INTERNAL LEAN DIFFUSION ON STREAMLINED-SERVICE OPERATIONS: ABSA BANK

by

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ABSTRACT

Lean manufacturing is a business philosophy that continuously improved all process involved in service process irrespective of what types of product or service being provided. It provides highest level of customer service through systematic and continuing searching non-value-added activities and wastes and eliminating them. The current branch-based distribution models are no longer sustainable in most banks, and are unable to meet rapidly evolving customer needs and provide easy access to simplified banking services. This paper focuses on examining the impact of the streamlining of internal lean practices on service operations processes, specifically at ABSA Bank. The structured questionnaires were distributed to selected 15 Absa branches in Gauteng area for the study.

The main purpose of this study is to examine the influence of internal lean-principled service operation processes on banking performance and customer centricity. Convenience sampling technique was used to collect data from employees of ABSA to get their perception of internal processes and the effect of technological self-service system that are aimed to improve customer service. Chi-square test was used to test the hypothesis. Technological banking services are meant to make customers' lives easier. Surprisingly, the study findings illustrates that self-service systems at Absa branches do not facilitate simplicity in using banking services. The study showed distinctive results for the relationship between self-service systems, i.e. cash accepting ATMs, and speed of service provision, the simplicity of using banking services, and consistency in customer service. While the bank invests a lot of money on technological systems to enable customers to self-service themselves, the study reveals that customers are reluctant to use these systems, therefore stand in queues. On the other hand, the introduction of innovative technological banking services is meant to divert customers to automated services, therefore reduce pressure on bank service desk, but the study reveals that cycle times are relatively longer at ABSA branches due to inconsistency on internal processes; hence customers find themselves queuing for a long time.

The findings suggest that to ensure streamlined operations processes, ABSA need to invest time on customer education about technological self-systems. Also, customers must initiate the value chain process, the bank need to adopt pull-approach by availing service catalogue for customers to choose services from. Simplicity, speed, and consistency are key elements on customer satisfaction when using banking services, the findings suggest that the bank need to improve cycle times by ensuring smooth flow of systems when servicing the customers. Further, this study illustrates that internal processes are explained by two elements, process engineering and customer centricity.

Key words: Lean, Lean Principles, Waste, customer-centric, value stream, lean-principled service operation processes.

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ACRONYMS

- Absa – Amalgamated Banks of South Africa
- FNB – First National Bank
- AMPS – All Media and Products Survey
- SARB – South African Reserve Bank
- UKZN – University of KwaZulu-Natal
- PWC – Price Water Coopers
- SMED – Single-Minute Exchange of Dies
- 5Ss – Sort; Straighten; Shine; Standardised and Sustain
- IT – Information Technology
- ATM –Automated Teller Machine
- ANOVA – Analysis of Variance
- VIF – Variance Inflation Factors
- KMO – Kaiser-Meyer-Olkin

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Background of the study

Current branch-based distribution models are no longer sustainable in most banks, and are unable to meet rapidly evolving customer needs and provide easy access to simplified banking services (Accenture, 2010). South Africa's retail banks have to embrace a customer-centric approach in order to preserve and augment their customer base. Accenture, cited by Tyrer, observes that, "local banks offer the same financial products so customer service becomes the key differentiator which could give them the competitive advantage" (Tyrer, 2010:5).

Systems like lean production that were originally designed for the manufacturing sector have the potential to improve service organisations' operations and processes. It is on this basis that this research study aims to assess the adoption of lean practices by Absa Bank to improve its retail banking operations. This study will consider lean practices and the degree of retail banking agility. An empirical study by Narasimhan (2008) found that lean and agile strategies address competitive priorities such as cost, superiority, service and litheness, although each strategy emphases different essentials and distinctions can therefore be made among them (Gunakaran, 2008:549-564). Furthermore, some analysts consider cost to be the focus of lean practices (Christopher and Towil, 2008) while speed is regarded as the focus of agility and litheness and receptiveness are associated with changes in service changes (Zhang and Sharifi, 2007). This research study seeks to ascertain the effects of a combination of lean and agile strategies on streamlining retail banking operations. The study will not adopt a one-dimensional perspective where lean and agile are considered conjoint competitive priorities, unlike analysts who view lean and agile practices as mutually exclusive concepts (Richard, 1996; Goldsby, 2006; Vazquez-Bustelo, 2007; Krishnamurthy and Yauch, 2007; Naylor, 1990).

1.2 Motivation for this study

Financial services companies, like production companies, have operational processes and products, all of which exhibit some degree of inefficiency. In reducing costs and improving capacity, lean principles can contribute to the bottom line. The manufacturing sector has adopted lean approaches because of their effect on bottom-line growth, cost reduction, ease of understanding at all levels of the organisation, and ability to change ways of thinking towards continuous improvement (David and Littman, 2009). According to Deming (1982:49), continuous improvement means to "improve constantly and forever the system of

production and service". A continuous improvement in efficiency and a focus on customer value-added plays a significant role in financial institutions. Lean manufacturing has been shown to improve efficiency (Worley and Doolen, 2006:228-245).

Achanga (2005:460-471) cautions the use of lean manufacturing as an approach to quality management, as lean manufacturing's success or failure depends on the organisation's ability to implement all the identified initiatives. In the process of transformation, financial institutions have significantly changed their business paradigm from servicing the product to servicing the customer. This research study aims to identify lean principles that can be utilised by financial institutions to deal with service operational challenges by improving efficiency, customer service quality and productivity.

1.3 Problem Statement

Financial institutions have evolved significantly in streamlining value-added services in response to customer demands for better service, lower transaction costs and convenient delivery channels, such as mobile and internet banking. Both business and customer needs have evolved over time despite the customer-centric approach that is necessary to ascertain and grow the customer base. Improved efficiencies accompanied by quality service are the main challenge facing financial institutions.

Lean practices are considered ideal for any firm that desires to implement streamlined service operations while adding value by eliminating waste and creating a smooth process flow. The adoption of lean practices is expected to improve system agility in response to changing customer demands. This study explores the value-stream efficiencies and productivity enhancement achieved through implementing internal lean techniques.

1.4 Research Objectives and Questions

1.4.1 Research Questions

The key questions to be addressed are:

i) To what extent do waste reduction practices enhance productivity and customer-centric initiatives?
ii) What value-added processes can channel the banking focus from servicing the product to servicing the customer?
iii) To what extent do a value stream system and self-service systems affect customer service?
iv) To what extent do internal lean-principled service operation processes influence banking performance and performance velocity?

1.4.2 Research Objectives

This study's principal objective is to investigate the impact of the streamlining of internal lean practices on service operations processes, specifically at Absa Bank.

The objectives of the study aim:

i) To examine the effects of operational waste reduction practices on productivity enhancement and customer centric initiatives.
ii) To investigate the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer.
iii) To explore the correlation between the value-stream system and serving customers and the influence of self-service systems on delivery channels
iv) To evaluate the extent to which internal lean-principle service operation processes influence continuous retail banking performance outcomes in terms of increased business performance velocity.

1.5 Literature Review

In today's competitive world, organisations are aware that businesses must deliver quality services that meet rising customer expectations. Ultimately organisations will only achieve this when they develop an improved understanding of customer needs. Increased customer expectations have pressurised banks to review their operations and become more efficient in order to remain competitive (Cronje, 2007:11). This study will elucidate the lean principles that Absa Bank can embrace in order to improve customer service and efficiencies.

