs leaving their distributor

Participant 3 mentioned that they would leave their local distributors due to poor service quality if the distributor does not keep to their promises, inadequate returns of faulty equipment and poor technical support. The last reason will also be if their distributor provides them with much higher prices, forcing them to source equipment from alternative distributors.

Participant 4 said they would leave their distributor if they did not have products available due to the chipset shortage. Furthermore, another reason would be if the distributor does not keep up and provide the latest technologies and equipment. The ISP will leave their distributor if they do not have effective online purchasing platforms, as it makes procuring stock and seeing live prices and availability much easier for them.

Participant 5 mentioned that after-sales services and support are vital for them, and if a distributor cannot offer it, they typically move their business elsewhere. Ease of access is essential, and if it is challenging to procure equipment fast and effectively, the ISP will procure from an alternative supplier. Furthermore, suppose the stock availability and pricing from their distributor are not effective and competitive, the ISP is forced to change suppliers, as higher distribution prices cause the ISP to lose money as they need to provide free installations and absorb the cost. The last aspect that would cause this ISP to leave their distributor is when the distributor does not provide the agreed-upon prices and does not stick to the stock arrival dates as promised.

Lastly, participant 6 mentioned that pricing is essential for them and that they will procure from any distributor that provides the best possible pricing. The reason for this is due to the free installation costs that they must absorb. Another reason this ISP leaves a distributor is when the supplier does not have stock.

The below quotes are the ones that stood out regarding perceived customer loyalty.

“If you receive promises regarding a product, but you are not achieving those unique selling points that were promised” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“It also forced us to use different suppliers who had stock. We used to deal exclusively with selected distributors, and since the lockdown, we were forced to sign up with others and spread our wings” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“Distributors that have an online portal simplified the process so that it informs us when they don’t have stock available and when we can expect it again, which is extremely beneficial for us” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“As for the distributor, the leading reason for an ISP to leave is due to price so we can provide a free installation to our customers” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.7.1.5 Reasons for clients leaving their ISPs

Client loyalty would decrease as soon as the services do not meet the client's expectations and when the consumer finds alternative services that are more effective. Within South Africa, many consumers value prices and services very high, especially in the telecommunication industry (Morgan & Govender, 2017:2). Furthermore, if the client does not receive these two value propositions, they will move to other ISPs that can offer the aspects they require (SA Telco Sentiment Index, 2019).

Furthermore, due to South Africa being a low-income country, expensive connectivity services reduce the demand tremendously as they cannot afford it. Approximately 36 percent of South Africans cannot afford smart devices, and over 15 percent of the population feel that connectivity prices are too expensive. This means price sensitivity levels will continue to increase significantly, causing consumers to move to providers with the best possible prices (Gillwald *et al*. 2018:7).

Participant 1 mentioned that an end-user would leave an ISP if the connectivity quality were poor, the speeds were too slow during peak times, the pricing of the connectivity

packages, and when ISPs only provide basic connectivity without any support and services.

Participant 2 mentioned that clients will leave due to pricing, especially if they find a better deal commonly found with the younger generation. Clients will also leave if they perceive that they are not receiving the value for the price they pay. Downtime and poor service quality are also the main contributors that will drive clients away due to dissatisfaction. Pleasant and friendly staff is essential to keep a client; therefore, if the employees are undesirable, a client will look for another service provider.

Participant 3 expressed that clients would primarily leave their ISP if fibre were available in the area and if the pricing of the alternative connectivity package were more affordable to an extent where they can see and feel it. Many clients move to different regions, which causes them to leave their ISP; however, most of the time, the ISP they are currently with provide services in other areas and regions, and if this was not communicated to the end-user, they typically cancel their contract. Service instability and unreliability will cause clients to move to alternative ISPs within the area.

Participant 4 suggested that many cancellations result from clients moving to different areas and selling their properties. The problem is that they are unaware that their current ISP is already covering the areas they are moving to, making communication essential. Service quality and support are also a primary driver for clients leaving.
Participant 5 mentioned that clients move over if they find out there is fibre available in their areas. However, many of them will typically return due to weak services, making it essential for ISPs to support their clients if they want to move to an extensive fibre provider.

Participant 6 suggested that client departures occur due to clients having bad debt, network issues and high price sensitivity levels, meaning they always try to find a better deal. Billing errors and administration issues also drive client dissatisfaction, ultimately causing them to leave. Lack of presence and communication within other areas is essential as many clients move and are unaware that their current ISP can continue to support them through an open fibre network. Ultimately, price is the main driver for clients to switch to an alternative ISP.

The below quotes are the ones that stood out regarding the reasons clients leave an ISP.

“We usually lose clients due to price because they've found something better, and that is typically the younger generation” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“People usually move only because of pricing, which is, unfortunately, the main thing” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“They would lose customers because of the quality of the connectivity” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“When the ISP makes it an admin headache for the end-user” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.7.1.6 Reasons for customers to return

Participant 1 mentioned that the clients that left them will typically return to them if the other ISP's service is not up to standard. Also, clients will return if their fibre provider has a lot of connectivity downtime, as fibre’s downtime is typically more extended than wireless. Clients would also return if the pricing were more competitive. If a client wants to move to an alternative service provider, they provide the client with a more competitive package deal by implementing a new contract.

Participant 2 mentioned that many of their clients return, as they only start realising the value of their services as soon as they subscribe with another ISP. Ultimately, end-users like dealing with an ISP that will provide them with what they need when they need it. Participant 3 also mentioned that their customers returned to them as their fibre packages were unstable, whereas, with wireless, this ISP is usually reliable and stable. Therefore, clients would return due to weak and inconsistent connectivity provided by the other ISP.

Lastly, participant 6 confirmed that their clients moved back to them as they expected fibre to be fast and reliable. Still, it was not, ultimately leading to them returning to utilise this ISP's services.

4.7.1.7 The price or percentage differences that will drive end-users away from the ISP

Participant 1 stated that the pricing difference must be significant for some end-users to leave their ISP. Customers will not leave their ISP if their pricing is four to ten per cent higher. Customers will leave their ISP only when it reaches 20 to 25 percent. One must understand that R200 to R300 is significant for an end-user, especially with financial constraints.

Participant 2 mentioned that a client would leave if the pricing of the connectivity package were approximately 30 percent higher than what they could pay at the alternative service provider. Participant 4 expressed that the pricing difference can sometimes be as low as 10 percent for clients to move, especially if they are bargain hunters. Participant 6 said that within the fibre side, if there are a few providers in areas, it provides clients with multiple choices. This ISP’s pricing was approximately R150 to R200, which was more expensive, leading to clients moving to the competition.

4.7.1.8 The price or percentage difference that will drive ISPs away from their distributor

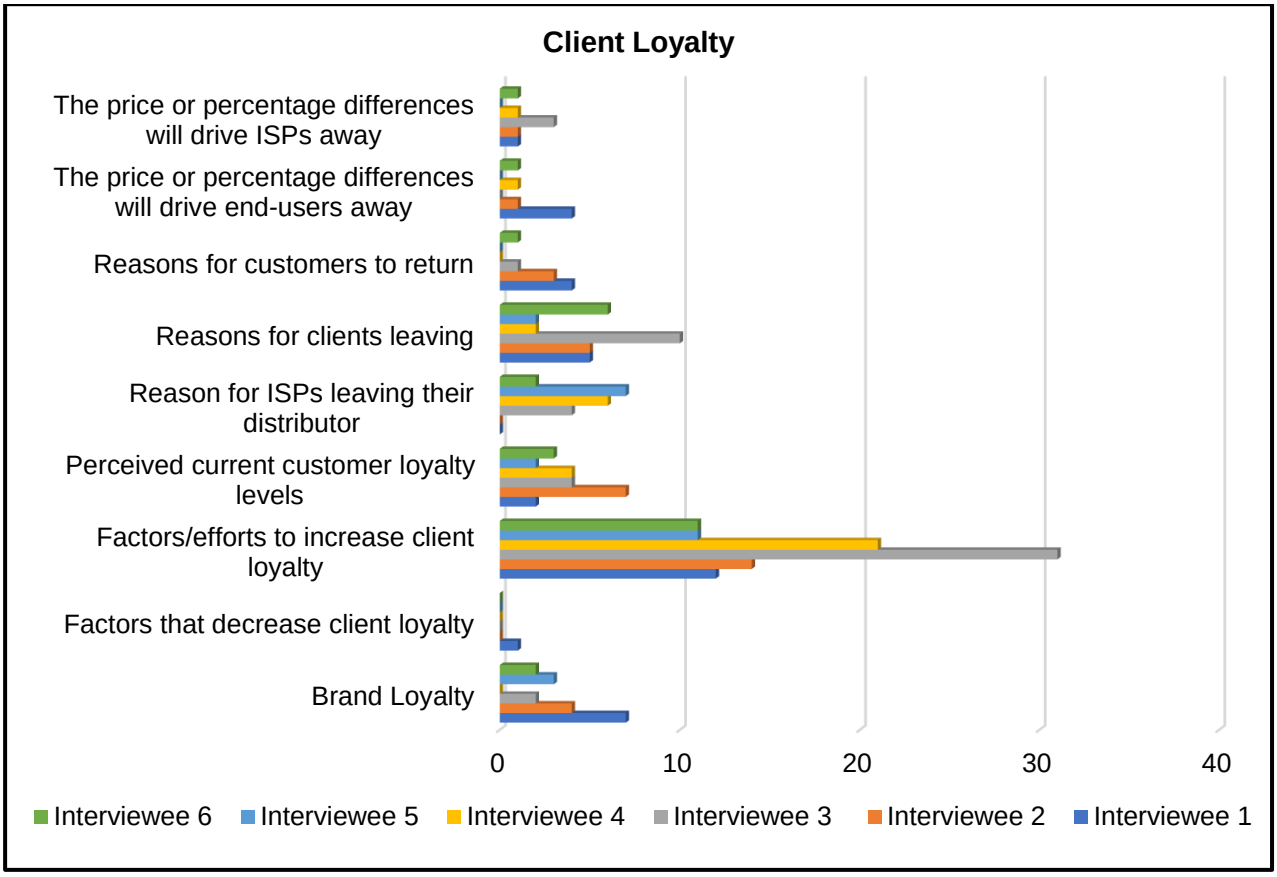
Participant 1 expressed that they have great relationships with their supplier and that the price difference should be significant for moving to an alternative distributor. Participant 2 mentioned that a price difference of 30 percent on some equipment would force them to purchase more affordable stock from other distributors.

Participant 3 noted that the pricing they are currently receiving from their distributor is not always the most cost-effective in the market. However, the distributor’s services are effective and adequate, meaning he does not mind paying 5 percent more for equipment. They spend more money at their current distributor, knowing they will

receive free support. However, if the same product is R1000 more than other distributors, the ISP cannot source elsewhere to find a more cost-effective unit.

Participant 4 mentioned that they do not price hunt for equipment; it is more about sound quality services and stock availability. They know they are getting a reasonable price from their distributor and trust the distributor to honour those prices. Participant 6 expressed that they would move if the distributor were R2000 to R3000, which is more expensive for the entire order. Terms make them stay with a distributor as it is easier to source from that specific supplier, but if they need to move to save a bit as they need to absorb those costs, they will.

Figure 9: Topic contribution to client loyalty



It is clear, according to the graph above, that participant 3 stood out the most regarding the sub-top factors to increase client loyalty. In terms of brand loyalty, participants 1 and 2 indicated the highest contribution ratios.

The following section will cover the last main theme, which is the growth levels of ISPs within South Africa.

4.8 Growth of businesses in the telecommunication industry

This central theme comprises seven codes that correlate and contribute to this problem. These codes are:

- Company growth.
- Management role within the company
- Number of employees
- Operating areas
- Return on investment on fibre
- Return on investment on wireless
- Rural opportunities despite high poverty levels

4.8.1 Code results

Table 11: Contribution rates per participant growth of business in the telecommunication industry

	ITW1	ITW2	ITW3	ITW4	ITW5	ITW6	Totals
Company growth	5,56 percent	25,00 percent	19,44 percent	16,67 percent	13,89 percent	19,44 percent	36
Management role in the company	10,00 percent	40,00 percent	20,00 percent	10,00 percent	10,00 percent	10,00 percent	10
Number of employees	16,67 percent	0,00 percent	16,67 percent	16,67 percent	16,67 percent	33,33 percent	6
Operating areas	28,57 percent	14,29 percent	14,29 percent	28,57 percent	14,29 percent	0,00 percent	7
Return-on-investment on fibre	20,00 percent	0,00 percent	0,00 percent	0,00 percent	40,00 percent	40,00 percent	5
Return-on-investment on wireless	37,50 percent	0,00 percent	37,50 percent	0,00 percent	25,00 percent	0,00 percent	8
Rural opportunities despite high poverty levels	20,51 percent	15,38 percent	23,08 percent	5,13 percent	25,64 percent	10,26 percent	39

The table above includes the contribution ratios of each participant toward the sub-topic of the central theme *growth of businesses in the telecommunication industry*.

4.8.1.1 Company growth

Participant 1's ISP significantly boosted growth during the lockdown as many clients and new clients requested stable connectivity for their homes as they needed to work from home. There are still many growth opportunities; however, the demand for connectivity has significantly slowed down.

