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Key factors that impact customer service delivery in South African retail banks.

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Key factors that impact customer service delivery in South African Retail Banks

Kenneth Matlhole

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

Johannesburg, 2016

ABSTRACT

Purpose – To determine the service-quality factors that are important to South African retail banking customers. With the changes taking place within the economic environment like technology advancements and banking de-regulation, competition is increasing in which servicing is being used as tool for competitive advantage.

Design/methodology/approach – A total of 217 South African retail bank customers responded to a questionnaire, which was based on SERVQUAL. Confirmatory and Exploratory Factor Analysis (EFA) were used to validate the SERVQUAL Model, and to identify other relationships between the service constructs. Using the means from the importance scale, the service attributes were ranked. The Wilcoxon-Mann-Whitney and Kruskal Wallis test were applied to measure the statistical difference of means between the demographic groups of age, gender and income.

Findings – Fit statistics indicated that the observed data was not a good fit to the SERVQUAL scale. High correlation was observed between the service dimensions. EFA produced four dimensions, namely *credibility and accuracy, tangible representation, attitudes and behaviour and eService access.* With regard to demographic impact, only low importance had a statistical difference of means.

Research limitations/implications – There were some difficulties in obtaining a normal distribution of channel usage, ethnicity, and age distribution. Future research could be directed at how service importance is impacted by channel usage, ethnicity, and understanding how service differs in a business-to-business (B2B) environment.

Practical implications – Findings of this study might help South African retail banks identify which elements of service quality are important to customers, enabling banks to create strategic competitive specifications to meet customer demands.

Originality/value – This study assesses the SERVQUAL instrument on the basis of importance ranking and with the aim of identifying service attributes. How technology has played a role in these service attributes is also explored.

Keywords Retail banks, SERVQUAL, services quality, South Africa, Factor analysis

DECLARATION

I, _____, 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.

Kenneth Matlhole

Signed at ……

On the …….. day of …… 20…..

DEDICATION

To my treasured mother, Ninki Junior Matlhole, thank you for yesterday's memories, today's sunset and tomorrow's sunrise. For it is you that has created who I am today, and it is your sacrifices and support that guide my way.

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I would like to express my deepest gratitude to the following individuals:

- My mother, Ninki Matlhole, who provided as much support as she possibly could. Her constant love is the one thing that has remained constant in my life and studies. I consider her to be the lighthouse when I am at sea, always helping me to find my way.
- My close friend, Nikita Preston, for continuously checking on me during this testing period, and providing me with the motivation to work, even on days when I had no energy or will power. She believed that I could complete this research within the allocated timeframe. Having her believe in me, allowed me to believe in myself, and for that I thank her.
- Mike Mundy, my supervisor. At first I thought the role of a supervisor was to ensure that I do my work, but I quickly realised that the role he played was to provide direction and support when I asked for it. Thank you for your support and guidance.
- FNB, my employer, for paying for my studies and giving me the opportunity and time, away from the office, to complete my research.
- My colleagues and team, for carrying all the work weight on thier shoulders, while I was away from the office. Thank you for your understanding and commitment to work
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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this research was to determine the factors that are important in defining service quality for retail banking customers, using the SERVQUAL model. The study further established whether service attribute importance differed based on specific demographic preference among customers.

1.2 Context of the study

The following section contextualises concepts of customer service. Section 1.2.1 provides an overview of the South African banking sector, with factors that have contributed to customer service expectation. Section 1.2.2 addresses the concept of competitive customer service, and provides a perspective from which customer services will be viewed with respect to the study.

1.2.1 *South African retail banks*

The South African banking sector operates within an oligopolistic market, which is characterised by a few market participants, and where product and pricing are determined primarily bench marking of other competitor's pricing and products (Rensberg, MvConnell, & Bruce, 2011). While there are over 40 banks, either operating as registered banks, foreign banks, mutual banks or co-operative banks (South African Reserve Bank, 2014), the four main banks, FirstRand, ABSA, Standard Bank, and Nedbank, have primarily dominated the South African banking sector, with a total asset value of the four banks accounting for over 84 percent of the banking sector asset value (South African Reserve Bank, 2011). 14 years ago, Saambou, one of seven large banks in South Africa in 2002, went under curatorship after there was a mass withdrawal of deposits by customers, which stemmed from a lack of trust of the bank and its ability to manage customer's funds (Jones, 2014).

Today, in 2016, the South African banking sector is faced with similar challenges that span across international pressures left over from the recent financial crisis of 2008 to local events such as the 2014 curatorship of African Bank and subsequent delisting.

The banking sector is both a product- and a service-orientated industry, but service quality, through value added services and customer services, has continued to become a key focus of differentiation and competitiveness, locally and internationally (Auerbach, Argimon, Hieronimus, Roland, & Teschke, 2012; Metcalfe, 2009).The focus of differentiation and competitiveness through customer service is highlighted by research conducted by Metcalfe (2009, 2011), that suggests that the change in legislation and regulation has made it difficult for retail banks to compete at a product and price level. At the same time regulation and technology has allowed for new entry of entities to the banking sector (Metcalfe, 2009). From an African perspective these new entrants have managed to capture large populations that were previously unbanked by offering lending- and payment solutions outside the traditional banking structures, such as Vodacom M-Pesa (PricewaterhouseCoopers, 2015).

Solutions such as Internet banking, big data analytics and cloud computing are changing the world we operate in (PricewaterhouseCoopers, 2015). The advancement in technology has also affected the business models we operate in, where the likes of social media have given banks and customers new channels to interact. Secondly, social media allows customers to be better informed, through receiving information between each other and banks (PricewaterhouseCoopers, 2015). With this increase in technology and movement from physical and tangible distribution channels towards self-service electronic channels, PricewaterhouseCoopers (2015) states that the challenge for financial institutions will be developing deeper relationships with customers on these digital channels.

A number of researchers – for example, Hossain and Leo (2009) and Bick, Abratt, and Moller (2010) – have indicated that financial institutions need alignment between products and services offerings.

To ensure competitive advantage over their peers they need to excel in quality service. Furthermore, institutions with better customer service tend to have better customer retention and have better financial performance than their peers, which allows them to survive and prosper (Williams & Naumann, 2011). While the importance of customer service is recognised by many financial institutions, a concern exists that not all is being done to ensure that customer service is managed and prioritised (Metcalfe, 2009). Owing to customer and workforce presence being in the output process of services, there is difficulty in managing and evaluating service as opposed to non-service production (Sampson & Froehle, 2006).

1.2.2 *Competitive customer services*

One of the key issues in service management is the lack of a consistent definition in classification or categorisation of service and service management (Metters & Marucheck, 2007). Bo, Anders, and Inger (2005) aimed at defining services and considered the definition of service as either a category of market offerings or perception of value creation. Bo et al. (2005) defined services as being a customer perspective on value creation, since the focal point is on the customer and what he or she considers as being value creation. All other aspects, which the customer does not find value in, are removed (Bo et al., 2005). Other definitions of services relate it to a financial transaction of intangible goods, such as entertainment, education, and financial services (Arasli, Mehtap-Smadi, & Salih Turan, 2005). For the purpose of this study, service will be considered as value creation that is perceived by the customer, which could be financial or non-financial value creation.

In order to measure the competitive advantage of an organisation based on its service, the quality of service provided must be examined (Bick et al., 2010). Since service is seen as intangible and is viewed from the perspective of value creation, measuring service quality may provide to be difficult. For this reason organisations would need to measure their customers perceptions of service quality (Karatepe, Yavas, & Babakus, 2005).

In an early study conducted by Boulding, Kalar, Staelin, and Zeithaml (1993), which is later referenced by Chen (2008), perception is defined as what the customer has previously experienced. Irrespective of the industry, the same view is held regarding the measurement of service quality where Akbaba (2006) considers customers' expectations as the key metric in measuring service quality. For the purpose of this study the measure of service quality will be considered from the customer's expectation of importance.

Since service quality is an evaluation based on customer expectation it can be argued that perception of service quality and value affect satisfaction (Chen, 2008). Satisfaction is considered as the gap between the expected service and what the customer experiences (Chen as cited in Oliver, 1980). Satisfaction can invoke either positive feelings or feelings of displeasure. These feelings have a direct impact on the behavioural intent of the customer (Chen & Chen, 2010). Although, in practice, "service quality" and "satisfaction" are used interchangeably, for the purpose of this study, Oliver (1980) original definition of customer service will be adopted, where customer satisfaction is related to the difference between perception and experience.

1.3 Problem statement

1.3.1 *Main problem*

This study will identify the main drivers of customer service together with the sub-factors influencing each driver within South African retail banks. The relevant importance of each factor is identified and is also classified according to the demographic factors of customers. Such classification will allow for the alignment of customer service expectations and bank's operational objectives in being competitive.

1.3.2 *Sub-problems*

Sub-problem 1: Identify customer's retail banking service requirements when selecting banks, based on relative importance of service attributes and service drivers.

Sub-problem 2: Identify the specific service requirements between customers based on demographics and characteristics that will allow for financial institutions to provide service differentials based on these identified needs.

1.4 Significance of the study

1.4.1 *Adding customer value*

This study might provide research-based guidance to the service function within the financial services sector – more specifically, retail banks – in identifying the factors that make up service quality. The study might lead to the identification of which properties of service quality are important to customers. With customers holding the purchasing power of services and products, it is important that retail banks focus on meeting the customer's demands so that the customer can select to either purchase or not purchase the service based on their expectation and needs(Smith & Fischbacher, 2005).

1.4.2 *Creating a strategic competitive advantage within an organisation*

One of the key drivers of strategic change within an organisation is changes in the external environment, such as advancements in technology that influence customer needs and service (Hossain & Leo, 2009). While a number of publications have identified customer service (Akbaba, 2006; Bick et al., 2010; Chen, 2008; Chen & Chen, 2010), it was necessary to conduct a modern study of customers' service expectations within retail banks. The purpose of this modern study was to assess whether the needs of customers with regard to retail banks have changed as a result of external environmental changes.

1.4.3 *Improving company financial performance*

Retail banks that focus on delivering the identified important customer service factors might benefit financially, since financial institutions with better customer service tend to retain their customers and, for this reason, are in a better financial position (Williams & Naumann, 2011).

1.5 Delimitations of the study

The scope of the study was limited to:

- Business to customer services between retail banks and consumer customers;
- All South African retail banks within the financial services industry;
- Mainly FNB-based respondents as a result of distribution methodology; and
- Online administration of the survey, which limited the respondents to individuals with access to the Internet.

This study did not include:

- Examination of business to business services between banks and businesses;
- Commercial and corporate banks' relationships with customers;
- All other customer market segments besides the consumer and premium customer market; and
- Actual service implementation that are conducted and carried out in South African retail banks.
- Bank specific services, based on the 5 major banks was excluded.

1.6 Definition of terms

Table 1 sets out and defines the terms that were used in the study.

Table 1: Definition of terms

Term	Definition	Reference
Cost efficiency	When a company aims to keep its operational costs, such as labour and capital, low in comparison to other companies.	(Dilworth, 2000)
Core services	Basic items that customers would want from a product or service. For example, a transactional account for depositing money.	(Chase, Aquilano, & Jacobs, 2001)
Dependability	Being readily available to meet customer demands in the delivery of a product or service on schedule.	(Dilworth, 2000)
Flexibility	The ability to respond quickly to change, in relation to operations management. Flexibility relates to changes in product design, product mix and volume.	(Dilworth, 2000)
Quality	Significant superiority of a product or service in relation to its competitors.	(Dilworth, 2000)
Value-added services	The services that organisations use to differentiate themselves form competitors and that also assist in an organisation's retention of customers in a positive way.	(Chase et al., 2001)
Service attribute	This is a service item, such as *"Understanding customer needs*".	(Parasuraman, Berry, & Zeithaml, 1988)
Service dimensions	These relate to a grouping of service attributes; for example, the service dimension of "empathy" consists of service attributes that relate to communication, access and understanding customer needs.	Parasuraman, Zeithaml, & Berry, 1988)

1.7 Assumptions

- Since the observed data was collected by means of a survey, it was assumed that the respondents were truthful and honest when completing the questionnaire. It was also assumed that respondents understood the questions posed and that there was no ambiguity in the questions.
- The survey focused primarily on what customers consider as important factors to being serviced in a retail bank, hence it can be assumed that the respondents specific banking relationship had no impact in defining what they consider as important service quality attributes.
- SERVQUAL was used as a skeleton in defining service items that were important to customers. Since there were no set standard service items it was assumed that the SERVQUAL items represented the respective service attributes/items of customers.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

In addressing the problem statement defined in Chapter 1, it is crucial to provide a context to the field of customer service, more specifically in banking, and to understand the current state of knowledge regarding the subject. The literature review has been structured into two main sections. The first is Customer Service Management*,* more specifically the authenticity and accuracy of the SERVQUAL model, which evaluates literature that addresses sub problem 1. The second section (Section 2.4) deals with demographic influences on service quality, such as the impact of gender and the impact of income, which address sub-problem 2. Definitions are provided in order to contextualise the topic.

The development and the evolution of the topics are then discussed, followed by the respective debates, which present the hypothesis and research questions within the concluding section – Section 2.5.

2.2 Background discussion

Traditionally, banking has been characterised by indistinguishable product offerings aimed at a wide customer group rather than at a particular segment (Culiberg & Rojsek, 2010). With changes taking place within the economic environment such as market globalisation, technological advancements, and de-regulation of the banking sector, competition has increased and has seen new entrants establishing themselves in the banking sector. In the case of the South African banking industry, we have seen the likes of telecommunication companies MTN and Vodacom accessing the mobile payment space. Retailers such as Checkers and Shoprite now provide a service to send money. These entrants are offering new and competitive products and services, which threaten the existing banking fraternities (Carlos Fandos Roig, Sanchez Garcia, Angel Moliner Tena, & Llorens Monzonis, 2006; Kumar, Tat Kee, & Taap Manshor, 2009; Lewis & Soureli, 2006; Seth, Deshmukh, & Vrat, 2005).

2.3 Customer Service Management

2.3.1 *Defining service*

Earlier ideas on what comprises service are based on work conducted by Parasuraman, Berry, and Zeithaml (1985), who characterised service as perishability, inseparability, heterogeneity, and intangibility. This model has been a topic of much debate as to whether it truly defines services and whether it can be applied to all types of services, or whether service varies based on services provided similarly to how product offerings are based on products (Edvardsson, Gustafsson, & Roos, 2005). The question that arises is whether the same generic models and scales can be used with the advancement of technology, which incorporates electronic services in banking. Bo et al. (2005) suggest that services are different from each other, and one should look at services as a perspective of value creation through the lens of the customer. These authors point out that services should not be generalised but be applied to situations where they are useful. Bo et al. (2005) define three core elements of services: activities involved, interactions (between the customer and the service provider), and solutions to customer problems.

2.3.2 *Service quality measurement tools*

Customer value has solely been viewed as the value that customers bring to an organisation (Munusamy, Chelliah, & Mun, 2010). Over time the idea of value has shifted from being internally focused to being based on how the customer views the value provided (Bo et al., 2005). Carlos Fandos Roig et al. (2006) argue that while it is understood that consumer-perceived value is important in the performance of a banking institution, it is not yet clear as to what the requirements of customers are. For this reason it becomes difficult to measure and focus on these requirements. A number of models have been created in order to determine these customer requirements and provide a plan for improvement and problem identification (Carlos Fandos Roig et al., 2006; Seth et al., 2005).

Carlos Fandos Roig et al. (2006) and Seth et al. (2005) specify that various models have been developed over the years. These models start with Gronroos (1984) Technical and Functional Quality Model (TFQ), which looks at matching expected services with the customer's perceived service in order to measure customer satisfaction. The model defines three components of service quality. These three are technical (what the client actually receives), functional (how the service is received), and image of the organisation.

A follow up to TFQ as specified by Seth et al. (2005) was the GAP model, developed by Parasuraman et al. (1985), which proposed that service quality is a function of the difference between expectation and performance. Five gaps were identified based on this model, as shown in Figure 1. This model can be explained as follows (Parasuraman et al., 1985):

- Gap 1: The gap between the expectations of customers and what management perceives customer's expectations to be;
- Gap 2: The difference between management's perceptions of customers' expectations and the translation of the customer's expectations to service quality specification;
- Gap 3: The gap between what has been translated as service quality specifications and the service being delivered;
- Gap 4: The difference between what has been communicated to customers and the actual service being delivered; and
- Gap 5: The difference between customer-perceived service and expected service.

All of the gaps besides Gap 5 are in the organisation's control, while Gap 5 is based on what the customer experiences and expects.

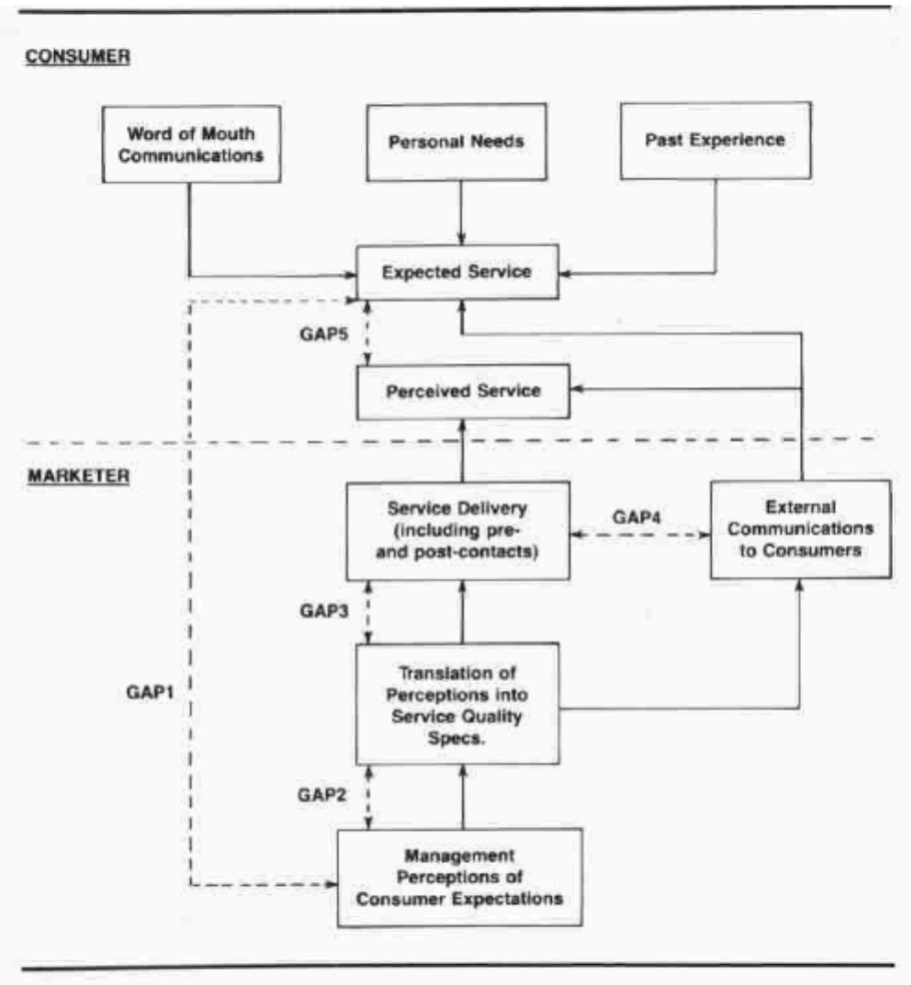

Figure 1: GAP model defining the various gaps established between consumers and the organisation (Parasuraman et al., 1985)

2.3.3 *SERVQUAL model*

Seth et al. (2005) explains that the GAP model was modified in 1988 to what we now refer to as the SERVQUAL model, which is effectively Gap 5. The SERVQUAL model measures the gaps between customer expectations and perceptions after they have received the service (Parasuraman et al., 1985, 1988; Seth et al., 2005).

