A TYPOLOGY OF THE REQUISITE SKILLS FOR FINANCIAL SERVICES EMPLOYEES TO ENHANCE SELF-SERVICE TECHNOLOGY USAGE: THE CASE OF THE SOUTH AFRICAN BANKING INDUSTRY

by

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DECLARATION

Student number 3129-618-1

I declare that the thesis " **A typology of the requisite skills for financial services employees to enhance self-service technology usage: the case of the South African banking industry** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

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SIGNATURE DATE

Mr G Thaver

ABSTRACT

Financial services institutions invest in self–service technologies for various reasons. These include the demands to rationalise costs and to meet the channel preferences of a 'technology- savvy' client base. Some advantages of self–service technologies ("SSTs") include the optimisation of staff activities and faster and improved customer services.

Retail banks experience various migration-related costs when migrating customers to an SST environment; in terms of both branch infrastructure and the development of employee skills. Some customers continue to favour face-to-face service interactions, which necessitates an identification and evaluation of the necessary skills required by employees to facilitate this migration process. This study aims to both **identify and classify the requisite skills** needed by financial services professionals to enable them to migrate customers from physical to electronic service channels; including ATMs.

With the appropriate training and competencies, employees can guide customers more effectively through the migration process in a non-judgemental way. This would, in turn, address the **lack of self-service technology understanding** among customers in the longer term. The lack of support from skilled service employees has, in many instances, led to customers paying higher transactional fees and experiencing inconvenience at physical channels, thereby **resulting in overall lower self-service usage.**

Key terms:

Self-service technology; Branches; electronic channels; up-skilled; customer experience; migration; adoption; Automated teller machine; prerequisite skills; usage;ease of use.

ACKNOWLEDGEMENTS

I thank my heavenly Father who is my everything and without Him I can do nothing. I owe my greatest acknowledgement to the Great I AM.

In the beginning was the Word, and the Word was with God, and the Word was God. [2] The same was in the beginning with God. [3] All things were made by him; and without him was not any thing made that was made. [4] In him was life; and the life was the light of men. [5] And the light shineth in darkness; and the darkness comprehended it not. John 1King James Version (KJV)

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List of Abbreviations

ATM	Automated teller machine
ATU	Attitudes towards usage
CSM	Customer satisfaction measurement
IDT	Innovation Diffusion Theory
IT/ IS	Information Technology /Information System
NPS	Net Promoter Score
PEOU	Perceived ease of use
PU	Perceived usefulness
SST	Self – service Technology
TAM	Technology Acceptance Model
TCF	Treating Customers Fairly
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behaviour
ToP	Theory of Performance

Chapter 1: General orientation

1.1 Introduction

Chapter 1 sets the context for the scope of the research and includes the following:

1. Primary considerations of the study;
2. The core philosophy;
3. Research assumptions;
4. Details of the motivation supporting the research;
5. The methodology employed by the researcher;
6. Research hypothesis and research questions; and
7. Overall thesis layout.

1.2 Background to the study

Self–service technologies have shown rapid expansion in recent years, thereby offering enhanced efficiency to businesses and improved convenience to clients. Eriksson and Nilsson, (2007) propose that the popularity of self-service technology is mainly due to its standardised service delivery and the expanded service options it offers.

Diverse businesses from retail stores, airports and financial services have adopted self-service technologies (“SSTs”). SSTs assist companies to reduce the number of staff they require and remain functional beyond business hours. For banks, SSTs may assist in alleviating long queues in the banking hall, thereby improving the customer’s overall service experience.

A drawback is that some clients are apprehensive of new technology and so continue to favour human intervention. It is therefore, vital for companies

introducing SSTs to be mindful of a) customers' varying degrees of technology exposure, and b) the different propensity levels among customers to adopt new technology; and hence to offer the customer a choice between self-service and assisted-service in the initial migration stage.

In general, today's customers are increasingly prioritising ease of use and faster services, and desire greater autonomy in their banking transactions. These customers usually prefer self–service delivery systems (Khan, 2010). From a self-service perspective, companies cannot fashion service without the client's active contribution, involvement, and co-production (Bitner, Zeithaml & Gremler, 2010); (Lin, Shih & Sher, 2007). Albeit clients have increasingly embraced technological interactions, they may still resist certain SSTs, in spite of the clear advantages (Meuter, Bitner, Ostrom & Brown, 2005).

Electronic services have lower operating costs, improve client services, retain customers, reduce branch traffic and enable institutions to down-size the number of branch staff (Parisa, 2006). It stands to reason that a greater use of electronic channels, including self-service devices, would increase these associated benefits. Cost reduction is a major pull for both the service institution and its customers.

An added advantage of self-service technology is that it frees in-branch staff from focusing on routine and often mundane tasks to focus on more valuable customer-centric tasks (Lee and Allaway, 2002). This is particularly relevant given that many technology-assured customers are becoming more demanding and sophisticated in their needs. Businesses are gearing up for the next generation in technology enabled products and services that transcend face-to-face transaction execution. With this, they are also gearing up to interact with a mixture of sophisticated technology-literate customers and those customers who may be less literate and apprehensive of new developments in technology.

In this context, the study **endeavours to identify and classify the requisite skills** that will better enable financial services professionals to migrate customers who transact in the physical channels (such as branches) to electronic channels such as ATMs. Clear organisational outcomes of a successful self-service strategy would include a) **increased usage** of self-service channels by customers; b) an overall **reduction in high volume, low value transactions** carried out in the bank's branch networks; and c) cost benefits resulting from the complete **cessation of certain in-branch activities**.

To realise these outcomes, it is necessary to develop a detailed and explicit channel migration strategy, which encompasses a comprehensive range of tools and techniques to be implemented. The successful participants in the branch channel will be those that develop new interactive formats in response to the needs of their customers and staff in different local markets, and within specific market segments; whilst offering a high quality sales and service experience at lower overall channel transactional costs.

There remains a gap in the research of digital banking in developing countries in spite of the current research literature available (Auta, 2010). It is against this backdrop that the study aims to develop and validate an instrument for defining the requisite skills to enhance SST usage. Given that the bank's branch networks will remain the primary channel to facilitate direct face-to-face client engagement, the in-branch services offered will be increasingly focused on client education and service guidance as part of a multi-channel offering.

To enable a more meaningful and sophisticated client interaction, the new branch network will require appropriate design and layout, together with a fully skilled and enabled workforce. Relevant to this study are the views of Baran, Galka & Strunk, (2008) who stress the importance of organisations adopting technological tools to ensure profitability.

The next section will discuss the research problem statement.

1.3 Problem statement

Customers' lack of understanding with reference to self-service technology and support has resulted in them paying higher transactional fees and experiencing unnecessary inconvenience at physical channels. Overall, this slow adoption of new self-service technology has resulted in lower levels of self-service usage, as highlighted in the research of McKinsey and Efma of European financial banks (McKinsey and Efma, 2011).

Financial services institutions invest in self–service technologies for various reasons, including the demands to rationalise costs and to meet the channel preferences of a technology-literate client base. Banks have utilised various strategies to move transactions from physical to digital channels, including pricing motivations and forced migration, yet often without fully realising the desired positive results and sustained customer adoption of self–service channels.

This study recognises a gap in understanding in identifying and evaluating the role of employee skills in this migration process. It, therefore, aims to develop and validate an instrument for defining the requisite skills needed by financial services employees to promote enhanced usage of SSTs among banking customers.

According to Akinci, Akoy & Atilgan, (2004) South Africa has lagged behind other countries in embracing digital banking. Based on secondary research from Consulta Research, performed within the local banking industry in January 2012 (as presented later in this study), 48% of 'mentions' relating to customers' preferences in using in-branch services over self-service devices, included customers who are a) not fully knowledgeable about these devices, b) apprehensive in using them, and c) require more understanding and assistance (Consulta Research, 2012).

The next section will explain the research questions identified for this study.

1.4 Research questions

The research questions were classified under primary and secondary questions, they were presented below:

1.4.1 Primary questions

1.4.1.1 Research question 1:

Does Declarative knowledge influence the perceived ease of use of new technology?

1.4.1.2 Research question 2:

Does Procedural knowledge influence the perceived ease of use of new technology?

1.4.1.3 Research question 3:

Do staff motivational skills influence the perceived ease of use of new technology?

1.4.1.4 Research question 4:

Does Declarative knowledge influence the perceived usefulness of new technology?

1.4.1.5 Research question 5:

Does Procedural knowledge influence the perceived usefulness of new technology?

1.4.1.6 Research question 6:

Do staff motivational skills influence the perceived usefulness of new technology?

1.4.2 Secondary questions

1.4.2.1 Research question 1:

Is there a difference in rating by staff of Declarative Knowledge and Knowledge Procedural Knowledge and Skill by gender?

1.4.2.2 Research question 2:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge in the role of the teller and enquiries staff?

1.4.2.3 Research question 3:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across all age groups?

1.4.2.4 Research question 4:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across the levels of education in staff?

The next section will outline the research aim and objectives.

1.5 Aim and objectives of the study

This study aims to identify and classify the requisite skills needed by financial services professionals to migrate customers and transactions from physical to electronic channels.

The primary research objectives are as follows:

1. **Evaluate and rank those skills** in terms of how they may enable (or hinder) self-service usage by customers.
2. **Identify and analyse** the staff skills required to enhance the use of self-service technology ("SST") among customers.

The next section will discuss the significance and contribution of this research.

1.6 Significance and contribution of the study

1.6.1 Rationale of study

This study identifies the potential interpersonal and technical skills required by employees in the financial services sector to educate customers on both the benefits and convenience of SSTs. This is particularly important given that they play a central role in migrating financial transactions to self-service platforms.

With SSTs being adopted by most industries, the failure to ensure that employees are adequately equipped to converse with customers about the benefits and challenges of these new technology platforms will result in customers' continued reluctance to use new self-service channels.

Ultimately, unless there is an increase in the use of SSTs within the financial services sector, critical benefits of this new technology may never materialise – for the bank, its employees and its customers. These include (but are not limited to) lower operating costs, a reduction in lengthy branch queues and an overall enhanced customer experience.

1.6.2 Who might benefit from the findings?

The following entities may benefit from the findings of the research study:

1. **Human resource (HR) practitioners and line managers** may be furnished with *a list of the requisite competencies* needed by staff to address channel adoption and usage. Such a list can be useful in determining key performance areas for staff.
2. **Front-line** client-facing staff may be furnished with an easily accessible "Q&A" template with the most commonly asked questions and their appropriate responses.
3. **Financial institutions** may use the findings from this study to *design and re-align front-line staff functions* to provide a more meaningful and sophisticated in-branch customer experience.
4. **Banking employees** could be *regularly up-skilled on SST systems and processes* so as to have greater value-added interactions with customers given their first-hand experience of potential challenges and benefits of SSTs.
5. **Customers** will generally benefit from interactions with a more informed and knowledgeable workforce in the financial services sector.
6. Whilst this study focuses on the South African banking sector, this research may offer benefits to a) **banking institutions in other countries** (particularly developing countries) and b) **local organisations in other service-oriented sectors**.

The research approach that would be adopted will be unpacked next.

1.7 Research design

The research performed for this study has followed a 'mixed method' approach, using both qualitative and quantitative methods. The value of the mixed approach is to capture customers' subjective sentiments and statements verbatim **(phase 1 – qualitative)** and, thereafter, to perform objective analysis of the data (**phase 2 – quantitative)**.

Charlesworth, Lawton, Lewis, Martin & Taylor, (2003) suggested that firstly appropriate variables must be selected (obtained from phase 1), thereby enabling the researcher to prove or disprove a particular hypothesis through logic and reason. Additional advantages of the mixed method approach are that it facilitates a deep exploration into the research problem and strengthens research findings (Jack and Raturi, 2006). According to Teddlie and Tashakkori, (2009), the validity of the research findings will be strengthened by examining the same phenomenon in different ways.

Phase 1: Qualitative approach

The qualitative approach involves *'non-quantitative'* methods of data collection and analysis. For this study, two techniques were applied:

1. **Secondary data analysis:** the first step in the exploratory study entailed sourcing secondary literature relating to self-service usage and adoption. This was done to improve the foundational understanding of issues relating to SSTs. In addition, it assisted the researcher to identify various sources of data for analysis. Literature research highlighted the following factors which were explored and quantified further namely:
    1. Staff training;
    2. Economic and pricing factors;
    3. Safety and security issues;
    4. Trust considerations;
    5. Technical skills;
    6. Diversity issues;
    7. Client advocacy; and
    8. Change drivers.

2. **Primary data:** whilst interviewing customers, the researcher captured their ideas about important issues relating to SSTs verbatim. The Clara Bridge analyst tool was used for text-mining.

Phase 2 – Quantitative approach

Phase 1 was followed by quantitative research, during which key variables were identified. The quantitative approach is based on scientific outcomes through statistical analysis, hence the researcher endeavoured to establish whether there is a relationship between dependant and independent variables, and if so, to determine the strength of the relationship.

The measuring instrument used for this study took the form of questionnaires provided to employees in the financial services industry. The goal was to capture and collate their thoughts and opinions on the required staff skills to enhance SST adoption and usage among banking customers. The questionnaire used the five–point Likert scale. As stipulated by Serumaga-Zake, (2011), a research study's target population should be clearly defined and the unit of analysis should be identified.

The research adopted the procedure for developing measures of constructs as highlighted by (Msweli, 2011) as indicated in **figure 1.1 below**. Due diligence for this research was undertaken in terms of approval and ethical clearance from the University of South Africa ("UNISA"). This approval process encompassed the research pilot, the design, the research instrument, and the proposed selected research sample for data capture.

The figure below depicts the procedure for developing measures of constructs:

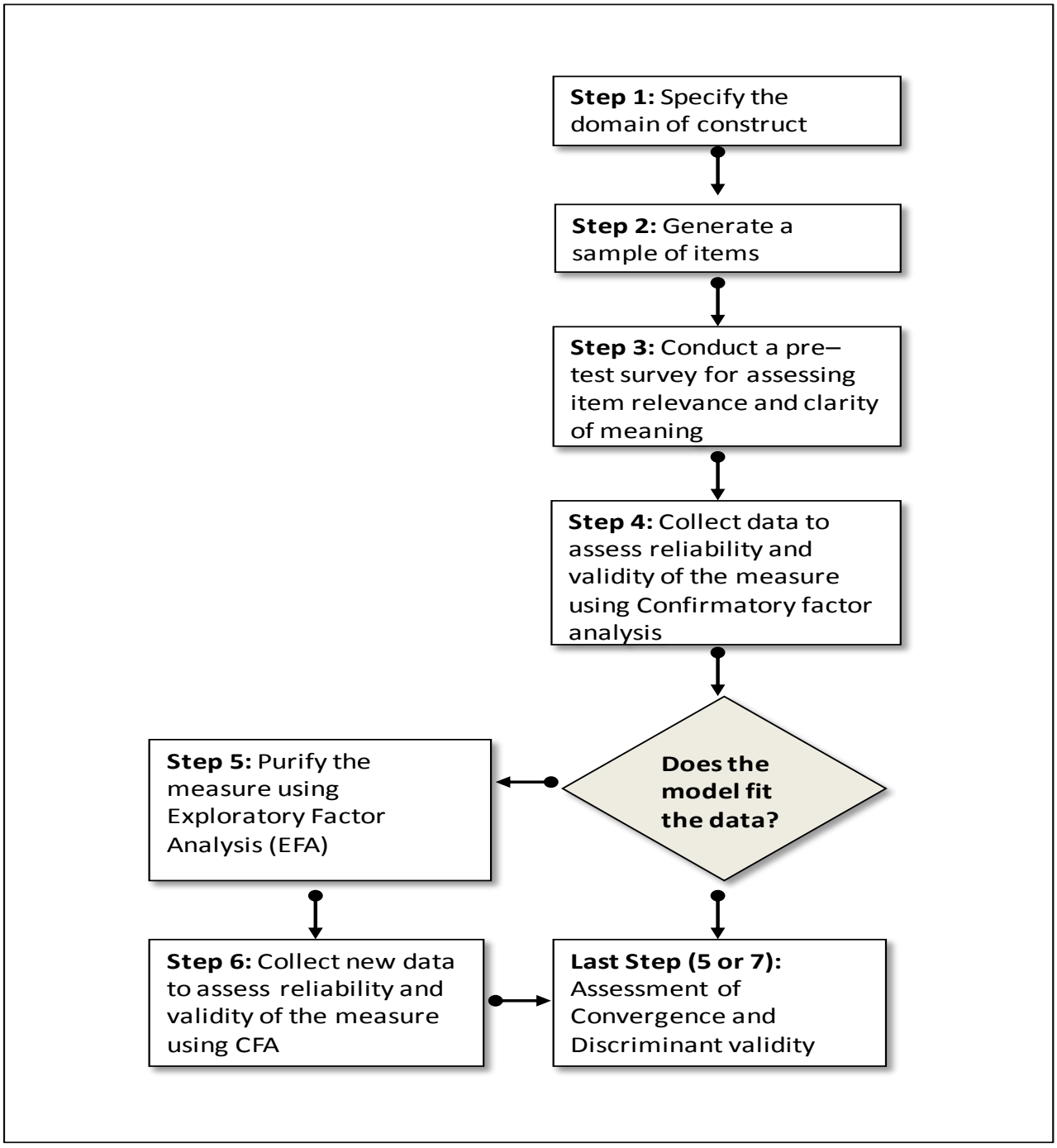

Figure 1: Measurement development of study process

*Source: Adapted from P. Msweli (2011**)***

The next two sections will outline the study limitations and ethical issues.

1.8 Limitations of the scope of the study

The research had the following limitations in scope:

1 **System limitations**: limited to ATMs, excluding other electronic channels such as cell phone and internet banking.
2 **Industry limitation**: limited to the financial services sector, not including other sectors such as manufacturing, public service or health.

1.9 Ethical considerations

This researcher adhered to UNISA's policy on ethics by aligning with to the three key principles relating to research ethics in the process of engaging human participants: It is not the sole responsibility of the researcher to determine whether the study involving human participation meets ethical standards; This responsibility needs to be jointly shared by those with a vested interest in the research but who are independent of the research – such as the UNISA facility; Ethical research should not simply be a matter of compliance but rather a matter of values.

Business entities were consulted to ensure that the above principles were strictly adhered to. This kept associated risks proportionate to potential benefits, thereby ensuring that research design provided valid results. Accordingly, the following letters / forms were designed:

1 Letter of consent to perform the study
2 Right to withdraw from the study
3 The validated questionnaire to be presented to the "ethics" committee for approval.

The next section will discuss the assumptions considered for this study.

1.10 Assumptions

This study worked with the following assumptions:

1 Surveys were filled in without staff being coerced and without contributions from their peers or superiors.
2 The staff respondents provided truthful and candid responses to indicate their perceptions of the necessary skill sets they required.

Lastly the high level overview of the subsequent chapters will be presented.

1.11 Structure of the thesis

Below is the outline of the structure and content of the study:

Table 1: Structure and content of the study

Chapter Number	Description
Chapter 1	Provides an introduction to the research being undertaken, providing an overview of the following: 1. The background of the research; 2. The problem statement; 3. The research questions; 4. The significance and contribution of the study; 5. The research design; and 6. Structure of the study.
Chapter 2	Presents an overview and analysis of the self-service technology industry.
Chapter 3	1. Reviews the literature concerning the research topic. 2. Provides both the theoretical and conceptual domains of the construct to develop relevant measures. 3. Reviews models.
Chapter 4	Details the research design and methodology.

Chapter 5	Reviews presentation and analysis of findings.
Chapter 6	1. Positions the discussions; and 2. Provides conclusions and recommendations

Table 1: Summary of each chapter

Chapter 1 offered an overview of the research introduction and orientation. It further outlined the purpose, process and objective of the research. The research problem and questions were positioned and the research design outlined in table format.

Chapter 2 will explore the current and available literature based on:

1 the research problem already highlighted;
2 the research questions posed for further investigation; and
3 the research propositions that may result from the research that was performed.

Chapter 2: Self-service technology

2.1 Introduction

This chapter offers an overview of **self–service technologies** (“SSTs”) by examining key issues and evaluating secondary data relating to customers’ reluctance to embrace this technology. It further reviews the definition of terms used in the context of SSTs (and also in this study).

The researcher applied the “**technology of acceptance model”** in the context of the **“theory of performance”.** The next section will provide an overview the background on self-service devices.

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2.2 Background

So called “self-service” activities offer the customer the option of serving him or herself without the immediate face-to-face support of a service assistant (e.g. a bank teller), either in the process of executing a purchase or realising service functionality. Examples of self-service devices permeate almost all sectors of the economy, including financial service institutions, retail stores and public service facilitates. Financial services institutions already deploy ATM kiosks, Internet-based services and cell phone services (Castro, Atkinson & Ezell, 2010). Advantages of SSTs include flexible time options and a wider range of service channels (Meuter *et al*., 2005). In addition, businesses embrace SST devices as these have been shown to increase their overall operational effectiveness and efficiency (Bitner *et al.,* 2010).

Financial services institutions have embarked on a process of migrating customers from in-branch services to more cost effective and efficient self-service transacting devices, especially as far as cash deposits, cash withdrawals, client enquiries, and statements and balance enquiries are concerned. SSTs are not limited to the financial services sector, with a wide range of industries utilising them, ranging from airports to retail shops.

Automated teller machines ("ATMs") were introduced by financial services institutions in the 1970s and merge multiple interfaces, such as a computer terminal, a record keeping mechanism, and a cash vault, all in one unit. ATMS enable clients to utilise and access the financial services platform with the aid of a transactional card. Jun and Cai, (2001) identified six dimensions of online systems quality, which also relate to automated teller machine usage. These elements take into account the content, accuracy, ease of use, timeliness, aesthetics and security of the channel. Empirical studies propose that ATMs provide both accessibility and convenience, which has a positive effect on consumer adoption of e-banking services (Wai-Ching, 2008).

Adepoju and Alhassan, (2010) propose that ATMs provide banking clients access to financial transactions without the need to personally visit the bank. In addition, by automating processes and procedures previously completed manually, these automated teller machines can significantly reduce the cost of servicing clients, (Mcandrews, 2003). In support of this view point Peter and Sylvia, (2008), add that new ATMs make use of highly innovative software, which suggests that this technology will continue to evolve in future to offer increasingly innovative service offerings.

Financial services institutions deploy self-service devices such as ATMs (automated teller machines) to facilitate value-added transactions over and above the traditional use of cash withdrawals and balance enquiries. ATMs offer two primary service functionalities, which relates to transaction- and enquiry-based services. The former deals with account payments and transfers, while the latter

relates to activities such as account balances and mini statements. Financial services institutions are continuously adding to their range of features on these platforms; however customers need to be educated on the full usage and benefits of these options.

Digital banking can be described as an electronic connection between clients and financial services institutions in order to set up administer and control transactions (Salehi and Zhila, 2008). Many businesses, such as banks and retail stores, are incorporating various SSTs into their product offerings to encourage clients to perform services themselves (Castro, Atkinson & Ezell, 2010).

Notwithstanding the huge capital investment by financial services institutions to improve their digital presence, numerous clients are inactive or only use this channel on a partial basis (Sarel and Marmorstein, 2003).

According to Meuter, Bitner, Ostrom & Brown, (2005) clients may embrace services by simply using additional channels, while Bitner, Zeithaml & Gremler, (2010), suggest that self-service technologies are fundamentally instrumental in the way services are developed, implemented and interfaced in relation to:

1. service innovations
2. service delivery options
3. employee and customers enablement
4. market reach expansion.

A research study as detailed in Gallup Business Journal, (2013), evaluating customer preference, identified the most common banking requirements according to a) varying client needs and b) a range of different channels. Pertinent findings include:

1. For money withdrawals, clients prefer either ATMs or branches.
2. For funds transfers or account information requests, clients mainly prefer the online channels.

3. To receive statements and pay bills, post and online (email and bank websites) are the preferred channels.
4. For obtaining new products and services understanding, the most preferred channels are banking websites, in-branch services, or speaking to a contact centre representative.
5. For logging a complaint or inquiring about a service fee, clients prefer an in-branch experience or a conversation with a contact centre representative.
6. To receive alerts on their accounts, clients show a preference for multiple channels, including online, post and email.

Joint research by McKinsey and Efma, (2011) indicate that clients of leading European banks are eagerly demanding a more sophisticated selection of both electronic and face-to-face channels. This research notes four factors that will impact and define the journey for banks namely:

1. The speed at which clients increase their alternative channel usage.
2. Internet adoption and new technology diffusion.
3. Macroeconomic developments.
4. Impact of client protection regulations.

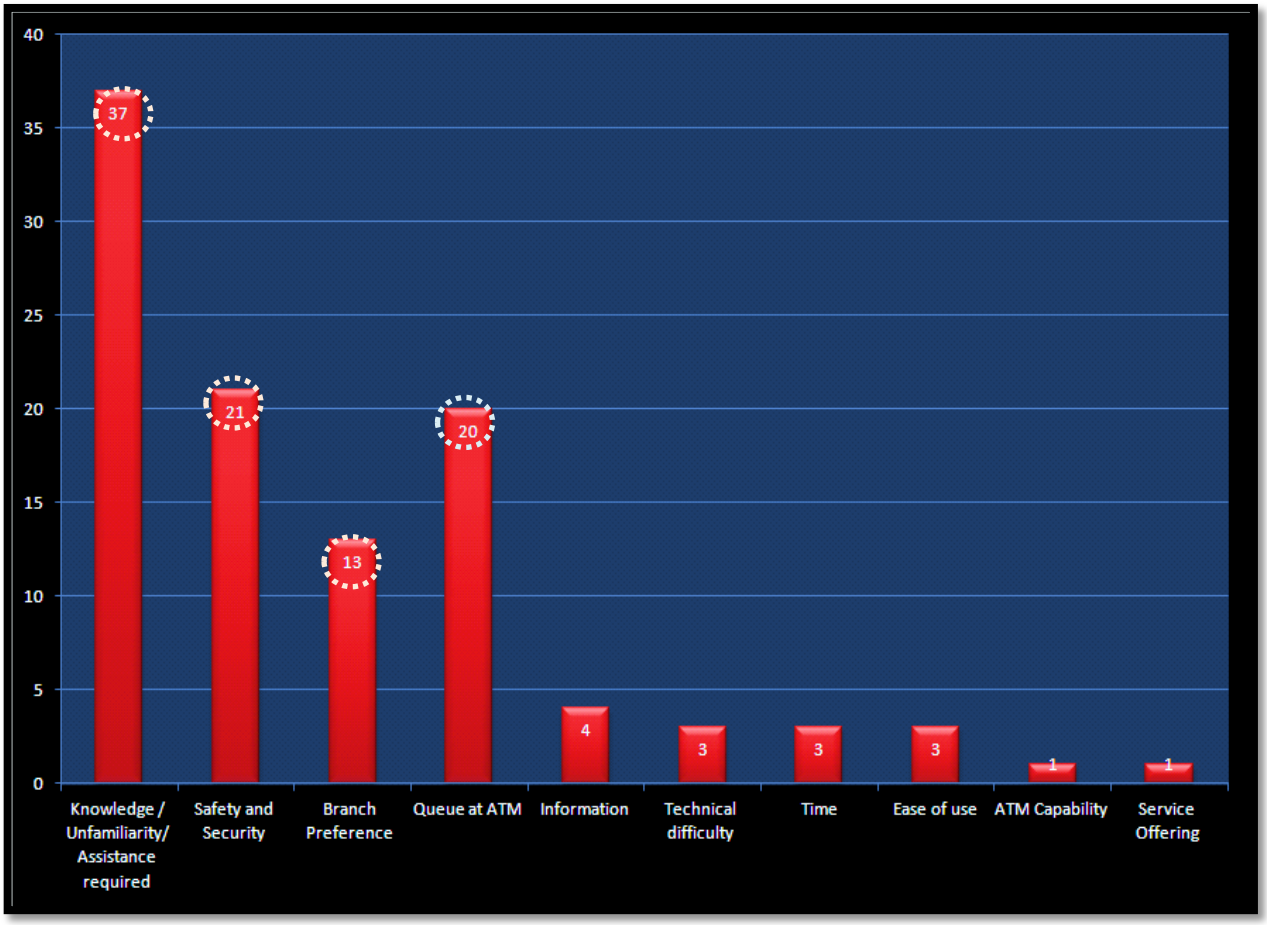
This study centres mainly on the first element, relating to the speed at which clients increase alternative channel usage. Electronic banking has been categorised into the following classifications: **internet banking**, **telephone banking** and **automated teller machines** (Joseph and Stone, 2003). The next section will cover the analysis of secondary data.

2.3 Secondary data analysis

Secondary sources of data included Consulta Absa Research (2012), the SACSI Research (2013), Banking Competitor Benchmark 2012 and ABSA internal

complaints information. These sources provided insights from customers transacting at SSTs.

Graph 1 presents research relating to customer transaction migration from an internal banking institution perspective to understand customers' lack of SST adoption.



Graph 1: Customer Migration Pain Points

Source: Adapted Consulta Research (2012)

Based on secondary research by Consulta Research, (2012), 48% of responses relating to customers' preferences for using bank branches - rather than self-service devices - include the following reasoning:

1. [Lack of] knowledge / unfamiliarity / assistance required (37%);
2. [Require more] Information (4%);
3. Technical difficulty (3%);
4. Ease of use (3%); and
5. Service offering (1%).

The above findings indicate that customers are not fully knowledgeable about SST devices; are apprehensive when using them; and ultimately require more understanding and assistance.

2.3.1 Customer verbatim

Obtaining customer verbatim (the exact words and sentiments) expressed by customers) is valuable in understanding their sentiment and obtaining insights on a particular topic. Figure 2 presents the words captured and filtered through the Clarabridge text analysis tool.

The more often a word was used, the larger it appears in the text. For example, the word “staff” was repeatedly mentioned in a negative context. Figure 2 below depicts verbatim statement from the customers:

Figure 2: Customer verbatim

Source: Consulta Research (2013) - Clarabridge text analysis at Branch and ATMs

The use of Clarabridge text analysis presented the customer verbatim in terms of negative or positive sentiment and the frequency of the mentions of the word. The Clarabridge tool allowed the researcher to evaluate the significance of words conveyed by customers and the related emotion assigned to them. Words that appeared more frequent were of greater importance to the customer , for example the words " customer" and "staff" were repeatedly mentioned by customers more than any other words , while words displayed in red represented 'loaded words' conveying a negative sentiment namely :

"Slow", "problem", "expensive", "wait", "stress", "busy", "complain", "hard" and "inefficient".

Words in green represented loaded words carrying a positive sentiment:

"Trust", "good", "happy", "friendly", "respect" and "quick".

The table below provides customer feedback from a customer benchmark study performed across the major South African banks. A sample of 1 131 customers

were surveyed and requested to provide their feedback on various hygiene and service factors they experienced whilst using ATMs. This report analysed this customer feedback across the four big banks to highlight challenges, strengths and commonalities.

2.3.2 Competitor ATM insights

Table 2 below represents customer feedback across all four major banks:

ATM	Absa	FNB	Nedbank	Standard Bank
Sample Size (n) =	264	296	296	275
ATM and its surrounding (cubicle) is clean and neat	83	87	82	87
Lighting at the ATM	85	86	82	88
Aligning the on screen instructions with the ATM buttons on the side	82	87	83	88
Being able to complete your transaction at the ATM quickly and efficiently	84	87	82	88
Personal security at the ATM (feeling safe and secure when doing transactions, enough security)	70	76	69	73
The availability of help/assistance when needed (e.g. you know who to contact if something goes wrong)	72	76	66	72
On-screen instructions are clear to understand and easy to follow	89	94	88	92
The availability of receipts/deposit slips	75	73	77	75
The accessibility of the ATM (ease of finding parking, convenient location)	84	83	76	87
ATMs are strategically placed at convenient locations (enough ATMs and close to where you would like to transact)	82	82	74	84
Availability of options to make using the ATM easier (choice of language, option to print a slip, option to continue, option to select denominations)	86	88	84	89
Other ATM services available (e.g. buying airtime, paying accounts, making deposits, requesting statements)	82	84	79	87
The waiting time at the ATMs due to queues	69	74	77	77
Having signage showing where the nearest [Brand] ATM is	75	74	68	76
Waiting time from when you insert your card to when you can begin your transaction	81	85	76	86
Ease of completing the transaction	87	89	86	91

Table 2: Customer Benchmark Report

Source: Consulta Benchmark Research (2012)

Feedback from the customer benchmark report (Table 2) correlated to an ATM competitor analysis (Graph 2) in which customers generally rated all the major financial services on par with each other across various hygiene and service factors.

This is evidenced by the relative closeness of customer's scores, for instance, questions on lighting at ATM's and the cleanliness of the cubicle provide insignificant. This was indicative that customers perceived overall parity amongst all the banks in their responses and that the consensus was that no bank was significantly leading nor lagging the other. This study focused on Absa customer and staff.

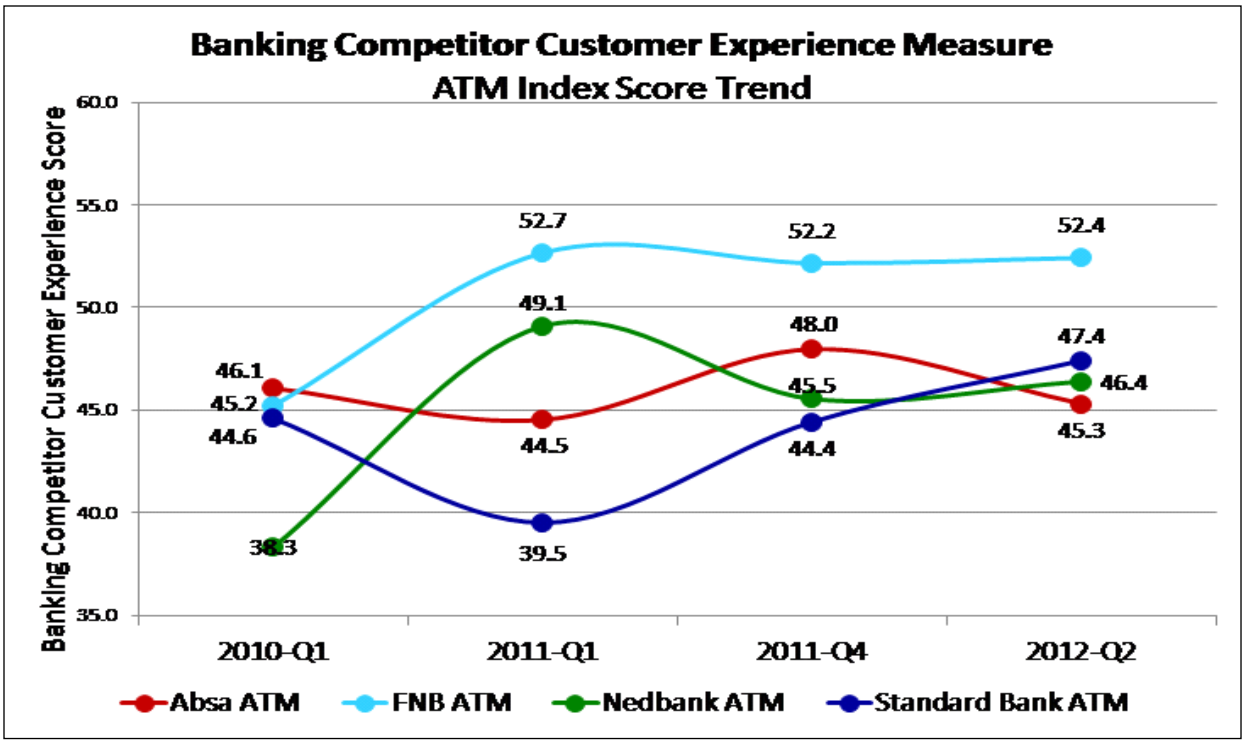
Two notable exceptions from the **qualitative analysis** were: "the availability of assistance when something goes wrong". For this question, FNB was rated "most favourable", with Nedbank being rated as "the least favourable" (10 point difference). For "the accessibility of ATMs", Nedbank was once again rated least favourably with Standard Bank being rated the most favourable. There was a negligible difference in how customers ranked the different banks in terms of categories such as "cleanliness of ATM's", "lighting", "speed of completing transactions at ATMs" and "ATM onscreen instructions" the graph represents trend analysis of customer experience.

