Determinants of dental patient loyalty to their service provider in South Africa

Wandile Mthombeni

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Student No. 0004388G

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ABSTRACT

Customer loyalty has been proven to increase revenue and value of service businesses. The healthcare sector is no exception, and with the increase competition in the dental industry in South Africa, practices need to understand the underlying drivers of patient loyalty. This research is conducted in three practices around Bronkhorstspruit, South Africa to investigate the determinants of dental patient loyalty to their dental providers.

Customer loyalty is widely accepted as strategic objective for both product and services sectors. The conceptual framework of this research is derived from the drivers of customer loyalty within the mainstream services industry, and how it compares to the healthcare sector. Furthermore, it hypothesises a plausible framework for the dental industry. Patient trust, patient satisfaction, and patient perceived value are hypothesised as the determinants of patient loyalty to their providers, with patient trust having the strongest effect.

The research was performed using a quantitative research methodology, with data collected using a survey method. A seven-point Likert scale questionnaire containing 19 items was used. There were 118 respondents recorded in three dental practices around Bronkhorstspruit, South Africa. The data was analysed using multiple regression.

The determinants of dental patient loyalty are patient trust, patient satisfaction, and patient perceived value. Patient trust has the strongest effect on patient loyalty. The indicators of patient trust are credibility and benevolence, with credibility showing the most influence. However, the results show that there may be other underlying drivers to both intentional and behavioural patient loyalty which need to be explored.

Customer loyalty has been successfully adopted as a key strategic objective by other service sectors like the banking industry. The healthcare industry is lagging behind both in research and implementation around this subject. The importance of gaining patient trust to the provider needs to be viewed as a point of parity within the healthcare sector.

DECLARATION

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

Wandile Calvin Mthombeni

Signed at ……

On the …….. day of …… 20…...

DEDICATION

I dedicate this paper to my family, particularly my daughters Lonwabo and Luyanda, for all the support and understanding throughout this journey. I wouldn’t have made it without their support.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to investigate the determinants of dental patient's loyalty to their service provider in South Africa. Customer loyalty, herein referred to as patient loyalty, has become a strategic tactic for business to increase profits and maintain longitudinal competitive advantage (Moliner, 2009; Weinstein, 1999). Due to an increase in competition in the healthcare industry, patient loyalty has also attracted more attention amongst healthcare providers (Corbin, Kelley, & Schwartz, 2001), including dental providers (Sumaedi et al., 2014).

The intangibility, and high properties of credence, healthcare services have high purchasing risk to the patient (Corbin et al., 2001), and may point to a more complex relationship between patient loyalty and its underlying drivers. This research seeks to explore this area further within the South African context.

Dental patients are consumers of various dental health procedures offered in dental practices. Like all businesses, dental practices need to be financially profitable, amongst other reasons, to sustain the quality and level of service they offer. One way of remaining sustainable is to prevent patient defection (Carlos Fandos Roig, Estrada Guillén, Forgas Coll, & Palau i Saumell, 2013), by forming long term relationships with patients (Jacoby & Chestnut, 1978). Customer loyalty has been found to be a key indicator of a strong relationship between service providers and their customers (C.-W. Chang, Tseng, & Woodside, 2013). Loyal customers promote the business to friends and relatives (C.-W. Chang et al., 2013), and 'serve as informal marketing agents' according to Sumaedi et al. (2014). The value of the business is also enhanced by higher projected future earnings due to loyal customers, or customer equity (Gupta & Lehmann, 2003).

According to Oliver (1999) loyal customers are typically satisfied customers, but satisfaction does not always guarantee loyalty. Satisfaction is attained by meeting or exceeding the customer's expectations of the service (Carlos Fandos Roig et al., 2013).

A rational customer makes decisions based on the difference between the benefits gained and sacrifices made (Kotler, Keller, Ancarani, & Costabile, 2014). A surplus of perceived benefits will offer value and satisfaction to the customer (Carlos Fandos Roig et al., 2013). Therefore, perceived value by the customer has a positive effect on satisfaction (Carlos Fandos Roig et al., 2013).

There is also a psychological aspect to a loyal customer, explained by Ajzen and Fishbein (1975) as three constructs namely: attitude, subjective norms, and behavioural intentions. It says that behavioural intentions are influenced by the attitude of the consumer towards the behaviour and social norms (Carlos Fandos Roig et al., 2013).

The basis is that a rational consumer's ultimate behavioural intention is based on available information. In the service industry, due to the intangibility of the offering, it is riskier for the consumer to make a purchase decision before receiving the service (Berry, 1995). According to Sheth and Parvatiyar (1995), in order to minimise the risk due to limited information, the consumer uses trust as a decision making tool. Trust has been found to have a positive effect on customer loyalty, especially in the healthcare industry (Sumaedi et al., 2014).

Relationship marketing has gained widespread attention due to its importance in promoting customer loyalty (Kantsperger & Kunz, 2010).Trust is widely recognised as a key mediator in customer relationship marketing (Berry, 1995; Morgan & Hunt, 1994). In the healthcare industry, trust has been found to be an indicator of the patient's belief that the provider will act in their best interest (Moliner, 2009; Sumaedi et al., 2014). For dental providers and their patients in particular, Kleinaltenkamp, Ehret, Hunt, Arnett, and Madhavaram (2006) found that trust offers additional value to their relationship, and the relationship can be described as relationship marketing. The purchasing decision of the patient for more dental services depends on their relationship with the provider, the stronger the relationship, the easier it is to make these decisions (Griffith & Abratt, 2013). Thus, 'while people go to dentists for healthcare reasons, the choice of dentist has something to do with value and trust' (Griffith & Abratt, 2013).

However, there are other factors that might influence the decision of the patient to commit to a particular provider that are outside of this relationship, like the context of

the service provision (Makarem & Coe, 2014). For instance, research has found that demographics affect customer retention, older customers put more weight on emotions and relationships, while high income customers tend to have more options and less likely to be loyal (Cooil, Keiningham, Aksoy, & Hsu, 2007). Cost tends to be the main barrier to routine dental procedures (Makarem & Coe, 2014), and medical aid cover mitigates this obstacle (Griffith & Abratt, 2013; Makarem & Coe, 2014)

M. A. Jones, Mothersbaugh, and Beatty (2000) argued that switching barriers e.g. interpersonal relationships, attractiveness to alternatives, and perceived costs, have a significant role in influencing the customer to remain loyal to a particular service provider. Dental providers are highly skilled professionals and often are not in abundance, especially in a country like South Africa. This, according to Zeithaml (1981) amplifies switching barriers.

Service orientated businesses, like dental practices, with high returning customers turnover are more profitable than those that see more new customers (B. Mittal & Lassar, 1998). Dental practices spend more time and resources on new patients, as they have to create treatment plans and explain procedures to them (Coulter & Magee, 2003). This usually requires an extra time, and increases patient waiting times. It is estimated that the cost of recruiting a new patient can be as much as five times the cost of retaining one (F. P. Reichheld & Sasser, 1990).

The private healthcare sector in South Africa has been under strain, amongst other reasons, due the high disparities in income, and that has increased competition amongst private dental practices (Möller & Spangenberg, 1996). Dental practices can reduce marketing costs and differentiate themselves by identifying the key drivers of patient loyalty (Caruana & Fenech, 2005). Loyal patients have also been found to be resourceful in spreading a positive word about the service provider(Sumaedi et al., 2014), and may also act as a brand ambassadors (Aggarwal, 2004).

Most researchers agree on the benefits of customer retention to business performance, but research on the actual drivers of customer retention, especially in dentistry, is scarce.

This paper seeks to identify the interactions between the widely recognised drivers of customer loyalty within the service industry, including healthcare, and test them within the context of dentistry in South Africa (addressed by Sub-problem 1). Furthermore, it is to detect the source of the highest level of loyalty amongst dental patients to their providers (addressed by Sub-problem 2). The ultimate aim is to be able to operationalise the findings of this research

1.2 Context of the study

The study was undertaken in a town called Bronkhorstspruit, South Africa. South Africa is a developing country found on the southernmost tip of Africa, and has a population of approximately 55 million people (Wikimedia Foundation, 2016). There are nine provinces, with Gauteng and Western Cape being the most developed. Bronkhorstspruit is found in the north eastern part of Gauteng (Wikimedia Foundation, 2016).

South Africa has a past of colonialism and later apartheid, where the majority was racially and economically discriminated against by the minority (Wikimedia Foundation, 2016). In 1994 the first democratic election was held. The African National Congress (ANC) won the elections, and started embarking on the huge task of rectifying the historical imbalances (Wikimedia Foundation, 2016). South Africa still remains a country of two economies, one that is first world and enjoyed by a few, and the other that is third world and has to be shared by the majority (Wikimedia Foundation, 2016).

The healthcare industry is one of the sectors that are still battling to redress the disparities caused by apartheid (Chetty, 2009). About 84% of the population, mostly black, depend on the public healthcare system due to the high cost of private healthcare and unemployment (Brand, 2016). Dental healthcare is one of the worst affected, due to the high set up costs and skills shortage (Green, 2014).

The dental health facilities that were utilised during this study treat predominantly black patients, who belong to different medical aid schemes. The town of Bronkhorstspruit has four private dental practices, which were the subject of the study.

In a landmark ruling by the competitions commission in 2004, all medical and dental organisations were prohibited from setting a standard pricing schedule (Green, 2014). This allowed each medical aid scheme to determine its own tariffs (Green, 2014). The result was that, because of the oligopolistic nature of the healthcare industry, medical aids had the power to determine the pricing of the industry. The smaller players, like dental practices, were forced into being price takers. This was a game changer that resulted in a lot of practices struggling to keep their doors opened. Practices were forced to be efficient or perhaps change their business model, due to the opportunistic tactics by medical aid schemes

The number of litigation against dentists has also been rising over the years, this has inflated their professional indemnity insurance by almost 36% (Green, 2014). Furthermore, the low number of people that can afford private dental care in South Africa further complicates the situation. Dental service providers need to raise their awareness of the source of profit in their practices.

Customer loyalty has gained considerable attention in most service industries, and the healthcare industry, particularly in South Africa, can benefit from the proven successes of other service industries. Some of the benefits include, minimising input costs, and allocate resources to effective means of promoting patient loyalty (C.-W. Chang et al., 2013; B. Mittal & Lassar, 1998). Loyal patients have tangible benefits for dental practices because they can also be passive marketing agents, and they tend to give the practitioner the benefit of the doubt in cases of treatment failure (Sumaedi et al., 2014).

The concept of customer loyalty has been studied by many researchers (Sumaedi et al., 2014).The focus has been on the effect of service performance on patient loyalty, and the construct found to have the most effect on patient loyalty was satisfaction (Moliner, 2009). This was later disputed in studies done by C.-W. Chang et al. (2013). C.-W. Chang et al. (2013) found that satisfaction is a precursor, not a determinant of patient loyalty. This necessitated further studies to further investigate the determinants of customer loyalty (Sumaedi et al., 2014). The healthcare industry is lagging behind in terms of embracing service marketing principles (Corbin et al., 2001). The concept of patient loyalty has not received the same attention as customer loyalty.

1.3 Problem statement

1.3.1 Main problem

This research aims to resolve the problem of identifying the determinants that have a relationship with dental patient loyalty to their dental service providers in South Africa, and to determine their effect on patient loyalty to their provider.

1.3.2 Sub-problems

The first sub-problem is to identify potential determinants of patient loyalty to their provider in South Africa.

The second sub-problem is to determine the effect of the determinants in enhancing dental patient loyalty to their provider.

1.4 Significance of the study

The study provides guidance to dental service providers and practice managers about the significance of patient loyalty to their practices, and identifies its drivers. The latter assists in operationalising a patient's loyalty orientated strategy. It has been shown that the long term profitability of patients enhances customer equity, and the overall value of the business (F. F. Reichheld, 1993). In the short term, the retention of existing customers is cheaper than the acquisition of new ones, and serves as a competitive advantage (F. P. Reichheld & Sasser, 1990).

There are also research gaps in so far as dental patient loyalty is concerned. Even though researchers like B. Mittal and Lassar (1998); Moliner (2009) have investigated the antecedents of loyalty within the healthcare industry, they have found satisfaction to be the dominant construct in explaining loyalty (Sumaedi et al., 2014). Literature in the broader service marketing has found that satisfaction alone is not enough to explain customer loyalty (Sumaedi et al., 2014). Therefore, research within the healthcare industry, specifically dental care, is still lagging behind in as far as explaining patient loyalty is concerned.

Loyal customers have a bigger role in the service industry (Gremler & Brown, 1996), due to the intangible nature of the offering. Patients, in the case of the dental industry, are exposed to more risk when making purchasing decisions because of a lack of objective knowledge of the service (Wilson, Zeithaml, Bitner, & Gremler, 2008).

Dental practices have to be aware of this, and consider it when formulating their business strategy. Loyal patients have also been found to be resourceful in spreading a positive word about the service provider (Sumaedi et al., 2014), and may also act as a brand ambassadors (Aggarwal, 2004). This can assist in mitigating the purchasing risk for prospective patients.

Dental practices, like most professional businesses, are typically managed by the dentist. Therefore, the service provider is responsible for the day-to-day management and strategic leadership of the institution, as well as the treatment of patients. Often, this leads to a lack of effective strategic management. Among the different management styles, some focus on offering superior facilities, and others are more treatment orientated. The confusion often leads to unmet expectations for patients, and increase in input costs. The competition amongst dental practices has been heightened by lacklustre South African economic growth, and this has increased the importance of efficient strategies.

According to F. F. Reichheld (1993) business managers are intuitively aware that an increase in customer loyalty leads to a growth in revenue, but few have adapted their business operations to this objective. Perhaps the unknown aspect is: what drives customer loyalty? What can dental providers strategically and operationally do to promote patient loyalty?

Previous studies conducted on patient loyalty by B. Mittal and Lassar (1998) and Moliner (2009) have found that satisfaction had the most effect enhancing patient loyalty. However, subsequent research by C.-W. Chang et al. (2013) discovered that satisfaction does not always lead to loyalty. The study found that only trust had a significant impact on patient loyalty. However, the findings needed to be investigated further in a different context in order to validate their stability (Sumaedi et al., 2014).

Based on findings by Berry (1995) and Sumaedi et al. (2014) healthcare institutions need to concentrate on customer trust to build patient loyalty. Trust can be built by communicating effectively with patients, and good conduct according to Sumaedi et al. (2014).

The private healthcare in South Africa has seen a rise in competition due to changes in regulation and funding, amongst other factors (Möller & Spangenberg, 1996). Providers and practice managers need to identify the most effective model to enhance patient loyalty. Until recently most studies had shown satisfaction to be the main driver of patient loyalty, and a lot of healthcare service organisations channelled their resources towards conducting satisfaction surveys (C.-W. Chang et al., 2013).

Traditional service businesses have leveraged on the service marketing research, and are benefiting by enhancing customer satisfaction and retention (Corbin et al., 2001). The healthcare industry has been lagging behind mainly due to 'ignorance and lack of necessity' (Corbin et al., 2001)1). From a research point of view, healthcare differs significantly from other services business, on how patients evaluate quality of services (W.-J. Chang & Chang, 2013; Donabedian, 1966).

The study leveraged its framework from service marketing literature, by testing previous findings on dental patients. This research assisted dental service providers to understand the underlying drivers of dental patient loyalty, and utilise that as a competitive advantage (Weinstein, 1999).

1.5 Delimitations of the study

- The study was carried out in an area where access to healthcare, specifically oral healthcare, is not a problem. The patients have a choice in terms of which dental practitioner to visit.
- The focus was on dental practices that are contracted to medical aid schemes. Therefore, they service both private and medical aid patients.
- The study used a quantitative research methodology. The data was analysed using multiple regression. This is in accordance with the study done by Sumaedi et al. (2014).

1.6 Assumptions

- Patients surveyed were existing patients, and thus had a view on what affects their decision to choose the dental provider again.
- The respondents were not new patients.
- The respondents had access to more than one dental care facility of the same quality. This ensured that the patient had a choice of where to consult.
- The respondents' medical aid cover did not restrict the respondent on the dentist they may consult.
- The dental practices were professionally managed, and had the capacity to implement the recommendations of the study

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

The significance of customer loyalty for firms cannot be overstated (Callarisa Fiol, Bigne Alcaniz, Moliner Tena, & Garcia, 2009). Customers now have a wide range of choices due to a highly competitive business environment, which leads to intensive marketing, and an increase in customer recruitment costs (Corbin et al., 2001). Customer loyalty has been shown to increase profits and can be a source for strategic advantage for firms (Weinstein, 1999). Therefore, it comes as no surprise that service providers are always searching for ways to enhance customer loyalty. Businesses should strive to build long term relationships with their customers in order to benefit from the advantages of having loyal customers (Jacoby & Chestnut, 1978)

Customer loyalty is defined by some studies from a behavioural perspective (Caruana, 2003; Jacoby & Chestnut, 1978), and measured by repeat purchase, and sequence of visits. This approach has been rejected by Oliver (1999); Szmigin and Carrigan (2001) as it does not explore the underlying causes of customer loyalty (Carlos Fandos Roig et al., 2013). The underlying reasons for a repurchasing decision may be due to convenience or lack of alternatives (Martínez & del Bosque, 2013), which can happen even if the company does not have the best offering (Dick & Basu, 1994). It is also impossible to locate the determinants of customer loyalty using the behavioural loyalty approach because of the shortcomings in measuring it (Carlos Fandos Roig et al., 2013). One recommends that loyalty should be conceptualised as an ‘attitude or an intention’ to repurchase. This is also supported by Wen-Hung, Liang, and Yung-De (2006); Yang and Peterson (2004) who define customer loyalty in terms of customer intentions, which is based on the customer’s will (Carlos Fandos Roig et al., 2013). Attitudinal loyalty does not only lead to repurchases but also produces ‘positive word of mouth’ (Martínez & del Bosque, 2013). For the purpose of this research, attitudinal loyalty formed part of the conceptual framework.

The purpose of this study was to find the ‘causal conditions that lead to strong customer loyalty’ (C.-W. Chang et al., 2013)92) in the services industry, and determine how they interact in the dental practice environment. This will guide dental providers on the activities they should focus on to enhance patient loyalty, and enable dental practices to increase patient revisits, referrals, and reduce patient defection (Corbin et al., 2001). By increasing patient retention by as little as 5%, practices can increase their sales by between 25% and 95% (Oliver, 1999).

Most literature has focused on customer satisfaction as the main determinant of customer loyalty (C.-W. Chang et al., 2013; Oliver, 1999), but there is also consensus that the causal conditions for strong customer loyalty are much more complex (C.-W. Chang et al., 2013; Sumaedi et al., 2014). Satisfaction is more of a precondition for loyalty according to C.-W. Chang et al. (2013). Satisfied customers are not necessarily loyal customers, but dissatisfied customers are disloyal customers (Sumaedi et al., 2014). The other constructs that have been discussed in service marketing literature are trust and perceived value.

Trust is defined by Morgan and Hunt (1994) as “existing when one party has confidence in the exchange partner’s reliability and integrity”). The customer uses trust to deal with the risk associated with a purchasing decision. This is more applicable in the services industry because of the intangible nature of the offering (C.-W. Chang et al., 2013). Within the healthcare industry patients have to accept the services based on trust because of the lack of sufficient clinical knowledge (Wilson et al., 2008).