In 1985 the SERVQUAL model effectively had 97 attributes of service, which were grouped into ten then five dimensions of service.

These dimensions are “tangibility”, “reliability”, “responsiveness”, “assurance”, “empathy”, and “convenience” (Kumar et al., 2009; Parasuraman et al., 1988; Seth et al., 2005). Parasuraman et al. (1988) summarises these dimensions as follows:

- Reliability: Delivering what is promised with accuracy and dependability;
- Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence;
- Empathy: Caring for customers and providing individualised attention;
- Tangibles: Physical facilities, marketing material and personeel; and
- Responsiveness: Willingness to provide prompt service and help customers.

Figure 2 provides a visual representation of the SERVQUAL model. Over the years the number of attributes was amended by Parasuraman, Berry, and Zeithaml (1991) to 22 attributes that define the dimensions of customer service. A number of service delivery models, have been developed in order to cater for these various services, such as the Internet banking model. However, the GAP and SERVQUAL models have been the basis of all modern models and analysis and remain the main form of model for understanding and measuring customer service (Culiberg & Rojsek, 2010; Seth et al., 2005).

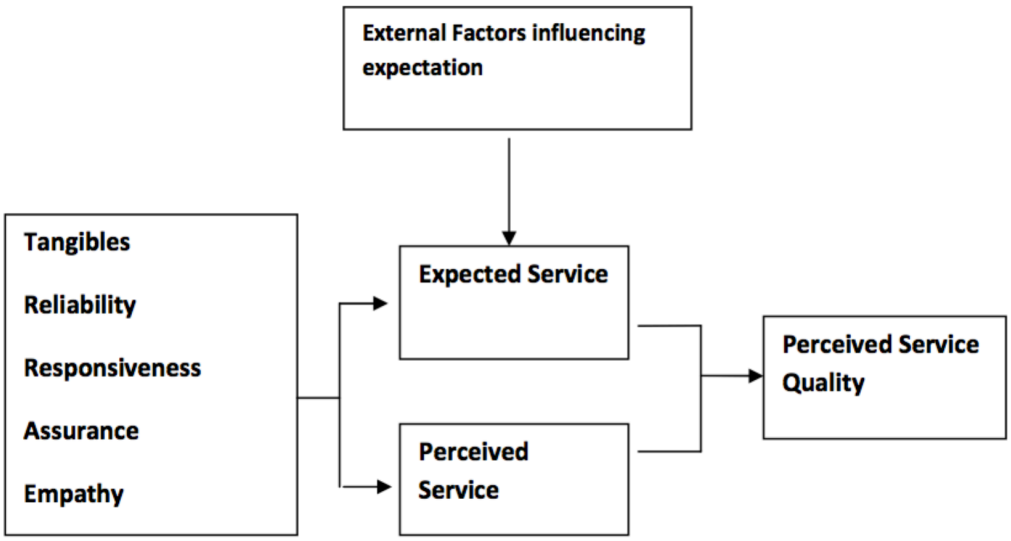

Figure 2: SERVQUAL model (Parasuraman et al., 1988)

2.3.4 *Debates concerning SERVQUAL*

While SERVQUAL remains the main form of model used to understand service quality measures, there have been many debates around the use of SERVQUAL.

Based on early works of Cronin Jr and Taylor (1992) there is an argument that service quality should be measured as an attitude, which is not taken into consideration through SERVQUAL. This weakness has resulted in a new model being proposed – the SERVPERF model – that looks at service quality as matter of performance (perception with expectation) rather than satisfaction. However, Culiberg and Rojsek's (2010) findings indicate that there is no consensus in the dimension used to measure service quality, which implies that whether SERVQUAL or SERVPREF is used, there is no real difference in the results obtained.

Another fundamental issue with SERVQUAL is that it is based on a gap score, which reveals the difference between expectations and perceptions (Parasuraman et al., 1988). What has been identified by a number of researchers is that customers' expectations are always significantly higher then their perceptions (Kemal Avkiran, 1994).

Culiberg and Rojsek (2010) indicate that the model needs to be calibrated for the sector concerned and the specific cultural context. Bick et al. (2010), who used the SERVQUAL model to study customer service quality in African banks, argue otherwise. Through their study, Bick et al. (2010) found that the SERVQUAL model was effective even though it had been criticised for not catering for other dimensions such as cultural differences and industry differences. Zalatar (2012), through his review of the literature, identifies that SERVQUAL has been used in a number of industries such as banking, retailing, hotels, airlines, and health services, among other. Parasuraman et al. (1988) advised that the five dimensions have discriminant validity (i.e. no overlap in the dimensions) and convergent validity of the service attributes.

As pointed out by Llosa, Chandon, and Orsingher (1998), in the development of SERVQUAL oblique rotation was used, which means that the dimensions had to be correlated. Llosa et al. (1998) study iindicated high interdependency between reliability, assurance and responsiveness. What is further noted by Llosa et al. (1998) is that McDougall and Levesque's 1992 study of the replication of SERVQUAL showed high correlations in the figures of 0.52 and 0.81 for all factors besides tangibility. Hence a steep direct linear relationship between the dimensions existed (Llosa et al., 1998).

However these finds are contradicted by Ladhari (2009), who investigated the dimensionality, discriminant validity, reliability, and convergent reliability of SERVQUAL. His findings support the five dimensions of SERVQUAL, where he showed convergent validity of the attributes through their factor loads, Ladhari (2009) stated that discriminant validity was achieved. The concerning part about the discriminant validity is that the results are not shown in the paper as evidence, which puts the results and the study into question. Asubonteng, McCleary, and Swan (1996) note that in studies reviewed, the factor loads presented by other researchers do not reflect those provided by Arun Parasuraman et al., (1988) as they are inconsistent, which further brings into question the discriminant validity of SERVQUAL.

2.3.5 *Customer satisfaction debate*

The debate from a customer satisfaction perspective is whether customer satisfaction leads to service quality or whether service quality results in customer satisfaction. Culiberg and Rojsek (2010) state that some studies have defined service quality as an outcome of customer satisfaction, but later studies have indicated that service quality precedes customer satisfaction. Munusamy et al. (2010) argue that many researchers identify customer satisfaction as a level of feeling, which is the result of comparing the perceived performance with customer expectation. Customer satisfaction can be split into either transactional satisfaction, where evaluation takes place directly after experience, or cumulative satisfaction, in which the evaluation takes place over

a long duration. Ideally, customer satisfaction is measured according to the cumulative period (Munusamy et al., 2010).

Lewis and Soureli's (2006) research determined the strong relationship between customer satisfaction and loyalty, which is defined as a period in which a customer has been with a provider, the number of services provided and the frequency of service use. The nature of the service, the relationship with the customer together with method delivery are considered to be important factors (Lewis & Soureli, 2006). Loyalty can either be defined as behavioural, attitudinal or it can be categorised based on the combination of behavioural and attitudinal loyalty (Lewis & Soureli, 2006). Behavioural loyalty refers to when the customer performs repeated transactions with service provider, while attitudinal loyalty refers to the customer's attitude to service received together with brand influence (Lewis & Soureli, 2006).

Manrai and Manrai (2007) determined that four dimensions of customer satisfaction exist, which impact on customer loyalty. These dimensions are personnel, financial consideration (interest and earning), environmental consideration, and convenience. Lewis and Soureli (2006) found that image, trust and service quality influence loyalty, which is inline with Arbore and Busacca (2009) and Manrai and Manrai (2007) who identified the social factor of relationships together with non-financial aspects of banking, such as staff, atmosphere, and trust as being crucial to customer loyalty.

2.3.6 *Alterations to SERVQUAL*

While there are various models of service quality with their respective dimensions (Akbaba, 2006; Arbore & Busacca, 2009; Bick et al., 2010; Carlos Fandos Roig et al., 2006), the majority of this literature has split the dimensions of service quality and value into 'hard' and 'soft' dimensions; 'hard' in reference to easily measurable or tangible dimensions such as responsiveness, cost and quality and 'soft' relating to the social and emotional dimensions, such as assurance and empathy.

Maddern, Maull, Smart, and Baker (2007) divide SERVQUAL into two categories. These categories are Functional Service Qualities (FSQs), which relate to “doing” and Technical Service Quality (TSQ), which relates to “doing the right thing”. It is argued that too much focus has been given to FSQs (Maddern et al., 2007). The research conducted by Maddern et al. (2007) found that while FSQs are important in determining customer satisfaction the process management is crucial to TSQ and impacts on customer service more significantly.

Further to splitting requirements into ‘hard’ and ‘soft’ dimensions, additional classification can be made in which customers’ requirements are separated into Kano, Seraku, Takahashi, and Tsuji's (1984) model (Arbore & Busacca, 2009; Maddern et al., 2007), which allows for assessment of the asymmetric (creation of satisfaction and dissatisfaction) relationships of the dimensions to service quality and customer satisfaction:

- *Basic needs:* do not contribute to satisfaction but if not met will result in dissatisfaction;
- *Excitement factors:* contribute to satisfaction if met but if not they do not result in dissatisfaction; and
- *Performance factors:* have a symmetrical impact on both satisfaction and dissatisfaction, if met and if not met

The ‘hard’ factors in SERVQUAL are to be considered as basic factors for delivery of service, which cannot be compensated for by performing on the ‘soft’ factors (Arbore & Busacca, 2009; Maddern et al., 2007). In addition to the ‘hard’ factors, reputation is ranked as a critical basic attribute, based on the recent financial market crash of 2008 and the African Bank liquidation, in which people perceived poor bank performance with high dissatisfaction (Arbore & Busacca, 2009).

2.3.7 *Important dimensions of SERVQUAL*

Bick et al. (2010) found that in the overall African results for service quality *responsiveness* was considered as the most important service dimension of retail banking African clients. Responsiveness was followed by reliability of service, tangibles, assurance and empathy. Key attributes of responsiveness that were considered as important by the respondents were staff efficiency, which incorporated the wiliness of staff to help customers and provide prompt service. The attribute that ranked second under responsiveness was queue lengths in branches. Similar to Carlos Fandos Roig et al. (2006), Arbore and Busacca (2009) identified similar constructs that add significant value in driving customer satisfaction. These include but are not limited to the impact of quality of core services provided, reliability, accuracy, speed, as well as the core relationship drivers, which seems to be the most important. These core relationship drivers comprise of responsiveness, competencies, trust, and friendliness.

Culiberg and Rojsek's (2010) study of the assessments of service quality in Slovenia banks suggests that staff conduct is thought of as the largest contributor to customer satisfaction through improved service; staff conduct is followed by product mix servicing, which also contributes significantly to satisfaction. Based on the literature of Arbore and Busacca (2009), Culiberg and Rojsek (2010), and Carlos Fandos Roig et al. (2006) there is a clear indication that the biggest influencer of customer service quality that impacts on customer satisfaction is related to tangible dimensions and attributes, more specifically face-to-face-related matters, such as responsiveness, tangibility, and reliability.

2.3.8 *Impact of technology*

Towards the late 1990s and early 2000, with the introduction of internet and mobile telephones, IT-based solutions have become a weapon for financial services to migrate services from physical location to electronic channels, and allow these IT-based solutions to provide efficient customer service (Ganguli & Roy, 2011; Sousa & Voss, 2012).

Firstly technology can provide a competitive advantage, through offering cheaper banking solutions and convenient channels for customers to perform their banking, secondly it helps banks in increasing profits through better cost management (Ganguli & Roy, 2011). Ganguli and Roy (2011) state that the increase in technology-based services has resulted in a decrease in the human interaction customers have with financial services, and this low interaction reduced customer satisfaction.

Sousa and Voss (2012) specify that one would expect that the current service model, more specifically SERVQUAL, would be sufficient in defining and measuring the service-quality- and customer-loyalty relationship. Ganguli and Roy (2011) identified the following technology-based service-quality dimensions: technology convenience, security and information quality, easiness and reliability and customer service. Sousa and Voss (2012) showed that the key dimensions that have the largest influence on service quality are competence and convenience. If improved, these dimensions could result in an increase of 76 percent improvement in customer satisfaction.

For the purpose of the research paper *competence* is defined as employees/staff being able to conduct their tasks and provide prompt friendly service, while *convenience* makes reference to activities that reduce the customer time and effort in receiving a service (Sousa & Voss, 2012). The opposite results were demonstrated by Munusamy et al. (2010). Their results indicated that tangibles were important to customers who had migrated to electronic channels. Migration to electronic channels has a direct impact on convenience as customers have the opportunity to transact 24/7 at their disposal. All other dimensions, such as assurance, reliability, empathy and responsiveness had no significant impact on customer satisfaction (Munusamy et al., 2010). Ganguli and Roy (2011) found that customer service is the most important service-quality dimension as it consists of items related to call centres (which are considered a technology-based channel) quality and problem solving.

Sousa and Voss (2012) argue that the adoption of electronic Services (eServices) may impact on the total service relationship with the client, because they reduced the value that customers derived from similar services being conducted in physical branches where customer loyalty can be developed. e-channel service dimensions such as; privacy/security, information quality, ease of use, reliability and responsiveness can be reinforced so that the channel used can gain loyalty. The e-channel service dimensions together with human interaction, creates a 'lock-in effect' for the customer (Sousa & Voss, 2012).

The question that arises is whether the current models for measuring the dimensions of service quality still hold true where services have been migrated to other electronic and self-service channels. Another question is whether the reduction in face-to-face service has impacted on customer service. What is clear is that the focus and developments of service-quality models have moved to IT and e-commerce-based services (Seth et al., 2005).

2.4 Demographic influences on service quality

Companies have always segmented customers on the basis of demographic variables such as income, age, gender, ethnicity, material statues, etc. (Mokhlis, 2012). Out of all service industries, the banking sector is the one industry and most likely the largest that caters for the needs of customers across the entire social spectrum (Vasantha & Sheela, 2011).

2.4.1 *Impact of gender on service quality*

Branca (2008), who aimed at understanding how demographic characteristics contribute to consumers' decision on bank delivery channels, tested his hypothesis on whether gender had an indirect influence on channel usage. Branca's (2008) research found that from a gender perspective males had a higher adoption of technology-based services than females. Ganesan-Lim, Russell-Bennett, and Dagger's (2008) review of the demographic impact on service quality expected that gender difference would be based on stereotypes built up during gender role socialisation.

Females would be more sensitive to quality service because of their enhanced decoding ability and reliance on tangibles in the environment. The result of the enhanced decoding ability is that Ganesan-Lim et al. (2008) expected that females would rate services more highly than males. Ganesan-Lim et al. (2008) found that gender had no significant effect on service interaction irrespective of the contact levels given to males and females. In a similar study of service quality Mokhlis (2012) evaluated the impact of gender when it came to customer satisfaction and service quality. Mokhlis (2012) attributed the difference to the role of socialisation, the unequal decoding ability and unequal information processing of males and females. Unlike the earlier studies of Ganesan-Lim et al. (2008), Mokhlis's (2012) study found that out of the 5 dimensions of service quality, empathy was the highest discriminator between males and females, followed by tangibles and reliability. In these cases, males allocated more importance to these service attributes than females did. However, factors such as responsiveness and assurance were equally important for males and females.

In an effort to create customer-related strategies Zalatar (2012) set out to discover whether gender played a significant role in defining the degree of importance of the five dimensions of service quality. Similar to Mokhlis's (2012) study, males and females gave the same degree of importance to assurance and responsiveness., However, Zalatar (2012) found that reliability was ranked equally important and had the highest importance for both men and women. A similarity between the studies was the importance of tangibles and empathy, where tangibles were ranked fourth highest for men and fifth highest for women (Zalatar, 2012).

When it came to the specific constructs that make up the respective dimensions, males perceived that being provided the service at the time they were promised and feeling safe during the transaction were the most important constructs. Women gave the perception of staff being neat in appearance the highest mean rating. The lowest mean rating given by males was for the constructs of: visual appealing material, being told when the service would be done and the bank having operating hours convenient to all customers.

Females gave the lowest mean rank to the bank having the interest of its customers at heart (Zalatar, 2012). Male respondents gave a higher score to reliability and females gave a higher score to empathy (Zalatar, 2012).

2.4.2 *Impact of age and income differentials to service quality*

Although the literature has shown that gender impacts on perceptions of service quality, Vasantha and Sheela (2011) suggest that gender does not impact on customers' perceptions of service quality and the true differentiator in demographic factors is age. In their research hypothesis Vasantha and Sheela (2011) aimed to show that age was the only factor that had an impact on the perception of services offered. While Vasantha and Sheela (2011) created and adapted dimensions of service quality, they found that on the basis of income the dimensions that were ranked in importance were service, followed by tangibles and reliability. With regard to the age group it was shown that only the element of time played a significant role between demographic characteristics and customers' perceptions of services offered (Vasantha & Sheela, 2011).

Branca (2008), in his study of the demographic impact on channel selection, found that there was an indirect relationship between adoption of a technology-based channel and demographics, where age was a large discriminator of taking up electronic services. These findings are similar to the findings of Sohail and Shanmugham (2003), who found that there was an indirect relationship between adoption of technology and the customer's age, where older customers adopted less technology then their younger counterparts.

With regard to income Sohail and Shanmugham (2003) found that a direct relationship existed between adoption of technology and income, where higher-income earners would adopt technology more quickly than those with less income. The reasoning behind quicker adoption of technology was that with more income people are able to purchase devices such as laptops, cellphones, and computers, enabling them to have access to technology-based services (Sohail & Shanmugham, 2003).

Mattila, Karjaluoto, and Pento's (2003) study found similar results in which 30 percent of the upmarket customer used online banking as the main banking channel, which indicates that with increasing income there is a higher adoption of technology.

In China, Laforet and Li (2005), found that based on demographics, younger consumers reported that they more interested in online- and mobile-banking topics than older consumers. What is inferred is that the younger population were more aware of technology-based solutions and had become more educated of services offered through these digital channels and were able to adopt the technology. From an income perspective Laforet and Li (2005) found that the users of online banking were those in a higher-income band. These users were salaried employees and senior managers. However, with Ganesan-Lim et al. (2008) no evidence was found for income causing a difference in the perception of service quality.

A South African study, conducted by Coetzee, van Zyl, and Tait (2012) found that biographical variables such as age, income, race, and gender did not play a significant role in determining important factors of bank's service.

The interpretation of their results was that financial institutions, more specifically banks, should align their marketing strategies with specific selection criteria and not necessarily look at specific demographic factors (Coetzee et al., 2012). When individuals select a bank they select according to what the bank can offer rather than their specific demographic-based point of view (Coetzee et al., 2012). While it can be said that biographical variables are not important, the demographic criterion of age was the only thing that was considered as important, as 43 percent of the respondents were older than 55 years of age. Their age influenced the results as the majority of respondents were retired and relied on the bank to keep their funds safe.

2.5 Conclusion of literature review

The literature reviewed has shown that there is a positive correlation between better customer service quality and competitive advantage. The literature review has also demonstrated that service quality leads into customer satisfaction, and based on customer satisfaction, loyalty is created with the customer and the service provider. A large amount of research has gone into defining acceptable and reliable measures for service quality. The literature has shown that the most common and used model is SERVQUAL.

The SERVQUAL model, while still popularly used, has been questioned because the customer's expectations are always higher then their perceptions, invalidating the gap score. Secondly the discriminant validity of the dimensions, together with the convergent validity of the model, has been questioned. Parasuraman et al. (1988) state that in their study low levels of correlations were found between the dimensions. However, subsequent studies have found high correlations between the dimensions, indicating the interdependcy of the dimensions. Other elements that are brought into question are whether the migration to electronic channel impacts on service quality and whether the existing models such as SERVQUAL still hold true.