1.6 Lean

Lean is "the systematic removal of waste by all members of the organisation from all areas of the values stream" where value stream is used to document and analyse the phases in the processes (Womack and Jones, 1996:6). Organisations that have embraced Lean management have witnessed performance improvement in the form of cost reduction, improved service, quick turn-around time (Emiliani, 2006:167). Lean removes all waste in the value stream chain which improves an organisation's operations (Abdulmalek and Rajgopal, 2007:223-236).

Lean's core competency is to remove all the links to non-value added activities in the enterprise with less manpower and less equipment. In the short-term and at a smaller site, this performance-based lean system seems to create value in meeting customer expectations of the product and service (Zhou, He and Gao, 2006). It emphasises waste reduction, an

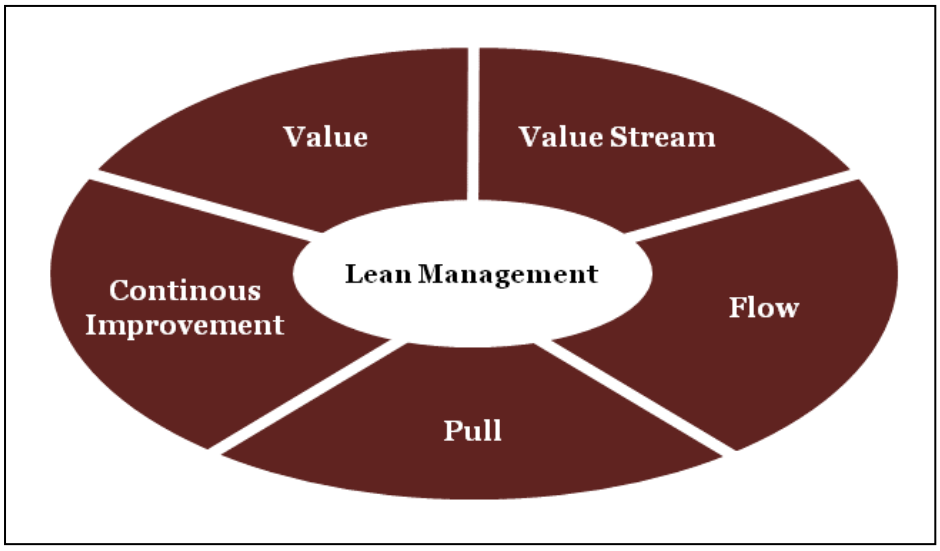
improved service value chain and therefore cost reduction (Russell and Taylor, 2009). It underpins growth by improving productivity and quality, reducing lead times and freeing up significant amounts of resources (ITC, 2004).

A recent survey conducted by Lebides (2012) revealed that South African banks do not measure and promote behaviour that is associated with good customer service; rather, they measure employee performance in terms of sales and revenue. Consequently, rather than focusing on customers' needs, employees push products in order to deliver on performance targets. The study further revealed that customers are frustrated by errors that occur when they visit their banks. These errors also emanate from bank employees servicing products instead of servicing the customer (Lebides, 2012).

Absa Bank has numerous branches across South Africa with a large number of customers. The bank has introduced many financial products to meet customers' needs. Despite these efforts, customers constantly complain of slow service at the branches (Absa, 2010). There seems to be a lack of information and knowledge sharing between the bank and its customers. This leads to long queues that suggest poor turn-around time. While self-service products have been introduced to reduce the waiting time at the branches, these have had little effect. This study aims to ascertain whether the adoption of lean manufacturing principles can improve Absa's operations and the ways it delivers services to its customers.

Seth(2005) state that service quality directly impacts customers and their experiences of an organisation's offering; high impact is manifested in improved business performance, customer satisfaction, customer loyalty and profitability. Womack, Jones and Roos (1996) present five principles of lean production that an organisation should focus on when adopting waste elimination and service quality improvement systems in order to pass on value to customers. These principles are guidelines for employing lean practices that ensure that processes are aligned with customers' value creation.

Figure 1.1 : Five Lean Principles



Source: Womack, J.P and Jones, T. (2003). Lean Thinking: Banish Waste and Create Wealth in Your Corporation, Revised and Updated", New York: Free Press.

Principle 1: Value

Value can only be defined by the ultimate customer. It's only meaningful when expressed in terms of a specific product (a good or service, and often both at once), which meets the customer's needs at a specific price at a specific time". Customer value entails mutual commitment and information sharing that will allow the organisation to satisfy customers' needs. The authors define value as the "capability provided to the customer at the right time at an appropriate price, as defined in each case by the customer"(Womack and Jones, 2003:311). For an organisation to deliver value to the customer, only services the customer asked for must be delivered to the customer (Hicks, 2007:233-249).

Principle 2: Value Stream

The second principle focuses on the identification of the value; mapping out how value will be delivered is essential while non-value adding steps are eliminated. (Womack and Jones, 2003:311). Value stream is meant to obtain a high-level, visual representation of a specific set of processes. When a value stream map is created there is a common view for everyone to see areas of waste (Tapping and Dunn, 2006:320).

Principle 3: Flow

Womack and Jones (2003:306) define flow as the "progressive achievement of tasks along the value stream so that a product proceeds from design to launch with no stoppages". For

waste elimination, more simple and organised processes are required so that the service moves through value adding steps. This includes reducing turn-around time and smaller lot sizes, and guarantees a visible and smooth production process which eliminates backlogs. Liker (2009) advocates that the flow is created by making the value-creating steps occur in a tight and integrated sequence so the service will flow towards the customer.

Principle 4: Pull

The fourth lean principle of pull is defined by the authors as a "system of cascading production and delivery instructions from downstream to upstream in which nothing is produced by the upstream supplier until the downstream customer signals a need for it" (Womack and Jones,2003:309).

Principle 5: Continuous improvement

Continuous improvement was pioneered by equality guru, Juran. He defined quality control, quality advancement and quality planning (Juran, 1986:19). Superiority is an important element of lean practice. Businesses and customers change frequently and organisational practices must accommodate new expectations and needs. Proper evaluation mechanisms enable organisations to satisfy customer needs continuously. Agile production focuses on flexibility and quick response to opportunities.

1.7 South African Banks

PWC (2012) states, that, there is great potential for financial institutions to embrace lean principles to improve day-to-day efficiency. It is very important for lean-based institutions to focus on the eradication of non-value-added activities. This will lead to visible and sustainable improvement as customers are becoming less loyal to their banks (Ernst & Young, 2012). A study conducted by PriceWaterhouseCoopers (2012) found that all the mainstream South African banks had a formal strategy in place to switch customers to electronic banking. However, this has not been very successful and has not had a significant effect on profitability. Customers are taking greater control of their banking relationships. They are prepared to switch banks and are demanding improvements and new products. Banks need to rapidly adapt to these changes and re-evaluate the ways they interact with customers. They need to embrace change by adopting new approaches that give customers greater flexibility. Giving more power to customers may feel uncomfortable, but it assures the future of the bank (Ernst & Young, 2012).