Beyond trust , patients are now exposed to a plethora of information sources and can make judgement, albeit limited, about the healthcare services received (Corbin et al., 2001). This development enables the patient to evaluate the value of the services received. Therefore customer perceived value, which is defined by Kotler et al. (2014) as the difference between the sacrifices customers make to obtain a product or service and the benefits they receive from the product or service, is to be considered as one of the variables.

The interaction of constructs is also different in the healthcare industry compared with other services industries. Healthcare involves a high degree of personal interaction between provider and customer (Corbin et al., 2001), and the ‘patients co-

produce the service' (Makarem & Coe, 2014)1513). The healthcare industry is also unique because the relationship between the provider and the patient involves relationship marketing (Kleinaltenkamp et al., 2006), and more inclined on trust as the main driver of loyalty (Griffith & Abratt, 2013).Healthcare consumers are increasingly becoming more involved in their choice of healthcare providers with the rise of healthcare costs (Corbin et al., 2001).The framework of this chapter is summarised is Table 1 below.

Table 1: Literature review framework

Elements	**Characteristics**		**Constructs**	**Indicators**	**Hypothesis Sub-problem 1**	**Hypothesis Sub-problem 2**
Strategy	Competitive Advantage Superior Value		Customer Loyalty	Behavioural Intentions		Trust has the strongest positive effect on patient loyalty, with benevolence resulting in higher levels of trust.
Customer Service	Intangible Relationship		Satisfaction	Overall Satisfaction	Direct Positive effect on Loyalty	
Healthcare Service	Credence Intangible Relationship		Perceived Value	Emotional and Functional Benefits	Direct Positive effect on Loyalty and Indirect effect on Satisfaction	
Dentistry	High Credence		Trust	Benevolence Credibility	Direct Positive effect on Loyalty	

South Africa	Powerful medical Aid Schemes Economic inequality					

2.2 Perceived value

Zeithaml (1988) explained customer perceived value as a '*consumer's overall assessment of the utility of a product or service*'. She suggested that value from a consumer's perspective is a trade-off between price and quality. Latter authors criticised this view as being too simplistic (Sweeney & Soutar, 2001). A multidimensional approach was followed by Sheth, Newman, and Gross (1991), Woodruff (1997) who looked at perceived value not only from a functional perspective, but considered its intrinsic aspect as well.

Perceived value is likely to be confused with customer satisfaction (Sweeney & Soutar, 2001). They differ in the sense that perceived value may occur before purchasing stage and at various stages of a transaction (Sweeney & Soutar, 2001; Woodruff, 1997), while satisfaction is a post purchase experience (Oliver, 1993; Sweeney & Soutar, 2001). The American Customer Satisfaction Index (ACSI) found that perceived quality and value are determinants of customer satisfaction (Gronholdt, Martensen, & Kristensen, 2000). Woodruff (1997), and also found that customer value has a strong relationship with customer satisfaction.

It should be the goal of the service provider to identify ways of creating superior value for the customer to ensure satisfaction. According to Porter (1985), the value chain model can be used to identify activities where service providers can improve, to enhance their offering to the customer. The value chain model in Figure 1 illustrates the different activities of the model, divided into support activities and primary activities. Porter (1985) suggests mainly two ways of improving the offering to the customers based on these activities: to be efficient in carrying out these activities, therefore reducing the customer's sacrifices; or to be unique and consequently increasing value for the customer (Carlos Fandos Roig et al., 2013).

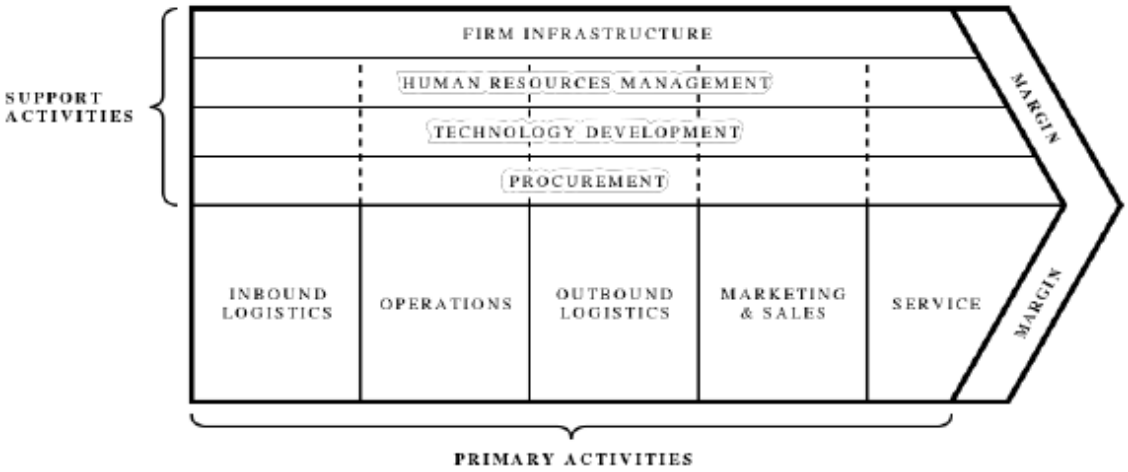

Figure 1: The Value Chain Model (Porter & Advantage, 1985)

W.-J. Chang and Chang (2013) described service quality, or service value, as a antecedent of satisfaction, and used a deconstructed framework that compiled the different elements of value. Service quality is divided into different elements adopted from the Donabedian (1966) framework called the structure-process-outcome model.

The structure-process-outcome model was utilised by W.-J. Chang and Chang (2013) to identify, from literature and interviews, a set of service quality elements important in the dental industry, shown in Figure 2. This study by W.-J. Chang and Chang (2013) goes a step further, similar to Porter's Value chain, in identifying the critical activities that dental practices should pay attention to, in creating value for their patients.

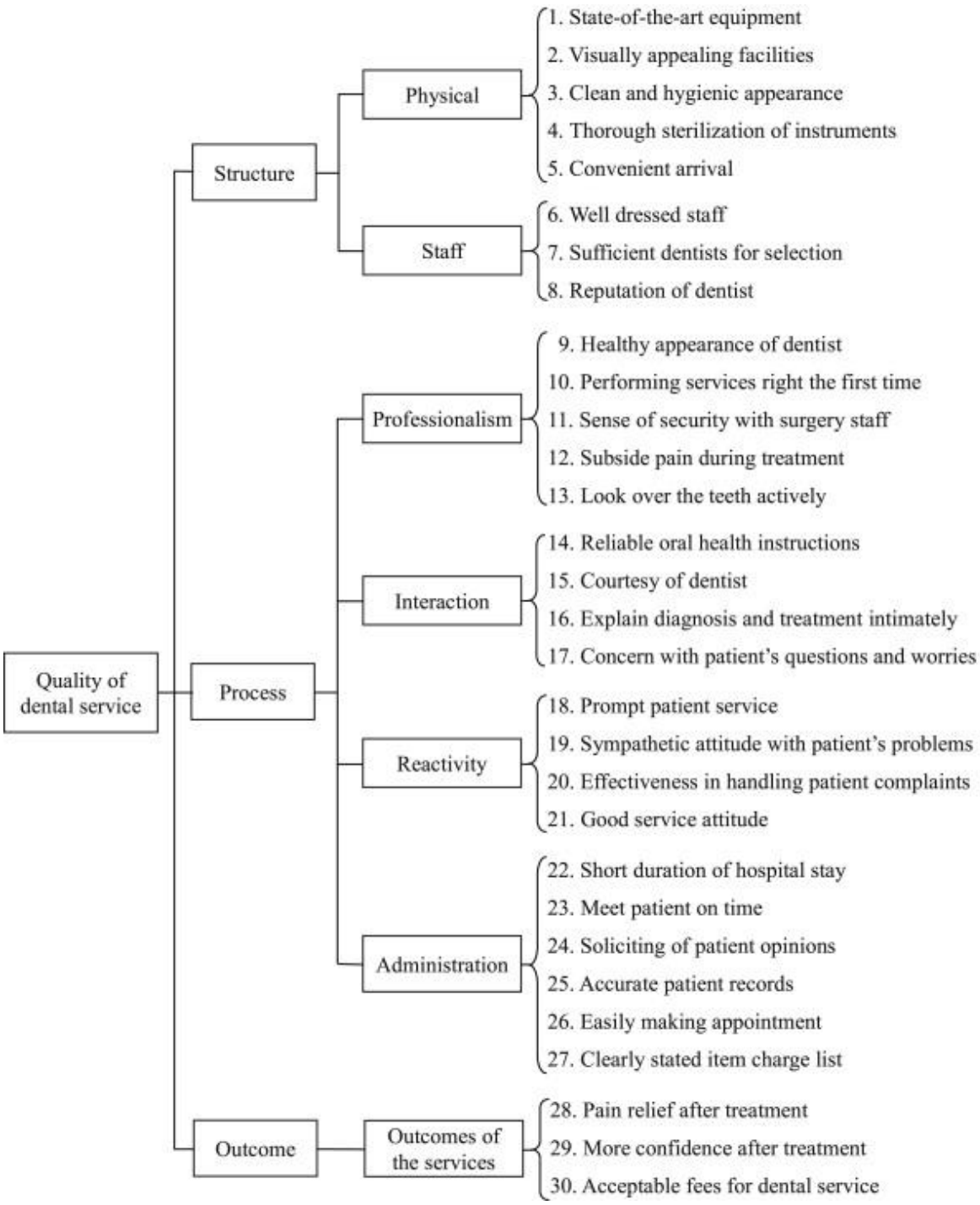

Figure 2: Dental Service Quality Elements (W.-J. Chang & Chang, 2013; Donabedian, 1966)

In a study done by Caruana and Fenech (2005) on the effect of perceived value on loyalty among dental patients, perceived value was conceptualised, using a study done by Zeithaml (1988), and defined customer perceived value as '*the consumers' overall assessment of the utility of a product based on perceptions of what is*

received and what is given' (Caruana & Fenech, 2005)246). This approach is anchored on the utility theory, which focuses on the utility of the product or service (Sweeney & Soutar, 2001; Zeithaml, 1988).

The research model used was based on perceived value acting as mediator in the relationship between customer satisfaction and customer loyalty. Their findings showed that perceived value has a direct and indirect effect on patient loyalty (Caruana & Fenech, 2005). However, the generalisation of findings, in other geographic regions, should be used with caution, and the instruments used were not industry specific, and therefore might not be applicable to other industries (Caruana & Fenech, 2005)

Carlos Fandos Roig et al. (2013), in their research of the influence of perceived value on customer loyalty in the banking industry, utilised a multidimensional approach, which has been derived from Alcañiz, Tena, and Fiol (2000); Sweeney and Soutar (2001), namely

- Perceived value of functional benefits, which refers to benefits of facilities, staff, pricing, time etc.
- Perceived value of emotional benefits, which refers to benefits of successful transaction, positive feelings that come after receiving service.

According to Alcañiz et al. (2000); Carlos Fandos Roig et al. (2013) sacrifices that a customer makes are divided into two, namely

- Economic costs, and
- Non-economic costs e.g. convenience, waiting time.

Called by Carlos Fandos Roig et al. (2013) as perceived value of sacrifices, and form part of the functional dimension.

There is also the affective dimension, which is divided into the emotional and the social dimension (Carlos Fandos Roig et al., 2013).

- Emotional dimension: good or bad feelings caused by service or product (Moliner, Sánchez, Rodríguez, & Callarisa, 2007; Sweeney & Soutar, 2001).
- Social dimension: social benefits or approval by society (Moliner et al., 2007; Sweeney & Soutar, 2001).

Social benefits are as a result of social approval for the purchase decision (Sanchez, Callarisa, Rodriguez, & Moliner, 2006; Sweeney & Soutar, 2001). Therefore, if the firm has a negative social image, it may lead to social disapproval (Carlos Fandos Roig et al., 2013). Social disapproval can be a barrier to a purchase.

Their findings showed that customer perceived value has a positive effect on customer loyalty, with functional benefits having the biggest effect. Other researchers like Choi, Cho, Lee, Lee, and Kim (2004) also demonstrated this relationship (Sumaedi et al., 2014). In a similar study by Sumaedi et al. (2014), perceived customer value has no influence on patient loyalty. The contradictions in findings may point towards a need for further research of the construct of perceived value in relation to loyalty.

During this study, a multi-dimensional approach was used, with each item of the construct representing the functional benefits, emotional benefits, sacrifices, and social value (Carlos Fandos Roig et al., 2013). This is a broader approach, and enlarged the likelihood to uncover the items with the most effect on satisfaction and loyalty, given the complex nature of the dental industry. Therefore, the following hypothesis is proposed:

Hypothesis 1- Perceived value has a positive relationship with patient loyalty.

2.3 Customer satisfaction

When the customer's expectations are met by the organisation, he/she will be satisfied (Oliver, 1993).The customer will cognitively agree that the level of service was in line or exceeded his/her expectations.Oliver (1999) also defines satisfaction as emotional relationship a customer develops with the organisation. This definition is more inclined towards being an attitude that the customer develops towards the organisation (Carlos Fandos Roig et al., 2013). This is also in line with our description of the difference between customer satisfaction and perceived value, with customer satisfaction being a post consumption/purchase construct.

According to Carlos Fandos Roig, Sanchez Garcia, Angel Moliner Tena, and Llorens Monzonis (2006), in their study within the financial services, there are two approaches commonly used in conceptualising satisfaction. It is either per

transaction, or on overall satisfaction (Carlos Fandos Roig et al., 2006). The overall satisfaction approach takes into account both the characteristics of the product/service, and the supplier or service provider (Carlos Fandos Roig et al., 2006), and is considered to be a better predictor of loyalty (Carlos Fandos Roig et al., 2006; Yang & Peterson, 2004). Similar to the definition by Oliver (1993), it was found that satisfaction leads to a customer relationship with the organisation. Hence, customer satisfaction has been identified as a key goal for companies wishing to enhance customer loyalty (Carlos Fandos Roig et al., 2013; W.-J. Chang & Chang, 2013; Gronholdt et al., 2000).

The European Organisation of Quality created a customer satisfaction index, called the European Customer Satisfaction Index (ECSI), based on a model that matches customer satisfaction to its drivers and consequently its goal, customer loyalty (Gronholdt et al., 2000). The model in Figure 3 points out the main causal links between the latent variables.

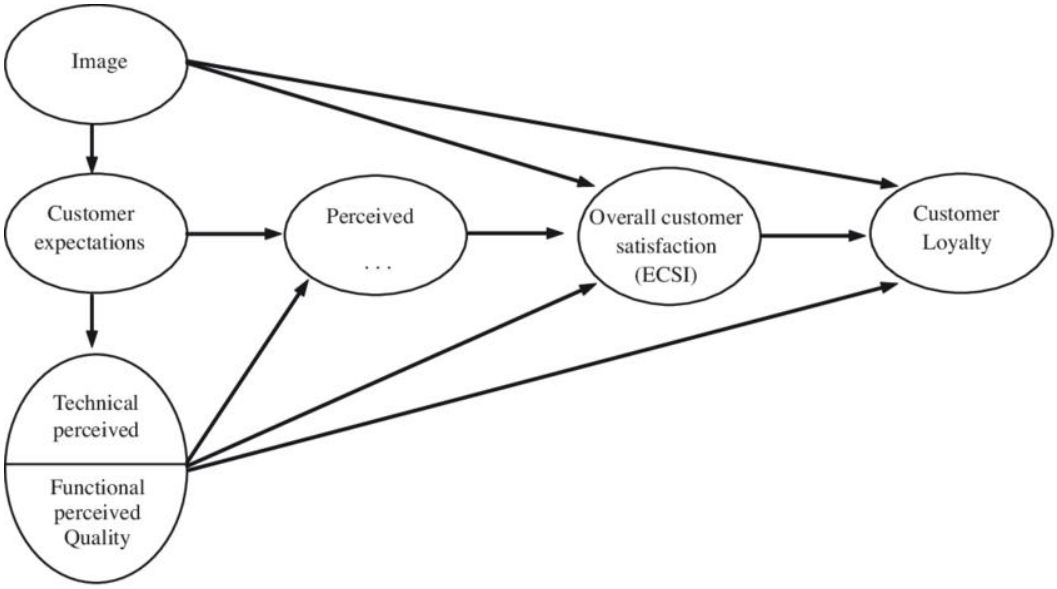

Figure 3: The ECSI Model (Gronholdt et al., 2000)

The drivers of customer satisfaction are conceptualised as being customer expectations, perceived image, perceived quality and value (Gronholdt et al., 2000). Perceived quality is divided into “hard-ware”- referring to service/product elements, and “human-ware”- referring to relationship attributes in service (Gronholdt et al., 2000). In a research done by Gronholdt et al. (2000) to test the effect of customer

satisfaction on customer loyalty across eight industries, using the ECSI Model, it was found that the model has a good fit across different industries. Satisfaction was found to have a positive effect on loyalty across all industries, albeit with a varying degree.

Other interesting findings from the research by Gronholdt et al. (2000) were that:

1. The positive relationship that satisfaction has on loyalty increases with the level of market competition.
2. An increase in market share decreases the level of satisfaction amongst customers, and it is theorised that this may be because diseconomies of scale.

Caruana and Fenech (2005) in their study of satisfaction amongst dental patients supports the ECSI model, and assert that perceived value and satisfaction have an interchangeable effect on loyalty.

They define satisfaction as a fulfilment response to a service or product (Caruana & Fenech, 2005; Oliver, 2014). Their research is grounded on the expectancy/disconfirmation paradigm by Oliver (1980), it also mentions three post consumption possibilities: zero, positive, and negative disconfirmation (Caruana & Fenech, 2005). Zero disconfirmation is achieved when the service/product meets expectations, positive when it exceeds expectations, and negative when it falls short of expectations (Caruana & Fenech, 2005; Oliver, 1981).

There is also the possibility that the customer could be satisfied with the transaction but not the overall service (Carlos Fandos Roig et al., 2006; Caruana & Fenech, 2005), and thus Caruana and Fenech (2005) measured overall satisfaction. Various studies by C.-W. Chang et al. (2013); T. Jones and Sasser (1995) found that satisfied customer can still defect to other providers, and that satisfaction is merely a prerequisite and does not guarantee loyalty.

Patient satisfaction in this study will conceptualised as the attainment of either zero or positive disconfirmation (Oliver, 1980). Perceived value and quality of functional and relationship attributes are antecedents of customer satisfaction across different industries, including the healthcare (Gronholdt et al., 2000). Therefore, it implies that dental providers need to put effort in enhancing value to the patient (Caruana &

Fenech, 2005). Dental services need to comply with certain standards and protocols, in line with patient expectations (W.-J. Chang & Chang, 2013).