As a form of practical implications, the question was reviewed around whether differences in demographics – more specifically gender, age, and income – impact on service quality importance. The study indicates that the literature is still conflicted on this topic with inconsistent findings from a number of authors. Based on the literature reviewed the following hypothesis and research questions were proposed:

2.5.1 *Hypothesis 1*

The SERVQUAL scale does not display the five-dimensional structure in the context of what is important to customers in today's banking environment and channel usage

The hypothesis is based on whether SERVQUAL still holds true, in the light of an ever-changing environment and changes in customer needs. While Bick et al. (2010) have assessed customer service needs in the African context, and have found that SERVQUAL still holds true irrespective of culture, there is a need to perform a more recent study, which focuses primarily on South Africa.

Based on the work of Llosa et al. (1998), Kemal Avkiran (1994), and Asubonteng et al. (1996) who question the validity of SERVQUAL, the validity of the model needs to be tested using importance ranking, instead of gap scoring. In so doing, testing whether the gap score model is an issue and how that impacts both convergent and discriminant validity of the model. The expectation is that there will be significant overlap between dimensions as customers will not be able to distinguish between the various service dimensions. Secondly due to importance rating customer will tend to select majority of the service items as important, invalidating the dimensions.

Finally, with increasing technology and the migration of services to self-service, the notion of decreasing customer service based on lack of face-to-face is tested by adding in attributes of channel usage and convenience to the SERVQUAL model.

2.5.2 *Research Question 1:*

Can other relationships between service-quality constructs be identified, for creating new dimensions of service quality?

As indicated by Llosa et al. (1998), Kemal Avkiran (1994), and Asubonteng et al. (1996), the need exists to verify whether a new service model will be developed that provides discriminant and convergent validity, based on the attributes of SERVQUAL. The new service model will have to take into account importance ranking rather than gap difference as the score. With there being high interdependency between reliability, assurance and responsiveness, as discussed by Llosa et al. (1998), do the attributes of these predefined dimensions create new dimensions that are a combination of each?

2.5.3 *Research Question 2:*

How do gender, age, and income play a significant role in determining the importance of service quality?

The literature has shown conflicting results when it comes to service expectations based on gender, age, and income. Royne Stafford (1996) indicates that service quality could be more important to females than males, while Spathis, Petridou, and Glaveli (2004) indicate that males are more likely to rate services better than females do. Ganesan-Lim et al. (2008) found no significant evidence in the impact of age, income and gender on service quality preferences, Mokhlis (2012) found differences between genders that was attributed to a more positive perception of service by females. Based on importance ranking it is key to evaluate whether demographics do play a role in determining service needs. The results of this evaluation would enable banks to compile service specifications that meet the needs of those demographics.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter describes the methodology together with the statistical techniques used that addressed the main problem of identifying the main drivers of customer service, together with the sub-factors influencing each driver within South African retail banks. The relevant importance of each factor is identified and also classified based on the demographic factors of customers. This identification and classification allow for alignment of customer-service expectations that will assist in a particular bank being competitive within retail banking.

Table 2: Alignment of sub-problem and hypothesis

	Sub-problems:	Hypothesis/research question:
1	Identify customer's retail banking service requirements when selecting banks, based on relative importance of service attributes and service drivers.	H1: The SERVQUAL scale does not displays the five-dimensional structure (tangibles, reliability, responsiveness, assurance, empathy) in the context of what is important to customers in today's banking environment and channel usage
		RQ1: Can other relationships between service-quality constructs be identified, for creating new dimensions of service quality?
2	Identify the specific service requirements between customers based on demographics and characteristics that will allow for financial institutions to provide service differentials based on these identified needs.	RQ2: How do gender, age, and income play a significant role in determining the importance of service quality?

Based on the literature reviewed in Chapter 2, Table 2 documents the link between the sub-problem and the corresponding hypothesis and research questions.

The chapter sets out: the methodology and design; population and sample techniques; research instrument; procedure for data collection, analysis and interpretation of the data; and, lastly, the limitations, reliability and validity of the research methodology.

3.1 Research methodology /paradigm

The research paradigm applied was quantitative in nature. Creswell (2013) explains that in the case where researchers and investigators have used post-positivist claims, such as hypothesis, measures and observations, and test of theories in developing knowledge, a quantitative approach has been used. In the quantitative method, statistical data is yielded though experiment, survey or questionnaire in a predetermined instrument (Creswell, 2013). The quantitative method is appropriate for the research paradigm as the research is a hypothesis together with two research questions that require empirical testing, through the collection of data. The limitation to this method is that while these are tangible statistics, there is a level of participant perception that creates bias in some of the results. Reference is made to reducing this limitation in Section 3.8.

3.2 Research design

A quantitative research design can be attained through data collection, by means of structured interview, and by means of unstructured data collection like observations (Axinn & Pearce, 2006). A quantitative survey design was applied to the research based on the SERVQUAL model, initially applied by Parasuraman et al. (1985). The aim of the quantitative study is to test the hypothesis and research questions of service-quality importance to customers to allow for the resolution of sub-problem 1 and sub-problem 2.

Based on the literature reviewed (Bick et al., 2010; Culiberg & Rojsek, 2010; Maddern et al., 2007; Sousa & Voss, 2012) the majority of customer-service-quality research uses designs based on SERVQUAL as part of the quantitative survey design. Using Qualtrics, an online survey builder, a questionnaire based on the 22 questions of SERVQUAL was sent to banking customers, through online administration and email and social media.

The disadvantage/limitations of using a survey SERVQUAL design are listed in Table 3:

Table 3: Advantages and disadvantage of survey

Advantages	Disadvantages
• Potential to generalise to a larger population, based on sample size (Mouton, 2001) • SERVQUAL has good reliability and validity and has broad applicability (Parasuraman et al., 1991) • Allows for standardisation of collection of data (Rattray & Jones, 2007)	• High refusal rate, where customer do not want to fill in the survey (Mouton, 2001) • Data capturing errors could result (Mouton, 2001) • Lack of depth and insider perspective creates surface-level analysis (Mouton, 2001). • Favouritism of a specific question can occur, necessitating the use of a pilot questionnaire (Rattray & Jones, 2007) • SERVQUAL questionnaire items are specific and, therefore, if there are any service needs outside the scope of the research they will not be identified.

3.3 Population and sample

3.3.1 *Population*

The population consisted of all individual retail-banking customers who hold at minimum, a transactional banking product with a South African banking institution.

The respondents were 18 years and older, with a South African banking relation at the time that the survey was administered. To ensure understanding of the survey, English-speaking respondents made up the majority, with no specific preference to English being a first or a second language. Since the survey was administered digitally through email or social media, respondents required internet access.

3.3.2 *Sample and sampling method*

Lee (2015) states that the sample size of a population is generally determined by the type of analysis that is to be conducted. While a large sample is better, it is not always possible to achieve such a sample (Lee, 2015). Based on Cochran's sample data formula for continuous and categorical data, assuming an alpha of 0.5, which sets the error rate at 3 percent and error rate of 5 percent, the sample size was 118 and 313 for continuous and categorical data respectively. In the case of factor analysis sample size should not be less than 100. Confirmatory and exploratory factor analyses were used. Habing's (2003) rule of thumb is that one needs at least 5 times the number of observations as there are variables. In this case the number of variables was 24 excluding demographics and 31 with demographics, which meant a minimum of 120 observations were required to complete factor analysis.

The number of questionnaires sent out does not amount to the same number being returned or completed in full. According to Kotrlik and Higgins (2001), there is a general 40 to 50 percent decrease in numbers, so it was crucial to insure that a healthy sample that exceeded the minimal criteria was used. For this purpose, the sample size was selected at 300.

Assuming a drop of 50 percent (150 responses) we would still have sufficient responses to perform factor analysis. Similar to Kumar et al. (2009) a convenient sample methodology together with a snowball sample method were used for the collection of data. As individuals were selected based on availability and consent to perform the study, at places of business, and digitally through Qualtrics. MBA students, friends and colleagues were sent the link to complete the survey and were asked to invite other appropriate people so that the survey could be completed (Frey, Botan, & Kreps, 2000). This method (the snowball method) ensured that an effective sample size could be reached.

In order to assess the importance in service quality for retail banking consumers, a questionnaire adapted from SERVQUAL model was used (Parasuraman et al., 1988, 1991). Together with the works of Kumar et al. (2009) and the methodology and research instrument modified by Ladhari (2009) the study of customer service was used as a basis for the research instrument used for this research paradigm. The questionnaire, attached in Appendix B, was divided into two sections.

- Section 1 - *Sociodemographics and product holding and channel usage of the respondents:* These factors entailed collecting the age and income bracket of the customer, which enabled the researcher to distinguish and group service importance through demographics. Though obtaining details about the respondent's channel usage and product holding, the researcher could discover whether the channel that the respondent used impacted the importance of certain service items. Sousa and Voss (2012) argue that migration to eServices has a negative impact on customer service.
- *Section 2 – Ranking of the service quality attributes*: From the original 22 SERVQUAL attributes, additional attributes were added to measure the impact of technology on service quality. The additional attributes were added to the existing dimensions of SERVQUAL as Parasuraman et al. (1991) state that additional attributes can be added to the existing structure of SERVQUAL but that adding in additional dimensions would impact on the integrity of the model. The additional attributes were:

1. Banking system availability – was added to the dimension of reliability (Sousa & Voss, 2012);
2. Electronic channel convenience – was added to the responsiveness dimension (Ganguli & Roy, 2011; Sousa & Voss, 2012); and
3. Security in electronic channels – amendment of existing attributes linked to assurance was made in order to test Sousa and Voss's (2012) findings about the positive impact of security on customer service

The addition of the two attributes brings the total attributes to 24 and the importance of each attribute/service item was measured. The questionnaire had a similar structure to the questionnaire administered by Ladhari (2009), who only took the perceived section of SERQUAL (i.e. SERVPREF), which assessed customer perception of service and reduced the survey items from 44 to 22. While the justification for Ladhari (2009) in only focusing on the perception was based on criticism of the gap scores between expectations and perceptions not being reliable. The purpose in using a similarly structured questionnaire was length reduction and the change in the research focus. The importance of the service was being measured and not just the expectations of service.

Responses to the 24 items were provided on a 7-point Likert scale, ranging from 1 to 7, where 1 represented “not important” and 7 represented “extremely important”. The service items were mixed together to avoid predefined responses from respondents. In order to reduce the risk of losing integrity of the scale the entire range of SERVQUAL items were used as per guidelines provided by Parasuraman et al. (1991).

3.4 Procedure for data collection

Figure 3 depicts the procedure that was followed for the collection of data through the survey.



Figure 3: Collection of data from questionnaires

- *Pre-test:* Prior to distributing the questionnaire to the sample population, the questionnaire was tested with a controlled sample of individuals. The purpose of doing this was to test the time required to complete the survey and to ensure that respondents understood the questions presented. Piloting the questionnaire also added to the validity of the research, as questions could be simplified if they were misunderstood to ensure consistency in responses and to avoid ambiguity (Rattray & Jones, 2007).
- *Amend questionnaire:* Any amendments to the questionnaire required post the testing phase were made and then resent to the pilot group for verification,
- *Distribute questionnaire:* The questionnaire was distributed through digital media. Individuals using social applications such as WhatsApp were sent a message containing the link to the survey in order to enable them to complete it on their model device. The Wits Business School's (WBS) mailing list was used to email individual part- and full-time students of various facilities at WBS to assist in completing the survey. Friends and work colleagues were emailed the same email sent to complete the survey.
- *Consolidation of feedback:* Since the survey was administered electronically, Qualtrics consolidated all the feedback into daily updated reports, which were available for download on demand.
- *Clean-up*: Data was cleaned up according to methodologies outlined in Lee (2015).

3.5 Data analysis and interpretation

For the analysis of the data, SAS software solution was used. The analysis was split based on the hypothesis and research questions being addressed.

Descriptive statistics:

Initially **Cronbach's coefficient alpha** of each of the variables that make up service quality was assessed to ensure that these variables were reliable (Gliem & Gliem, 2003).

Secondly, since a Likert scale was being used, it was imperative to establish internal reliability for ensuring that the correct inference was made from the data (Gliem & Gliem, 2003). An acceptable Cronbach alpha is 0.7, with anything below 0.6 considered as questionable (Gliem & Gliem, 2003; Lee, 2015)

Hypothesis 1:

Confirmatory Factor Analysis (CFA) was used to analyse the data, which is similar to Pantouvakis, Chlomoudis, and Dimas's (2008) study. With CFA the expected structure of the manifest variables (service attributes) is known based on theory (Lee, 2015). We were measuring the relationship between the observed data and the known latent variables (i.e., five dimensions) of SERVQUAL. Like any other Structural Equation Modelling (Gliem & Gliem, 2003), CFA relies on a number of statistical tests to determine whether the data fits the model (Suhr, 2006). One of the tests that we conducted was the Chi-Square test that determines whether there is a difference between the observed and expected covariance matrices. Chi-Square needs to be close to zero for model fit. When the test is conducted probability levels are required to be greater than 0.05 for model fit (Suhr, 2006).

Research question 1:

Owing to multiple attributes belonging to one dimension it was critical to assess whether these attributes have convergent or divergent validity with the underlying dimension (factor), based on consistency of response by multiple respondents (Lee, 2015).

The validity of the variables, together with reducing the variables into single summary factors, can be tested with factor analysis (Lee, 2015).

Exploratory Factor Analysis (EFA) was conducted on the observed data. EFA aimed to verify whether certain variables can be grouped together as a set, meaning that the variables should be treated in a statistically similar way (Lee, 2015). EFA is a quantitative method to determine correlations or inter-relationships among observed variables (Suhr, 2006).

It is important to ensure that the data is adequate to perform EFA, which meant that the **Kaiser-Meyer-Olkin (KMO) test** was performed to ensure that the data was suitable for structure detection (Lee, 2015). The acceptable levels for KMO are between 0.50 and 0.80 (Lee, 2015). **Cronbach's coefficient alpha test** needs to be considered on all factors to ensure reliability.

Research question 2

By calculating the **mean** scores of importance based on the Likert scale, we were able to identity the importance of the service items based on demographics of income, age and gender**.** While there might be differences in the means between the various demographic characteristics of respondents it is crucial to determine whether the differences were statistically significant.

To measure the statistical significances of the mean differences two tests were conducted. The **Wilcoxon-Mann-Whitney test** was conducted on the gender demographics. The Wilcoxon-Mann-Whitney test is similar to the t-test; however, it assumes that we are dealing with ordinal data, which is correct for the research question (UCLA, Unknown). Secondly the Wilcoxon-Mann-Whitney test does not assume that the observed data from the service attribute is normally distributed, (UCLA, Unknown). This test works only where there are two levels of independent variables data. For this reason, the test will only used for the gender differences (UCLA, Unknown).

For the significant test of income and age, which contained more than two groups within each independent group, the **Kruskal Wallis (KWallis)** test was used to test the significance in mean differences. Similar to the Wilcoxon-Mann-Whitney test the KWallis test does not assume that the data is normally distributed, but only assumes that the dependent data (the service attributes) are ordinal in nature. For significant Chi-squared, together with the probability (p-value), have to be assed, with any *p*-value less than 0.05 showing statistical significance (UCLA, Unknown).

3.6 Limitations of the study

- The survey was administered using email, and social media which means that the results and sample population is limited to majority (87percent) of eService channel users in comparison to 7 percent branch users.
- EFA assumes that the data was correlated, as we aimed to perform a correlation of variables (Habing, 2003; Lee, 2015). A correlation test could be conducted to ensure that a significant correlation existed between the variables to perform the respective EFA.
- The service items were based on the SERVQUAL model. In this way, the limitations and customer needs for service importance were limited to the items defined in SERVQUAL.
- This study was applicable only to respondents with a South African banking relationship. Therefore, a limitation existed in that the study was needs based on South African Banks.

3.7 Validity and reliability

Ritchie, Lewis, Nicholls, and Ormston (2013) state that validity and reliability were developed in the natural sciences and have filtered to include the social sciences. Validity refers to the correctness of data or findings, while reliability is concerned with the ability to replicate the research findings (Ritchie et al., 2013).

3.7.1 *External validity*

External validity asks the question of whether the investigation could be transferred to other groups or another population (Ritchie et al., 2013). A method of ensuring external validity of the data was to collect it from a standardised set of questions based on the work of Parasuraman et al. (1991) and Kumar et al. (2009). A convenient data sampling methodology was followed, which allowed for generalising of results across different populations and also led to respondents completing the questionnaire without any repudiation.

3.7.2 *Internal validity*

Internal validity asks the question of whether we are investigating what we intended to investigate (Ritchie et al., 2013). To ensure the validity of the data used for quantitative analysis, the questionnaire used was sampled to validate responses. Since SERVQUAL tool is one of the most used methods of researching customer service, the questions in the survey were compiled primarily on the basis of previous work of researchers Parasuraman et al. (1991) who created and used the SERVQUAL tool. Such a compilation adds in the internal validity of the data.

Internal validity was also achieved through conducting factor analysis, as dominant constructs can be identified within an underlying core latent variable (Rattray & Jones, 2007). For the research, CFA was conducted to test the relationship of the constructs with the latent variables (i.e. attributes to the service dimensions).

3.7.3 *Reliability*

To ensure the reliability of data from the questionnaire the Cronbach's coefficient alpha could be computed (Lee, 2015). Cronbach's coefficient alpha provided the average inter-correlation of items being measured, which should be above 0.65 (Lee, 2015).

In the case of this study the Cronbach's coefficient alpha was assessed on the subset of attributes that make up the service dimensions to ensure that they could be aggregated together and represent the service dimensions. To ensure reliability of the MV in the CFA results, the R-Squared was calculated. For R-Squared statistics the higher the R-Squared the better (Lee, 2015).

With regard to the Wilcoxon-Mann-Whitney test and the Kruskal Wallis (KWallis), the probability > Chi-Square (*p*-value) that defines statistical significance of the data to the straight line relationship between dependent and independent variables (Lee, 2015) was measured. It was assumed that the *p*-value needs to be between 0.01 and 0.05 (Lee, 2015), which defines the accuracy of the data used, together with the significance in mean differences.

3.8 Demographic profile of respondents

This study is aimed at the South African banking population, which is stable at 75 percent of the general population by FinScope (2014). The characteristics of this banking population was as follows:

- Sixty-six percent of the population were urban bankers (FinScope, 2014)
- Thirty-five percent of the banking population were under the age of 39 (FinScope, 2014), while 8 percent of the population were older than 60 (Statistics South Africa, 2015b). However, our volumes indicated that 71 percent of the populations were under 35 years, and only 2 percent were older than 55 years. The difference in volumes for the 55 year olds resulted from the fact that the 8 percent population included the non-banked, which were mainly rural dwellers and were excluded from the study.
- Based on access, 54 percent of the population had access to smartphones, while 25 percent had access to the Internet (FinScope, 2014). Our population indicated that 55 percent were online banking users, 28 percent were cellphone banking users, and only 7 percent were branch banking users, which is against the norm. The number of branch users can be attributed to the survey distribution, which was done electronically.

Therefore, the main channel of usage would be digital banking for these respondents

- Based on gender, The World Bank (2014) states that 46 percent of females are employed in the formal sector. In the sample for the current study 44 percent were females, which is in close proximity to the norm.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results from the observed data, together with the respective analyses for the quantitative study, as discussed in Chapter 3. The data-collection- and processing details are first presented in Section 4.2. Section 4.3 then provides the descriptive statistics together with the respective service codes used throughout the results section, which identify the various service attributes. The remainder of the chapter has been structured to address, the hypothesis for SERVQUAL in Section 4.4, followed by research questions 1 and 2 in Section 4.5, and Section 4.6 respectively. To conclude the chapter a summary of all the results is presented in Section 4.7.