Participant 2 expressed that they are open-minded as they had a strategic shift from providing fibre or wireless to delivering stable and reliable connectivity, no matter the medium being used. This new strategic view is assisting the company to grow even more. The participant also mentioned that they are constantly evolving, just not as fast as it was during the pandemic. Furthermore, he noted that there are still areas that do not have fibre, meaning there is an opportunity for them in those areas. They are the number one ISP in the area and do not participate in the race to the bottom. The participant also mentioned that they do not mind the power cuts in South Africa, as it helps them grow even faster.

The ISP's sites run on solar, meaning that when the other ISPs are down, they continue providing stable and fast connectivity. This spread through word of mouth, causing clients to move to them. The large service providers cannot install solar at all their sites as they have too many, meaning it will be a significant capital-intensive investment.

Participant 2 confirmed that they are growing as a company. However, the growth pace is slow to ensure they keep up with the development. If they grow too fast, they cannot provide the high-quality services they take pride in. For ISPs to grow, they need to think outside the box and delve into uncomfortable zones to ensure they develop and grow. Financial options such as down payments must be available for clients, and the ISP should adapt to every client's needs. This ISP offers connectivity to their clients, but if they require cable, cameras or network expansion, the ISP will provide it. Furthermore, the participant also mentioned that they started with rural deployments at the start of 2023 and already achieved over 40 clients on the new network. This ISP

managed to pinpoint an area where LTE was the only option and offered stable connectivity at an affordable price, which led to them moving over.

Participant 4 confirmed that they also experience growth; however, they only focus on growing within the operating area to ensure they can uphold their high standard of services. This ISP uses FNO infrastructure to sign new clients for fibre, but unfortunately, the wireless portion has slowed down significantly. Despite the wireless part's slowdown, they still see growth. Unfortunately, many new end-users do not want to sign new contracts for connectivity, ultimately leading to a slowdown in overall growth for the company, but still at a reasonable pace, which means that the business is sustainable.

Participant 5 mentioned that they are growing within the industry, and to prove it, they employ two people if the finances are in a favourable position. This company try to improve their sales by approximately R30 000 per month before they hire new people. There must be new businesses before they can be employed to ensure it is a sustainable hire. This ISP has also done a few projects, such as providing nursing homes with 5Mbps lines for R50 per month, to assist these people in contacting their children. As for the second project, they started rolling out their connectivity in Hartbeespoort Dam, which led to an influx of new clients. After the first six months, they obtained over 400 new clients who signed up for either a pre-paid or monthly service.

Participant 6 mentioned that they have started as a small WISP and grown into a full-scale ISP with their fibre infrastructure in a few areas. This participant further emphasised that they use automation to ensure they develop and grow faster. They also ensure that their sales force is large enough, as more people in this department correlate directly to company growth as sales representatives generate revenue. Furthermore, this ISP’s fibre portfolio is growing significantly. This company’s management also carefully targets newly identified areas that will create new opportunities for them, ultimately leading to higher growth. The participant mentioned that they have more clients signing up with them at the rate they are losing clients, which is a positive sign. The company is also testing fibre deployments to certain

farming areas, which led to them having a successful rate as their profit in this area is much higher.

4.8.1.2 Management role within the company

Participant 1 mentioned that he is the company's founder and is responsible for setting a clear business direction and pursuing new possible ventures. Participant 3 expressed that he is the company's director and handles multiple roles, from operations, finances, and installation, as they are a small firm.

Participant 2 confirmed that he is the CEO of his company, but due to their size, he must be involved in the finances, operations, and many more to ensure everything is running smoothly. He is also responsible for finding funding and motivating staff within the company. Furthermore, the participant mentioned that he is always in the field helping with installations as he is very passionate about technology, product development and providing reliable and stable connectivity to the community.

Participant 3 expressed that he is the company's director and handles multiple roles, from operations, finances, and installation, as they are a small firm. Participant 4 confirmed that he is the IT manager responsible for most of the technical operations within the company. He oversees the wireless network and manages the VoIP portfolio. He also assisted in building a full-scale in-house cluster for the firm.

Participant 5 confirmed that he is the co-owner and CEO of the company and is responsible for creating a clear path for the future. Lastly, participant 6 is the general manager overseeing all the branches and provinces within South Africa. He reports to his directors to ensure the same path is followed from the top down.

4.8.1.3 Number of employees

Participant 1 mentioned that they have 12 employees working for the company; however, they are slowly but surely growing. Participant 2 confirmed that they have around 23 employees working for the company, and they try to employ two to three employees every second or third month, indicating that they are indeed growing.

Participant 5 mentioned that they have five employees working for them, but they are expanding slowly at a rate where they can maintain high customer service levels.

Participant 4 mentioned 12 full-time employees working for the company, and participant 5 said they have 26 employees. Participant 5 also mentioned that they try to employ a couple of employees every second or third month if the growth and development of the company are steady.
Lastly, participant 6 mentioned they have roughly 26 employees, making them the largest company in the study. They have an account, technical, sales and installers department. However, this participant mentioned that they try to do more with the number of employees they have within the company.

4.8.1.4 Operating areas

Participant 1 confirmed that they operate all over South Africa and have clients in almost every province except for Bloemfontein, which is in the Free State. Participant 2 stated that they have been in the industry for over 14 years and operate within and surrounding areas of Ladysmith, Drakensberg and Bergville.

Participant 3 mentioned that their operating areas focus mainly on Montana in Pretoria. Participant 4 confirmed that they only focus on one site, Parys, and its immediate vicinity.

Participant 5 confirmed that several companies operate in Thabazimbi, Brits, Magaliesburg, George and Potchefstroom. Lastly, participant 6 covers most areas in Gauteng and certain outbound areas.

4.8.1.5 Return on investment on fibre

Only participants 1, 5 and 6 expressed their opinions about the return on investment in fibre. Participant 1 mentioned that the return on investment for fibre takes approximately 20 months, covering the hardware costs without considering all the other expenses involved.

Participant 5 mentioned that their return for their fibre investment can take up to 24 months to cover all their equipment costs and expenses, which is a long time for an ISP. Participant 6 needs around 14 to 16 months to make their investment back on fibre, and that 12-month clawback contracts do not protect them. Denser areas typically provide ISPs with faster returns on investment as more people are on the network.
The below quotes are the ones that stood out regarding the return on investment in fibre.

“With Fibre, your return on your investment takes you 20 months just to pay back the hardware cost, and then you need to consider all the other expenses involved” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“Fibre’s return on investment can take up to two years” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“A clawback agreement of 12 months does not help; we need around 14 to 16 months to make our money back due to the expensive products installed at their home” (Participant 6: MS Teams interview. 08 Jul.,14:29).

4.8.1.6 Return on investment on wireless

Within this section, participants 1, 3 and 5 expressed their opinions regarding the return on investment of wireless within their businesses. Participant 1 mentioned that with proper hardware and sales personnel, they have managed to get their return on wireless for around eight months, which is significantly lower than fibre. With wireless, all the revenue goes back to the ISP, whereas with fibre, if it is not owned, a significant amount of the packages goes to the FNOs that own the infrastructure. Due to fibre providers offering free installations, WISPs are also forced to provide it, making the return on investment longer than it should be.

Participant 3 mentioned that they had received their return on investment on wireless from 12 to eight months. Therefore, they are trying to source from distributors at affordable prices. Once again, the free installation also sets back this ISP’s investment.

Participant 5 confirmed that with their wireless systems, it takes them a few months to make it a profitable network, but it is still faster than fibre.

The below quotes are the ones that stood out regarding the return on investment on wireless.
“It is setting us back even more because now the small ISPs must also provide free installs, but we don't have the funding the big corporates have. So, the cheaper we can get the equipment, the faster the return on investment starts. Instead of being 12 months, it's coming down to eight months. We are always trying to get a better price where we can” (Participant 3: MS Teams interview. 06 Jul.,09:07).

“With the proper hardware and sales personnel, we have gotten the return on investment for our wireless deployment down to around eight months” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“New wireless equipment’s also on the horizon, making it possible to compete at fibre-like speeds. The return on investment in wireless is also much faster as it takes us around six months to make our investment, whereas fibre can take up to two years” (Participant 5: MS Teams interview. 05 Jul.,10:56).

4.8.1.7 Rural opportunities despite high poverty levels

There is a significant ICT infrastructure difference between South Africa’s rural and urban areas, causing many citizens within the rural areas to have fewer opportunities due to the lack of stable and reliable internet (Blom & Uwizeyimana, 2020:208). If South Africa wants to achieve economic growth, the country must invest in connecting rural communities with stable internet, as it positively contributes to the country’s GDP (Fernández-Portillo *et al*., 2019:9).

Participant 1 firmly believes many opportunities exist within South Africa’s rural areas. This ISP provides Wi-Fi hotspots in rural communities as they cannot always afford monthly connectivity packages, and mobile operator data is significantly expensive. Therefore, people living in rural areas would rather pay for data multiple times per

month, depending on when they were paid. This ISP offers 10-hour data packages at the Wi-Fi hotspots throughout the area.

Participant 2 mentioned that many individuals living in rural areas prefer prepaid billing packages, meaning they do not have to sign up for a month-to-month contract. These areas also need connectivity as they use the internet for educational purposes and essential services. Furthermore, this ISP believes there is tremendous opportunity within these areas as there are a lot of people living in those areas. However, the initial investment must be kept lower to ensure the company profits faster. Lastly, the participant mentioned that they build relationships with these communities by targeting the schools and providing connectivity for them first.

Participant 3 notes that South Africa's poverty rate creates a significant issue for all ISPs, as it causes price sensitivity. Many people cannot afford monthly internet fees and struggle to pay for the equipment. Furthermore, this ISP accommodates these clients by covering the equipment costs and only letting them pay their monthly instalments. LTE is typically found in these areas; however, the data is expensive, meaning there is a significant opportunity for WISPs within South Africa's rural areas. Many individuals have businesses and must have connectivity to continue with their company.

Participant 4 confirmed that they offer budget services for people in rural areas, with connectivity services starting at around R250 per month. The fibre operators in this area focus on homes and businesses within the town but not rural areas, making it a golden opportunity for WISPs as they can provide connectivity due to the wireless medium.

Participant 5 mentioned that they focus on rural cities and towns by providing low-cost wireless internet. The packages they offer are around 8Mbps for R350 per month. They use micro-pops for prepaid month-to-month connectivity with more affordable equipment to provide the connectivity.

Participant 6 sees many opportunities within the rural areas, especially in areas where farms are. Smart farming is becoming a major development, creating a significant

demand for proper connectivity. Furthermore, the participant firmly believes there will always be opportunities within rural areas, but an ISP must carefully approach this market to ensure they build a good relationship with them. Wireless in rural areas is the future, as it is challenging for fibre providers trench fibre lines to these rural towns, as it is not financially worth it for them.
The below quotes are the ones that stood out regarding rural opportunities in South Africa.

“Many of the guys in those areas preferred a prepaid billing model. It is different for us because we've always worked on a postpaid model and had to move to a month-to-month contract, which is currently the demand” (Participant 2: MS Teams interview. 12 Jul.,15:55).

“In terms of opportunities in the rural area, I feel that there are a lot of opportunities” (Participant 3: MS Teams interview. 06 Jul.,09:07).

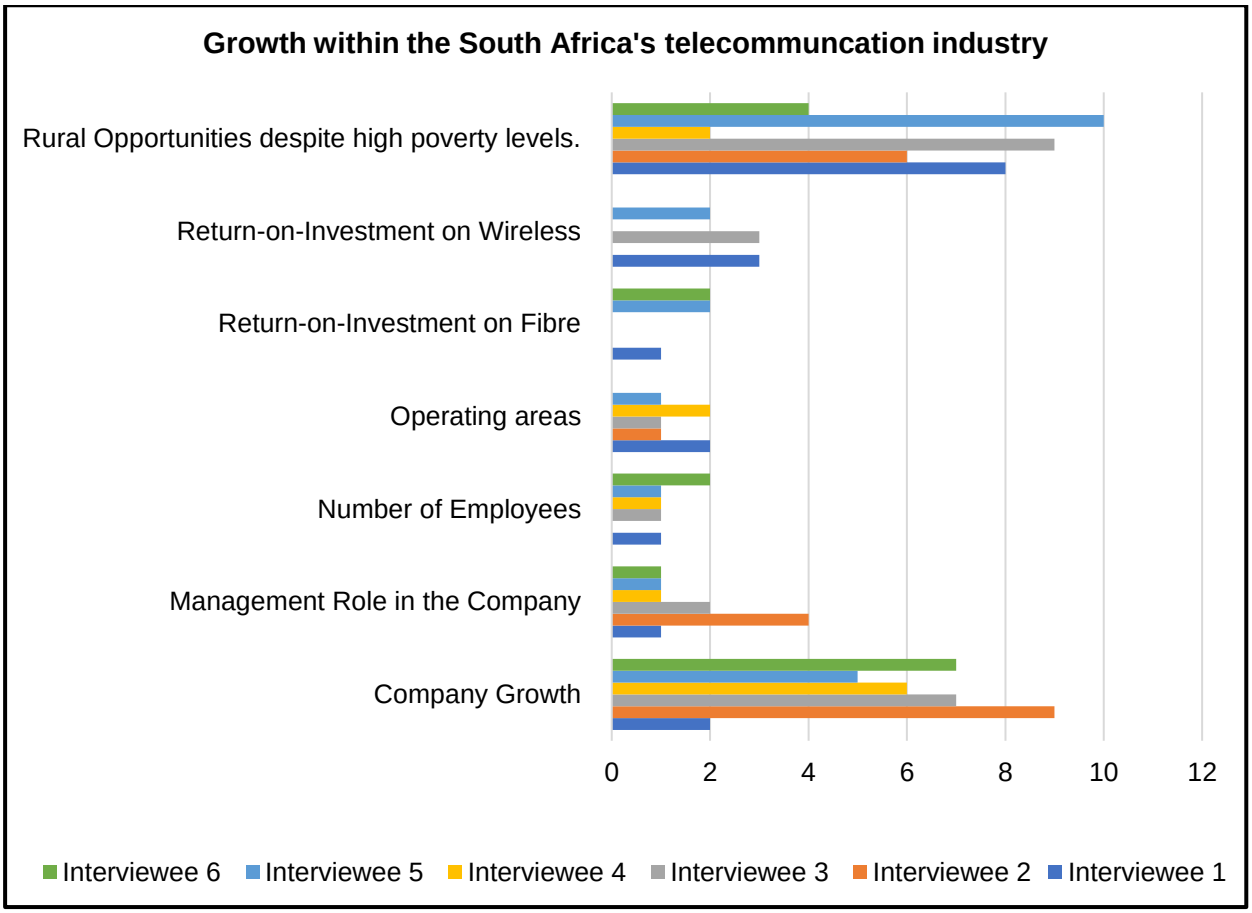
“We compete with two major fibre operators, which slowed down our wireless connectivity side within the town, but all our towers are in the rural areas, sitting the farming community, serving the people next to the gravel roads, where they built smaller communities, but they still want connectivity” (Participant 4: MS Teams interview. 18 Jul.,10.00).