The mainstream South African retail banks have recognised the ever-changing demands in the banking industry that call for simple and innovative ways of doing business (Dayan, AL-Tamimi and Elhadji, 2008:320-330). Not surprisingly, customers want better value and improved services. Customer advocacy and word of mouth are rapidly gaining power. Research shows that customers are more likely to seek financial advice from friends and family (Ernest & Young, 2012).Van Belle (2012) observes the dissatisfaction of the majority of customers with their banks. Asked why they stay with their banks, responses included that it is "too much effort to change". Other reasons offered were good service (17%), loyalty (10%) and competitive rates (5%). This emphasises perceptions that banks tend to invest more in attracting new customers than in retaining their current customers. It signals that banks need to change their approaches and adopt lean principles to attract and retain customers in order to remain competitive.

1.8 Dissertation Structure

Chapter one: Introduction

This chapter introduces the study. It outlines the operational, conceptual and theoretical framework to the study by contextualising the topic in the current need for the study. The chapter also summarises the problem statement, limitations and delimitations of the research study and the researcher's expectations of the study.

Chapter two: Literature Review

Chapter two provides a detailed discussion of the theoretical framework for the study by examining the literature on internal lean processes. It analyses debates and views that capture the concept of banks' service operational processes.

Chapter three: Research Methodology

This chapter presents and discusses the various data analysis methods used in this study. It provides further details on the sample size, sampling methods, and the data collection instrument.

Chapter four: Data Analysis and interpretation

This chapter analyses the data collected from the questionnaires with the use of SPSS (statistical software). The results are presented using frequencies, tables, and diagrams to explain how respondents perceive the service operational processes.

Chapter five: Discussion of results

This chapter discusses the results outlined in chapter four. The results are examined against the theoretical framework, guided by the objectives of the study outlined in chapter one. Chapter six will make recommendations and conclusions based on the results and analysis in chapters four and five.

Chapter six: Managerial implications, Recommendations and Conclusion

The recommendations are based on the findings of the study and discussions from chapter five. This chapter concludes the study by ensuring that the research objectives have been achieved. Future research will be recommended for the research questions not answered.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on lean principles. It also provides an in-depth discussion of lean principles in the service sector with particular attention to Absa bank branches.

In the aftermath of the global financial crisis, banks have sought ways to reduce costs without compromising quality. Lean practices relate to waste reduction in a manner that does not simply reduce waste, but adds to the value offered to customers. The main focus of lean is to maximise customer value while utilising fewer resources and eliminating non-value adding activities (Simon and Canacari, 2012:85). In today's competitive world, service organisations are aware of the need to deliver quality services that meet rising customer expectations. This requires improved understanding of customer needs. Heightened customer expectations have compelled banks to review their processes and systems in order to increase efficiency. This will enable them to improve both customer service and overall performance in order to remain competitive (Cronje, 2007:11). Lean theory is based on the Toyota Production System which focused on simultaneously improving customer satisfaction and waste elimination (Pegels, 1984; Tsasis and Bruce-Barrett, 2008; Womack and Jones, 2005; Vlachos and Bogdanovic, 2013).

This study investigates how the adoption of lean principles can help Absa Bank to improve customer service and efficiency. The investigation was motivated by long queues experienced at Absa branches and, at the same time, the on-going introduction of new banking products. This situation presents the opportunity for Absa to review its processes and align them with customer needs. Womack and Jones (1996); Ahlstrom (2004); Goldenbaum-Gaber and Rizenbanch (2013); and Babczenko and Garvey (2012) identify five core lean principles. The first important principle is value, which requires an understanding of what the customer wants; the quest for value encourages pull theory where customers determine what services should be provided to them. These five principles; value; value stream; flow; pull; and continuous improvement are discussed in detail in this chapter.

2.2 Conceptual Framework

Lean theory is based on the Toyota Production System (TPS) which aimed to simultaneously improve customer satisfaction and waste elimination (Pegels, 1984; Tsasis and Bruce-Barrett, 2008; Womack and Jones, 2005; Vlachos and Bogdanovic, 2013).

Studies by Vlacho and Bogdanovic(2011); Cookson (2011); Goldenbaum-Gaber and Rizenbanch (2013); Babczenko and Garvey (2012); Ahlstrom (2004:3-7);Noorwali (2013); Bowen and Youngdahl (1998);Kundu and Monohar (2012); and Bonneau (2011) identify the core lean principles that can be applied to any sector, including service organisations. These are value, which is determined by customers; value stream; flow; the pull system; and continuous improvement. While these principles have been predominantly applied in a manufacturing environment, Taco Bell was amongst the first service organisations to successfully implement lean. Psychogios (2012: 122-139) notes that Taco Bell is a perfect example of the introduction of lean to the service sector (Noorwali, 2013:4). This provides a level of confidence that lean methodology is applicable to the banking environment.

2.3 Lean System

Lean is "the systematic removal of waste by all members of the organisation from all areas of the values stream" where value stream mapping is used to document and analyse the phases in the processes (Naslund, 2008:12). Lean is also known as a production practice that considers the utilisation of resources for any objective other than value-creation for customers to be wasteful. Value is defined as any service or product that a customer would be willing to pay for (Chibaira and Hattingh, 2013:2). While Chibaira and Hattingh's (2013) work contributes to knowledge on lean systems, it neglected the question of cultural transformation, which is very important when adopting lean methodology. Wellman (2011), advocates that Lean is not a programme or a set of quality improvement tools. Rather, it is a cultural transformation that introduces new ways for an organisation to work. Lean requires multi-skilled staff; this introduces a new attitude to doing business throughout the organisation. Lean is therefore not a destination, but a continuous process (Toussaint and Berry, 2013:74). According to Seth (2005), the ultimate goal of Lean is to eliminate waste in inventory, processes and the operations environment in order to focus on customer demand while delivering quality services in the most efficient and effective way (Ravet, 2011:7)

Farrington, Utley, and Harris (2007:625) states that, "Lean is a managerial approach which inspects processes, services and products according to their value from the customer's perspective". Lean also refers to the classification and elimination of waste in processes in order to maximise customer value (Goldenbaum-Gaber and Rizenbanch, 2013:6). Dickson, Singh, Cheung, Wyatt and Nugent (2009) advocate that Lean provides a method to specify value, sequence all value-adding processes, and continuously improve those processes, therefore eliminating waste (Noorwali 2013:2). These definitions are appropriate for this study as it considers both the processes and services provided to the customer according the customer's perspective of value (the first lean principle).

The fundamental objective of Lean is to eliminate waste in the process of delivering services to the customer through compressing the lead time from customer order to service delivery (Glenn, 2006). Lean transformation generally employs tools and techniques such as Kaizen approach which focuses on continuous improvement; (SMED) single-minute exchange of dies, SMED focuses more on inventory reduction and systems efficiency ; Six Sigma (a philosophy of doing business with a focus on eliminating defects through fundamental process knowledge), value stream mapping and 5S's of housekeeping (Sort; Straighten; Shine; Standardised; and Sustain) in order to remove waste and deliver improvements in specific areas (Hicks, 2007: 236). Since a continuous improvement mindset is central to this process, operational discipline will need to be reviewed on an on-going basis (Norman, 2008:2).Organisations that have embraced Lean management have witnessed improved performance through reduced costs, improved service and quicker turn-around time (Emiliani, 2006). Lean removes all waste in the value stream chain which improves organisational operations (Abdulmalek and Rajgopal, 2007:5). According to Kruger, De Wit, and Ramdas (2005), companies that use Lean in their operations have achieved a level of quality that enables them to function with small batch sizes and tight schedules.