4.2 Data collection and processing

Prior to administering the survey, a sampling of the questionnaire was carried out on 12 individuals. The respondents were tested to measure time taken to complete the survey and assess whether the respondents understood the questions. Post the sampling exercise the survey was amended to remove any jargon that was banking related and to correct any grammatical errors in the survey.

The questionnaire was split into two sections – demographic questions followed by questions of importance. For this second section respondents had to select the level of importance of a service item based on a 7-point Likert-type scale with response options ranging from “not important” (1) to “extremely important” (7). Using a convenient sample size and the snowball method of survey distribution, a total of 245 respondents started the online survey. Data collection took place between 2 December and 11 December 2015. The data was then cleaned, through Listwise deletion (Peugh & Enders, 2004) where respondents who might have abandoned the survey were removed.

An example of missing data is respondents not specifying their income band or not providing their age. After cleaning of the data a total of 217 clean data respondents could be used for the analysis, creating an 89 percent response rate of those that started and completed the survey.

4.3 Descriptive analysis

Table 4 shows the Cronbach's coefficient alpha. Since these variables belong to the same service model, it was expected that that they were correlated. Both the standard and raw alpha are above the acceptable value of 0.70 (Nunnally & Bernstein, 1994).

Table 4: Cronbach's coefficient alpha test – service item variables

Cronbach's coefficient alpha	
Variables	**Alpha**
Raw	0,941734
Standardized	0,951626

Note: Means and Standard Deviations of the variables are provided in Section 4.6

4.4 Demographic results

Table 5 illustrates the characteristics of the 217 respondents who successfully completed the questionnaire.

Ethnicity

Thirty-five percent of the respondents were white, 33 percent were black and 15 and 14 percent were coloured and indian respectively.

Table 5: Characteristics of respondents

Demographics	Variations	Frequency	Percentage
Gender	Male	122	56%
	Female	95	44%
Ethnicity	White	76	35%
	Black	72	33%
	Coloured	33	15%
	Indian	30	14%
	Other (e.g. Asian)	6	2%
Age Groups	18 – 25	19	9%
	26 – 35	155	71%
	36 – 54	38	18%
	55 and older	5	2%
Income (Rands)	Less than 100 000	15	7%
	100 001 – 300 000	49	23%
	300 001 – 750 000	101	47%
	750 001 – 1 500 000	46	21%
	1 500 001 or more	6	3%
Main Bank	ABSA	47	22%
	FNB	65	30%
	Nedbank	34	16%
	Capitec	10	5%
	Standard Bank	58	27%
	Other	3	1%
Number of Products	1	30	14%
	2	50	23%
	3	54	25%
	4	45	21%
	5 or more	38	18%
Channel Usage	Branch	16	7%
	Other (ATM, Call centre)	21	10%
	Online Banking	120	55%
	Cellphone Banking (Including APP)	60	28%

Gender

Fifty-six percent of the respondents were male while 44 percent were female, as illustrated in Figure 4.

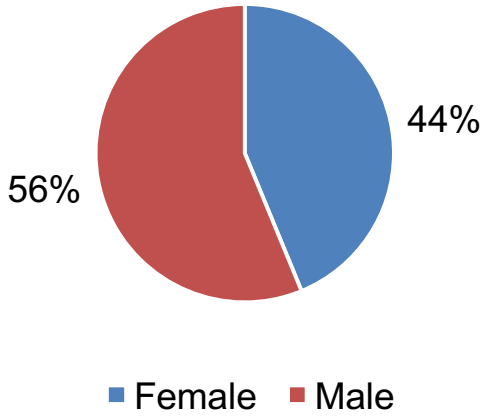

Figure 4: Gender distribution

Main bank

The majority of the respondents were main-banked with FNB, Standard Bank, and then followed by ABSA, Nedbank, Capitec and other institutions. These banks have a sample market size of 30 percent, 27 percent, 22 percent, 16 percent, 5 percent and 1 percent respectively.

Number of products

The number of products held was an indication of the number of accounts that the respondents had. This number could be a combination of credit cards, home loans, transactional or savings accounts, personal loans. Twenty-five percent of the respondents had three products with their main bank, followed by 23 percent of respondents who had two products, and 21 percent who had four products with their main bank. On the far ends of the scale 18 percent of customers had more than five products with their bank, and 14 percent had one product with their bank.

Age groups

Figure 5 shows 71 percent of the respondents as being between the ages of 26 and 35, with the 36 to 54 years' age group being the second highest group. The smallest number of respondents was in the 55 years and older group (2 percent).

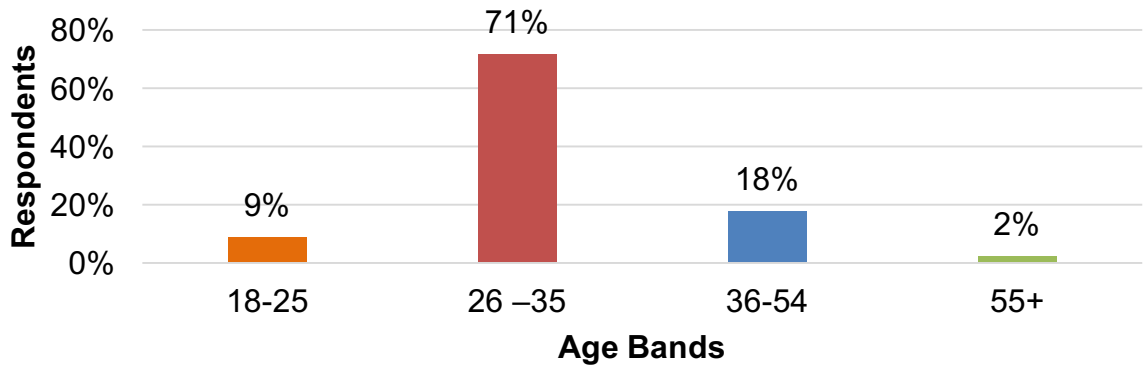

Figure 5: Age distribution

Channel usage

Fifty percent of the respondents used online banking and 28 percent used cell phone banking, which incorporates tablet banking. Ten percent used other channels, such as ATMs and call centres, while 7 percent indicated that they primarily used a bank branch as their main form of day-to-day banking.

Income bracket

Figure 6 shows that 47 percent of the respondents earned an income of between R300 000 and R750 000 while 23 percent earned between R100 000 and R300 000. Towards the upper premium market 21 percent of the respondents stated that they earned between R750 001 and R1 500 000. Seven percent of the respondents indicated that they earned less than R100 00, while 3 percent indicated they earn over R1 500 001.

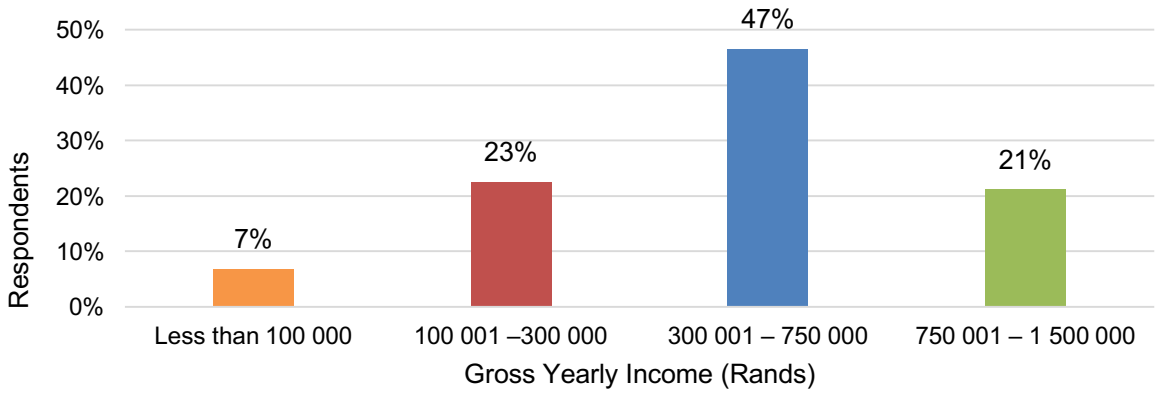

Figure 6: Annual income distribution

4.4.1 *Code descriptions for analysis*

For simplicity purposes each statement of the questionnaire was coded as TA1, TA2, RL1, RL2 and so on, as depicted in Table 6.

Table 6: Service quality dimensions and their respective codes

Code	Service Quality Dimensions
	Tangibles
TA1	My bank having modern facilities
TA2	My bank having facilities that are physically appealing
TA3	My bank having employees that are always dressed neatly
TA4	My bank having appealing market material
	Reliability
RL1	My bank delivering on its promises to do something by a specific time
RL2	When I have a problem, my bank showing sincere interest in resolving it
RL3	My bank performing the service right the first time
RL4	My bank performing the service at the time that it promised to do it
RL5	My bank having error-free records
RL6	My bank's banking systems being available and operational at all times
	Responsiveness
RS1	My bank advising me when the service will be performed
RS2	My bank providing prompt service to me
RS3	The willingness of my bank to always help me
RS4	My bank never being too busy to respond to my requests
RS5	My bank's electronic channels giving me convenience to perform my banking any time
	Assurance
AS1	My bank 's employees instilling confidence in me
AS2	Feeling safe when making transactions electronically
AS3	The staff at my bank treating me with courtesy consistently
AS4	The staff at my bank having knowledge about my questions
	Empathy
EM1	My bank giving me individual attention
EM2	My bank having convenient operating hours
EM3	My bank giving customers personalised service
EM4	My bank having the best interests of its clients at heart
EM5	My bank understanding my needs

4.5 Results pertaining to hypothesis 1

To prove hypothesis 1, CFA was conducted on the observed data using the PROC CALIS estimation method in SAS. As stated in Chapter 3 CFA is based on the correlation matrix of the SERVQUAL observed constructs/variables (Finn & Lamb, 1991). Based on the fit of the model, CFA can provide the correlation between the factors in addition to variances of the variables.

4.5.1 *Assessment of model fitness*

Table 7 displays the results from the goodness-of-fit test that includes the absolute fit index, the parsimony index and the incremental index of the CFA model. These indices provide a fundamental indication of how the theory fits the model (Hooper, Coughlan, & Mullen, 2008). For the purpose of the analysis the indices that were included were: Chi-Square test, the Root Mean Square Error of Approximation (RMSEA), Standardised Root Mean Residual (SRMR), and incremental indices of Bentler Comparative Fit Index and the Bentler-Bonett NFI.

Table 7: Fit summary for CFA

Covariance Structure Analysis: Maximum Likelihood Estimation		
Modelling Info	Number of Observations	217
	Number of Variables	24
Absolute Index	Chi-Square	1120,3115
	Chi-Square DF	242
	Pr > Chi-Square	<. 0001
	Root Mean Square Residual (RMR)	0,0999
	Standardized RMR (SRMR)	0,0787
Parsimony Index	RMSEA Estimate	0,1296
Incremental Index	Bentler Comparative Fit Index	0,7711
	Bentler-Bonett NFI	0,7276
	Bentler-Bonett Non-normed Index	0,7389
	Bollen Normed Index Rho1	0,6893
	Bollen Non-normed Index Delta2	0,7731

Absolute index - Chi-Square (χ^2)

Based on the analysis the Chi-Square reflected as 1120.3115. Chi-square is large, which would mean that the data does not fit the SERVQUAL Model. Secondly, the Chi-Square probability (pr) was less than 0.0001 and could not be accepted. For the model to be accepted the pr must be greater than 0.05. However, Hooper et al. (2008) note that it is rare to find empirical data that meets all the assumptions required to use a Chi-Square test, as the Chi-Square test is greatly impacted on by sample size. If the number of constraints increases then fit becomes an issue (Fornell & Larcker, 1981). In the case of the analysis, there are 24 constraints that decrease the goodness of fit of the Chi-Square test. Taking into account nominal Chi-Square (NC), which is χ^2/df less to and equal to (<=) 4.63. This is considered as unacceptable as the required ration has to be <= 2 or 3, according to Hooper et al. (2008).

Standardised root mean square residual

The SRMSR measures the extent to which the covariance between the actual and the predicted differ (Lee, 2015) the smaller the better. While Browne, Cudeck, Bollen, and Long (1992) state that the conventional value for the SRMSR is 0.05, Lee (2015) indicates that SRMSR greater than 0.05 but less than 0.08 is a reasonable approximate fit . In the analysis SRMSR measured as 0.0787.

Incremental indices

These indices effectively compare the fit of the data to the current model where the variables are not allowed to correlate. A good fit is considered to be greater than 0.95, while an acceptable fit is greater than 0.90, and anything less than 0.90 is considered a poor fit. The Bentler-Bonnet NFI, and Bentler-Bonnet nonnormed index are 0.7711 and 0.7389 below the acceptable cut-off. Based on the findings set out above, the fit statistics indicate an unacceptable model fit.

4.5.2 *Factor convergent validity*

Table 8 displays the covariance matrix for the factors, which indicates the correlation between the respective factors as the covariance is fixed at 1. Reliability has a strong uphill relationship with the responsiveness, assurance and empathy factors, which are 0.943, 0.904, and 0.907 (highlighted in blue). The tangible factor has a weak correlation with a moderate uphill linear relationship with reliability, responsiveness and empathy at 0.550, 0.591, and 0.783, highlighted in green and 0.656 respectively. However, the tangibles factor has a strong uphill linear relationship with assurance, with a correlation of 0.783, highlighted in orange. The results from the factor correlation matrix indicate that all factors are significantly correlated with correlation estimates being significant above 0.5, indicating that they belong to the same construct.

Table 8: Factor covariance matrix

Factor Correlation Matrix: Estimate/StdErr/t-value					
	Tangibles	**Reliability**	**Responsiveness**	**Assurance**	**Empathy**
Tangibles	1	0,5639	0,5941	0,7831	0,655
		0,0576	0,0554	0,044	0,0537
		9,7831	10,7138	17,7953	12,1952
Reliability	0,5639	1	0,9635	0,9241	0,9164
	0,0576		0,014	0,0244	0,0229
	9,7831		69,0235	37,8408	39,9695
Responsiveness	0,5941	0,9635	1	0,8916	0,9453
	0,0554	0,014		0,0279	0,0201
	10,7138	69,0235		32,0121	47,1066
Assurance	0,7831	0,9241	0,8916	1	0,9038
	0,044	0,0244	0,0279		0,0304
	17,7953	37,8408	32,0121		29,724
Empathy	0,655	0,9164	0,9453	0,9038	1
	0,0537	0,0229	0,0201	0,0304	
	12,1952	39,9695	47,1066	29,724	

4.5.3 *Manifest variable convergent validity*

Table 15 in Appendix B shows the loads of the MV, together with the standard error estimates, and the t-values. All the t-values are greater than 2 at a 0.05 level. T-values greater than 2 at a 0.05 level indicate that the relationship between the variables and factors is significant, which means that the factor loads can be interpreted as indicators of validity for the 24 items.

All significant factor loads were considered as 0,5, while highly significant loads were considered as greater than 0.8. All MV loads were greater than 0.5 indicating their significance and correlation to their respective factors. However, not all factor loads were greater than 0.8, which would have ensured divergent validity. For the tangibility factor, the highest significance was with MV TA2, followed by TA4, at 0.8215 and 0.792 respectively, while TA1 and TA3 had the lowest significance in the tangibles factor, 0.556 and 0.516 respectively, showing that the MV has the lowest correlation with the factor, as depicted in red. For the reliability factor MV RL1 and RL4, have the highest correlation with the factor, at 0.894 and 0.842, highlighted in green. The introduction of MV RL6, which is *my bank's banking systems being available and operational at all times* only had a correlation of 0.630, shown in orange. RL6's correlation is the second lowest in the factor but still considered as significant. The correlation indicates that the MV is still significant with the latent Reliability factor.

For the responsiveness factor MV RS2 and RS3 have the highest correlation – both at 0.884. While the RS5 MV of *my bank's electronic channels giving me convenience to perform my banking any time* had only a significance of 0.605. Based on the model, RS5 is not a good measure of the latent variable. The MV of AS2 had a load of only 0.580, which is the lowest significance of the factor. Within the factor of empathy, the highest correlated MV and lowest manifested variable were EM4 and EM2 at loads of 0.814 and 0.502.

The overall results for validity provided evidence of convergent validity for the SERVQUAL model scale. However, some MVs had weak loads.

4.5.4 *Reliability*

Table 9 provides the R-Squared of the variables from the output of the CFA. R-Squared was also used as an indicator of each manifest variable's common factor reliability, ranging from 0.252 to 0.800 (Lee, 2015). Sixteen MVs had an R-Squared above 0.50. The percentage is lowest for *my bank having convenient operating hours* (EM2) and *my bank having employees that are always dressed neatly* (TA3) at 0.252 and 0.266 respectively, indicating that these two variables are low indicators of their factor "empathy" and "tangibility" respectively. While the variables of *my bank delivering on its promises to do something by a specific time* (RL1), *my bank providing prompt service to me* (RS2), and *the willingness of my bank to always help me* (RS3) are high indictors of their respective factors – reliability and responsiveness factors – with R-squared values of 0.800, 0.782 and 0.783 respectively, as highlighted in green in Table 9. It is noted that all estimate of R-Squared are between 0-1 (Lee, 2015).

While the expectation for each of the MV's R-Squared was to be much larger, as they would need to match their respective factors, the average R-squared of each factor was: 0.469 for tangibles, 0.564 for reliability, 0.596 for responsiveness, 0.492 for assurance and 0.483 for empathy. The additional new dimensions, RL6 and RS5, decrease the reliability of SERVQUAL Model, where the average R-Squared would be 0.596 for reliability and 0.652 for responsiveness. What this means is that the addition of MVs RL6 and RS5 reduce the average R-Squared of the factors, which results in poor variance were the MVs on average explain only 50 percent of their latent factor.

Table 9: Squared multiple correlation of the CFA Model

Squared Multiple Correlations			
Variable	Error Variance	Total Variance	R-Square
TA1	1,38668	2,00623	0,3088
TA2	0,91716	2,82104	0,6749
TA3	2,16448	2,94944	0,2661
TA4	1,14529	3,07254	0,6272
RL1	0,16348	0,81533	0,7995
RL2	0,44221	0,90126	0,5093
RL3	0,26262	0,65276	0,5977
RL4	0,27531	0,94406	0,7084
RL5	0,79508	1,25444	0,3662
RL6	0,33822	0,56972	0,4063
RS1	0,56584	1,16978	0,5163
RS2	0,19576	0,89866	0,7822
RS3	0,19892	0,91628	0,7829
RS4	0,55159	1,16428	0,5262
RS5	0,33786	0,53298	0,3661
AS1	0,89793	1,85629	0,5163
AS2	0,36389	0,54852	0,3366
AS3	0,77763	1,38829	0,4399
AS4	0,34703	1,07168	0,6762
EM1	0,73807	1,53627	0,5196
EM2	1,40757	1,88198	0,2521
EM3	1,05833	1,73938	0,3915
EM4	0,28675	0,85108	0,6631
EM5	0,51248	1,23865	0,5863

4.5.5 *Summary of results*

CFA was used to test SERVQUAL scale based on three components namely; model fitness, convergent and discriminant validity of latent variables (factors) and MV, constructs of service dimensions. Finally, reliability was assessed of the MVs.

Based on the assessment of model fit, the Chi-Square test is 1120.3115 (df =8, p<0.0001). Other incremental indices, such as the Bentler's comparative fit index are below the acceptable level of 0.95 for good fit. In this way, the fit statistics indicate that the model is an unacceptable fit for the observed data.