Furthermore, patients who are merely satisfied will not be necessarily loyal (W.-J. Chang & Chang, 2013). There are other contributing constructs in achieving loyalty. Consequently, the following hypothesis is proposed:

Hypothesis 2- Satisfaction has a positive relationship with patient loyalty

2.4. Trust

Trust is defined by Rotter (1967)651) as “an expectancy held by an individual that the word, promise, verbal or written statement of another individual can be relied upon” (Kantsperger & Kunz, 2010). Therefore, trust forms the basis for the promises made by service providers to be believed by the customer (Moliner, 2009). Some studies have suggested a list of characteristics associated with trust (Kantsperger & Kunz, 2010; Sirdeshmukh, Singh, & Sabol, 2002). The most common characteristics used are quality, benevolence, credibility, competence, honesty, reliability, and fulfilment (Kantsperger & Kunz, 2010). Kantsperger and Kunz (2010) theorised a two-dimensional conceptualisation of trust, with benevolence and credibility as the two main components of trust. Benevolence is the degree of belief that the provider will act in the best interest of the customer’s well-being, disregarding self-interest (Kantsperger & Kunz, 2010; Kumar, Scheer, & Steenkamp, 1995). Credibility looks at the reliability of the provider, and the capacity to perform the service effectively (Kantsperger & Kunz, 2010). They further stress that both components are crucial for the customer’s trust. The absence of either of them can negatively affect the customer’s trust in the provider. For instance, within the healthcare sector, a benevolent provider who performs a procedure he/she is not adequately trained for, will tarnish the relationship with the patient (Kantsperger & Kunz, 2010) meaning there is a presence of benevolence, but without credibility. On the other hand, the provider, can be highly qualified (high level of credibility), but only perform procedures with the highest profitability (lack of benevolence).

Because trust implies a certain level of commitment, as part of a provider/patient relationship (Berry, 1995; Morgan & Hunt, 1994), the patient may be prepared to

overlook a single mistake due to incompetence (Kantsperger & Kunz, 2010; Moorman, Zaltman, & Deshpande, 1992). According to Kantsperger and Kunz (2010) this means that credibility can be compromised in certain instances without eroding customer loyalty.

Reciprocity on the other hand, also implied a trustworthy relationship, if violated even once, always leads to reduced customer loyalty (Kantsperger & Kunz, 2010). Reciprocity is harmed by the tendency to act opportunistically, without benevolence (Gouldner, 1960) In the case of a service provider, if the customer finds out that the provider had a selfish agenda, Kantsperger and Kunz (2010) found that it will always lead to reduced patient loyalty. Therefore, this means that credibility has a lesser impact on loyalty than benevolence (Kantsperger & Kunz, 2010).

The customer uses trust to deal with the risk associated with a purchasing decision (Carlos Fandos Roig et al., 2013). This is more relevant in the services industry because of the intangible nature of the offering (C.-W. Chang et al., 2013). Trust also serves as a foundation for long term relationships (Sirdeshmukh et al., 2002). F. F. Reichheld and Schefter (2000) state that service providers should first gain trust before they can gain loyalty from their customers. Trust is therefore an antecedent of purchasing behaviour, especially where the customer is unable to access evidence that a service will adequately fulfil his/her needs. It is also a view held by the customer that the provider can be relied on to produce the desirable outcome in the future (Sirdeshmukh et al., 2002). When the customer receives a service that is consistent with their expectations, there is an increase in trust and a reduction in risk associated with the specific provider (Sirdeshmukh et al., 2002). This will lead to an increase in confidence about future interactions (Morgan & Hunt, 1994).

The dental profession has a high level of credence, because the patient is unable to accurately evaluate and select services prior to treatment, and evaluate post treatment effects (Corbin et al., 2001). Therefore, credibility and benevolence have an influence on the level of trust that the patient has on the provider or institution, and can be used as indicators of trust in a working environment. Consequently, the following hypothesis is submitted:

Hypothesis 3- Patient trust has a positive relationship with patient loyalty

2.5 Customer loyalty

Customer loyalty has become a strategic tactic for business to increase profits and maintain longitudinal competitive advantage (Moliner, 2009; Weinstein, 1999). According to Moliner (2009) despite the proven significance of loyalty for both business and the marketing literature, there is no consensus on the definition of loyalty and its drivers. Most of the early marketing research focused on the behavioural aspects of loyalty (Jacoby & Chestnut, 1978). This approach concentrated on repeat purchases and frequency of visits as a measure of loyalty. However this approach is criticized by authors like Oliver (1999); Szmigin and Carrigan (2001) for lacking in conceptual rigour. It is argued that it does not address the implicit motives of loyalty. For instance, high repeat purchases could be as a result of situational influence like unavailability of alternatives, and lower repeat purchases, need for variety by customers (Carlos Fandos Roig et al., 2013; Dick & Basu, 1994). Repeat purchases that are as a result of situational factors are 'labelled as spurious loyalty' by Dick and Basu (1994).

Loyal behaviour, like repeat purchases, is created by loyalty intentions, and the intentions are conditioned by the customer's attitude towards the service or product (Carlos Fandos Roig et al., 2013; Oliver, 1999). This process is further elaborated by the attitude formation model which states that the "cognitive and affective elements are antecedents of the behavioural intention" (Carlos Fandos Roig et al., 2013). Cognitive elements are loyalty due to information such as product feature and price, and affective elements are related to 'just liking the product' (Oliver, 1999).

The attitude formation model is part of the customer loyalty framework by Dick and Basu (1994) that is based on the strength of the bond between the customer's attitude and repeat purchases, in Figure 4. This bond can moderated by situational factors and social norms in some contexts, and may positively or negatively affect the customer's attitude towards a product or service (Dick & Basu, 1994).

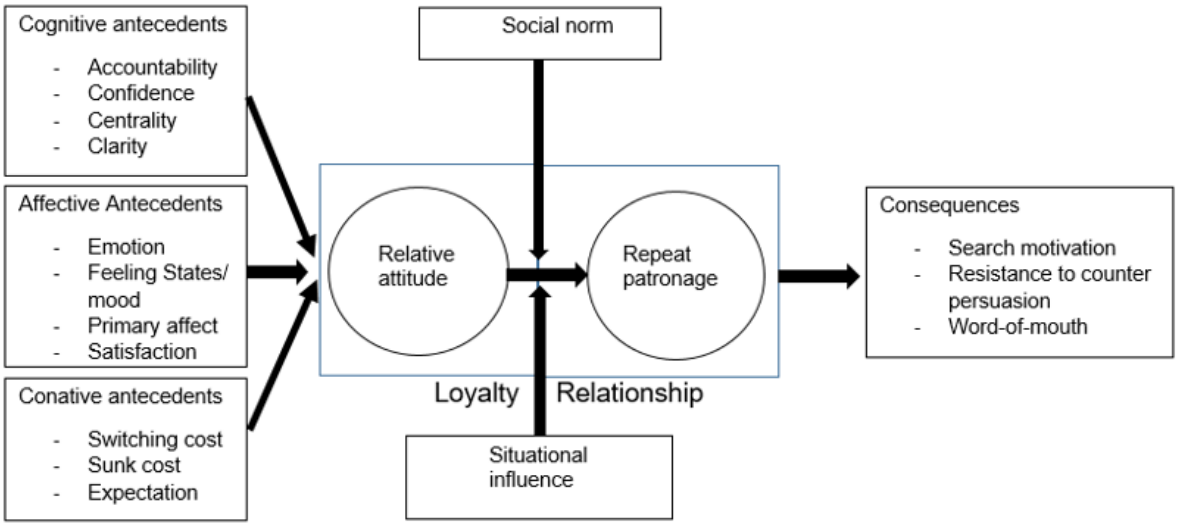

Figure 4: A framework for customer loyalty (Dick & Basu, 1994)

There has been earlier frameworks to the behavioural loyalty approach by Jacoby and Chestnut (1978) that looked at a three phased decision making process namely beliefs, attitude, and conation (Oliver, 1999). All three phases must coincide to create customer loyalty towards a brand. However there seems to be not enough supporting knowledge regarding this framework (Dick & Basu, 1994; Oliver, 1999).

2.6 The benefits of customer loyalty

The benefits of a loyal customer base are translated into customer equity (CE) and Customer Lifetime Value (CLV), and an increase in the valuation of a business (F. F. Reichheld, 1993). In the short term, the retention of existing customers is cheaper than the acquisition of new ones, and serves as a competitive advantage (F. P. Reichheld & Sasser, 1990).

Maintaining long term relationships with customers has to be integral to a company's business strategy (F. F. Reichheld, 1993), and requires a commitment of resources towards this goal. Consequently, there needs to be measureable outcomes to this investment. Customer Lifetime Value is gaining popularity as a measure of the success of marketing efforts to promote customer loyalty, and of businesses in general (Gupta et al., 2006). Marketing strategies that solely intend to increase sales or market share could have a negative impact on the long-run profitability of a business (Gupta et al., 2006).

The advantages of using CLV as a loyalty metric is that not all loyal customers are profitable, and it may be necessary to segment your loyal customers according to the level of profitability (Gupta & Lehmann, 2003). In the long-run the CLV of present and future customers, or Customer equity, can be a representative of a firms value (Gupta, Lehmann, & Stuart, 2004)

2.6.1 Calculating CLV

It is essential to quantify the value of retained customers over time. This value will assist in accounting for Return on Investment (ROI) on marketing expenditure, and project future earnings due to loyal customers. Gupta et al. (2004) came up with a formula, in Figure 5, to estimate CLV.

$$CLV = \sum_{t=0}^{T} \frac{(p_t - c_t) r_t}{(1+i)^t} - AC$$

where

p_t = price paid by a consumer at time t,

c_t = direct cost of servicing the customer at time t,

i = discount rate or cost of capital for the firm

r_t = probability of a customer repeat buying at time t

AC = acquisition cost

T = time horizon for estimating CLV

Figure 5: Customer Lifetime Value Formula (Gupta *et al*., 2004)

They went further to illustrate the model on 100 hypothetical customers, over a period of 10 years.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Number of Customers	100	90	80	72	60	48	34	23	12	6	2
Revenue per Customer		100	110	120	125	130	135	140	142	143	145
Variable Cost per Customer		70	72	75	76	78	79	80	81	82	83
Margin per Customer		30	38	45	49	52	56	60	61	61	62
Acquisition cost per Customer	40										
Total Cost or Profit	-4000	2700	3040	3240	2940	2496	1904	1380	732	366	124
Present Value	-4000	2454.55	2512.4	2454.26	2008.06	1549.82	1074.76	708.16	341.48	155.22	47.81

Figure 6: Hypothetical example to illustrate CLV ((Gupta & Lehmann, 2003)

2.7 Healthcare

The service business, including healthcare, involves a lot of interaction between the service provider and the customer. Healthcare in particular, often the relationship formed during patient-provider interactions surpasses that of other service businesses (Corbin et al., 2001). According to Corbin et al. (2001) healthcare providers have failed to leverage on this opportunity to foster loyalty.

Customer loyalty, referred to as patient loyalty, in healthcare has received attention from researchers such as C.-W. Chang et al. (2013); Moliner (2009) in the hospital industry, and W.-J. Chang and Chang (2013); Sumaedi et al. (2014) in dentistry. All of these researchers have used different conceptual frameworks in explaining the antecedents of loyalty. But all agreed that satisfaction alone is not enough to predict loyalty (W.-J. Chang & Chang, 2013; Moliner, 2009; Sumaedi et al., 2014).

The ability of businesses to leverage on customer loyalty depends on their deeper understanding of its antecedents, and it is impossible to accurately detect these antecedents by purely using the behavioural loyalty approach (Carlos Fandos Roig et al., 2013). Therefore, Oliver (1999) defines customer loyalty as:

"a deeply held commitment to rebuy or repatronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour".

For the purpose of this research, dental patient loyalty is defined as the patient's positive attitude towards a dental service provider that may result in repeat consultation, and positive word-of-mouth despite available alternatives.

Subsequently, the aim is to operationalise the findings, as to what can dental practices do to improve patient loyalty, based on the outcome of sub-problem 1.

2.8 Sub-problem 1: To determine the effect of the determinants in enhancing dental patient loyalty to their provider.

There are distinct attributes that differentiate services from products, and which are common across service industries(Corbin et al., 2001). The body of literature included in this study is derived from various industries, including healthcare. The dental industry has unique characteristics that may point towards unique causal attributes. Some of the unique characteristics of the dental industry include the complex and technical nature of the services, which amplifies the purchase risk. Therefore, the dental patient uses trust to deal with the risk associated with a purchasing decision (Carlos Fandos Roig et al., 2013), and the study proposes the following hypothesis,

Hypothesis 4- Patient trust has a strong positive effect on patient loyalty

2.8.1 Dental patients

Dental patients are consumers of dental services. They can be classified into two categories namely, those who choose providers without any alternatives, but out of necessity ,and those who make choices from predilection (Moliner, 2009). Price, and affordability, can influence the consumer's decision to choose, based on the perceived value, one service provider over the other. Therefore, medical aid cover gives patients more choice in as far as dental providers are concerned, with everything else equal.

In South Africa, specifically in the province of Gauteng (the subject of the survey), 24,4% of the population has medical cover (Stats, 2015). Furthermore, there is approximately a 50/50 split between males and females, with females slightly higher at 50,8% (Stats, 2015).

There is a greater risk in purchasing services than products because of the intangibility of service (Murray, 1991). In the context of dental services, patients have

limited technical and clinical knowledge and therefore also base purchasing decisions on faith (C.-W. Chang et al., 2013). The restrictions on advertising based on pricing and quality of services, for dental service providers, makes it difficult for patients to make informed choices when choosing dental providers (Lipscomb & Douglass, 1982). According to Lipscomb and Douglass (1982) the patient has to make assumptions based on:

- Dental provider's qualifications
- The quality of the premises and equipment
- Word-of-Mouth (Reputation)
- Location convenience
- Age
- Experience

Fear of dental treatment also influences the choice of a dental provider and frequency of visits (Griffith & Abratt, 2013). Price becomes a determining factor amongst patients without dental insurance (Griffith & Abratt, 2013).

In the context of repurchases and revisits, most literature assumes the patient's decision is dependent on satisfaction (C.-W. Chang et al., 2013).But, satisfaction alone does not result in patient loyalty (Oliver, 1999). According to Sirdeshmukh et al. (2002) patients' trust play an integral role on patient loyalty.

The patient perceives the dental provider and his/her organisational management differently (Griffith & Abratt, 2013). They assess providers according to their behaviours, and organisational management in terms of policies and practices (Griffith & Abratt, 2013). The dissatisfaction in either facet could lead to patient defection (Sirdeshmukh et al., 2002).

2.8.2 Age

According to a study done by Anderson, Pearo, and Widener (2008) on service satisfaction, older customers have higher switching costs and are more likely to be satisfied with a service. This may be due to less capability to search for an alternative provider (V. Mittal & Kamakura, 2001). Other studies have also supported

the findings that younger customers tend to be less satisfied than older customers (Anderson et al., 2008; V. Mittal & Kamakura, 2001).

2.8.3 Gender

Past research suggests that there may be differences in purchasing behaviour between females and males, specifically in that women tend to show more service satisfaction than men (V. Mittal & Kamakura, 2001).The reasons attributed to these difference vary from women being experienced buyers and therefore making better choices (Fornell, Johnson, Anderson, Cha, & Bryant, 1996), to women putting more weight on personal interactions and are therefore more likely to find satisfaction with a service (Zeithaml, 1988).

2.8.4 Patients vs. Customers

- Customers possess the capability to find the best deals and can assess the level of service they receive (Corbin et al., 2001). Patients' choices are based on credence or faith (C.-W. Chang et al., 2013).
- Patients and providers form relationships that have additional value beyond the normal customer-provider relationship (Griffith & Abratt, 2013).

2.9 Dental service providers

Dental service providers provide various dental treatment to their potential patients with the aim of maximising profit on a competitive basis (Griffith & Abratt, 2013) (Kushman & Scheffler, 1978). Their services are regulated by professional bodies that foster parity in terms of ethical standards. Dental service providers in South Africa are regulated by the Health Professions Council of South Africa (HPCSA) (Africa, 2007). The role of the HPCSA is to maintain the adherence to Ethical and Code of Conduct by the healthcare professionals within the boundaries of South Africa. Their duties include the regulation of the relationship between the dental service provider and the patients, in the interest of both. The role of the HPCSA is similar to organisations like the American Dental Association. Dental providers in

South Africa are not permitted to advertise based on pricing, and quality of work (Africa, 2007),

There is a unique relationship between a healthcare provider and patient that is different to a customer-provider relationship (Corbin et al., 2001). The relationship is described by Kleinaltenkamp et al. (2006) as relationship marketing. Relationship marketing is based on the premise that “on top of the value of the services that are exchanged, the existence of the relationship between two parties creates additional value for the customer and also the service provider” (Grönroos, 2004). This creates an additional relationship based on trust between the dental provider and the patient (Griffith & Abratt, 2013)

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Research methodology paradigm

The research was carried out using the quantitative method to gather and analyse data. The aim of the research was to measure the effect of the constructs using statistical models. According to Bryman (2015) quantitative research 'emphasises quantification in the collection and analysis of data'. Therefore it was appropriate for this research because it sought to measure and quantify the relationship between each variable.

The body of literature utilised in developing the proposition was developed from quantitative research methods, namely Carlos Fandos Roig et al. (2013); (Caruana & Fenech, 2005); C.-W. Chang et al. (2013); Kantsperger and Kunz (2010); Makarem and Coe (2014); Sumaedi et al. (2014), amongst others.

3.2 Research design

Research design is referred to as an adopted framework for the collection, and subsequent analysis of data (Bryman, 2015).The survey was conducted by using a cross-sectional (occurring at a particular point in time) design that utilised a self-completion questionnaire. Predominantly quantitative cross-sectional design surveys are conducted using self-completion questionnaire (Bryman, 2015). This is meant to collect data relating to two or more variables (Bryman, 2015). Our questionnaire represented four variables, with close-ended items on a seven point Likert-type scales, ranging from 1-7 namely: 1-Strongly agree; 2-Agree; 3-Somewhat agree; 4-Neither agree or disagree; 5-Somewhat disagree; 6-Disagree; 7-Strongly disagree.

3.3 Population and sample

The population of the study was restricted to various dental practices in Bronkhorstspruit. The practices saw approximately 20 patients each daily, randomly

distributed in terms of demographics. It was uncertain how many repeat patients they saw daily, but that could be extracted from each practices management system, to assist the estimation of sample size.

The survey employed convenience sampling (selected based on availability (Bryman, 2015)), by targeting only returning patients, i.e. patients who were not consulting for the first time. The advantages of convenience sampling are that it is operationally convenient and requires less resources (Bryman, 2015). The downside is that it may not be possible for the findings to be generalised (Bryman, 2015). Most studies in the healthcare industry, for example, Caruana and Fenech (2005); W.-J. Chang and Chang (2013); Sumaedi et al. (2014), were undertaken in hospitals. This could be due to the availability of a large pool of patients. In this study, due to the time, and resources available, it was not feasible to undertake probability sampling.

The survey was conducted over a period of four weeks, which included at least a week of school holidays to mitigate sampling bias.

Based on information obtained from the practices, school children- albeit older than 18 years old- rarely consult during schooling season, and we needed fair representation across the age groups. A maximum of ten questionnaires were issued daily over 20 working days. Each questionnaire took approximately 10-15 minutes to complete. Therefore the sample size was envisaged to be approximately 200 for supervised questionnaires. In addition emails were sent to a database of patients of each practice. The minimum total sample size of 100 was set as the target in order to meet the assumptions of some of the analysis that were undertaken.

3.4 The research instrument

The survey was conducted using a questionnaire. There were four variables namely satisfaction, perceived value, trust, and loyalty (Sumaedi et al., 2014). Each item measuring the variables was closed-ended, and measured on a seven-point Likert-type scale (C.-W. Chang et al., 2013). A Likert scale is a multiple item measure of feelings about a particular variable (Bryman, 2015). Each respondent was asked about their degree of agreement to a particular statement (Bryman, 2015).The scale

ranged from strongly disagree to strongly agree. Each response had a score, which was summed up to form an aggregate score.