The below graph compares customer experiences from 2010 to 2012 across all four major banks were 1 131 customers were surveyed to provide their personal feedback at ATM's. Information was presented from the quantitative analysis conducted.

2.3.3 Analysis of ATM competitor customer experience (CE)

The sample sizes across all four banks were Absa (264); FNB (296); Nedbank (296) and Standard Bank (275). Hence there was is parity on the sample size across all banks.

The graph below represents customer satisfaction across the four major South African banks.



Graph 2: Banking competitor analysis

Source: Consulta Competitor Research 2012

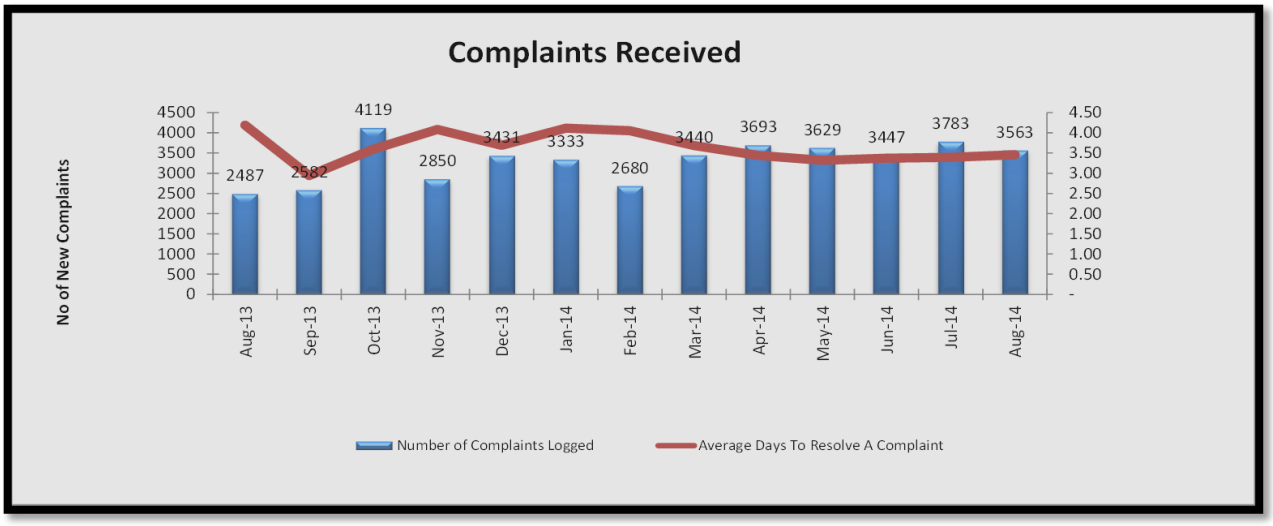
The above graph reflects **customer satisfaction measurements** across the four major South African banks when using the ATM channel. The last two quarters reflected a normalisation and convergence of customer score, with the only exception being FNB, which was rated significantly higher than the other banks. In contrast, Absa which was the market leader in 2010 is shown to lag behind the other financial institutions. Apart from First National Bank ("FNB"); all other banks have not managed to sustain a score of over 50 points. Both Nedbank and

Standard Bank showed an increase from Q4/2011 to Q2/2012, while Absa's score decreased from 48 to 45.3 points.

Dean, (2007) argues that to build brand advocacy, it is critical to manage clients' perceptions of employees' interpersonal behaviour, particularly behaviour displayed towards clients and efforts to address clients' issues (Schoefer and Diamantopoulos, 2008). Furthermore by superficially meeting clients' requests through existing services or products is not sufficient to retain or acquire further market share. They argue that the client's expectations should be exceeded with the use of product innovations, thereby ensuring his or her experience is a 'delight' when consuming financial products and services.

2.3.4 Analysis of ABSA ATM Complaints

The graph below represents a monthly breakdown of complaints received from ABSA bank customers relating to ATM usage between the months of August 2013 to August 2014. The graph also includes resolution time-frames for complaints. The graph below represents Absa customer complaints at ATMs form August 2013 to August 2014.



Graph 3: ABSA Complaints Report

Source: ABSA Total Complaints (2014)

The complaint volumes averaged around 3 500. Complaints peak in October 2013 at 4 119, with a low of 2 850 complaints in November 2013. Over the last 6 months the complaint volumes averaged at more than 3 500 complaint cases.

While the average days to resolve complaints peaked in August 2013 at over 4 days due to continued customer complaints at the ABSA service centres, this time-frame decreased to less than 3.5 days by August 2014.

Furthermore, in many instances, customers complain that branch employees appear to have little understanding of their expectations of ATMs and how to satisfy them.

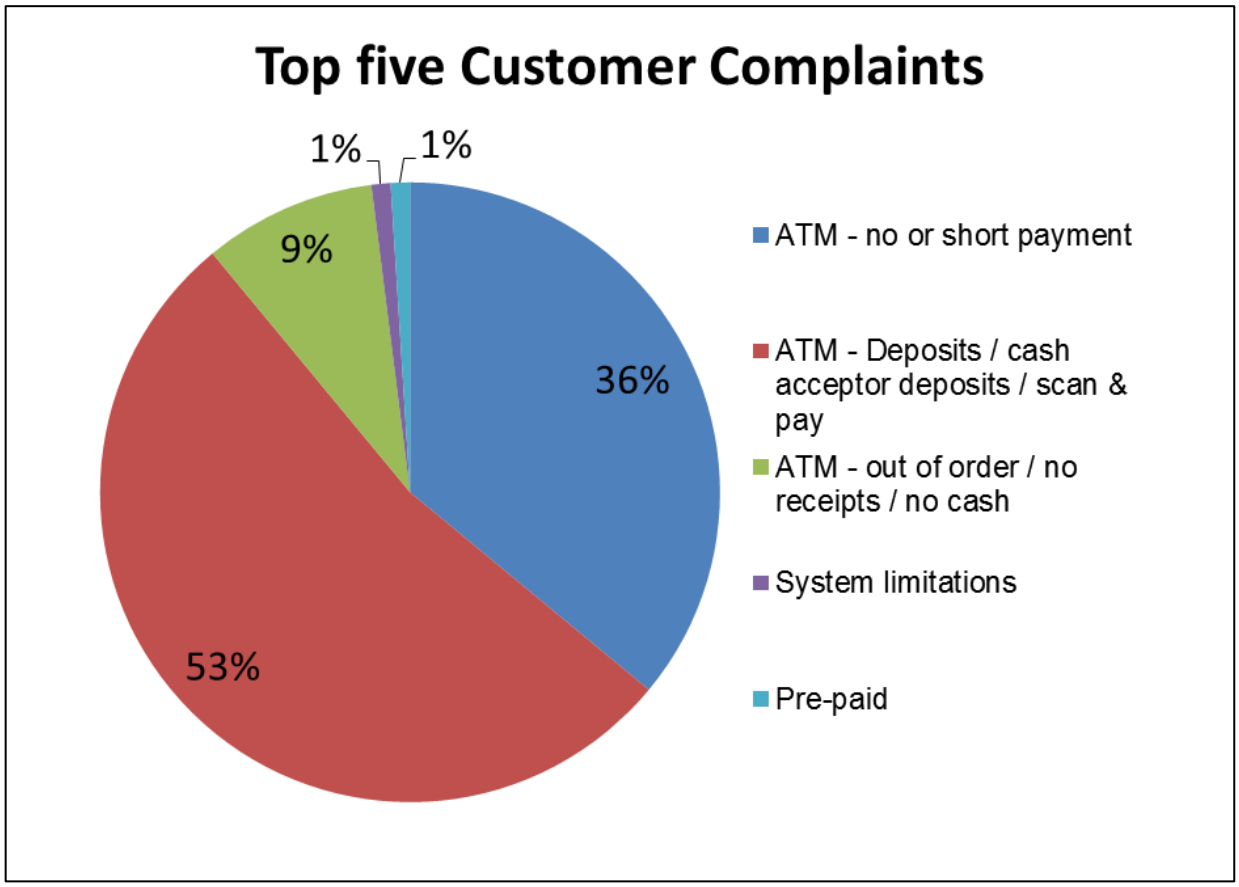
The top three categories of complaints are:

1. 53%: difficulty in making ATM cash deposits / faulty cash acceptors;
2. 36%: short or no payment at ATMS; and
3. 9%: ATM downtime.

Complaints associated with ATM limitations and prepaid transactions make up the remaining two categories, each representing 1% of customer complaints.

2.3.5 Analysis of ABSA complaint categories

The below graph represents an analysis of ABSA's top five complaint categories.

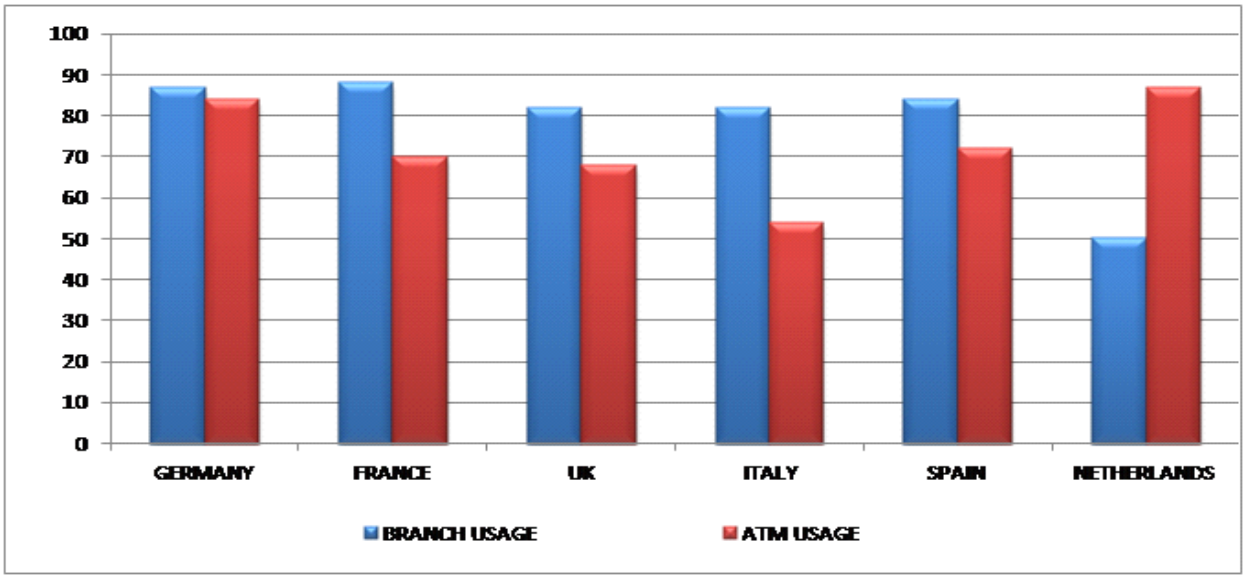


Graph 4: ABSA complaints categories

Source: ABSA Total Complaints (2014)

The complaints categories represented by Graph 4 reflect a range of customer challenges associated with ATM usage, all of which may have a negative impact on ATM usage. Should these challenges not be adequately addressed, adoption of customers to this channel may be adversely effected.

The graph below depicts European branch and ATM usage.



Graph 5: European branch and ATM usage

Source: McKinsey and Efma Multichannel Opportunity

The research sample grouping for the above graphical representation included 3 000 customers across 150+ branches. According to the graph, overall **in-branch usage is much higher than that of ATMs.** In Germany, this difference in usage between branch and ATMs is marginal. In Italy it is more evident. The clear exception is the Netherlands, with **in-branch usage of 50%** compared to the European **branch average of 79%**, while reflecting a staggering **87% ATM usage** compared to the European **ATM average of 73%.**

Not only does digital banking afford value to clients, it also enables organisations to reduce costs and increase efficiencies (Laukkanen, Sinkkonen & Laukkanen, 2008). Banks have already commenced in setting up cost effective alternative service delivery systems (Shih and Fang, 2004). Research by McKinsey and Efma shows that for bank branches to adopt a multichannel approach, fewer employees are required. It is in the interest of financial services institutions to make their branches leaner. This does not simply denote less staff but rather an optimisation of staff time and effort. Ideally staff ought to be diverted into roles that add value to the customer experience. Both banks and customers gain from greater utilisation

of self-service devices. This said, the main objective of this research is to **identify key critical employee capabilities that encourage usage of self-service technologies**.

Evidently customers are not fully knowledgeable about SST devices; are apprehensive in using them; and ultimately require more understanding and assistance. Numerous studies have revealed that a lack of knowledge, together with technical complexities were major limitations in promoting the use of ATMs (Bhatta, 2011 and Khan, 2010). It stands to reason that the better banking employees are equipped to educate and support customers, the more client acceptance and usage of SSTs will be enhanced.

The next section will discuss the overview of factors relating to the usage of self-service technologies.

2.4 Overview of factors relating to the usage of self-service technologies

Whilst Chapter 3 will provide an in-depth literature review covering factors relating to the usage of self-service technologies, these factors are introduced in the sections that follow. Factors include staff training, economic and pricing factors, safety and security issues, trust issues, technical and diversity factors, and loyalty and change factors.

2.4.1 Staff training

According to research undertaken by Breu, Oretega & Vertriest, (2011), a Nigerian bank attained a 30% increase in productivity gains within a year of up-skilling their tellers. Further, the bank improved the average number of products consumed per customer by 70%.

Banks are experiencing marked improvements in branch service practices as a result of improved staff training. Enhanced banking service is a key driver for clients to develop their banking relationships. Banks should be aware of possible irritants such as excessive charges and high costs; as well as client safety, convenience and the security of financial transactions.

2.4.2 Economic and pricing factors

Customers are looking for the next level in service integration. Digital banking offers tangible value to clients who wish to regain their fiscal autonomy (Laukkanen *et al.,* 2008). 'Value' relates to how easily customers are able to integrate service into their lifestyle. Service staff's knowledge of issues such as pricing per transaction, comparative cost across channels, and competitors' fees across devices would be valuable in assisting clients to make informed decisions on channel usage from a cost effectiveness perspective.

From the perspective of ever-evolving service platforms, clients expect both convenience and speed as crucial elements (Klopping and McKinney, 2004). Alternative SST delivery platforms have afforded clients additional avenues to execute their banking transactions (Akinci *et al.,* 2004), offering around-the-clock convenience at cheaper rates (Ismail and Panni, 2009; Lee, Lee & Eastwood, 2003).

2.4.3 Safety and security factors

Brunner, Decressin & Kudelea, (2004) state that combatting ATM fraud is not the singular responsibility of the bank but requires a collaborative effort from financial services institutions, customers and law enforcement. Card theft and card skimming are ways of obtaining clients' cards to fraudulently access their bank accounts. Security measures should protect consumers from fraud risk and financial loss when they conduct financial transactions.

Security has been cited as a significant factor when utilising technology-based services (Singhal and Padhmanabhan, 2008). According to (Lee, 2009), banks should focus their efforts on risk-reducing strategies. This includes establishing and maintaining security systems to attract potential clients. Such processes are pertinent in ensuring transactions are secure so that clients are protected against fraud, identity theft and intrusion (Lee, 2009).

2.4.4 Trust factors

A study by Yaghoubi, Kord & Shakeri, (2010) concluded that the core factors in customer acceptance of e-services include *trust* and *privacy*. In fact, trust is a key component in clients' usage of any channel. As argued by Zhou, (2012), customers' feelings are expressed as 'low trust' and 'high risk' in terms of service providers. However, if a customer felt that their personal data was protected, trust could moderate perceived risk and ultimately positively impact the use of the system.

As cited by (Lee and Chung, 2009), the quality of the system plays a significant role in influencing the client's trust which is vital in the acceptance of technology. Customers should also be reassured that their transaction is safe and all due diligence is adhered to. From an electronic banking perspective, according to Casalo, Flavian & Guinaliu, (2008) there is an express affiliation that exists between *trust* and *perceived reputation*.

2.4.5 Technical skills

Chong, Ooi, Lin & Tan, (2010) propose that if consumers feel that online banking is easy to use, they will be more inclined to use it. Technologies and product innovations that are simpler to comprehend and also easy to use would be accepted far quicker than complex technologies and intricate, convoluted offerings. According to the local *Consulta Banking Competitor Customer Experience Measure Report*, (2012) relating to ATM channel usage, First National Bank

received the highest ‘client satisfaction and loyalty’ percentage scores. This was mainly due to the following factors:

1. On screen instructions are clear to understand and easy to follow; and
2. Assistance / help is available when needed.

Customers related two issues contributing to their reluctance in using self-service devices (Consulta research, 2012), namely:

1. Technical difficulty (5%); and
2. (The lack of) ease in using self-service devices (3%).

2.4.6 Diversity sensitivity

“Interpersonal skills” can be defined as the deployment of both intellectual and communication abilities during social interactions to attain desired outcomes. According to Rentz, Shepherd, Armen, Tashchian, Dabholkar & Ladd, (2002), the elements of interpersonal skills include:

1. Listening
2. Empathy
3. Optimism
4. Perceived observation skills.

In view of the above observations, it is probable that culture – and cultural miasmas – can play a crucial role in either hindering or enhancing a client’s propensity to use new products and services. It is, therefore, important to enhance banking employees’ understanding of the role of culture in clients’ decisions and actions when interacting with them.

The issue of “culture” will be further explored in the sections that follow, to determine how clients from different cultures may adopt new technology. The

successful role-players in the banking branch channel going forward, will be those that identify cultural variables in enhancing channel usage; and who respond to the needs of their customers in different local markets, and within specific segments; offering a high quality, culturally-appropriate sales and service experience at lower overall channel costs.

2.4.6 Client advocacy and customer satisfaction

Collier and Sherrell, (2010) suggest that when clients perceive the transaction speed of their SST experience to be quicker than expected, customer satisfaction is increased. Furthermore, Wai-Ching (2008) argues that customer satisfaction needs to be perceived as a long-term success element for a banking institution's competitiveness. The following definitions of "satisfaction" are provided by different authors:

1. Wai-Ching Poon, (2008) argues that *satisfaction* relates to a client's evaluation of their experience relative to their expectation.
2. Kursunluoglu, (2011) defines *satisfaction* as the extent to which a client's expectation is met or exceeded.
3. Hunt *et al.,* (2012) maintain that *satisfaction* is the customer's judgment of performance versus expectation.

According to Consulta Branch & Digital Research, (2013) a migration strategy - i.e. migrating customers from face-to-face service experiences to digital experiences - might not only have financial and operational benefits, but will also have the added benefit of increasing the net promoter score (NPS). This study also suggests that there is a continuing trend in which the loyalty percentage for the digital channel out-performs that of the branch channel. However, actual client usage of ATMs appears to be incongruent with this finding. Key benefits of loyalty, satisfaction and service quality relate to customer retention (rather than service usage) as noted by authors Szuts and Toth, (2008).

The ever transforming customer landscape has seen banking customers using a range of channels to open, maintain and even close accounts, and lodge queries and complaints. It is, therefore, imperative for financial services institutions to evaluate evolving customer transaction behaviour relative to the channel mix used by each customer. This customised level of data capture and data mining is possible with the use of new enhanced data mining tools and enterprise-wide decision support technology in use within financial institutions today.

This assessment and analysis of individual customer behaviour could positively impact bottom line profit whilst also improving the customer experience and enhancing account retention. It is paramount that banks use the available knowledge gained from the analysis of customer behaviour to create a culture of customer advocacy. The latter can be achieved by ensuring service excellence at all levels of the institution and providing value-added product features (Wai-Ching, 2008).

2.4.7 Change factors

The express pace of change in a global environment - from a technological, innovation and economic perspective - makes change an unavoidable and necessary component in the life-cycle of any organisation. Nkomo and Kriek, (2011) argue that altering a company's strategy and operations will enable it to properly steer through future changes. The need to shift and adapt to numerous market challenges and demands, has forced financial services institutions to become increasingly innovative in the way they relate to customers. Banks are becoming more flexible, dynamic and innovative in order to balance client and business imperatives. Stephens and Hamblin, (2006) suggest that the following management skills are required for technological change:

1. Client care
2. Leadership
3. Change management

4. Negotiation skills
5. Technology awareness.

This study aims to explore factors that address customer concerns pertaining to ease of use and usefulness of SSTs. Possible spin-offs to greater usage of electronic channels may relate to improved client experience, customer loyalty, reduced queues at physical channels, and branch staff assisting in more relationship-focussed interactions.

The next section will provide a conclusion to chapter two.

2.5 Summary of the chapter

This chapter provided a foundation for the exploration of self-service technologies in the financial services sector. It examined some of the challenges relating to customer sentiment and factors hindering adoption and usage of SSTs. Furthermore, data from secondary data sources relating to customers' reluctance to embrace SSTs was also examined. Frequently used terms in the self-service technology field – such as "interpersonal skills", "customer satisfaction", and "culture" - were also defined.

Chapter 3 will present a comprehensive literature review, offering a framework for the conceptualisation of the requisite employee skills needed to enhance the quality of service provided to clients in the context of the SST environment. The chapter will highlight possible gaps in the literature, with the ultimate aim of providing the necessary constructs to define and classify the typology of skills required.

Chapter 3: Literature review

3.1 Introduction

Chapter 3 provides a literature review to facilitate an analysis of definitions relating to the skills needed by employees in the financial services sector to better serve clients within the SST environment. The review is provided within the framework of the **Theory of Performance** and **Technology Acceptance Model,** which are, in turn, underpinned by the philosophy and principles of **Treating Customer Fairly**. The chapter defines the theoretical meaning and conceptual domain of the construct that is required to adequately measure and obtain reliable and valid results.

The next section will discuss a literature review on SST factors.

3.2 Literature review on self-service factors

The figure below represents pertinent self-service factors briefly referenced in Chapter 2 of this study.

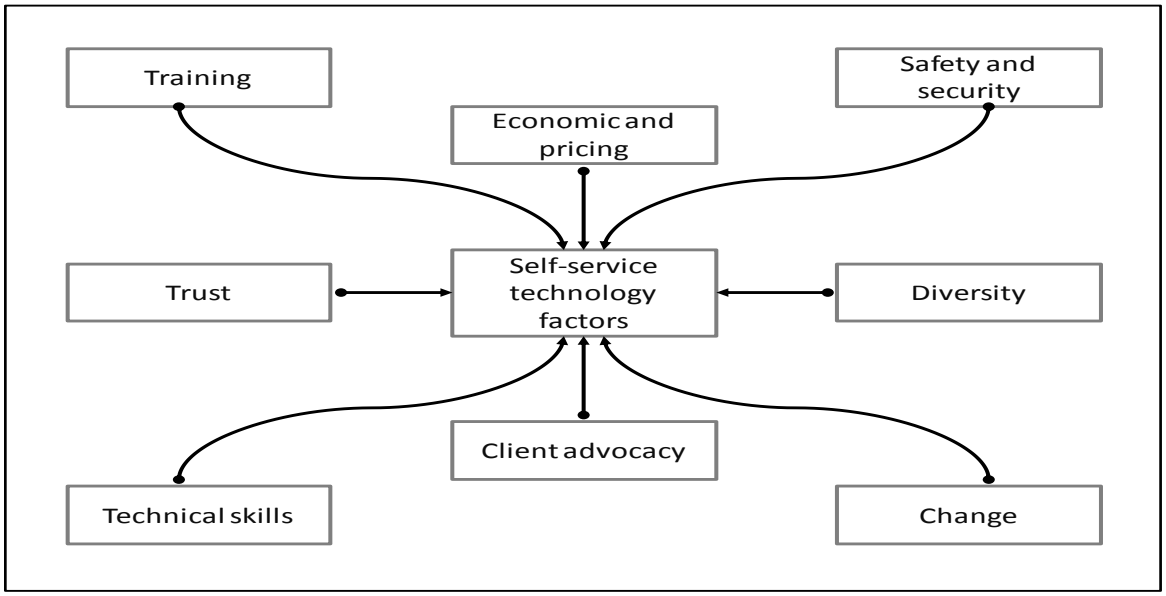


Figure 3: Self–Service Technology ("SST") factors

The researcher aims to investigate how the SST factors outlined in Figure 3 contribute to the required employee skills needed by staff in the financial services sector to better facilitate quality service in the SST environment. Factors listed in this figure will be unpacked in the sections below.

3.2.1 Training

A key factor driving SST usage is the education of customers, not only in terms of price savings but also in terms of the expanded service value-add of these devices. It is crucial that the same personal banking experience delivered within the branch is also experienced by customers outside of the branch when using SSTs. Financial services institutions can build a repository of customer insights by evaluating channel usage, behaviour patterns and analysing customer complaints. Such a database of client information can also be used to offer solutions to clients based on their unique preferences, both from a sales and channel usage perspective, and to predict future trends and behaviour patterns. Importantly, such a repository can greatly assist in matching customers' SST practices to staff training needs.

Earlier research argues that client training (education) is required to prevail against the major barriers associated with SST (McKee, Simmers & Licata, 2006). Benefits of a client training initiative include:

1. Definition of the client's role in the self-service experience; and
2. The enhancement of the customer's skill levels in utilising self-service technologies.

Therefore, educating customers as well as branch staff on the pricing of high volume / low value transactions is imperative in promoting optimal channel usage. Informed customers may be more likely to utilise SSTs, hence branch employees also need to be fully skilled in terms of all pricing, technical, and process knowledge. Further, line management need to be appropriately skilled to ensure branch employees are efficiently deployed and that the quality of staff-client

interaction is improved. Ideally, staff should be encouraged to personally make use of SSTs when they themselves need to use banking services.

3.2.2 Cost factors

Most business entities are embracing technological enablers to drive long-term, profitable relationships (Baran, Galka & Strunk, 2008). ATMs provide a huge cost reduction for financial services compared to branch banking. Vesala, (2000) argues that the proximity of ATMs to customers and, therefore, their 'foot-print' can establish the pricing power for banks.

The two largest cost drivers for financial services institutions are *maintenance* and the overhead costs of *branch networks* and *staff* (Durkin, 2004). The greater the use of electronic channels, including SSTs, the better these costs can be managed and ultimately reduced. Research by Dahlberg, Mallat, Ondrus & Zmijewska, (2008) proposes that there are three cost facets relating to an adoption of technology. These are:

1. The **direct cost** the client pays to make use of the new technology.
2. The **indirect cost** when the technology cannot deliver according to expectation.
3. The **psychological cost** which relates to that which the client pays in terms of peace of mind due to the fear of problems s/he may experience while using new technology.

(Demchak, 2012) in his capacity as Group President of PNC Financial Services Group Inc, launched a strong drive to migrate transactions from the teller to the ATM within his company. His primary motive for doing so was that the transactional cost at the branch was approximately $4, compared to 59 cents at the ATM and a staggering 10 cents at a contact centre. Employees need to be familiar with price options and have the necessary conversational knowledge to communicate this so that customers could be fully equipped to make an informed

choice. Furthermore, cost comparisons across each channel should be readily available to both staff and customers.

Financial services institutions are creating increasingly innovative operating models to drive costs down. This said, the technology interface in digital channels will become increasingly critical in maintaining efficiency and productivity, particularly in view of the fact that SST transactions form part of a 'lights-out service', not subject to time or geographical constraints.

3.2.3 Safety and security factors

ATMs are often stationed onsite at financial services institutions or at key business points to facilitate transactions at the client's convenience. ATMs not only offer the traditional service functions but also sales opportunities, such as ATM loans; and they do so in a safe and secure manner. To protect the customer, financial institutions provide clients with transaction receipts that may be used to obtain compensation at times of disputes (Lee, 2009).

Research by Amtul, (2010) identifies four critical stages of security that financial institutions need to embed to mitigate against vulnerabilities:

1. Identification and authentication;
2. Digital certification;
3. Encryption; and
4. Biometrics.

Whilst these factors relate to electronic banking ("e-banking"), SSTs can be enhanced from lessons learnt from e-banking platforms, especially from an authentication and identification perspective. SSTs in this study relate to the physical devices like ATM's while e-banking platforms refer to online infrastructure like internet banking. The main motivation for banking customers to adopt Internet

banking appears to be the ability to perform banking transactions quickly, from anywhere, at any time.

3.2.4 Trust factors

In his research of low cost services at ATMs, Al Sawalqa (2012) has noted that security and privacy are significant factors in the client's need for service satisfaction. In this respect, to **foster a climate of trust**, in-branch employees need to communicate the relevant protocols to customers detailing the following:

1. Their information is **secure and confidential**;
2. Their transaction is **protected**;
3. They are **safeguarded** against unauthorised access to their accounts;
4. There is a **set process** to deal with any breaches;
5. The bank will identify and **assess all risks** pertaining to device usage and mitigate risks accordingly;
6. They have access to a **service recovery plan** to resolve any disputes;
7. The bank will ensure that its employees are **mandated** to either resolve or escalate complaints;
8. **Controls will be assessed** on an on-going basis; and
9. Branch employees are equipped to ensure that back-up processes and policies are adhered to should there be any **system outage or malfunction**.

Banks should ensure that their policies allow for the periodic 'sacrifice of profits' so as to satisfy clients' needs. For instance, if a client wants to reverse or correct a transaction, either at the branch or when using an SST, s/he should be permitted to do so without related administration fees. Wong, Rexha & Phau, (2008) adopt the thinking that both digital and traditional banking channels should be scrutinised as complimentary entities. The authors argue that the client's trust in digital banking is an outcome of his or her experience and has a paramount impact in future usage and adoption.

3.2.5 Technical skills

There is a shift from traditional banking channels to a digital environment, the main drivers being the intensity of competition in the banking sector as cited by Ganguli and Roy (2010). It is of paramount importance that companies simplify the client experience, as complexity may be described as “the degree to which an innovation is perceived as difficult to use” (Cheung, Chang & Lai, 2000) It is, therefore, imperative that banking employees have expertise to educate customers on six critical factors, namely:

1. The device menu options;
2. Navigation process;
3. On-screen options and instructions;
4. End-to-end processes in completing the transaction;
5. Device features; and
6. Device utilisation.

Factors that generate anxiety in customers include time consuming delays and poor navigational options, as well as critical incidents, such as a lack of assistance by staff when required (Shariq, 2006). Contemporary clients are therefore less tolerant of financial services, especially when instant gratification is required. The latter has been fuelled by the technological era, which has cascaded into the banking world through digital banking (Ismail and Panni, 2009). Clients, rather than service organisations, are the primary beneficiaries of innovation and technology, as noted by Grant, (2010).

3.2.6 Diversity sensitivity

Cultural factors play an important role in an individual’s adoption of new technology. It is, therefore, important to explore cultural factors – such as access to technology and digital literacy – when promoting SST platforms for services traditionally facilitated through ‘walk-in’ channels. This view is supported by

authors Erumban and Jong, (2006); and Twati, (2006), who highlight the impact and importance of culture in the adoption of technology. Erumban and Jong, (2006) further stress the critical relationship between adoption decisions and cultural factors across regions. Al-Gahtani & Hubona, (2010), also reference the importance of cultural effects in technology acceptance behaviours.

Lee *et al.,* (2003) differentiate between **individualistic and collective cultures.** The study highlights that, in individualistic cultures, people acquire information from formal and direct sources. This is contrasted with collectivistic cultures, where greater dependence is placed on other like-minded individuals, who may be early adopters of an innovation.

3.2.7 Client advocacy

Chiu, Hsieh & Lee, (2005) suggest that client loyalty may be described as a "repurchase pledge to a favoured service or product in the future" (Chiu, *et al.,* 2005). Given that there is a marginal gap between local financial services competitors, the requirement for a differentiated service becomes decisive in influencing customer satisfaction and loyalty (Ganguli and Roy, 2010). However, this can only be achieved by an unambiguous consideration of clients' priorities and an appreciation of the key drivers that influence adoption. Furthermore, Casala, Flavian & Guinaliu, (2008) argue that organisations can influence loyalty by offering standardised services. Wai-Ching (2008) notes that the survival of banks in the age of e-banking depends on their ability to attract customer advocacy. This, in turn, depends on their ability to offer service excellence and value-added product features.

3.2.8 Change factors

Beer, (2009) maintains that the majority of organisational change management programmes do not succeed. This is mainly due to their failure to engage and alter employees' conduct. Supporting employees and equipping them with the relevant

tools and skills during the change process is vital in ensuring seamless change integration. Key considerations include:

1. Employees' feelings and perceptions;
2. Changes in the job role or profile;
3. Obtaining new competencies from a technological and service perspective; and
4. Changes in processes and procedures.

Patsiosis, Hughes & Webber, (2012) and Joseph, (2010) classify resistance to an innovation or change as either *passive* or *active* resistance. While passive resistance relates to an unwillingness to engage in the adoption process, (Joseph, 2010), active resistance is a conscious decision that convinces the user that the innovation is unsuitable (Laukkanen, Sinkaunen & Laukkanen, 2009).

Financial institutions, like all other organisations, need to factor in rewards and recognition into their change programmes to ensure greater buy-in from employees. When training banking staff in the context of the customer oriented self-service environment, certain sensitivities need to prevail. For instance, any job losses that may result from customers migrating to SSTs and using less of the branch network should be fully contextualised and sensitively communicated.

The benefits of employee skills training and a targeted change-management strategy cannot be underestimated in helping banking staff to transition into the new self-service business environment. A smooth transition for employees means they have the ability to migrate customers smoothly into this new digital environment as well. This will ultimately result in greater self-service channel utilisation by customers. The **staff-training component includes** the identification of training needs; the up-skilling and multi-skilling of employees on different processes; clarification of pricing options and cost comparisons; direction on

channel features; access to information on evolving service benefits; and knowledge of the risk issues relating to all self-service channels.

The next section will unpack the models pertinent to this research topic.

3.3 Overview of models

Theoretical models are helpful in understanding user acceptance, adoption and usage of new technology. Oliveira and Martins, (2011) reference various studies used in information systems ("IS") research. These are founded on either intention-based or diffusion-based models. These models have been positioned to better appreciate and describe individual behaviours toward information technology and include the following:

1. The Theory of Reasoned Action ("TRA") Model (Ajzen and Fishbein, 1980)
2. The Theory of Planned Behaviour Model (Ajzen and Madden, 1986).
3. The Innovation Diffusion Theory Model (Rogers, 2003);
4. The Technology Acceptance Model (Davis, and Wiedenbeck, 2001);
5. The Technology Acceptance Model ("TAM2") Venkatesh and Davis (2000); and
6. The Technology acceptance model ("TAM3") (Venkatesh and Bala, 2008).

The above theories are discussed below.

3.3.1 Theory of Reasoned Action model

The theory of reasoned action ("TRA") model is utilised for predicting *behavioural intention.* This model, proposed by (Ajzen and Fishbein, 1980), originated from prior research first known as the "theory of attitude". The primary motivation for this theory was the dissatisfaction with traditional *attitude–behaviour* research, which showed weak correlations between performance of volitional behaviours and attitude measures (Hale, Householder & Greene, 2002).