2.4 Seven Types of Waste

A clear understanding of waste is critical to lean improvement because waste has high cost implications but adds no value. It is therefore very important to build awareness of waste among team members that perform routine duties. Eliminating waste in a process increases capacity and motivates staff (Simon and Canacari, 2012:87). The Toyota Production System identified seven types of waste in lean manufacturing:

2.4.1 Overproduction

Lean supports pull theory encourages organisations not to produce more than the customer demands, but rather let the customer decide what needs to produced. Overproduction increases the risk of producing the incorrect products and services and therefore wastes resources (Khalil *et al.*, 2013:68-80).

2.4.2 Defects

Defects in final products may lead to waste. Errors in paperwork, longer lead times emanating from having to redo the work and unnecessary scrap are regarded as waste in the production system (Khalil *et al*., 2013:68-80). Defects in a banking context refer to errors made by consultants and tellers while providing a service to customers; this may result in a transaction having to be redone, which is a waste of resources.

2.4.3 Inventory

Keeping high levels of unnecessary materials can hide waste. Higher inventory requires storage space which is costly. Lean encourages as minimum a stock as possible (Hines and Rich, 2007; Khalil *et al*., 2013:68-80). Heavy reliance on paper at Absa branches results in large volumes of files being kept in storerooms; this is hidden waste. This calls for the adoption of lean methodology to eliminate such waste.

2.4.4 Transportation

Transportation involves any movement of materials in a production environment. Organisations need to avoid the unnecessary movement of materials between workstations as this prolongs production cycle times (Khalil *et al*., 2013:68-80). In a banking environment, bank consultants and tellers should not have to move around to find material to service the customer; everything should be close by in order to provide faster service to the customer.

2.4.5 Waiting

Inconsistencies in processes result in bottlenecks and machines and employees standing idle. This delays processing time and service provision to customers (Hines and Rich, 2007; Khalil *et al*., 2013:68-80). In many bank branches, there is visible waiting on the floor due to slow systems and inconsistencies in service provision.

2.4.6 Motion

Motion includes unnecessary walking by employees which wastes processing time. This is mainly the result of poor demarcation. Rawabdeh, (2005) notes that motion results from poor ergonomics of production; employees have to stretch and bend in order to get material (Khalil *et al*., 2013:68-80).

2.4.7 Over processing

Over-complexity creates waste. Over-processing involves more work being done than is required. Keeping things simple makes it easy to identify and eliminate waste (Khalil *et al*., 2013:68-80). This kind of waste is also found in the banking environment, especially when customers visit a branch for specific services and find themselves being told about all the other complementary services.

2.5 Lean in the service sector

Levitt (1976:63-74) advocated the adoption of lean in the service sector in his article on the "production line approach to service". Other scholars,(Table 2.1), supported his position and more service organisations became interested in implementing lean principles (Kanakana, 2013:2-3). As discussed in section 2.2, Taco Bell was amongst the first service organisations to successfully implement lean. In table 2.1, Psychogios (2012:125) observed that this company was a perfect example of the introduction of lean to the service sector (Noorwali, 2013). This scholarly endorsement provides some level of confidence that lean methodology is applicable to a banking environment (Table 2.1).

While lean manufacturing principles are not applicable to all service organisations, studies by Vlachos and Bogdanovic (2011); Cookson (2011), Goldenbaum-Gaber and Rizenbanch (2013); Babczenko and Garvey (2012); Ahlstrom (2004);Noorwali (2013); Bowen and Youngdahl (1998); Kundu and Monohar (2012); and Bonneau (2011) outline the core lean principles which can be applied to any sector, including service organisations, (as shown in Table 2.1). These are value, which is determined by customers; value stream; flow; the pull system; and continuous improvement. Service organisations can adopt lean principle tools such as the 5S's of housekeeping(Sort; Straighten; Shine; Standardised; and Sustain) methodology and 7 wastes of Lean (Piercy and Rich, 2009:54). It is clear that lean principles can be implemented at Absa branches in order to improve internal processes and enhance customer service (Table 2.1).

Table 2.1: Review of Lean applications within the service sector

Sector	Author	Results
Hotels & Healthcare	I. Vlachos and A. Bogdanovic (2011);Cookson (2011).	Successful implementation in a European hotel.
Financial Sector	D. Goldenbaum-Gaber and R. Rizenbanch (2013);K. Babczenko and J. Garvey (2012); Ahlstrom (2004).	Successful implementation in afinancial organisation.
Food	A. Noorwali (2013); Bowen and Youngdahl (1998);Kundu and Monohar (2012).	Successful implementation at different levels of a food processing system.
Consulting	N. Bonneau (2011)	Lean implementation in a service organisation.

Source: Designed by the researcher from the literature

2.5.1 Lean in the Hotel and Healthcare sector

Since lean techniques have been predominantly applied in the manufacturing sector, with reference to Table 2.1, there is a paucity of studies on lean implementation in the service sector, particularly hospitality. The majority of studies on lean principles in the services sector have focused on the health industry; most of these studies support the implementation of lean techniques in this sector (Vlachos and Bogdanovic, 2013:4).

Cookson (2011) applied value stream mapping in the Emergency Department of a UK hospital and identified more than 300 instances with the potential for waste elimination and process improvements. Bortolotti, Romano, and Nicoletti (2010:579-583) developed a methodology to streamline and automate processes with the aim of eliminating waste in service organisations (refer to Table 2.1). They found that the automation of a non-streamlined process could generate problems that slow down the flow and increase errors (Vlachos and Bogdanovic, 2013:6). This implies that lean principles are not applicable to all industries. While the service sector can implement lean principles, not all organisations within this sector can adopt lean methodology (Table 2.1).

2.5.2 Lean in the financial sector

Traditionally, the financial sector has been known as being service-centred, with services being pushed towards the branches rather than requested or pulled by customers. In recent times, banks have adopted a more customer-centric approach where internal processes that customers value, such as credit applications, are managed in an end-to-end manner. Ahlstrom (2004); Goldenbaum-Gaber and Rizenbanch (2013);and Babczenko and Garvey (2012) investigated how successful the financial sector has been in adopting and implementing lean principles (Table 2.1). These studies revealed that banks can implement lean principles and reap substantial benefits, including improved efficiency and cost reductions (Kanakana, 2013:6). An interesting study by Maleyeff (2006:674) observes that lean can be adopted to improve internal banking processes. Maleyeff's study is in line with the current study that investigates how lean principles can improve internal banking process at Absa branches (Table 2.1).

2.5.3 Lean in the food sector

A study conducted by Youngdahl (1998:207-225) on lean adoption by two companies, McDonalds and Taco Bell, found that lean can be successfully implemented in the food sector; McDonalds and Taco Bell were amongst the first service organisations to successfully adopt lean principles (Kanakana, 2013:5-6).Zarei, Fakhrzad and Paghaleh(2011:25-33) found that that lean manufacturing principles could improve

processes while reducing costs and improving customer value (Noorwali, 2013:2). The evidence therefore suggests that service organisations can embrace lean principles to improve internal processes (Table 2.1).