The items, and relevant indicators, for the variables were taken from different studies based on the literature review, and adapted to meet the survey criteria (Caruana & Fenech, 2005) in Table 2.

Table 2: Measurement of variables (Carlos Fandos Roig et al., 2013)

Variable	Indicators	No. of Items	References
Satisfaction	Overall Satisfaction	6	(C.-W. Chang et al., 2013; Oliver, 1980)
Perceived Value	Perceived Value of Benefits: Functional, Emotional Perceived Value of Sacrifices Social value	5	(Carlos Fandos Roig et al., 2013; Sanchez et al., 2006; Sweeney & Soutar, 2001)
Trust	Benevolence and credibility	4	(Kantsperger & Kunz, 2010; Sumaedi et al., 2014)
Loyalty	Behavioural intentions	4	(C.-W. Chang et al., 2013; Oliver, 1999)

3.5 Procedure for data collection

The data was collected at five dental practices located in Bronkhorstspruit, South Africa. A written request was delivered to the owners of the practices, wherein the details of the research and procedure were furnished. The practices were requested to notify their existing patients of the details and timing of the survey. An assistant was employed to issue and supervised the completion of the questionnaires over a period of four weeks- which included at least one week of school holidays. The patients were approached beforehand, if they were early for their appointments, or after their consultation.

Each questionnaire was accompanied by a consent form that the patient had to sign after the supervisor has explained the details of the survey. The respondents were assured of anonymity in their responses, and were notified of the intended use of the survey. All ethical considerations were adhered to, in consultation with the owner of the dental practices and regulatory bodies where applicable.

3.6 Data analysis and interpretation

The demographic details of the survey data were summarised descriptively using frequency tables and graphs. The results were represented by either tables or graphs. Then the survey data of different variables namely trust, satisfaction, perceived value, and loyalty were organised into frequency tables. Frequency tables shows the number of observations for each category (Bryman, 2015). The data was analysed using a multiple regression model to detect the variables that have the most effect on loyalty. The statistical procedure was performed on SAS Studio.

3.7 Limitations of the study

The inherent limitation of utilising convenience sampling is that the findings cannot be generalised (Bryman, 2015). Therefore the findings of this study could not be applied in other dental practices with reasonable confidence. The instruments that were utilised in the study, though effort has been made to adapt them accordingly, were not designed primarily for the dental industry, therefore may not fully detect the extent of the effects (Caruana & Fenech, 2005). The dental industry is characterised by a very intense provider-patient relationship that may require being explored using qualitative research methods.

3.8 Validity and reliability

3.8.1 External validity

The question of whether the findings of a study can be generalised depends on whether there are any biases to context (Bryman, 2015). The study was carried out

using convenience sampling, in various dental surgeries. These conditions posed a threat to external validity, and it was unlikely that the findings could be generalised. There was also a threat of selection bias.

3.8.2 Internal validity

Internal validity measures the extent to which the causal relationship between variables can be relied on, as theorised (Bryman, 2015). In order to ensure validity of the variables, the measurement scale was adopted from peer reviewed literature (See Table 1). Satisfaction was measured using indicators from W.-J. Chang and Chang (2013); Oliver (1980), perceived value from Carlos Fandos Roig et al. (2013); Sanchez et al. (2006); Sweeney and Soutar (2001), trust from Kantsperger and Kunz (2010); Sumaedi et al. (2014), and customer loyalty from W.-J. Chang and Chang (2013); Oliver (1999). Nevertheless, Component factor Analysis was performed to confirm whether indeed the constructs did load into their respective components

3.8.3 Reliability

The stability of the selected measurement scale of each variable is important to ensure the reliability of the variable to measure a concept (Bryman, 2015). The Cronbach Alpha coefficient is used to indicate the internal reliability of each variable. A Cronbach Alpha coefficient equal or higher than 0.6 is generally acceptable, while that higher than 0.8 is considered good (Bryman, 2015; Sumaedi et al., 2014). It is generally recommended to use the Cronbach Alpha coefficient if a Likert type questionnaire is used to conduct a study (Bryman, 2015).

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

The research sought to analyse the relationship between the dependent variable namely patient loyalty, and the independent variable namely patient trust, patient perceived value, and patient satisfaction. The instrument used was a 7-point Likert scale questionnaire containing 19 items. Inherent in this type of instrument and research were few considerations.

a) The sample size: in order to perform multiple regression to test our hypothesis, the minimum sample size should be between 30-40 respondents (Lee, 2015).
b) A sample which is as representative as possible of dental users in the geographical location.

4.2 Sample size

There were 150 emails and 50 questionnaires printed, which meant there were 200 questionnaires in total. The response was a total of 118 valid respondents, out of which 70 completed the questionnaires sent by email, using qualtrics survey software, and 48 completed the manual questionnaires. This resulted in an overall response rate of 59%.

A bigger sample is likely to be more representative of the population (Bryman, 2015). The number of dental patients that each practice sees is low compared to other health service establishments, and even less for those who were repeat patients. A bigger sample would have meant more time and resources for the research, the former being an inconvenience to the smooth running of the practices. On the balance of circumstances, 118 respondents was a good outcome.

However, not all questionnaires were fully completed. There were missing values. Techniques of handling missing values were used to avoid depleting the sample size of the data, by simply deleting observations. This process was crucial to attain a representative sample of our population.

4.3 Dental service users

In total there are four dental practices in our geographical area of research, Bronkhorstspruit. A total of three practices agreed to participate in the research. These practices, according to their managers, are the three ‘biggest’ in town. They are also seeing a diverse racial profile of patients, although race does not form part of our demographic survey. The factors mentioned above are meant to assist in making the sample as representative as possible of dental service users in Bronkhorstspruit.

4.4 Data

For all missing observations, Multiple Imputation (MI) and the Mean Value Imputation (MVI) techniques were utilised. Consequently, as the observations were Missing Completely At Random (MCAR), all missing data was rectified.

The next stage entailed the reversal of negatively worded statements namely ‘I feel bad about my decision to use the dental services offered by this dentist’ and ‘I am not happy I used dental services provided by this dentist’, which are question 4 and question 5 respectively. Thereafter, the next step was to aggregate the items for each construct into summary variables (Lee, 2015). These summary scores are denoted as TotalSatis, TotalTrust, TotalPV, and TotalLoyalty in our data.

During the next step, the data was analysed to detect any outliers in the data using boxplot. The boxplot denotes the existence of outliers in the data amongst other indications e.g. median and range (Bryman, 2015).

4.5 Validity and reliability

To test the reliability of the variables, to measure the concept, before conducting the analysis, the Cronbach's Alpha coefficient was determined. The Cronbach's Alpha test has gained most usage in measuring internal consistency (that is reliability) (Bryman, 2015), and it is recommended to be used when there are multiple Likert questions. This is when respondents state their level of agreement/disagreement with the statement, for example, a scale of 1 to 7 of Strongly agree; Agree;

Somewhat agree; Neither agree nor disagree; Somewhat disagree; Disagree; and Strongly disagree on a symmetric scale for a series of statements. The range captures the intensity of the respondent's state of mind in a given item in a survey/questionnaire (Bryman, 2015). Table 4 shows the Cronbach's Alpha evaluation results for the study.

4.5.1 Validity

The four constructs used in the research were examined using component factor analysis to confirm construct validity. Component factor analysis is appropriate because it tests the validity of constructs based on a proposed theory (Williams, Onsman, & Brown, 2010), compared to exploratory factor analysis, which is usually used when the researcher in uncertain of the expected groupings (Lee, 2015).

The results showed that there were indeed four constructs, and most of the items have loaded into their respective components.

Table 3: The KMO and Bartlett's Test of the study

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.888
Bartlett's Test of Sphericity	Approx. Chi-Square	1707.674
	df	171
	Sig.	.000

Based on the KMO and Bartlett's test in Table 3, the KMO value is .888. According to Kaiser and Rice (1974) this value is appropriate for performing factor analysis, which implies that there is significant correlation between the items.

Table 4: The Cronbach's Alpha value of all variables

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

.946	.949	19

Table 5: Cronbach's Alpha of each variable

Reliability Statistics	
Variable	Cronbach's Alpha
Loyalty	.848
Trust	.877
Satisfaction	.841
Perceived Value	.861

Subsequently, when accounting for the determinants of dental patients' loyalty to their service provider in South Africa, the scale has a practically high alpha (α) coefficient of 0.946, when all 19 items are loaded. The results for Loyalty, Trust, Satisfaction, and Perceived Value are 0.848, 0.877, 0.841, and 0.861 respectively. A α coefficient of 0.8 or higher exhibits strong internal reliability of variables (Bryman, 2015), and we can be confident in saying that these items do indeed tap into an underlying construct of fairness among respondents.

4.6 Descriptive statistics of the study

4.6.1 Gender

The Gender variable is denoted from 1 = Male to 2 = Female where the minimum is 1 and the maximum is 2. With the study showing a mean of 1.47, it means that, on average; there were more males who participated in this study than females. We can tell that the gender observations are positively skewed. This implies that the distribution of observations is skewed to the right. By being right skewed, it means that the right tail is long relative to the left tail. The kurtosis of gender is platykurtic, the distribution has kurtosis < 3, which implies that the tails of the distribution are shorter and thinner having a central peak which is lower and broader.

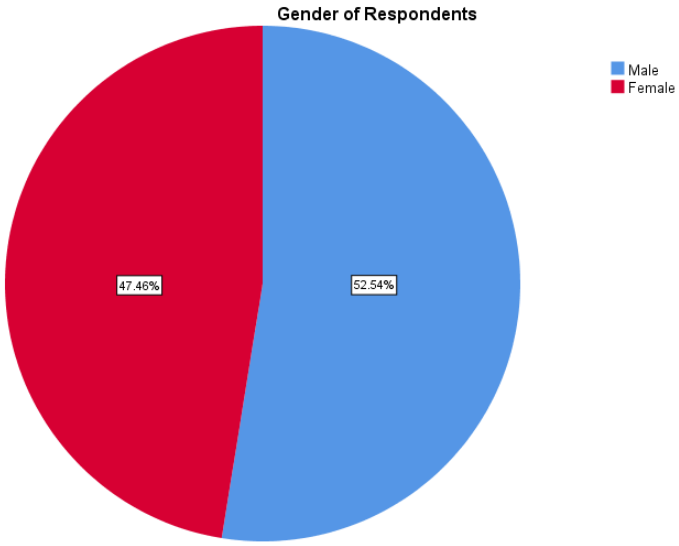

Figure 7: Gender of the respondent

Table 6: Gender of the respondents

		Percent
Valid	Male	52.5
	Female	47.5
	Total	100.0

The respondents were observed to have a gender with a ratio of 0.47:0.53. As seen on the frequency table above, of the total respondents (n=118) gender accounted for 47.5% (n=56) of females and 52.5% (n=62) of males.

4.6.2 Age

The Age Range variable is denoted from 1 = Less Than 20 years old to 5 = More than 50 years old. The mean = 3.18, which means that, on average, the age range of the respondents was within 31-40 years old for this study. We can tell that the Age Range observations are negatively skewed. This implies that the distribution has observations that are skewed to the left. By left skewed, we mean that the left tail is long, relative to the right tail. The kurtosis of gender is platykurtic, the distribution has

kurtosis < 3, which means that the tails of the distribution are shorter and thinner, having a central peak, which is lower and broader.

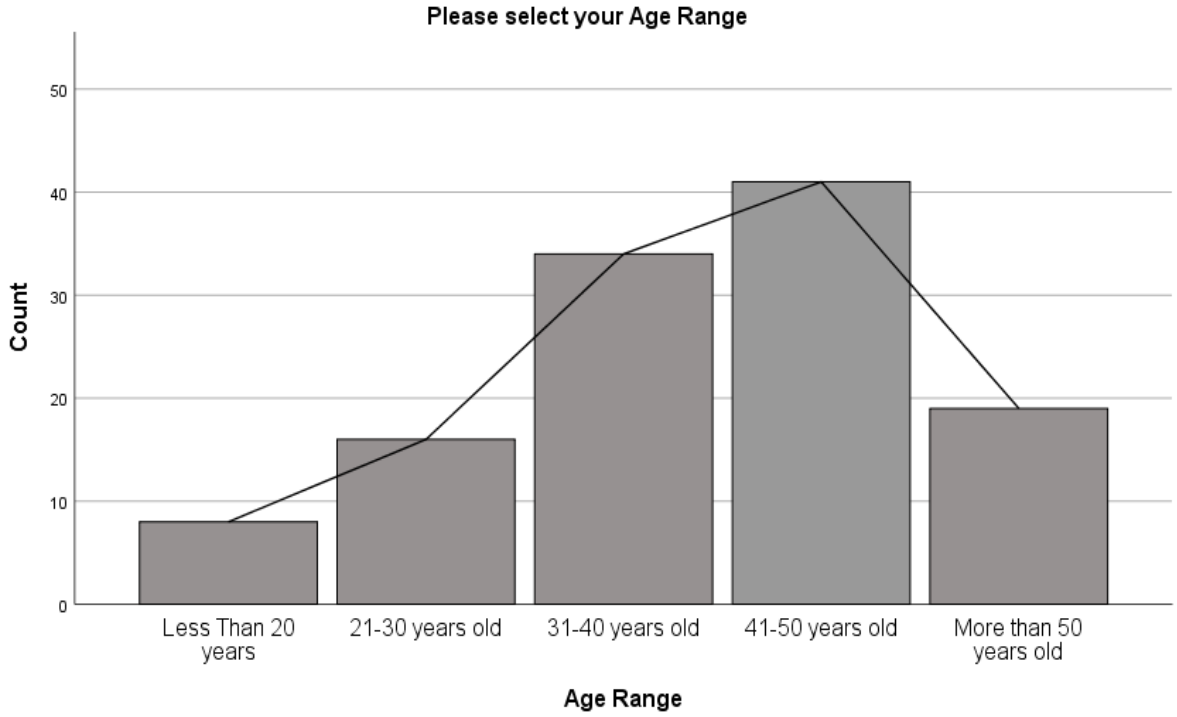

Figure 8: Age range of the respondent

Table 7: Age range of the respondent

		Percent
Valid	Less Than 20 years	6.8
	21-30 years old	13.6
	31-40 years old	28.8
	41-50 years old	34.7
	More than 50 years old	16.1
	Total	100.0

The biggest number of respondents account for 31-40 years old and 41-50 years old, which are 29% (n=34) and 35% (n=41) respectively. Respondents who were less than 20 years old (teenagers and children) accounted for 7% (n=8), more than 50

years old, who accounted for 16% of the respondents and 21-30 years old were just 16 respondents (14%).

4.6.3 Medical Aid Scheme

The Medical Aid Scheme variable is denoted from 1 = Yes to 2 = No. The mean = 1.17, when rounded up is 1. On average; the respondents of this study were on medical aid. The ratio with respect to medical aid scheme cannot be evaluated using the descriptive statistics parameters. We can tell that the Medical Aid Scheme observations are positively skewed. This implies that the distribution has observations that are skewed to the right. By right skewed, we mean that the right tail is long relative to the left tail. The kurtosis of gender is platykurtic, which means the distribution has kurtosis < 3, the tails of the distribution are shorter and thinner having a central peak, which is lower and broader.

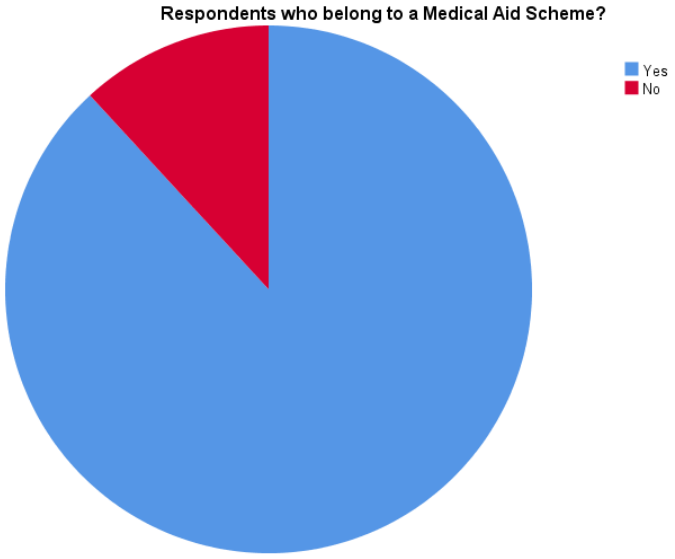

Figure 9: Respondents who belong to a Medical Aid Scheme

Table 8: Respondents' medical aid status

		Percent
Valid	Yes	88.1
	No	11.9

	Total	100.0

The respondents were observed whether they have a medical aid scheme or not. A ratio of 0.12:0.88 was observed, this means that 88% (n=104) were on medical aid scheme and 12% (n=14) of were not on medical aid scheme. From the above table, we can deduce that less than 20% were not on medical aid, and thus most of the respondents are insured as far as the medical aid scheme is concerned.

4.6.4 Gender and Age

The relationship between age and gender was assessed using contingency tables. Contingency tables are commonly used to determine the relationship between two variables, and usually contain percentages (Bryman, 2015). This is done to further assess any pattern within our demographic that may be of importance.

Table 9: Age range

Question: Please select your Age Range * Please select your gender Cross tabulation

Count

		Please select your gender		Total
		Male	Female	
Please select your age range	Less Than 20 years	5	3	8
	21-30 years old	7	9	16
	31-40 years old	15	19	34
	41-50 years old	25	16	41
	More than 50 years old	10	9	19
Total		62	56	118

The highest number of male respondents is within the 41-50 years old range at 40% (n=25) of all males. The female respondents are predominantly around the ages of

31-40 years at 34% (n=19) of all females. This may imply that there female group was much younger than the male group.

Table 10: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.951[a]	4	.566
Likelihood Ratio	2.967	4	.563
Linear-by-Linear Association	.297	1	.586
N of Valid Cases	118		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.80.

The Chi-Square test was used to test the statistical significance of the relationship between age and gender based on the sample. The Chi-Square value is 0.566, which is more than 0.05 based on a 95% confidence level. Therefore there is no statistically significant difference between males and females, as far as age is concerned.