“We focus more on rural cities also, but primarily rural little towns with fibre aren't so relevant or used now. We've created a new concept of delivering low-cost wireless to a previously disadvantaged group” (Participant 5: MS Teams interview. 05 Jul.,10:56).

“We have also diversified our services to the townships, as we deployed multiple Wi-Fi hotspot access, providing a profitable part of the business” (Participant 1: MS Teams interview. 07 Jul.,08:27).

“I think there are many opportunities in the rural areas, especially within the farming areas, due to smart farming solutions because of all the IoT solutions that are currently in the market, and those things require connectivity” (Participant 6: MS Teams interview. 08 Jul.,14:29).

Figure 10: Topic contribution to growth within South Africa's telecommunication industry



All participants indicated high contribution lives, except for participant 4, regarding rural opportunities. Therefore, this indicates that many untapped opportunities remain within South Africa's rural areas. Furthermore, all participants expressed that their company is growing despite the cut-throat conditions of the telecommunication industry. Lastly, there is also a clear indication in the graph that the return on investment on the wireless medium is higher than the fibre solutions.

The following section focuses on the overall conclusion of the results obtained.

4.9 Conclusion

Within the results chapter, there is a clear indication that there are many opportunities within the telecommunication sector. However, with all the opportunities come many challenges and obstacles the ISPs must overcome to be successful. The study's

primary objective is to determine the factors influencing client loyalty levels, which are clearly identified in the results. Factors such as adequate service, resolving problems, providing excellent service and support, having stock, selling at the right price, building trust and relationships, providing personalised services, effective communication, and many more contribute to customer loyalty.

The study also has several secondary objectives, such as determining the impact of underdeveloped infrastructure on adopting ICT technology within the country. The results indicated that the country's weak infrastructure creates a challenging environment to provide stable and uninterrupted connectivity, ultimately weakening the country's adoption of a new digital age. This corroborates with literature stating that due to weak infrastructure within the country, it is challenging to adopt ICT technologies (Saba & David, 2020:2).

The second objective is to investigate the effect of high poverty rates on the expansion of the industry. By referring to the findings, it is also clear that the high poverty rates in the country are slowing down the growth of the telecommunication industry, as South Africans are significantly price-sensitive, and many cannot afford connectivity, as seen in the literature by Chinembiri, (2020:1). However, many creative ideas are implemented according to the results to ensure the lower-income population receives affordable and stable connectivity.

The third objective is to establish the impact of the lack of skills among ICT employees on the quality of service. In the results, it is indicated that training is a positive contributor toward service quality. The literature review studies also indicated that training employees will assist companies with providing higher quality services, improving client satisfaction (Hanaysha, 2016:172). However, although training is vital, many participants expressed that there is not always time for thorough certified training, meaning they must conduct in-house training to ensure employees can service any problems. The results also indicated that training clients is crucial for ISPs, as it will assist them in attending to less technical problems as fully trained consumers have the necessary knowledge to deal with entry-level problems.

The fourth objective of the study is to investigate the competitiveness within South Africa's connectivity sector and how it affects the decision-making of service providers and consumers. The results showed that the industry is highly competitive and that consumers have multiple options with low prices available within the market. A price war is going on within the industry between WISPs and fibre providers, which causes a race to the bottom as prices continuously decrease to ensure the ISPs remain competitive (Azizan & Yusr, 2019:97; Chiou, 2004:686). As for the ISPs, they also have multiple distributors to choose from, meaning if the pricing of the equipment is not adequate and the services are not effective, they will move to alternative distributors. These ISPs must provide free installations to clients to remain competitive, as that is the trend in the market, placing further strain on the price sensitivity of both the ISP and the consumer.

The fifth objective is to investigate the effect of the global chipset shortage in the market. It is seen within the results that the chipset shortage added much pressure on ISPs, consumers, and distributors. ISPs could not procure the equipment they are comfortable with, causing them to either lose deals or have maintenance issues due to the unfamiliarity with the new equipment. The literature review also indicated that this constraint had a tremendous negative effect on the industry (Yang, 2022:6).

The last secondary objective is to investigate how price-sensitive the South African market is, and it is clear, according to the results, that the poverty rates and weak economic circumstances in South Africa are causing significant price sensitivity levels among consumers. The results indicated that many consumers would move due to price and do not always consider value-added services such as technical support and constant connectivity availability. The literature review also indicated that citizens in South Africa struggle to afford connectivity, creating a significant digital divide (Akande & Belle, 2014:4).

Overall, this chapter's results addressed all the study's objectives and provided a comprehensive overview of the industry, with its opportunities and challenges. The results were conducted on six ISPs, ranging from small to large WISPs and ISPs. These six participants provided valuable information to address the overall research question of investigating the factors influencing client loyalty within South Africa's ICT

industry. The final chapter will focus on the overall conclusion and recommendation of the study.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study's objective was to investigate the factors influencing client loyalty within South Africa's ICT industry. This included the investigation of several secondary objectives, such as the below, to answer the research question.

Objective 1: To determine the impact of underdeveloped infrastructure on adopting ICT technology in South Africa.
Objective 2: To investigate the effect of high poverty rates on ICT expansion within South Africa.
Objective 3: To establish the impact of the lack of skills among ICT employees on the quality of service.
Objective 4: To investigate how competitive the connectivity market in South Africa is and how it affects the decision-making of the service provider and consumer.
Objective 5: To investigate the effect of global chipset shortages on service providers and distributors in South Africa.
Objective 6: To investigate how price-sensitive the South African market is toward connectivity packages.

Furthermore, the chapter also provides a summary of the main findings from the literature review (Chapter 2) and empirical research (Chapter 3). The study will also include several research recommendations as well as the achievement of the objectives. The limitation of the study can also be found in this chapter, with suggestions for future topics within the ICT field. Lastly, the chapter also includes practical implications and a conclusion of the study.

5.2 Research conclusions

Table 12: Research conclusions

Objectives	Key findings
Objective 1: Underdeveloped infrastructure	Weak infrastructure affects adequate service delivery and industry growth within the telecommunication industry. Challenges include road construction damaging fibre lines, lack of infrastructure in rural areas affecting stable connectivity, and weak power grids causing

Objectives	Key findings
	connectivity outages, to name only a few. Many overcome these infrastructure challenges by implementing wireless solutions. With the wireless medium, ISPs do not rely on infrastructure as much as with the fibre medium.
Objective 2: High poverty rates	It is a clear indication within the study that high poverty levels increase price sensitivity among South African consumers. ISPs struggle with initial costs and free installations to improve their competitiveness and to obtain more clients, as many expect this due to the market trends within the telecommunication industry. However, adjusting service delivery methods to suit lower-income markets is becoming more popular among ISPs, and many are benefiting as they are now tapping into a different market segment while maintaining their higher-income consumers. Internet is becoming a necessity and not a luxury, as everyone requires connectivity to apply for jobs, run a business, connect with far-away friends and family and many more.
Objective 3: Lack of Skills among ICT employees	Consumers have unrealistic expectations due to a lack of understanding and knowledge of connectivity. Therefore, ISPs educate clients to manage minor issues independently, which ultimately helps them save time and money. Furthermore, employee education contributes to better service and higher client loyalty, making it a fundamental element for any ISP. Unfortunately, training challenges exist due to the cost of sending technicians for external training and the time it consumes. Therefore, these ISPs typically implement in-house training for all staff regularly to ensure that knowledge and skills are on adequate levels to handle any problem that might occur.
Objective 4: Competitive connectivity market	High competition triggers a price war among ISPs, leading to sustainability and service quality challenges within South Africa. Therefore, for ISPs to obtain more clients, they must either provide excellent services and build client loyalty or lower their pricing structures. Consumer decisions heavily rely on pricing and service quality, and if an ISP can implement a healthy balance, it stands a better chance of obtaining a higher market share. Ultimately, ISPs must differentiate themselves through exceptional services to retain clients despite price sensitivity in South Africa. Results have also indicated that if services are of high quality, an ISP can get away with charging higher fees to particular consumers or businesses.
Objective 5: Global chipset shortages	Chipset shortages disrupted many industries worldwide, including the ICT industry, causing demands to go unfulfilled and opportunities lost along the line. ISPs struggled to procure equipment, leading to unfamiliar products, discouraging confidence levels, weakening service delivery, and deteriorating relationships with distributors. Surviving the pandemic required adaptability and fast decision-making to ensure the business remains successful. Results indicated that the after-effect of the pandemic is only rising now, as

Objectives	Key findings
	many ISPs must service the vast number of different solutions out in the field.
Objective 6: Price sensitivity in the market	The South African market is highly price-sensitive, impacting connectivity package prices, initial installation fees and overall client loyalty. ISPs have adapted to the price sensitivity situation by offering various connectivity packages to capture different market segments within the country to ensure the company's sustainability. Client loyalty is heavily influenced by price, service, and added value.

The findings above have all contributed significantly toward the overall research question of the study. The following section focuses on several recommendations that must be implemented to improve consumer and business loyalty within South Africa's telecommunication industry.

5.3 Recommendations

South Africa's ICT industry is essential as it contributes approximately R93 billion toward the country's GDP (Molatelo *et al*.,2022:15). However, despite the importance of the ICT industry, there is evidence that only 50 percent percent of South Africa's population has access to good quality internet (Gillwald *et al*., 2018:6). Furthermore, even with the opportunity to expand and grow the telecommunication industry, it remains a struggle as many South Africans cannot afford connectivity, as the consumers are significantly price sensitive, making it challenging to expand and improve the industry (Mothobi & Gillwald, 2018:4). Furthermore, with the demand in the market for the internet being reasonably high, the competition levels also become a problem, sparking a price war among service providers. Linked to the high competition rates in South Africa are the client loyalty levels, as they have plenty of service providers to choose from, causing companies to invest in factors to improve their consumer loyalty levels.

Many of the participants who were interviewed have agreed that there are many opportunities still within the telecommunication sector. However, they all have expressed concerns regarding price sensitivity, competition, client loyalty, overall problems within South Africa, service quality and industry growth. It was clear that the

participants were worried about the current price war in South Africa, as it is a race to the bottom and negatively affects customer loyalty. Clients will quickly move to an alternative ISP if the pricing does not suit their budget; however, they continue to request high levels of services, availability, and reliability. A recommendation is for ICASA to regulate connectivity prices more effectively to ensure ISPs do not sell connectivity below a specific price point. This will ensure the competition levels remain healthy and assist the growth of the ICT industry.

Furthermore, the participants genuinely expressed their concerns regarding the challenging problems within South Africa, including weak road conditions, power outages and high crime levels. These problems cause ISPs to struggle to provide effective and reliable services, making it challenging to grow in the market. A recommendation is for the government of South Africa to step up and improve infrastructure investments, especially the power grid and to invest in the country's policing to ensure the country's people and infrastructure remain safe.

The study also focused on the factors that affect client loyalty within the telecommunication industry. According to the data findings, a recommendation for ISPs to grow is to focus on and implement the following factors:

- Provide excellent services at affordable rates.
- Implement proactive communication.
- Build relationships and trust.
- Supply reliable connectivity speeds according to the needs of the client.
- Build a local presence and provide quick solutions to problems.

Aspects such as personalised services, minimal downtime of connectivity, providing additional services, and highly trained staff also assist in improving client loyalty.
The following section focuses on achieving all the various objectives within the study and how the findings correlate with the literature evidence.