The predefined factors are highly correlated, as their significance is above the set value of 0.5. The high correlation indicates that the latent variables (LV,) all belong to the same construct (Service Quality). The validity of the MVs indicates that they are significant with respect to the t-values being greater than 2 and load factors exceeding the significant value of 0.5 on their respective factors.

There is weak reliability with three of the factors, namely tangibles at 0.469, Assurance at 0.492 and Empathy at 0.483 that means that the MVs on average can only explain less than 50 percent of the latent factor. Factors of responsiveness and reliability have average R-squared above the acceptable 0.5 thresholds.

4.6 Results pertaining to Research Question 1

To define the underlying factor structure, without imposing any preconceived structure on the SERVQUAL MVs (Suhr, 2006), EFA was conducted using the PROC FACTOR estimation method option in SAS. Through EFA the following research question can be answered:

RQ1: Can other relationships between service-quality constructs be identified, for creating new dimensions of service quality?

4.6.1 *Adequacy of data for EFA*

To ensure that the data is appropriate for EFA, the rule of thumb provided is to consider only correlations which are > 0.3 (Habing, 2003). The correlation matrix, shown in Appendix B Table 16, indicates a correlation average of 0,473, which is above the required threshold.

The KMO of our observed data has an index of 0.923, which indicates suitability for structure detection, as the acceptable cut-off is 0.50, were 0.80 is preferable (Lee, 2015).

4.6.2 *Selection of factors*

Table 10 displays the output of the Eigenvalues of the correlation Matrix. Since the principal component (Gay & Kirkland) analysis was conducted on the correlation matrix, the variables are standardised to a variance of 1.

The number of principle components which would be used to explain the variance in the data would be based on the Kaiser Criterion, which states that the number of factors must be equal to the number of Eigenvalues >1 (Goldberg, 1997). This rule is good if there are 20 – 50 variables and in the case of the analysis the number of variables was 24 (Habing, 2003). Eigenvalues greater than 1 explain at least as much variance as the variance explained by one variable (Habing, 2003).

Twenty-four Eigenvalues were output into the Eigenvalue chart, as shown in Table 10, and using Eigenvalues >1, 4 components/factors were selected, with Eigenvalues of 11.645; 2.047, 1.216, and 1.162, which explains 49 percent, 9 percent, 5 percent, and 4 percent respectively of the variance.

The analysis shows that the four factors explain a 0.67 portion of the variance, which is acceptable as its close to 1 (Lee, 2015).

Table 10: Eigenvalues of the correlation matrix

	Eigenvalue	Difference	Proportion	Cumulative	
1	11,6453315	9,5984474	0,4852	0,4852	
2	2,0468841	0,8304511	0,0853	0,5705	
3	1,216433	0,0540006	0,0507	0,6212	
4	1,1624324	0,2207809	0,0484	0,6696	4 components retained
5	0,9416515	0,0631033	0,0392	0,7089	
6	0,8785482	0,0824469	0,0366	0,7455	
7	0,7961014	0,1603586	0,0332	0,7786	
8	0,6357427	0,0608491	0,0265	0,8051	
9	0,5748937	0,0342521	0,024	0,8291	
10	0,5406416	0,0912243	0,0225	0,8516	
11	0,4494173	0,015694	0,0187	0,8703	
12	0,4337233	0,0776938	0,0181	0,8884	
13	0,3560295	0,0239241	0,0148	0,9032	
14	0,3321053	0,0127725	0,0138	0,9171	
15	0,3193329	0,04864	0,0133	0,9304	
16	0,2706929	0,0230438	0,0113	0,9417	
17	0,2476491	0,0178205	0,0103	0,952	
18	0,2298285	0,0270471	0,0096	0,9616	
19	0,2027815	0,0083463	0,0084	0,97	
20	0,1944352	0,0226776	0,0081	0,9781	
21	0,1717576	0,0352567	0,0072	0,9853	
22	0,1365009	0,0195664	0,0057	0,991	
23	0,1169344	0,0167829	0,0049	0,9958	
24	0,1001515		0,0042	1	

4.6.3 *Factor patterns and loads*

A Varimax rotation was applied to the data. As part of the objectives of factor analysis it is important to achieve a simplified structure (Yong & Pearce, 2013) . Through the rotation of the factor dimensions identified, one can obtain simple and interpretable factors, through the reduction of MV based on loads (Brown, 2009). While two main types of rotation are available, based the correlation of the factors, orthogonal and oblique, which in simple terms mean that the factor is either uncorrelated or correlated. Both yield the similar pattern of loadings (Brown, 2009).

Table 11 shows the rotated factor patterns with their respective factor loads of variables and with their respective codes. In defining which specific variables represent the factor; a load cut-off of 0.535 was applied. In general, high significant factor loads are considered above 0.7, while many individuals consider loads of greater than 0.35 as big enough to be considered (Lee, 2015). The first reason for choosing a value of 0.535 was to remove split loading of MVs, which would lead to difficulty in interpretation (Yong & Pearce, 2013). Secondly, one needs to ensure discriminant and convergent validity, and hence strong loads on manifest variables are required (Lee, 2015).

Table 11: Rotated factor pattern

	Factor1	Factor2	Factor3	Factor4
RL1	0,675	0,161	0,412	0,403
EM5	0,644	0,353	0,211	0,235
RL5	0,639	0,247	0,047	0,257
RS3	0,613	0,191	0,518	0,301
RS2	0,553	0,188	0,531	0,356
EM4	0,548	0,132	0,437	0,438
TA2	0,370	0,791	0,003	0,037
TA4	0,223	0,692	0,131	0,059
AS3	0,110	0,623	0,322	0,230
RS4	0,208	0,278	0,739	0,196
RL2	0,162	0,270	0,724	0,288
RL4	0,445	0,315	0,539	0,317
RL6	0,194	0,187	0,177	0,822
RS5	0,243	0,174	0,197	0,735
AS2	0,310	0,086	0,203	0,731
RL3	0,497	0,162	0,332	0,486
TA1	-0,003	0,523	0,228	0,216
AS4	0,506	0,502	0,319	0,213
EM2	0,251	0,413	0,167	0,170
AS1	0,340	0,423	0,448	0,166
EM1	0,448	0,363	0,397	0,140
EM3	0,224	0,346	0,490	0,138
RS1	0,441	0,471	0,438	0,126
TA3	0,070	0,475	0,181	0,033

4.6.4 *Identification of factors*

Table 12 illustrates the variables that were kept on each factor based on the variable loads. The standardised Cronbach's coefficient alpha in Table 12 was used to test the reliability of the four factors, as they are all above the required acceptable cut-off rate of 0.7 (Lee, 2015).

Table 12: Retained factors

Factor	Retained Components > 0,535	Factor Label	Cronbach Alphas
1	RL1, EM5, RL5, RS3, EM4, RS2	Credibility and accuracy	0.918
2	TA2, TA4, AS3	Tangible representation	0.893
3	RL2, RS4, RL4	Attitudes and behaviour	0.985
4	RS5, RL6, AS2	eService access	0.924

Factor 1: Credibility and accuracy

This factor contains MV with the largest significance, as it contributes 49.0 percent to the variance service quality. The factor consists of the following MVs, with thier respective loads:

- **RL1:** My bank delivering on its promises to do something by a specific time (0.675)
- **EM5**: My bank understanding my needs (0.644)
- **RL5:** My bank having error-free records (0.639)
- **RS3:** The willingness of my bank to always help me (0.613)
- **RS2:** My bank providing prompt service to me (0.553)
- **EM4:** My bank having the best interests of the clients at heart

This factor is referred to as “credibility and accuracy” in that trust is created through ensuring that services are delivered as promised on time, that help is offered to customer needs when requested. Accuracy is also key in this dimension as customers want error-free records, while still being provided prompt service.

Factor 2: Tangible representation

The factor consists of tangibility and assurance MVs from the original SERVQUAL model, namely:

- **TA2:** My bank having facilities that are physically appealing (0,791)
- **TA4:** My bank having appealing market material (0,692)
- **AS3:** The staff at my bank treating me with courtesy consistently (0,623)

This factor contributes 8.53 percent of the total variance of service quality. The factor will be referred to as “tangible representation” due to the high load of the tangibility MV, the assurance MV, which is still linked to tangibility as it is linked to the physical and tangible treatment of customers that staff provide.

Factor 3: Attitudes and behaviour

Factor 3 is referred to as “attitudes and behaviour”, as the factor consists only of the original reliability and responsiveness MVs, which are as follows:

- **RL2:** When I have a problem, my bank showing sincere interest in resolving it (0.739)
- **RS4:** My bank never being too busy to respond to my requests (0.724)
- **RL4:** My bank performing the service at the time that they promise to do it (0.539)

This factor contributes 5.10 percent of the total variance of the service quality. Here we look at how customer requests are handled, by means of staff attitudes towards an issue.

Factor 4: eService access

Factor 4, contributing 4.84 percent of the total variance is referred to as “eServices access”, as it consists of the significant loads on this factor comprising of the additional modern electronic based MVs added to reliability and responsiveness dimensions of the original SERVQUAL model. In addition, it is made up of the amended assurance MVs, which are as follows:

- **RL6:** My banks banking systems being available and operational at all times (0.822)
- **RS5:** My bank's electronic channels giving me convenience to perform my banking any time (0.735)
- **AS2:** Feeling safe when making transactions electronically (0.731)

4.6.5 *Conclusion*

The EFA produced four dimensions, based on the sample data that produced a KMO index of 0,907. The four dimensions are as follows:

- Credibility and accuracy
- Tangible representation
- Attitudes and behaviour
- eService access

Only loads of greater than 0.535 were considered as significant to remove split loading and complexity in the model, which would increase convergent and divergent validity of the factors. The “credibility and accuracy” dimension has the largest variance-explaining service construct, while the Cronbach’s Alpha test indicated that all four dimensions were reliable. The addition of the modern influence to service – namely manifest variables RL6 and RS5 – indicate that these MVs are considered as significant to customer service, while they only contribute 4.84 percent of the variance.

4.7 Results pertaining to Research Question 2

In order to measure the level of importance of various service quality attributes, the means were calculated based on the 7 point Likert scale of importance.

4.7.1 *General importance ranking*

The general mean ranking of all user groups is shown in table 13. Based on the Likert scale the respondents selected these as the top five service items:

1. Feeling safe when making transactions electronically (AS2)
2. My bank's electronic channels giving me convenience to perform my banking any time (RS5)
3. My bank's banking systems being available and operational at all times (RL6)
4. When I have a problem, my bank showing sincere interest in resolving it (RL2)
5. My bank performing the service right the first time (RL3)

As seen in Table 13, the standard deviation increases gradually further down the service items, indicating that the majority of respondents are closer to the mean with the top five items but the spread of views increases as we move down the ranks. For this reason, we expect variations in ranking of the less important service items.

Table 13: General ranking of service attributes

Rank	Code	Service quality dimensions	Mean	StD
1	**AS2**	Feeling safe when making transactions electronically	6,77	0,741
2	**RS5**	My bank's electronic channels giving me convenience to perform my banking any time	6,71	0,730
3	**RL6**	My bank's banking systems being available and operational at all times	6,68	0,755
4	**RL2**	When I have a problem, my bank showing sincere interest in resolving it	6,59	0,949
5	**RL3**	My bank performing the service right the first time	6,58	0,808
6	**EM4**	My bank having the best interests of the clients at heart	6,54	0,923
7	**RL1**	My bank delivering on its promises to do something by a specific time	6,53	0,903
8	**RS2**	My bank providing prompt service to me	6,47	0,948
9	**RL4**	My bank performing the service at the time that it promises to do it	6,46	0,972
10	**RS3**	The willingness of my bank to always help me	6,46	0,957
11	**RS4**	My bank never being too busy to respond to my requests	6,39	1,079
12	**AS4**	The staff at my bank having knowledge to my questions	6,39	1,035
13	**RL5**	My bank having error-free records	6,27	1,120
14	**EM5**	My bank understanding my needs	6,26	1,113
15	**AS3**	The staff at my bank treating me with courtesy consistently	6,19	1,178
16	**RS1**	My bank advising me when the service will be performed	6,16	1,082
17	**EM3**	My bank giving customers personalised service	6,04	1,319
18	**AS1**	My bank 's employees instilling confidence in me	6,01	1,362
19	**EM1**	My bank giving me individual attention	5,97	1,239
20	**EM2**	My bank having convenient operating hours	5,92	1,372
21	**TA1**	My bank having modern facilities	5,89	1,416
22	**TA2**	My bank having facilities that are physically appealing	5,11	1,680
23	**TA4**	My bank having appealing market material	4,92	1,753
24	**TA3**	My bank having employees that are always dressed neatly	4,80	1,717

4.7.2 *Gender-based importance ranking*

In order to test whether there are statistically significant differences between males' and females' importance ranking, the Wilcoxon-Mann Whitney test was used. Table 17 in Appendix D shows respective service code with the means of both female and male, as well as the normal approximations of *Z* and *p-value*. The following items had significant differences between males and females at $p<0.05$ levels:

1. RS1: My bank advising me when the service will be performed (p=0.0343)
2. AS4: The staff at my bank having knowledge to my questions (p=0.0206)
3. RL1: My bank delivering on its promises to do something by a specific time (p=0.0097)
4. TA4: My bank having employees that are always dressed neatly (p=0.0087)
5. TA3: My bank having appealing market material (p=0.0067)

The findings show that females had a higher ranking for the respective attributes, which was explained, based on the Wilcoxon Sum of mean scores, as shown in Appendix D, Table 18.

4.7.3 *Age-based importance ranking*

The KWallis test is used to test the significance in mean differences of the four age groups. Table 19, in Appendix D, shows the importance ranking split based on age, and the significances of the differences in means between the age groups at $p<0.05$. The following items can be considered as significantly different between the age groups (highlighted in orange in Table 19):

1. TA2: My bank having facilities that are physically appealing (p=0.023)
2. EM1: My bank giving me individual attention (p=0.021)
3. EM3: My bank advising me when the service will be performed (p=0.020)

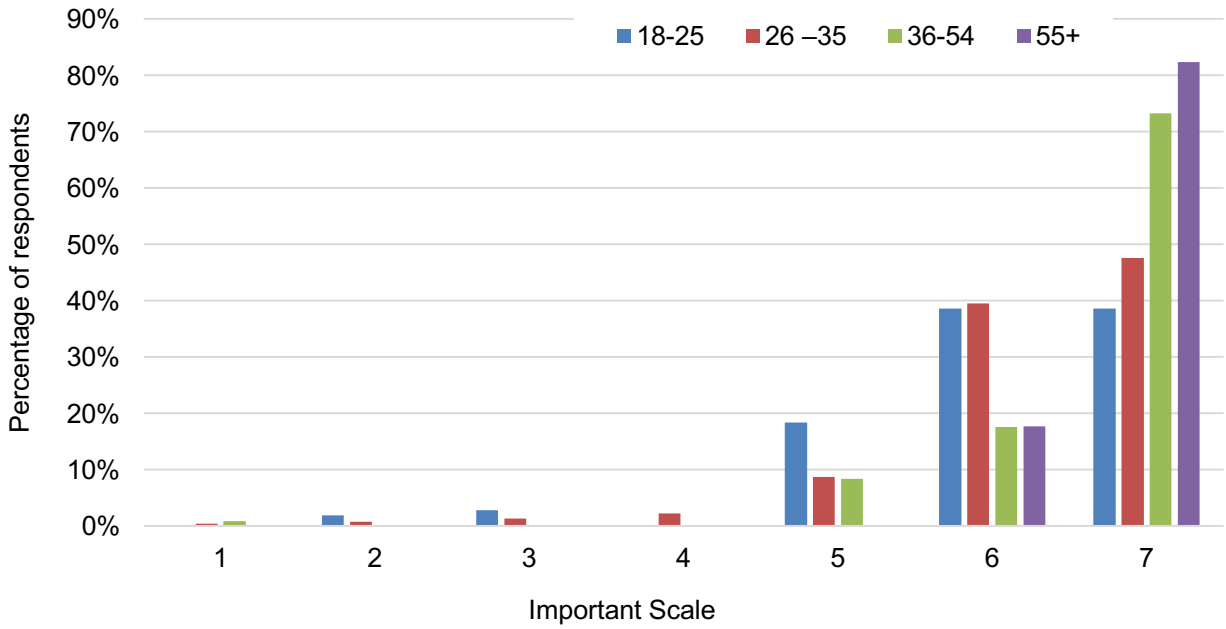

Figure 7: EM3 importance based on age

For further insights into the difference in means, Figure 7 shows that for the item of EM3, 82 percent of respondents older than 55 and 75 percent of the respondents aged between 36 and 55 consider this service item to be extremely important. Only 44 percent of respondents aged between 18 to 25 and 26 to 35 found item EM3 to be extremely important.

For MV EM1, 100 percent of respondents older than 55 years and 60 percent of respondents aged between 36 and 55 considered individualised attention as extremely important. Age groups between 18 and 25 years old and 26 and 35 years accredited equal importance to the individualised attention at 44 percent, as shown in Figure 8.

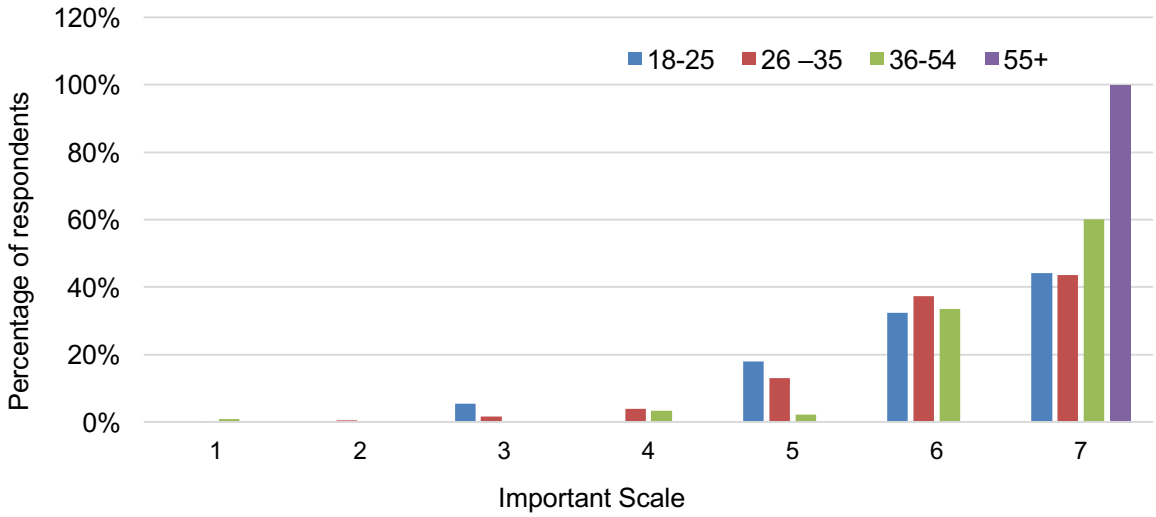

Figure 8: EM1 importance based on age

Figure 9, shows that 53 percent of the respondents aged between 18 to 25 ranked item TA3, *my bank having facilities which are physically appealing*, as extremely important in comparison to 32 and 23 percent of respondents aged between 26 to 35 and 36 to 54 years old respectively. One-hundred percent of customers older than 55 years old ranked service item TA3 as extremely important.