4.7 All variables statistics

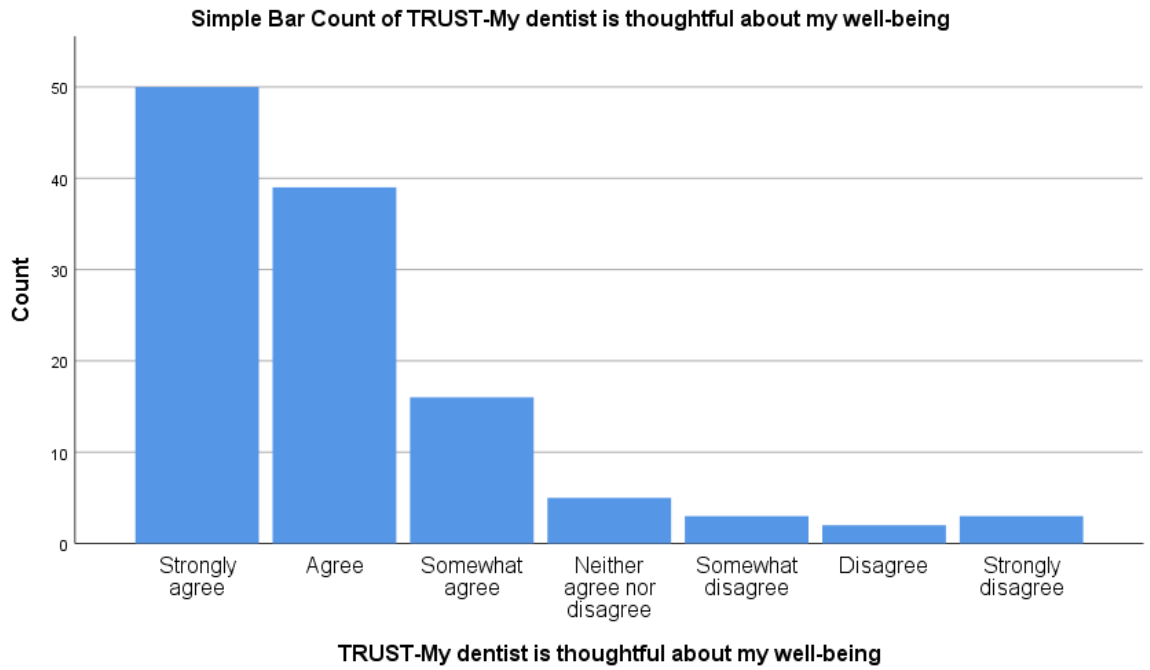

Figure 10: TRUST: My dentist is thoughtful about my well-being

Table 11: TRUST: My dentist is thoughtful about my well-being

		Percent
Valid	Strongly agree	42.4
	Agree	33.1
	Somewhat agree	13.6
	Neither agree nor disagree	4.2
	Somewhat agree	2.5
	Disagree	1.7
	Strongly disagree	2.5
	Total	100

On a scale of 1 to 7, 42% strongly agreed, 33% agree, 13.6% somewhat agree and it was observed that about 3% strongly disagreed that their dentist is thoughtful about their well-being. However, 4.2% accounts for those who neither agree nor disagree that their dentist is thoughtful about their well-being, and 2.5% disagree.

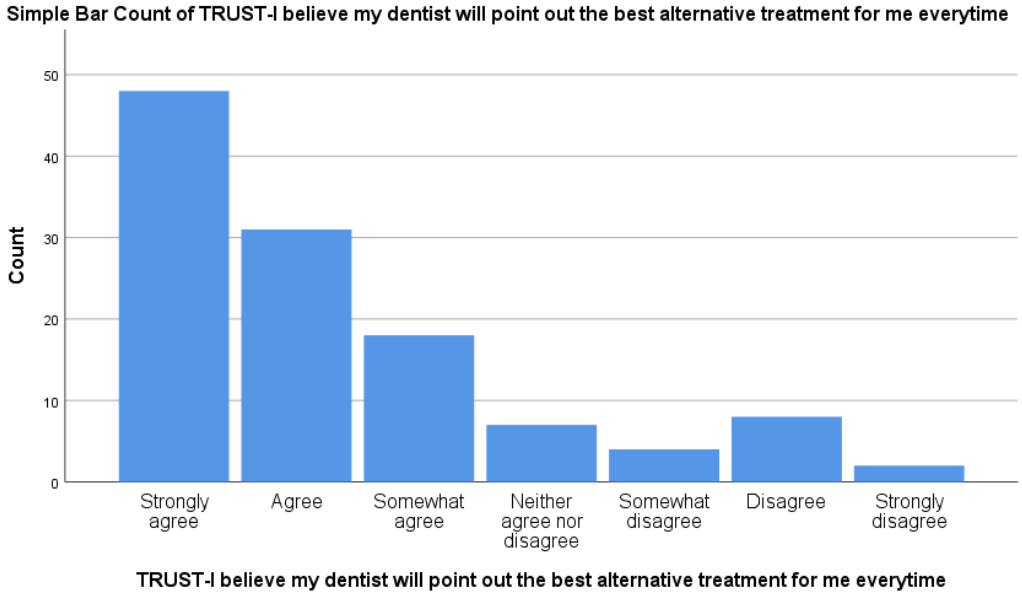

Figure 11: TRUST: I believe my dentist will point out the best alternative treatment for me every time

Table 12: TRUST: I believe my dentist will point out the best alternative treatment for me every time

		Percent
Valid	Strongly agree	40.7
	Agree	26.3
	Somewhat agree	15.3
	Neither agree nor disagree	5.9
	Somewhat agree	3.4
	Disagree	6.8
	Strongly disagree	1.7
	Total	100

Numerically (without responding based on percentages), we have 48 who strongly agree, 31 agree, 18 somewhat agree and it was observed that only two strongly disagree that their dentist is thoughtful about their well-being. However, seven accounts for those who neither agree nor disagree that their dentist is thoughtful about their well-being, four somewhat disagree, and 18 somewhat agree that their dentist is thoughtful about their well-being.

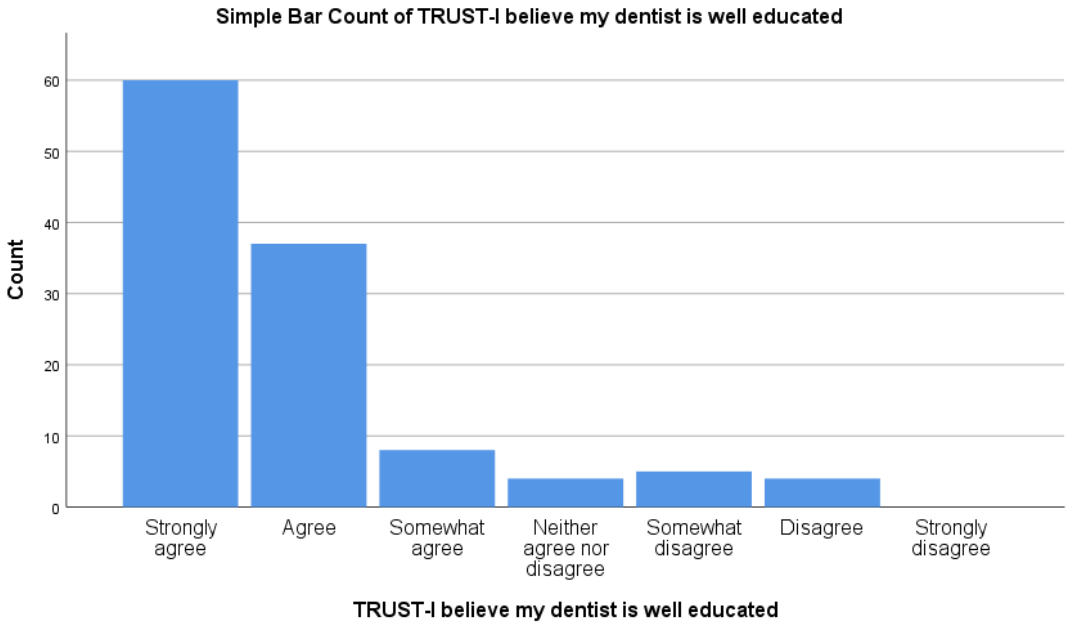

Figure 12: TRUST: I believe my dentist is well educated

Table 13: TRUST: I believe my dentist is well educated

		Percent
Valid	Strongly agree	50.8
	Agree	31.4
	Somewhat agree	6.8
	Neither agree nor disagree	3.4
	Somewhat disagree	4.2
	Disagree	3.4
	Total	100.0

On the above diagram, 89% of the respondents trust that their dentist is well educated by strongly agreeing or agreeing. On overall, only 11% have either an indifferent opinion or disagree that their dentist is well educated. Notably, no respondents strongly disagreed.

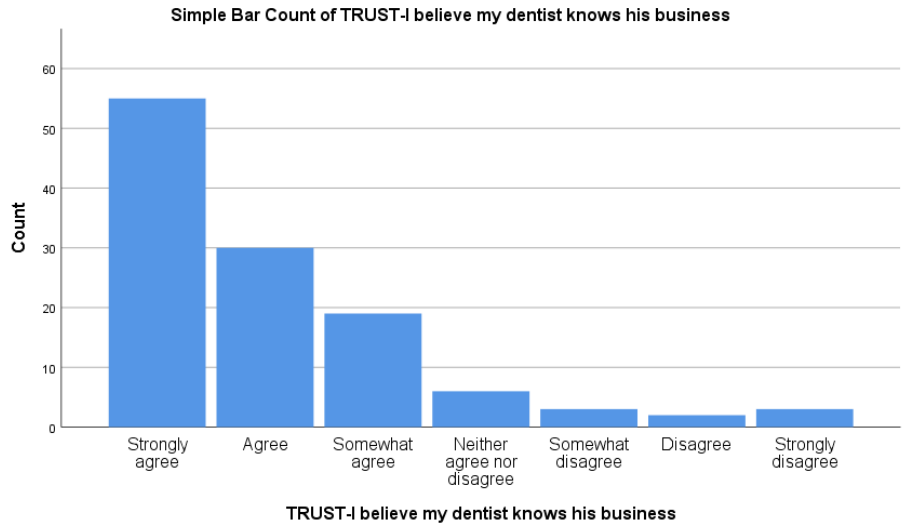

Figure 13: TRUST: I believe my dentist knows his business

Table 14: TRUST: I believe my dentist knows his business

		Percent
Valid	Strongly agree	46.6
	Agree	25.4
	Somewhat agree	16.1
	Neither agree nor disagree	5.1
	Somewhat agree	2.5
	Disagree	1.7
	Strongly disagree	2.5
	Total	100

There are about 88.1% of the respondents who believe their dentist knows his/her business, and only 5.1% are indifferent. A minority of 6.8% range from somewhat disagreeing to strongly disagreeing.

Table 15: TRUST: Summary of descriptive statistics for patient trust variable

	N	Minimum	Maximum	Mean	Std. Deviation
TRUST-I believe my dentist will point out the best alternative treatment for me every time	118	1	7	2.32	1.590
TRUST-My dentist is thoughtful about my well-being	118	1	7	2.07	1.370
TRUST-I believe my dentist knows his business	118	1	7	2.07	1.407
TRUST-I believe my dentist is well educated	118	1	6	1.89	1.280
Valid N (listwise)	118				

Overall the item ‘TRUST: I believe my dentist will point out the best alternative treatment for me every time’ had the highest mean of 2.07, and the item ‘TRUST: I

believe my dentist is well educated' had the lowest mean of 1.89, which implies that more patients agreed with the statement.

4.8 Perceived value

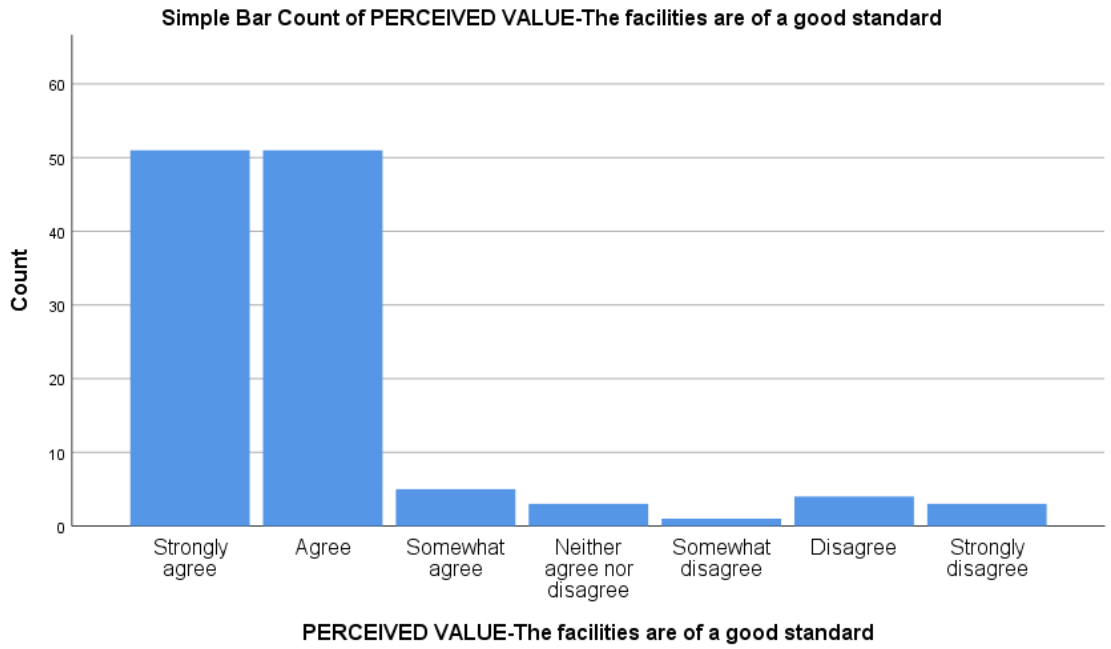

Figure 14: PERCEIVED VALUE: The facilities are of a good standard

Table 16: PERCEIVED VALUE: The facilities are of a good standard

		Percent
Valid	Strongly agree	43.2
	Agree	43.2
	Somewhat agree	4.2
	Neither agree nor disagree	2.5
	Somewhat agree	.8
	Disagree	3.4
	Strongly disagree	2.5
	Total	100

The facilities are of a good standard according to 90.6% of the respondents, ranging from strongly agree to somewhat agree, 6.7% of respondents either somewhat disagree, disagree, or strongly disagree that the facilities are of a good standard.

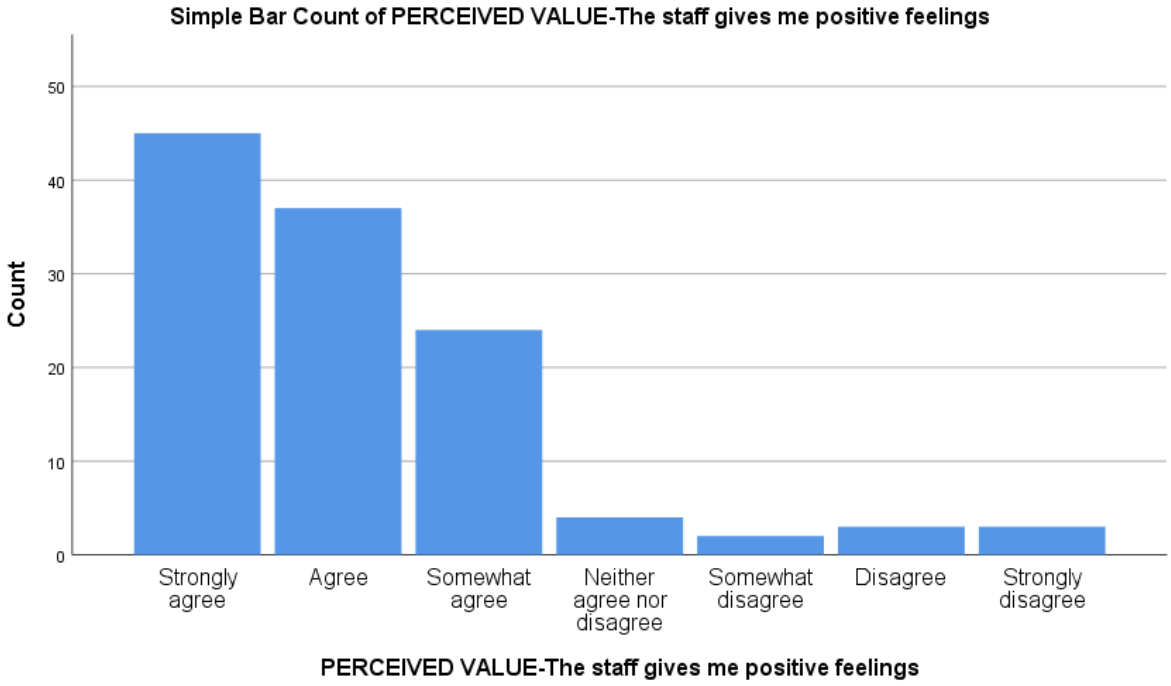

Figure 15: PERCEIVED VALUE: The staff gives me positive feelings

Table 17: PERCEIVED VALUE: The staff gives me positive feelings

		Percent
Valid	Strongly agree	38.1
	Agree	31.4
	Somewhat agree	20.3
	Neither agree nor disagree	3.4
	Somewhat agree	1.7
	Disagree	2.5
	Strongly disagree	2.5
	Total	100

With regard to ‘the staff gives me positive feelings’, 89.8% of the respondents either strongly agreed, agreed, or somewhat agreed with the statement. Only 3.4% of respondents neither agree nor disagree. A total of 6.7% of respondents either strongly disagreed, disagreed, or somewhat disagree.

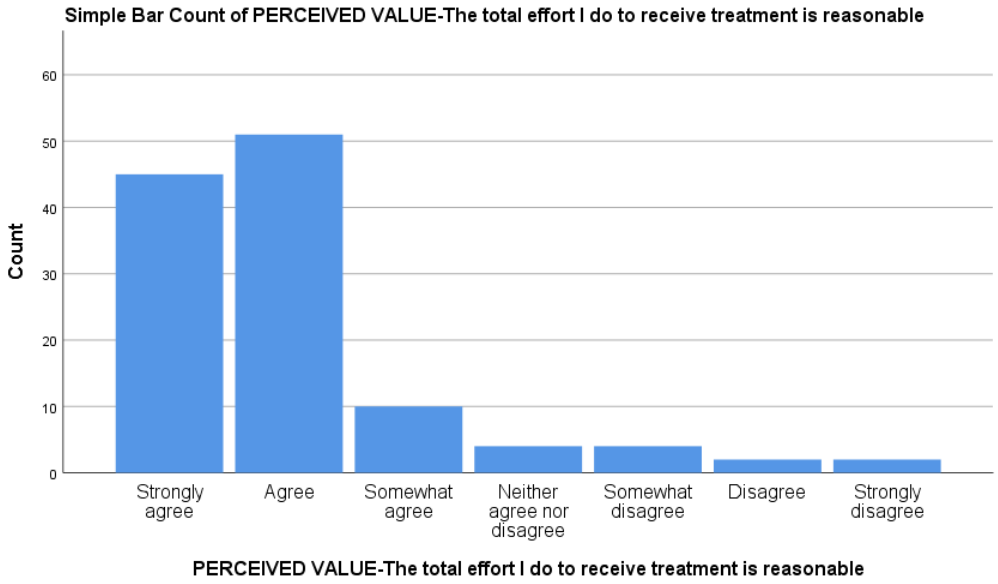

Figure 7: PERCEIVED VALUE: The total effort I do to receive treatment is reasonable

Table 18: PERCEIVED VALUE: The total effort I do to receive treatment is reasonable

		Percent
Valid	Strongly agree	38.1
	Agree	43.2
	Somewhat agree	8.5
	Neither agree nor disagree	3.4
	Somewhat agree	3.4
	Disagree	1.7
	Strongly disagree	1.7
	Total	100

A total of 89.8% of respondents thought that the effort they put in receiving treatment from these institutions was reasonable, and only 6.8% thought it was unreasonable.