5.4 Achievement of objectives

The primary research question for this study is: What factors influence customer loyalty within South Africa's ICT industry? To answer this question, the study focuses on a primary objective, which is determining the factors of client loyalty and a set of secondary objectives, which include the following:

- Impact of underdeveloped infrastructure.
- The impact of high poverty levels on the expansion of the ICT industry.
- The effect of weak ICT skill levels among employees on service quality.
- To investigate how competitive the market is and how it affects overall decision-making.
- How the global chipset shortage affected businesses and the industry.
- Lastly, to investigate the levels of price sensitivity within the market.

Furthermore, obtaining the answers to the primary and secondary objectives is essential to answer the study's research question confidently. Therefore, the following sub-section focuses on the factors influencing customer loyalty within the ICT industry.

5.4.1 Primary objective

Investigating the factors influencing customer loyalty within South Africa's ICT industry. Below are the factors the participants mentioned that help their businesses increase customer loyalty:

- Providing adequate services and competitive pricing.
- Resolving problems quickly and effectively.
- Offering credit when downtime of connectivity occurs.
- Proactive communication with clients, even if it is minor problems.
- Providing reliable products that perform the job effectively.
- Providing reliable and effective services.
- Providing adequate connectivity speeds.
- Improving local presence to build relationships.
- Offering good value services and adequate technical expertise.
- Build relationships to obtain effective word-of-mouth.

- Being transparent with all clients.
- Providing additional services and products to diversify the company's opportunities.
- Obtaining client referrals and testimonials.
- Providing personalised services according to the needs of each client.
- Reducing downtime of connectivity by utilising backup energy solutions.
- Having redundancy wireless connectivity solutions, especially when a client is connected through a fibre medium.
- Providing hassle-free support services.
- Providing complete solutions and offering complementary solutions.
- Investing in in-house technical teams ensures problems are dealt with quickly and effectively.
- Matching prices to a certain extent to ensure more business and to retain clients.

Furthermore, the following information focuses on short summaries of the secondary objective of the study to ensure a clear understanding of how the results and objectives have been met.

5.4.2 Secondary objectives

Objective 1: To determine the impact of underdeveloped infrastructure on adopting ICT technology in South Africa.

According to the findings, weak infrastructure is hindering ISPs' ability to provide effective services and impacts the growth of the telecommunication industry. Road construction is causing many challenges for ISPs with fibre lines, as they dig up roads and damage the fibre lines, causing significant outages. Space for fibre is also causing challenges for ISPs, as many are fighting for cable space in designated areas. Findings also indicated that the lack of infrastructure within rural areas is causing several difficulties in providing stable and reliable connectivity. It is challenging to provide internet in these areas even with good infrastructure, as these areas are typically not in urban areas, meaning the lack of infrastructure makes it significantly more challenging.

The results also indicated that South Africa's weak power grid is causing significant problems for ISPs as they continue to struggle to keep the towers and equipment on to ensure they have no downtime in connectivity. Some ISPs have implemented solar, battery and generator power solutions at their sites, but unfortunately, once these power solutions are implemented, theft and vandalism become another problem. The issue is that these power solutions are expensive to implement, causing the return on investment to be longer than it should be for ISPs.

An interesting finding was the road conditions, damaging the vehicles of the ISPs. Many of their towers are in areas where the terrain is rough, causing increases in maintenance and tyre costs, which is a significant added expense for ISPs. The findings also showed that ISPs fight against weak infrastructure by implementing wireless mediums to transfer data and provide connectivity. Inadequate infrastructure does not affect the wireless mediums as much, providing ISPs with a chance to overcome this significant issue. Furthermore, another solution within the findings was to fully implement solar solutions at all the towers to ensure no downtime in connectivity. Many large operators cannot afford to implement back power solutions at their sites as there are too many; however, smaller ISPs can, providing them with a competitive advantage.

Objective 2: To investigate the effect of high poverty rates on ICT expansion within South Africa.

Findings indicated that South Africa's high poverty rates cause challenges for all ISPs as they cause price sensitivity levels to increase within the country. Many consumers and businesses cannot afford monthly connectivity packages or equipment, causing ISPs to cover the initial costs and free installations. Providing free installations places immense strain on ISPs as it causes the return on investment to be much longer than expected. However, to remain competitive, they must provide such services. Furthermore, evidence indicated that price is one of the most important aspects for consumers and loyalty is mainly linked to pricing.

However, to accommodate the lower LSM markets, which struggle to afford the internet, many ISPs have changed their approach regarding how ISPs deliver the

medium. Many South Africans in poorer areas spend their money differently; they prefer to purchase it daily and in small increments. ISPs are installing wireless hotspots with affordable equipment in rural areas, providing a connectivity cloud for rural areas. This assists tremendously, as mobile data remains exceptionally high in South Africa, making this a preferred solution. Furthermore, other ISPs seek rural areas where they provide wireless fixed connectivity packages lower than R250.00 per month, a sweet spot for clients who can afford a monthly premium. A finding in the results that stood out was that the internet is not a nice to have anymore, but a necessity, as everything is becoming digital nowadays.

Objective 3: To establish the impact of the lack of skills among ICT employees on the quality of service.

Findings indicated that consumers do not know how the internet works, and the problem with this is that they have unrealistic expectations when they sign up with an ISP. Many consumers think Wi-Fi is the same as the internet, meaning it is essential for ISPs to train their clients to ensure they are realistic and patient when downtime or latency occurs. Findings showed that ISPs are training and educating their clients so they can handle more minor problems when their internet is down. This assists in reducing the costs of sending an employee to these struggling customers whenever they have an issue.

On the other hand, employee education is also vital for ISPs as it assists them in providing higher levels of services to clients, which ultimately causes higher levels of client loyalty. According to the findings, the issue is that ISPs cannot afford to send their employees to training camps. They know it will benefit them in the long run, but not having a technician in the field costs a lot of money and opportunities, which is not an option, especially in such a cut-throat industry. Many participants mentioned that they use in-house training weekly and monthly. This helps the team if they struggle with issues and allows everyone to share their challenges, successes, and concerns.

Objective 4: To investigate how competitive the connectivity market in South Africa is and how it affects the decision-making of the service provider and consumer.

Findings have indicated that the competition levels within South Africa's telecommunication industry are significantly high, which causes a price war among ISPs. Smaller ISPs are struggling to provide connectivity at such low prices as they do not have the capital investments to do so. More giant corporations have the financial backing to offer free installations, which ultimately causes the rest of the ISPs in South Africa to follow. The problem is that their return on investment becomes much longer, placing them under strain in the long run. Furthermore, ISPs cannot bind consumers to a contract anymore, meaning that when a consumer cancels the connectivity contract, the ISPs lose money. Another issue, according to the findings, is the amount of competition there is in the market, thereby causing consumers to pick and choose whoever is the most cost-effective.

Due to the high competition levels, ISPs and end-users are forced to look at pricing, and if it does not suit their budget, they are forced to look elsewhere for solutions or products. This issue ultimately causes a ripple effect, placing the distributors under strain. The results indicated that ISPs would move to alternative distributors if the pricing were not adequate, if there is poor service quality, there are inadequate returns policies, there is no stock on hand, they do not keep up with the times, and many more. Consumers will leave ISPs if their pricing is not according to their budget, if there is downtime of connectivity, poor after-sales services, when the fibre is in the area, if there is a lack of presence and communication and many more.

However, many participants expressed that ISPs could get away with higher prices if their services are exceptional. Exceptional services typically include being there for them when others are not, great relationships, minimal downtime, effective technical support, providing a human touch, and building a solution according to the consumer's requirements.

Objective 5: To investigate the effect of global chipset shortages on service providers and distributors in South Africa.

According to the findings, the global chipset shortage has disrupted the entire ICT industry, especially the telecommunication sector. Everyone required internet during the pandemic, which caused a demand that could not be fulfilled. Many ISPs struggled

to procure equipment, causing them to lose several opportunities or use unfamiliar equipment. The distributors were also under severe constraint as they could not supply the preferred products, causing relationships to deteriorate. ISPs were forced to source products wherever they could, reducing client loyalty levels. The ISPs continue to struggle despite the normalisation of the industry, as many unfamiliar products are still in the field, meaning they need to continue to service and maintain them. Many businesses did not make it during the pandemic, and it was not the survival of the fittest but survival of the fastest for ISPs to survive.

Objective 6: To investigate how price-sensitive the South African market is toward connectivity packages.

South Africans are significantly price-sensitive toward connectivity packages, meaning that the market price for the internet will continue to decline, causing harm to the entire telecommunication industry. ISPs try to conquer this issue by providing better services and higher data capacities. However, there comes a time when consumers do not require faster speeds or more effective services. The issue of price sensitivity is not always the monthly costs but the initial installation fees, as many consumers cannot afford the equipment, leading to them going for an ISP that provides free installation. Free installation makes ISPs also more price sensitive as their return on investment takes much longer than usual, placing them under financial strain.

Furthermore, results also indicated that some of their clients will move to an alternative service provider if the pricing is between 10 and 30 percent more expensive than the competition. However, despite the price sensitivity in the market, ISPs are starting to think outside the box and provide affordable services to ensure they capture the LSM market and not lose out on any opportunities. Many ISPs have several different connectivity packages, from affordable connectivity to premium solutions, which increase the chance of obtaining more clients. Ultimately, if an ISP or distributor’s pricing is inadequate, clients will leave despite the excellent services and benefits they receive. It is mostly all about what they can afford.

The following section includes all the various limitations of the study.

5.5 Limitations of the study

Despite the contribution of this study, there are a few limitations that create opportunities for future studies. The study was limited in terms of the number of participants, as there was only a total of six participants who contributed to the topic. The reason for only six participants is that data saturation was quickly reached as most participants had similar opinions. The second limitation was the regions covered, as most regions covered were in Gauteng, the Western Cape, North West and KwaZulu-Natal, but regions such as the Free State, Northen Cape, and Limpopo were not mentioned, which ultimately caused a gap in the study, but opportunities for future studies. The research approach was qualitative; only higher management and directors were asked to participate. However, another limitation is the lack of consumer input within the study. Lastly, only small and medium sized ISPs were interviewed, meaning the large enterprises were excluded, causing another opportunity for further studies.

The following section focuses on the suggested future research topics that would complement this study. The limitation of the study has created several opportunities for other researchers to continue with similar topics, which would benefit the industry as a whole.

5.6 Suggestions for future research

The study mainly focused on what ISPs can implement to increase client loyalty within the ICT industry. Many points were discussed, such as price sensitivity, growth of the industry, service quality, challenges, and client loyalty levels. However, there are still many suggestions that can be considered to investigate in the future.

Based on the results obtained throughout the study, it is recommended that future research consider a mixed-method research approach containing quantitative and qualitative methods. This research approach is to obtain a larger sample size to obtain more information from more ISPs within South Africa.

Topics that could benefit future studies based on the findings include the following:

- Investigating the adequate balance of connectivity prices within South Africa's telecommunication industry, from a customer's point of view.
- Investigating ways to improve wireless tower security to safeguard connectivity and power equipment.
- Investing in telecommunication markets outside South Africa to compare the differences and determine the aspects that work effectively.
- Investigating areas in South Africa that do not have existing connectivity infrastructure.
- Determining how soon fibre infrastructure will take over the market and whether there is still a market space for wireless.

The following section touches on the practical implications of the study.

5.7 Practical implications

The study provides many implications for telecommunication companies in South Africa. The findings indicated that many factors influence customer loyalty, and if not focused on, it will cause a decline in loyalty levels. Aspects such as price, effective service, communication, good value for money services, low downtime in connectivity and effective marketing contribute heavily toward customer loyalty. The implication of this not being implemented by ISPs could lead to them losing clients or not gaining new customers.

Another practical implication for the research was about ISPs fighting against all odds within South Africa regarding weak infrastructure. ISPs have several challenges, including underdeveloped infrastructure, unstable power grids, high crime levels, etc. Therefore, if ISPs invest in solutions such as improved security systems, building a relationship with the community, and using off-grid power solutions, to name a few, to conquer these obstacles, they stand a better chance of being more competitive against larger ISPs and obtaining more business.

Furthermore, another practical implication is that ISPs must invest in training or at least try to implement training as much as possible. Findings indicated that if employees are well trained and kept up to date with the latest technologies, the company's service

levels will also increase. If service levels are of high standards, client satisfaction will also increase significantly, meaning better client loyalty levels. Another vital aspect for ISPs is training their clients to ensure they do not look elsewhere for other connectivity deals. Consumers have a significant lack of knowledge regarding connectivity, and many fall for any marketing trick on the market. Therefore, ISPS must ensure their clients understand how the technology works and what clauses to look out for to ensure they do not leave the ISP.

The findings also highlighted the importance of flexibility when unforeseen circumstances occur, such as the pandemic and global chipset shortages. ISPs must not get too comfortable with one brand or product because should something occur, they might undergo another shock, which ultimately affects client service. ISPs must stay current with other telecommunication brands to ensure they are ready for unforeseen circumstances.

Lastly, according to the findings, a practical implication is competition and how it affects decision-making. Therefore, ISPs must ensure they understand the competition and what they have to offer and know their pricing and where they are to compete effectively. Consumers have a significant number of ISPs to choose from. Therefore, the ISP needs to differentiate itself from the others. Another important implication is thinking outside the box and offering additional value-added solutions to clients, which will assist with the company's growth.

Lastly, the findings indicated that pricing is a significant factor in client loyalty. This is due to the weak economy, which causes high price sensitivity levels within South Africa. Therefore, to ensure ISPs gain more clients and retain the ones they have, they must provide connectivity packages at a reasonable price. Services and relationships can help ISPs to offer their services at higher prices. However, there are limits, and if the ISPs overstep those limits, the chance of losing clients is high.