2.6 Waste Elimination and Waste Reduction

Wilson (2010:79) notes that the fundamental goal of lean is to pragmatically identify waste at each level of the process and eliminate it completely. One of the easiest ways to locate waste is observing material or product flow from the process perspective. Lean methodology aims to streamline processes and workflow to enhance the productivity of the organisation, while satisfying the customer and eliminating waste (Chibaira and Hattingh, 2013:6). The most significant aspect of Lean is its focus on the elimination of all forms of waste. Two lean tools are commonly used. The check-list for 'the seven forms of waste' is concerned with identifying waste as a first step towards eliminating it, while the 5S's of housekeeping (Sort; Straighten; Shine; Standardised; and Sustain) is a simple set of principles for reducing waste (Slack, 2007).

Waste poses a risk to both manufacturing and service operations as it hinders productivity and operations efficiency while resulting in higher operational costs. Understanding the relationship between and the effects of waste reduction and waste elimination is important for any organisation. These relationships can be understood by putting performance measures in place that foster waste reduction and elimination. Lean focuses on eliminating waste and reducing lead times between customer demand and service delivery to satisfy this demand; this is achieved by focusing on and addressing non-value-adding activities (Goldenbaum-Gaber and Rizenbanch, 2013:3-7). Applying lean properly within a service context often means viewing customer satisfaction as "the product" and investigating ways to improve customer service (Kanakana, 2013:6-9).

A recent survey by Lebides (2012:18) revealed that South African banks do not measure and promote behaviour that is associated with good customer service; rather, they measure employee performance in terms of sales and revenue. Consequently, rather than focusing on customers' needs, employees push products in order to deliver on performance targets. The study further revealed that customers are frustrated by errors that occur when they visit their banks. These errors also emanate from bank employees servicing products instead of servicing the customer (Lebides, 2012:18-28). These concerns reflect the reality of what is happening atAbsa branches; hence this study investigates the adoption of lean principles in banking processes.

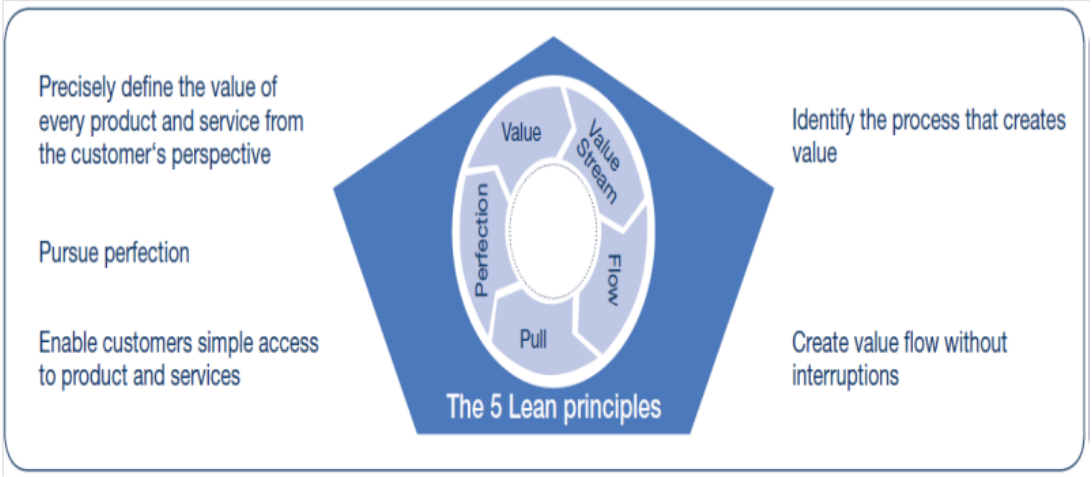
Absa bank has approximately 800 retail branches across South Africa with a large number of customers. The bank has introduced many financial products to meet customers' needs. Despite these efforts, customers constantly complain of slow service at the branches (Absa, 2010). There seems to be a lack of information and knowledge sharing between the bank and its customers. This leads to long queues that suggest poor turn-around time. While self-service products have been introduced to reduce the waiting time at the branches, these have had little effect. This study aims to ascertain whether the adoption of lean manufacturing principles can improve Absa operations and the ways it delivers services to its customers.

Seth (2005) state that service quality directly impacts customers and their experiences of an organisation's offering; high impact is manifested in improved business performance, customer satisfaction, customer loyalty and profitability.

2.7 Five Principles of Lean

Lean methodology is built around five principles: Value, Value Stream, Flow, Pull, and Perfection/Continuous Improvement (Ahlstom, 2004; Goldenbaum-Gaber and Rizenbanch, 2013; and Babczenko and Garvey, 2012). With reference to Figure 2.1, organisations should focus on these principles in order to promote waste elimination and improve service quality and pass on value to customers.

Figure 2.1: Lean Methodology Five basic Principles



Source: Goldenbaum-Gaber, D., and Rizenbach, R. (2013). Implementing the Lean Approach in a financial Organisation. Available:http://www.tefen.com/fileadmin

Goldenbaum-Gaber and Rizenbanch (2013:2) state that, if properly implemented, lean methodology can achieve continuous long term improvement. They add that, due to its clear

focus on standardisation of processes; cost reductions; improved efficiency; and consistent service provision, the lean approach has been adopted by more service organisations (Figure 2.1).

Principle 1: Value

Organisations must specify value from the standpoint of the customer**.** Bicheno (2008:6-8) states "that it is an established marketing idea that customers buy results and not products". In other words, customers are mainly interested in how a product can satisfy their needs (Figure 2.1). From the supply chain perspective, there should be a clear understanding of who the customers are and who the customer's customer is along the chain so that processes are aligned and streamlined to service customers efficiently (Chibaira and Hattingh, 2013:3).

Hines (2010:1-3) states that "the critical point for lean adoption is value that can only be defined by the ultimate customer. It's only meaningful when expressed in terms of a specific product (a good or service, and often both at once), which meets the customer's needs at a specific price at a specific time" (refer to Figure 2.1). Customer value entails mutual commitment and information sharing that will allow the organisation to satisfy customers' needs. Value is defined as a "capability provided to the customer at the right time at an appropriate price, as defined in each case by the customer" (Womack and Jones 1996:311). Lean approaches eliminate waste by determining customer value and then improving processes by targeting those activities that do not add value to customers. Hanna and Newman (2007:13) observe that lean thinking can be applied in virtually any service organisation (Figure 2.1).

Ravet (2003:7) notes that value only becomes meaningful when articulated in terms of a specific service which satisfies customers' needs at a specific time and at a specific price. This challenges some organisations as most organisations are accustomed to traditional ways of pushing products or services to customers. It is also argued that the principle of value recognises that customers purchase results, not products (Bicheno, 2008:8). Johnson and Weinstein (2004:5) state that value can be defined in terms of a customer's assessment of the costs of obtaining the service and the benefits derived it. These authors share the view that organisations shouldplace the customer at the centre of everything in order to meet their expectations.

According to Khalifa (2004:645), customers calculate value by evaluating the benefits of the service attributes and the utility of the service, which results in their demands being met (Ivanauskiene, Auruskeviciene, and Skudiene 2012:78). Customers' definition of value can

be grouped into three main categories: cost-benefit ratio models (Kumar and Grisafe, 2004; Roig, 2006; Gounaris, 2007), value components models (Kaufman, 1998), and means-ends models (Huber, Hermann, and Morgan, 2001; and Khalifa, 2004). Kumar and Grisafe (2004: 43-74) define value as an assessment by the customer of two aspects, namely, benefits and costs. This study also examined customer perceptions of cost, quality, and value.Zeithaml (1998) expressed value as a function of service utility (benefits derived) divided by the costs incurred (the price paid), and emphasised that, from a customer's perspective, value is a subjective matter (Ivanauskiene, Auruskeviciene, Skudiene, and Nedzinskas, 2012:77). These studies suggest that customers are concerned with cost, quality, value, and benefits.