According to Miller, (2005), an individual's behaviour may also be thwarted due to factors relating to their lack of confidence or control over certain behaviour. Hale *et al.,* (2002) comment that the theory of reasoned action has been applied in various research studies across several spheres (including one in dieting). A shortcoming of TRA is that it lacks the ability to provide explanations for the impact of any particular belief or behaviour (Davis *et al.,* 2001).

The figure below represents the Theory of Reasoned Action.

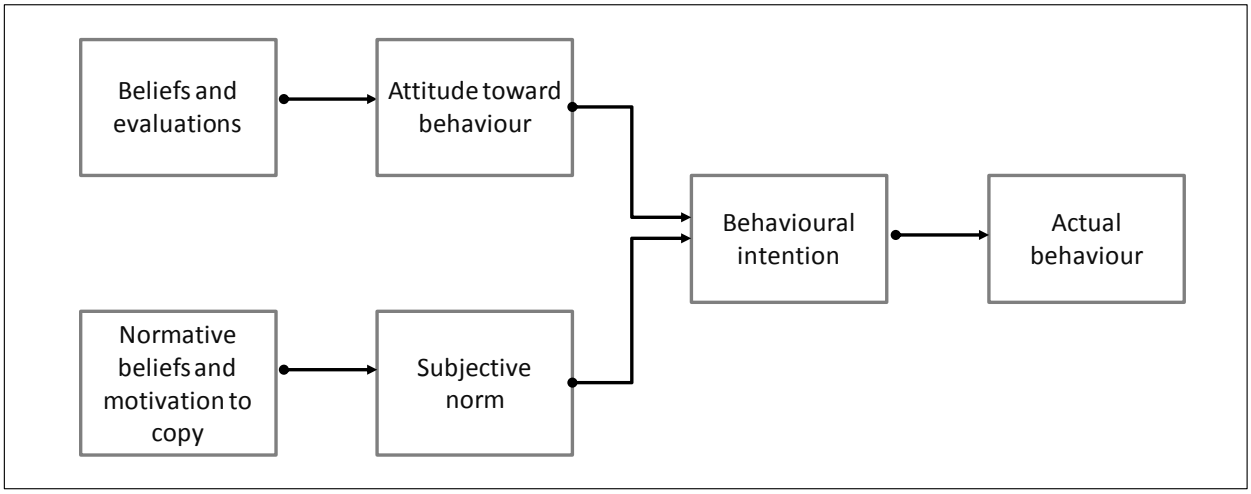


Figure 4: Outline of the Theory of Reasoned Action

Source: Fishbein and Ajzen (1980)

3.3.2 Theory of Planned Behaviour

The Theory of Planned Behaviour is considered to be an extension of the Theory of Reasoned Action (Werner, 2004). Albeit one of the limitations of the Theory of Planned Behaviour is that there may be a variance between the assessment of the *intention* of behaviour and the *actual* behaviour being assessed (Werner, 2004), this theory is typically used to predict a range of behaviours (Martin *et al.,* 2010) and (Stone, Jawahar & Kisamore, 2010).

Recent studies using the Theory of Planned Behaviour include:

1. A study to predict adolescents' use of social networking (Baker and White, 2010).
2. Research highlighting the 18-29 age-group as being the most frequent users of social networking sites (Madden, 2010).
3. A study to assess the 'feelings' of online communities from different age-groups demographics (Chung, Park, Wang, Fulk & McLaughli, 2010).

The figure below represents the Theory of Planned behaviour.

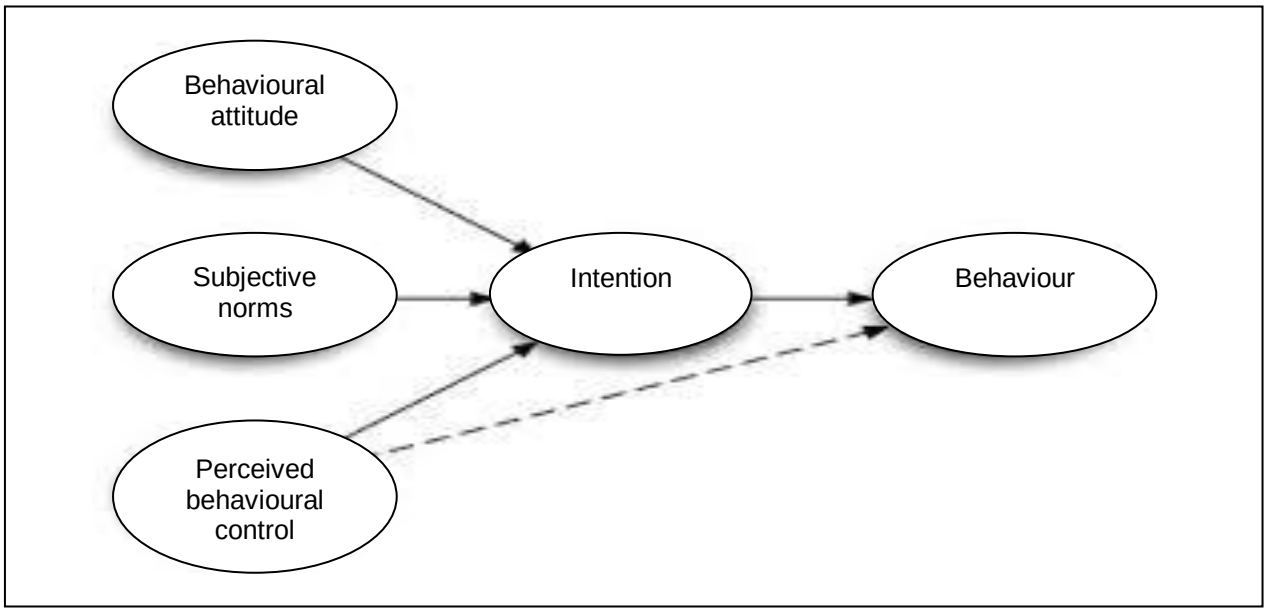


Figure 5: Outline of the Theory of Planned Behaviour

Source: Ajzen (1991)

1.3.3 Innovation Diffusion Theory

The figure below represents the Innovation Diffusion Theory.

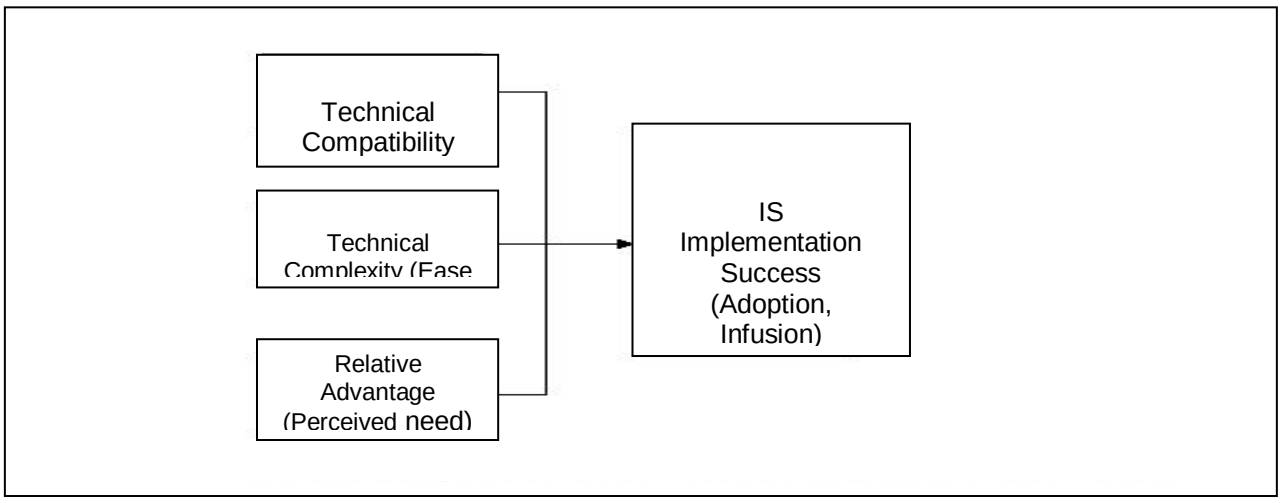


Figure 6: Outline of the Innovation Diffusion Theory

Source: Agarwal and Prasad (1998)

The Innovation Diffusion Theory investigates the rationale for and the rate at which technology and ideas are adopted in cultures. This theory has used empirical research to review the composition and differences in clusters of technologies created by **adopters and non-adopters** (Vishwanath and Chen, 2006). At the core of this theory is the ability to predict the rate of adoption of an innovation and express its structure (Rogers, 2003). The categories of adopters include innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003).

Peres, Muller & Mahajan, (2010) argue that innovation diffusion of a new technology is steered by social influences, which include interdependencies that affect various market players. Greve, (2009) notes that a significant point for the innovation process is that it plays a major role in an organisation obtaining competitive advantage. Rogers, (2003) posits that the Innovation Diffusion Theory highlights the importance of an organisation's capabilities in predicting the early adoption of innovations. Equally important, is the impact of social and central proximity on these innovations. Lastly, Ray and Ray, (2010) point out that the Diffusion of Innovation Theory model cannot be seen as a 'one-size-fit-all' model.

3.3.4 Technology Acceptance Model

The Technology Acceptance Model ("TAM") as proposed by Davis, (1989) is the traditional information system ("IS") model. It has been expanded to describe factors linked to the acceptance of technology. TAM is used to understand behavioural intention as shaped by decision-making processes. The present utility of TAM has been enhanced to include the prediction of adoption (Holden and Rada, 2011); (Sturgeon, 2011). Much debate has originated from of the study of technology acceptance (Gao, 2005; Gong, Xu & Yu, 2004). TAM posits that the successful adoption of a system is governed by three factors namely:

1. Perceived usefulness **(PU)**
2. Perceived ease of use **(PEOU)**
3. Attitudes towards usage **(ATU)** of the system (Davis, 1989).

The theory maintains that a system will not be deemed useful if it is not easy to use. It further asserts that a *user's perceptions* about the technology's usefulness as well as its ease of use, would result in a *behavioural intention* to either use or conversely not to use the system (Nov and Ye, 2008). The figure below represents the Theory of Planned behaviour.

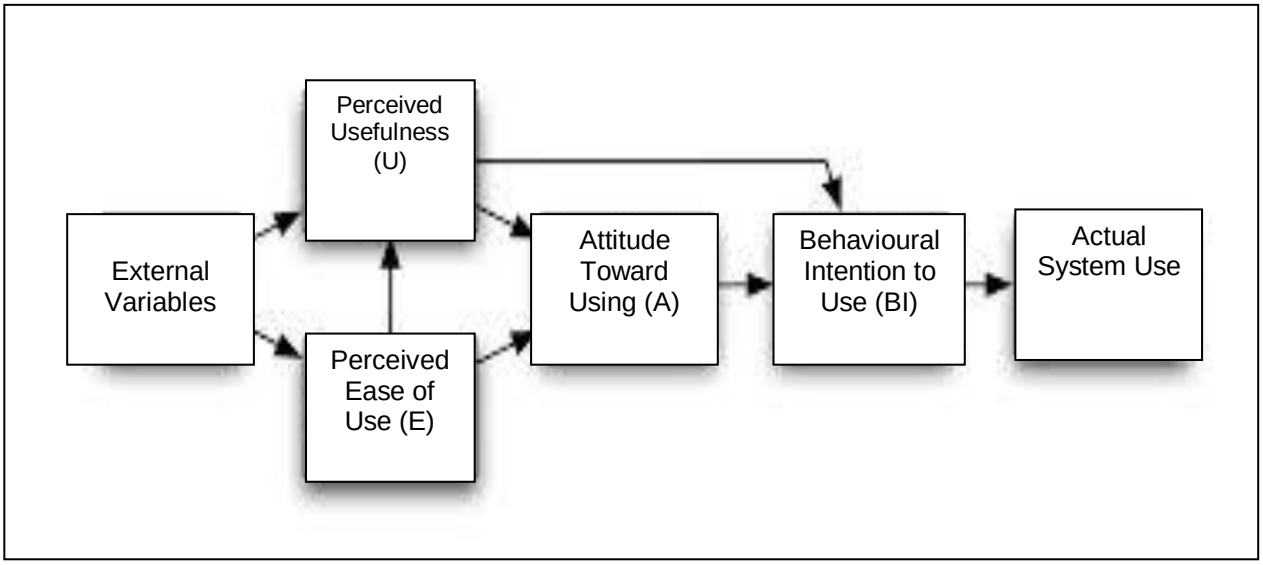


Figure 7: Outline of the Technology Acceptance Model ("TAM")
Source: Davis (1989)

3.3.5 Technology Acceptance Model 2 ("TAM2")

This model is an extension of the original TAM model and accordingly termed "TAM2" by Venkatesh and Davis (2000). The original model has been expanded, with one of the two notable upgrades being TAM2 (Venkatesh and Davis 2000 & Venkatesh 2000). Other upgrades include the Unified Theory of Acceptance model and the Use of Technology model (Venkatesh *et al.,* 2003). TAM2 posits that there is a perceptual link between the user's assessment of goals, and his/her assessment of the outcomes resulting from performing job tasks whilst using a

particular system. How the user matches his or her original goals to the eventual outcome (having used a particular system) is of paramount importance in creating perceptions of the system's usefulness (Venkatesh and Davis, 2000).

TAM2 was validated and tested in both mandatory and voluntary settings (Venkatesh and Davis, 2000). The empirical study was performed using longitudinal data collected onsite from four organisations across four unique systems, and engaging 200 participants. TAM2 revealed positive influences in terms of cognitive, instrumental and social processes. It also presented an enhanced understanding of user adoption behaviour. The TAM2 research had the added effect of endorsing the validity of the original TAM model, (Venkatesh, 2000).

The figure below represents the Theory of Planned behaviour.

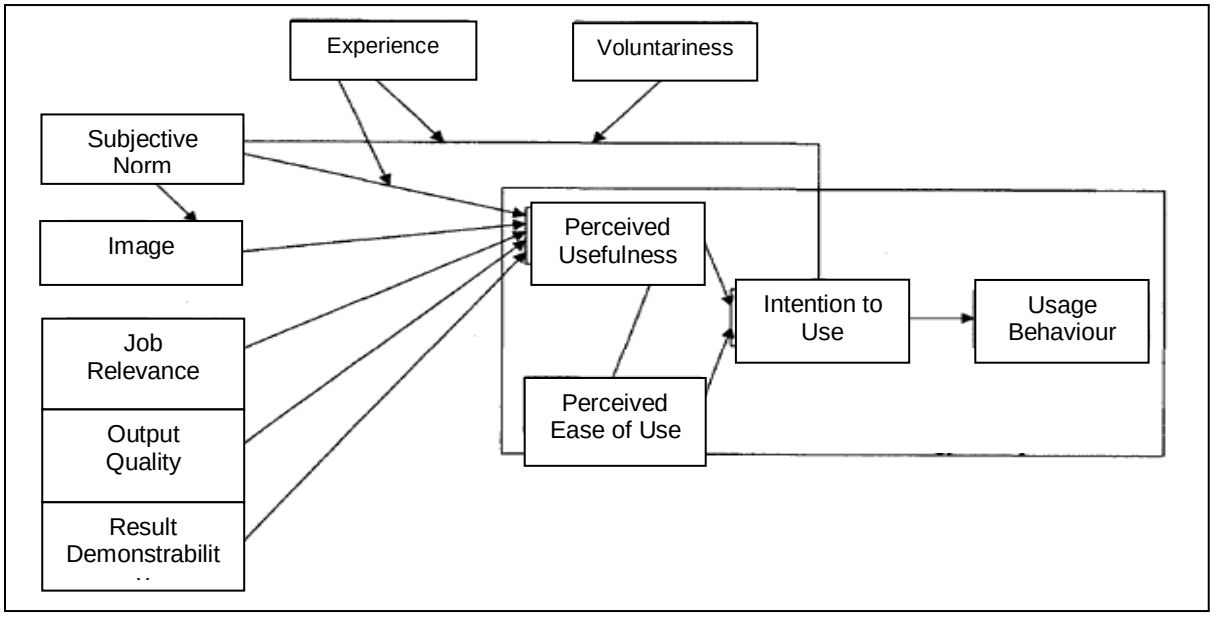


Figure 8: Outline of the Technology Acceptance Model ("TAM2")

Source: Venkatesh and Davis, (2000**)**

3.3.6 Technology Acceptance Model 3 ("TAM3")

The Technology Acceptance Model 3 ("TAM3") is an improvement on earlier technology acceptance models (i.e. TAM and TAM2), (Venkatesh and Bala, 2008).

TAM3 attends to the gaps in literature by unpacking how interventions can sway the determinants of IT adoption.

Notably TAM3 was instrumental in introducing perceived enjoyment and computer playfulness into the theory, thereby influencing perceived ease of use ("PEOU") (Venkatesh and Bala, 2008). When compared to TAM2, TAM3 suggests new theoretical relationships, such as the moderating effects of experience on key relationships (Bhattacherjee and Premkumar, 2004).

The figure below represents the Theory of Planned behaviour.

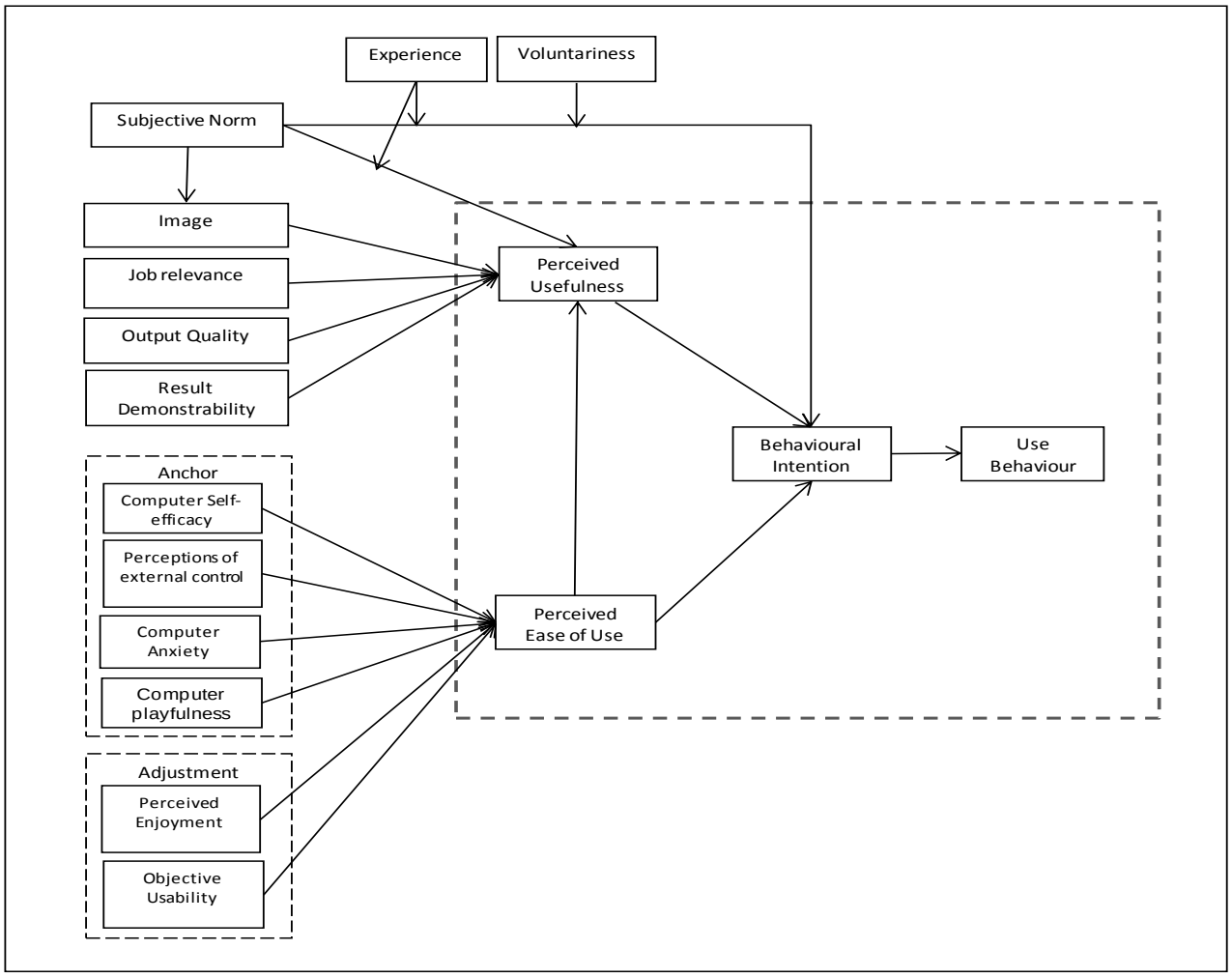


Figure 9: Outline of the Technology Acceptance Model 3 ("TAM3")

Source: Venkatesh (2008)

3.3.7 Motivation for selecting the Technology Acceptance Model (TAM)

The reason for selecting the Technology Acceptance Model to support this research study is its vigour and robustness compared to other theories in predicting behavioural outcomes in the adoption of new technology (Yousafzai, Foxall & Pallister, 2010). Other theories considered include the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB).

Additionally, the TAM framework offers an *improved clarification* and *enhanced predictive capability* with reference to user intention compared to TRA and TPB (Riemenschneider, Harrison & Mykytyn, 2003). The application of the TAM model in this study was considered vital in appreciating the more subtle conceptual issues relating to the enhancement of banking employees' competencies in the context of an SST environment.

Due to TAM's broad applicability, researchers have continued to extend this model with external factors critical to technology adoption (Dimitriadis and Kyrezis, 2010; Wu and Lederer, 2009). Prior applications of TAM have revealed that individual differences constitute significant external factors that contribute to the implementation of any technological innovation across diverse disciplines (Wang, Wang, Lin, & Tang, 2003). Importantly, a methodical analysis of the TAM model may assist in unpacking the rationale for defining the requisite staffing skills needed to improve overall customer adoption and usage of SST technology.

Davis, (1989) maintains that practitioners evaluate technologies for two reasons:

1. To predict acceptability.
2. To detect the basis for the lack of acceptance and to take appropriate steps to advance user acceptance.

The Technology Acceptance Model (TAM) was used to support this study as its key constructs of usefulness and ease of use are critical in defining the requisite

skills of banking employees to enhance client acceptance and satisfaction of SSTs. Fundamentally, TAM explains how an individual may approach a technology system from an acceptance and utilisation perspective. TAM shows how various factors are in play when an individual is confronted with a new technology (Davis 1989). The TAM model is used as the **theoretical framework** for this study. The applications of TAM, various studies relating to the model and its limitations are discussed next.

3.4 Applying the Technology Acceptance Model ("TAM")

3.4.1 Application of TAM

TAM proposes that behavioural intention is structured around the outcome of conscious decision-making processes (Venkatesh, et al., 2003). Technological service innovations are key factors in the firm's interaction with customers, and are critical for long-term business success (Meuter et al., 2005). Self-service technologies ("SSTs") are "technological interfaces that enable customers to produce a service independent of direct service-employee involvement" (Meuter et al., 2000, p. 50).

3.4.2 Studies on the different applications of TAM

The tabled below, as cited by Legris, Ingham & Collerette, (2003), shows the potential application and sample size of TAM. TAM is dynamic enough to be used across various population sizes, as indicated by the assorted sample types below.

The table below represents different studies on TAM behaviours.

Author	Software	Sample size	Model used
Davis et al.,	Text-editor	107 full time MBA students	TAM + TRA
Mathieson	Spread sheet	262 students course intro-management	TAM + TPB

Author	Software	Sample size	Model used
Taylor and Todd	University computing, resource centre, business school student	786 students	TAM + subjective norm + perceived behavioural control
Chau	Case	2500 IT professionals	TAM modified for long- and short-term usefulness
Davis *et al.,*	Three experiences with six software	Total of 108 students	TAM model of antecedents of perceived ease of use
Jackson *et al.,*	Spread sheet, database, word processor, graphics	244, 156, 292, 210 students	TAM validation of perceived usefulness and ease of use instruments (each six items tools)
Igbaria and Craig	Personal computing	596 PC users	TAM in small firms
Bajaj *et al.,*	Debugging tool	25 students	TAM + loop back adjustments
Gefen and Keil	Configuration software	307 salesman	TAM testing for effect of perceived developers

Table 3 Different Technology Acceptance Model studies

Source: Adapted from Legris 2003 et al.,

For the purposes of this study, the *utility* and *applicability* of TAM is of paramount importance. Information systems researchers typically use TAM because of its popularity (Venkatesh, Davis & Morris, 2007). It has, therefore, been continuously adapted and replicated. TAM is the most dominant model for unpacking technology acceptance behaviour (Jackson, 2010). In various organisations, technology is at the forefront in guiding and steering business activities. Enhanced technology platforms have been instrumental in realigning and scoping the financial services industry in a global context (Kerem, Lustsik, Sorg & Vensel, 2003).

Notwithstanding TAM's consistent application in the context of new technology platforms, the discussion points in the table above relate to the different demographics and applications of TAM. They further highlight gaps in the model, particularly potential gaps in the research methodology deployed.

The table below highlights selected study types and demographics conducted on TAM.

TAM description	Selected incidences
Study type	• Laboratory study; Field study • Web surveys; Knowledge workers • Brokers; Students (undergraduate and graduates) • Sales assistants; and internet users.
Countries	• United States of America • United Kingdom • Japan • Australia • Hong Kong • Switzerland • Australia • Turkey • Canada • Kuwait • Nigeria • France • Singapore • China • Finland
Applications	• E-commerce application; Voicemail; Expert support system; Word processor; Email; Fax; Software ; Case tools • Groupware ; and Telemedicine technology

Table 4: Selected TAM study types and demographics

Source: Adapted from P. Legris et al.,

Overall, the Technology Acceptance model ("TAM") has received empirical support for being robust in predicting technology adoption in various contexts and across a variety of technologies (Davis and Morris, 2007). This study is focused on ATMs. Notably TAM has not been applied to this channel in the South African context with reference to employee's skills development. The model is helpful in determining the competencies that could form part of the foundational profile for both existing and new banking employees in the SST environment, thereby supporting customer usage of SSTs as a primary objective. The limitations of the technology acceptance model will be discussed next.

3.5 Limitations of TAM

In spite of the technology acceptance model being well cited, many authors share mixed views regarding the theoretical assumptions and practical effectiveness of the model. These can be summarised as follows:

The table below highlights limitations of the Technology Acceptance Model.

Author	Commentary
T. Dybå, N.B. Moe, E. Arisholm,	• Argue that TAM does not measure the advantages of using a technology. • Propose that technology acceptance model is not the final point of technology introduction. • State that TAM is limited as it does not measure the impact of technology on work performance, by using measures of effectiveness, to glean business value of a new technology. • Limitations of research papers are that few apply usage measures, and usually their sample sizes were relatively low or small.
D. Straub, M. Limayem, E. Karahanna-Evaristo,	• State that even though perceived use can sway morale, disposition and eventually performance, the relationship is not as clear-cut as the

Author	Commentary
	technology acceptance model proposes. • TAM is limited in its use when assessing pre-prototype systems.
Lee *et al.,*	• Several TAM research studies utilise students as participants in a controlled environment, hence the findings may not be generalised.
Yang and Yoo (2003)	• *Attitude* needs to be reconsidered in the TAM model, and therefore propose that affective and cognitive variables are incorporated.

Table 5: TAM limitations

Source: Adapted Chuttur (2009)

According to the comments in the above table, there are gaps in TAM, such as the gap in assessing the advantages of technology or the gap in measuring the impact of technology on work performance. Given the potential gaps in TAM, this study aims to link TAM to the Theory of Performance model.

Bagozzi (2007) argues that TAM does not consider the systems approach when an individual uses technology. He also maintains that another shortcoming in TAM is its deficiency in dealing with the emotional drivers in system usage (Bagozzi, 2007). Furthermore, Bagozzi (2007) notes that TAM does not effectively compare the *achievement of end-goals* to *system usage*.

3.6 Performance management

Performance management is defined differently by different authors. Van Dooren *et al.,* (2010) describe it as a type of management where information is utilised for decision-making while Moynihan, (2008, p. 5) cites performance management as a system which “generates information through strategic planning and performance measurement routines and that connects this information to decision venues, where, ideally, the information influences a range of possible decisions”.

Aguinis, (2009) labels performance management as the process of identifying, developing and measuring staff performance in relation to organisation's goals. Taticchi, (2008) notes that in the last two decades interest in performance measurement has significantly increased.

Past research has made use of results-based measures, including output rates and sales (Sturman, Cheramie & Cashen, 2005). Even though performance is dynamic, Ployhart, Schneider, & Schmidt, (2006) argue that there is sufficient stability in performance for it to be predictable. It should be noted that when it comes to performance management, there is no single universally accepted model. Burney *et al.,* (2009) suggest that there is a positive correlation when linking rewards to performance. It is imperative for staff to fully grasp work goals to perform their tasks (Buchner, 2007).

Financial services employees are inundated by a continuous stream of changes, both from a technological perspective as well as changing business strategies and business decisions. For an organisation to remain competitive, employees need to constantly realign themselves with the organisation's overall goals and strategic direction. This requires a constant re-evaluation of their competencies as well as their professional ethics, their approach to service excellence, their relationship with co-workers, their interaction with customers and their personal aspirations for the future. This said, it is the responsibility of the organisation to empower their employees with the appropriate set of tools and competencies to remain at the cutting edge of their profession. Rao, (2008) argues that companies ought to offer challenging and motivating work if they expect their staff to perform.

3.7 Theory of performance

Overview of the Theory of Performance

The Theory of Performance (Campbell, 1990), encompasses three key determinants of performance, namely:

1. Declarative knowledge;
2. Procedural knowledge, skill; and
3. Motivation.

Declarative knowledge relates to knowledge about facts, principles, objects, and so forth. It represents the knowledge of a given task's requirements.

Procedural knowledge and skill, relates to knowing how something is done, which would include cognitive skill, perceptual skill, and interpersonal skill.

***Motivation**, combines the following factors:*

1. *The choice to expend effort;*
2. *The choice of the level of effort to expend; and*
3. *The choice to persist in the expenditure of that level of effort.*

The table overlays the determinants of job performance – as it relates to declarative knowledge, procedural knowledge and motivation – with the eight factors identified in the self-service literature analysis and described in Figure 2 above, namely: training, economic and pricing factors, safety and security factors, trust, technical skills, diversity, client advocacy and change management factors.

The table below links Campbell's job performance determinants to employee skills factors required within the SST environment.

Determinants of job performance	Description	Factors to be reviewed

Declarative knowledge	This entails knowledge based on facts and understanding of the requirements of a task.	• Economic and pricing factors • Safety and security • Trust
Procedural knowledge and skill	This relates to the knowledge of how things are done.	• Technical skills • Diversity
Motivation	This covers an individual's choices.	• Channel advocacy • Change management factors

Table 6: Determinants of employee skills factors
Source: Campbell's (1990) Determinants of Job Performance

The Theory of Performance has not been linked to TAM. This study may, therefore, assist in a) identifying the present skill levels in banking institutions, b) evaluate and rank skills levels, and c) ultimately collate and compile a list of the requisite skills needed in an SST environment.

The figure below the compares the work of Campbell to that of Viswesvaran.

3.7.1 **Comparison of models**

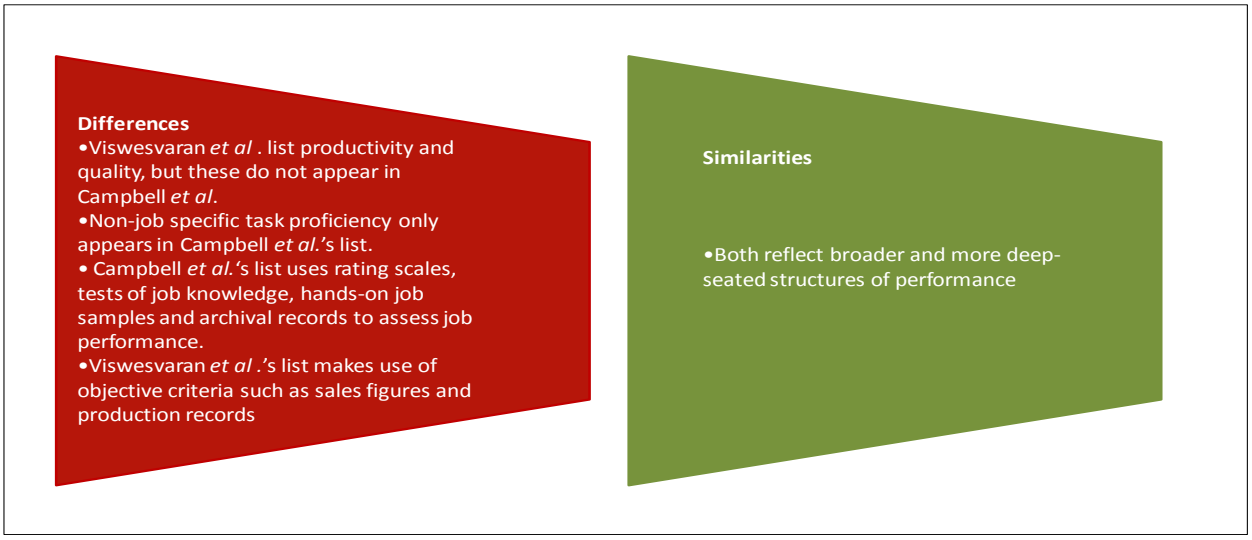


Figure 10: Comparisons between the Theories of Performance Models

3.7.2 Summary of Campbell's explanation of job performance

The table below describes the domain of job performance as per Campbell (1990).

Components	Description
1. Job-specific task proficiency.	1. Core technical tasks.
2. Non-job-specific task proficiency.	2. Tasks not specific to a given job.
3. Written and oral communication proficiency.	3. Preparing written materials or giving oral presentations.
4. Demonstrating effort.	4. Exerting extra effort; willing to work under adverse conditions.
5. Maintaining personal discipline.	5. Avoid negative or adverse behaviours.
6. Facilitating peer and team performance.	6. Support and assist peers; reinforce participation.
7. Supervision and leadership.	7. Influence; setting goals; rewarding and punishing.
8. Management and administration.	8. Organize people and resources; monitor progress; problem-solve.

Table 7: Job performance according to Campbell

Source: Adapted from Rotundo, & Sackett, (2002).

3.7.3 Campbell's Eight-Factor Performance Model

The Eight-Factor Model of Performance developed by Campbell, (2000) generalises features of job performance across all work streams and can be summarised as follows:

1. Task-specific behaviours - behaviours that an employee performs as part of his or her role / function.
1. Non-task-specific behaviours - behaviours that an employee is required to perform that are not necessarily applicable to the work role.
2. Oral and written communication duties.
3. Performance evaluated in terms of a staff member's effort or commitment to a role / function.
4. The factor of personal discipline.
5. The extent to which a staff member assists his or her co-workers.

6. The supervisory or leadership component - conveys the recognition or punitive steps an employee is required to carry out.
7. Administrative performance - duties that do not require direct supervision.

To link job features as detailed by Campbell, (2000) to employees' self–service expertise, it is necessary to clearly define specific behaviours. Furthermore, other dimensions are also significant, such as the employee's skills and the way s/he works within the team context, as well as the manner of recognition or sanction applied to the employee's work.