The following section provides a comprehensive and informative final summary of the study, which ultimately sums up all the most crucial aspects of the topic.

5.8 Final summary

The study investigated the factors influencing client loyalty within South Africa's ICT industry. A comprehensive review of relevant literature was conducted on the overview of the telecommunication industry and the factors to improve a country's ICT infrastructure to ensure economic growth. The state of South Africa's internet connectivity and the opportunities that remain within the sector were also thoroughly discussed. Furthermore, the literature review heavily focused on factors to improve client loyalty to ensure it correlated with the study's findings.

One main objective and six secondary objectives were included, contributing to answering the study's overall research question. The objective of the study was to investigate what factors influence customer loyalty, and it is clear that factors such as price, service, relationship, trust, effective aftersales services, personalised services, being reliable, and providing adequate connectivity speeds, to name a few were significant contributors toward the study.

This chapter concluded by providing the study's main findings, which included the literature review, empirical research and the results and analysis. From all the findings, a conclusion and several recommendations were made regarding what factors ISPs should focus on to improve overall business within the telecommunication industry. Furthermore, several limitations were also provided, which assisted with recommendations for future research topics.

In conclusion, the ICT industry is an essential element for the growth of a country, as everything is starting to move to the new digitalised age. Therefore, telecommunications will play an essential part in ensuring this industry grows because, without reliable and stable connectivity, the industry cannot grow and develop. Telecommunications in South Africa are a fierce and highly competitive market, especially regarding price. ISPs continue to struggle to provide highly effective communication as they face several challenges, such as a shortage in wireless spectra, a connectivity price war, high price sensitivity levels, high crime levels, weak power grids, and high poverty levels, only to name a few. Therefore, ISPs must ensure their client loyalty increases by focusing on factors such as affordable prices, stable

and reliable connectivity, effective service, staying up to date with the latest technologies and many more.

The findings in the study confirmed that ISPs are being challenged by high competition levels within South Africa. However, it is concluded that there are many opportunities for ISPs within the country. However, to tap into these opportunities, ISPs must focus on the customer, i.e., caring about them, knowing what they want, and where they are. Other crucial aspects for ISPs are thinking outside the box and looking for market gaps to ensure their company's growth.

Many factors influence client loyalty; however, if ISPs remain focused, have a growing mindset, adapt quickly and effectively, invest in future technologies, know the competition, and treat it respectfully, they will develop and grow within the industry.

REFERENCE LIST

Adams, R., Adeleke, F., Anderson, D., Bawa, A., Branson, N., Christoffels, A., Vries, J.D., Etheredge, H., Flack-Davison, E., Gaffley, M. & Marks, M. 2021. POPIA code of conduct for research. *South African Journal of Science*, 117(5-6):1-12. https://doi.org/10.17159/sajs.2021/10935

Adeleye, N. & Eboagu, C. 2019. Evaluation of ICT development and economic growth in Africa. NETNOMICS: *Economic Research and Electronic Networking*, 20:31-53. https://doi.org/10.1007/s11066-019-09131-6

Afawubo, K. & Noglo, Y.A., 2022. ICT and entrepreneurship: A comparative analysis of developing, emerging and developed countries. Technological Forecasting and Social Change, 175, p.121312.

Akande, A.O. & Van Belle, J.P.W. 2013. October. *ICT adoption in South Africa: opportunities, challenges and implications for national development*. Paper delivered in IEEE International Conference on Electronics Technology and Industrial Development, Cape Town, South Africa (pp. 23-24). https://www.researchgate.net/publication/285593353_ICT_Adoption_in_South_Africa_-_Opportunities_Challenges_and_Implications_for_national_development Date of access: 23 Aug. 2023.

Alharahsheh, H.H. & Pius, A. 2020. A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3):39-43. https://doi.org/10.36348/gajhss.2020.v02i03.001

Ali, Y., 2020. *Towards the development of network service cost modelling: An ISP perspective*. Ontario: The University of Western Ontario, Canada. (Thesis – PhD). https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=9248&context=etd Date of access: 23 Aug. 2023.

Anderson, P., Bynum, M., de Castro, M.H.G., Gaston, P., Malyn-Smith, J., McGaw, B., Methia, R., O'Connor, B. & Taylor, L.A. 2002. Digital transformation: A framework

for ICT literacy. *Educational Testing Service*, 1(2):1-53. http://hdl.voced.edu.au/10707/34529.

Appiah-Otoo, I. & Song, N. 2021. The impact of ICT on economic growth-Comparing rich and poor countries. *Telecommunications Policy*, 45(2): 1-3.

Arslan, I.K. 2020. The importance of creating customer loyalty in achieving sustainable competitive advantage. *Eurasian Journal of Business and Management*, 8(1):11-20. https://doi.org/10.15604/ejbm.2020.08.01.002

Asiaktewen, A.A.H. & Ibrahim, R.O. 2019. The marketing strategies of Djibouti telecommunication. *European Journal of Engineering and Technology*, 7(4):111-125. http://www.idpublications.org/wp-content/uploads/2019/07/Full-Paper-THE-MARKETING-STRATEGIES-OF-DJIBOUTI-TELECOMMUNICATION.pdf Date of access: 24 Aug. 2023.

Azcarraga, A. & Peña, P.J. 2019. *Technology and automation as sources of 21st-century firm productivity: The economics of slow internet connectivity in the Philippines.* Paper presented at the DLSU Research Congress, De La Salle University, Manila, Philippines. https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2019/see-II-030.pdf Date of access: 23 Aug. 2023.

Azizan, N.S. & Yusr, M.M. 2019. The influence of customer satisfaction, brand trust, and brand image towards customer loyalty. *International Journal of Entrepreneurship*, *2*(7):93-108. https://doi.org/10.35631/ijemp.270010

Azungah, T. 2018. Qualitative research: deductive and inductive approaches to data analysis. *Qualitative Research Journal*, 18(4):383-400. https://doi.org/10.1108/QRJ-D-18-00035

Bahrini, R. & Qaffas, A.A. 2019. Impact of information and communication technology on economic growth: Evidence from developing countries. *Economies*, 7(1): 1-13.

Bariu, T.N. 2020. Status of ICT infrastructure used in teaching and learning in secondary schools in Meru County, Kenya*. European Journal of Interactive Multimedia and Education,* 1(1): 1-8.

Bengtsson, M. 2016. How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, (2):8-14. https://doi.org/10.1016/j.npls.2016.01.001

Blom, P.P. & Uwizeyimana, D.E., 2020. Assessing the effectiveness of e-government and e-governance in South Africa: During national lockdown 2020. *Research in World Economy,* 11(5):208-219. https://doi.org/10.5430/rwe.v11n5p208

Bvuma, S. & Marnewick, C. 2020. An information and communication technology adoption framework for small, medium and micro-enterprises operating in townships South Africa. *The Southern African Journal of Entrepreneurship and Small Business Management*, 12(1):1-12. https://doi.org/10.4102/sajesbm.v12i1.318

Chetty, M., Sundaresan, S., Muckaden, S., Feamster, N. & Calandro, E. 2013. *Measuring broadband performance in South Africa*. Paper deliver[ed] at the 4th Annual Symposium on Computing for Development, Cape Town, South Africa. (pp. 1-10). https://doi.org/10.1145/2537052.2537053

Chinembiri, T. 2020. Despite reduction in mobile data tariffs, data still expensive in South Africa. *Research ICT Africa,* (2):1-6. https://www.africaportal.org/publications/despite-reduction-mobile-data-tariffs-data-still-expensive-south-africa/ Date of access: 9 Aug. 2023.

Chivandire, G., Botha, I. & Mouton, M. 2019. The impact of capital structure on mobile telecommunication operators in Africa. *The Journal of Private Equity*, 22(4):96-110. https://doi.org/10.3905/jpe.2019.1.085

Chiou, J.S. 2004. The antecedents of consumers' loyalty toward Internet service providers. *Information & Management*, 41(6):685-695. https://doi.org/10.1016/j.im.2003.08.006

Chuah, S.H.W., Marimuthu, M., Kandampully, J. & Bilgihan, A. 2017. What drives Gen Y loyalty? Understanding the mediated moderating roles of switching costs and alternative attractiveness in the value-satisfaction-loyalty chain. *Journal of Retailing and Consumer Services*, 36: 124-136.

Connelly, L.M. 2020. Inclusion and exclusion criteria. *Medsurg Nursing*, 29(2):125-116. https://www.proquest.com/openview/46ad1457b17d5d5995f448f9133109fa/1?pq-origsite=gscholar&cbl=30764 Date of access: 8 Aug. 2022

Creswell. J.W. & Creswell, J.D. 2017. *Research design: Qualitative, quantitative, and mixed methods approaches.* 5th ed. Sage, Newbury Park.

Curran, M. & Shirk, B. 2015. *Basics of fiber optics. Allen: Amphenol Fiber Systems International (AFSI)*:1-13. http://www.fibersystems.com/pdf/whitepapers/Basics-of-Fiber-Optics.pdf Date of access: 16 Oct. 2022.

Dalati, S. 2021. Factors affecting Syrian female researchers' experience during crisis: inductive approach. *Business, Management and Economics Engineering*, 19(1):91-110. https://doi.org/10.3846/bmee.2021.13232

Darmawan, D. & Grenier, E. 2021. Competitive advantage and service marketing mix. *Journal of Social Science Studies (JOS3),* 1(2)*:*75-80. https://doi.org/10.56348/jos3.v1i2.9 5

David, O.O. & Grobler, W. 2020. Information and communication technology penetration level as an impetus for economic growth and development in Africa. *Economic research-Ekonomska istraživanja*, 33(1): 1394-1418.

Deen-Swarray, M., Calandro, E., Stork, C., Gillwald, A.N., & Esselaar, S. 2012. *Mobile usage at the base of the pyramid in South Africa.* https://www.semanticscholar.org/paper/Mobile-usage-at-the-base-of-the-pyramid-in-

South-Deen-Swarray-Calandro/720da759d6d91675516c97cefbd7e7af3ee1d2bb Date of access: 5 Apr. 2022.

Dhir, S., Rajan, R., Ongsakul, V., Owusu, R.A. & Ahmed, Z.U. 2021. Critical success factors determining performance of cross-border acquisition: Evidence from the African telecom market. *Thunderbird International Business Review,* 63(1):43-61. https://doi.org/10.1002/tie.22156

Dube, B. 2020. Rural online learning in the context of COVID 19 in South Africa: Evoking an inclusive education approach. *REMIE: Multidisciplinary Journal of Educational Research,* 10(2):135-157. https://dx.doi.org/10.447/remie.2020.5607

Ehmke, C., Fulton, J. & Lusk, J. 2005' Marketi'g's four P's: first steps for new entrepreneurs. Purdue University, Purdue Extension, Department of Agricultural Economics. *Agricultural Innovation and Commercialization,* EC730:1-12. https://www.extension.purdue.edu/extmedia/ec/ec-730.pdf Date of access: 24 Aug. 2023.

Fernández-Portillo, A., Almodóvar-González, M., Coca-Perez, J.L. & Jiménez-Naranjo, H.V. 2019. Is sustainable economic development possible thanks to the deployment of ICT?. *Sustainability*, 11(22):6307. https://doi.org/10.3390/su11226307

Fleming, J. & Zegwaard, K.E. 2018. Methodologies, methods and ethical considerations for conducting research in work-integrated learning. *International Journal of Work-Integrated Learning*, 19(3):205-213. https://files.eric.ed.gov/fulltext/EJ1196755.pdf Date of access: 24 Aug. 2023.

Fusch, P.I. & Ness, L.R. 2015. Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9):1408-1416. https://doi.org/10.46743/2160-3715/2015.2281

Fylan, F. 2005. *Semi-structured interviewing*. *In* J. Miles & P. Gilbert *Eds*., A handbook of research methods for clinical and health psychology. New York, USA: Oxford University Press.

Gao, Y. 2021. South Africa telecom market analysis. *American Journal of Industrial and Business Management*, 11(11):1113-1127. https://doi.org/10.4236/ajibm.2021.1111067

Gati, A., Salem, F.E., Serrano, A.M.G., Marquet, D., Masson, S.L., Rivera, T., Phan-Huy, D.T., Altman, Z., Landre, J.B., Simon, O. & Rouzic, E.L. 2019. Key technologies to accelerate the ICT Green evolution: ’n operator's point of view, *arXiv preprint arXiv:*1903.09627. https://doi.org/10.48550/arXiv.1903.09627

Gillwald, A., Mothobi, O. & Rademan, B. 2018. The state of ICT in South Africa. *Africaportal,* 5(5):7. https://www.africaportal.org/publications/state-ict-south-africa/ Date of access: 29 Mar. 2022.

Greener, S., 2008. *Business research methods*. London: Ventus Publishing.

Gowda, V.D., Sridhara, S.B., Naveen, K.B., Ramesha, M. & Pai, G.N. 2020. Internet of things: Internet revolution, impact, technology road map and features. *Advances in Mathematics: Scientific Journal,* 9(7): 4405-4414.

Grzybowski, L. 2022. Disruptive Technologies in South Africa and Sub-Saharan Africa: *The Case of Mobile Telecommunications Services.* Pp. 1-90.