Value component models (Figure 2.1) consider esteem; substitute; and utility. Esteem refers to a customer's desire to possess a good or service purely for the sake of ownership. The substitute value relates to the service interests of the customer, while utility value considers how and when the customer will make use of the service. Thirdly, the means-ends model works on the assumption that customers' procurement and utilisation of services is directed at accomplishing favourable ends. Huber, Hermann, and Morgan, (2001:41-53) note that this model focuses on the correlation between service features, utility derived from consumption, and a customer's individual values. Simply put, customer satisfaction is a function of service quality, fulfilment of needs, and the affordability of the service.

Izquierdo's (2006:57) survey on retail banking categorised value as defined by the customer into three dimensions: functional value; affective value; and saving value.

i) Functional value is characterised by greater satisfaction with banking services through consistency; value-added services; professionalism; and simplicity. Roig (2006, 2009) identifies functional value as the most important value as it creates customer loyalty and therefore assures customer retention. In other words, customer satisfaction takes into account the consistency of service provision, accessibility of services and value added by banking services, which subsequently discourages them from moving to another bank.

   All these elements such as; consistency in service provision in different areas of business; value-added services; professionalism in providing service to the customer; and simplicity in accessing banking services and understanding how to use channels provided to customers by the bank, are important as they directly affect customer service. These elements all add value as the customer would expect to witness them when visiting the branch. Simplicity poses some challenges as most

services, including self-service channels, offered by the bank are based on technology and many customers are not comfortable using such technology.

ii) Affective value refers to the social and emotional benefits achieved through regular engagement with bank employees, recognition and social integration. In the bank branch environment, this is very important as customers expect superior, quality service from consultants. Affective or sentimental value indirectly contributes to the retention of customers as some may rate the level of service based on this engagement.

iii) Saving value is derived when the customer observes the bank service as more affordable and convenient. This is a very subjective value in retail banking as customers compare the price of services at different banks. However, such conclusions may be skewed due to differences in the dynamics and complexities experienced by different banks. For example, Absa branches always have long queues due to the bank's relatively larger market share; this may erode convenience (in terms of receiving fast, easy service) in the eyes of customers; hence they might consider moving to other banks.

On the basis of the reviewed literature, it is noted that several scholars concur with the three dimensions of customer value outlined by Izquierdo (2006:57) in his survey. Hines (2010:1-3) states that "the critical point for lean adoption is value that can only be defined by the ultimate customer. It's only meaningful when expressed in terms of a specific product (a good or service, and often both at once), which meets the customer's needs at a specific price at a specific time". However, Grisafe (2004:43-74) defines value as the customer's assessment of two proportions, namely, benefits and costs. This study also identifies customer perceptions of cost, quality, and value. Both authors emphasise the importance of putting a customer at the centre of everything; therefore the customer determines the value and the services the bank should provide.

Principle 2: Value Stream

Value stream is an analysis of the value that an organisation creates; it assumes that value flows from end-to-end processes and gradually builds up to the final service (refer to Figure 2.1). Organisations need to constantly improve their processes by detecting and identifying those that create waste and do not add value (Vlachos and Bogdanovic, 2013:355).Once the customer's definition of value has been recognised, the organisation needs to examine its processes and expose the waste. The value stream examines the flow of materials and

information required to deliver services to a customer. The second principle focuses on the identification of the value, mapping out how value will be delivered without non-value adding activities (refer to Figure 2.1). This is achieved by identifying all phases in the value stream and removing all non-value adding steps from the process. Bicheno (2008:9) observes that this is a step-by-step end-to-end process from raw materials to the end user (Chibaira and Hattingh, 2013:4)

The value stream focuses on waste removal; it is empirical in that all the processes involved are understood. The value stream is defined in Lean Thinking as the set of all the "specific activities necessary to design, order, and afford a specific service, from concept to launch, order to deliver, and raw materials into hands of the customer" (Womack and Jones, 1996:311). Value stream mapping requires the involvement of all affected parties, including customers, staff members, systems and processes (refer to Figure 2.1). This allows the organisation to identify waste in existing processes (Toussaint, and Berry, 2013:80)

As a waste removal process, a value stream is a set of all specific activities and processes required to deliver a specific service from conception to final product. The value stream involves all the necessary activities to deliver a specific service through three essential activities (Toussaint and Berry, 2013:77); firstly, service definition, which examines the process from conception through to final launch; secondly, information management, which focuses on the process from order taking through to the delivery of the service; and finally, physical transformation that concerns the process from initial conception to the receipt of the service by the customer. Value stream identification almost always reveals vast amounts of waste in the form of non-value-adding steps (refer to Figure 2.1).

Womack and Jones (2003) present four easy steps to map the value stream:

a) Decide on the service you want to map.
b) Sketch the current value stream map.
c) Sketch the future value stream map.
d) Execute the action plan.

The purpose of these steps is to identify the value-adding and non-value-adding activities. The services that need to be mapped should be selected and outlined on a current value stream map, in other words, the AS-IS process. This is followed by sketching the future or desired value stream map. This will help the organisation to identify value-adding processes and processes that should be removed. The final plan of action is the ultimate outcome. The main aim of these steps is to eliminate all non-value-adding activities in the value stream.

Lean production is not just a technological system but the implementation of a concept throughout the entire organisation; this may require agreement on the organisational culture (Wong, 2010).The value stream perspective challenges the traditional way of doing business.

Table 2.2: Value stream perspective and Traditional business perspective comparison

Service Value Stream Perspective	Traditional Business Perspective
•Service View	•Functional View
•Value Stream Focus	•Individual Company Focus
•Customer Pull	•Economies of scale
•Waste Reduction	•Cost Reduction
•Continuous Improvement	•Improvement Relative to competitors
•Long-term	•Short-term

Source: Johns R., Crute V., and Graves A. (2002). ***Lean supply: Cost Reduction or Waste Reduction?***

Table 2.2 indicates that the traditional business perspective has a functional view of doing business. A value stream perspective recommends that instead of optimising functional or departmental performance, the organisation should focus on the service offered, where the customer determines the value of a service (Johns, Crute and Graves, 2002and Gonzalez,2009).

Similarly, if the focus of all activities is service, the business will view service and its progress as the outcome of cross-functional collaboration. Traditionally, organisations were interested in the economies of scale of mass production; the value stream philosophy promotes service-provision by customer pull. The ideal outcome should optimise a service-oriented perspective of doing business, aligned with downstream demand pulls and mass service customisation instead of mass production.

Cost reduction is a standard focus for most organisations. Advocates of the value stream perspective prefer waste reduction to cost reduction, as continuous improvement in waste reduction will directly impact the value supplied to the customer (refer to Table 2.2). The value stream is a strategic rather than a tactical resolution and it requires organisations to have a long-term view of their business (Johns,Crute and Graves, 2002:28 and Gonzalez, 2009).

The value stream involves all activities, both value added and non-value added, required to take a service from ordering to the customer (Kruger, De Wit, and Ramdas, 2005). In lean organisations, value stream (refer to Figure 2.1) is mapped for every product in order to eliminate non-value added activities, which are usually divided into the following seven categories, also known as the seven wastes in manufacturing: overproduction; transportation; inventory; waiting time; motion; processing; and product/service defects (Sokovic and Pavletic, 2008).