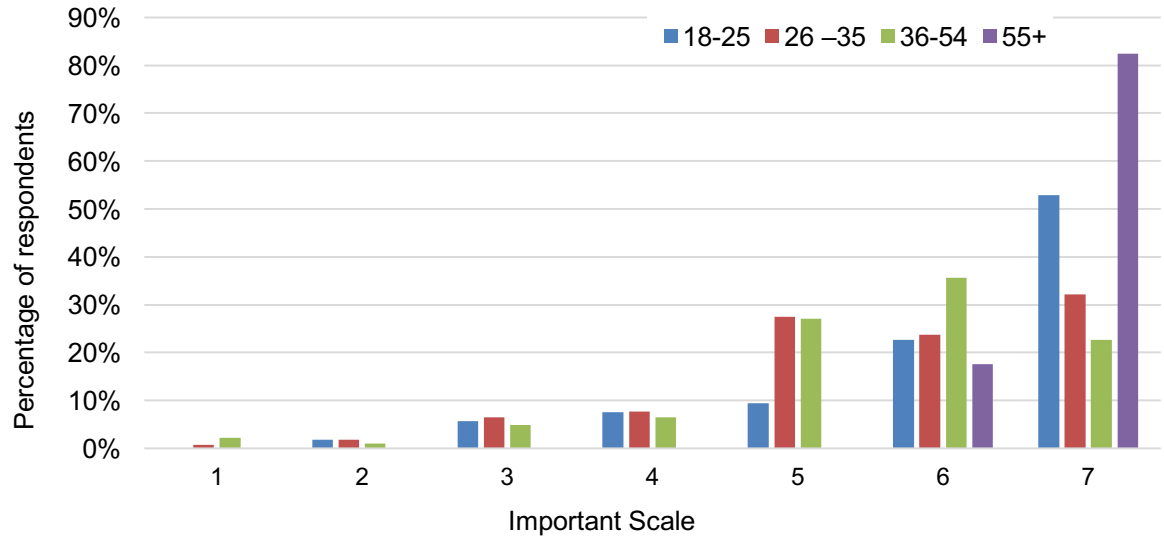

Figure 9: TA3 importance scale by age

4.7.4 *Income-based importance ranking*

Similar to the significance test of age, the income-based importance-ranking test was done using the KWallis test. Based on results shown in Table 20 of Appendix D, the only attribute that showed statistically significant differences between the various income groups is the empathy service attribute: *my bank having convenient operating hours* (EM2), which was significant at $p<0.05$.

The results indicate that the income demographic does not play a significant role in determining differences in service importance of customers besides there being a difference on EM2, which relates to *the bank having convenient operating hours*. In such instances respondents earning less than R100 000 per year found it to be the most important out of the various income groups.

4.7.5 *Conclusion*

Demographics do not play a significant role in determining which items are most important to customers; only lower-ranking items had differences based on the demographics stipulated. The following top five items were considered as important to all respondents based on means:

1. AS2: Feeling safe when making transactions electronically
2. RS5: My bank's electronic channels giving me convenience to perform my banking any time
3. RL6: My banks banking systems being available and operational at all times
4. RL2: When I have a problem, my bank showing sincere interest in resolving it
5. RL3: My bank performing the service right the first time

Only lower-ranking items had differences based on the demographics stipulated. An assessment of whether there is statistical significance between male and female respondents showed that the tangibility item of *my bank having appealing market material* (TA3) and *my bank having employees that are always dressed neatly (*TA4), were considered to be highly significant with *p*-values of 0.007 and 0.009 respectively.

The following items were also considered as significant with female respondents, who ranked them higher then males regarding importance:

1. RS1: My bank advising me when the service will be performed (p=0.0343)
2. AS4: The staff at my bank having knowledge to my questions (p=0.0206)
3. RL1: My bank delivering on its promises to do something by a specific time (p=0.0097)

With regard to age, it was found that there were statistical differences for the following items:

1. TA2: My bank having facilities that are physically appealing (p=0.023)
2. EM1: My bank giving me individual attention (p=0.021)
3. EM3: My bank advising me when the service will be performed (p=0.020)

Further examination indicated that the older the age group the more they found the empathy items extremely important, while the tangibility item TA2 was viewed as extremely important for 53 percent of customers.

With income groups the only significant difference between incomes bands was item EM2: *my bank having convenient operating hours,* which was considered to be more important for incomes less than R100 000.

4.8 Summary of the results

For hypothesis 1, CFA was conducted on the observed data against the SERVQUAL scale. The fit statistics indicated that the model was an unacceptable fit to the observed data. Significant high correlation between factors was observed. The average R-Squared of the dimensions was less than 50 percent for the dimensions of “tangibility”, “empathy”, and “assurance”, while it was just above 50 percent for “responsiveness” and “reliability”.

To answer Research Question 1*:* EFA presented four dimensions of service quality based on the observed data, which are:

- *Credibility and accuracy:* MVs that loaded significantly were based on trust and accuracy in which requests are actioned together with staff being responsive and providing prompt service.
- *Tangible representation:* The MVs that loaded significantly related to the physical look of the facilities together with the marketing material and the manner in which staff treated customers
- *Attitudes and behaviour:* The MVs that dealt with attitudes loaded significantly on this factor, where the manner in which customer requests are handled was considered as being highly correlated to the factor.
- *eService access:* As the significant loads were those of the additional modern electronic-based MVs added to “reliability” and “responsiveness” dimensions

Research question 2 asked*: How do age, gender, and income play a significant role in determining importance of service quality?* Based on mean ranking of service items, five items were ranked as being important to all respondents irrespective of their demographics. However, there were significant differences that were on items outside of the five most important service items.

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

This study was designed to identify the service factors that South African retail banking customers found as important and to classify them into main drivers of customer service. Further to the above, the study aimed to establish whether specific demographics had a preference for a particular area of service quality. The implications of these analyses are discussed in this chapter. Section 5.2 introduces the demographics of the respondents together with the significance of the demographic to the study. Section 5.3 is a discussion that relates to the first hypothesis, and Section 5.4 and 5.5 discuss the results of research question 1 and 2 respectively. Lastly section 5.5 provides a summary of the overall findings.

5.2 Demographic profile of respondents

Gender

Fifty-six percent of the respondents were male and 44 percent were female, while Statistics South Africa (2015b) indicates that the population distribution is 48,7 percent male and 51.3 percent. The World Bank (2014), however, states that only 46 percent of the female population make up the working force in South Africa, which is similar to the sample gender-distribution numbers. For this reason, the gender-based results can be generalised to represent the population.

Ethnicity

Black respondents were under represented. Thirty-five percent of the respondents were white, 33 percent black, 15 and 14 percent coloured and Indian respondents respectively. Statistics South Africa (2015b) reports an ethnicity breakdown of 80.2 percent Black, 8.8 percent coloured, 2.5 percent Indian/Asian, and 8.4 percent White. Reasons for underrepresentation are due

to the distribution method of the survey where a convenient sampling methodology was used. Secondly, the black population is under represented as a majority of approximately 50 percent would not have access to the Internet (Statistics South Africa, 2015a) and so would not be able to complete the survey. Further analysis on ethnicity cannot be conducted as it weakens the validity of the study.

Income bracket

The income segmentation was based on the product segmentation of FNB and is generally aligned to the other main retail banks that apply product segmentation based on income. The income distribution in our results are above the normal income standards as indicated by Statistics South Africa (2015a), which indicates that the average South Africa earns an average of R208 644 annually, while our data indicated that 68 percent were above the R300 000 annual income band, which classifies these customers as premium customers. Sohail and Shanmugham (2003) state that a link exists between income and technology adoption, that greater income means access to technology, and that technology results in easier electronic channel adoption. For this reason, our results would indicate more users of electronic channels than branch channel.

Channel usage

The usage of digital channels was the largest in the sample population, with online banking customers, making up 55 percent of the total volume. Twenty-eight percent of the respondents used Cellphone banking, which incorporates the tablet banking application. Only 7 percent indicated that they primarily used a bank branch as their main form of day-to-day banking. The channel usage distribution statistics is in conflict with banking statistics where 80 percent of the population still use branches as their main form of outlet. The reason for the poor distribution in channel usage was the electronic distribution of the survey and the weak ethnicity distribution limiting the type of respondents.

Age groups

Seventy-one percent of the respondents were between the ages of 26 and 35, with the smallest population of 2 percent being customers older than 55 years. The sample drawn for this study did not provide an evenly spread distribution across all age categories. Also, respondents had to be over the age of 18 in the age distribution. The group older than 35 had similarities with actual population estimates in South Africa as stated in Statistics South Africa (2015a). A direct impact on channel usage was found, just as Sohail and Shanmugham (2003) and other researchers have found that electronic channel adoption is related to age, with the younger generation being faster adopters of technology.

Main bank

Based on the Banking Association of South Africa (2014) report, the sample population was representative of the banking market-share distribution, with a slight over-representation in FNB respondents at 30 percent. This slight over-representation results from the researcher being an employee of FNB and having colleagues and friends that are FNB based. The banking market-share distribution had no impact on the findings, as the questionnaire was based on what customers determine as important and not on perceptions or expectations of their current main banks.

5.3 Discussion pertaining to hypothesis 1

Hypothesis 1*: The SERVQUAL scale does not display the five-dimensional structure in the context of what is important to customers in today's banking environment and channel usage.*

The results show that our hypothesis is correct, in that there is poor model fit with our observed data and the SERVQUAL model. The results indicate a high association between the superficial dimensions, but discrimination between dimensions does not exist.

5.3.1 *Model fit*

The CFA indicated a poor fit to the SERVQUAL model, where the Chi-Square test indicated that the values of 1120.31 and probability were less than 0.0001. Incremental indices such as the Bentler Comparative Fit index were well below the acceptable cut-off of 0.90. A number of reasons can contribute to the poor fit, as indicated below

Respondent suitability

As stated by Newman (2001), service-quality factors are seen as people oriented where, irrespective of the dimension, human interaction takes place. With the SERVQUAL scale initially being developed by Parasuraman et al. (1988) for tangible-services-based companies in the 80s, a number of attributes are linked to staff, such as the reliability attribute of *when I have a problem, my bank showing sincere interest in resolving it,* and the assurance attribute of *the staff at my bank treating me with courtesy consistently.* The selection of respondents could impact on the results, as the channel demographic indicated that 17 percent of respondents would have a tangible (face-to-face) interaction with a bank, while 83 percent used self-service channels (online banking, Cellphone and app). The channel demographic creates a weakness in the study, as those tangible services are not adequately rated.

Technological impact

The increase in technology-based services, which has brought automation and efficiency to the way servicing is carried out, has resulted in a decrease in representation of tangible services, where service attributes that relate to technology-based services have replaced the importance of these tangibles services (Newman, 2001).

Data variation and measurement ranking

Our study measured the importance ranking of services in comparison to other studies that measure the gap between perception and expectation.

The result of the study could mean that the SERVQUAL scale is compromised, and further studies would be required to justify the results.

Variation in data-collection procedures and analysis techniques can also contribute to the differing results. Another finding that impacts on the model fit, as pointed out by Asubonteng et al. (1996), is that if the respondents provide similar responses then fewer dimensions are created. In our survey customers had to select what they considered as important in service quality. Based on mean calculations being in the 6 range, the majority (over 18) of the service attributes were considered as either “very important” or “extremely important”, which impacts on the number of dimensions and, ultimately, impact on the model fit.

5.3.2 *Service dimension relationship*

The findings indicate that service dimensions are interdependent and overlap with each other. Based on the work of Parasuraman et al. (1988), which has shown that in order to obtain five dimensions of service quality, SERVQUAL should create discriminant validity between the factors. Discriminant validity was not found in our research or in other literature that could not achieve discriminant validity – such as the studies of Llosa et al. (1998), Kemal Avkiran (1994), and Asubonteng et al. (1996).

Our dimensions have high statistical significance, with regard to the interdependency of the reliability dimension with responsiveness, assurance and empathy. The respective correlation figures were above 0.90 for all factors, which indicates that customers cannot distinguish between these respective service dimensions, similar to the findings of Llosa et al. (1998). The implication is that by respondents indicating that reliability is an important service dimension, then the respondents would find responsiveness, empathy and assurance to be as important.

While there is significant interdependency between the factors, the lowest correlation is between tangibility dimensions in relation to the other service dimensions.

Correlation values with tangibility and the respective dimensions are 0.550, 0.591, 0.783, and 0.656, with the dimensions of “reliability, responsiveness, and empathy. It can be concluded that customers could differentiate services that are tangible from those that are not tangible, as these services attributes deal specifically with: the dress code of staff, the physical appeal of the facilities and how modern they are, together with the appeal of the marketing material.

The only strong uphill linear relationship displayed with tangibility, was the assurance dimension, which had a correlation of 0.783. The correlation between tangibility and assurance is high due to assurance mainly dealing with staff members, that is a tangible element that customers can relate to, for this reason, the overlap with tangibility is strong. The assurance service attribute of *feeling safe when making transactions electronically* reduced the overlap, as the attribute related to a non-tangible of electronic channels.

5.3.3 *Service attribute relationships*

Two factors need to be considered when dealing with service attribute relationships. The first factor is the extent to which the service attribute can explain the dimension. The second is whether the attributes overlap to show commonality.

Babakus and Boller’s 1992 study and Carman’s 1990 study as cited in Asubonteng et al. (1996) found that the service attribute loads did not match up to the respective dimensions as indicated in Parasuraman et al. (1988) SERVQUAL study. Our study shows similar results where some service attributes have a low interdependence with the dimension they represent. To evaluate the relationship that the attributes had with each other we considered their factor loads rather then the convergent validity test. As stated by Asubonteng et al. (1996), researchers do not specify loads of attributes. In this way it becomes difficult to verify results presented in their research to confirm whether their service attributes are able to explain the service dimension.

Within the tangibility item, the attributes TA1 and TA3 had significantly weak loads, which relate to *my bank having modern facilities,* and *my bank having employees that are neatly dressed* respectively. What can be extrapolated is that these two attributes do not resonate with tangible services towards the customer, as a customer is not receiving any form of output nor are the attributes part of an operational task that will add value to their service needs.

Another dimension that had low loads for its service attributes was the assurance attribute of *feeling safe when making transactions electronically* (A2) and the empathy attribute of *my bank having convenient operating hours* (EM2). Looking into the reason for the low representation of these attributes to their respective service dimension, one can conclude that safety, based on electronic transaction, is not related to assurance, where the rest of the assurance attributes are related to human interaction of staff. In the case of attribute A2 that common denominator of human interaction has been removed.

An assessment of the empathy dimension, EM2, *my bank having convenient operating hours*, is not seen as an attribute of empathy, partly because empathy relates to a feeling, a level of passion (Spiro, 1992) or the ability for an individual to express another's feelings (Nair, Ranjith, Bose, & Shri, 2010). In which case banks having convenient operating hours evoke little emotion in comparison to the other empathy attributes. Secondly, because the respondent sample was more self-service based than face-to-face based, the convenient operating hours did not resonate with empathy, as convenient operating hours do not impact on their serviceability through the self-service channels.

Reliability of attributes

The average R-Squared of 3 of the five dimensions – tangibles at 0.469, assurance at 0.492 and empathy at 0.483 – could explain less than 50 percent of their allocated dimension. While the dimensions of reliability and responsiveness had an average R-Squared of 0.564 and 0.596 respectively. The average R-Squared reconfirms what has been discussed previously, in that the tangible attributes of TA1 and TA3 only describe less than 30 percent of the tangible dimension.

Similarly, the attribute of assurance (A2) and empathy (EM2) explain less than 34 percent and 25 percent of their service dimensions respectively.

The new attributes that have been added to the service dimensions of reliability and responsiveness (*my bank's banking systems being available and operational at all times* and *my bank's electronic channels giving me convenience to perform my banking any time*) describe only 41 percent and 37 percent of their respective dimension. While Parasuraman et al. (1991) state that new MVs can be added to the model, the results of the reliability test show that the additional MVs of RL6 and RS5 reduce the reliability of the respective service dimensions. The reduction in reliability, through the addition of new attributes, has been echoed in a study done by Finn and Lamb (1991) where they assessed the modification of SERVQUAL for retail shoppers through expansion and narrowing of attributes to include specific dimensions relating to retail products. These authors found that by adding new attributes to the scale the generalisability co-efficient (GC) was decreased and the variance of the scale was also impacted on.

5.4 Discussion pertaining to Research Question 1

RQ 1: Can other relationships between service-quality constructs be identified, for creating new dimensions of service quality?

Based on EFA, the following service dimensions were developed, which speak to service importance within the South African context:

- *Credibility and accuracy*
- *Tangible representation*
- *Attitudes and behaviour*
- *eService access*

The implications of each factor are discussed below.

5.4.1 *Credibility and accuracy*

This is the largest service dimension among the four identified dimensions, as it contributes to 49 percent of the service-quality variance. In summary, the service dimension is centred on credibility and accuracy associated with the institution. This dimension consists of attributes such as: the bank delivering on the promise to do something by a specific time; the bank understanding the customer's needs; and the bank having the best interest of the clients at heart. Accuracy also plays a significant role, as customers relate this dimension to the bank having error-free records and providing prompt service. It is understandable that credibility, together with accuracy, is the most important service dimension, as the fundamental role that banks play is one of trust. The entire banking model is built on trust in that customers trust financial institutions to keep their money safe and, in return, banks trust customers to retain their funds in the institution. A good example of where credibility and trust were broken is in the case of the 2002 collapse of Saambou Bank, South Africa's seventh largest bank at the time, where investors lost their trust in the bank and withdrew more than R1 billion of their savings (Jones, 2014).

One can even consider this dimension as a basic attribute of service quality within financial services. Arbore and Busacca (2009) identified similar constructs of reliability, accuracy and speed when banks dealt with core services within financial institutions. Arbore and Busacca (2009) attributed the micro and macro economic climate in 2008 to the significance of this factor. Within the South African context, similar and recent impacts have been felt by consumers, with the collapse of African bank bringing into question the credibility of the financial industry (Jones, 2014). This element of trust/credibility is commonly referred to among researchers who investigate service-quality dimensions, like Arbore and Busacca (2009) and Manrai and Manrai (2007) who state that the social aspects of trust played a crucial role in customer loyalty. Customers still expect banks to have their best interests at heart, again very indicative of the macro- and micro-economic environment where trust has been damaged as a result of decisions made by financial institutions.

While Maddern et al. (2007) split SERVQUAL into functional (the doing part of service) and technical service quality (doing the right thing), our findings indicate that “the doing” and “doing the right thing” cannot be mutually exclusive, as customers find these equally important for credibility and accuracy, in which “doing” would be considered as *the bank providing prompt service*, and the *bank’s willingness to always help*, while the “doing the right thing” would be considered as *the bank delivering on its promise to do something at a specific time*, as well as *having error-free records*.

5.4.2 *Tangible representation*

The second dimension identified was tangible representation. This dimension includes three items, which relate to *a bank having facilities that are physically appealing*, *the bank having appealing marketing material*, and *the staff treating the customer with courtesy consistently*. Tangible representation contributes 8.53 percent of the total variance of service quality.

While only 17 percent of the total respondents use tangible facilities such as branches and Automated Teller Machines (ATMs), the tangible representation dimension of service quality was the second largest dimension that explained service quality variance. What can be deduced is that while customers migrate to self-service channels, it is key that banks still maintain their physical presence that customers can still associate with and that increases brand association. As stated by Lewis and Soureli (2006), this association with the brand can result in attitudinal loyalty, where the customer’s attitude to service and brand influence create customer satisfaction and loyalty towards their respective banks. Analogously Munusamy et al. (2010), who investigated the impact of moving services from face-to-face services to an electronic channel, found that there was direct correlation with customer satisfaction and tangibles, where customers found it important to still have tangibles even though they had migrated to electronic channels.