Within Campbell's, (1990) proposed hierarchical model of eight performance factors, five refer to task performance:

1. Job-specific task proficiency;
2. Non-job-specific task proficiency;
3. Written and oral communication proficiency;
4. Supervision, in case of leadership position; and
5. Management / administration.

The five factors may be clarified as follows: Supervision relates to the motivation, directing and coordinating of staff. Motivation is a significant factor in enabling staff to perform at their utmost ability. An effective leader should be able to appreciate the triggers that drive performance and should use these to direct employee behaviour (Jain, 2005). Coaching is a crucial component in ensuring that employees have the necessary competencies to facilitate role changes (Ashcroft, 2004). Coaching is also referred to as part of the leadership component by Stephens and Hamblin, (2006) and Jain (2005).

3.8 Other performance management considerations

3.8.1 Adaptive performance

The reality of a changing work environment places the employee in a perpetual cycle of transformation and adaptability (Pulakos, Arad, Donovan & Plamondon, 2000). Researchers use different terminologies to refer to this adaptability. Performance management systems act as an interface between management and staff, linking management's strategic vision to staff interests and steering change and adaptability according to the business's long-term objectives. This is facilitated by translating the organisation's strategic direction into tangible operational goals and activities (Becker *et al.,* 2011). Pulakos, *et al.,*., (2000) provide an eight-dimensional classification for *adaptive performance*:

1. Handling crisis situations
2. Dealing with work stress
3. Creative problem solving
4. Handling unpredictable job scenarios
5. Up-skilling on technologies and procedures
6. Displaying interpersonal adaptability
7. Exhibiting cultural adaptability
8. Demonstrating physically-oriented adaptability.

Companies invest significantly in staff training each year (Towler and Dipboye, 2006). This is indicative of the perception that training is instrumental in improving employees' performance, raising skills levels and ultimately strengthening the company's competitive edge. Regular training is also necessary to inculcate a *learning culture*. Research by Arthur, Bennett, Edens & Bell, (2003) indicate that effective organisational training interventions have a higher impact on organisational learning than other dimensions, such as appraisals and performance feedback. Therefore, the ability to translate training skills into the

relevant competencies required in the self-service environment will greatly enhance job performance and employee satisfaction.

Further, diversity within companies requires that the business constantly adapts to the work environment's complexities. Such internal diversities may include differences in operational competencies, varying age groups, different cultural backgrounds and varying levels of experience and education. This diversity can be positively embraced in the change process, thereby enabling (and encouraging) staff to adjust to new job situations by generating diverse viewpoints using the same information (Nonaka *et al.,* 2001).

Of relevance to a manager of a self–service business unit, is that it is critical to create a framework to position organisational objectives; thereafter an appropriate structure of evaluation can flow logically from the priorities set in the framework. From a self–service work context, the mere compliance of employees with formal job requirements may not be sufficient in an ever-changing, customer-centric work environment. Therefore, employees need to exceed formal requirements (Parker, Williams & Turner, 2006). Moreover, management needs to provide the necessary strategic and operational guidance to steer employee effort and commitment. This should be accompanied by a visible and tangible recognition process, in which employees can clearly observe their own value and how it relates to the achievement of operational goals.

The next section will provide a summation of the above models.

3.9 Model summary

This study combines two theories**, namely the Technology Acceptance Model** and the **Theory of Performance model**. The two models interlink to determine the requisite employee skills to support customers' adoption of self-service

technologies. Both theories will be further explained from a utility perspective, considering their applications and limitations.

While these two theories have been broadly investigated and cited, no effort has been made to integrate the two streams of research to better understand a) what skills are required by employees in the banking sector to support customers' usage of self-service devices and b) how these skills can be best imparted to staff in an ever-changing work environment, so that their output does not simply comply with organisational standards, but continually exceed them.

Based on the constructs of the Theory of Acceptance Model and the Theory of Performance Model, the following conceptual framework is proposed for this study: By overlaying the three determinants of job performance, that is *declarative knowledge*, *procedural knowledge* and *motivation* with the two constructs of TAM, namely *perceived usefulness* and *perceived ease of use*, the researcher aims to determine which of the requisite skills are of primary importance to support customers in **increasing SST usage** and subsequently to **increase customer satisfaction** of these devices.

The next section will unpack Treating Customers Fairly principles, its application and relevance to SSTs.

3.10 Guiding principles: Treating Customers Fairly

3.10.1 **Overview**

In 2010, the South African Financial Services Board implemented a Treating Customers Fairly ("TCF") programme to regulate the market conduct of financial services firms. The purpose of this programme was to ensure that the fair treatment of clients was entrenched in financial firms' organisational and

operational cultures. The TCF principles will be executed via a range of credible restraints both from a financial and non-financial perspective.

TCF encompasses six principles, as accessed electronically on the 1st of November 2013 at www.fsb.co.za. They are represented as follows (as outlined by the Financial Services Board):

TCF Principle	**Relevance to this study from a SSTs dimension**
The fair treatment of customers must be central to the firm's culture.	From executive management, down to front line staff, TCF principles should be embedded in the ethos of the company from an SST solution perspective.
Products and Services marketed and sold in the retail market must be designed to meet the needs of identified customer groups and targeted accordingly.	SSTs should be offered according to customers' needs to meet their financial and non-financial requirements.
Customers must be given clear information and be kept appropriately informed before, during and after the time of contracting (**disclosure**).	All information relating to price and processes of SSTs need to be plain and transparent.
Where customers receive **advice**, this must be suitable and must take into account their current circumstances.	The advice the client is furnished with on SSTs must be congruent with their present state of affairs.
Products must **perform** as firms have led their customers to expect and their service must be of an acceptable standard and must be what customers are expecting.	All SST processes and functionalities should be aligned with what was communicated to clients.
There must be no unreasonable **post sale barriers** to change the product, switch provider, submit a claim or make a complaint.	Should a customer decide to revert to the physical channels after choosing to adopt SSTs, businesses should allow this request.

Table 8: Application of Treating Customers Fairly

Source: Financial Services Board

3.10.2 Application of TCF

In the self-service context, it is important to ensure all processes, staff advice (information provided / cost and pricing details) and service recovery are grounded in the TCF principles. The FSB's response to non-compliance includes some of the following:

1. Administrative penalties and / or fines;
2. A declaration that the business process or procedure is undesirable;
3. The withdrawal of regulatory licenses;
4. The suspension and criminal prosecution of individual wrongdoers.

USA-based research by Gallup (2013) concluded that there are three overarching strategies for financial services in migrating customer transactions from physical to electronic channels:

1. Firstly it is essential to afford customers either positive rewards or incentives or disincentives. Examples of positive rewards include reduced service fees for online transactions or discounts for performing transactions via lower-cost channels. The research posits that more than 70% of clients would agree to switch from traditional platforms to digital platforms if they were presented with fee-based incentives. Findings also showed that institutions need to guard against disincentives, such as charging for transactions that were previously free, as clients were likely to seek an alternative financial institution.
2. Secondly, the findings showed that clients did not respond positively to the introduction of positive defaults, meaning they did not wish to be subjected to electronic channels as a mandatory standard for service. As noted by the Gallup study, institutions need to enable clients to choose their own most advantageous channel, and to use and pay for service usage accordingly.
3. Thirdly, clients are more inclined to use new digital platforms if they are provided with appropriate training and interactive learning materials. This may include interactive kiosks in the branch network or instruction videos to

> acclimate clients to new channels. Instructional content should communicate features, benefits and costs of each channel and should also be available in both digital and paper-based brochure formats to ensure the content is easy to access and understand. All pricing information should be current and relevant. Instructions relating to channel navigation should be clear, and functionality should be tested regularly to ensure on-going, reliable service functions. Institutions should further establish effective channels to resolve technical queries and complaints. These should include online, in-branch and call-centre channels, so that the client can select the most convenient one. Additionally, institutions should design a multi–channel strategy to facilitate cooperation between the different channels, thereby offering customers a seamless customer experience.

Aligned with the research above, financial institutions should clearly define banking employees' roles, responsibilities and training requirements so that they are well equipped to support customers in whichever channel they select to use. This applies to staff training at entry-level positions through to leadership levels, across the different service channels. Importantly, front-line branch staff should be sufficiently skilled to migrate clients from traditional to electronic channels.

In addition to being trained on the technical and functional aspects of digital platforms, as well as benefits and costs of new electronic service channels, employees need to be sensitive to possible resistance from clients to using new technologies. Employees should, therefore, also be trained on how to gauge possible reasons for such resistance and to guide clients in non-judgemental ways. Special attention should be given to the customer's right to select the channel of their choice. Therefore, institutions should guard against any directive to 'force-migrate' customers to new digital platforms as a business policy.

The Gallup study also highlighted the risk of incongruences between *channel preference* and *channel usage*. When clients could not use the channel of their

preference for a transaction or service, they were less satisfied with their customer experience than clients who utilised their channel of choice. The study further showed that satisfied clients were less engaged with the bank.

The study further highlighted some of the risks associated with efforts to migrate customers who have already clarified their channel preference. These include the risk of channel dissatisfaction and decreased engagement. If not adequately addressed, this may lead to account closures and reduced profits.

Ultimately, the study shows that although transaction migration to SST platforms carries significant benefits for institutions, understanding ***how*** clients respond to the business's migration directives is a critical success factor. This understanding should be overlaid with the respectful adherence to TCF principles.

The following section will explain the integration of key models relevant for this study.

3.11 Model framework

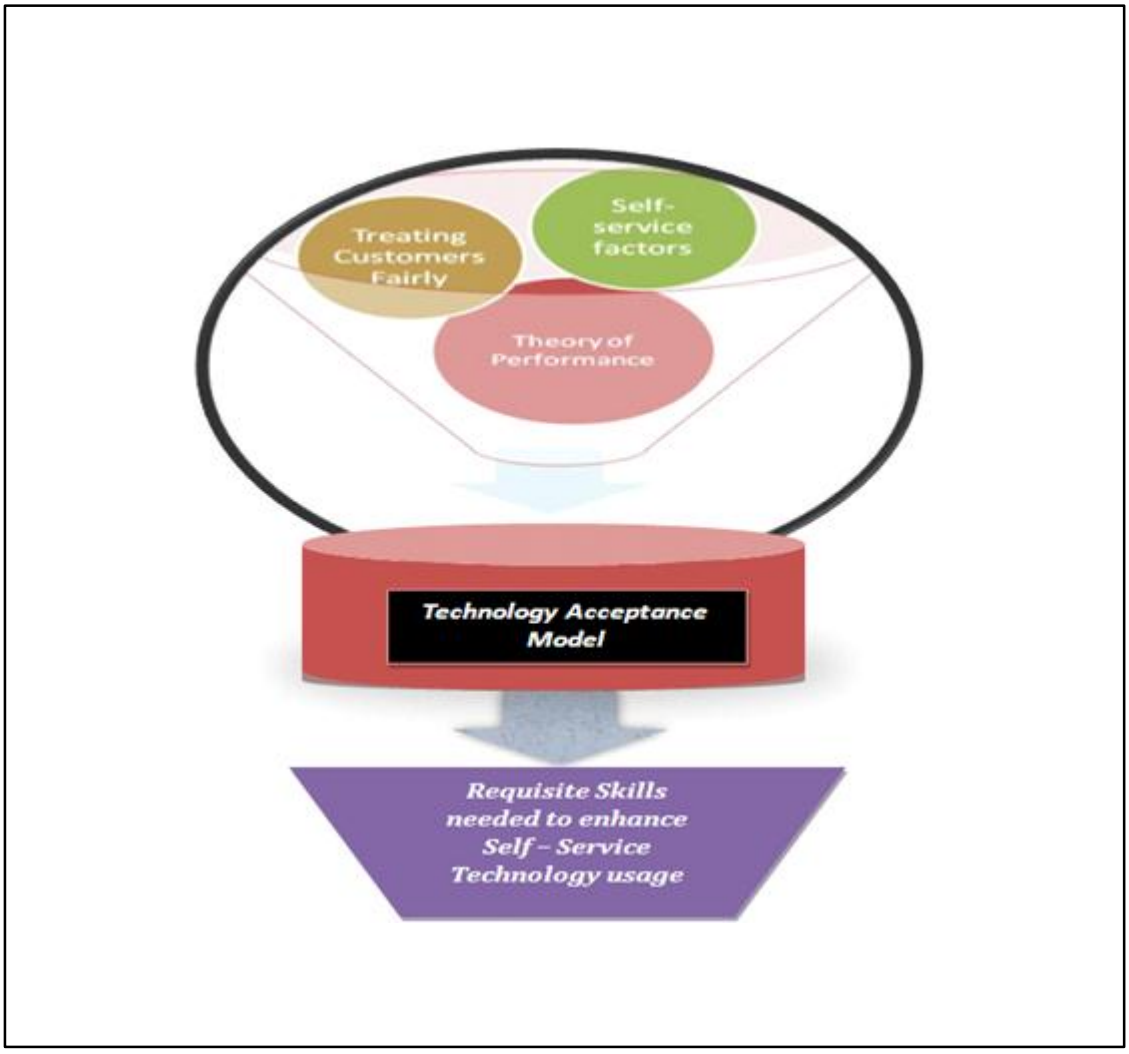


Figure 11: Research Model Framework

The diagram above depicts the integration of the Theory of Performance Model and the Technology Acceptance Model, and their combined alignment with TCF principles. Not only does this study aim to identify gaps in the existing literature, it also endeavours to be the departure point for a general discussion on self-service technologies. Ganguli and Roy, (2010) affirm the move away from so-called “traditional channels”, which is stimulated by robust industry competition. To remain innovative - and therefore competitive - financial services institutions are using technology leverages to deliver virtual banking services. As institutions

innovate, develop and compete, the evolving digital SST environment, in turn, is driving industry growth (Barwise and Farley, 2005).

The next section will discuss the conceptual framework for this study.

3.12 Conceptual framework

A *"positivist approach"* was adopted for this study, which emphasises the application of exploratory research in reaching conclusions which can be generalised for the entire population. A positivist approach to research is based on knowledge gained from 'positive' verification of observable experience rather than, for example, introspective or intuitive analysis. Scientific methods or experimental testing are the best way of achieving this knowledge. For the purposes of this study, the term refers to the use of explorative methods and evaluative scales to detect gaps in relationships and technological activities. Additionally, this approach follows a process of diagnostic clarification and definition of information relevant to the problem (Cant, Gerber-Nel, Nel and Kotzé, 2005).

A combination of *inductive* and *deductive* approaches will assist in theory building. Following the process of data collection, the key points are highlighted with a series of codes extracted from the text; the researcher then groups and packages similar concepts together. From an ontological perspective, the *reality* of SSTs is *constructivist* (i.e. findings are based on observation and scientific study) as it differs from organisation to organisation and from country to country. Therefore, from an *epistemological* perspective, knowledge is gleaned from observations and interpretations relating to what is seen or listened to. The next section will provide a conclusion to chapter three.

3.13 Summary

Chapter 3 critically reviews both the *Technology Acceptance Model ("TAM")* and *Theory of Performance* Model. The self–service approach is previewed within the

context of the principles of the *Treating Customers Fairly ("TCF")* approach. According to the financial Services Board ("FSB"), the latter is an outcomes-based regulatory and supervisory approach designed to ensure that regulated financial firms deliver specific, clearly articulated *fairness outcomes* to financial services consumers.

The Chapter positions TAM in terms of its history, applicability and utility. It further explores various authors' views on TAM's limitations. There is widespread support for TAM, as shown in the literature; however research on the impact of staff knowledge – as well as their relevant capabilities in supporting clients with SST acceptance - has been largely neglected. Existing studies centre on **either** *the client factors relating to adoption* **or** *acceptance*. Prior research results have revealed that technology anxiety has an adverse effect on both the client's satisfaction and intention to reuse SSTs. Earlier research argues that client training (education) is required to prevail against the major barriers associated with SSTs. The gaps within TAM are clearly referenced in that the model does not measure the *impact of technology on work performance*.

Chapter 3 also presents the **Theory of Performance**, detailing its history, its comparisons, applications and limitations. There remains a lack of consensus when it comes to a single universally-accepted model for performance management. From an organisational perspective, when dealing with staff, it is not adequate for them to merely adhere to the formal job specifications, but rather to exceed that which is formally required (Parker *et al.,* 2006)

Several elements will render this thesis both new and significant. Firstly, the impact of staff knowledge and their relevant capabilities in relation to self–service technology acceptance has been largely neglected by previous research. Existing studies centre on either the *client factors relating to adoption* or *acceptance*; this study extends the applicability of the Technology Acceptance Model in the context of the Theory of Performance. The resultant insights will create value in informing

organisations of the requisite staffing skills needed by financial services professionals to a) work within a changing innovative banking environment, b) share knowledge and information with peers in a constructive way, and c) support clients in a professional and non-judgemental manner to migrate from traditional service channels to digital platforms. From a staffing perspective, the more employees use, understand and keep abreast of self-service devices, the greater their ability and willingness to promote and recommend the channel to customers.

The next chapter will provide a complete overview of the research methodology; aligned with the findings of the literature review to develop a valid construct measurement instrument. It will, discuss all related issues pertaining to methods, techniques and processes, including sampling techniques, data collection and data analysis, as implemented in the research.

Chapter 4: Research design and methodology

4.1 Introduction

This chapter commences with the research problem summary, followed by the research objectives and its propositions. Thereafter both the design and methodology of the research is positioned.

As indicated by (Cooper and Schindler, 1998: 14-18), the following characteristics for scientific research are:

1. The research purpose has to be plainly defined;
2. In the research proposal the research process must be out lined;
3. The limitations must be forthrightly positioned;
4. The data analysis must be sufficient to present its significance;
5. The findings must be revealed unequivocally; and
6. Lastly its conclusions must be vindicated.

The next section will discuss the research problem.

4.2 Research problem

As highlighted in Chapter 1, Customers' lack of understanding with reference to self-service technology and support has resulted in them paying higher transactional fees and experiencing unnecessary inconvenience at physical channels. In accordance to this financial services institutions invest in self–service technologies for various reasons, including the demands of cost reduction and to cater for the channel preferences of technological savvy customer base.

This study aimed to both **identify and classify the requisite skills** needed by financial services professionals to enable them to migrate customers from physical

to electronic service channels; including Automated Teller Machines. The introduction of new technology often necessitates the need for new abilities and competency sets. Trained service staff can better understand the reasons for customers' reluctance to use new self-service technology. Essentially there is a requirement to develop and validate an instrument for defining the requisite skills needed by financial services employees to promote enhanced usage of SSTs among banking customers.

Based on the apparent gap in understanding with regards to the role of banking employees in promoting SST usage among banking customers, and therein, the required skills needed by employees to add value in the process, the following research questions were developed.

4.2.1 Primary questions

4.2.1.1 Research question 1:

Does Declarative knowledge influence the perceived ease of use of new technology?

4.2.1.2 Research question 2:

Does Procedural knowledge influence the perceived ease of use of new technology?

4.2.1.3 Research question 3:

Do staff motivational skills influence the perceived ease of use of new technology?

4.2.1.4 Research question 4:

Does Declarative knowledge influence the perceived usefulness of new technology?

4.2.1.5 Research question 5:

Does Procedural knowledge influence the perceived usefulness of new technology?

4.2.1.6 Research question 6:

Do staff motivational skills influence the perceived usefulness of new technology?

4.2.2 Secondary questions

4.2.2.1 Research question 1:

Is there a difference in rating by staff of Declarative Knowledge and Knowledge Procedural Knowledge and Skill by gender?

4.2.2.2 Research question 2:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge in the role of the teller and enquiries staff?

4.2.2.3 Research question 3:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across all age groups?

4.2.2.4 Research question 4:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across the levels of education in staff?

The research objectives will be discussed next.

4.3 Research Objectives

This study aimed to identify and classify the requisite skills needed by financial services professionals to migrate customers and transactions from manual (paper based systems) to electronic channels.

The primary research objectives were as follows:

1. **Evaluation and ranking of staff skills** in terms of how they enable (or hinder) self-service usage by customers; and
2. **Identification and analysis of** staff skills required to enhance the use of self-service technology ("SST") among customers.

The next section will cover the research propositions.

4.4 Research propositions

Cooper and Schindler (1998: 45) argue that the there are three conditions a hypothesis should adhere to:

1. Firstly it needs to be adequate for its purpose;
2. Secondly it needs to be testable; and
3. Lastly, for explanatory purposes, it ought to be superior to its rivals.

The below propositions are gleaned from the above research objectives and outlines the sequential flow of the research approach:

The table below represents the (Null and Alternative) hypothesis:

Item	Null Hypothesis: HO	Description
1.	$H0_1$	Declarative knowledge has no influence on the perceived ease of use of new technology
2.	$H0_2$	Procedural knowledge has no influence on the perceived ease of use of new technology.
3.	$H0_3$	Staff motivational skills have no influence on the perceived ease of use of new technology
4.	$H0_4$	Declarative knowledge has no influence on the perceived usefulness of new technology
5.	$H0_5$	Procedural knowledge has no influence on the perceived usefulness of new technology
6.	$H0_6$	Staff motivational skills have no influence on the perceived usefulness of new technology
7.	$H0_7$	There is no significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge by gender
8.	$H0_8$	There is no significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge in the role of the teller and enquiries staff
9.	$H0_9$	There is no significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge across all age groups
10.	$H0_{10}$	There is no significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge across the levels of education in staff
Item	Alternative Hypothesis: H1	**Research Hypothesis Alternative**
1.	$H1_1$	Declarative knowledge has an influence on the perceived ease of use of new technology
2.	$H1_2$	Procedural knowledge has an influence on the perceived ease of use of new technology.

3.	$H1_3$	Staff motivational skills have an influence on the perceived ease of use of new technology
4.	$H1_4$	Declarative knowledge has an influence on the perceived usefulness of new technology
5.	$H1_5$	Procedural knowledge has an influence on the perceived usefulness of new technology
6.	$H1_6$	Staff motivational skills have an influence on the perceived usefulness of new technology
7.	$H1_7$	There is a significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge by gender
8.	$H1_8$	There is a significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge in the role of the teller and enquiries staff
9.	$H1_9$	There is a significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge across all age groups
10.	$H1_{10}$	There is a significant difference in the rating of Declarative Knowledge , motivation and Procedural Knowledge across the levels of education in staff

Table 9: List of the (H0) Null and (H1) Alternative hypotheses

Since a hypothesis is a purely an assertion about the population, it may be either true or false, hence the data enables one to decide on which hypothesis (from above) to accept or reject it (Siegel, 1997: 342). Since hypotheses are extensions of past and present theories, it is useful in giving shape to the design of a study (Chen, Kingston, Tiemann & Gu, 2010).

The next section will explain the research methodology adopted for this study.

4.5 Research methodology

Research methodology, as cited by (Kothari, 2005:10) is the logical manner that is followed when a research study is performed. Furthermore, it can also be

described as the process, instruments and procedures to be employed in study (De Vos, 2002:137). Wiid and Diggines (2009: 87) cites qualitative and quantitative research as the two chief methods in primary data collection and subsequently lists three elements when choosing the most appropriate method namely:

1. The volume of required data;
2. The reliability of the data; and
3. The time period and cost of the study.

For this study, the research will follow a 'mixed method' approach, using both qualitative and quantitative methods. Mixed methods designs merge a range of data analytic techniques for a seamless transfer of evidence (Castro, Kellison, Boyd & Kopak, 2010: 342). Another advantage of mixed methods is that it improves both the authenticity and accuracy of a study (Schensul, Schensul & LeCompte, 2012: 52). Charlesworth, Lawton, Lewis, Martin & Taylor, (2003) recommend that when using the mixed method, the appropriate variables must be selected (obtained from phase 1), thereby enabling the researcher to prove or disprove a particular hypothesis through logic and reason. According to Teddlie and Tashakkori, (2009), the validity of the research findings will be strengthened by examining the same phenomenon in different ways.

The value of the mixed approach is to capture customers' subjective sentiments and statements verbatim **(phase 1 – qualitative)** and, thereafter, to perform objective analysis of the data (**phase 2 – quantitative)**.

4.5.1 Phase 1: Qualitative approach

The qualitative approach involves *'non-quantitative'* methods of data collection and analysis. Authors have defined qualitative research in various ways, Wilson (2006:

105) defines it as unstructured research with few selected individuals with the purpose of furnishing insights into behaviour, motivations and attitudes, while Collis and Hussey, 2003 posits that it entails both the reflection and examination of perceptions to glean an appreciation of human actions.

For this study, two techniques were applied:

1. **Secondary data analysis:** the first step in the exploratory study entailed sourcing secondary literature relating to self-service usage and adoption. This was done to improve the conceptual understanding of issues relating to SSTs. In addition, it assisted the researcher to identify various sources of data for analysis. Literature research highlighted the following factors which were explored and quantified further namely:

1. Staff training;
2. Economic and pricing factors;
3. Safety and security issues;
4. Trust considerations;
5. Technical skills;
6. Diversity issues;
7. Client advocacy; and
8. Change drivers.

2. **Primary data analysis:** whilst interviewing customers, the researcher captured their ideas about important issues relating to SSTs verbatim. The Clara Bridge analyst tool was used for text-mining.

The study of Brewerton and Millward (2001: 199) comments that even though the primary goal of qualitative research is to search a specific topic for the purpose of creating a new theory, it is also useful to enhance quantitative research.

4.5.2 Phase 2 – Quantitative approach

Phase 1 was followed by quantitative research, during which key variables were identified. The quantitative approach was based on scientific outcomes through statistical analysis, hence the study endeavoured to establish whether there was a relationship between dependant and independent variables, and if so, to determine the strength of the relationship. (Tustin et al, 2010: 89) adds that while the purpose of the quantitative approach is to generalise about a specific population, its benefits include the forecasting of future results under either similar or different conditions.

(Shaughnessy, Zechmeister & Zechmeister, 2000; Terre Blanche and Durrheim, 2002) posits that quantitative methodology endeavours to not only quantify behaviour but also to draw inferences. The quantitative approach displays the below qualities (Creswell, 2009):

1. It involves systematic controlled observation;
2. The researchers ascertains the dependent and independent variables;
3. The measuring instruments need to be reliable and valid;
4. A hypothesis has to be developed which needs to be testable and clear; and
5. The evidence gleaned should either prove or refute the hypothesis.

The next section will unpack the data collection process.

4.6 Approach and data collection

While Bryman and Bell (2007:10) defined secondary data collection methods as the researcher's ability to conduct data analysis that was completed by other researchers, (Oates, 2006:234) adds that secondary data is made up data, documents and information from earlier studies . Due diligence for this research was undertaken in terms of approval and ethical clearance from the University of

South Africa ("UNISA"). This approval process encompassed the research pilot, the design, the research instrument, and the proposed selected research sample for data capture.

4.6.1 Sampling method

A sample may be defined as "a smaller set of cases a researcher selects through scientific sampling procedure from a larger pool (Neuman,2000:518), while a population consists of a group of people whose attitudes and opinions are collected to respond to the research question (Tustin, Ligthelm, Martins & Van Wyk; 2010: 337). According to Mcneill and Chapman (2005:226), it is vital to appreciate the features of the sample subjects to enable generalisation to the rest of the population.

For this study, the stratified sampling method was adopted where the population is divided into strata based on one or a number of attributes. A stratified sample will always achieve greater precision than a simple random sample.

The table below depicts the application stratified sampling:

Classification	Details	Volume	Percentage
Strata 1	Full time Metropolitan staff	5 940	45%
Strata 2	Full time Rural staff	5 016	38 %
Strata 3	Part time Metropolitan staff	1 452	11%
Strata 4	Part time Rural staff	792	6%

Table 10: Stratified Absa Branch staff - break down

The next section will provide an overview of the research instrument.

4.6.2 Research instrument

Questionnaires simplify the process to assemble huge amounts of predefined data in a shorter time frame (Oates, 2006:217). (Gillham, 2000: 2) cites a weakness of questionnaire is that they elicit answers by asking questions while strength is that it facilitates the data collection process by enabling specific questions to be asked which can be subsequently tested statistically.

According to (Saunders et al, 2009: 361), there are three outputs for properly structured questionnaire namely:

1. Collection of pertinent data;
2. Production of comparable data; and
3. Reduction of biases

Gillham (2000: 26) contends that the research topics may be classified in three groupings namely:

1. Questions relating to opinions:
2. Questions of fact ; and
3. Questions concerning behaviour.

The measuring instrument used for this study took the form of questionnaires provided to employees in the financial services industry. The goal was to capture and collate their thoughts and opinions on the required staff skills to enhance SST adoption and usage among banking customers. The questionnaire used the five–point Likert scale, lasting approximately 20 minutes

The research design will be explained next.

4.6.3 Research design

Research design is described by DeForge, (2010) as a plan that steers the researcher to focus on the research problems and answer research questions. DeForge, (2010) also notes that the research design determines the type of relationships to be investigated between variables. (Wiid and Diggines, 2009: 53) defines research design as a plan detailing the required data, the sampling process, the data collection approach and resultant analysis. Furthermore research design associates the theory and argument that informed the study and data collated (Nachmias and Nachmias, 2008:245). (Bryman and Bell, 2007:40), comments that the selection of research design has a significant impact on methodological processes such as statistical packages and the sample approach.

4.6.4 Reliability

Various authors have defined the concept of reliability, with Saunders *et al* (2009: 156) citing it as the degree to which an analysis process will produce consistent outcomes should a similar study be conducted by another researcher. Similar to this definition is the explanation of (Zikmund, 2003:300) who describes reliability as the extent to which a measure is error free. Reliability as noted by (Ward, and Street, 2010) is imperative in weighing up the extent to which the research outcomes could be replicated if the study was repeated (Cooper and Schindler, 1998:171) argue that the Cronbach Alpha test is considered useful in signifying reliability.

4.6.5 Validity

(Collis and Hussey, 2003: 59) explains validity as how adequately a variable measures what it is purposed to measure and stresses the significance of a test to be sound, even though its reliability does not allude to the test's validity.

4.6.5.1 Internal validity

According to the research of Frank, Ritter, Kim, Morgan & Carlson, (2013) internal validity may be defined as how well the study design describes the results gleaned from the study. Laxton, (2004) cites the following issues from an internal validity perspective that need to be considered important for this research:

1. Respondents either not completing or withdrawing from the questionnaire; and
2. Partiality by the researcher in the choice of the sample unit.

4.6.5.2 External validity

External validity can be explained as how well the results from a study would be able to explain phenomena with other individuals in other conditions Frank, Ritter, Kim, Morgan & Carlson, (2013). Laxton, (2004) lists the following elements that influence external validity:

1. Duration the research is carried out;
2. Personality of study participants; and
3. Location at which the research is conducted.

The two types of validity related to this study are:

1. Content validity and
2. Construct validity.

When comparing the above concepts it is interesting to note that while authors Frank, Ritter, Kim, Morgan & Carlson, (2013) defines the concept of construct validity, as whether the researcher is measuring what he or she intends to measure, Markus and Lin, (2010) explain content validity as the refers to the level to which the items listed on a test in a study are an equitably representation of the total domain the test endeavours to evaluate. Markus and Lin, (2010) maintain that construct validation as “to the collection and application of validity evidence

intended to support the interpretation and use of test scores as measures of a particular construct."

Lavrakas, (2008) notes the following comments when discussing construct validity which will be adhered to in this study:

1. In a survey the full wording and the location within the questionnaire is required to collate data on the construct to ensure whether or not the question is likely to have high construct validity; and
2. Various statistical analyses ought to be conducted to ensure that answers offered by respondents are within rational expectations.

The following will be done to mitigate the above namely ensuring a representative sample group; and ensuring the findings of the pre-questionnaire pilot was implemented.

Next the analysis of quantitative data will be briefly outlined.

4.6.6 Analysis of quantitative data

4.6.6.1 Structural equation modelling

Structural equation modelling (SEM) is a procedure for expressing, approximating, and assessing a linkage of relationships among variables, both measured variables and latent factors or factors. In this study, SEM was used to assess the relationship among observed variables ("ease of use", "perceived usefulness" and "motivation") as well as latent variables ("declarative knowledge" and "procedural knowledge"). Exogenous variables are causes not included in the model while endogenous variables are represented as effects of other variables as cited by (Castro, Atkinson & Ezell, 2010). SEM will be used to evaluate the validity of substantive theories with empirical data.

A sample size of 393 supports confidence in the goodness-of-fit test (Bentler & Chou (1987), hence this number is seen as a goal for SEM research. Hence from the stratified sample the following breakdown is suggested:

Classification	Details	Volume of 393	Percentage
Strata 1	Full time Metropolitan staff	174	45%
Strata 2	Full time Rural staff	149	38 %
Strata 3	Part time Metropolitan staff	42	11%
Strata 4	Part time Rural staff	28	6%

Table 11: Breakdown of sample size

4.6.7 Software program for SEM

For this study, LISREL (linear structural relationships) and AMOS (analysis of moment structures) will be used. Its primary functions include the checking of distributional assumptions, imputing data for missing observations and calculating summary statistics.

Furthermore charts and descriptive statistics will be used in order to explain and examine trends and relationships relating to the quantitative data collated (Collis and Hussey, 2003: 196). The use of descriptive statistics will be imperative on the other hand assist in the comparison of variables with the goal of determining frequency distribution, dispersion and central tendency (mode, median and mean).

Main types of SEM, CFA (confirmatory factor analysis), path analysis with observed variables and path analysis with latent variables. Walliman (2006) list the following analytical methods a researcher may deploy namely:

1. Measure;

2. Formulate comparisons;
3. Observe relationships;
4. Prepare forecasts;
5. Test hypotheses;
6. Build concepts and theories;
7. Explore;
8. Control; and
9. Furnish explanation.

The next section will cover the ethical considerations to be adhered to by the researcher.

4.7 Ethical considerations

This researcher adhered to UNISA's policy on ethics by aligning with to the key principles relating to research ethics in the process of engaging human participants. Furthermore, ethical research should not simply be a matter of compliance but rather a matter of values.

Business entities were consulted to ensure that the above principles were strictly adhered to. This kept associated risks proportionate to potential benefits, thereby ensuring that research design provided valid results. Accordingly, the following letters / forms were designed:

1. Letter of consent to perform the study (Appendix 2)
2. Right to withdraw from the study (Appendix 1)

The next section will provide a conclusion to chapter four.

4.8 Summary

This chapter described the research design and methodology. It also outlined the research approach, with the justification of the research instrument and the rationale of the sample size. It concludes with the high level overview of the data analysis process. The next chapter provides a discussion on the research findings. It unpacks and analyses the data collected. Lastly it provided linkages to the research questions, objectives and proposition, with related commentaries and interpretations

Chapter 5: Research findings

5.1 Introduction

Chapter 5 commences with the presentation of the findings and insights derived from the data from both the pilot and final survey. Furthermore, it delivers a concluding discussion of the main foundations of the research topic. It also presents a critical interpretation of the views of customers, focus groups and staff.

As the purpose of this research study was to assist financial services in understanding those skill sets required by front line branch staff to migrate customers from physical to self–service channels, the analysis focused on the factors that either contribute or hinder this process.

The next section will describe the research findings.

5.2 Findings and discussions

As emphasised in in Chapter 1, the purpose of this research study is to identify and classify the requisite skills needed by financial services professionals to enable them to migrate customers from physical to electronic service channels. The use of data has enabled the researcher to either prove or disprove particular hypotheses through logic and reason. Charts and descriptive statistics were used to explain and examine trends and relationships relating to the quantitative data collated as proposed by Collis and Hussey, (2003:196).