Principle 3: Flow

Womack and Jones (1996:306) define flow as the "progressive achievement of tasks along the value stream so that a product proceeds from design to launch with no stoppages" (Figure 2.1).Flow focuses on making sure that the value-adding steps occur in clear sequence to ensure that the service flows efficiently towards the end customer. This ensures that there are no stoppages or queues. According to Stalk and Hout's golden rule, value flow should be as simple as possible. All non-value-adding steps must be removed to prevent them from delaying value-adding steps (Chibaira and Hattingh, 2013:4). In the banking environment, the smooth flow of processes could be possible if all service offerings were built on customer perspectives and determined by the customer (Figure 2.1).

Principle 4: Pull

"Pull" in service terms means a fast response to customer demand and producing what the customer wants. In service organisations, it is capacity that is pulled; put differently, no inventory is being pulled (refer to Figure 2.1). A lean process should allow value to be pulled by the customer rather than pushed to the customer (Womack and Jones, 2003; Chibaira and Hattingh *et. al*., 2013:4).Pull is defined as a "system of cascading production and delivery instructions from downstream to upstream in which nothing is produced by the upstream supplier until the downstream customer signals a need" (Ravet, 2011: 4-8).Once customer demand is understood, processes can be designed to meet that demand and the organisation should be able to deliver what, when, and where the customers need it. Ravet (2011:8) observe that pull has the ability to design, schedule and deliver what the customer wants at the right time.

Push-Pull theory of innovation

The push/pull theory is one of the strategies commonly used by different organisations. Fitzsimmons and Fitzsimmons, (2006) note, that, it focuses on only providing the services demanded by customers. Traditionally, banks are known to have a product-centred logic

with services being pushed to customers rather than pulled by customers. They have recently begun to slowly move processes from a product-centred logic towards a more customer-centric approach; for example, a customer initiates credit and loans applications instead of banks pushing loans to the customers (Partners, 2013: 2-5).The segregation of responsibility across various departments' makes visibility a critical determinant of value stream success within service organisations. Visibility is important to determine the push-pull boundary in processes. Value stream becomes leaner as it removes waste from every stage of the process in the pull stream and avoids the waste associated with keeping inventory in a push stream (Vlachos and Bogdanovic, 2013:361).

Principle 5: Continuous improvement

Continuous improvement is the last lean principle. It refers to the continuation of smooth, error free value stream mapping processes and improved customer satisfaction (Figure 2.1). The terms 'perfection' and 'continuous improvement' are used interchangeably. Perfection refers to giving customers only what they want, exactly when required, without delay, at a reasonable price and with minimum waste. These five principles are not a destination, but rather a journey of continuous improvement (Chibaira and Teresa Hattingh, 2013:5). Most organisations perceive lean methodology as a tool to improve operations and neglect the cultural transformation of lean. Lean cultural transformation encourages employees at every level of the organisation to improve their work environment and approaches on a daily basis. In the banking environment, this requires mutual commitment and a set of deliverables that lean methodology will provide (Partners, 2013: 3). The concept of "internal customer" noted by Chibaira and Hattingh, (2013:3) is important, as these internal customers play a vital role in the value-creation process. Paying attention to internal customers will promote a customer-centric attitude at every level of the organisation.

Continuous improvement begins with an understanding and a 'map' of the process. Once the value, as determined by the customer is established, a process is mapped to ensure alignment and the capability to delivering such value (Figure 2.1). Ultimately, continuous improvement sums up all the values and ensures that value-added activities are tracked and improved. Ravet (2011) state that: "Perfection: means delivering exactly what the customer wants, exactly when (with no delay), at a fair price and with minimum of waste". In the bank branch environment, if processes are in line with customer needs, it would be easier to deliver service to customers; however, due to the complexity of banking products, there are always queues at Absa branches. This has prompted this study to propose that the bank adopt lean principles.

2.8 South African Retail Banking

Retail banks are facing challenging times as customer demands and expectations change rapidly. South Africa's 'big four banks" (Figure 2.2) are competing for market share and the loyalty of increasingly demanding retail customers. Customers are demanding flexibility and better service, characterised by lower costs. In this environment, banks are called on to reconfigure the business models to align them with customer needs (EY, 2012). Customer expectations and demands are encouraging banks to shift their focus from profits to their customers. Tom Winterboer, Financial Services Leader for Price-water-Coopers (P*w*C) Southern Africa and Africa (2013), notes that the: "South African banking survey(2013) shows that executives acknowledge that the industry is evolving fast, with a number of trends and developments currently shaping the global landscape for financial services and in particular the banking industry. These trends could either contribute to or detract from banks' ability to achieve sustainable revenue growth". This means that bank executives are aware of the rapid changes in the industry; new methodologies are required to accommodate these changes and improve processes to take advantage of new opportunities.

Globally, retail banking customers are putting more pressure on banks to provide convenient, customised, reliable service across all distribution channels. This requires that banks leverage innovative technologies to provide seamless and customised services. This calls for the adoption of a "pull theory" where customers determine value services (Bankseta, 2012:13).

Figure 2.2 : South African Banking

Source: AMPS, (2013). http://businesstech.co.za/news/banking/37411/biggest-sa-banks

South Africa's'big four banks', namely Absa, Standard Bank, First National Bank, and Nedbank are competing for retail market share (Figure 2.2). Absa (JSE; 2012) is the leader by market share, with 12.2m clients, followed by Standard bank with 10.5m (Clark, 2012:2-6).

According to the South African Reserve Bank, these four banks dominate the South African banking industry with an 81% market share (Rootman, Tait and Bosch, 2007:182). An AMPS (2013) survey (All Media and Products Survey) presented the order of market share as follows (Figure 2.2):

1) Absa has maintained the largest market share at 32.9%, although lower than its share of 34.9% of 2011.
2) Standard Bank's market share increased to 23.9 (23.5% in 2011).
3) FNB's market share decreased slightly to 2.2% (from 25.6%).
4) Capitec stands at 10.8%.
5) Nedbank now has 10.7% market share, compared with 11% in 2011.

The South African banking industry has 22 million active clients (Beeld, 2013). There has been much debate on the issue of Capitec being the fourth biggest bank, as revealed by the AMPS survey. Capitec is indeed the fastest emerging bank in South Africa and currently has 4.7 million customers (Figure 2.2).

Absa offers a range of financial services, insurance, home loans, wealth management products and other services. It has expanded to the rest of Africa as a member of Barclays. This expansion presents both opportunities and challenges. As a result, there is much emphasis on ensuring service quality without compromising the profitability of the company (AbsaGroup, 2010). There is a clear trend towards the homogeneity of services offered by all retail banks; hence securing a competitive edge rests on factors such asfast service provision and consistency in all areas of business.

Relative to other sectors, retail banking embraces certain service-particular qualities. Intangibility, loyalty, confidentiality, insecurity, and two-way (customer and personal) relationships are critical elements. An interesting study by Deloitte and Touche (2010) reveals that the retail market is very important to a bank. It further reveals that electronic banking, traditional retail banking and personal banking remain critical in the retail market segment, with intense competition in these areas. South Africa's big four banks believe that they need to revisit their strategies positioning is required to remain competitive in this market.