Hachim, M.N., Hachim, M. & Bellahcen, M. 2022. The impact of service marketing mix elements on customer loyalty: A case study on CPA Bank in Algeria. *Journal of Economics and Sustainable Development,* 50(1):107-118. https://www.asjp.cerist.dz/index.php/en/downArticle/598/5/1/181521 Date of access: 24 Aug. 2023.

Hanafizadeh, M.R., Saghaei, A. & Hanafizadeh, P. 2009. An index for cross-country analysis of ICT infrastructure and access. *Telecommunications Policy*, 33(7):385-405. https://doi.org/10.1016/j.telpol.2009.03.008

Hardman, J., Shankar, K., Crick, T., McGaughey, F., Watermeyer, R., Suri, V.R., Knight, C. & Chung, R. 2022. “Does anyone *even notice us?” Covid-19’s impact on academics’ well-being in a developing country. South African Journal of Higher Education,* 36(1):1-19. https://hdl.handle.net/10520/ejc-high_v36_n1_a1 Date of access: 23 Aug. 2023.

Hanaysha, J. 2016. Testing the effects of employee empowerment, teamwork, and employee training on employee productivity in higher education sector. *International Journal of Learning and Development,* 6(1):164-178. https://econpapers.repec.org/article/mthijld88/v_3a6_3ay_3a2016_3ai_3a1_3ap_3a164-178.htm Date of access: 19 Oct. 2023.

Hasan, S., Ben-David, Y., Bittman, M. & Raghavan, B. 2015. The challenges of scaling wisps. *Proceedings of the 2015 Annual Symposium on Computing for Development*, pp. 3-11. http://dx.doi.org/10.1145/2830629.2830637

Hasfar, M., Militina, T. & Achmad, G.N. 2020. Effect of customer value and customer experience on customer satisfaction and loyalty PT meratus samarinda. *International Journal of Economics, Business and Accounting Research (IJEBAR),* 4(01):84-94. https://jurnal.stie-aas.ac.id/index.php/IJEBAR

Heyns, A.M., du Plessis, W., Curtin, K.M., Kosch, M. & Hough, G. 2021. Decision support for the selection of optimal tower site locations for early-warning wildfire detection systems in South Africa. *International Transactions in Operational Research*, *28*(5):1-30. https://doi.org/10.1111/itor.12928

Hira, A. 2012. Introduction to wireless technology and markets. *International Journal of Technology and Globalisation*, 6(1/2):27-37. https://doi.org/10.1504/IJTG.2012.045294

Hossain, M.A. & Quaddus, M. 2012. Expectation-confirmation theory in information system research: A review and analysis. *Information Systems Theory: Explaining and Predicting Our Digital Society*, (1):441-469. https://doi.org/10.1007/978-1-4419-6108-2_21

ICASA – Independent Communications Forum of South Africa. 2023. *The State of the ICT Sector Report in South Africa, 2023 Report*. https://www.icasa.org.za/legislation-and-regulations/state-of-ict-sector-report-2023-report Date of access: 23 Aug. 2023.

Išoraitė, M. 2016. Marketing mix theoretical aspects. *International Journal of Research-Granthaalayah*, 4(6):25-37. https://doi.org/10.29121/granthaalayah.v4.i6.2016.2633

Jain, R. & Jain, S. 2022. Analyzing and Exploring the Effectiveness of Each Element of 7Ps of Marketing Mix. *International Journal of All Research Education and Scientific Methods (IJARESM),* 10(1): 243-251.

Jewels, T.J. & Timbrell, G.T. 2001. Towards a definition of B2C & B2B e-commerce. *Proceedings of the Twelfth Australasian Conference on Information Systems,* 1(1):1-8. https://aisel.aisnet.org/acis2001/56

Jorgenson, D.W. & Vu, K.M. 2016. The ICT revolution, world economic growth, and policy issues. *Telecommunications Policy*, 40(5):383-397. https://doi.org/10.1016/j.telpol.2016.01.002

Junjie, M. & Yingxin, M. 2022. The discussions of positivism and interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 4(1):10-14. https://doi.org/10.36348/gajhss.2022.v04i01.002

Karim, R., Latip, N.A., Marzuki, A., Haider, S., Nelofar, M. & Muhammad, F. 2021. The impact of 4ps marketing mix in tourism development in the mountain areas: A case study. *International Journal of Economics & Business Administration (IJEBA),* 9(2): 231-245.

Kaushik, V. & Walsh, C.A. 2019. Pragmatism as a research paradigm and its implications for social work research. *Social Sciences,* 8(9):255. https://doi.org/10.3390/socsci8090255

Keček, D., Žajdela Hrustek, N. & Dušak, V. 2016. Analysis of multiplier effects of ICT sectors–a Croatian case. *Croatian Operational Research Review*, 7(1): 129-145.

Khan, M.T. 2014. The concept of 'marketing mix' and its elements. *International Journal of Information, Business and Management,* 6(2):95-107.

Khan, R.U., Salamzadeh, Y., Iqbal, Q. & Yang, S. 2022. The impact of customer relationship management and company reputation on customer loyalty: The mediating role of customer satisfaction. J*ournal of Relationship Marketing,* 21(1):1-26. https://doi.org/10.1080/15332667.2020.1840904

King, J.J. & Stahl, N.A. 2020. Expanding approaches for research: Understanding and using trustworthiness in qualitative research*. Journal of Developmental Education,* 44(1):26-28. https://www.jstor.org/stable/45381095

Kozyreva, A., Lewandowsky, S. & Hertwig, R. 2020. Citizens versus the internet: Confronting digital challenges with cognitive tools*. Psychological Science in the Public Interest*, 21(3): 103-156.

Kumar, R. 2018. *Research methodology: A step-by-step guide for beginners*. 5th ed. Sage, New Delhi.

Kumatongo, B. & Muzata, K.K. 2021. Research paradigms and designs with their application in education. *Journal of Lexicography and Terminology*, 5(1):16-32. https://journals.unza.zm/index.php/jlt

Lakens, D. 2022. Sample size justification. *Collabra: Psychology*, 8(1):1-32. https://doi.org/10.1525/collabra.33267

Lina, R. 2022. Improving product quality and satisfaction as fundamental strategies in strengthening customer loyalty. *AKADEMIK: Jurnal Mahasiswa Ekonomi & Bisnis,* 2(1):19-26. https://doi.org/10.37481/jmeb.v2i1.245

Lommerud, K.E. & Sørgard, L. 2003. Entry in telecommunication: customer loyalty, price sensitivity and access prices. *Information Economics and Policy*, 15(1):55-72. https://doi.org/10.1016/S0167-6245(02)00086-0

Lorenzetti, D.L. 2007. Identifying appropriate quantitative study designs for library research. *Evidence Based Library and Information Practice*, 2(1):3-14. https://doi.org/10.18438/B8V30J

Mahmood, A., Rana, M.L.T. & Kanwal, S. 2018. Relationship between service quality, customer loyalty and customer satisfaction. *Lahore Journal of Business*, 6(2):135-154

Mailula, N.P. 2022. *Impact of high demand radio frequency spectrum in the reduction of South African mobile data prices*. Johannesburg: University of Johannesburg (Thesis – PhD). https://ujcontent.uj.ac.za/esploro/outputs/graduate/Impact-of-high-demand-radio-frequency/9925409807691?institution=27UOJ_INST Date of access: 23 Aug. 2023.

Malau, H. 2020. The 4P's marketing mix variables: an assessment of concept, applicability, and impact on organizational goal from west Java's business organizations. *Journal Terapan Ilmu Manajemen dan Bisnis (JTIMB),* 3(1):57-74. https://core.ac.uk/download/pdf/327692352.pdf Date of access: 24 Aug. 2023.

Meade, N. & Islam, T. 2015. Forecasting in telecommunications and ICT: A review. *International Journal of Forecasting,* 31(4):1105-1126. https://doi.org/10.1016/j.ijforecast.2014.09.003

Merriam, Sharan B. 2009. Qualitative research: A guide to design and implementation. *San Francisco, CA: John Wiley*.

Merriam, S.B. & Tisdell, E.J. 2015. *Qualitative research: A guide to design and implementation*. In John Wiley & Sons. 137-143.

Mhlanga, D. & Moloi, T. 2020. COVID-19 and the digital transformation of education: What are we learning on 4IR in South Africa?. *Education Sciences,* 10(7):180. https://doi:10.3390/educsci10070180

Mhlanga, D., Denhere, V. & Moloi, T. 2022. COVID-19 and the key digital transformation lessons for higher education institutions in South Africa. *Education Sciences*, 12(7):464. https://doi.org/10.3390/educsci12070464

Mirick, R.G. & Wladkowski, S.P. 2019. Skype in qualitative interviews: Participant and researcher perspectives. *The Qualitative Report*, 24(12):3061-3072. https://doi.org/10.46743/2160-3715/2019.3632

Mishra, D. 2019. How broadly do product preannouncement performance effects generalize? Product life cycle and switching cost perspectives. *Product Life Cycle and Switching Cost Perspectives,* 15(2):96-109. http://dx.doi.org/10.21511/im.15(2).2019.08

Mishra, S.B. & Alok, S. 2022. Handbook of research methodology. *A Compendium for Scholars & Researchers.* http://74.208.36.141:8080/jspui/bitstream/123456789/1319/1/BookResearchMethodology.pdf Date of access: 27 Aug. 2023.

Mntande, K.A., Stiehler-Mulder, B. & Roberts-Lombard, M. 2022. Securing delight and loyalty in a market with low switching costs. *European Business Review*, 35(1):1-22. https://doi.org/10.1108/EBR-03-2022-0043

Molatelo Ramahlo, R., Pillay, A.M. & Madzimure, J. 2022. Assessing the effectiveness of compliance inspection in ensuring the quality of ICT products and services: a case of the compliance department at ICASA. *EUREKA: Social and Humanities*, 2:15-25. https://doi.org/10.21303/2504-5571.2022.002350

Morgan, S. & Govender, K. 2017. Exploring customer loyalty in the South African mobile telecommunications sector. *Cogent Business & Management*, 4(1):1-16. https://doi.org/10.1080/23311975.2016.1273816

Mothobi, O. & Gillwald, A. 2018. Lagging ICT adoption in SA reflects social and economic inequalities. *Africa Portal,* 2(23):4-5. https://www.africaportal.org/publications/lagging-ict-adoption-sa-reflects-social-and-economic-inequalities/ Date of access: 31 Jul. 2018.

Moyo, M., Chinembiri, T. & Govan-Vassen, N. 2021. COVID-19, pricing regulation and big player profitability. *Research ICT Africa*, (3):1-8. https://www.africaportal.org/publications/covid-19-pricing-regulation-and-big-player-profitability Date of access: 9 Aug. 2022.

Mpwanya, M.F. & Van Heerden, C.H. 2016. The links among the cost drivers of the South African mobile phone industry and supply chain cost reduction approaches: A network diagram perspective. *WSEAS Transactions on Business and Economics*, 13:427-442. http://www.wseas.us/journal/pdf/economics/2016/a785807-527.pdf Date of access: 24 Aug. 2023.

Mpwanya, M.F. & Letsoalo, M.E. 2019. Relationship between service quality, customer satisfaction and behavioural intentions in South Africa's mobile telecommunication industry. *African Journal of Business and Economic Research*, 14(2):67. https://doi.org/10.31920/1750-4562/2019/14n2a4

Madushanka, D., Wijekumara, J., Kuruppu, K. & Sugathapala, S. 2020. Evaluation of Factors Affecting for Select Internet Service Providers. *Iconic Research AND Engineering Journals*, 4(3):18-27.

Ndibalema, P. 2020. Unlocking the potential of ICT for transformative learning among youth: A path to 21st century competencies. *Journal of Educational Technology and Online Learning,* 3(3):245-271. https://doi.org/10.31681/jetol.777647

Neuman, W.L. 2011. *Social research methods: qualitative and quantitative approaches*, 7th ed. Pearson/Allyn and Bacon, Boston.

Ngugi, D.G., Mcharo, M. & Munge, M. 2020. Application of the 4 Ps Marketing Mix by Micro and Small-Scale Traders in Kenya. Impact on Household Incomes. *Journal of Applied Economic Sciences, 15*(3): 654-644.

Oki, O. & Lawrence, M.O. 2022. The cost-effectiveness of fibre optic technology deployment in rural area: a case study of Mdantsane. *Journal on Innovation and Sustainability RISUS,* 13(2):111-123. https://doi.org/10.23925/2179-3565.2022v13i2p111-123

Oliver, D. & Mahon, S.M. 2006. Reading a research article part III: the data collection instrument. *Clinical Journal of Oncology Nursing*, 10(3):423-426. https://doi.org/10.1188/06.CJON.423-426

Opdenakker, R. 2006. Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 7(4):1-13. https://doi.org/10.17169/FQS-7.4.175

Ozturkoglu, Y. 2016. On the 4Ps & 4Cs of green logistics marketing mix. *Logistics and Transport*, 29(1):5-18. https://core.ac.uk/download/pdf/228461465.pdf Date of access: 24 Aug. 2023.