In summary it is important for financial institution to focus on tangible elements that provide a human element of courtesy towards customers, as these physical attributes are still considered as relevant to service quality, and our findings

agree with findings from the literature that indicate tangibility, more specifically in face-to-face service, is a large influencer of customer service quality (Arbore & Busacca, 2009; Carlos Fandos Roig et al., 2006; Culiberg & Rojsek, 2010). The importance of tangible elements in service quality are evident in the current South African banking sector, where there has been a shift to electronic and self-service channels, but banks continue to increase the frontline channel (branches and walk-in centres) operating hours. The likes of FNB, ABSA, and Capitec operate seven days a week and, during business days, operate 8:30 a.m. to 5:00 p.m. Secondly, banks are also introducing the "virtual banker" technology on self-service channels like online banking where customers can interact with an individual (whether it be artificial intelligence or an agent) should they need assistance. Standard Bank has introduced this service, which is referred to as *Always On,* where live chats can be held 24 hours a day through their electronic channels (Standard Bank, 2015). All of these changes are meant to meet customer demand, which is believed to lead to better service quality.

5.4.3 *Attitudes and behaviour*

This dimension contributes 5.10 percent of total variance of service quality and addresses the attitudes of staff and their conduct towards customers. Attitudes and behaviour service dimensions consist of three attributes that relate to the following:

- *When a customer has a problem, their bank shows a sincere interest in resolving it;*
- *The bank never being too busy to respond to the customer's requests; and*
- *The bank performing the service at the time that they promised to perform it*

In today's markets where the five main South African banks have market share in double digits and millions of customers, there is still an expectation of individual attention, irrespective of how busy the bank may be in servicing others.

Kemal Avkiran (1994) found that staff conduct was one of the main service attributes required for effective service quality, while the dimension's variance

was not provided to specify how important it is in defining service quality. Sousa and Voss (2012) concur with these findings, as their study shows that human interaction, while not the main driver of servicing, creates the lock-in effect with customer service. Finally how staff conduct themselves is a large influencer in improving service issues (Culiberg & Rojsek, 2010).

The attribute of *the bank performing the service at the time that they promised to do it* had the lowest load of 0.539. The low load can be accounted for in the sample population, which is made up of self-servicing customers who have low reliance on individuals for servicing.

5.4.4 *eService access*

The last dimension of service quality is referred to as “eServices access” as this dimension is made up of three service items that were all added and modified based on the impact of technological changes within the banking environment. This dimension contributes 4.84 percent of the total variance of the service quality.

Nupur (2010) studied eServices in Bangladesh banks and found that reliability, responsiveness and assurance had a significant contribution to eServices. Our study found three service attributes made up of the attributes of *reliability, responsiveness and assurance* dimensions. These three service attributes are: *my bank’s banking systems being available and operational at all times; my bank's electronic channels giving me convenience to perform my banking any time*, and *feeling safe when making transactions electronically.*

What this means for financial institutions is that while they work to migrate services from face-face interaction to self-service channels they need to ensure that the same attributes relating to reliability, responsiveness and assurance are delivered for customers. Systems must be accessible at any time and access should be controlled to ensure safe transacting. This view is held by Ganguli and Roy (2011) and Sousa and Voss (2012); banking system availability, channel convenience and security are critical to service quality when dealing with electronic channels.

5.5 Discussion pertaining to Research Question 2

RQ2: How do gender, age, and income play a significant role in determining the importance of service quality?

An assessment of the top five service attributes mean ranking shows that no statistical difference exists in importance between the demographics of gender, age, and income.

The implications of the importance items are discussed in section 5.5.1 up to and including section 5.5.4.

5.5.1 *General importance ranking*

Importance based on mean ranking indicates that all customers consider the following items in their top three services.

1. Feeling safe when making transactions electronically (assurance);
2. My bank's electronic channels giving me convenience to perform my banking any time (responsiveness); and
3. My bank's banking systems being available and operational at all times (reliability).

Note that the top three elements comprise all the electronic banking service attributes that were either added or modified (assurance items) to consider the impact of technology on servicing. The three top service attributes indicate that with banks and other financial institutions moving services to cheaper electronic channels, the importance of the service items also start moving toward these channels.

Further to this, and as shown in Chapter 4, the tangible items rank within the last four positions of importance, which is in contradiction to the view of Munusamy et al. (2010) that tangibles are important to customers who have migrated to electronic channels.

Safety and security

The most important measure that was displayed is that customers want to feel safe when making transactions electronically. The migration to electronic banking has increased security threats where customers have become more at risk to cyber attacks. PricewaterhouseCoopers (2015) suggests that the traditional customer did not grow up with digital experiences – more specifically in Africa. This situation has resulted in trust issues that relate to the safety and usage of electronic channels. As indicated by Sabric (2014), fraud losses due to credit card fraud increased by 23 percent between 2013 and 2014 to R454.9 million. Just under 43 percent of these losses were due to Card Not Present (CNP) transactions, which are generally online purchases using cards. The focus of security increased in 2015, which resulted in a decrease of 28.6 percent in CNP fraud transactions between 2014 and 2015.

Convenience

Convenience was the second most important item, as customers want the ability to perform their banking at any time of the day. This measure is based on electronic banking and the finding is in contradiction to findings of Ganguli and Roy (2011), which identified convenience attributes (*Beyond Business Hours, and Quick Transactions*) as the primary focus and importance based on means interpretation. KPMG South Africa (2015) looked at the importance factors driving customer satisfaction, and identified that while 57 percent of customers still believe in access to branches, the convenience of electronic channels is still considered as a game changer in innovation.

Reliability of systems

The third item of importance was the reliability of systems. Customers want their banks to be operational at all times, while Llosa et al. (1998) noted that based on a weighting given to importance of the five SERVQUAL dimensions, reliability proved to be the most important. Our reasons for a lower rating is that these system failures are not a regular occurrence in South Africa, which results in a lower negative judgment but would still be considered as important because of the financial impacts seen when the systems collapse.

5.5.2 *Gender-based importance ranking*

The top five items of service are not considered to have a statistical significant difference between males and females. However, females rated the following items more important than males did, with the difference being statistically significant:

1. Responsiveness: My bank advising me when the service will be performed;
2. Assurance: The staff at my bank having knowledge to my questions;
3. Reliability: My bank delivering on its promises to do something by a specific time;
4. Tangibility: My bank having employees that are always dressed neatly; and
5. Tangibility: My bank having appealing marketing material.

While Zalatar (2012) found that differences existed between the ranking of tangibles between males and females, his findings are contrary to ours, in which females ranked the services more importantly than males. The correlation in tangible attributes was the bank having appealing marketing material. Zalatar (2012) found that males gave this factor a lower importance ranking than females. Our study, together with Zalatar (2012), found that females rated the following service attributes more important than males; *employees, dressed neatly*, and *banks delivering on something at a specific time* resembled the findings of Zalatar (2012).

The service attributes of empathy do not feature when it comes to the difference between males' and females' ranking. Zalatar (2012) and Mokhlis (2012) found, in contrast, that empathy was ranked differently between the gender groups. Another dissimilarity exists between our study and Spathis et al. (2004) and Mokhlis (2012) where females rated services lower than men did. This difference in findings can be attributed to Spathis et al. (2004) and Mokhlis (2012) basing their scores on perception of service while our research was based on the importance assigned to a service.

Contrasting findings might be attributable to differences in methodology of applying the SERVQUAL scale, where majority of the studies use gap scoring, while our study applies importance ranking.

Another factor that may attribute to contrasting findings is the variation between the compositions of the sample population.

5.5.3 *Age-based importance ranking*

Age did not have impact on the top 16 service items; the only items where there was a statistically significant difference were empathy and tangibility, where the items of *my bank advising me when the service will be performed* was seen as extremely important for the older market, namely customer older than 55 years older together with *my bank giving me individual attention.* Interestingly the tangibility item of *physically appealing* facilities is ranked higher for customers between 18 and 25, in comparison to customers between the ages of 26 years to 55 years. This result indicates that while we consider those customers within the age group of between 18 and 25 as being the tech-savvy generation, they still consider appealing bank facilities as important. Morrow's 2004 study as cited by Ganesan-Lim et al. (2008) found that within fast-moving consumer goods retailers younger consumers had higher demands of the physical environment – in their case shopping malls. It was expected that the older generation would be more critical of the physical environment that younger generations, as in our findings.

Kumari and Rani (2011) found that the only significant difference between demographics was the element of time where customers wanted to be advised on when a service was to be conducted. Branca (2008) found that age was a large discriminator of taking up electronic services, which is contradictory to our findings as the age of respondents did not make a difference in ranking of the 3 top items. Coetzee et al. (2012) showed that the age impact in their research was due to the respondent being predominately over 55 years old. For future studies it should be investigated on whether a normal distribution of age-based respondents would impact on these results.

5.5.4 *Income-based importance ranking*

Out of the three demographics the impact of income on service quality had the least amount of statistical variance between the income bands. The only statistical significance in mean differences was with the “empathy” attribute of *my bank having convenient operating hours*. This was considered to be most important for the annual income group of less than R100 000. As discussed in the demographic section, there is a linear upward relationship between income and adoption of technology and with lower income resulting in low technology adoption, which means they are serviced through branches (Sohail & Shanmugham, 2003). Similar to our findings, Coetzee et al. (2012) found that income had little to no impact on service quality.

5.6 Conclusion

For hypothesis 1 the findings show that the SERVQUAL scale is not an adequate representation of service importance in the South African context of retail banking. The results reveal that there is a high interdependency between the service dimensions of reliability, responsiveness, and assurance and empathy, indicating that customers are unable to separate the services. With regard to the service dimension of tangibility, customers could differentiate between this service dimension and the others.

In answering Research Question 1, four dimensions of service quality were defined namely; Credibility and accuracy, Tangible representation, Attitudes and behaviour and eService access.

Delivering what is promised, with accuracy and dependably, Credibility and accuracy, were considered the most important service dimension. From a customer perspective credibility and accuracy forms the backbone of the servicing within banks. The tangibility dimension indicated customers still require a tangible link to their bank for reassurance that the bank exists. The eService dimension indicated that on electronic channels, customer's reliability on and responsiveness to systems together with security, when performing transactions, are fundamental to service.

For Research Question 2, the demographics of gender, age, and income do not play a significant role in determining importance of service attributes. The top three items were electronic-banking based, while the bottom three were tangibility based. With income differences, the less than R100 000 group ranked branch-operating hours as more important then other income groups did. For the age demographic, the empathy items of being advised *when a service will be done* and *individualised attention* ranked most important with the 55 and older age group, while, surprisingly, the tangibility item of physically appealing facilities ranked higher for the 18-25 age group in comparison to customers aged between 26 to 55 years.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The purpose of this research was to determine the service factors that are important to retail banking customers in South Africa and to identify if there are any preferences in service quality that follow demographic lines. This chapter provides the conclusion to the research and is broken up into three sections: summary of findings; recommendations to financial institutions, and suggestions for further research.

6.2 Conclusions of the study

6.2.1 *Hypothesis 1*

In addressing the first sub-problem of identifying customers' retail banking service requirements, the popular SERVQUAL scale was assessed for appropriateness in measuring service quality. Owing to the number of literature debates associated with SERVQUAL such as the gap score adequacy and the model's discriminatory and convergent validity, where authors argued that the dimensions overlapped, hypothesis 1 was stated as follows:

The SERVQUAL scale does not display the five-dimensional structure (tangibles, reliability, responsiveness, assurance, empathy) in the context of what is important to customers in today's banking environment and channel usage.

The SERVQUAL model did not fit the observed data and resulted in a poor model fit, which was in line with our hypothesis. The results demonstrated a high overlap between the dimensions of reliability, responsiveness, empathy and assurance. The interpretation of this finding is that customers are unable to distinguish the difference in these SERVQUAL dimensions. There was a low interdependency with the dimension of tangibility, which indicated that the customers were able to distinguish it from other dimensions.

Another finding from our examination of the SERVQUAL model showed that the service attributes did not fully explain their respective dimensions. On average the service attributes explained less than 50 percent of their respective dimension.

An interesting discovery was that with the addition of the technology-based service attributes to the service dimensions of reliability, responsiveness and assurance. These dimensions were: *my bank's banking systems being available and operational at all times; my bank's electronic channels giving me convenience to perform my banking any time*; and *feeling safe when making transactions electronically*. The technology-based attributes decreased the average reliability of the respective attributes. Our findings indicate that adding attributes compromises the reliability of the model.

6.2.2 *Research question 1*

Since the SERVQUAL model did not meet our requirements of defining service factors for customer service, it leads us to Research Question 1:

Can other relationships between service-quality constructs be identified, for creating new dimensions of service quality?

Table 14 summarises the new service relationships and dimensions identified together with their respective attributes.

From a customer perspective *creditability and accuracy* remain the primary service that is required from a bank, as this is the backbone of banking, which is based on trust and credibility.

Another insight that was brought to light is that while banks move to electronic channels, customers still associate tangibles with service, more specifically the physical appearance of facilities, and the marketing material, which speaks to the tangible representation dimension.

Table 14: Service dimension overview

Service dimension	*Attributes of the dimension*
Credibility and accuracy	This service dimension relates to the trust element in which banks deliver on promises to perform a task, and ensure error-proof solutions, while still having the customer at heart and understanding their needs. One can consider this dimension to be *more focused on process and operational aspects of service*
Tangible representation	The dimension relates to physical aspects of service, namely the appeal of the facilities and marketing material, together with the treatment of customers by staff (constant courtesy). *The focus is on marketing and brand relations*
Attitudes and behaviour	This dimension deals with the softer aspect of service; mainly staff conduct, where staff need to show interest in customer problems, and should never be too busy to help, while preforming the service when they promise to do it. Operationally it is linked to the *soft skills and emotional aspect*
eService access	eServices access dimension is made up of three service items that are technology based, mainly assurance with electronic transactional safety, and the availability of the system together with the convenience of the system to be operational at any time. *This is a technology-driven service dimension*

Another insight is that with the increase in technology the following aspect of service needs to be met:

- Service quality needs to cater for electronic channels; it is not adequate to simply applying SERVQUAL to an electronic environment. For this reason, electronic service attributes must be defined.
- Staff and human interaction are still vital in providing effective customer service, as seen by the service dimensions of attitudes and behaviour together with the service attributes within the credibility and accuracy dimension, where human interaction plays a significant role in defining the respective service dimensions.

6.2.3 *Research question 2*

In identifying the specific customer-service needs, we investigated whether these service needs differed between the demographics of gender, age, and income groups.

Our findings were partially met in that there were no significant differences in service needs based on demographics for the top seven important items, as indicated in Chapter 5. However, as we move down the ranks of service items, the spread in importance selection increased. Therefore, for less important items there is a difference in views between the respective demographics as to what is important.

An interesting find was that the top three items were related to technology-based service, while the bottom 4 service attributes were those of the tangibility dimension. The significance in the top three service items is that irrespective of the demographics, all customers agree on what is important with regard to the top service items.

When looking at gender, females in general ranked service items more importantly then males but the importance difference was only statistically significant for tangibility, responsiveness, assurance, and reliability items. Our findings are in contradiction to Mokhlis (2012) findings, who found that males and females rate responsiveness and assurance attributes equally. Zalatar (2012) however, indicated that male respondents gave a higher score to reliability while females gave a higher score to empathy. In our study empathy attributes did not feature as a service attribute that males and females differed on.

An assessment of age-based differences indicated that customers older than 55 prefer individualised attention together with being advised when a service will be conducted. An interesting find was that there was a higher importance put on the tangibility attribute of *banks having physically appealing facilities* (TA2) for customers aged between 18 and 25 years, in comparison to older respondents aged between 26 and 55 years.

This finding suggests that while the younger generation are more inclined to use electronic channels, they still put a higher demand on the physical environment than their older counterparts.

With regard to income, the empathy attribute of *convenient operating hours* had the most significant difference between the various income groups, with the income group of less than R100 000 income finding this attribute as most important. The reasoning behind the importance in convenient operating hours is due to the lower-income groups having less access to technology and putting a reliance on face-to-face channels to perform their banking. While some may have access to technology-based solutions, Education and awareness play a pivotal role in the adoption of these electronic solutions.

6.3 Recommendations

With the banking environment undergoing changes, such as deregulation that is allowing more entrants into the sector, and other regulations being introduced with regard to pricing regulation on services and products, it is key to review the servicing component. Customers hold the buying power and are spoilt for choice in deciding where to have their banking relationship.

Banks are often criticized in not delivering on service quality, due to operational structures where they operate in silos, and cater for the respective attributes of servicing individually, whether it is driving operational efficiencies or focusing on the brand and marketing. Our findings show that customers are unable to distinguish the differences between these respective items. A poor delivery in one service dimension results in a knock-on effect on another service item/dimension. The operational implications for banks are that institutions cannot work in silos when creating service-related value propositions. A holistic approach needs to be catered for in delivering service quality. Banks need to ensure that they integrate IT requirements, which relate to the reliability of banking systems, to the tangibles, such as appealing marketing material, the design of physical facilities, and online content.

Marketing needs to also play a role educating customers on the various options and solutions available to conduct their banking, as this education will assist in the adoption of technology-based solutions.

Management needs to understand that employees, irrespective of whether they are customer facing or back-office, are critical in delivering service. For this reason, while banks migrate efforts to self-service and cheaper electronic channels, there is a need to maintain an element of tangibility to the service. Secondly, departments such as human resource and training need to ensure that competent individuals are hired for their respective roles and are adequately trained to be effective in their roles, while still showing compassion and being sincere to customers.

With so many various departments and functional teams required within the organisation it is key that this strategy of effective customer service is driven by top management and their involvement is critical in ensuring the success of the organisation, as they would need to co-ordinate efforts to ensure successful implementation. The synergy created by a holistic strategy would enable consistent customer experience and servicing irrespective of the channel taken by the customer.

Finally, while South Africa has a diverse population, and banking products have been fragmented based on demographics of age and income, our findings suggest that service should not be catered for on the basis of these demographics and should be catered for on a needs bases.

6.4 Suggestions for further research

For further research into the topic, which may assist in understanding, explaining and verifying our findings, the following is suggested:

- Replicate the study in terms of Business-to-Business (B2B) as some individuals have a business relationship with their institution and, in most cases, these relationships are treated separately.

Therefore, individual service requirements have to match up to business requirements and the possible gaps between the two needs to be explored.

- With regard to the importance ranking of service items, the top three items were electronic-bank based while the lowest ranked items where the tangibility service items. An element of respondent demographics bias could impact on these results and further research would need to be conducted in order to generalise the results. This generalisation could be done by obtaining a sample that represents the general banking population channel usage, where close to 70 percent of customers actual use their branch as their primary channel (FinScope, 2014).
- The ethnicity distribution did not reflect the general population; hence any findings that could relate to ethnicity cannot be generalised. Future studies could evaluate whether ethnicity has an impact on service rankings
- Service items were based on SERVQUAL, as this is the most used service-quality scale. Two new service attributes were then introduced and amended an existing attribute. These new attributes were more important to customers than the predefined SERVQUAL service items. So we are brought to the question of whether the SERVQUAL items truly defined service. Further research could investigate a combination of top service scales, such as the BANKSERV scale. Alternatively, we could obtain an adequate sample of respondents to define what they consider as important service items. After their definitions had been consolidated a new scale could be created and its items could be weighed against existing scales defined by the literature.