Analysis of the below research (primary and secondary) questions was undertaken.

5.2.1 Primary questions

5.2.1.1 Research question 1:

Does Declarative knowledge influence the perceived ease of use of new technology?

5.2.1.2 Research question 2:

Does Procedural knowledge influence the perceived ease of use of new technology?

5.2.1.3 Research question 3:

Do staff motivational skills influence the perceived ease of use of new technology?

5.2.1.4 Research question 4:

Does Declarative knowledge influence the perceived usefulness of new technology?

5.2.1.5 Research question 5:

Does Procedural knowledge influence the perceived usefulness of new technology?

5.2.1.6 Research question 6:

Do staff motivational skills influence the perceived usefulness of new technology?

5.2.2 Secondary questions

5.2.2.1 Research question 1:

Is there a difference in rating by staff of Declarative Knowledge and Knowledge Procedural Knowledge and Skill by gender?

5.2.2.2 Research question 2:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge in the role of the teller and enquiries staff?

5.2.2.3 Research question 3:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across all age groups?

5.2.2.4 Research question 4:

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across the levels of education in staff?

Proceeding the analysis of the research questions above, the aims and objections of the study were presented.

5.2.3 Aim and objectives of the study

The research endeavoured to identify and classify the requisite skills needed by financial services professionals to migrate customers and transactions from physical to electronic channels and were expressed as below:

5.2.3.1 Evaluation and ranking of those skills of how they may enable (or hinder) self-service usage by customers.

5.2.3.2 Identification and analysis the staff skills required to enhance the use of self-service technology (“SST”) among customers.

Next the research approach will be discussed, beginning with the pilot phase and concluding to the finalisation and analysis of the research instrument findings.

5.3 Research approach adopted for this study

The research approach commenced with the pilot phase as detailed in the below figure. 12

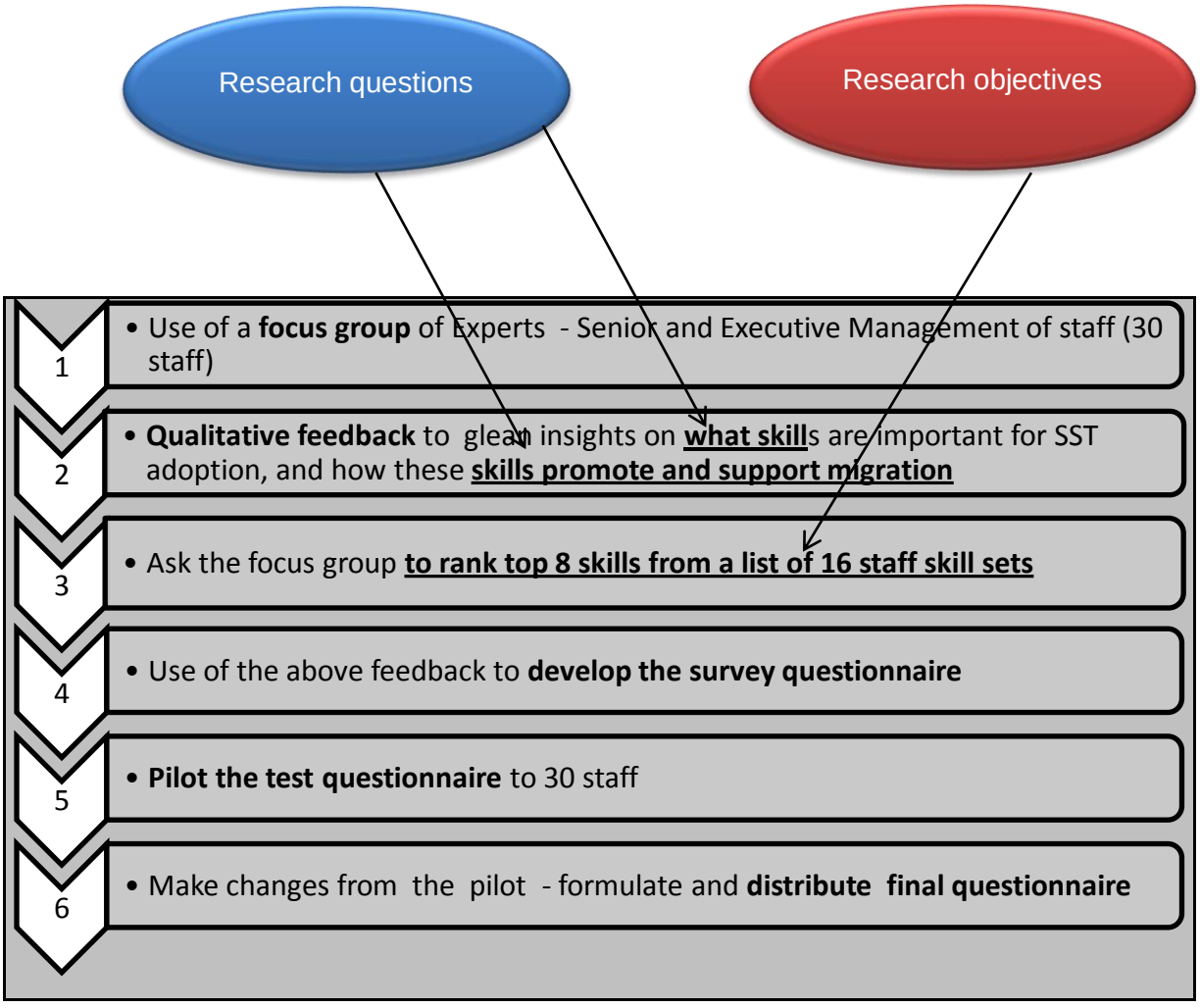


Figure 12: Pilot process

There were six phases from the pilot stage to the distribution of the final research instrument.

5.3.1 Pilot step 1

Three focus groups were selected, with each group being comprised of ten staff members. Each group consisted of senior leadership staff, product specialists and channel consultants. The primary criteria for the selection of participants were that they were either subject matter experts or key strategists in SSTs.

An independent facilitator served to ensure neutrality and to promote unbiased responses. The facilitator also ensured that all staff participation met ethical standards. The facilitator was further tasked with ensuring that objectivity was adhered to, with participants remaining free of influence from external members, and that the group discussion remained focused within the boundaries of the topic. The facilities selected for group discussion were conducive for participants to engage. Each of the focus groups lasted between two and three hours.

5.3.2 Pilot Step 2

Staff comments were recorded verbatim, detailing:
1. The skills considered by the focus group to be important for SST adoption; and
2. How these skills may promote and support customers' SST migration (these considerations are linked to the **research questions**).

5.3.3 Pilot Step 3

The focus group was asked to individually rank the relative importance of a set of 16 factors in terms of how they may support customers in their usage of SSTs. The skill-sets are presented in the table below.

Factor classification	Ranking of each factor	Number of Ticks per factor	Percentages breakdown for each factor
Convenience of branch	6	23	5%
Staff Attitude	9	8	2%
Process knowledge of ATMs	4	38	8%
Safety and security factors at ATMs	1	54	11%
Effort to transact at the ATMs	2	49	10%
Ease of using ATMs	3	44	9%
On screen ATMs instructions are easy to understand	4	36	8%
Waiting times at ATMs	7	18	4%
Accessibility of ATMs	6	23	5%
System knowledge of ATMs	4	40	8%
Language options on ATMs	8	16	3%
Trust	5	34	7%
Cost factors at ATMs	2	47	10%
Customer alternative preference to ATMs	7	20	4%
Staff knowledge of ATMs	9	8	2%
ATM features	6	22	5%

Table 12: Skills rankings

Source: ABSA Focus Group (2014)

The process of collating verbatim feedback facilitated the collection of opinion data. The following eight staff skills featured 'top-of-mind' for respondents. Below they are ranked from the highest to lowest (percentage of preferences selected):

1. 11%: Safety and security
2. 10%: Effort to transact at the ATM and cost factors
3. 9%: Ease of using the ATM
4. 8%: ATM system knowledge, ATM process knowledge and ease of ATM screen instructions
5. 7%: Trust factors.
6. 5%: Convenience of branch, accessibility of ATMS and ATM features.
7. 4%: Waiting times at ATMS and customer alternative preference to ATMs.
8. 3%: Language options at ATMs.
9. 2% Staff attitude and staff knowledge of ATMs.

5.3.3.1 Pilot Verbatim

Staff respondents from the focus group were asked to provide in-depth feedback on their opinions regarding SSTs. Responses relating to **negative**, **positive** and **indifferent** sentiments was collated.

The figure below from respondents related to the importance of SST migration, as well as the impact of SST challenges on customer experiences and the importance of staff training:

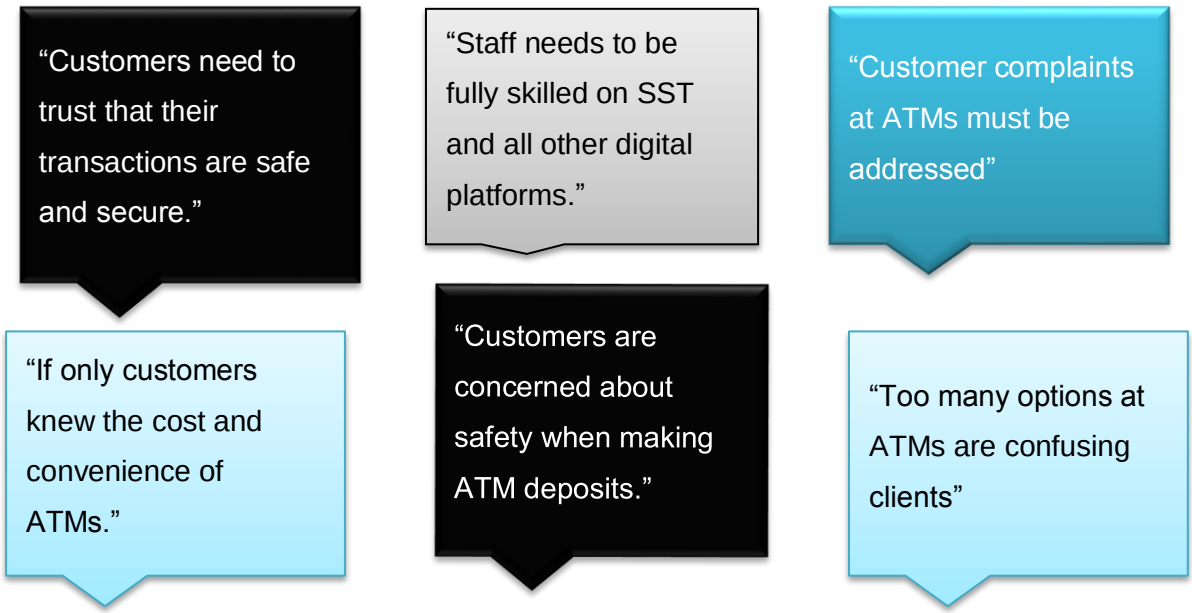


Figure 13: Staff verbatim

Source: Absa Focus Group (2014)

Staff overall comments from the focus groups were generally positive and constructive in terms of what they perceived the key customer concerns and levers relating to migration from physical to digital channels. The following verbatim were linked to the literature theory:

5.3.3 The comment " …*too many options at ATM's are confusing to clients*" is a salient one and can be linked to the literature review which revealed that technology anxiety has an adverse effect on both the client's service satisfaction and their intention to re-use SSTs in future (Meuter *et al.,*., 2005).

5.3.4 A statement by a senior executive, "*Staff need to be fully skilled on SST and all other digital platforms*", collaborates numerous studies that revealed that a lack of knowledge, together with technical complexities were major limitations in promoting the use of ATMs (Bhatta, 2011 and Khan, 2010).

5.3.5 The statement " *customers need to trust that their transaction are safe and secure*" was affirmed by a study by Yaghoubi, Kord & Shakeri, (2010) that concluded that the core factors in customer acceptance of e-services include trust and privacy.

5.3.6 The verbatim ""Customers are concerned about safety when making ATM deposits", was cited by (Singhal and Padhmanabhan, 2008), who commented that security was a significant factor when utilising technology-based services.

It is clear that the focus group considered training of soft and technical skills were paramount in SST migration, this was also affirmed by authors (McKee, Simmers & Licata, 2006) who stated that training (education) is required to prevail against the major barriers associated with SST).

The below figure presents a word map made up of the verbatim comments of the pilot participants.

5.3.3.2 Pilot Word Cloud

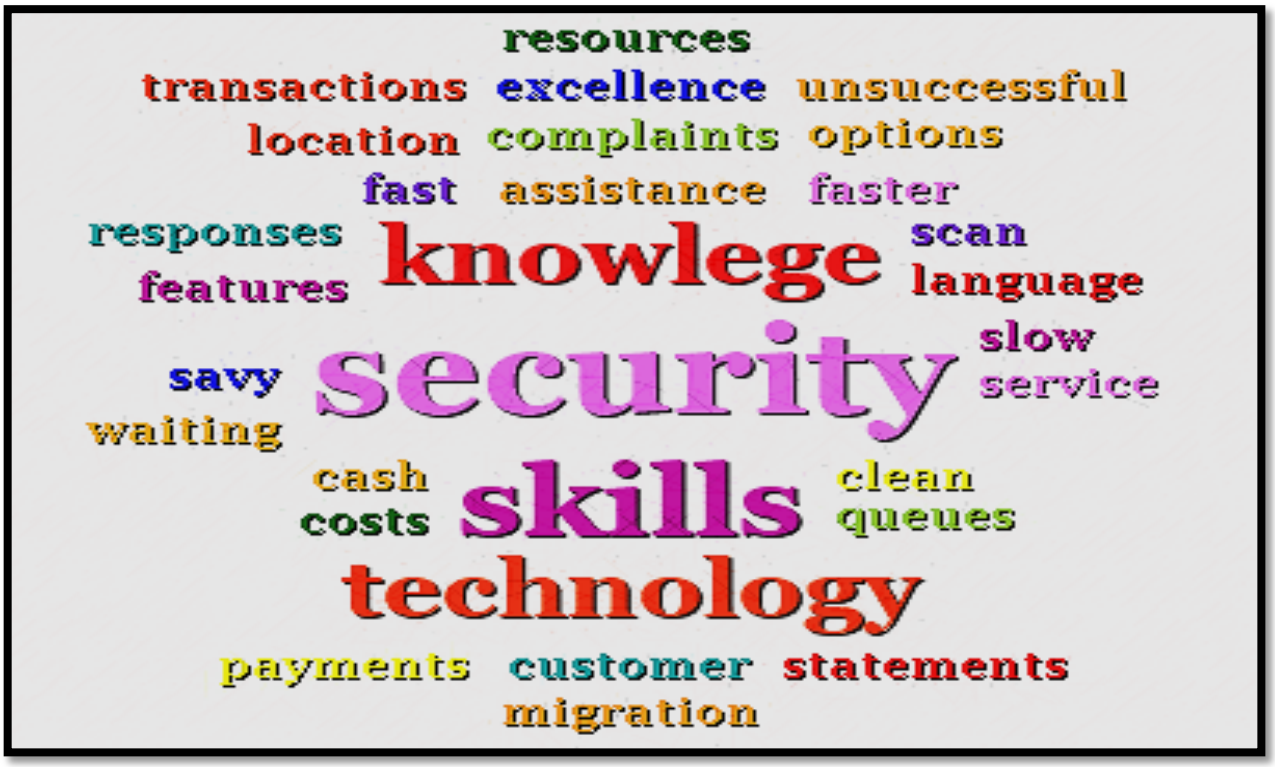


Figure 14: Employee feedback

Source: Focus Group (2014)

Discussion on the word cloud

The more often a word was used by the focus group participants, the larger it appears in the text of the pilot 'word cloud'. For instance, the following three words were most often used:

1. "Security"
2. "Knowledge"
3. "Skills"

The word *"security"* can be compared to earlier research conducted by Amtul, (2010) who identified the four critical stages of security that financial institutions needed to embed to mitigate against vulnerabilities. These were **identification and authentication; digital certification; encryption and biometrics.** The words "knowledge and skills" can be aligned to authors Arthur, Bennett, Edens & Bell, (2003)) who indicated that effective organisational training interventions have a higher impact on organisational learning than other dimensions, such as appraisals and performance feedback.

5.3.4 Pilot Step 4

The top eight factors obtained from the focus group's ranking formed the basis of the pilot questionnaire. These factors were aligned to the research propositions and research questions.

The below table links the research constructs to the individual questions on the research instrument (questionnaire).

Items	Comments	Association
Declarative knowledge		
Declarative knowledge Questions	This entails knowledge based on facts and understanding of the requirements of a task.	• Economic and pricing factors • Safety and security • Technical issues
Question 1.2	I understanding ATM pricing structures	Declarative knowledge on PU
Question 1.3	I understand security issues at ATMs	Declarative knowledge on PU
Question	I understand customers tendency of using ATMs	Declarative knowledge on PU

1.6		
Question 1.7	I understand technical elements of ATMs	Declarative knowledge on PU
Question 2.3	I understand technical elements (for example ATM features and menus) at ATMs	Declarative knowledge on PEOU
Procedural knowledge		
Procedural knowledge Questions	This relates to the knowledge of how things are done.	• Welfare • End to end processes
Question 1.5	I understand welfare issues that are a concern to clients.	Procedural knowledge on PU
Question 2.4	I am quick to migrate customers at ATMs	Procedural knowledge on PEOU
Question 2.2	I understand end-to-end processes (navigation process) at ATMs.	Procedural knowledge on PEOU
Question 2.5	The customers I migrate are more likely to make use of ATMs.	Procedural knowledge on PEOU
Motivation		
Motivation Questions	This covers an individual's choices.	• Customer effort • Staff advice • Staff efficiency
Question 2.6	Customers can count on my advice regarding ATMs	Motivation on PEOU
Question 1.4	**I understand the importance of reducing customers' effort at ATMs**	Motivation on PU
Question 2.7	I am very efficient in migrating customers at ATMs	Motivation on PEOU

Table 13: Linkage of factors from Focus Group to survey questions

Discussion of the research construct / questionnaire table

The table above links the questionnaire question to the research construct, for instance the question "*I understand ATM pricing structures*" was linked to the declarative knowledge construct. All questions were classified under one of the three constructs namely declarative knowledge, procedural knowledge and motivation.

5.3.5 Pilot Step 5

The pilot questionnaire was tested by 30 staff members to ensure the implication and context of the questions were targeted at the right level of detail.

The pilot questionnaire was further refined by:

1. shortening questions to promote clear understanding and to avoid ambiguity;
2. timing the questionnaire to ensure it was not unreasonably long;
3. removing jargon and colloquialisms; and
4. ensuring that the instructions to complete the questionnaire as well as the different scales to be used were clearly outlined and easy to follow.

5.3.6 Pilot Step 6

Step 6 ensured that changes from the pilot were factored and also included the following activities:

1. Ensuring that the research design adequately determined the type of relationships to be investigated between variables;
2. Using the Cronbach Alpha test in signifying reliability;
3. Factoring **internal validity** by determining why respondents either did not complete or withdrew from the questionnaire;
4. Setting guidelines from a **construct validity** perspective to ensure that answers offered by respondents were within rational expectations;

5. Incorporating the five-point Likert scale items for respondents to rate each of the questions from the questionnaire. This refers to where respondents rated how strongly they agree or disagree with each of the statements, affirming their choices of either “strongly agree”; “agree”; “neutral”; “disagree” or “strongly disagree”.
6. Instituting a coding scheme prior to data collection as data was to be analysed by computer programme;
7. Including ethical considerations in the final questionnaire. This included a statement indicating that feedback received will **be treated confidentially** and will be used solely for research purposes. Further, **no confidential or personal information** would be shared with any third party. Staff members were **not required** to add their names or to provide any personal information. They were also afforded the opportunity to **withdraw** from the survey at any time if they so desired;
8. Obtaining a letter of consent from the organisation to perform the study;
9. Presenting the validated questionnaire to the “ethics” committee for approval;
10. Formulating and **distributing the final questionnaire to** a stratified sample, and setting the protocol and timing for the questionnaire completion by respondents.

Two assumptions were made:

1. That surveys were filled in without staff respondents being coerced and without contributions from their peers or superiors; and
2. That the staff respondents provided truthful and candid responses to indicate their perceptions of the necessary skill-sets they required.

The next section will cover the analysis of questionnaire responses.

5.4 Questionnaire analysis

The questionnaire was interpreted using various analytical tools and methods. The frequency and percentage distributions were used in certain incidents and the standard deviations and mean were used in others. The method of analysis was expected to provide insights into the relationships between staff skills relating to customer migration. Similarly, key factors were identified as potentially impacting migration by using regression, correlation, and other statistical methods. Factors considered included procedural knowledge, “motivation”, “declarative knowledge”, perceived “usefulness” and perceived “ease of use” as it applied to SSTs.

5.4.1 Response rate

A total of 550 questionnaires were distributed to branch staff as per the stratified sampling method described in chapter 4. The initial response rate was unsatisfactorily low at just 72 completed surveys after the first week. However, the completion of surveys increased by 52% and 30% in the second and third weeks respectively. After follow up requests were sent to the survey respondents, the overall response rate attained was 71%, which was considered more than adequate considering that the standard and acceptable response rate for most surveys is 60% (Malaney, 2002).

With regards to the **treatment of missing data,** out of the 403 questionnaires received, 10 were incomplete, with some data missing. Since the goal of 393 completed surveys was attained, the 10 incomplete questionnaires were excluded from the study.

The below table indicates the weekly rate of questionnaire responses, where for instance 121 surveys were completed in week 3 which amounted to 30% of the total sample size.

Frequency	Number of Completed Surveys	% of Total sample
Week 1	72	18%
Week 2	210	52%
Week 3	121	30%
Total	**403**	**100**

Table 14: Breakdown of survey response rate

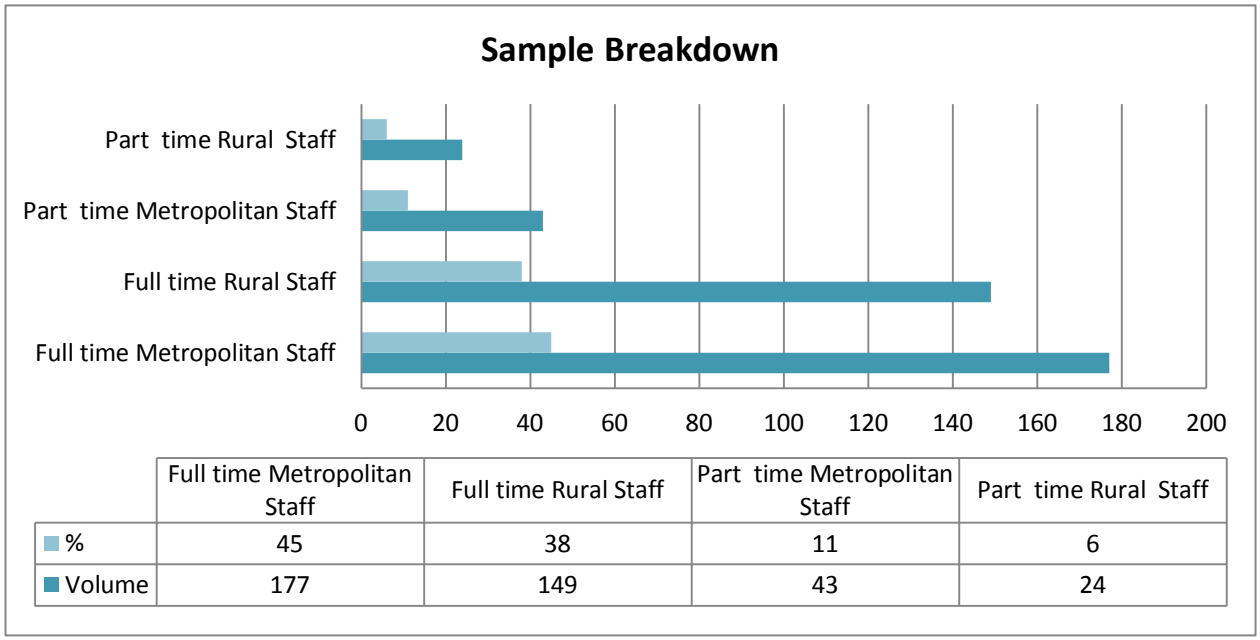
The survey participation was voluntary and no staff were coerced or pressurised into participation. The survey was concluded within three weeks, with the desired sample being reached in Week 3.Of the total of 403 surveys received, 10 were rejected due to respondents not completing them in full.

5.5 Analysis of stratified sampling

The rationale of selecting a stratified sample as noted in Chapter 4 was that a stratified sample will always achieve greater precision than a simple random sample. The total population of ABSA frontline staff (13 200) was broken down into four different strata's namely:

1. Full-time metropolitan staff;
2. Full-time rural staff;
3. Part-time metropolitan staff; and
4. Part-time rural staff.

The graph below represents the breakdown of the stratified sample response where the proportion of the population is reflected in the sample size.



	Full time Metropolitan Staff	Full time Rural Staff	Part time Metropolitan Staff	Part time Rural Staff
%	45	38	11	6
Volume	177	149	43	24

Graph 6: Stratified sample breakdown

A sample of 393 employees was sampled and shows the percentage break-down of the employee base sampled as well as respondents' locale positioning and the volume responses for each sample segment. When comparing the national make up of ABSA frontline staff to the research sample (383 staff), a sample size of 393 respondents supports confidence in the goodness-of-fit test (Bentler & Chou (1987). Albeit the total volumes differ, the percentage for each stratum is exactly the same. Clearly from the graph above the highest proportion of the sample namely over 56 % (45 % full time and 11% in part time staff) in resides in the metropolitan areas.

The next section will analyse and interpret the survey data results.

Presentation and interpretation of results

On completion of data collection, data was collated and captured into Microsoft Excel 2010. Each column was occupied by a question (variable) and each row by a respondent's name.

The data was exported from Microsoft Excel to SPSS® 20 (Statistical Package for the Social Sciences) for analysis and titled “Statistical Product and Service Solutions”. SPSS® 20 is a powerful computer program used to perform a wide variety of statistical analysis.

The data was subsequently coded, analysed and the output was exported to Microsoft Word 2010. Using SPSS® 20, the following analyses were performed in relation to the research questions:

1. Factor analysis;
2. Cronbach’s alpha;
3. Independent Sample t-test;
4. Analysis of variance (ANOVA); and

5.5.1 Factor analysis

For this study factor analysis was used to rationalise the number of statements in order to measure “declarative knowledge”, “procedural knowledge” and staff “motivational skills” into fewer factors. Hardy and Bryman, (2004) propose that factor analysis is utilised to represent, in a more apparent way, the manner in which variables are clustered together. This analysis comprises a set of statistical procedures that summarise the relationship between the original variables in terms of a smaller set of derived variables called “factors” or “variants” with a minimal loss of information.

Subsequently the relationship between the original variable and the factors is articulated in terms of a correlation. The larger the absolute size of the correlation, the stronger the association between the variable and the factor. The meaning of the factor is inferred from the variables that correlate to it. In this type of research, where empirical summary of the data is required, the Principal Component Factor

analysis, which is an exploratory factor, analysis/analytical procedure should be employed (Hardy and Bryman, 2004).

5.5.2 Cronbach's alpha

Cronbach's alpha coefficients was utilised to assess the internal consistency and reliability of the questionnaire sub-scales. Internal consistency describes the extent to which all the items in a test measure the same concept or construct. The value scale of the Cronbach's Alpha ranges from zero to one. The closer the Cronbach's alpha coefficient is to 1, the greater the internal consistency of the items in the scale Gliem and Gliem (2003).

5.5.3 Independent sample t-test

The independent sample t-test was used to compare two means of two independent random samples. The samples are independent in the sense that they were drawn from different populations as per the stratified sampling method. The elements of one sample are not matched with their corresponding elements in the other sample Park (2009).

5.5.4 One-way analysis of variance (ANOVA)

One-way analysis of variance (ANOVA) was performed to assess whether there was a significant difference in the average rating of "declarative knowledge", "motivation", and "procedural knowledge" in terms of the differences in respondents' skills, age groups, genders, job functions and also in terms of highest level of education.

The goal for conducting one-way analysis of variance is to test for differences among the means of different levels of a factor and to quantify these differences.

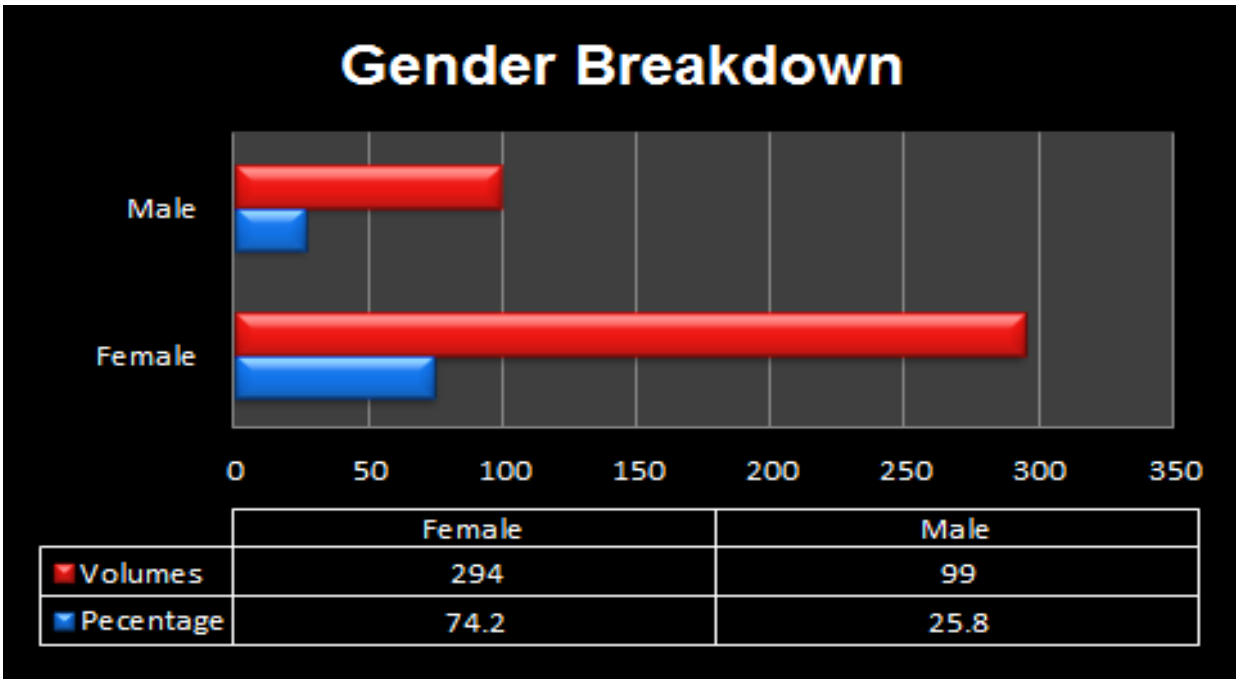
The next section will cover the sample's demographic characteristics.

5.6 Descriptive statistics – (demographic characteristics)

The SPSS® 20 statistical package was used to perform the analysis that follows. As a first step, the descriptive statistics of the respondents were explored. The descriptive statistics were broken down by gender, age, job roles and level of staff education.

5.6.1 Gender

Staff respondents were given three selective options, namely to choose “female”, and “male”. The graph below represents the volume and percentage breakdown of the stratified sample response. The study investigated the comparison of gender preferences to each of the research constructs. From the 393 respondents 74.8% were female and the remaining 25.2 % (99 staff) were male.



Graph 7: Gender breakdown of stratified sample

The graph below represents the volume and percentage breakdown of staff from an age perspective

5.6.2 Age categories

Respondents were given a range of age segmentations to select from, as outlined in Table 15**.** The study investigated the comparison of age classifications to each of the research constructs. Table 15 represents the volumes of respondent's volume and the subsequent percentage breakdown of staff from the age category breakdown of the stratified sample responses. From the 393 respondents, the largest category of staff was in the 18-year to 25-year category. This is in line with the job role, which is often seen as an entrance-level role. The second highest ranking is the 26-year to 35-year age group, while the lowest age ranking, at 8%, is the 46-year to 55-year age group.

The table below represents the volume and percentage breakdown of staff from an age breakdown of the sample.

Ages	Respondent Volumes	% Breakdown
1. 18 years to 25 years	151	38.4
2. 26 years to 35 years	123	31.3
3. 36 years to 45 years	88	22.4
4. 46 years to 55 years	31	8
Total	**393**	**100%**

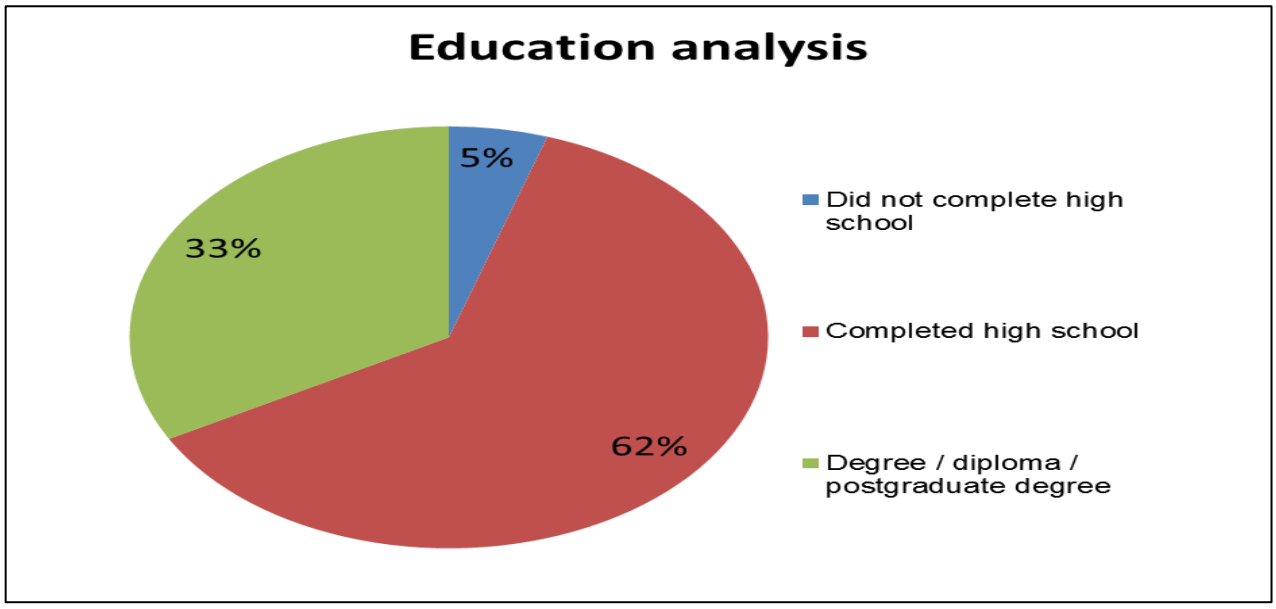
Table 15: Employee age segmentation

The next section will cover the education view point of the sample size.

5.6.3 Education

The study investigated the comparison of education classifications to each of the research constructs. From the 393 respondents, the largest category consisted of staff members that had completed high school (62%), followed by those who had a tertiary qualification (33%) and lastly by those who did not complete high school (5%).

The below graph depicts the sample size educational breakdown



Graph 8: Education breakdown of stratified sample

The next section covers the volume and percentage breakdown of staff from job function perspective.