Panama, A.E., Ugiagbe, I.J. & Aguwamba, S. 2023. Determinants of customer switching behaviour in mobile telecommunication industry in South-South Nigeria. *British Journal of Marketing Studies*, 11(3):17-62. https://doi.org/10.37745/bjms.2013/vol11n31762

Pau, L.F. 2011. Telecommunications in South Africa: Who is actually regulating? *Journal of Governance and Regulation*, 2(3):1-18. http://dx.doi.org/10.2139/ssrn.1917335

Paul, R.I.K., Ponnam, A., Rubal, R. & Singh, D.K. 2023. How Perceived Value Advances Loyalty Progression? Evidence from Indian Quick Service Restaurants. *Academy of Marketing Studies Journal*, 27(S3): 1-13.

Pivoto, D.G., de Almeida, L.F., da Rosa Righi, R., Rodrigues, J.J., Lugli, A.B. & Alberti, A.M. 2021. Cyber-physical systems architectures for industrial internet of things applications in Industry 4.0: A literature review. *Journal of Manufacturing Systems*, 58:176-192. https://doi.org/10.1016/j.jmsy.2020.11.017

Ponelis, S.R. & Holmner, M.A. 2015. ICT in Africa: Building a better life for all. *Information Technology for Development,* 21(2):163-177. https://doi.org/10.1080/02681102.2015.1010307

PWC (PricewaterhouseCoopers). 2020. Opportunities for the global semiconductor market: Growing Market Share by Embracing AI. *PWC, Technology, Media & Telecommunications (TMT),* https://www.pwc.com/gx/en/industries/tmt/publications/global-tmt-semiconductor-report-2019.html Date of access: 04 Apr. 2022.

Rababah, B. 2015. *Build Nationwide Internet Service Provider. School of Engineering*, Portsmouth: University of Portsmouth. (Dissertation – MA). https://doi.org/10.13140/RG.2.1.4686.7286

Rahman, R. 2015. Comparison of telephone and in-person interviews for data collection in qualitative human research*. Interdisciplinary Undergraduate Research Journal,* 1(1):10-13

Reggi, L. & Gil-Garcia, J.R. 2021. Addressing territorial digital divides through ICT strategies: Are investment decisions consistent with local needs? *Government Information Quarterly*, 38(2):1. https://doi.org/10.1016/j.giq.2020.101562

Riyadi, A. & Rangkuti, S. 2016. *The influence of marketing mix and customer purchasing decision process on customer satisfaction*. In: Asia Tourism Forum 2016-the 12th Biennial Conference of Hospitality and Tourism Industry in Asia (pp. 528-534). Atlantis Press.

Saba, C.S. & David, O.O. 2020. Convergence patterns in global ICT: Fresh insights from a club clustering algorithm. *Telecommunications Policy*, 44(10):102010. https://doi.org/10.1016/j.telpol.2020.102010

Saeed, N., Bader, A., Al-Naffouri, T.Y. & Alouini, M.S. 2020. When wireless communication responds to COVID-19: Combating the pandemic and saving the economy. *Frontiers in Communications and Networks*, 1:66853. https://doi.org/10.3389/frcmn.2020.566853

Saraswati, E. 2022. Market orientation, service quality on customer satisfaction and loyalty: Study on Sharia Banking in Indonesia. *Golden Ratio of Marketing and Applied Psychology of Business,* 2(1):26-41. https://doi.org/10.52970/grmapb.v2i1.157

SA Telco Sentiment Index. 2019. *Index Consumers threaten to quit networks as half of all complaints go unanswered and Vodacom bungle implementation of Icasa data regulations,* 29 April, https://dataeq.com/research/sa-telco-sentiment-index-highlights-consumer-unhappiness/ Date of access: 19 Jun. 2019.

Saunders, M., Lewis, P. & Thornhill, A. 2007. Research methods for business students. *Pearson Education,* (6):140.

Saunders, M., Lewis, P. & Thornhill, A. 2009. Research methods for business students. *Pearson Education,* (6):2-696.

Saunders, M., Lewis, P. & Thornhill, A. 2016. Research methods for business students. *Pearson Education,* (7):2-731.

Saunders, M., Lewis, P. & Thornhill, A. 2019. Research methods for business students. *Pearson Education,* (6):128-170.

Shava, H. 2021. The relationship between service quality and customer satisfaction in the South African mobile network telecommunications industry. *Journal of International Studies,* 14(2):70-83. http://doi.org/10.14254/2071-8330.2021/14-2/5

Siamah, N., Mensah, H. K., & Oteng-Abayie, E. 2017. General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report,* 22(6):1607-1621. https://doi.org/10.46743/2160-3715/2017.2674

Simanjuntak, M., Sumarwan, U. & Situmorang, A.D. 2020. The effect of marketing mix and brand image on customer loyalty of remixed mortar. *Independent Journal of Management & Production,* 11(2):450-472. https://doi.org/10.14807/ijmp.v11i2.963

Siripipattanakul, S., Siripipatthanakul, S., Limna, P. & Auttawechasakoon, P. 2022. Marketing mix (4Cs) affecting decision to be an online degree student: a qualitative case study of an online master's degree in Thailand. *International Journal on Integrated Education,* 5(4):31-41. https://doi.org/10.31149/ijie.v5i4.2922

Slettebø, T. 2021. Participant validation: Exploring a contested tool in qualitative research. *Qualitative Social Work,* 20(5):1223-1238. https://doi.org/10.1177/147332502096818

Stallings, W. 1996. IPv6: the new Internet protocol. *IEEE Communications Magazine*, 34(7):96-108. https://doi.org/10.1109/35.526895

Stratton, S.J. 2021. Population research: convenience sampling strategies. *Prehospital and disaster Medicine*, *36*(4):373-374. https://doi.org/10.1017/S1049023X21000649

Sutherland, E. 2021. *Telecommunications in South Africa: enforcement of competition.* Paper delivered in Competition Commission and Competition Tribunal 15th Annual Competition Conference, Pretoria, South Africa (pp. 20-22). http://dx.doi.org/10.2139/ssrn.1988136

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A. & Varpio, L. 2015. Choosing a qualitative research approach. *Journal of Graduate Medical Education*, *7*(4):669-670. https://doi.org/10.4300/JGME-D-15-00414.1

Thomas, D.R. 2006. A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2):237-246. https://doi.org/10.1177/1098214005283748

Tripathi, S.K. 2022. Semiconductor microprocessors: Situational analysis for India. *Journal of Computer Engineering,* 24(1):15-35. https://www.doi.10.9790/0661-2401011535

Turcanu, T. 2017. The problematic of defining ICT sector and measuring its impact. *Institutional Repository of the Technical University of Moldova*, 4:77-80. http://repository.utm.md/handle/5014/281 Date of access: 9 Aug. 2022.

Verma, Y. & Singh, M.R. 2017. Marketing mix, customer satisfaction and loyalty: an empirical study of telecom sector in Bhutan. *Indian Journal of Commerce and Management Studies,* 8(2):121-129. http://dx.doi.org/10.18843/ijcms/v8i2/17

World Bank, 2020. Global economic prospects, June 2020. The World Bank. https://databankfiles.worldbank.org/public/ddpext_download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_ZAF.pdf Date of access: 11 Feb. 2024.

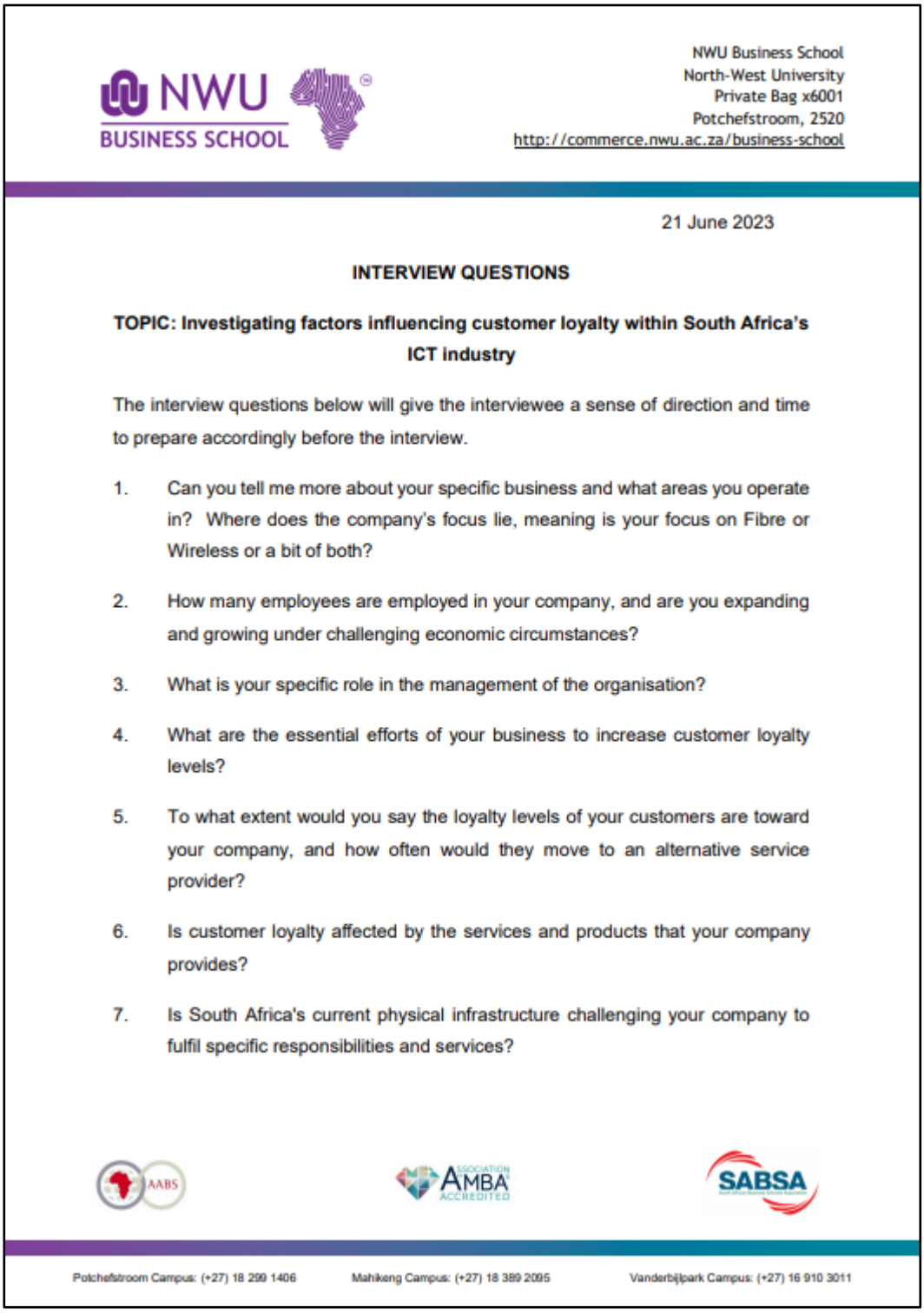
Wu, Y.L. & Li, E.Y. 2018. Marketing mix, customer value, and customer loyalty in social commerce: A stimulus-organism-response perspective. *Internet Research,* 28(1):74-104. https://doi.org/10.1108/IntR-08-2016-0250

Yang, S. 2022*. Equity research-BT Group PLC. Lisbon: Lisbon School of Economics and Managemen*t. (Dissertation – MA). https://www.repository.utl.pt/bitstream/10400.5/26831/1/DM-SY-2022.pdf Date of access: 24 Aug. 2023.

Zhu, F., Li, Q., Yang, S. & Balezentis, T. 2021. How ICT and R&D affect productivity? Firm level evidence for China. *Economic Research-Ekonomska Istraživanja*, 34(1):3468-3486. https://doi.org/10.1080/1331677X.2021.1875861

List of Appendices

Appendix A: Interview questions



NWU BUSINESS SCHOOL

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

21 June 2023

INTERVIEW QUESTIONS

TOPIC: Investigating factors influencing customer loyalty within South Africa's ICT industry

The interview questions below will give the interviewee a sense of direction and time to prepare accordingly before the interview.

1. Can you tell me more about your specific business and what areas you operate in? Where does the company's focus lie, meaning is your focus on Fibre or Wireless or a bit of both?
2. How many employees are employed in your company, and are you expanding and growing under challenging economic circumstances?
3. What is your specific role in the management of the organisation?
4. What are the essential efforts of your business to increase customer loyalty levels?
5. To what extent would you say the loyalty levels of your customers are toward your company, and how often would they move to an alternative service provider?
6. Is customer loyalty affected by the services and products that your company provides?
7. Is South Africa's current physical infrastructure challenging your company to fulfil specific responsibilities and services?

AABS ASSOCIATION AMBA ACCREDITED SABSA

Potchefstroom Campus: (+27) 18 299 1406 Mahikeng Campus: (+27) 18 389 2095 Vanderbijlpark Campus: (+27) 16 910 3011

8. To what level are South Africa's poverty rates affecting the expansion of the ICT industry, and do these price sensitivity levels affect the services and products you provide to clients? In your opinion, are there still many opportunities for connectivity in South Africa's rural areas?

9. How often do your employees undergo training, and do you feel that training is necessary to provide high-quality services effectively and consistently?

10. How competitive is the ICT market in South Africa currently, and is it affecting the prices and margins your company offers clients? Furthermore, is the mass deployment of fibre infrastructure affecting WISPs to compete effectively?

11. How did the global chipset shortages affect your company's business, and how did you overcome this challenge or mitigate it for the time being?