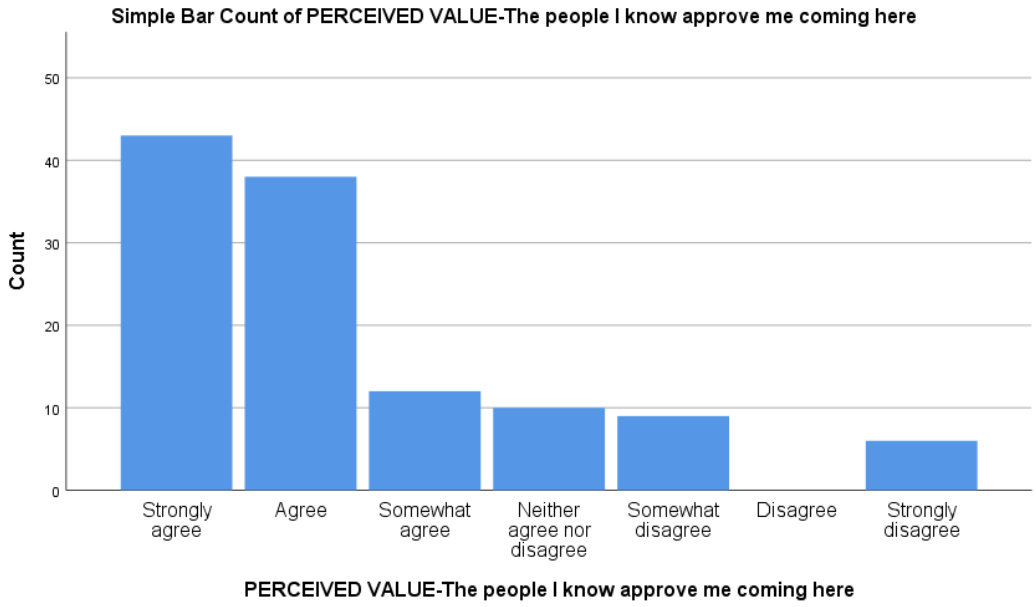

Figure 8: PERCEIVED VALUE: The people I know approve me coming here

Table 19: PERCEIVED VALUE: The people I know approve me coming here

		Percent
Valid	Strongly agree	36.4
	Agree	32.2
	Somewhat agree	10.2
	Neither agree nor disagree	8.5
	Somewhat disagree	7.6
	Strongly disagree	5.1
	Total	100

Of all respondents, 78.8% thought that it will be acceptable to people they know to visit these dentists. About 12.7% disagreed. Notably, as high as 8.5% were indifferent, and no one strongly disagreed.

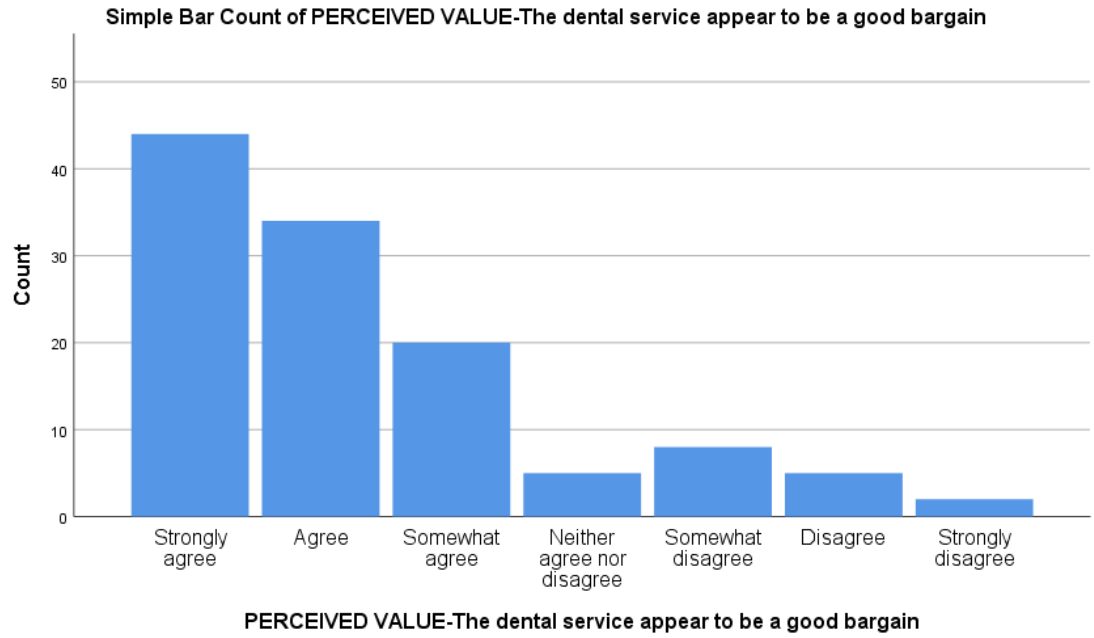

Figure 18: PERCEIVED VALUE: The dental service appear to be a good bargain

Table 20: PERCEIVED VALUE: The dental service appear to be a good bargain

		Percent
Valid	Strongly agree	37.3
	Agree	28.8
	Somewhat agree	16.9
	Neither agree nor disagree	4.2
	Somewhat agree	6.8
	Disagree	4.2
	Strongly disagree	1.7
	Total	100

Or 'the dental service appear to be a good bargain', 83% of respondents are in agreement, and 12.7% are in disagreement. Only 4.2% are indifferent.

Table 21: Summary of descriptive statistics for patient perceived value variable

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PERCEIVED VALUE-The facilities are of a good standard	118	1	7	1.95	1.358
PERCEIVED VALUE-The staff gives me positive feelings	118	1	7	2.17	1.379
PERCEIVED VALUE-The total effort I do to receive treatment is reasonable	118	1	7	2.03	1.271
PERCEIVED VALUE-The people I know approve me coming here	118	1	7	2.39	1.623
PERCEIVED VALUE-The dental service appear to be a good bargain	118	1	7	2.34	1.526
Valid N (listwise)	118				

Overall the item ‘PERCEIVED VALUE: The facilities are of a good standard’ had the lowest mean of 1.95, which means the respondents were more in agreement with the statement than any other item. The item ‘PERCEIVED VALUE: The people I know approve me coming here’ had the highest mean of 2.34, which means that the respondents were more indifferent towards the statement.

4.9 Satisfaction

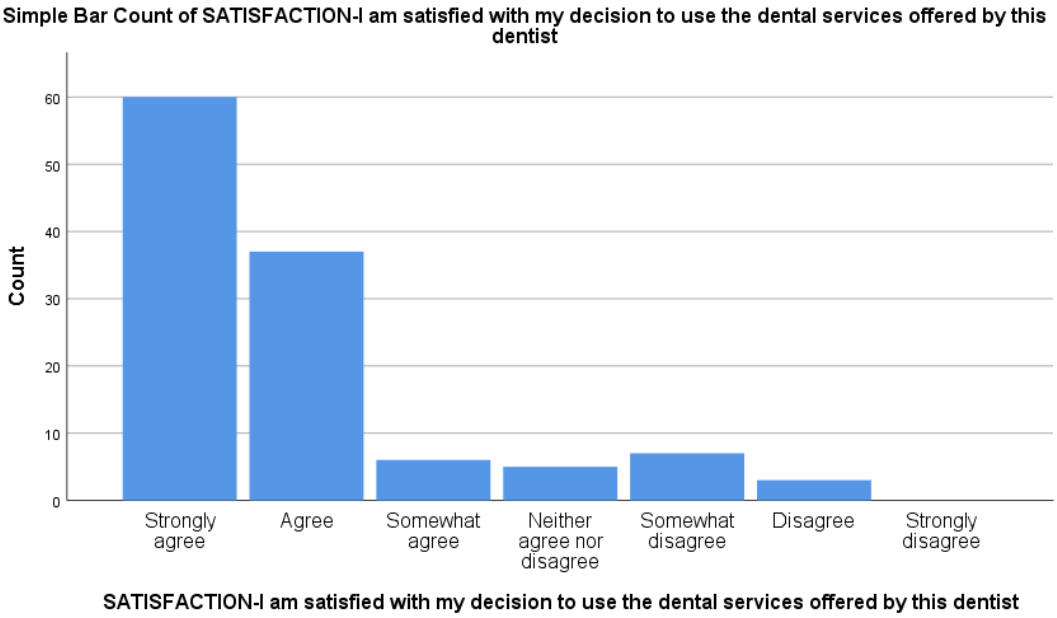

Figure 19: SATISFACTION: I am satisfied with my decision to use the dental services offered by this dentist

Table 22: SATISFACTION: I am satisfied with my decision to use the dental services offered by this dentist

		Percent
Valid	Strongly agree	50.8
	Agree	31.4
	Somewhat agree	5.1
	Neither agree nor disagree	4.2
	Somewhat disagree	5.9
	Strongly disagree	2.5
	Total	100

With regard to 'I am satisfied with my decision to use the dental services offered by this dentist', 87.3% of the respondents either indicated that they strongly agree,

agree, or somewhat agree with the statement. Only 4.2% of respondents neither agree nor disagree. 8.5% of respondents either strongly disagree, disagree, or somewhat disagree.

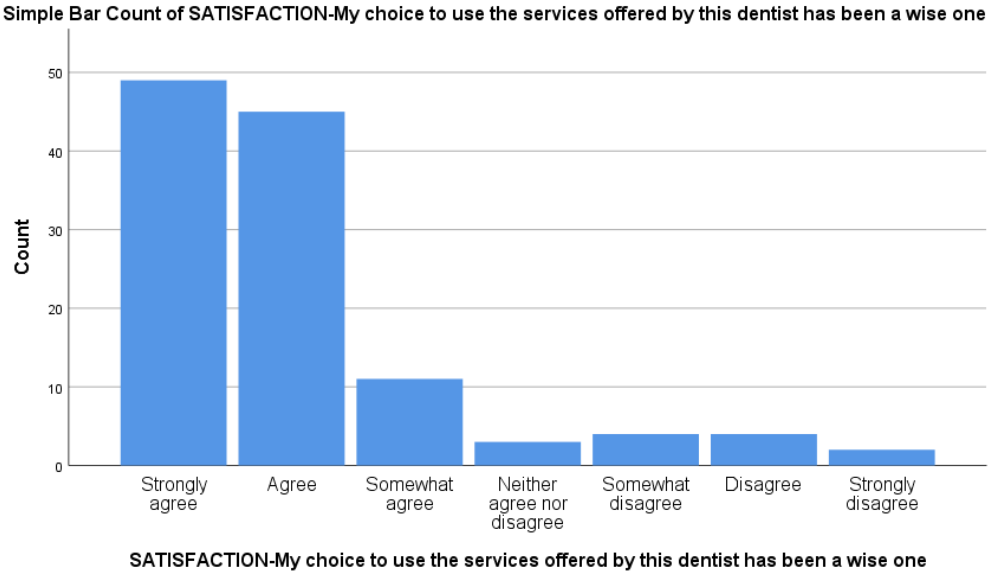

Figure 20: SATISFACTION: My choice to use the services offered by this dentist has been a wise one

Table 23: SATISFACTION: My choice to use the services offered by this dentist has been a wise one

		Percent
Valid	Strongly agree	41.5
	Agree	38.1
	Somewhat agree	9.3
	Neither agree nor disagree	2.5
	Somewhat agree	3.4
	Disagree	3.4
	Strongly disagree	1.7
	Total	100

With regard to 'My choice to use this dentist has been a wise one', 89% of the respondents either indicated that they strongly agree, agree, or somewhat agree with the statement. Only 2.5% of respondents neither agree nor disagree. A total of 8.5% of respondents either strongly disagree, disagree, or somewhat disagree.

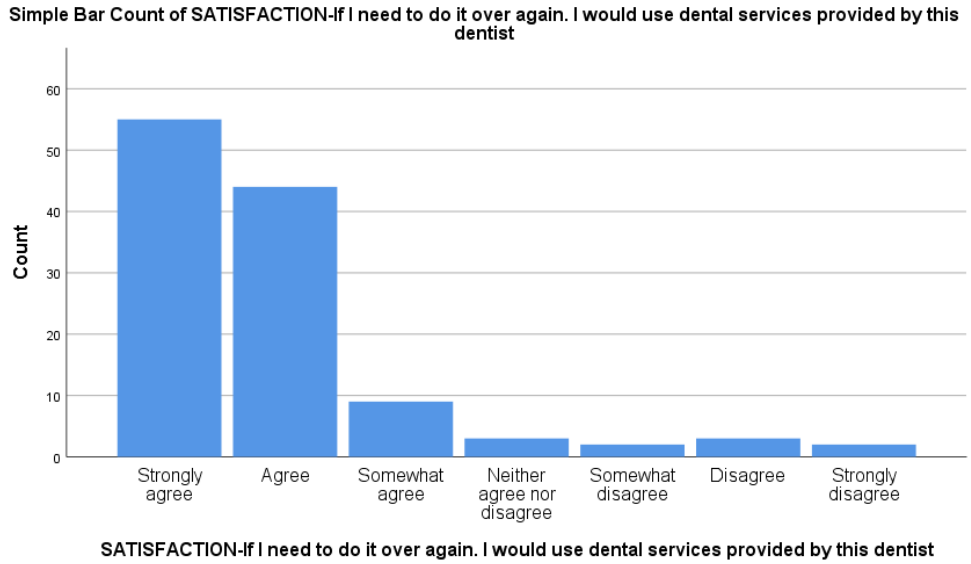

Figure 21: SATISFACTION-If I need to do it over again. I would use dental services provided by this dentist

Table 24: SATISFACTION-If I need to do it over again. I would use dental services provided by this dentist

		Percent
Valid	Strongly agree	46.6
	Agree	37.3
	Somewhat agree	7.6
	Neither agree nor disagree	2.5
	Somewhat agree	1.7
	Disagree	2.5
	Strongly disagree	1.7
	Total	100

Of all respondents, 91.5% thought that they would use dental services provided by this dentist again. About 1.7% neither agreed nor disagreed. The rest, 5.9%, were not in agreement with the statement.

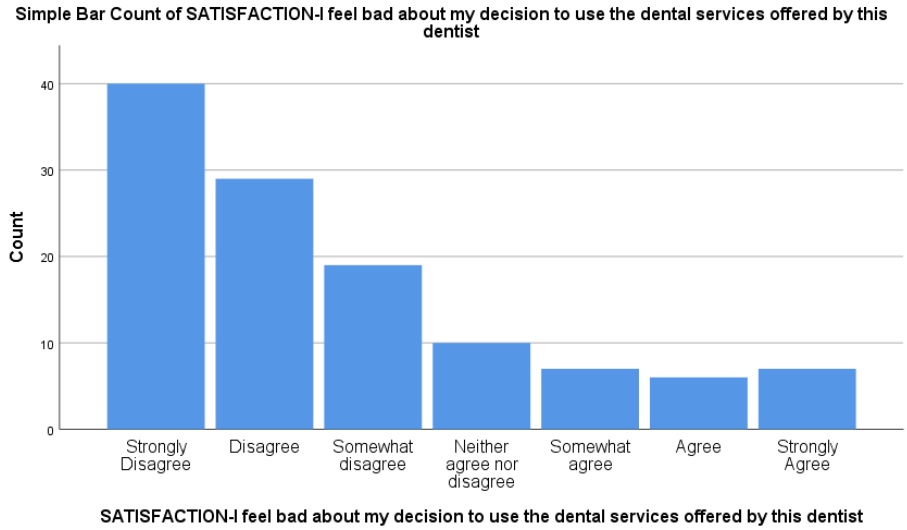

Figure 22: SATISFACTION: I feel bad about my decision to use the dental services offered by this dentist

Table 25: SATISFACTION: I feel bad about my decision to use the dental services offered by this dentist

		Percent
Valid	Strongly agree	33.9
	Agree	24.6
	Somewhat agree	16.1
	Neither agree nor disagree	8.5
	Somewhat agree	5.9
	Disagree	5.1
	Strongly disagree	5.9
	Total	100

With regard to the statement 'I feel bad about my decision to use the dental services offered by this dentist', 74.6% of the respondents either strongly disagree, disagree,

or somewhat disagree with the statement. About 8.5% of respondents neither agree nor disagree. 16.9% of respondents either strongly agree, agree, or somewhat agree. It would be useful to note that this is a negatively worded statement.

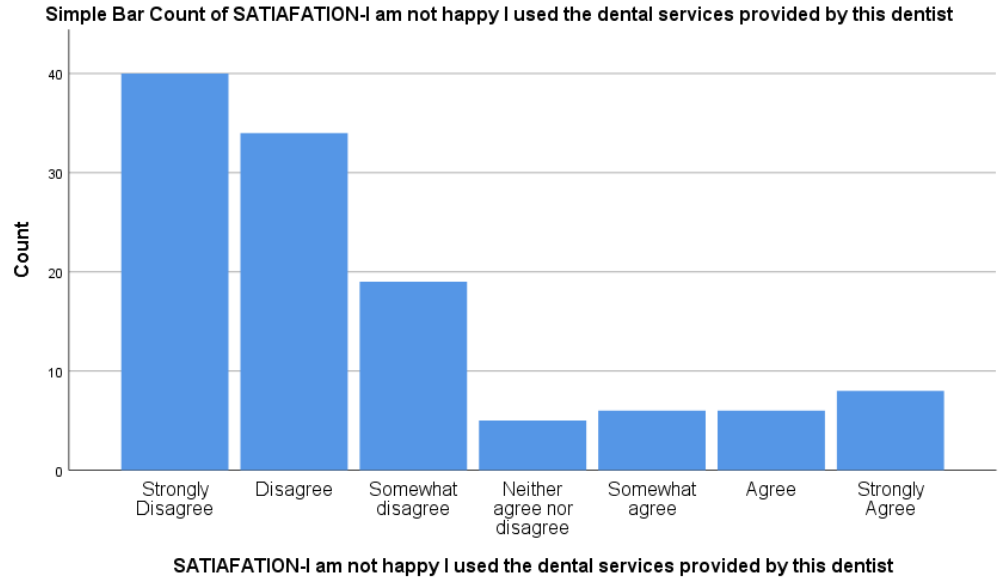

Figure 23: SATISFACTION: I am not happy I used dental services provided by this dentist

Table 26: SATISFACTION: I am not happy I used dental services provided by this dentist

		Percent
Valid	Strongly agree	33.9
	Agree	28.8
	Somewhat agree	16.1
	Neither agree nor disagree	4.2
	Somewhat agree	5.1
	Disagree	5.1
	Strongly disagree	6.8
	Total	100

With regard to the statement 'I am not happy I used the dental services provided this dentist', 78.8% of the respondents either strongly disagree, disagree, or somewhat disagree with the statement. Only 4.2% of respondents neither agree nor disagree. 11.9% of respondents either strongly agree, agree, or somewhat agree. It would be useful to note that this is a negatively worded statement.