5.6.4 Job roles

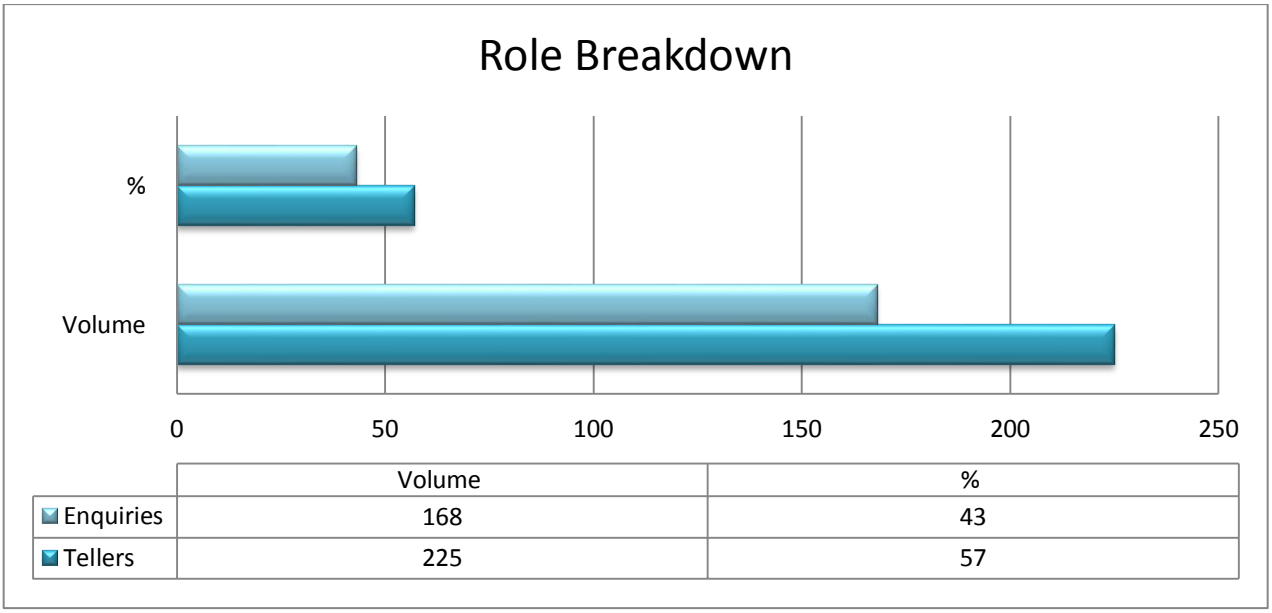
The final descriptive analysis performed in the study was for job functions. ABSA Barclays (South Africa) employs 36 000 staff members in their branch network, with 27% (13 400) representing frontline staff. The study investigated the comparison of role classifications to each of the research constructs The key function of frontline staff is to assist with the resolution of account or transactional

queries and complaints. Furthermore, they assist by offering solutions to clients in the form of products and services.

Survey respondents were 'ring-fenced' in terms of consultant roles relating specifically to the teller and enquiries functions as professionals in these functions primarily handle customers' queries and advice on SST channels. Staff respondents were given two selective options, namely to choose whether their job functions related to either the teller or enquires clerk roles (1 for tellers, 2 for enquiries clerk). From a sample perspective, the teller role was the largest category chosen with 57% selections. Both these functions play a significant role in handling SST-related queries.

The graph below represents the volume and percentage breakdown of staff from a job role perspective.

Graph 9: Role Breakdown of stratified sample



	Volume	%
Enquiries	168	43
Tellers	225	57

Graph 9: Volume and percentage breakdown of staff from a job role perspective

The next section discusses the factor analysis and Cronbach's Alpha results.

5.6.5 Factor analysis and Cronbach's Alpha results

Factor analysis was performed to enable the researcher to assess 'validity'. 'Validity' refers to the extent to which a scale or set of measures accurately represents the concept of interest. The convergent validity, which is shown by factor loadings provided in factor analysis output, refers to the amount of weight assigned to the factor. For the purposes of this study, the researcher was concerned with significant factor loadings. Factor loadings less than 0.45 were considered to be insignificant and hence removed from the model.

Analysis to determine 'reliability' was also performed. 'Reliability' measures the degree of consistency between multiple measurements of a variable. The Cronbach's Alpha coefficient was used to assess internal consistency of the scale. The accepted threshold for the alpha value is 0.7.

The results for both factor analysis and Cronbach's Alpha are shown in the table below.

Factor Analysis and Cronbach's Alpha

Rotated Component Matrix[a]					
		Component			
		Factor 1	Factor 2	Factor 3	Cronbach's Alpha
Declarative knowledge(DK)	Q1_3 I understand security issues at ATMs	.838		-.189	0.75
	Q1_7 I understand technical elements of ATMs	.793			
	Q1_6 I understand customers tendency of using ATMs	.788			
	Q1_2 I understanding ATM pricing structures	.697		.315	

Procedural knowledge (PK)	Q2_2 I understand end-to-end processes (navigation process) at ATMs.		.981		0.961
	Q2_5 The customers I migrate are more likely to make use of ATMs.		.981		
Motivation (Q2_6)	Q2_6 Customers can count on my advice regarding ATMs.			.969	-
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 3 iterations.					

Table 16: Factor analysis and Cronbach's Alpha

Five out of the 12 attributes measuring "declarative knowledge", "procedural knowledge" and "motivation" were excluded from the factor analysis as they had low factor loadings. The following items were excluded:

1. I understand the importance of reducing customers' effort at ATMs;
2. I understand welfare issues that are a concern to clients;
3. I understand technical elements (for example ATM features and menus) at ATMs;
4. I am quick to migrate customers at ATMs; and
5. I am very efficient in migrating customers at ATMs.

The following attributes were grouped into one factor and the factor was called "declarative knowledge" (DK):

1. I understand security issues at ATMs;
2. I understand technical elements of ATMs;
3. I understand customers' tendency of using ATMs; and
4. I understand ATM pricing structures.

The Cronbach's Alpha for the "declarative knowledge" (DK) factor was 0.75, which is acceptable and implies that the four attributes could be grouped together. This group formed a summated scale called "declarative knowledge".

The following attributes were grouped into the second factor which was named "procedural knowledge" (PK).

1. I understand end-to-end processes (navigation process) at ATMs; and
2. The customers I migrate are more likely to make use of ATMs.

The Cronbach's Alpha for the "procedural knowledge" factor was 0.961, implying that there is very good internal consistency within the factor. Thus, the two attributes could be grouped together to form a summated scale called "procedural knowledge". There was one item that formed its own factor, namely "Customers can count on my advice regarding ATMs". This factor was classified as "Motivation".

Comments on summated scale

A summated scale was constructed for each factor by computing the mean of the items describing each construct. Further analyses were performed on each of the summated scales, that being: "declarative knowledge (DK)", "procedural knowledge (PK)", and "motivation". The descriptive statistics for the three factors are shown in the table below:

	N	Minimum	Maximum	Mean	Std. Deviation
Motivation	393	3.00	5.00	4.65	0.565
Declarative knowledge	393	1.50	5.00	4.19	0.992
Procedural knowledge	393	1.00	5.00	2.95	1.291

Table 17: Means of the construct

The "motivation" (mean = 4.65 out of 5) was the best rated factor followed by "declarative knowledge" (4.19). "procedural knowledge" (2.95) was the least rated factor. The standard deviation **(SD)** ranges from 0.565 to 1.291, (SD)

approximates the average distance of individual scores from the mean. The higher the standard deviation, the greater the distances are on average from the mean (Gravetter & Wallnau, 2007).

Next Squared Multiple Correlations will be discussed.

Questions numbers	Question details	Estimate
Q2_6	Customers can count on my advice regarding ATMs	.000
EOU		.103
Q2_5	The customers I migrate are more likely to make use of ATMs	.755
Q2_2	I understand end-to-end processes (navigation process) at ATMs	1.135
Q1_7	I understand technical elements of ATMs	.534
Q1_6	I understand customers tendency of using ATMs	.491
Q1_3	I understand security issues at ATMs	.594
Q1_2	I understanding ATM pricing structures	.327
PU		.017

Table 18: Squared Multiple Correlations

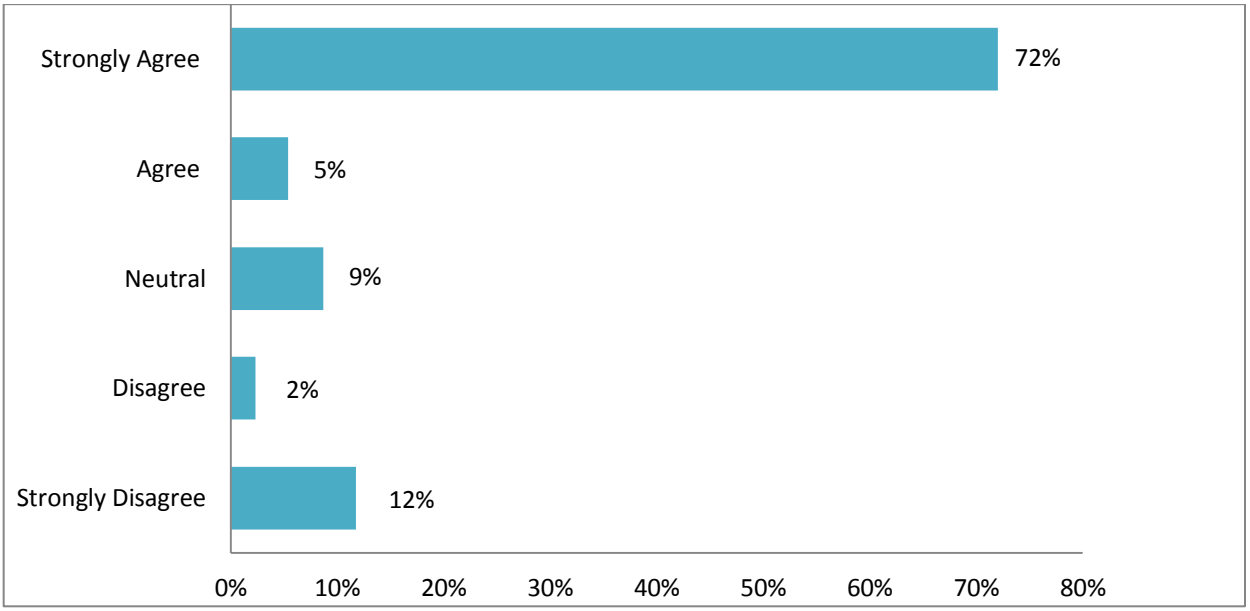
It is estimated that the predictors of “ease of use” (i.e. “motivation”, “declarative knowledge”, and “procedural knowledge”) explain 10.3% of its variance in “ease of use”. “Ease of use” in turn explains only 1.7% of the variance in “procedural knowledge”. In other words, the error variance of “procedural knowledge” is approximately 98.3 percentage of the variance of “procedural knowledge” itself.

The next section will analyse the survey statements.

5.7.6 Analysis of survey respondents answers

The top seven statements were measured on a five-point Likert scale, where 1 was “strongly disagree” and 5 was “strongly agree”. The results are shown in the section that follows.

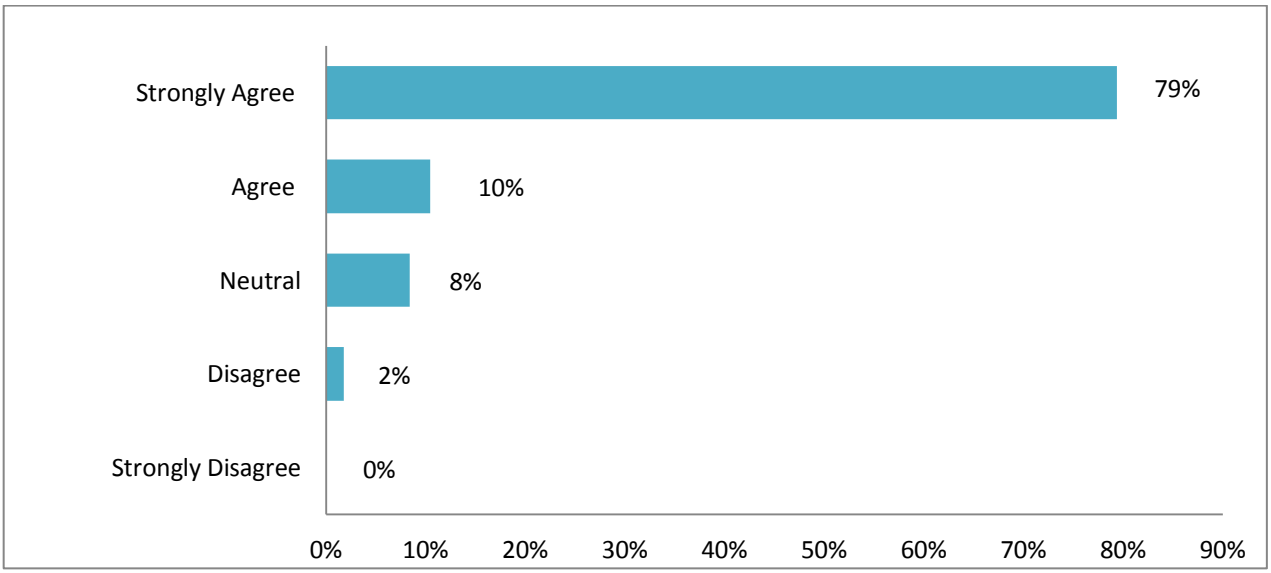
5.7.6.1 Statement Analysis (Question 1.2)



Graph 10: Analysis of Question 1.2 of the Questionnaire

For the statement “I understand ATM pricing structures”, the results show overall agreement with the statement, with 72% strongly agreeing (283 responses), 5% agreeing (21 responses), 2% disagreeing (9 responses), and with 12% strongly disagreeing (46 responses). The total number of responses in favourable agreement is over 75%. This finding highlights the perception of staff members’ overwhelming affirmation of “declarative knowledge” in terms of the use of new technology. 34 staff members (9%) provided neutral responses.

5.7.6.2 Statement Analysis (Question 1.3)

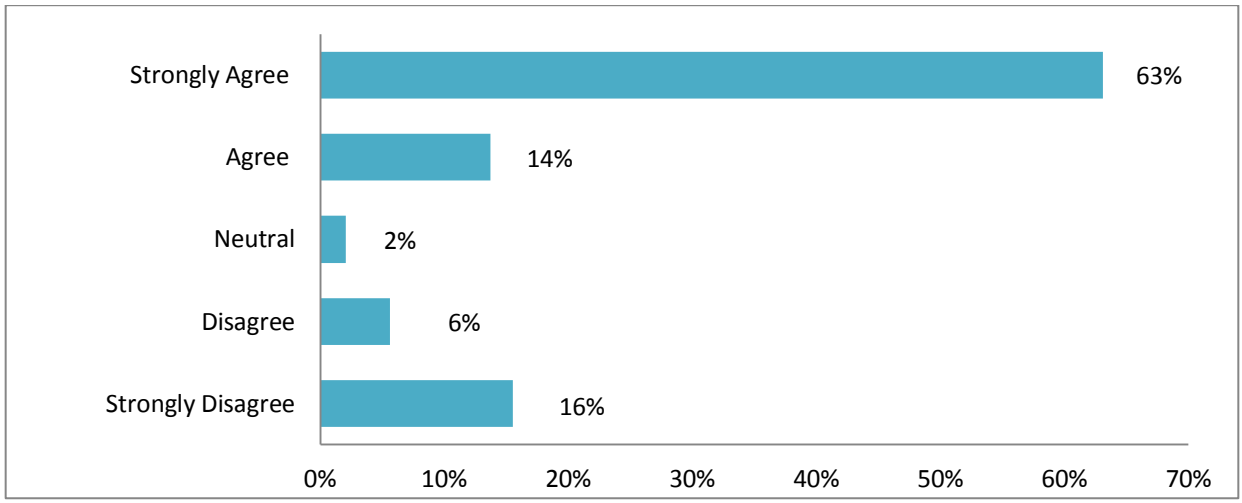


Graph 11: Analysis of Question 1.3 of the Questionnaire

For the statement "I understand security issues at ATMs", the following observations can be made:

1. The results suggested a favourable response, with a significant percentage of almost 90% being either in agreement or in strong agreement.
2. Just 2% of staff members disagreed with the statement. This equated to 7 staff members.
3. The range of responses suggests that there is an overwhelming acceptance that staff members are confident that they understand security issues at ATMs.

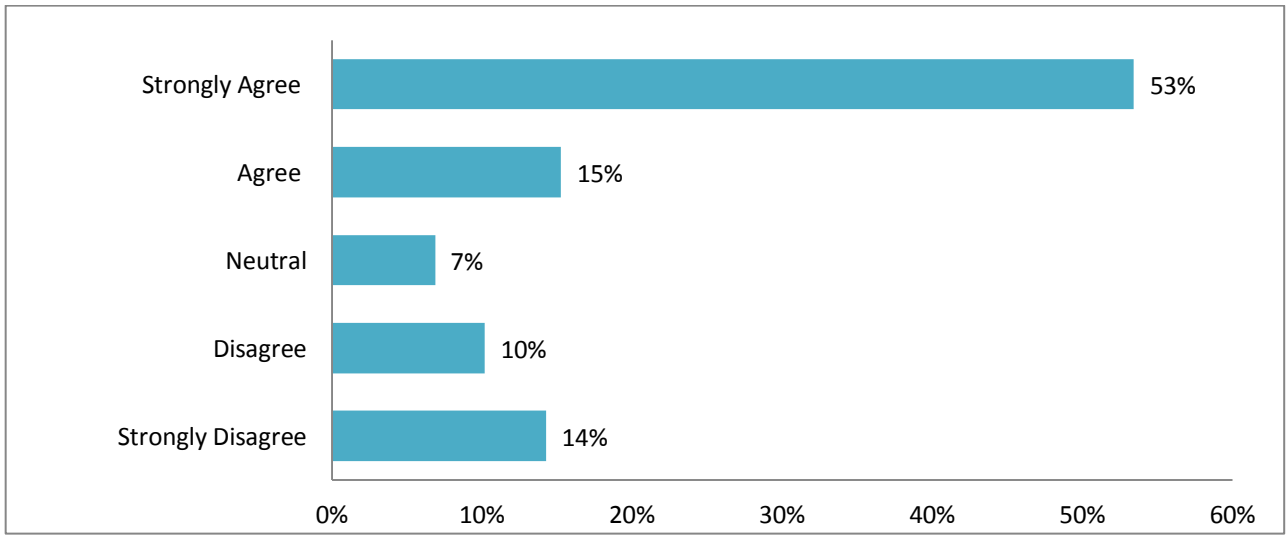
5.7.6.3 Statement Analysis (Question 1.6)



Graph 12: Analysis of Question 1.6 of the Questionnaire

The statement: "I understand customers' tendency of using ATMs", elicited an extremely strong agreement, with two thirds of staff members either agreeing or strongly agreeing with this statement. The amount of neutral responses was nominal at just 2%. From a volume perspective, 56 respondents strongly felt that they did not understand technical elements of ATMs.

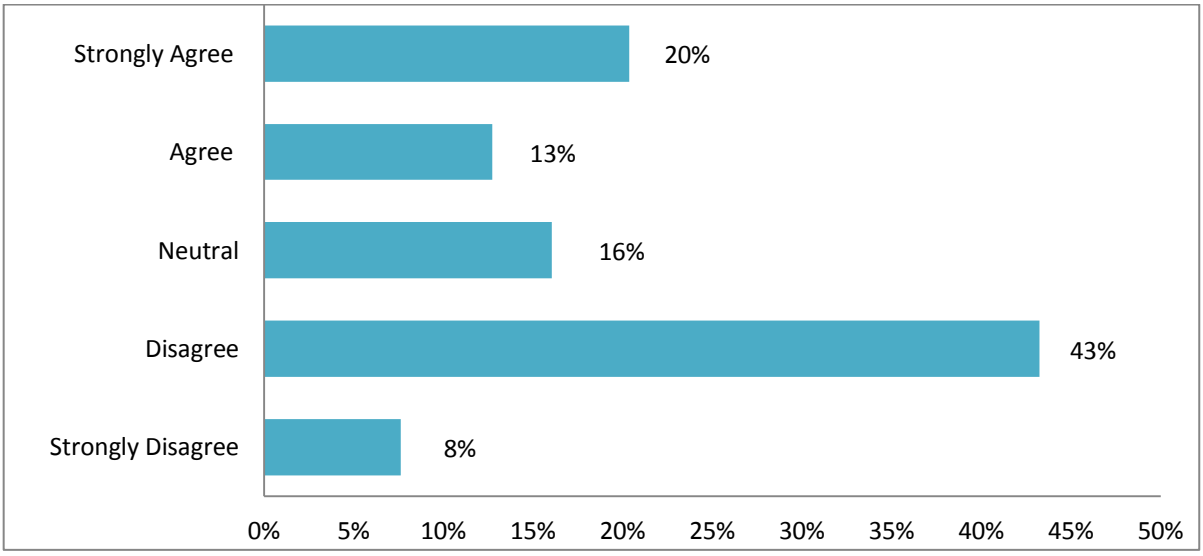
5.7.6.4 Statement Analysis (Question 1.7)



Graph 13: Analysis of Question 1.7 of the Questionnaire

For the statement “I understand technical elements of ATMs”, the results show mixed perceptions, with half the respondents strongly agreeing. Conversely, almost 25% either disagreed or strongly disagreed. Of the total respondent base, 210 staff members (53%) strongly agreed and 60 (15%) agreed to the statement that they understood technical requirements. 27 staff members (7%) provided neutral responses.

5.7.6.5 Statement Analysis (Question 2.2)



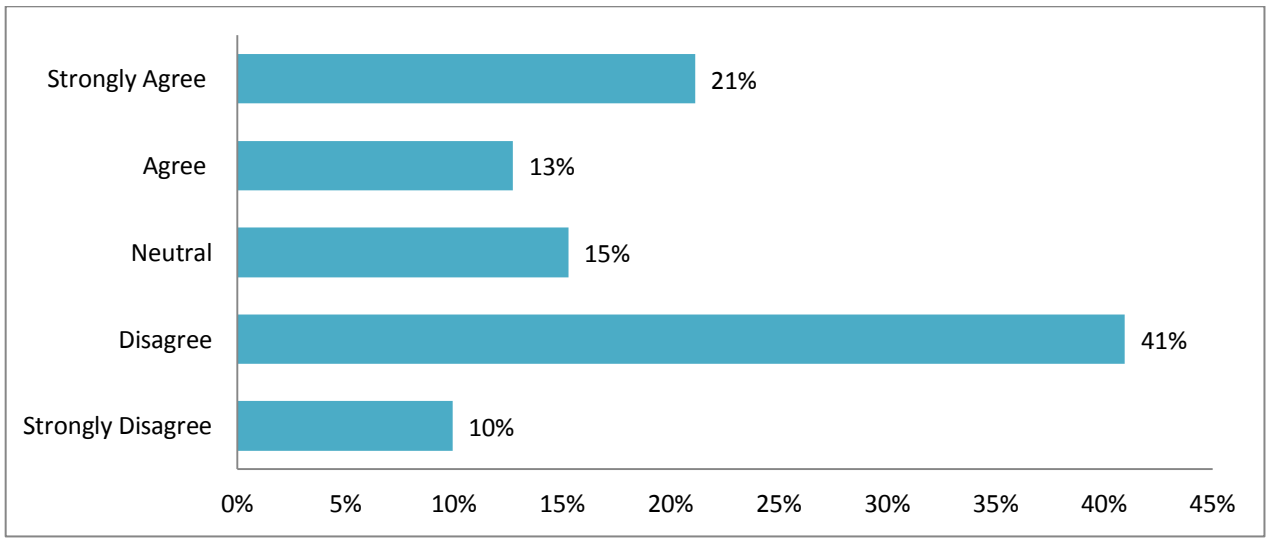
Graph 14: Analysis of Question 2.2 of the Questionnaire

For the statement “I understand end-to-end processes (navigation process) at ATMs”, the following observations can be made:

1. The results suggested largely unfavourable responses to this statement, with over 50% either disagreeing or strongly disagreeing,
2. 16% remained neutral (63 responses) and a third (33%) providing positive replies (either agreeing or strongly agreeing).

3. The range of responses suggests that there is an overall rejection from staff members that they understand end-to-end processes at ATMs.

5.7.7 Statement Analysis (Question 2.5)

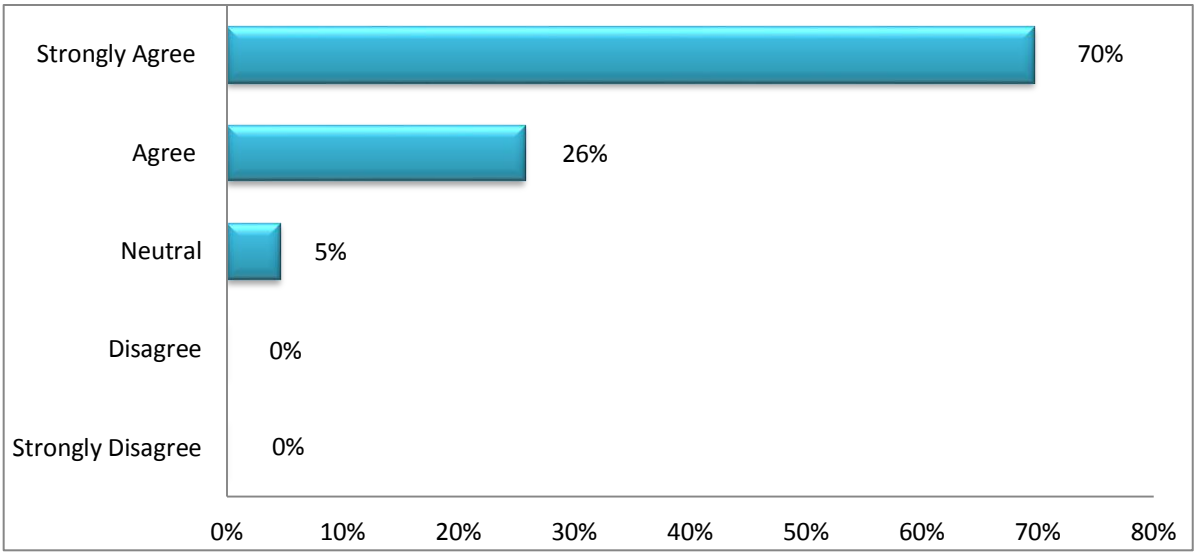


Graph 15: Analysis of Question 2.5 of the Questionnaire

For the statement “The customers I migrate are more likely to make use of ATMs”, results were mixed, with the exception of 41% of staff members who disagreed with the statement. 83 staff members strongly agreed, whilst 50 agreed, 60 remained neutral, and 39 strongly disagreed.

The average results of 13% respondents agreeing with the statement compared to 10% strongly disagreeing with statement, reaffirm the blended feedback together with the 15% neutral responses.

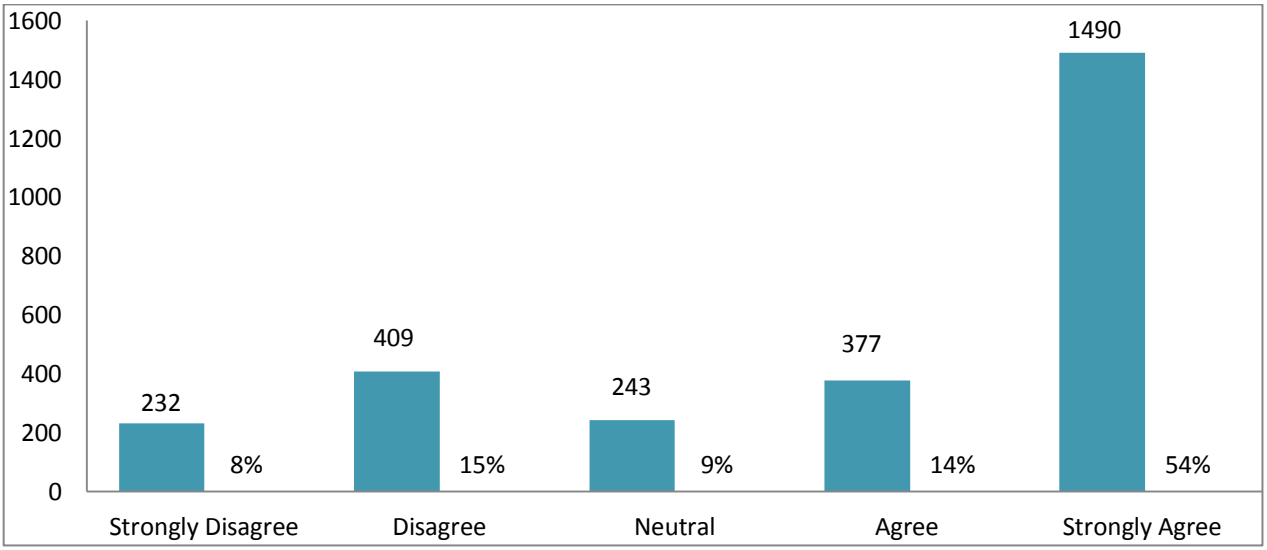
5.7.7.1 Statement Analysis (Question 2.6)



Graph 16: Analysis of Question 2.6 of the Questionnaire

For the statement "Customers can count on my advice regarding ATMs", the results reveal that staff members are highly positive and confident with regards to the advice they provide to customers. Significantly, there are no staff members who indicated that they are in disagreement or strong disagreement with this statement. 274 staff members strongly agreed while 110 agreed. 18 staff members (5%) provided neutral responses.

5.7.7.2 Overall statement Analysis (Total of all 7 questions)



Graph 17: Analysis of overall survey questions

An analysis of the top seven statements reveal that there was significant overall agreement, with 10% of staff members undecided or with neutral responses to statements. Overall, favourable agreement reached approximately 70%, while 15% disagreed and 8% strongly disagreed. This finding is important as it adds weight to staff members' assertions that they believe these set of skills are key to migrating customers from the branch to SSTs.

The following section will analyse the primary and secondary research questions proposed for this study. After each research question is stated, an analysis of the data in terms of either accepting or rejecting the null hypothesis is done.

The next section discusses the results of the ten research questions as covered in Chapter one.

5.8 Discussion on research question one

Does "declarative knowledge" influence perceived "ease of use" of new technology?

Research question 1:

$H0_1$:"Declarative knowledge" has no influence on the perceived "ease of use" of new technology.
$H1_1$: "Declarative knowledge" has a positive influence on the perceived "ease of use" of new technology.

The correlations for the attributes below are moderately strong and the p-values < 0.05. According to Cohen, (1988), Pearson correlation coefficients are said to be moderate if between (0.3 and 0.49). This implies that the relationship is statistically significant, with the following values:

1. "I understand technical elements of ATMs" (0.256);
2. "I understand customers' tendency of using ATMs" (0.209); and
3. "I understand ATM pricing structures" (0.187).

A positive correlation means that, as one variable is increasing the other variable will be increasing as well. Hence, declarative knowledge has a positive influence on the perceived "ease of use" of new technology. HO may be therefor rejected.

Discussion on research question two

Does "procedural knowledge" influence the perceived "ease of use" of new technology?

$H0_2$: "Procedural knowledge" has no influence on the perceived "ease of use" of new technology.
$H1_2$: "Procedural knowledge" has a positive influence on the perceived "ease of use" of new technology.

"Procedural knowledge" attributes had an insignificant correlation to "ease of use", since the p-values were > 0.05. According to Cohen, (1988), the Pearson

correlation coefficient is said to be weak if between 0 and 0.29). The p-values > 0.05, with the following values:

1. "I am quick to migrate customers at ATMs" (0.033);
2. "The customers I migrate are more likely to make use of ATMs" (- 0.046); and
3. "I understand end-to-end processes (navigation process) at ATMs" (- 0.058).

A negative correlation coefficient implies that one variable increases as the other one decreases and vice versa, but when there is no correlation between variables, hence if the one goes up, then it does not mean the other one goes down. Hence, "procedural knowledge" has no influence on the perceived "ease of use" of new technology. HO may therefore be accepted.

Interpretation of research question results

One sample t-test was conducted against the *mid*-point of the scale (3). The null hypothesis was that the rating of each statement is equal to three (3) $(\mu = 3)$ and the alternative hypothesis was that the respondents agree with the notion that "declarative knowledge" (DK) positively influences the perceived usefulness of new technology$(\mu > 3)$. This was a one-tailed test and the analysis was conducted at 5% significance level.

Discussion on research question three

Do staff motivational skills have an impact on the perceived "ease of use" of new technology?

$H0_3$: Staff motivational skills have no influence on the perceived "ease of use" of new technology.

$H1_3$: Staff motivational skills have a positive on the perceived “ease of use” of new technology.

The correlations for the attributes below are moderately strong and the p-values < 0.05. According to Cohen, (1988), the Pearson correlation coefficient is said to be moderate if between 0.3 and 0.49. This implies that the relationship is statistically significant, with the following values:

1. “Customers can count on my advice regarding ATMs” (0.152); and
2. “I am very efficient in migrating customers at ATMs” (0.129).

A positive correlation means that as the one variable is increasing, the other variable will be increasing as well. Hence, staff motivational skills have a positive correlation to the perceived “ease of use” of new technology. HO may be therefor rejected.

Discussion on research question four

Does “declarative knowledge” influence perceived “usefulness” of new technology?

$H0_4$: “Declarative knowledge” have no influence on the perceived “usefulness” of new technology.
$H1_4$: “Declarative knowledge” has a positive influence on the perceived “usefulness” of new technology.

The correlations for the attributes for this hypothesis are moderately strong. The p-values were < 0.05, since Pearson correlation coefficients for this attributes are:

1. “I understand customers’ tendency of using ATMs” (0.361);
2. “I understand technical elements of ATMs” (0.282); and
3. “I understand ATM pricing structures” (0.181).

The Pearson correlation coefficients is said to be moderate if between 0.3 and 0.49. A positive correlation means that, as the one variable increases, the other variable will be increasing as well. Hence, “declarative knowledge” has a positive influence on the perceived “usefulness” of new technology. HO may be therefor rejected

Discussion on research question five

Does “procedural knowledge” influence the “perceived usefulness” of new technology?

$H0_5$:“Procedural knowledge” has no influence on the perceived “usefulness” of new technology.
$H1_5$: “Procedural knowledge” has a positive influence on the perceived “usefulness” of new technology.

A review of the “procedural knowledge” attributes reflected an insignificant correlation to the perceived “usefulness” of new technology since the p-values > 0.05 with the following values

1. “I understand welfare issues that are a concern to clients” (0.073); and
2. “I understand end-to-end processes (navigation process) at ATMs (0.031)

A positive correlation means that as the one variable is increasing the other variable will be increasing as well. This implies that “procedural knowledge” has a positive influence on the perceived “usefulness” of new technology. HO may therefore be accepted.

Discussion on research question six

Do staff motivational skills influence the “perceived usefulness” of new technology?

$H0:_6$ Staff motivational skills have no influence on the perceived “usefulness” of new technology.
$H1:_6$ Staff motivational skills have a positive on the perceived “usefulness” of new technology.

The attributes are moderately strong. According to Cohen, (1988), Pearson correlation coefficients are said to be moderate if between 0.3 and 0.49. The p-values were < 0.05. This implies that the relationship is statistically significant, with the following values:

1. “Customers can count on my advice regarding ATMs” (0.204); and
2. “I am very efficient in migrating customers at ATMs” (0.161).