12. How price sensitive is your current clientele base regarding internet connectivity, and will they move if the pricing is slightly less competitive? Furthermore, how important is product prices from local distributors to service providers, and will these prices ultimately affect end-users' decision-making?

13. In your opinion, will clients typically stay with internet service providers if they deliver excellent after-sales services but still offer higher rates?

14. What would be the leading causes of a client leaving a service provider and the same with a service provider leaving a local distributor? If price is one of the major causes, what would be the overall percentage to make a client leave a service provider and a service provider their distributor?

Appendix B: Organisation permission letter to conduct the research

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

ORGANISATION PERMISSION LETTER TO CONDUCT RESEARCH

I, Ralph Derrick Brown, Product Manager at MiRO, hereby ask for your permission as a Manager/Director of your company to interview one of your managers regarding the below topic. The data collected will form part of the research for a mini dissertation. All information obtained during this interview will be anonymous, and the participant will sign an informed consent form agreeing to participate.

Researcher: RALPH DERRICK BROWN (STUDENT NUMBER: 25927965)

Supervisor: JOHAN LANDSBERG

Institution: NORTH-WEST UNIVERSITY

Ethics Clearance Reference Number: NWU-00590-23-A4

Research topic:

Investigating factors influencing customer loyalty within South Africa's ICT industry

Purpose of study:

ICT service providers play a pivotal part in South Africa's economic growth and development of innovative technology. Therefore, the primary purpose of this study is to determine the level of customer loyalty end-users have toward their ICT service providers, despite all constraints and issues faced in the industry. Furthermore, this study also investigates South Africa's readiness for ICT adoption, the challenges of the high poverty rates and challenging economic circumstances focusing on price sensitivity, the competitiveness of the ICT market, and how the global chipset shortages effective business. This study aims to gain more knowledge regarding the ICT industry and its clients from your point of view.

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

Organisation consent for manager to participate in the study

I, (DIRECTOR/CEO) _____ of (ORANISATION) _____, hereby confirm that I have read and understand the participant information sheet for this study. I understand that participation in this study is voluntary, and, as a result of this, I agree that (PARTICIPANT) _____ has the approval of the company to participate in this research study.

_____	dd / mm / yyyy	_____
Name of DIRECTOR/CEO	Date	Signature
_____	dd / mm / yyyy	_____
Name of PARTICIPANT	Date	Signature

Appendix C: Participant information sheet qual (POPIA compliant)

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

Investigating factors influencing customer loyalty within South Africa's ICT industry

PARTICIPANT INFORMATION SHEET

Ethics Clearance Reference Number: NWU-00590-23-A4

1. ***Why is this research being conducted, and what does the study aim to discover?***

ICT service providers play a pivotal role in South Africa's economic growth and development of innovative technology. Therefore, the primary purpose of this study is to determine the level of customer loyalty end-users have toward their ICT service providers, despite all constraints and issues faced in the industry. Furthermore, this study focuses on price sensitivity by investigating South Africa's readiness for ICT adoption, the challenges of the high poverty rate, and the current disruptive economic circumstances. Other objectives that will be analysed are the competitiveness of the ICT market and how the global chipset shortages have affected businesses over the last few years. This study aims to gain more knowledge regarding the ICT industry and its clients from your point of view.

2. ***Why have I been invited to take part?***

- You are invited to participate in this study because your company is an Internet Service Provider (ISP) operating within the borders of South Africa.
- You are registered with the Independent Communications Authority of South Africa (ICASA).
- You have at least 100 service subscribers.
- Your company has been operating in the ICT industry for the last two years.

3. ***Do I have to take part?***

Participation in this study is entirely voluntary, meaning that should you not be interested in participating, you are more than welcome to decline. You are also allowed to withdraw from the study at any time, and you do not have to provide the researcher with an explanation. There will be no consequences when withdrawing from the study.

4. ***What will be required if I participate in the research?***

Should you agree to participate in this study, you will be interviewed at a location of your choice, if it is within a 150km radius of Centurion. An online meeting is also viable if you choose to avoid meeting face-to-face. You will also choose the time and date that suits your calendar. The interview will mainly focus on the factors influencing client loyalty from two different perspectives, which include the loyalty of an end-user to the service provider and a service provider to a distributor. Follow-up questions will be asked to ensure you completely understand the study. The primary purpose is to ensure that your position and relationship with the company are accurate throughout the study.

When the interview takes place, you will be informed how the procedure works and allowed to ask any questions in return, before the interview commences. The interview will not take too much time, it will be limited to forty minutes, depending on the information provided.

Should you agree to participate, you will be asked to sign a consent form. This form allows the researcher to use the information gained from the interview. The consent form will be stored on a separate hard drive and password protected. Only with your consent, the interview will be recorded using a voice recorder to ensure that all obtained information is transcribed accurately. Furthermore, you are allowed to use a name of your choosing to ensure your privacy is kept.

Short follow-up interviews might be necessary to ensure the information is transcribed correctly. You are welcome to contact the researcher if you require individual feedback afterwards.

5. ***Are there any potential risks in taking part?***

The following risks may be experienced during or after the interviews:

- There is a chance that you will become bored or get tired throughout the interview process. However, you are more than welcome to take breaks should you feel like it. You may choose how long the break is, and you may stop at any time.
- Should the interview occur at your workplace, some colleagues may feel you are providing the researcher with sensitive information. Should that be a concern, you may choose a location or venue outside the working premises to ensure your privacy is continually respected. You can alsocrequest an online meeting if that will be easier for you.

6. ***Are there any benefits to taking part?***

By agreeing to participate, you might gain new industry perspectives and think of new ideas. You will have the opportunity to provide information on your previous experiences and current perceptions, which could provide you with a benefit indirectly, due to self-reflection. Lastly, once all interviews are conducted, the final results will be shared if the participants allow the researcher permission, which might provide you with a third-party perspective of how business is conducted within other companies. All information will be completely anonymous to protect the participant's privacy.

7. ***What happens to the data provided?***

All information and data gathered from the interviews, such as the recording, written transcriptions, and any other obtained data, will be stored electronically and on a separate hard drive that is password protected. Furthermore, no one

except the research team will have access to the data. The data will also be stored for at least five years. The stored data will be fully aligned with good research practices. It is essential to remember that the information stored is entirely anonymous to prevent anyone from ever knowing who the participants are.

Please note that the research team will have access to the anonymous data throughout the study. All team members will formally sign a confidentiality agreement to ensure the integrity and safety of documents throughout all the different phases of the research.

Furthermore, there will be areas in the research where direct quotes would be of high value. Any direct quotes will remain anonymous. Should the study be successful and further investigation required, permission to use the raw data will also be requested. Please note that any personal information linking the data to you will be removed or completely changed before being released to the public. The permission will only be for the transcribed data and not the recordings.

8. ***Will the research be published?***

The North-West University (NWU) will release the study to the public to benefit the community and society. The research may get published in academic books, articles, reports or presented at seminars and workshops. Please note that if the research is published, no participant names will be included to protect the integrity and safeguard personal information.

9. ***Will you be paid/compensated for taking part in this study and are there any costs involved?***

Participants will not be physically rewarded with money or incentives, however, you might receive valuable information that could assist in improving procedures and provide new and effective industry knowledge. This study can also assist in learning more about how client loyalty works and maintaining it,

which could provide the participants with valuable information. This experience can ultimately help your company obtain new clients and maintain existing customers.

10. ***What do I need to take note of in terms of personal information collected as part of the study?***

All personal information obtained in the interview, such as contact details, email addresses, and demographics, will remain confidential. This information is used according to the guidelines of the Protection of Personal Information Act (POPIA Act 4 of 2013). The reason for the inclusion of demographic information such as age, gender, education, and position is to describe the total sample size of the study accordingly to ensure the study direction and information is portrayed correctly. This will also help with further studies on this subject. No information of a any participant will be released individually but only be published on a group level. The reason for the inclusion of contact details is to share all the necessary results, and if more information is required for the study. Please note that contact details will only be accessible to the researcher and research supervisor (Dr Johann Landsberg). Please note that providing contact details is not compulsory. Once all data is obtained, contact details linked to the participant will be deleted as the researcher and supervisor will not have further use for it. You are welcome to request information and details anytime throughout the study by contacting the researcher (Ralph Derrick Brown) or the research supervisor (Dr Johann Landsberg).

11. ***Who do I contact if I am concerned about the study or wish to complain?***

Should you have any concerns or complaints throughout the study or after the interview, please get in touch with the ethics committee's administrative assistant. You will be directed to the party relevant to your complaint or concern.

Ms Dalene Vorster

Email: dalene.vorster@nwu.ac.za

You have the right to raise any concerns or complaints directly to the information regulator if you are not satisfied with how the process is handled throughout the study.

Email: complaints.RI@justice.gov.za

12. ***Further information and contact details:***

Should you wish to discuss the topic of the research, questions asked in the interview, or how the information will be handled, please get in touch with the research supervisor:

Dr Johann Landsberg

Email: Johann.Landsberg@nwu.ac.za

Appendix D: Permission letter consent form qual (POPIA compliant)

NWU Business School
North-West University
Private Bag x6001
Potchefstroom, 2520
http://commerce.nwu.ac.za/business-school

PARTICIPANT CONSENT FORM

Ethics Clearance Reference Number: NWU-00590-23-A4

Investigating factors influencing customer loyalty within South Africa's ICT industry

Purpose of study:

ICT service providers play a pivotal part in South Africa's economic growth and development of innovative technology. Therefore, the primary purpose of this study is to determine the level of customer loyalty end-users have toward their ICT service providers, despite all constraints and issues faced in the industry. Furthermore, this study also investigates South Africa's readiness for ICT adoption, the challenges of the high poverty rates and challenging economic circumstances focusing on price sensitivity, the competitiveness of the ICT market, and how the global chipset shortages effective business. This study aims to gain more knowledge regarding the ICT industry and its clients from your point of view.

Participant consent to take part in the study

		Please tick each box
1	I confirm that I have read and understand the participant information sheet for the above study. I have had the opportunity to review the information and ask relevant questions.	☐
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any consequences or penalty.	☐
3	I understand that this project has been reviewed by EMS-REC (Ethics Committee) and received official ethical clearance.	☐
4	I fully understand what parties will have access to the provided data, how the data will be stored, and what will happen to the data at the end of the research project.	☐
5	I understand how this research will be conveyed and distributed.	☐
6	I understand the process of raising a concern or submitting a complaint.	☐
7	I consent to be recorded during the interview.	☐
8	I give my permission to be directly quoted in the research study, however, only completely anonymously.	☐
9	I agree to take part in the study.	☐

Consent to process personal information

Please tick each box

With this, I consent to the use of my personal information contained herein (as well as demographic information provided) and confirm that:

1	the information is presented willingly, without influence from any party.	☐

I am aware that I have the following rights regarding personal information, which is attained during the interview. I have the right to:

2	access the information at any time to ensure correctness of provided data.	☐
3	object to the processing of the data in which case this agreement will be terminated.	☐

Please provide your:

- email address: _____
- cell phone number: _____

By continuing with the interview, I give consent that my data may be used in the study.

Appendix E: Ethical clearance form

NWU®
NORTH-WEST UNIVERSITY
NOORDWES-UNIVERSITEIT
YUNIBESITI YA BOKONE-BOPHIRIMA

Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Fax: 018 299-4910
Web: http://www.nwu.ac.za

Senate Committee for Research Ethics
Tel: 018 299-484
Feziwe.Mseleni@nwu.ac.za

31 March 2023

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Economic and Management Sciences Research Ethics Committee (EMS-REC)** on 31/03/2023, the Economic and Management Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-REC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Investigating factors influencing customer loyalty within South Africa's ICT industry

Study Leader/Supervisor (Principal Investigator)/Researcher): Dr Johann Landsberg- Marketing Management
Student: Brown LD (25927965)

N	W	U	-	0	0	5	9	0	-	2	3	-	A	4
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type:
Commencement date: 1/4/2023 **Risk:** Low
Expiry date: 1/5/2024
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

•

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the EMS-REC:*
  - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the EMS-REC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*

1

- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started.*

n the interest of ethical responsibility, the NWU-SCRE and EMS-REC reserves the right to:

- *request access to any information or data at any time during the course or after completion of the study;*
- *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;*
- *withdraw or postpone approval if:*
  - *any unethical principles or practices of the study are revealed or suspected;*
  - *it becomes apparent that any relevant information was withheld from the EMS-REC or that information has been false or misrepresented;*
  - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
  - *new institutional rules, national legislation or international conventions deem it necessary.*

The EMS-REC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the EMS-REC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely,

Mark Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-West University, ou=Business management, email=mark.rathbone@nwu.ac.za, c=ZA
Date: 2023.04.12 13:41:07 +02'00'

Prof Mark Rathbone
Chairperson: NWU Economic and Management Sciences Research Ethics Committee

Appendix F: Language Editing Letter

To whom it may concern

Cecile van Zyl
Language editing and translation
Cell: 072 389 3450
Email: Cecile.vanZyl@nwu.ac.za

15 November 2023

Dear Mr / Ms

Re: Language editing of dissertation (Investigating the factors influencing customer loyalty within South Africa's ICT industry)

I hereby declare that I language edited the above-mentioned dissertation by Mr RD Brown (student number: 25927965).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl

Language practitioner

BA (PU for CHE); BA honours (NWU); MA (NWU)
SATI number: 1002391