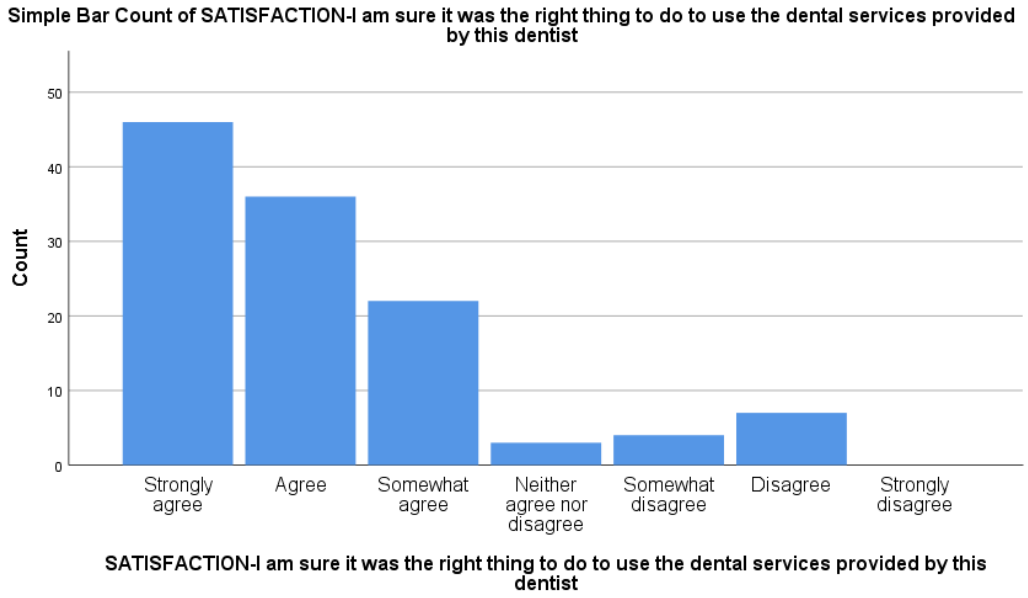

Figure 24: SATISFACTION: I am sure it was the right thing to do to use the dental services provided by this dentist

Table 27: SATISFACTION: I am sure it was the right thing to do to use the dental services provided by this dentist

		Percent
Valid	Strongly agree	39.0
	Agree	30.5
	Somewhat agree	18.6
	Neither agree nor disagree	2.5
	Somewhat disagree	3.4
	Disagree	5.9
	Total	100.0

Of all respondents, 88.1% thought that it was the right thing to use dental services provided by the dentist. About 9.3% were not in agreement. Notably, only 2.5% were indifferent, and no one strongly disagreed.

Table 28: Summary of descriptive statistics for patient satisfaction variable

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SATISFACTION-I am satisfied with my decision to use the dental services offered by this dentist	118	1	6	1.91	1.294
SATISFACTION-My choice to use the services offered by this dentist has been a wise one	118	1	7	2.05	1.377
SATISFACTION-If I need to do it over again. I would use dental services provided by this dentist	118	1	7	1.90	1.277
SATISFACTION-I feel bad about my decision to use the dental services offered by this dentist	118	1	7	2.67	1.802
SATISFACTION-I am not happy I used the dental services provided by this dentist	118	1	7	2.60	1.817
SATISFACTION-I am sure it was the right thing to do to use the dental services provided by this dentist	118	1	6	2.19	1.383
Valid N (listwise)	118				

Overall the respondents were more in agreement with the statement with item ‘SATISFACTION: If I need to do it over again. I would use dental services provided by this dentist’ with a mean of 1.90, and were somewhat indifferent with the

statement ‘SATISFACTION: I feel bad about my decision to use the dental services offered by this dentist’ with a mean of 2.67.

4.10 Loyalty

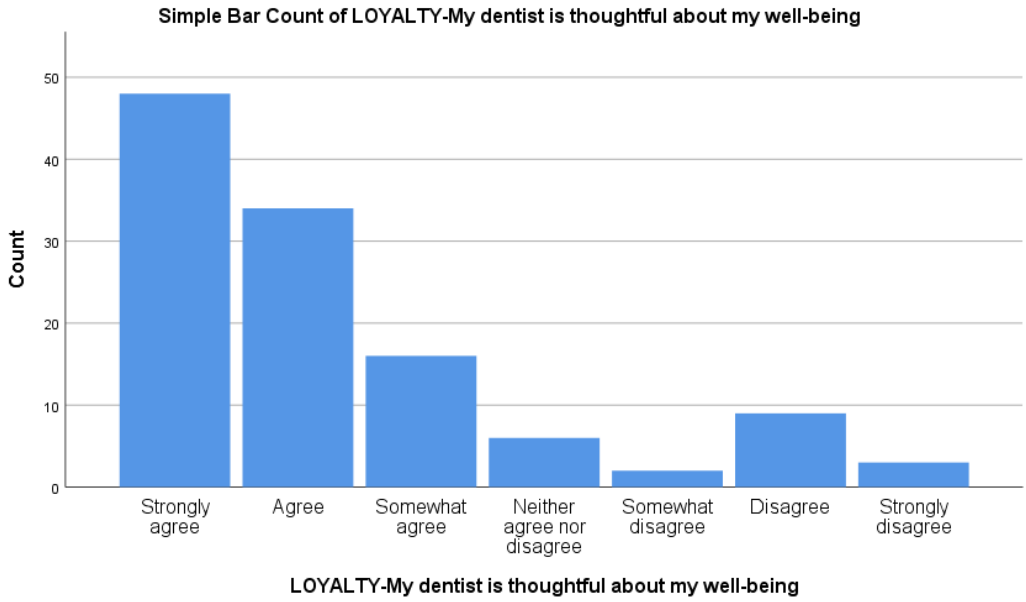

Figure 25: LOYALTY: My dentist is thoughtful about my well-being

Table 29: LOYALTY: My dentist is thoughtful about my well-being

		Percent
Valid	Strongly agree	40.7
	Agree	28.8
	Somewhat agree	13.6
	Neither agree nor disagree	5.1
	Somewhat agree	1.7
	Disagree	7.6
	Strongly disagree	2.5
	Total	100

With regard to the statement 'My dentist is thoughtful about my well-being', 83.1% of the respondents either strongly agreed, agreed, or somewhat agreed with the statement. Only 1.7% of respondents neither agreed nor disagreed. 10.2% of respondents either strongly agree, agree, or somewhat agree.

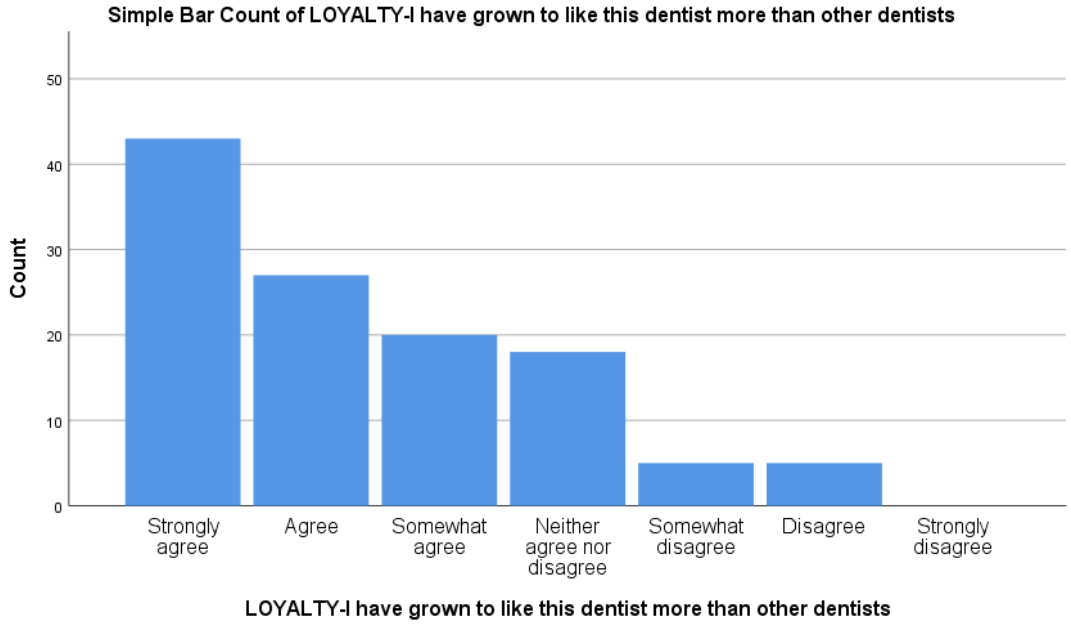

Figure 9: LOYALTY: I have grown to like this dentist more than other dentists

Table 30: LOYALTY: I have grown to like this dentist more than other dentists

		Percent
Valid	Strongly agree	36.4
	Agree	22.9
	Somewhat agree	16.9
	Neither agree nor disagree	15.3
	Somewhat disagree	4.2
	Disagree	4.2
	Total	100.0

A total of 76.3% of respondents thought that the effort they have grown to like this dentist than other dentist, and only 8.5% did not think so. A somewhat high number of them were indifferent, constituting 15.3% of all respondents.

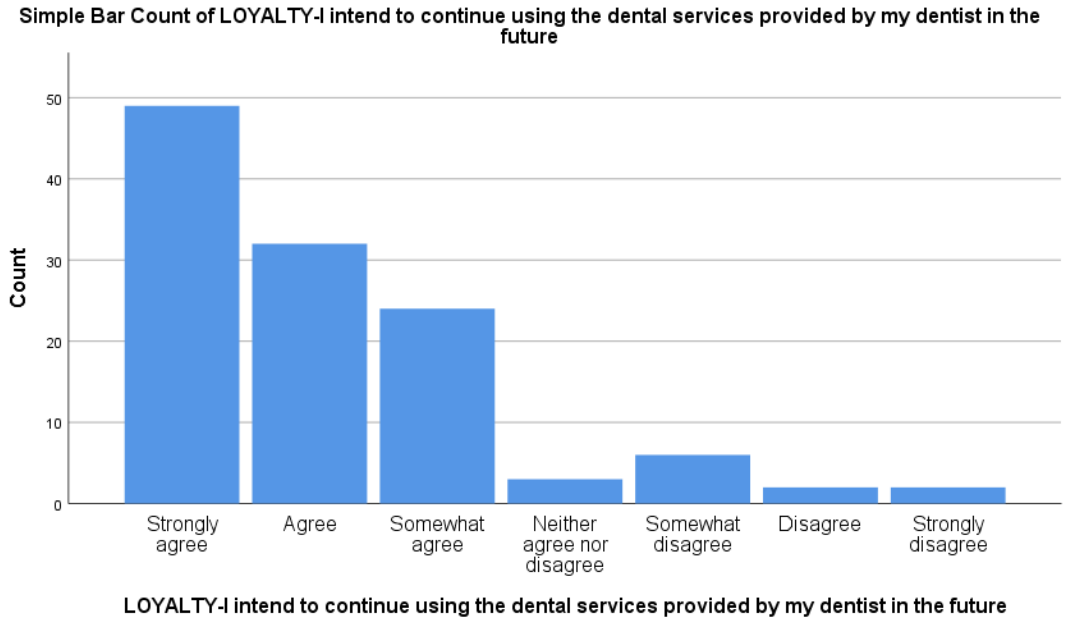

Figure 10: LOYALTY: I intend to continue using the dental services provided by my dentist in the future

Table 31: LOYALTY: I intend to continue using the dental services provided by my dentist in the future

		Percent
Valid	Strongly agree	41.5
	Agree	27.1
	Somewhat agree	20.3
	Neither agree nor disagree	2.5
	Somewhat disagree	5.1
	Disagree	1.7
	Strongly disagree	1.7
	Total	100.0

A total of 89% of respondents intend using the dental services provided by this dentist in the future, and only 8.5% did not think so. Only 2.5% were indifferent.

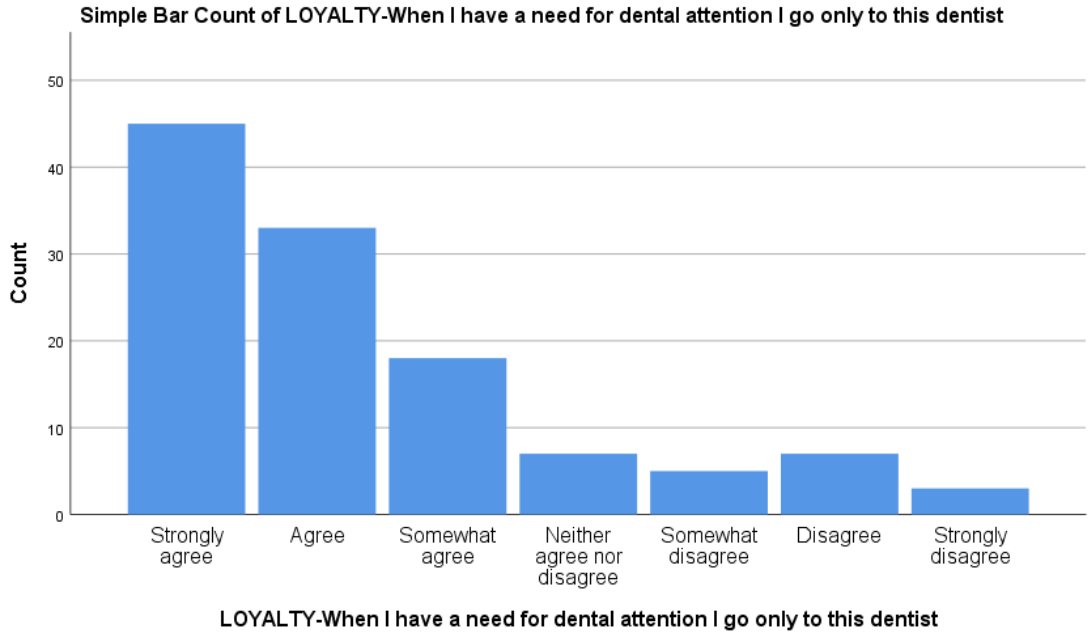

Figure 11: LOYALTY: When I have a need for dental attention I go only to this dentist

Table 32: LOYALTY: When I have a need for dental attention I go only to this dentist

		Percent
Valid	Strongly agree	38.1
	Agree	28.0
	Somewhat agree	15.3
	Neither agree nor disagree	5.9
	Somewhat disagree	4.2
	Disagree	5.9
	Strongly disagree	2.5
	Total	100.0

With regard to the statement 'When I have a need for dental attention I go only to this dentist', 81.4% of the respondents either strongly agreed, agreed, or somewhat agreed with the statement. Only 4.2% of respondents neither agreed nor disagreed. 12.7% of respondents either strongly agree, agree, or somewhat agree.

Table 33: Summary of descriptive statistics for patient loyalty

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
LOYALTY-My dentist is thoughtful about my well-being	118	1	7	2.31	1.637
LOYALTY-I have grown to like this dentist more than other dentists	118	1	6	2.41	1.434
LOYALTY-I intend to continue using the dental services provided by my dentist in the future	118	1	7	2.14	1.367
LOYALTY-When I have a need for dental attention I go only to this dentist	118	1	7	2.38	1.617
Valid N (listwise)	118				

Overall the item with the highest lowest mean is 'LOYALTY: I intend to continue using the dental services provided by my dentist in the future' n=2.14, and the highest is 'LOYALTY: When I have a need for dental attention I go only to this dentist' n=2.38. The respondents were somehow within the same range given the small difference in the highest and lowest mean.

The problem of the research is to identify the determinants of dental patient loyalty to their dental service providers in South Africa, and to measure the effect of the determinants in enhancing patient loyalty to their provider.

Sub-problem 2: To identify the potential determinants of patient loyalty to their provider in South Africa.

Based on our literature review, and subsequently the instrument that was adopted, we hypothesise that Patient Trust, Patient Satisfaction, and Patient Perceived Value are the drivers of patient loyalty. Furthermore the instrument was tested for internal and external validity and was found to be sound.

The underlying indicators of each scale were also discussed, which are important in the operationalisation of the findings the research. Therefore the Pearson's r correlation analysis of the different variables was performed. Pearson's correlation determines the direction and the strength of the relationship of the variables (Bryman, 2015). According to Lee (2015) the correlation sizes are measured between -1 and 1, with negative representing a negative correlation, and positive a positive correction. A figure between 0.5-0.8 signifies a good correlation, > 0.8 a strong correlation (Lee, 2015).

Furthermore, the relationship between the different variables is illustrated through scatter diagrams in the Figures. The diagrams show a positive slope of the relationship between the dependent variable and the independent variables. This also shows a linear relationship.

Table 34: Pearson's correlation matrix for patient loyalty, patient trust, patient perceived value, and patient satisfaction with significant

Correlations

		TotalTrust	TotalPV	TotalSatis	TotalLoyalty
TotalTrust	Pearson Correlation	1	.779**	.700**	.701**
	Sig. (2-tailed)		.000	.000	.000
	N	118	118	118	118
TotalPV	Pearson Correlation	.779**	1	.779**	.688**
	Sig. (2-tailed)	.000		.000	.000

	N	118	118	118	118
TotalSatis	Pearson Correlation	.700**	.779**	1	.651**
	Sig. (2-tailed)	.000	.000		.000
	N	118	118	118	118
TotalLoyalty	Pearson Correlation	.701*	.688**	.651**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	118	118	118	118

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

Table 34 shows that there is a positive correlation between the dependent variable and the independent variables, which ranges from 0.65 and 0.7. This signifies a strong correlation. The level of significance, denoted by Sig, shows all the variables have a p-value of < 0.05. This implies that the relationship between the dependent variable and independent variable is positive and strong.

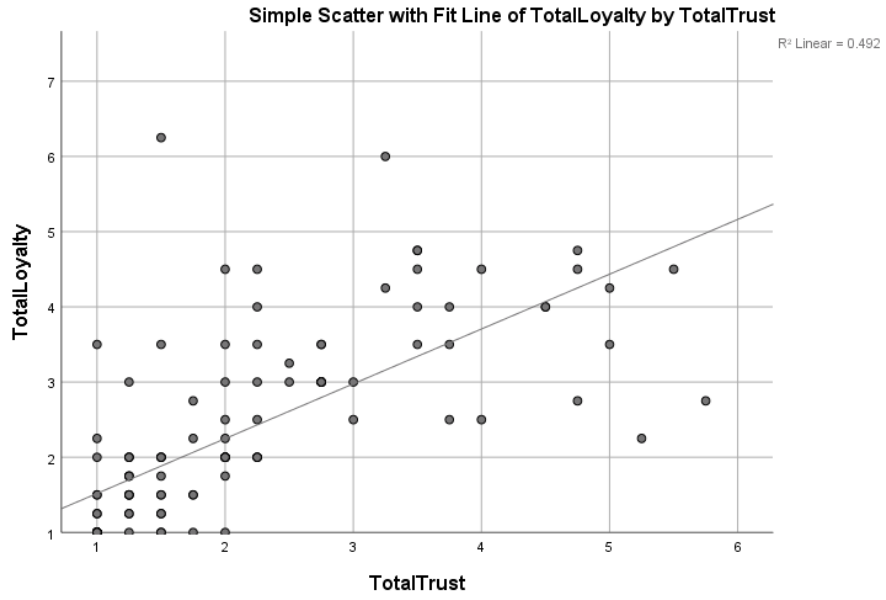

Figure 29: Association between patient loyalty and patient trust using scatter plot with fit line

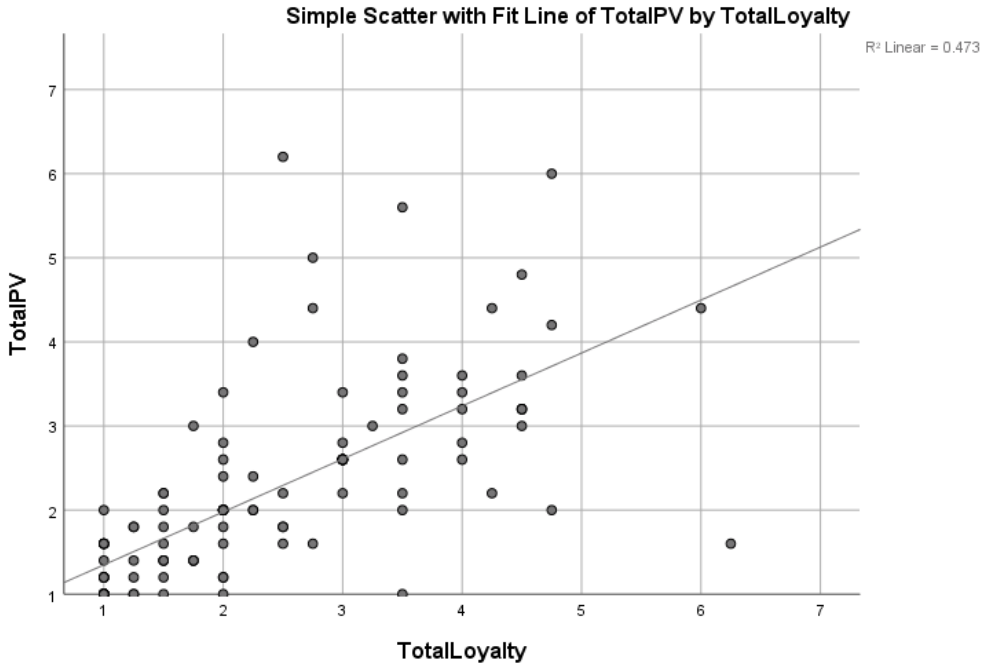

Figure 30: Association between patient loyalty and patient perceived value using scatter plot with fit line