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APPENDIX A

Survey Sample

Sample questionnaire that was used for the study. Note that this has been created through Qualtrics and below is the extraction of the online Qualtrics survey. The number next to the questions is for reference purpose only as each number links to a service dimension. These have been randomized as discussed in Chapter 3

Dear Sir/Madam Please can you help in completing the below survey. Purpose: The purpose of the questionnaire is to understand the key attributes in customer satisfaction when dealing with retail banks. The questionnaire should not take you more than 5 minutes to complete. In the survey you will be required to rank the relative importance of each statement that contributes to customer service with your Bank. Consent: By pressing the "forward" arrow you acknowledge the following: The data you provided is accurate The data will only be known to the researchers You agree to the use of the data provided in the customer satisfaction survey. Thank you once again for completing the questionnaire

Tell us about yourself...What is your gender?

- Male (1)
- Female (2)

What is your ethnicity?

- White (1)
- Black (2)
- Coloured (3)
- Asian (4)
- Indian (5)
- Other (6)

How old are you (in years)?

- 18 - 25 (1)
- 26 - 35 (2)
- 36 - 54 (3)
- 55 or older (4)

Gross Yearly Income (Rands)?

- less than 100 000 (0)
- 100 001 - 300 000 (1)
- 300 001 - 750 000 (2)
- 750 001 - 1 500 000 (3)
- 1 500 001 or more (4)

Where does your salary get deposited?

- ABSA (1)
- First National Bank (FNB) (2)
- NedBank (3)
- Capitec (4)
- Standard Bank (5)
- other (6)

How many products (Credit Card, Homeloan, Transactional or Savings accounts) do you currently have with your existing bank?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 or more (5)

Which Banking outlet do you most frequently use?

- Branch (1)
- ATM (2)
- Online Banking (3)
- Cellphone Banking (including APP) (4)
- Call Centre (5)

Please indicate the importance of the below statements that relate to your banking needs. If the statement is not important to you select “Not Important", however if you feel that the feature is critical then select “Extremely Important”.

	Not important (1)	Less important (2)	Slightly important (3)	Neutral (4)	Moderately important (5)	Very important (6)	Extremely important (7)
My bank having modern facilities (1)	❍	❍	❍	❍	❍	❍	❍
My bank having employees that are always dressed neatly (2)	❍	❍	❍	❍	❍	❍	❍
My bank giving customers personalized service (3)	❍	❍	❍	❍	❍	❍	❍
My bank never being too busy to respond to my requests (4)	❍	❍	❍	❍	❍	❍	❍
My bank have appealing market material (5)	❍	❍	❍	❍	❍	❍	❍
When I have a problem, my bank showing sincere interest in resolving it (6)	❍	❍	❍	❍	❍	❍	❍
My bank performing the service right the first time (7)	❍	❍	❍	❍	❍	❍	❍
My bank having the best interest of the clients at heart (8)	❍	❍	❍	❍	❍	❍	❍
My bank's electronic channels giving me convenience to perform my	❍	❍	❍	❍	❍	❍	❍

banking any time (9)							
My banks banking systems being available and operational at all times (10)	❍	❍	❍	❍	❍	❍	❍
The willingness of my bank to always help me (11)	❍	❍	❍	❍	❍	❍	❍
Feeling safe when making transactions electronically (12)	❍	❍	❍	❍	❍	❍	❍
My bank providing prompt service to me (13)	❍	❍	❍	❍	❍	❍	❍
My bank delivering on its promises to do something by a specific time (14)	❍	❍	❍	❍	❍	❍	❍
My bank 's employees instilling confidence in me (15)	❍	❍	❍	❍	❍	❍	❍
My bank performing the service at the time that they promise to do it (16)	❍	❍	❍	❍	❍	❍	❍
The staff at my bank treating me with courtesy consistently (17)	❍	❍	❍	❍	❍	❍	❍

The staff at my bank having knowledge to my questions (18)	❍	❍	❍	❍	❍	❍	❍
My bank giving me individual attention (19)	❍	❍	❍	❍	❍	❍	❍
My bank having convenient operating hours (20)	❍	❍	❍	❍	❍	❍	❍
My bank advising me when the service will be performed (21)	❍	❍	❍	❍	❍	❍	❍
My bank having facilities which are physically appealing (22)	❍	❍	❍	❍	❍	❍	❍
My bank understanding my needs (23)	❍	❍	❍	❍	❍	❍	❍
My bank having error free records (24)	❍	❍	❍	❍	❍	❍	❍

APPENDIX B

Factor load matrix

Table 15: Factor loading matrix

Standardized Factor Loading Matrix: Estimate/StdErr/t-value					
	Tangibles	Reliability	Responsiveness	Assurance	Empathy
TA1	0,5557	0	0	0	0
	0,0535				
	10,3859				
TA2	0,8215	0	0	0	0
	0,0332				
	24,7692				
TA3	0,5159	0	0	0	0
	0,0563				
	9,1699				
TA4	0,792	0	0	0	0
	0,0352				
	22,5155				
RL1	0	0,8941	0	0	0
		0,0164			
		54,6693			
RL2	0	0,7137	0	0	0
		0,0353			
		20,192			
RL3	0	0,7731	0	0	0
		0,0294			
		26,2773			
RL4	0	0,8417	0	0	0
		0,0221			
		38,0899			
RL5	0	0,6051	0	0	0
		0,045			
		13,4457			
RL6	0	0,6374	0	0	0
		0,0423			
		15,0727			
RS1	0	0	0,7185	0	0
			0,0349		
			20,588		
RS2	0	0	0,8844	0	0
			0,0175		

	Tangibles	Reliability	Responsiveness	Assurance	Empathy
			50,6742		
RS3	0	0	0,8848	0	0
			0,0174		
			50,8301		
RS4	0	0	0,7254	0	0
			0,0342		
			21,192		
RS5	0	0	0,6051	0	0
			0,045		
			13,4367		
AS2	0	0	0	0,5802	0
				0,048	
				12,0741	
AS1	0	0	0	0,7185	0
				0,0363	
				19,7802	
AS3	0	0	0	0,6632	0
				0,0413	
				16,0756	
AS4	0	0	0	0,8223	0
				0,0268	
				30,7091	
EM1	0	0	0	0	0,7208
					0,036
					19,9961
EM2	0	0	0	0	0,5021
					0,0538
					9,3294
EM3	0	0	0	0	0,6257
					0,0445
					14,0646
EM4	0	0	0	0	0,8143
					0,027
					30,1588
EM5	0	0	0	0	0,7657
					0,0317
					24,1163

APPENDIX C

MV correlation matrix

Table 16 shows the correlation matrix output for the EFA on the SERVQUAL MV.

Table 16: Correlation matrix of MV

	Correlations																						
Variables	TA1	TA3	EM3	RS4	TA4	RL2	RL3	EM4	RS5	RL6	RS3	AS2	RS2	RL1	AS1	RL4	AS3	AS4	EM1	EM2	RS1	TA2	EM5	RL5
TA1	1,000	0,234	0,379	0,386	0,422	0,382	0,307	0,209	0,291	0,292	0,273	0,271	0,308	0,237	0,334	0,360	0,462	0,396	0,283	0,238	0,317	0,453	0,315	0,215
TA3	0,234	1,000	0,353	0,330	0,462	0,207	0,245	0,204	0,199	0,157	0,274	0,101	0,244	0,218	0,326	0,217	0,388	0,271	0,226	0,209	0,361	0,398	0,255	0,154
EM3	0,379	0,353	1,000	0,543	0,344	0,482	0,397	0,448	0,377	0,296	0,456	0,307	0,460	0,411	0,489	0,471	0,353	0,424	0,678	0,270	0,486	0,299	0,492	0,266
RS4	0,386	0,330	0,543	1,000	0,391	0,709	0,497	0,564	0,392	0,368	0,642	0,390	0,643	0,574	0,494	0,637	0,447	0,479	0,482	0,294	0,598	0,298	0,437	0,303
TA4	0,422	0,462	0,344	0,391	1,000	0,323	0,313	0,290	0,242	0,244	0,400	0,189	0,362	0,357	0,458	0,377	0,480	0,494	0,331	0,321	0,453	0,657	0,430	0,353
RL2	0,382	0,207	0,482	0,709	0,323	1,000	0,482	0,597	0,424	0,468	0,609	0,403	0,652	0,563	0,559	0,670	0,490	0,527	0,486	0,357	0,542	0,325	0,352	0,294
RL3	0,307	0,245	0,397	0,497	0,313	0,482	1,000	0,702	0,603	0,598	0,637	0,525	0,657	0,700	0,481	0,669	0,315	0,568	0,451	0,235	0,463	0,342	0,519	0,532
EM4	0,209	0,204	0,448	0,564	0,290	0,597	0,702	1,000	0,549	0,595	0,742	0,550	0,752	0,728	0,499	0,623	0,384	0,520	0,536	0,442	0,485	0,367	0,598	0,497
RS5	0,291	0,199	0,377	0,392	0,242	0,424	0,603	0,549	1,000	0,703	0,441	0,696	0,511	0,552	0,376	0,499	0,352	0,391	0,375	0,285	0,405	0,208	0,459	0,444
RL6	0,292	0,157	0,296	0,368	0,244	0,468	0,598	0,595	0,703	1,000	0,511	0,721	0,516	0,565	0,364	0,485	0,397	0,419	0,367	0,319	0,322	0,273	0,418	0,355
RS3	0,273	0,274	0,456	0,642	0,400	0,609	0,637	0,742	0,441	0,511	1,000	0,575	0,850	0,785	0,613	0,647	0,421	0,609	0,541	0,339	0,587	0,403	0,683	0,500
AS2	0,271	0,101	0,307	0,390	0,189	0,403	0,525	0,550	0,696	0,721	0,575	1,000	0,559	0,604	0,329	0,502	0,322	0,431	0,351	0,282	0,404	0,184	0,477	0,405
RS2	0,308	0,244	0,460	0,643	0,362	0,652	0,657	0,752	0,511	0,516	0,850	0,559	1,000	0,789	0,568	0,636	0,469	0,576	0,523	0,365	0,564	0,400	0,590	0,532
RL1	0,237	0,218	0,411	0,574	0,357	0,563	0,700	0,728	0,552	0,565	0,785	0,604	0,789	1,000	0,540	0,768	0,435	0,658	0,497	0,357	0,626	0,389	0,671	0,591
AS1	0,334	0,326	0,489	0,494	0,458	0,559	0,481	0,499	0,376	0,364	0,613	0,329	0,568	0,540	1,000	0,583	0,546	0,594	0,494	0,266	0,536	0,448	0,514	0,383
RL4	0,360	0,217	0,471	0,637	0,377	0,670	0,669	0,623	0,499	0,485	0,647	0,502	0,636	0,768	0,583	1,000	0,492	0,710	0,560	0,435	0,702	0,420	0,523	0,459
AS3	0,462	0,388	0,353	0,447	0,480	0,490	0,315	0,384	0,352	0,397	0,421	0,322	0,469	0,435	0,546	0,492	1,000	0,595	0,387	0,411	0,525	0,520	0,403	0,262
AS4	0,396	0,271	0,424	0,479	0,494	0,527	0,568	0,520	0,391	0,419	0,609	0,431	0,576	0,658	0,594	0,710	0,595	1,000	0,597	0,433	0,628	0,553	0,640	0,524
EM1	0,283	0,226	0,678	0,482	0,331	0,486	0,451	0,536	0,375	0,367	0,541	0,351	0,523	0,497	0,494	0,560	0,387	0,597	1,000	0,456	0,608	0,444	0,576	0,472
EM2	0,238	0,209	0,270	0,294	0,321	0,357	0,235	0,442	0,285	0,319	0,339	0,282	0,365	0,357	0,266	0,435	0,411	0,433	0,456	1,000	0,455	0,512	0,302	0,298
RS1	0,317	0,361	0,486	0,598	0,453	0,542	0,463	0,485	0,405	0,322	0,587	0,404	0,564	0,626	0,536	0,702	0,525	0,628	0,608	0,455	1,000	0,531	0,609	0,442
TA2	0,453	0,398	0,299	0,298	0,657	0,325	0,342	0,367	0,208	0,273	0,403	0,184	0,400	0,389	0,448	0,420	0,520	0,553	0,444	0,512	0,531	1,000	0,502	0,452
EM5	0,315	0,255	0,492	0,437	0,430	0,352	0,519	0,598	0,459	0,418	0,683	0,477	0,590	0,671	0,514	0,523	0,403	0,640	0,576	0,302	0,609	0,502	1,000	0,564
RL5	0,215	0,154	0,266	0,303	0,353	0,294	0,532	0,497	0,444	0,355	0,500	0,405	0,532	0,591	0,383	0,459	0,262	0,524	0,472	0,298	0,442	0,452	0,564	1,000

APPENDIX D

Wilcoxon score and mean differences

Table 17: Wilcoxon-Mann-Whitney test based gender (normal approximation)

Rank (Mean)	Service Code	Male (Mean)	Female (Mean)	Z	Two-Sided Pr > |Z|
1	AS2	6,70	6,85	1,7371	0,0824
2	RS5	6,69	6,73	0,3126	0,7546
3	RL6	6,63	6,75	0,8446	0,3983
4	RL2	6,52	6,67	1,1164	0,2642
5	RL3	6,55	6,61	0,0483	0,9615
6	EM4	6,45	6,66	0,7097	0,4779
7	RL1	6,39	6,69	2,5851	0,0097
8	RS2	6,38	6,60	1,4155	0,1569
9	RL4	6,41	6,53	1,1321	0,2576
10	RS3	6,36	6,59	1,3554	0,1753
11	RS4	6,34	6,44	0,7144	0,475
12	AS4	6,29	6,52	2,3146	0,0206
13	RL5	6,21	6,35	1,1056	0,2689
14	EM5	6,22	6,31	0,2611	0,794
15	AS3	6,11	6,31	1,599	0,1098
16	RS1	6,02	6,33	2,1168	0,0343
17	EM3	6,02	6,05	-0,0821	0,9346
18	AS1	5,89	6,17	1,6507	0,0988
19	EM1	5,93	6,03	0,5882	0,5564
20	EM2	5,86	5,99	0,8052	0,4207
21	TA1	5,93	5,83	0,0602	0,952
22	TA2	4,90	5,38	1,9189	0,055
23	TA4	4,65	5,27	2,7107	0,0067
24	TA3	4,54	5,13	2,6256	0,0087

Table 18 shows the Wilcoxon scores of the variable gender, where females have a higher mean score than males indicating that for the following variables are rated as more important than what males rated them as.

Table 18: Wilcoxon score for variable gender

Wilcoxon Scores (Rank Sums) for Variable TA4					
Gender	**N**	**Sum of Scores**	**Expected Under H0**	**Std Dev Under H0**	**Mean Score**
Male	122	12075	13298	450,994	98,975
Female	95	11578	10355	450,994	121,874

Wilcoxon Scores (Rank Sums) for Variable TA3					
Gender	**N**	**Sum of Scores**	**Expected Under H0**	**Std Dev Under H0**	**Mean Score**
Male	122	12116,5	13298	449,805	99,316
Female	95	11536,5	10355	449,805	121,437

Wilcoxon Scores (Rank Sums) for Variable RS1					
Gender	**N**	**Sum of Scores**	**Expected Under H0**	**Std Dev Under H0**	**Mean Score**
Male	122	12399,5	13298	424,234	101,635
Female	95	11253,5	10355	424,234	118,458

Wilcoxon Scores (Rank Sums) for Variable RL1					
Gender	**N**	**Sum of Scores**	**Expected Under H0**	**Std Dev Under H0**	**Mean Score**
Male	122	12333,5	13298	372,91243	101,094262
Female	95	11319,5	10355	372,91243	119,152632

Wilcoxon Scores (Rank Sums) for Variable AS4					
Gender	**N**	**Sum of Scores**	**Expected Under H0**	**Std Dev Under H0**	**Mean Score**
Male	122	12375	13298	398,554	101,434
Female	95	11278	10355	398,554	118,716

Table 19: Service importance based on age

Rank	Code	18-25	26 –35	36-54	55+	Chi-Square	Pr > Chi-Square
1	AS2	6,58	6,77	6,84	7,00	2,024	0,568
2	RS5	6,37	6,70	6,84	7,00	5,946	0,114
3	RL6	6,47	6,65	6,87	7,00	5,615	0,132
4	RL2	6,58	6,59	6,55	6,80	0,325	0,955
5	RL3	6,37	6,59	6,58	7,00	3,545	0,315
6	EM4	6,68	6,54	6,45	7,00	3,963	0,265
7	RL1	6,47	6,52	6,53	6,80	1,447	0,695
8	RS2	6,37	6,47	6,47	7,00	3,113	0,375
9	RL4	6,47	6,48	6,32	6,80	0,813	0,846
10	RS3	6,47	6,45	6,42	7,00	4,251	0,236
11	RS4	6,37	6,42	6,21	6,80	1,490	0,685
12	AS4	6,37	6,38	6,34	7,00	3,882	0,275
13	RL5	6,16	6,25	6,34	7,00	4,179	0,243
14	EM5	6,05	6,27	6,21	7,00	4,378	0,223
15	AS3	6,26	6,13	6,32	7,00	4,871	0,182
16	RS1	6,00	6,19	6,00	6,80	2,871	0,412
17	EM3	5,74	5,99	6,29	6,80	9,827	0,020
18	AS1	5,74	5,99	6,13	6,80	4,120	0,249
19	EM1	5,84	5,92	6,13	7,00	9,691	0,021
20	EM2	6,26	5,92	5,61	7,00	7,298	0,063
21	TA1	5,58	5,86	6,08	6,40	2,693	0,441
22	TA2	5,58	5,06	4,87	6,80	9,578	0,023
23	TA4	5,16	4,92	4,66	6,20	5,512	0,138
24	TA3	5,26	4,72	4,74	5,80	5,339	0,149

Table 20: Kruskal Wallis test of significance for income bands

Rank	Code	Less than 100 000	100 001 –300000	300 001 – 750000	750 001 – 1 500 000	1 500001 or more	Chi-Square	Pr > Chi-Square
1	AS2	6,87	6,51	6,87	6,83	6,50	6,636	0,156
2	RS5	6,67	6,55	6,77	6,76	6,50	0,474	0,976
3	RL6	6,73	6,47	6,77	6,72	6,50	1,191	0,880
4	RL2	6,87	6,51	6,61	6,50	6,67	2,172	0,704
5	RL3	6,67	6,43	6,60	6,63	6,67	1,017	0,907
6	EM4	7,00	6,39	6,55	6,54	6,50	7,081	0,132
7	RL1	6,67	6,41	6,58	6,48	6,50	1,541	0,820
8	RS2	6,60	6,37	6,50	6,52	6,33	0,347	0,987
9	RL4	6,80	6,41	6,50	6,35	6,33	3,921	0,417
10	RS3	6,67	6,37	6,44	6,52	6,67	3,003	0,557
11	RS4	6,53	6,27	6,44	6,37	6,33	0,454	0,978
12	AS4	6,47	6,27	6,50	6,24	6,50	5,055	0,282
13	RL5	6,53	5,94	6,34	6,35	6,67	3,814	0,432
14	EM5	6,13	6,04	6,31	6,43	6,17	3,761	0,439
15	AS3	6,40	6,27	6,21	6,00	6,33	5,502	0,240
16	RS1	6,20	6,06	6,23	6,04	6,50	2,290	0,683
17	EM3	5,93	5,88	5,98	6,30	6,50	5,651	0,227
18	AS1	6,07	6,04	6,05	5,85	6,33	4,432	0,351
19	EM1	6,00	5,73	5,93	6,22	6,67	5,647	0,227
20	EM2	6,33	6,24	5,91	5,41	6,17	11,013	0,026
21	TA1	5,60	5,86	5,96	5,83	6,17	1,746	0,782
22	TA2	5,47	5,37	4,98	4,91	5,83	3,704	0,448
23	TA4	5,00	5,20	4,97	4,41	5,50	6,036	0,197
24	TA3	5,13	5,14	4,59	4,70	5,33	6,036	0,197