A positive correlation means that as the one variable increases the other variable will be increasing as well. Hence we can conclude that staff motivational skills have a positive correlation to the perceived “usefulness” of new technology. HO may be therefor rejected.

Discussion on research question seven

Is there a difference in rating by staff of Declarative Knowledge and Knowledge Procedural Knowledge and Skill by gender?

$H0_7$: There is no significant difference in the rating of “declarative knowledge” and ”procedural knowledge” by gender
$H1_7$: There is a significant difference in the rating of “declarative knowledge” and “procedural knowledge” by gender

To assess the above research question, an independent sample t-test was conducted around each question. The null hypothesis was that the mean rating by

male respondents is not different for the mean rating by female respondents ($\mu_F = \mu_M$) and the alternative hypothesis was that the rating differs. ($\mu_F \neq \mu_M$ or $\mu_F - \mu_M \neq 0$). The test was conducted at 5% significance level and the test was two-sided. The results are shown in the table below.

Group Statistics						**Independent Samples Test**	
Gender		N	Mean	Std. Deviation	Std. Error Mean	t	P-Value
Declarative knowledge	Female	294	4.25	0.961	0.056	1.841	0.068
	Male	99	4.03	1.069	0.107		
Procedural knowledge	Female	294	2.94	1.298	0.076	-0.174	0.862
	Male	99	2.96	1.276	0.128		

Table 19: Independent sample T-test between Factors by Gender

There was no significant difference in the rating of "declarative knowledge" and "procedural knowledge" by gender since the p-values of the t-test were greater than 0.05. HO may be therefor is accepted. The standard deviation **(SD)** ranges from 0.961 to 1.298 (SD) approximates the average distance of individual scores from the mean.

Discussion on research question eight

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge in the role of the teller and enquiries staff?

What is the influence of job functions of tellers and enquiries staff on "declarative knowledge" (DK), "motivation" and "procedural knowledge" (PK)?

$H0_8$: There is no difference in the ratings of "motivation", "declarative knowledge", and "procedural knowledge" in the role of the teller and enquiries staff.
$H1_8$: There is a significant difference the ratings of "motivation", "declarative

knowledge", and "procedural knowledge" in the role of the teller and enquiries staff.

To assess the above research question, an independent sample t-test was conducted for the question. The null hypothesis was that the mean rating by tellers is not different for the mean rating by enquiries staff ($\mu_T = \mu_E$) and the alternative hypothesis was that the rating differs ($\mu_T \neq \mu_E$ or $\mu_T - \mu_E \neq 0$). The test was conducted at 5% significance level and the test was two-sided. The results are shown in the table below.

Group Statistics						**Independent Samples Test**	
Role		N	Mean	Std. Deviation	Std. Error Mean	t	P-Value
Motivation	Teller	225	4.68	0.545	0.036	1.327	0.185
	Enquiries	168	4.61	0.590	0.045		
Declarative knowledge	Teller	225	4.20	0.986	0.066	0.098	0.922
	Enquiries	168	4.19	1.004	0.077		
Procedural knowledge	Teller	225	2.89	1.282	0.085	-1.042	0.298
	Enquiries	168	3.02	1.302	0.100		

Table 20: Independent sample T-test between factors by role

There was no significant difference in the rating of all three factors in terms of respondents' roles since the p-values of the t-test were all > 0.05. Thus HO may be therefor not rejected, implying that there was no difference in the ratings of "motivation", "declarative knowledge", and "procedural knowledge" in terms of the roles of the teller and enquiries staff. The standard deviation **(SD)** ranges from 0.545 to 1.302 (SD) approximates the average distance of individual scores from the mean.

Discussion on research question nine

Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across all age groups?

$H0_9$: There is no differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across all age groups.
$H1_9$: There is a significant differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across all age groups.

To assess the above research question, one-way analysis of variance (ANOVA) was used to assess whether the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” differ depending on respondents’ age groups. AVOVA (analysis of variance) was used because the categories for age were more than two. The null hypothesis was that the average rating of each factor is the same across all age groups against the alternative hypothesis that the average rating of each factor differs with age group. The results are shown in the table below.

Descriptive					
		N	Mean	Std. Deviation	Std. Error
Declarative knowledge	18 years to 25 years	151	4.334	0.948	0.077
	26 years to 35 years	123	4.098	1.014	0.091
	36 years to 45 years	88	4.148	0.950	0.101
	46 years to 55 years	31	4.032	1.188	0.213
	Total	393	4.195	0.992	0.050
Procedural knowledge	18 years to 25 years	151	3.017	1.331	0.108
	26 years to 35 years	123	2.911	1.296	0.117
	36 years to 45 years	88	2.864	1.231	0.131
	46 years to 55 years	31	2.968	1.278	0.229
	Total	393	2.945	1.291	0.065
Motivation	18 years to 25 years	151	4.781	0.430	0.035
	26 years to 35 years	123	4.537	0.644	0.058
	36 years to 45 years	88	4.580	0.601	0.064
	46 years to 55 years	31	4.677	0.599	0.108

	Total	393	4.651	0.565	0.029

Table 21: Descriptive statistics for factor means by age group

The standard deviation (SD) ranges from 0.430 to 1.331 (SD) approximates the average distance of individual scores from the mean. **"**Declarative knowledge" and "motivation" had high ratings across all age groups while those for "procedural knowledge" were low. The 18 – 25 years age group had the highest means on all three factors. The standard error is indicative of how approximately the observed value of the statistic is from the mean and the amount of uncertainty in a summary number representing the entire sample. The standard error for this sample ranges between 0.029 to 0.229. Table 22 shows the results of the analysis of whether the differences in ratings by age group were significant or not.

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Declarative knowledge	Between groups	5.121	3	1.707	1.744	.158
	Within groups	380.862	389	.979		
	Total	385.984	392			
Procedural knowledge	Between groups	1.518	3	.506	.302	.824
	Within groups	651.556	389	1.675		
	Total	653.074	392			
Motivation	Between groups	4.651	3	1.550	5.001	.002
	Within groups	120.591	389	.310		
	Total	125.242	392			

Table 22: ANOVA Table for Factor Means by Age Group

The p-values (Sig) for "motivation" (0.002) < 0.05 (the significance level) and thus the null hypothesis is rejected and it is concluded that the rating for "motivation" differs with the respondents' age groups.

On the other hand, the p-values for “declarative knowledge” (0.158), and “procedural knowledge” (0.824) were > 0.05, implying that the HO may be therefor cannot be rejected for the two factors and thus, the rating for “declarative knowledge” and “procedural knowledge” do not depend on the respondent’s age group. Table 23 shows where the differences for “Motivation” are.

LSD					
Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.
Motivation	18 years to 25 years	26 years to 35 years	0.245	0.068	0.000
		36 years to 45 years	0.202	0.075	0.007
		46 years to 55 years	0.104	0.110	0.344
	26 years to 35 years	18 years to 25 years	-0.245	0.068	0.000
		36 years to 45 years	-0.043	0.078	0.581
		46 years to 55 years	-0.141	0.112	0.209
	36 years to 45 years	18 years to 25 years	-0.202	0.075	0.007
		26 years to 35 years	0.043	0.078	0.581
		46 years to 55 years	-0.098	0.116	0.400
	46 years to 55 years	18 years to 25 years	-0.104	0.110	0.344
		26 years to 35 years	0.141	0.112	0.209
		36 years to 45 years	0.098	0.116	0.400

Table 23: Multiple comparisons for “motivation” by age

The p-values for the multiple comparison, which shows individual differences among the different pair of age groups, shows that respondents that are aged between 18 and 25 years rated “motivation” significantly higher than the age groups 26 to 36 years (P-value =0.000<0.05) and also significantly higher than those aged 36 to 45 years. There were no significant differences among the rest of the age groups. The standard error is indicative of how approximately the observed value of the statistic is from the mean and the amount of uncertainty in a summary number representing the entire sample. The standard error for this sample ranges between 0.075 to 0.116.

Research question: Is there a difference in rating by staff of Motivation, Declarative Knowledge, and Procedural Knowledge across the levels of education in staff?

Discussion on research question ten

$H0_{10}$: There is no difference in the ratings of "motivation", "declarative knowledge", and "procedural knowledge" across the levels of education of staff members.
$H1_{10}$: There is a significant difference in the ratings of "motivation", "declarative knowledge", and "procedural knowledge" across the levels of education of staff members.

To assess the above question, one-way analysis of variance (ANOVA) was performed. The null hypothesis was that the average rating of each factor is the same across all levels of education against the alternative hypothesis that the average rating of each factor differs with highest level of education attained. The results are shown in Table 24.

	N	Mean	Std. Deviation	Std. Error	
Declarative knowledge	Did not complete high school	20	4.74	0.497	0.111
	Completed high school	242	4.11	1.011	0.065
	Degree / diploma / post undergraduate	131	4.28	0.986	0.086
	Total	393	4.19	0.992	0.050
Procedural knowledge	Did not complete high school	20	2.53	1.070	0.239
	Completed high school	242	3.05	1.280	0.082
	Degree / diploma / post undergraduate	131	2.81	1.325	0.116
	Total	393	2.95	1.291	0.065
Motivation	Did not complete high school	20	4.75	0.550	0.123
	Completed high school	242	4.65	0.557	0.036
	Degree / diploma / post undergraduate	131	4.63	0.584	0.051
	Total	393	4.65	0.565	0.029

Table 24: Descriptive statistics for factor means by highest level of education

The results reveal that respondents who did not complete high school had the highest “declarative knowledge”, and “motivation”. On the other hand those who completed high school had the highest rating of “procedural knowledge”. The standard deviation (SD) ranges from 2.81 to 4.75 (SD) approximates the average distance of individual scores from the mean. The F – distribution is used when comparing statistical models. The standard error for this sample ranges between 0.497 to 1.325. Table 25 shows results of the analysis of whether the differences in ratings by highest level of education were significant or not.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Declarative Knowledge	Between Groups	8.705	2	4.352	4.499	.012
	Within Groups	377.279	390	.967		
	Total	385.984	392			
Procedural knowledge	Between Groups	8.564	2	4.282	2.591	.076
	Within Groups	644.510	390	1.653		
	Total	653.074	392			
Motivation	Between Groups	.237	2	.118	.369	.692
	Within Groups	125.005	390	.321		
	Total	125.242	392			

Table 25: Descriptive statistics for factor means by highest level of education

The p-values (Sig) for “declarative knowledge” (0.012) is < 0.05 (the significance level) and thus null hypothesis is rejected and it is concluded that the rating for “declarative knowledge” differs with the respondent’s highest level of education.

On the other hand the p-values for “procedural knowledge” (0.076), and “motivation” (0.692) were greater than 0.05, implying that HO may be therefor cannot be rejected for the two factors and thus, the rating for “procedural

knowledge" and "motivation" do not depend on the respondent's level of education. Table 26 shows where the differences for "declarative knowledge" are.

Multiple Comparisons					
LSD					
Dependent Variable	(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.
Declarative Knowledge	Did not complete high school	Completed high school	.63213*	.22884	.006
		Degree / diploma / post undergraduate	.46078	.23612	.052
	Completed high school	Did not complete high school	-.63213*	.22884	.006
		Degree / diploma / post undergraduate	-.17135	.10669	.109
	Degree / diploma / post undergraduate	Did not complete high school	-.46078	.23612	.052
		Completed high school	.17135	.10669	.109
*. The mean difference is significant at the 0.05 level.					

Table 26: Multiple comparisons for "motivation" by highest level of education

The p-values (Sig) for multiple comparisons, which illustrates individual differences among the different pair of levels of education, shows that respondents who did not complete high school had significantly higher ratings for "declarative knowledge" compared to those that had completed high school. The standard error for this sample ranges between .10669 to .22884.

There was, however, no significant difference between those respondents that had degrees / diplomas / post undergraduate qualifications and the other two groups.

Summary of research questions analysis

The researcher proposes that "declarative knowledge" and "procedural knowledge" have a positive influence on the perceived "ease of use" of new technology. Similarly, the perceived "ease of use" of new technology has a positive influence

on the perceived “ease of use” of new technology. When the constructs of “motivation”, “declarative knowledge”, and “procedural knowledge” were analysed, these were impacted by gender, job roles, and levels of education.

The table below summarises the outcomes of the hypotheses:

Item	Hypothesis	Acceptance or rejection of Null Hypothesis
1.	“Declarative knowledge” has no influence on the perceived “ease of use” of new technology	H0: Rejected
2.	“Procedural knowledge” has no influence on the perceived “ease of use” of new technology.	H1 : Rejected
3.	Staff motivational skills have no influence on the perceived “ease of use” of new technology	H0: Rejected
4.	“Declarative knowledge” has no influence on the perceived “usefulness” of new technology	H0: Rejected
5.	“Procedural knowledge” has no influence on the perceived “usefulness” of new technology	H1 : Rejected
6.	Staff motivational skills have no influence on the perceived “usefulness” of new technology	H0: Rejected
7.	There is no significant difference in the rating of “declarative knowledge “and “procedural knowledge” by gender	H1 : Rejected
8.	There is no difference the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” in the role of the teller and enquiries staff	H1 : Rejected
9.	There is no differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across all age groups	H1 : Rejected
10.	There is no differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across the levels of education in staff	H1 : Rejected

Table 27: Outcomes of hypotheses

5.8 Summary of research questions

This study intended to address the ten key research objectives outlined in Table 10. Of the ten hypotheses, four of the H0 may be rejected as below:

1. “Declarative knowledge” has no influence on the perceived “ease of use” of new technology;
2. Staff motivational skills have no influence on the perceived “ease of use” of new technology;
3. “Declarative knowledge” has no influence on the perceived “usefulness” of new technology; and
4. Staff motivational skills have no influence on the perceived “usefulness” of new technology.

This implies that there are differences between attributes and constructs. The six premises that were accepted by respondents (detailed below) implied that the differences were not significant:

1. “Procedural knowledge” has no influence on the perceived “ease of use” of new technology;
2. “Procedural knowledge” has no influence on the perceived “usefulness” of new technology;
3. There is no significant difference in the rating of “declarative knowledge” and “procedural knowledge” by gender;
4. There is no difference the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” in the role of the teller and enquiries staff;
5. There is no differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across all age groups; and
6. There is no differerence in the ratings of “motivation”, “declarative knowledge”, and “procedural knowledge” across the levels of education in staff.

The next section will detail the resultant model and will incorporate the analysis of the hypotheises above.

5.6.6 Resultant model

A model was fitted that provided “ease of use” (EOU) dependent on the three factors namely; “declarative knowledge”, “motivation”, and “procedural knowledge”. ‘Perceived usefulness’ was, in turn, dependent on “ease of use”. The resultant model is illustrated in Figure 15.

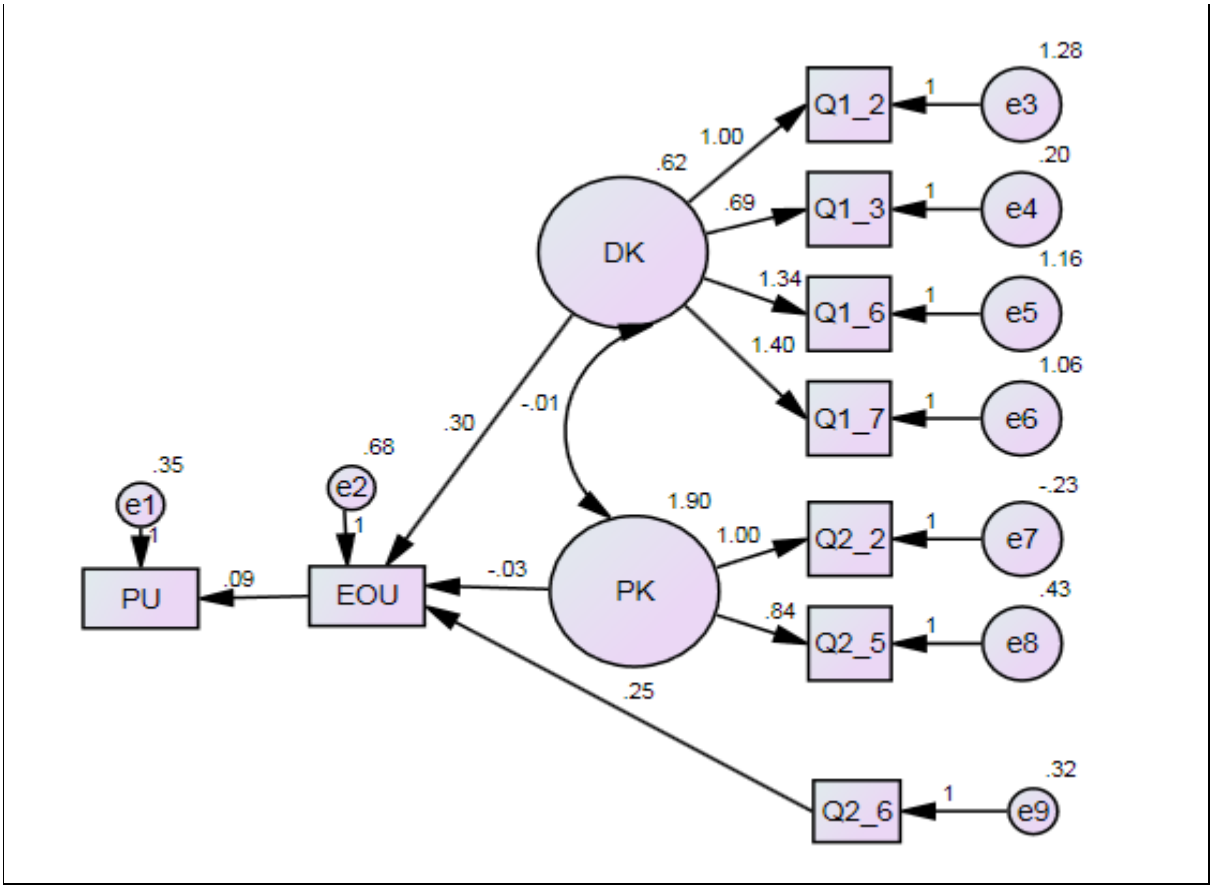


Figure 15: Resultant Model

Comments

When **PK** goes up by 1 standard deviation, **EOU** goes up by 0.271 standard deviations.

Regression Weights: (Group number 1 - Default model)

The results in figure 15 show that when “declarative knowledge” (DK) goes up by 1, “ease of use” (EOU) goes up by 0.301. The regression weight estimate, 0.301, has a standard error of approximately 0.064. A standard error (S.E.) of 4.674 implies that the regression weight estimate is 4.674 standard errors above zero. The probability of getting a critical ratio (C.R.) as large as 4.674 in absolute value is less than 0.001, which is also less than 0.05 (the significance level).

Stated differently, the regression weight for “declarative knowledge” in the prediction of “ease of use” is significantly different from zero at the 0.001 level (two-tailed). When “procedural knowledge” goes up by 1, “ease of use” goes down by 0.032. The probability of getting a critical ratio as large as 0.92 in absolute value is 0.357. Stated differently, the regression weight for “procedural knowledge” in the prediction of “ease of use” is not significantly different from zero at the 0.05 level (two-tailed).

When “motivation” **(Q2_6)** goes up by 1, “ease of use” goes up by 0.25. A standard error (S.E.) of 3.354 implies that the regression weight estimate is 3.354 standard errors above zero. The probability of getting a critical ratio as large as 3.354 in absolute value is 0.010, which is less than 0.05 (the significance level). Stated differently, the regression weight for “motivation” in the prediction of “ease of use” is significantly different from zero at the 0.05 level (two-tailed). Overall it can be noted that when “declarative knowledge” goes up by 1, **Q1_3** goes up by 0.689.

Since the following H1 (alternative hypothesises) were accepted, the following are deductions are applicable:

H1 Accepted	Staff skills to be prioritised
“Declarative knowledge” has an influence on the perceived “ease of use” of new	Technical elements (for example ATM features and menus) at ATMs

technology	
Staff motivational skills have an influence on the perceived “ease of use” of new technology	Staff advice
Declarative knowledge” has an influence on the perceived “usefulness” of new technology	ATM pricing structures; Security issues at ATMs
Staff motivational skills have an influence on the perceived “usefulness” of new technology	Reduction of CE (Customer Effort)

Table 28: Linkage of H1 to staff skills

Factors identified in the survey findings include technical, staff advice, pricing, security issues and customer effort skills. It is imperative that financial institutions should clearly ring fence and prioritise the above staff skills so they are well equipped to assist customers in whichever channel they select to use. These staff skills should be rolled out throughout the organisation at all levels.

Furthermore, coaching of the above staff skills are a crucial component in ensuring that employees have the necessary competencies to facilitate role changes (Ashcroft, 2004).

The next section will provide a conclusion to chapter five.

5.7 Chapter conclusions

Chapter 5 provided a discussion on the **findings, results and insights**. The discussion commenced with the data collected from both the pilot and final survey. It provided linkages to the research questions, objectives and proposition, with

related commentaries and interpretations noted. There was a critical interpretation of the views of customers, focus groups and staff. It proceeded to discuss the results on the stratified sample by the **interpretation of data and to evaluate each of the ten hypotheses** through logic and reason.

Chapter 6 will conclude this study by discussing the researcher's final inferences, research implications and study gaps, and by offering overall closing remarks and recommendations.

Chapter 6: Discussion, recommendations and conclusions

6.1 Introduction

In this chapter, the researcher positioned the gaps, opportunities and conclusions of the study with recommendations for future research and final remarks were made at the end of this chapter. The researcher assesses the implications of his research findings as they pertain to internal and external stakeholders within financial services institutions. Thereafter, the study limitations and recommendations are evaluated, focusing on a typology of staff skills that could contribute to a migration of customers from manual to self-service technology channels.

The purpose of this study was to address the slow adoption of self-service technology and the subsequent lower levels of self-service usage, as highlighted in the research of McKinsey and Efma of European financial banks (McKinsey and Efma, 2011), therefore this study research set to identify and evaluate the role of employee skills in this migration process. From a SST adoption perspective, there was a glaring gap as South Africa has lagged behind other countries in embracing digital banking, Akinci, Akoy & Atilgan, (2004) . Furthermore with SSTs being adopted in most industries, the failure to ensure that staff were adequately equipped to converse with customers about the benefits and challenges of these new technology platforms will result in customers' continued reluctance to use new self-service channels.

Chapter six commenced by furnishing a brief summary of all the preceding chapters, thereafter the primary findings of the research was covered with the main recommendations from the present study and future areas of research were

presented. The chapter ends with study conclusions together with opportunities for further research.

The next section will provide a high level summary of each of the chapters.

6.2 Chapter summary

Chapter one commenced with the primary considerations of the study, the core philosophy and research assumptions. It also included an overview of the research methodology together with the research hypothesis, questions and objectives. It finally presented the limitations of the scope of the study, ethical considerations and the study assumptions.

Chapter two offered an overview of **self–service technologies** ("SSTs") by examining key issues and evaluating secondary data relating to customers' reluctance to embrace this technology. It further reviewed the definition of terms used in the context of SSTs (and also in this study). It provided a foundation for the exploration of self-service technologies in the financial services sector. It examined some of the challenges relating to customer sentiment and factors hindering adoption and usage of SSTs.

Chapter three presented a comprehensive literature review, offering a framework for the conceptualisation of the requisite employee skills needed to enhance the quality of service provided to clients in the context of the SST environment. Furthermore it highlighted possible gaps in the literature, with the goal of furnishing the necessary constructs to define and classify the typology of skills required.

Chapter four covered the research design and methodology. It commenced with the research problem summary, followed by the research objectives and its propositions. Chapter four also outlines the research approach, with the

justification of the research instrument and the rationale of the sample size. It concludes with the high level overview of the data analysis process.

Chapter five provided a discussion on the findings, results and insights. The discussion commenced with the data collected from both the pilot and final survey. It provided linkages to the research questions, objectives and proposition, with related commentaries and interpretations noted. There was a critical interpretation of the views of customers, focus groups and staff. It proceeded to discuss the results on the stratified sample by the interpretation of data and to evaluate each of the ten hypotheses through logic and reason.

Finally, chapter six offered an overview of all the chapters covered in this study, a discussion of the gaps, opportunities and conclusions of the study with recommendations for future research. Finally the main recommendations from the present study and future areas of research were presented. Next the implications of this study will be presented.

6.3 Research implications

The findings of this research study may have the following implications to internal and external stakeholders and is expressed from a theoretical and pragmatic perspective:

1. **Human resource (HR) practitioners and line managers from private and public sectors** could be furnished with *a list of the requisite competencies* needed by staff to address channel adoption and usage. These skills were identified and highlighted in chapter 1. Such a list can be useful in the recruitment, selection and placement process. In addition, these competencies should form part of the new employee's induction programme. These skills should also be the basis of staff evaluation and measurement.
2. **Front-line client-facing staff** may be furnished with an *easily accessible "Q&A" template* with the most commonly asked questions relating to the

declarative knowledge. The *"Q&A"* should also be posted on internal staff communication forum (e.g. company intranet) and external customer communication channels and sites.

3. **Financial institutions** may use the findings from this study to *design branch and ATM layouts,* particularly in areas where staff have identified safety issues as a primary concern.
4. There is also an implication for institutions **to** provide adequate and updated pricing information that is readily available and accessible to both customers and employees.
5. **Staff** should be *regularly up-skilled on SST systems and processes* so as to have greater value-added interactions with customers given their first-hand experience of potential challenges and benefits of SSTs. **Customers** will generally benefit from interactions with a more informed and knowledgeable workforce in the financial services sector.

There is an implication for **staff and customers** in terms of the principles of **"Treating Customers Fairly"**. These principles may relate to the following service aspects:

1. **Products targeting and marketing** – companies need to ensure that self – service technology product offerings and services are designed to meet the needs of identified consumer groups and are targeted accordingly.
2. **Quality of information** – customers need to be provided with clear information and should be kept appropriately informed before, during and after take-up of products or services.
3. **Corporate culture** – from a self – service technology standpoint, customers need the assurance that the corporate companies they are interacting with value the fair treatment of customers as a central motivation of their corporate culture.

4. **Delivery as expected** - consumers have the right to expect that SSTs will perform as companies have pledged through their market communication, and that the associated service is of an acceptable standard.
5. **Quality of advice** - where customers receive advice on SSTs, from a suitability and affordability viewpoint, the advice should be appropriate and should consider customers' unique circumstances.
6. **Barriers to act or change** - consumers should not face unreasonable service barriers imposed by firms to change financial products, or to submit a claim or make a complaint (e.g. if there be a short payment or technical issue at ATM).

Since research argues that client training (education) is required to prevail against the major barriers associated with SST (McKee, Simmers & Licata, 2006), it is anticipated that the below recommendations will be beneficial.

6.4 Recommendations

The recommendations and opportunities for further research arise from this study's findings and insights. The empirical evidence garnered from this research intended to identify key skills that would assist financial services staff to help migrate customers from manual to self-service technology channels.

The following two proposed recommendations are presented with associated commentary.

6.4.1 Comprehensive training plan

The figure below depicts the training and communication plan.

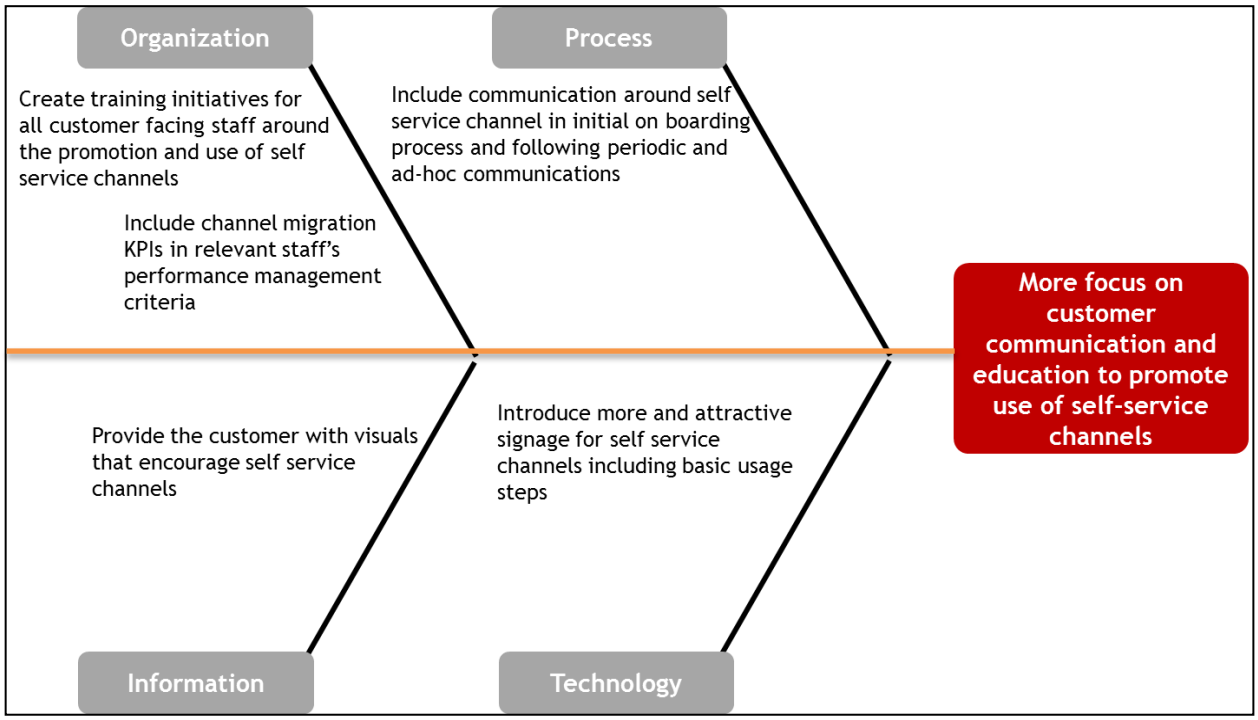


Figure 16: Training and communication plan

Key steps in providing a **comprehensive training** plan include:

1. Conducting an in-depth analysis into current staff training and development plans;
2. Provide the customer with visuals that encourage the use of self-service channels;
3. Introduce more and attractive signage for self-service channels, including basic usage steps; and
4. Display self-service area directions in visual aids within branches.

There are various elements companies should incorporate into their **integrated communication plan**, including:

1. Include communication around self-service channels in initial on boarding processes and follow periodic and ad-hoc communications;
2. Create SMS campaigns to Network Leadership (create top of mind focus and awareness);

3. Create staff campaigns to support “faith and confidence” in the digital offerings.

6.4.2 SST incentives

The figure below depicts the incentives of SSTs proposal.

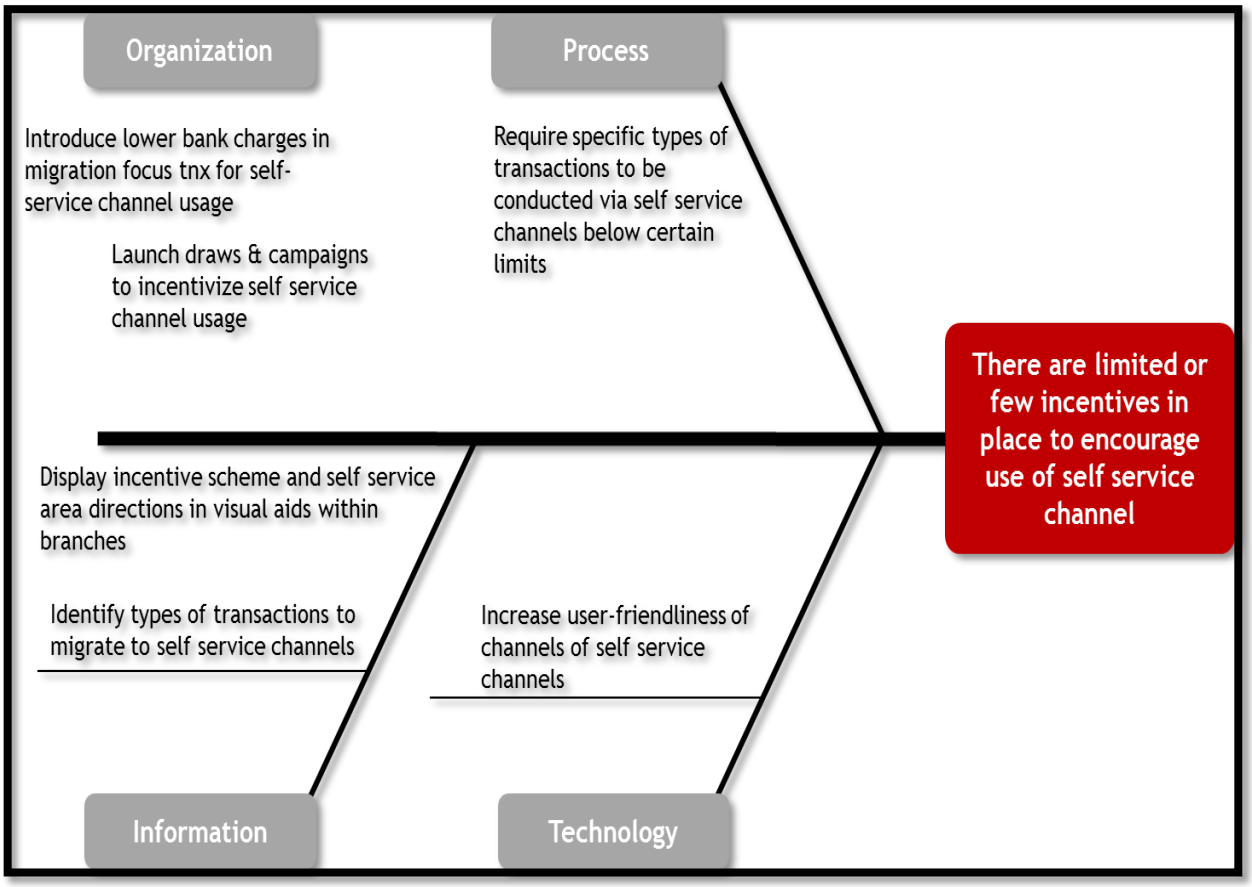


Figure 17: Incentives of SSTs proposal

To promote Migration to SST channels, banks should introduce lower bank charges for self-service channel usage. Further, there are opportunities to launch draws and campaigns to incentivise self-service channel usage to both customers and employees.

6.5 Benefits from implementing insights from the research findings

The effective rollout of resultant insights from the research analysis will inform and enable companies of those requisite staffing skills required in a dynamic and ever changing competitive environment. Furthermore it will facilitate knowledge sharing among staff colleagues. Consequently the more knowledgeable employees are of SST's, the greater their capability to promote and recommend digital channels to clients.

Other benefits from this study for staff include flexible time options and the potential to increase their overall operational effectiveness and efficiency (Bitner *et al.,* 2010).As alluded in the research, an understanding of processes and procedures can significantly reduce the cost of servicing clients, (Mcandrews, 2003). .

Other spin off of well trained staff include:

1. Enabling customers to perform services themselves (Castro, Atkinson & Ezell, 2010).
2. From a TCF (Treating customers fairly) perspective, staff will be better equipped to inform customers on information, prices and processes to meet their financial and non-financial requirements.
3. Access to information on evolving service benefits; and knowledge of the risk issues relating to all self-service channels.
4. Furthermore training allows staff to be diverted into roles that add value to the customer experience.

Lastly, well informed staff increase customer advocacy, as Casala, Flavian & Guinaliu, (2008) argue that organisations can influence loyalty by offering standardised services.