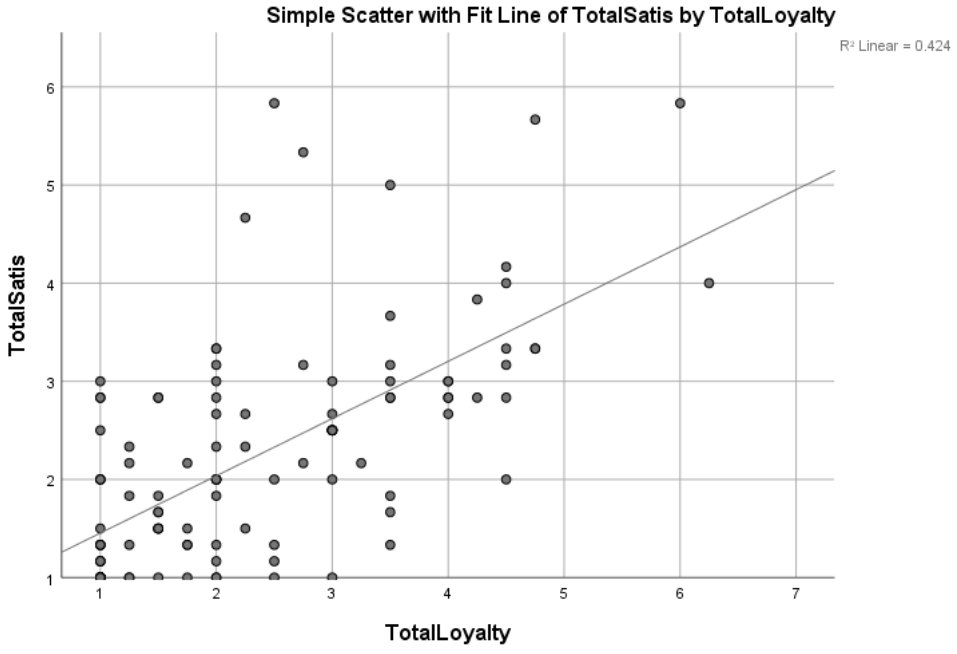

Figure 31: Association between patient loyalty and patient satisfaction using scatter plot with line

The hypothesis' that are proposed are as follows:

4.11 Hypothesis 1: The relationship between perceived value and patient loyalty

The hypothesis predicts that, in line with other service industries, dental patients will weigh the trade-off between the total sacrifices and the quality of service received, which is referred to as perceived value. Perceived value is defined as *' the customers' overall assessment of the utility of a product or service based on perceptions of what is received and is given'* (Zeithaml, 1988)246). Therefore, even though dental services may be essential services, dental patients will assess the service value of different dental providers.

Furthermore, dental patient perceived value has also been proven by various studies to have relationship with patient loyalty (Caruana & Fenech, 2005; W.-J. Chang & Chang, 2013). Therefore, the study predicts the same effect within the geographical context of this research.

$H1_0$: Perceived value does not have a relationship with patient loyalty.

$H1_a$: Perceived value has a relationship with patient loyalty.

The null hypothesis is rejected as the results suggest there is a positive relationship between perceived value and patient loyalty with a significant level of > 95% (p-value < 0.05).

4.12 Hypothesis 2: The relationship between satisfaction and patient loyalty

The overall satisfaction framework was adopted in assessing the relationship between satisfaction and patient loyalty. Overall satisfaction takes into account the characteristics of both the service received, and the supplier/service provider (Carlos Fandos Roig et al., 2006). Furthermore, this approach is considered to be a better predictor of loyalty (Carlos Fandos Roig et al., 2006; Yang & Peterson, 2004).

The hypothesis predicts that, in line with other studies in both the healthcare, and service industries, satisfaction has a positive relationship with patient loyalty.

$H2_0$: Satisfaction does not have a positive relationship with patient loyalty.

$H2_a$: Satisfaction has a positive relationship with patient loyalty.

The null hypothesis is rejected as there is a positive relationship between Patient satisfaction and patient loyalty with a significant level of > 95% (p-value < 0.05).

4.13 Hypothesis 3: The relationship between trust and patient loyalty

Trust forms the basis for the promise made by service providers, including dental providers, to be believed by the customer (Moliner, 2009). The customer uses trust to deal with the risk associated with a purchasing decision (Carlos Fandos Roig et al., 2013). Dental services share most characteristics with other services like banking. Therefore, trust is plays a role in purchasing decision made by dental patients.

In previous studies by Carlos Fandos Roig et al. (2013); Sumaedi et al. (2014) on the dental patients, trust has been found to have a positive relationship with loyalty. Therefore, it is hypothesised that trust has a positive relationship with patient loyalty.

$H3_0$: Trust does not have a positive relationship with patient loyalty.

$H3_a$: Trust has a positive relationship with patient loyalty.

The null hypothesis is rejected as there is a positive relationship between patient trust and patient loyalty with a significant level of > 95% (p-value < 0.05).

4.14 Sub-problem 2: To determine the effect of the determinants in enhancing dental patient loyalty to their provider.

Multiple regression analysis was performed to determine the effect that the independent variables have on the dependent variable. According to Hair, Black, Babin, Anderson, and Tatham (1998) multiple regression is relevant in determining the relationship between a dependent variable and multiple independent variables.

The multivariate analysis also exists with a certain context. One of the main considerations is its statistical significance (Bryman, 2015). This entails the risk that there might be a finding that there is a relationship between variables when there is none, or failure to find a relationship when the relationship actually exists (Bryman, 2015). The level of risk that is normally acceptable is 5%, which means that you are 95% certain with the outcome of the analysis. This is represented by a p-value of < 0.05 (Bryman, 2015).

Another consideration is the possibility that there might be two or more independent variables that are highly correlated (Bryman, 2015). This is called multicollinearity. A multicollinearity analysis was done, represented by Variance Inflation Factor (VIF), which determines the extent to which each variable might relate to another (Hair et al., 1998). According to Belsley, Kuh, and Welsch (1980) an acceptable VIF value is < 10. The results in Table 35 show that all figures are below 10, which implies that there is no multicollinearity between the independent variables.

The output resultant of the analysis shows whether the relationship between the variables, if any, is either a positive or negative through the unstandardised coefficient (Hair et al., 1998). This output must be supported by a statistical significance (Sig) of < 0.05.

Table 35: Regression analysis coefficients with collinearity statistics

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.185	.173		1.069	.287	-.158	.527		
	TotalPV	.466	.136	.374	3.435	.001	.197	.735	.271	3.686
	TotalSatis	.203	.103	.172	1.966	.052	-.002	.407	.422	2.367
	TotalTrust	.333	.105	.316	3.171	.002	.125	.540	.325	3.078

a. Dependent Variable: Total Loyalty

The results show a direct effect on loyalty for all independent variables. Perceived Value has values of β=0.374 with p=0.001; Satisfaction β=0.172; p=0.052; Trust β=0.316; p=0.02. Satisfaction does not meet the threshold of p< 0.05, and thus we cannot make the inference that it has an effect on loyalty. The value of β for Satisfaction is also the lowest. Perceived Value has the highest β of 0.374, which implies that it has the highest effect on loyalty.

The hypothesis that is proposed is as follows:

4.15 Hypothesis 4: The effect that patient trust has on patient loyalty

The service offered by dental providers to their patients shares similar characteristics with other service industries. However, there are features that differentiate it from the rest. The complex and technical nature of the service, and its association with pain makes it a riskier purchasing decision than most service transactions. According to Carlos Fandos Roig et al. (2013), the dental patient uses trust to mitigate this risk.

Trust serves as a foundation for long term relationships according to Sirdeshmukh et al. (2002). The service provider should first gain trust before they can gain loyalty

from their patients (F. F. Reichheld & Schefter, 2000). Therefore, this study proposes that dental patient trust has the strong direct positive effect on patient loyalty to a dental provider.

H_0: Patient Trust does not have the strong effect on patient loyalty.

H_a: Patient Trust has the strong effect on patient loyalty.

The null hypothesis is rejected, as patient trust has a statistically significant strong positive effect on patient loyalty. The results in Table 35 show that patient trust was a major predictor of patient loyalty (β=.316; p=002).

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Discussion

The aim of this study was to determine drivers of dental patient loyalty to their provider in South Africa and to contribute to the health service management literature, not only in the dental industry, but to the healthcare industry at large. Patient equity can be a strategic objective of healthcare organisations. In the short term loyal patients are cheaper to service, and are a source of referrals (F. P. Reichheld & Sasser, 1990). In the long run they enhance the valuation of the practice (Gupta et al., 2004). The findings will be discussed based on the results in Chapter 4 of this paper.

Firstly, the effect that the demographic profiles, namely gender and age, of the respondents has on each variable were discussed. Secondly, the results in relation to each sub-problem will be interpreted. Thirdly, observations in the results were explained, in relation to the literature review.

5.2 Demographics

The moderating effects of patient characteristics namely gender, and age have not been given attention as one of the hypothesis. Nevertheless, it would be interesting to find out whether these characteristics do have an effect on the variables or not.

5.3 Medical Aid

Based on the descriptive results in Table 8, around 88% of the respondents belong to a particular medical aid scheme. This is far more that Gauteng provinces and national figures for medical aid coverage in South Africa. The estimates according to the Stats (2015), are 24,4% and 18,6% respectively. We posit that this may be as a result of most non covered patients using the free public healthcare system in South Africa. Additionally, for the purpose of this research, the race demographic was not

recorded. Interestingly, the white population has medical aid coverage of 73% according to Stats (2015). This may point to a white race dominated sample.

5.4 Age

In a study done by Anderson et al. (2008) on service satisfaction, older customers have higher switching costs and more likely to be satisfied with a service. The age distribution of the respondents in Table 7, suggests that there were more respondents between the ages of 31 and 50, around 74, 28% to be precise. Convenience sampling was used, by selecting only returning patients to the practices, which would be typically 'loyal' patients. This might point to a tendency by older patients to be more loyal than younger patients, or perhaps an issue of financial independence among older patients. Further research in this area might shed more light.

5.5 Gender

There were also more male respondents than female respondents. In total there were 56.14% male respondents to 43, 86% female. According the Stats (2012), there are 51,3% females and 48,7% in South Africa. The sample contains substantially more male than female respondents. This is contrary to a tendency by females to be more satisfied than males (Anderson et al., 2008). That is assuming that satisfaction has a positive effect on loyalty.

5.6 Age and Gender

The cross tabulation output between Gender and Age show that the male respondents are predominantly between the ages of 41-50 years, while most of the females are between the ages 31-40 years. Therefore, a hypothesis of whether there is a statistically significance between the ages of Males and Females was performed using Pearson's Chi-Square test in Table 10. It shows a p-value of 0.566, which is greater than the threshold of < p=0.05. Therefore the difference in age of males and females is not statistically different.

5.7 Variables

Table 12 shows that the item ‘I believe my dentist will point out the best alternative treatment for me every time’ had the highest mean of 2.32. This item measures benevolence as an indicator of trust. It may thus imply that the respondents value benevolence more than credibility as an indicator of Trust.

Table 19 shows that the item ‘the people I know approve me coming here’ has the highest mean of 2.39. This item measures social value as an indicator of perceived value. According to this, it may be implied that social value ranks the highest among the respondents. This means that what others think of the action of consulting this provider matters to their decision making.

The highest mean amongst the items under the variable Satisfaction is ‘I feel bad about my decision to use the dental services offered by this dentist’ with a mean of 2.67. A majority of the respondents disagreed with this statement. This item is measure overall satisfaction as an indicator of Satisfaction. It also happens to have the highest mean across all variables.

5.8 The first sub-problem

To identify potential determinants of patient loyalty to their provider in South Africa

The outcome of the results are similar to the ones discussed in the literature review, and show that the underlying determinants hypothesised do also apply in the dental industry. There is a positive correlation between all the independent variables and the dependent variable. Based on Table 34 trust has the highest positive correlation (n=.701). This however does not imply causality, but merely an association. The scatter plots in Figure 31 show a linear relationship between patient loyalty and the independent variables namely Trust (n=0.701), Satisfaction (n=0.651), and Perceived Value (n=0.688). Since all these values have correlation sizes of between .50 and .80, it implies that they have a large correlation with good evidence of association (Lee, 2015).

5.8.1 Hypothesis 1- Perceived value has a positive relationship with patient loyalty

The null hypothesis that perceived value does not have a positive relationship with patient loyalty is therefore rejected, as it clearly shows that patient trust has a large positive correlation (n=.688; p≤ 0.001). We can therefore be more than 95% confident in this result.

5.8.2 Hypothesis 2- Satisfaction has a positive relationship with patient loyalty

The null hypothesis that satisfaction does not have a positive relationship with patient loyalty is rejected, as it shows that patient perceived value has large positive correlation(n=.651; p≤ 0.001) which is between .50 and .80.

5.8.3 Hypothesis 3- Trust has a positive relationship with patient loyalty

The null hypothesis that trust does not have a positive relationship with patient loyalty is rejected. According to the outcome of the Pearson's correlation test trust has a strong positive relationship (n=.701; p≤ 0.001) with patient loyalty.

5.9 The second sub-problem

To determine the effect of the determinants in enhancing dental patient loyalty to their provider in South Africa

5.9.1 Hypothesis 4- Patient trust has the strong effect on patient loyalty

According to the results the hypothesis that trust has a strong effect on patient loyalty to their provider is proven. The results suggest that only patient perceived value, and patient trust have an effect on patient loyalty. Patient perceived value has the strongest effect in patient loyalty, with a slope of (β=0.374; p< 0.001). This value according to Lee (2015) shows a very strong effect on patient loyalty.

Although the results show that patient satisfaction has a positive effect (β=.172), the p-value is above the threshold of statistical significance (p=0.052). This figure is marginally higher the 95% threshold, or a p-value of <0.05.

5.10 Conclusion

The results are in line with the literature discussed, and the framework hypothesised that although perceived value and satisfaction may have a relationship with patient loyalty, patient trust has strong effect on patient loyalty. This is to a greater extent influenced by the risk associated with making service purchases, because of the intangibility and high credence properties (Corbin et al., 2001). Patients rely on trust to mitigate the associated with these transactions.

Different frameworks were also discussed, which further highlights the complexity of the patient/provider relationship. Age and gender have been found to have some form of correlation with satisfaction (Anderson et al., 2008). According to Anderson et al. (2008) females and older customers have been found to be more satisfied than males and younger customers respectively. There is always a chance that satisfaction might be moderated my age or gender.

The first sub-problem was to confirm whether the hypothesised variables do indeed have a relationship. Confirmatory factor analysis was performed, which confirmed the grouping of the items into four variables. Secondly, correlation analysis confirmed the existence of a strong positive correlation between all the variables, in particular between the predictor variables and the dependent variable. This shows that there is indeed evidence of a relationship as hypothesised, with patient trust having the strongest effect (β=0.373; p< 0.000). As discussed above, although this is in line with our literature, the role of the credibility of the qualifications is the item with the lowest mean. This confirmed by 89% of the respondents not questioning the qualifications of the dental providers.

The total variance caused by all the predictor variables, represented by R^2, is .558. This implies that 55.8% of the variance in patient loyalty was caused by patient trust, perceived value, and satisfaction.

Notably, the item with the lowest mean amongst all variables is ‘TRUST- I believe my dentist is well educated’. This may point towards the role which credible institutions of a particular country play in the trustworthiness of healthcare professionals. South Africa is one of the highly rated countries in terms of the credibility of its institutions, and its universities are highly rated worldwide.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The results of the research that was conducted in three dental surgeries around Bronkhorstspruit, South Africa, reveal that patient trust, satisfaction, perceived value do indeed have a relationship with patient loyalty. Patient trust has been found to have a strong effect on patient loyalty.

According to recommendations made by other similar studies like Caruana and Fenech (2005); Sumaedi et al. (2014) the most prevalent limitation of their studies is the inability to generalise their findings. This is influenced by the complexity of the relationship between a provider/patient relationship, and the moderating effect of socio-economic factors. However, this study largely focused on the South African context, and cognisant of the limitations to generalise the findings.

The implications of the findings are intended to assist dental providers around Bronkhorstspruit, and South Africa in appreciating the value of patient loyalty, as articulated in the literature review, but also to understand its underlying drivers. Each of the predictor variables has an indicator/s to assist in operationalising the findings.

6.2 Conclusion and recommendations

The results revealed a strong correlation between the tested variables. However, there was notably a strong correlation, 0.779, between satisfaction and perceived value. The confirmatory factor analysis also loaded most of these predictor variables' items together. This may point to a unique relationship between these two variables, as posited by Caruana and Fenech (2005) that perceived value has an indirect effect on satisfaction. The above infers that operationally neither of these constructs should be neglected at the expense of the other, as results suggest an element of interdependency.

All the tested predictor variables namely patient trust, perceived value, and satisfaction have a strong effect on patient loyalty- each has a slope of $\beta \geq 0.1$. The

total variance caused by the predictor variable combined is 55.8%. The R^2 value suggests that there may be other constructs that have an effect on patient loyalty that account for 44% of the variance.

Patient trust has a strong effect on patient loyalty as the results suggest. This is particularly expected in an industry that has high credence properties. Based on our research instrument, there are two indicators for patient trust namely credibility and benevolence. Credibility seemed more influential to the respondents, as it had the lowest mean- to be specific, the credibility in the qualifications of the provider. This may also imply the credibility of the institutions where the provider qualified.

All of the constructs remain crucial in promoting patient loyalty, but patient trust is the *sine qua non* of loyal patient. Loyal patients that are not only showing their loyalty through repeat visits, but also promote the practice to others are the backbone of a dental practice.

6.3 Suggestions for further research

Firstly, the study was only limited to dental practices in Bronkhorstspruit with a sample size of 118 respondents. This poses a challenge to the ability to generalise the findings of this study. The healthcare industry still lags behind in the area marketing, particularly the role patient loyalty to the sustainability of healthcare establishments. The rapid advancements in technology are complicating the external factors further. Therefore, it is imperative that more resources are employed to undertake bigger studies, that can be generalised, and to understand the underlying constructs of patient loyalty, in order catch up with rest other sectors.

Secondly, the variance in patient loyalty due to the predictor variables was recorded as 55.8%. This implies that there are other constructs responsible for patient loyalty. There are more constructs that need to be tested in order to understand their role in explaining patient loyalty. One that may be recommended is the role of industry regulatory institutions on patient loyalty, or their trustworthiness as a key determinant of patient loyalty.

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