6.6 Limitations of the study

The research had the following primary limitations in scope:

1. **System limitations**: the study was limited to ATMs, and excluded other electronic channels, such as cell phone and internet banking;
2. **Industry limitation**: the study was limited to the financial services sector, not including other sectors such as manufacturing, public service or health;
3. **Broad generalisation of findings**: data was obtained from a single organisation in the financial services sector and broadly applied to the wider industry.

Apart from the limitations listed above, whilst every endeavour was made to minimise researcher bias, the influence on the design and structure of the research instrument together with the unpacking and analysis of the research results need to be considered. Prospects for future research will be discussed in the next section

6.7 Recommendations for future research

1. The research in this study centred extensively on one particular sector, namely financial services (specifically the banking industry). There may be an opportunity to conduct a similar research study **in other sectors** such as the hospitality or health-care services sectors.

2. Further option may be to **segment the sample size** for the same research study according to other job levels apart from those in the study (tellers and enquiries clerk) to senior banking staff (including strategists and channel experts) .

3. While still in it's in infancy stage, video conferencing at ATMs may offer additional solutions to migrating and assisting customers to use SSTs. To

retain their competitive edges, financial institutions need to ensure technologies are continuously updated, and that their staff members are appropriately versed in both the usage and benefits of new technologies.

4. A similar study could also be performed of SST usage in the public services area to gauge the appetite for technology acceptance amongst both staff and customers.

5. Another direction future research could take may be to 'unpack' the technical skill sets in young school-going adults utilising different forms of SST's. While SST adoption and usage may open countless financial and social opportunities, there are still significant future gaps and risks including card fraud and card swiping at SST's. Only with robust research will greater advancement be made towards addressing these challenges.

6. A comparable study could also be performed overlaying TAM to theory of performance incentives and rewards.

7. In this research a random sample was chosen to test the typology of skills required to migrate customers from physical to SST channels. Future research may be done with a greater survey sample so that the results could be ratified. Other opportunities may lie in segmenting the sample base so that studies may be carried out on different customer segments – such as by income group or by geographical region (e.g. by province).

The linkage of research findings to secondary data will be discussed in the next section

6.8 Linkage of research findings to secondary data

When linking the research findings to secondary data analysis the following three points are pertinent:

1. The primary two issues noted in secondary research by Consulta Research, (2012), namely **a lack of knowledge** and **customers requiring more information** will be addressed as the more competent the staff are to inform and advise clients, resulting in greater the SST adoption and usage
2. The highest complaint type category in ABSA was the **customer's difficulty in making ATM cash deposits** as indicated in the ABSA Total Complaints Report (2014); however this would be minimised by the technical skills training as highlighted in the study findings.
3. The purpose of this study was to address the **slow adoption of self-service technology** and the **lower levels of self-service usage**, as highlighted in the research of McKinsey and Efma of European financial banks (McKinsey and Efma, 2011), therefore implementation of skills identified in this study will assist customers speedily migrating to alternative channels.

Lastly as revealed in numerous studies, the lack of knowledge, together with technical complexities were major limitations in promoting the use of ATMs (Bhatta, 2011 and Khan, 2010). The **staff-training component as eluded** to in the literature review includes the identification of training needs; the up-skilling and multi-skilling of employees on different processes; clarification of pricing options and cost comparisons; direction on channel features; access to information on evolving service benefits; and knowledge of the risk issues relating to all self-service channels.

The benefits of skills training cannot be underestimated in helping banking staff to transition into the new self-service business environment. The better banking employees are equipped to educate and support customers, the more client acceptance and usage of SSTs will be enhanced

The next section will cover the significance of the study to the literature review.

6.9 Significance of the study and the literature review

Linking the literature review presented in Chapter 3 to the analysis of the research questions, the following linkages are noteworthy:

1. **Security factors**, as noted in the findings, need to be considered and customers' concerns and fears when using SST devices should be addressed, both practically from a physical security perspective and also from a knowledge perspective (e.g. alerting customers to protect their pins when using ATMs).

This reassurance from in-branch staff, as noted by Wong, Rexha and Phau (2008), is critical in promoting customers' trust in the use of digital banking. Further, this trust is primarily cultivated as an outcome of a customer's personal experiences and has a paramount impact on his or her future usage and adoption of SSTs.

2. From a **cost perspective**, the study has highlighted the importance of pricing skills of financial services staff. Practical pricing knowledge, combined with the appropriate conversational knowledge to communicate cost implications to customers, will support in-branch staff to empower customers to make more informed choices between physical channels and SSTs – particularly in terms of the cost benefits of SSTs.

3. **Technical issues** were identified as being critical in the research questions analysis. It is of paramount importance that financial services companies simplify the client experience, as complexity may be described as "the degree to which an innovation is perceived as difficult to use" (Cheung, Chang & Lai,

2000). It is, therefore, important for banking employees to have the requisite expertise to educate customers on six critical factors, namely:

1. The device menu options;
2. Navigation process;
3. On-screen options and instructions;
4. End-to-end processes in completing the transaction;
5. Device features; and
6. Device utilisation.

4. Factors that generate anxiety in customers include **time-consuming delays and poor navigational options** as well as critical incidents, such as a lack of assistance by staff when required (Shariq, 2006). Hence employee skills-training is of paramount importance. This creates a smooth transition for employees and means they have the ability to migrate customers smoothly into this new digital environment as well.

   To address concerns around cost, security and technical issues, training as highlighted in the literature review will be of paramount importance. Furthermore as commented by (McKee, Simmers & Licata, 2006), derived benefits of a comprehensive training roll out plan includes an enhancement of the customer's skill levels in utilising self-service technologies. As noted in the literature review technology anxiety has an adverse effect on both the client's service satisfaction and their intention to re-use SSTs in future (Meuter *et al.,*2005). This anxiety can be addressed by banking employees who are informed, skilled and knowledgeable about SSTs.

   This will ultimately result in greater self-service channel utilisation by customers. The staff-training component includes the following training-related activities:

1. The identification of training needs;
2. The up-skilling and multi-skilling of employees on different processes;
3. Clarification of pricing options and cost comparisons;
4. Direction on channel features;
5. Access to information on evolving service benefits; and
6. Knowledge of the risk issues relating to all self-service channels.

The next section will provide a discussion on the integration of theories (TAM and ToP).

6.10 Integration of this study to the theoretical framework

This study has used the constructs of the **Theory of Acceptance Model** and the **Theory of Performance Model**, by overlaying the three determinants of job performance (that being, *"declarative knowledge"*, "*procedural knowledge*" and "*motivation"*) with the two constructs of TAM, namely *perceived usefulness* and *perceived "ease of use".* This research purposed to address the impact of technology on work performance.

While this study adds on to the theories of previous research in the field of technology acceptance, this research has tapped into an inward internal focus (staff) as compared to former studies in which the Technology acceptance model and Theory of performance models were broadly investigated and cited. As indicated in Chapter 3, while TAM was the most dominant model for unpacking technology acceptance behaviour (Jackson, 2010), a glaring gap existed with the emotional drivers in system usage (Bagozzi, 2007). Given the potential gaps in TAM, this study aimed to link TAM to the Theory of Performance model.

This study was successful in that it over-laid the two theoretical models by identifying ToP constructs (include technical, staff advice, pricing, security issues and customer effort skills) and linking them to TAM constructs (ease of use and usefulness of technology. A major benefit was understanding a) what skills are required by employees in the banking sector to support customers' usage of self-service devices and b) how these skills can be best imparted to staff in an ever-changing work environment, so that their output does not simply comply with organisational standards, but continually exceed them . .

The next section will provide a platform to discuss final remarks and study conclusions.

6.11 Final remarks

By ensuring financial services branch staff members are adequately trained and up-skilled; the benefits will be two-fold: firstly, staff will assist customers by offering and explaining a choice of banking channels that are more convenient, lower in cost and of greater practical value to them. Secondly, a notable benefit to branch staff would be a reduction of queues and low value work, enabling them to engage more qualitatively with customers.

Financial institutions, like all other organisations, need to factor in rewards and recognition into their change programmes to ensure greater buy-in from employees. When training banking staff in the context of the customer oriented self-service environment, certain sensitivities need to prevail. For instance, any job losses that may result from customers migrating to SSTs and using less of the branch network, should be fully contextualised and sensitively communicated

In addition to being trained on the technical and functional aspects of digital platforms, as well as benefits and costs of new electronic service channels, employees need to be sensitive to possible resistance from clients to using new

technologies. Employees should, therefore, also be trained on how to gauge possible reasons for such resistance and to guide clients in non-judgemental ways. Special attention should be given to the customer's right to select the channel of their choice. Therefore, institutions should guard against any directive to 'force-migrate' customers to new digital platforms as a business policy.

Lastly this study has favourably answered the research gaps identified that were set in order to understand the typology of skills required to migrate customers from physical to digital channels by the presentation of the findings and insights derived from the data from both the pilot and final survey.

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APPENDIX 1

Dear Staff Member

Thank you for your willingness to participate in this survey. Your views and of Absa will be of great value in the attempt to understand and improve the service that Absa delivers.

This survey relates to specific transactions interactions of customers at ATMs , please answer the questions as honestly as you can , *information shared in this survey and all future interactions will* ***be treated confidentially*** *and will be used only for research purposes.* ***No confidential- and personal identifiable information*** *will be shared with any third part - you are* ***not required*** *to add your names or any personal information.*

Furthermore, please note that ***you have the right to withdraw*** *from this survey at any time.*

Questionnaire

Part 1 – Survey Questions

Rating of each question as follows:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 1 – Declarative knowledge (Perceived Usefulness)

1.1 Customer understanding of pricing structures at ATM's improves staff performance in migrating customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.2 Customer understanding of security issues at ATM's improves staff performance in migrating customers

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.3 Customer understanding of pricing structures at ATM's improves quicker customer migration .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.4 Customer understanding security issues at ATM's improves quicker customer migration .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.5 Customers confidence in staff advice regarding ATM's improves migrating customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.6 Customers know that staff are concerned about their welfare at ATM's, this improves migrating customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.7 Since customers can count on staff advice regarding ATM's , this improves quicker customer migration.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.8 Customers know that staff are concerned about their welfare at ATM's, this improves quicker customer migration .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 2 – Procedural knowledge and skill (Perceived Usefulness)

2.1 Understanding end to end processes (navigation process) at ATM's improves staff performance in migrating customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2.2 Explaining technical elements (for example ATM features and menus) at ATM's to customers improves staff performance in migrating customers

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2.3 Understanding end to end processes (navigation process) at ATM's improves quicker customer migration .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2.4 Explaining technical elements (for example ATM features and menus) at ATM's to customers improves quicker customer migration .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 3 – Motivation (Perceived Usefulness)

3.1 Customer's propensity of using of ATM's improves staff performance in migrating customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3.2 Reducing the effort at ATM's improves staff performance in migrating customers

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1	2	3	4	5

3.3 Customer's propensity of using of ATM's improves quicker customer migration .

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

3.4 Reducing the customer effort at ATM's improves quicker customer migration .

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

Section 4 – Declarative knowledge (Perceived Ease of Use)

4.1 Customer understanding of pricing structures at ATM's improves staff work efficiency.

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

4.2 Customer understanding of security issues at ATM's improves staff work efficiency.

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

4.3 Customer understanding of pricing structures at ATM's would make them understand ATMs easier .

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

4.4 Customer understanding of security issues at ATM's would make them understands ATMs easier .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4.5 If customers know that staff were concerned about their welfare at ATM's, this will improve staff work efficiency .

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4.6 If customers can count on staff advice regarding ATM's this will improve staff work efficiency

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4.7 If customers know that staff are concerned about their welfare at ATM's, this would allow them to understand ATMs easier

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4.8 If customers can count on staff advice on ATM's this would allow them to understand ATMs easier

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 5 – Procedural knowledge and skill (Perceived Usefulness)

5.1 Customer understanding of end to end processes (navigation process) at ATM's improves staff work efficiency.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5.2 Customer understanding of technical elements (for example ATM features and menus) at ATM's improves staff work efficiency.

Strongly	Disagree	Neutral	Agree	Strongly Agree

Disagree				
1	2	3	4	5

5.3 Customer understanding of end to end processes (navigation process) at ATM's will make migration clear and understandable to customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5.4 Customer understanding of technical elements (for example ATM features and menus) will make migration clear and understandable to customers.

.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Section 3 – Motivation (Perceived Usefulness)

6.1 Customers propensity to use ATM's improves staff work efficiency.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6.2 Reducing the effort at ATM's for customers improves staff work efficiency.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6.3 Customers propensity to use ATM's will make migration clear and understandable to customers.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6.4 Reducing the effort at ATM's for customers will make migration clear and understandable to customers.

.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Appendix 2

BARCLAYS

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT ABSA

Developing a typology of the requisite skills for financial services employees to enhance self-service technology usage: the case of the South African banking industry

Donovan Smith

15 Troye Street, Johannesburg

Tel +27 (0)11 846 5932 | Mobile 1 +27 (0)76 481 7619 | Email don.smith@absa.co.za
Head MCCPA | Retail and Business Banking | Group Marketing

Dear Donovan Smith (Barclays Africa Group Limited)

Your permission is herewith requested to allow Gerald Thaver, a student in the Doctorate of Business Leadership at the UNISA Graduate School of Business Leadership (SBL), to conduct academic research in your organisation.

Your company has been selected to participate because it plays a key role in the use of Self-service technologies (SSTs) in the financial services industry

The purpose of the study is to investigate "Developing a typology of the requisite skills for financial services employees to enhance self-service technology usage." The study will entail using qualitative (focus group insights) and quantitative methods (questionnaire) .

Your organisation participation in this study is very important to us. You may, however choose not to participate and you may also withdraw from the study at any time without any negative consequences.

The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.

Please contact my supervisor, Prof Visvanathan Naicker [PhD] Naickv@unisa.ac.za if you have any questions or comments regarding the study. Please sign below to indicate your willingness to participate in the study.

Yours sincerely

Gerald Thaver

Signature

24/10/2014
Date

I, Donovan Smith, herewith give my permission for the study to be conducted in ABSA.

Signature

24/10/2014
Date

APPENDIX 3

Hi Gerald,

The chair of ethics informed that you may proceed with your data collection.

.

Thank-you.

Regards and take care.

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APPENDIX 4

Data results - Multiple Comparisons

Table 1

Multiple Comparisons				
LSD				
Dependent Variable	(I) Strata	(J) Strata	Mean Difference (I-J)	Sig.

Understanding pricing structures at ATMs improves my performance in migrating customers.	Full time Metropolitan Staff	Full time Rural Staff	-.560*	.000
		Part time Metropolitan Staff	-.251	.185
		Part time Rural Staff	.009	.970
	Full time Rural Staff	Full time Metropolitan Staff	.560*	.000
		Part time Metropolitan Staff	.308	.110
		Part time Rural Staff	.569*	.021
	Part time Metropolitan Staff	Full time Metropolitan Staff	.251	.185
		Full time Rural Staff	-.308	.110
		Part time Rural Staff	.261	.359
	Part time Rural Staff	Full time Metropolitan Staff	-.009	.970
		Full time Rural Staff	-.569*	.021
		Part time Metropolitan Staff	-.261	.359
Understanding safety and security issues at ATMs improves my performance in migrating customers.	Full time Metropolitan Staff	Full time Rural Staff	-.521*	.000
		Part time Metropolitan Staff	-.641*	.000
		Part time Rural Staff	-.277	.208
	Full time Rural Staff	Full time Metropolitan Staff	.521*	.000
		Part time Metropolitan Staff	-.120	.491
		Part time Rural Staff	.244	.273
	Part time Metropolitan Staff	Full time Metropolitan Staff	.641*	.000
		Full time Rural Staff	.120	.491
		Part time Rural Staff	.364	.157
	Part time Rural Staff	Full time Metropolitan Staff	.277	.208
		Full time Rural Staff	-.244	.273
		Part time Metropolitan Staff	-.364	.157
Understanding pricing structures at ATMs facilitates quicker customer migration.	Full time Metropolitan Staff	Full time Rural Staff	-.143	.241
		Part time Metropolitan Staff	-.293	.117
		Part time Rural Staff	.120	.615
	Full time Rural Staff	Full time Metropolitan Staff	.143	.241
		Part time Metropolitan Staff	-.149	.432
		Part time Rural Staff	.263	.276
	Part time Metropolitan Staff	Full time Metropolitan Staff	.293	.117
		Full time Rural Staff	.149	.432
		Part time Rural Staff	.413	.141
	Part time Rural Staff	Full time Metropolitan Staff	-.120	.615
		Full time Rural Staff	-.263	.276
		Part time Metropolitan Staff	-.413	.141
Understanding safety and security issues at	Full time Metropolitan Staff	Full time Rural Staff	-.852*	.000
		Part time Metropolitan Staff	-.903*	.000

ATMs facilitates quicker customer migration		Part time Rural Staff	-.697*	.020
	Full time Rural Staff	Full time Metropolitan Staff	.852*	.000
		Part time Metropolitan Staff	-.051	.830
		Part time Rural Staff	.155	.608
	Part time Metropolitan Staff	Full time Metropolitan Staff	.903*	.000
		Full time Rural Staff	.051	.830
		Part time Rural Staff	.206	.556
	Part time Rural Staff	Full time Metropolitan Staff	.697*	.020
		Full time Rural Staff	-.155	.608
		Part time Metropolitan Staff	-.206	.556
Since customers can count on my advice regarding ATMs, this improves my performance in migrating customers	Full time Metropolitan Staff	Full time Rural Staff	-.791*	.000
		Part time Metropolitan Staff	-.626*	.003
		Part time Rural Staff	-.504	.057
	Full time Rural Staff	Full time Metropolitan Staff	.791*	.000
		Part time Metropolitan Staff	.165	.434
		Part time Rural Staff	.287	.284
	Part time Metropolitan Staff	Full time Metropolitan Staff	.626*	.003
		Full time Rural Staff	-.165	.434
		Part time Rural Staff	.122	.694
	Part time Rural Staff	Full time Metropolitan Staff	.504	.057
		Full time Rural Staff	-.287	.284
		Part time Metropolitan Staff	-.122	.694
Customers know that I am concerned about their welfare at ATMs, this improves my performance in migrating customers	Full time Metropolitan Staff	Full time Rural Staff	-1.001*	.000
		Part time Metropolitan Staff	-.946*	.000
		Part time Rural Staff	-.833*	.003
	Full time Rural Staff	Full time Metropolitan Staff	1.001*	.000
		Part time Metropolitan Staff	.055	.805
		Part time Rural Staff	.169	.554
	Part time Metropolitan Staff	Full time Metropolitan Staff	.946*	.000
		Full time Rural Staff	-.055	.805
		Part time Rural Staff	.113	.731
	Part time Rural Staff	Full time Metropolitan Staff	.833*	.003
		Full time Rural Staff	-.169	.554
		Part time Metropolitan Staff	-.113	.731
Since customers can count on my advice regarding ATMs, quicker customer	Full time Metropolitan Staff	Full time Rural Staff	-.250	.132
		Part time Metropolitan Staff	-.619*	.015
		Part time Rural Staff	-.421	.195
	Full time Rural Staff	Full time Metropolitan Staff	.250	.132

migration is facilitated		Part time Metropolitan Staff	-.369	.153
		Part time Rural Staff	-.171	.602
	Part time Metropolitan Staff	Full time Metropolitan Staff	.619*	.015
		Full time Rural Staff	.369	.153
		Part time Rural Staff	.198	.603
	Part time Rural Staff	Full time Metropolitan Staff	.421	.195
		Full time Rural Staff	.171	.602
		Part time Metropolitan Staff	-.198	.603
Customers know that I am concerned about their welfare at ATMs and therefore it facilitates quicker customer migration	Full time Metropolitan Staff	Full time Rural Staff	-.040	.799
		Part time Metropolitan Staff	-.095	.689
		Part time Rural Staff	.151	.619
	Full time Rural Staff	Full time Metropolitan Staff	.040	.799
		Part time Metropolitan Staff	-.055	.819
		Part time Rural Staff	.191	.535
	Part time Metropolitan Staff	Full time Metropolitan Staff	.095	.689
		Full time Rural Staff	.055	.819
		Part time Rural Staff	.246	.489
	Part time Rural Staff	Full time Metropolitan Staff	-.151	.619
		Full time Rural Staff	-.191	.535
		Part time Metropolitan Staff	-.246	.489
*. The mean difference is significant at the 0.05 level.				

Multiple Comparisons

LSD

Dependent Variable	(I) Strata	(J) Strata	Mean Difference (I-J)	Sig.
My understanding of pricing structures at ATMs improves my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	-.295*	.033
		Part time Metropolitan Staff	-.054	.798
		Part time Rural Staff	-.772*	.004
	Full time Rural Staff	Full time Metropolitan Staff	.295*	.033
		Part time Metropolitan Staff	.241	.261
		Part time Rural Staff	-.477	.080
	Part time Metropolitan Staff	Full time Metropolitan Staff	.054	.798

		Full time Rural Staff	-.241	.261
		Part time Rural Staff	-.718*	.023
	Part time Rural Staff	Full time Metropolitan Staff	.772*	.004
		Full time Rural Staff	.477	.080
		Part time Metropolitan Staff	.718*	.023
My understanding of safety and security issues at ATMs improves my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	-1.384*	.000
		Part time Metropolitan Staff	-1.112*	.000
		Part time Rural Staff	-.636*	.030
	Full time Rural Staff	Full time Metropolitan Staff	1.384*	.000
		Part time Metropolitan Staff	.272	.243
		Part time Rural Staff	.748*	.012
	Part time Metropolitan Staff	Full time Metropolitan Staff	1.112*	.000
		Full time Rural Staff	-.272	.243
		Part time Rural Staff	.477	.164
	Part time Rural Staff	Full time Metropolitan Staff	.636*	.030
		Full time Rural Staff	-.748*	.012
		Part time Metropolitan Staff	-.477	.164
My understanding of pricing structures at ATMs would make it easier for customers to understand ATMs	Full time Metropolitan Staff	Full time Rural Staff	-.288*	.015
		Part time Metropolitan Staff	-.397*	.028
		Part time Rural Staff	-.495*	.032
	Full time Rural Staff	Full time Metropolitan Staff	.288*	.015
		Part time Metropolitan Staff	-.109	.553
		Part time Rural Staff	-.207	.375
	Part time Metropolitan Staff	Full time Metropolitan Staff	.397*	.028
		Full time Rural Staff	.109	.553
		Part time Rural Staff	-.098	.717
	Part time Rural Staff	Full time Metropolitan Staff	.495*	.032
		Full time Rural Staff	.207	.375
		Part time Metropolitan Staff	.098	.717
My understanding of safety and security issues at ATMs would make customers understand ATMs easier	Full time Metropolitan Staff	Full time Rural Staff	-.643*	.000
		Part time Metropolitan Staff	-.616*	.000
		Part time Rural Staff	-.657*	.004
	Full time Rural Staff	Full time Metropolitan Staff	.643*	.000
		Part time Metropolitan Staff	.027	.880
		Part time Rural Staff	-.015	.948
	Part time Metropolitan Staff	Full time Metropolitan Staff	.616*	.000
		Full time Rural Staff	-.027	.880
		Part time Rural Staff	-.042	.874

	Part time Rural Staff	Full time Metropolitan Staff	.657*	.004
		Full time Rural Staff	.015	.948
		Part time Metropolitan Staff	.042	.874
If customers know that I am concerned about their welfare at ATMs, this will improve my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	-.577*	.000
		Part time Metropolitan Staff	-.589*	.003
		Part time Rural Staff	-.376	.131
	Full time Rural Staff	Full time Metropolitan Staff	.577*	.000
		Part time Metropolitan Staff	-.012	.953
		Part time Rural Staff	.201	.426
	Part time Metropolitan Staff	Full time Metropolitan Staff	.589*	.003
		Full time Rural Staff	.012	.953
		Part time Rural Staff	.212	.467
	Part time Rural Staff	Full time Metropolitan Staff	.376	.131
		Full time Rural Staff	-.201	.426
		Part time Metropolitan Staff	-.212	.467
If customers can count on my advice regarding ATMs this will improve my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	-.809*	.000
		Part time Metropolitan Staff	-.867*	.001
		Part time Rural Staff	-.338	.315
	Full time Rural Staff	Full time Metropolitan Staff	.809*	.000
		Part time Metropolitan Staff	-.058	.829
		Part time Rural Staff	.471	.165
	Part time Metropolitan Staff	Full time Metropolitan Staff	.867*	.001
		Full time Rural Staff	.058	.829
		Part time Rural Staff	.529	.179
	Part time Rural Staff	Full time Metropolitan Staff	.338	.315
		Full time Rural Staff	-.471	.165
		Part time Metropolitan Staff	-.529	.179
If customers know that I am concerned about their welfare at ATMs, this would make customers understand ATMs easier	Full time Metropolitan Staff	Full time Rural Staff	-.837*	.000
		Part time Metropolitan Staff	-.954*	.000
		Part time Rural Staff	-.624*	.047
	Full time Rural Staff	Full time Metropolitan Staff	.837*	.000
		Part time Metropolitan Staff	-.117	.639
		Part time Rural Staff	.213	.501
	Part time Metropolitan Staff	Full time Metropolitan Staff	.954*	.000
		Full time Rural Staff	.117	.639
		Part time Rural Staff	.330	.369
	Part time Rural Staff	Full time Metropolitan Staff	.624*	.047
		Full time Rural Staff	-.213	.501

		Part time Metropolitan Staff	-.330	.369
If customers can count on my advice regarding ATMs, this would make customers understand ATMs easier	Full time Metropolitan Staff	Full time Rural Staff	-.802*	.000
		Part time Metropolitan Staff	-.820*	.002
		Part time Rural Staff	-.296	.389
	Full time Rural Staff	Full time Metropolitan Staff	.802*	.000
		Part time Metropolitan Staff	-.018	.948
		Part time Rural Staff	.506	.145
	Part time Metropolitan Staff	Full time Metropolitan Staff	.820*	.002
		Full time Rural Staff	.018	.948
		Part time Rural Staff	.524	.193
	Part time Rural Staff	Full time Metropolitan Staff	.296	.389
		Full time Rural Staff	-.506	.145
		Part time Metropolitan Staff	-.524	.193
*. The mean difference is significant at the 0.05 level.				

Multiple Comparisons

LSD

Dependent Variable	(I) Strata	(J) Strata	Mean Difference (I-J)	Sig.
Understanding end-to-end processes (navigation process) at ATMs improves my performance in migrating customers	Full time Metropolitan Staff	Full time Rural Staff	-.009	.956
		Part time Metropolitan Staff	-.348	.176
		Part time Rural Staff	-.231	.483
	Full time Rural Staff	Full time Metropolitan Staff	.009	.956
		Part time Metropolitan Staff	-.339	.196
		Part time Rural Staff	-.222	.505
	Part time Metropolitan Staff	Full time Metropolitan Staff	.348	.176
		Full time Rural Staff	.339	.196
		Part time Rural Staff	.117	.761
	Part time Rural Staff	Full time Metropolitan Staff	.231	.483
		Full time Rural Staff	.222	.505
		Part time Metropolitan Staff	-.117	.761
Understanding technical elements (for example ATM features and menus) at ATMs improves my	Full time Metropolitan Staff	Full time Rural Staff	-.735*	.000
		Part time Metropolitan Staff	-.575*	.007
		Part time Rural Staff	-.746*	.006
	Full time Rural Staff	Full time Metropolitan Staff	.735*	.000
		Part time Metropolitan Staff	.159	.460

performance in migrating customers		Part time Rural Staff	-.011	.967
	Part time Metropolitan Staff	Full time Metropolitan Staff	.575*	.007
		Full time Rural Staff	-.159	.460
		Part time Rural Staff	-.171	.591
	Part time Rural Staff	Full time Metropolitan Staff	.746*	.006
		Full time Rural Staff	.011	.967
		Part time Metropolitan Staff	.171	.591
Understanding end-to-end processes (navigation process) at ATMs facilitates quicker customer migration	Full time Metropolitan Staff	Full time Rural Staff	-.057	.734
		Part time Metropolitan Staff	.419	.100
		Part time Rural Staff	-.085	.793
	Full time Rural Staff	Full time Metropolitan Staff	.057	.734
		Part time Metropolitan Staff	.476	.067
		Part time Rural Staff	-.029	.930
	Part time Metropolitan Staff	Full time Metropolitan Staff	-.419	.100
		Full time Rural Staff	-.476	.067
		Part time Rural Staff	-.505	.186
	Part time Rural Staff	Full time Metropolitan Staff	.085	.793
		Full time Rural Staff	.029	.930
		Part time Metropolitan Staff	.505	.186
Understanding technical elements (for example ATM features and menus) facilitates quicker customer migration	Full time Metropolitan Staff	Full time Rural Staff	-.614*	.000
		Part time Metropolitan Staff	-1.119*	.000
		Part time Rural Staff	-.805*	.006
	Full time Rural Staff	Full time Metropolitan Staff	.614*	.000
		Part time Metropolitan Staff	-.505*	.028
		Part time Rural Staff	-.191	.512
	Part time Metropolitan Staff	Full time Metropolitan Staff	1.119*	.000
		Full time Rural Staff	.505*	.028
		Part time Rural Staff	.314	.353
	Part time Rural Staff	Full time Metropolitan Staff	.805*	.006
		Full time Rural Staff	.191	.512
		Part time Metropolitan Staff	-.314	.353
*. The mean difference is significant at the 0.05 level.				

Multiple Comparisons
LSD

Dependent Variable	(I) Strata	(J) Strata	Mean Difference (I-J)	Sig.
Understanding end-to-end processes (navigation process) at ATMs improves my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	-.110	.445
		Part time Metropolitan Staff	.130	.557
		Part time Rural Staff	.360	.202
	Full time Rural Staff	Full time Metropolitan Staff	.110	.445
		Part time Metropolitan Staff	.240	.286
		Part time Rural Staff	.470	.100
	Part time Metropolitan Staff	Full time Metropolitan Staff	-.130	.557
		Full time Rural Staff	-.240	.286
		Part time Rural Staff	.231	.485
	Part time Rural Staff	Full time Metropolitan Staff	-.360	.202
		Full time Rural Staff	-.470	.100
		Part time Metropolitan Staff	-.231	.485
Understanding technical elements (for example ATM features and menus) at ATMs improves my work efficiency	Full time Metropolitan Staff	Full time Rural Staff	.345*	.010
		Part time Metropolitan Staff	-.394	.055
		Part time Rural Staff	-.003	.991
	Full time Rural Staff	Full time Metropolitan Staff	-.345*	.010
		Part time Metropolitan Staff	-.739*	.000
		Part time Rural Staff	-.348	.190
	Part time Metropolitan Staff	Full time Metropolitan Staff	.394	.055
		Full time Rural Staff	.739*	.000
		Part time Rural Staff	.391	.203
	Part time Rural Staff	Full time Metropolitan Staff	.003	.991
		Full time Rural Staff	.348	.190
		Part time Metropolitan Staff	-.391	.203
Understanding end-to-end processes (navigation process) at ATMs will make migration clear and understandable to customers	Full time Metropolitan Staff	Full time Rural Staff	1.246*	.000
		Part time Metropolitan Staff	1.102*	.000
		Part time Rural Staff	.808*	.000
	Full time Rural Staff	Full time Metropolitan Staff	-1.246*	.000
		Part time Metropolitan Staff	-.144	.423
		Part time Rural Staff	-.438	.055
	Part time Metropolitan Staff	Full time Metropolitan Staff	-1.102*	.000
		Full time Rural Staff	.144	.423
		Part time Rural Staff	-.295	.265
	Part time Rural Staff	Full time Metropolitan Staff	-.808*	.000
		Full time Rural Staff	.438	.055
		Part time Metropolitan Staff	.295	.265
Understanding	Full time	Full time Rural Staff	-.242	.164

technical elements (for example ATM features and menus) will make migration clear and understandable to customers	Metropolitan Staff	Part time Metropolitan Staff	-.782*	.003
		Part time Rural Staff	-.149	.660
	Full time Rural Staff	Full time Metropolitan Staff	.242	.164
		Part time Metropolitan Staff	-.540*	.046
		Part time Rural Staff	.093	.787
	Part time Metropolitan Staff	Full time Metropolitan Staff	.782*	.003
		Full time Rural Staff	.540*	.046
		Part time Rural Staff	.633	.111
	Part time Rural Staff	Full time Metropolitan Staff	.149	.660
		Full time Rural Staff	-.093	.787
		Part time Metropolitan Staff	-.633	.111
*. The mean difference is significant at the 0.05 level.				

Multiple Comparisons

LSD

Dependent Variable	(I) Strata	(J) Strata	Mean Difference (I-J)	Sig.
The likelihood of customers making use of ATMs improves my performance in migrating customers	Full time Metropolitan Staff	Full time Rural Staff	-.275	.099
		Part time Metropolitan Staff	-.588*	.022
		Part time Rural Staff	-.356	.276
	Full time Rural Staff	Full time Metropolitan Staff	.275	.099
		Part time Metropolitan Staff	-.313	.229
		Part time Rural Staff	-.081	.807
	Part time Metropolitan Staff	Full time Metropolitan Staff	.588*	.022
		Full time Rural Staff	.313	.229
		Part time Rural Staff	.233	.543
	Part time Rural Staff	Full time Metropolitan Staff	.356	.276
		Full time Rural Staff	.081	.807
		Part time Metropolitan Staff	-.233	.543
Reducing the effort at ATMs improves my performance in migrating customers.	Full time Metropolitan Staff	Full time Rural Staff	.038	.825
		Part time Metropolitan Staff	-.221	.397
		Part time Rural Staff	-.843*	.012
	Full time Rural Staff	Full time Metropolitan Staff	-.038	.825
		Part time Metropolitan Staff	-.259	.331
		Part time Rural Staff	-.881*	.009
	Part time Metropolitan Staff	Full time Metropolitan Staff	.221	.397
		Full time Rural Staff	.259	.331

		Part time Rural Staff	-.622	.112
	Part time Rural Staff	Full time Metropolitan Staff	.843*	.012
		Full time Rural Staff	.881*	.009
		Part time Metropolitan Staff	.622	.112
The likelihood of customers making use of ATMs facilitates quicker customer migration	Full time Metropolitan Staff	Full time Rural Staff	-.186	.177
		Part time Metropolitan Staff	-.153	.467
		Part time Rural Staff	-.631*	.019
	Full time Rural Staff	Full time Metropolitan Staff	.186	.177
		Part time Metropolitan Staff	.033	.878
		Part time Rural Staff	-.446	.101
	Part time Metropolitan Staff	Full time Metropolitan Staff	.153	.467
		Full time Rural Staff	-.033	.878
		Part time Rural Staff	-.479	.129
	Part time Rural Staff	Full time Metropolitan Staff	.631*	.019
		Full time Rural Staff	.446	.101
		Part time Metropolitan Staff	.479	.129
Reducing the effort at ATMs facilitates quicker customer migration	Full time Metropolitan Staff	Full time Rural Staff	-.079	.506
		Part time Metropolitan Staff	-.516*	.005
		Part time Rural Staff	-.677*	.004
	Full time Rural Staff	Full time Metropolitan Staff	.079	.506
		Part time Metropolitan Staff	-.437*	.018
		Part time Rural Staff	-.598*	.011
	Part time Metropolitan Staff	Full time Metropolitan Staff	.516*	.005
		Full time Rural Staff	.437*	.018
		Part time Rural Staff	-.161	.553
	Part time Rural Staff	Full time Metropolitan Staff	.677*	.004
		Full time Rural Staff	.598*	.011
		Part time Metropolitan Staff	.161	.553
*. The mean difference is significant at the 0.05 level.				

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