While banks have always competed, increased competition at the lower end of the market and the entry of corporate retailers and other financial services providers has intensified competition. Mobile network providers have also become major competitors (Keraan, 2010). Grosskopf (2013) notes that, "going forward, partnerships between banks and non-financial institutions, such as retailers and telecom companies are expected to become more prevalent as banks aim to broaden distribution and reach unbanked populations in South Africa and Africa". The unbanked population is that part of the population that does not keep money in the bank, but rather keeps it at home. Ernst & Young's report on global banking points out that "banks are facing new competitors, including institutions in emerging markets and nonbank companies such as utilities, retailers, and mobile services providers" (Ernst & Young, 2012:1).

To remain competitive and healthy, banks have embraced cost containment strategies to maintain profitability. These are expected to be utilised over the medium term as cost containment plays a vital role in facilitating improvements in return-on-equity and return-on-assets. Internal efficiency is the key driver of cost containment and includes all value-adding processes and activities, automation and optimisation of staff levels; this mainly relates to up-skilling staff members (Winterboer, 2013:57).Simplicity, reliability and affordability are key drivers of customer satisfaction and retention. Banks need to embrace

and implement new service propositions that deliver service to customers easily in the manner that they prefer.

2.8.1 Customer Centricity

The new entrants in the retail banking environment, Capitec and African Bank, as well as other financial institutions underline the need for banks to put customers at the centre of all their activities. Capitec has stated that banks are perceived as inflexible and are product-focused rather than customer-centric. (Bankseta, 2012:21) states that Fischer from Capitec observes "moving to a client-centric approach is a fundamental shift that needs to take place in order for banks to surmount the challenges they face and to ensure banks remain relevant to clients"

2.8.2 Simplicity and Cost Effectiveness

Customers buy solutions, not products (McMillan, 2007:2-5). Banks need to ensure that the services they offer customers are built around simplicity, convenience, and cost-effectiveness. Carl Fischer suggests that banks should be more transparent in terms of service offerings; customers should be presented with a "menu" to choose from rather being dictated to by bank consultants. Since homogeneity in service offerings between banks is common, they need to create value for their customers by introducing supplementary services (Bankseta, 2012:23). The customer should be free to select from the service offerings. This will improve customer experience as services will be pulled by the customer instead of being pushed to them.

2.8.3 Flexibility

Bank branches are perceived as rigid assets. Technological innovations opened up possibilities for flexibility (Bankseta, 2012:27). The introduction of self-service channels in branches allows customers to perform activities faster than waiting in long queues

2.9 Products and services

In the current competitive environment, banks have introduced a wide variety of services to enhance customer satisfaction. Technology has enabled internet banking services that positively impact banks' performance (Singh 2004; Ciciretti, Hasan and Zazzara 2009). They have penetrated the property retail market by granting home loans and other services not related to traditional banking services, such as insurance and electronic services (Goosen and Pampallis; Van Der Merwe and Mdluli 1999:231).

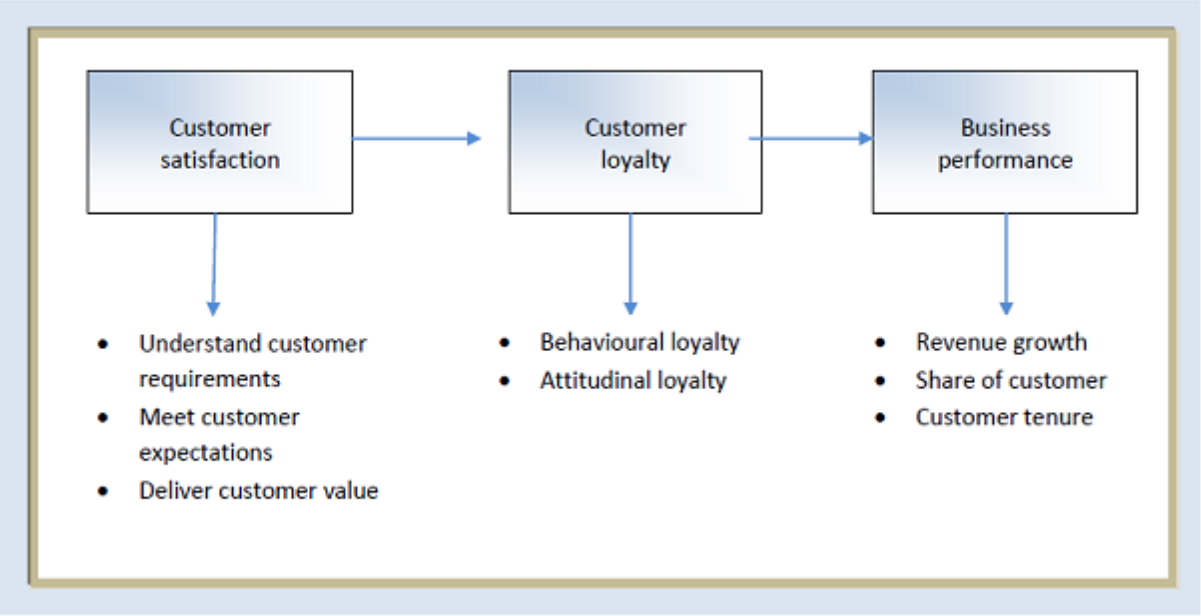
Keraan (2010:12) advises that service distribution and product service channels should be built on the principles of customer accessibility, ubiquity and cost effectiveness. Two such

channels are mobile phones and retailers. Karaan notes that there has been an increase in the use of mobile phones to make purchases and payments. A customer survey also revealed that customer preferences and attitudes are shifting from traditional branch banking to self-service channels (Novantas, 2012:3). Banks have introduced cell-phone banking in order to capture the market currently served by financial institutions. With the recent increase in virtual shopping, banks have made it a point to introduce internet banking to enable customers to make transactions easily. Technology has enabled banks to allow customers to deposit cash at ATMs. This fairly new innovation has eased the pressure on branches (Ciciretti, Hasan and Zazzara, 2009:8).

2.10 Relationship Banking

The bank-client relationship has recently emerged as one of the key drivers in the retail banking sector. The mainstream banks, also known as the 'big four banks', are all implementing a more holistic approach to these relationships. Bringing customers on board is regarded as a way to gain a competitive edge. The mainstream banks have acknowledged that attracting and retaining resources (employees) is also a priority (Winterboer, 2013:54).

Figure 2.3: Customer satisfaction, loyalty and business performance relationship



Source: Anani, A., O. (2010). *Attracting and retaining customers in South Africa's banking sector.* Business School in the Faculty of Business and Economic Sciences of the Nelson Mandela Metropolitan University. p. 55

Anani (2004:42) presents the relationship between customer satisfaction, customer loyalty and business performance (Figure 2.3). Anani (2004) further states that the first priority is for organisations to understand their customers' needs and make sure that all processes are

aligned with delivering customer needs. Anani supports Hines's (2010:3) argument that customers determine value and the organisation has to deliver that value as per customer requirements (Figure 2.3). Buttle believes that customer satisfaction results in customer loyalty and retention, thereby promoting organisation growth in terms of revenue and market share.

Several studies note the connection between customer loyalty, service quality and customer satisfaction. Miguel-Davila, Valdunciel and Florez (2010:6-10) support the notion that service quality is major contributor to customer satisfaction. Ennew and Binks (1996:5) provide evidence of a causal link between service quality and customer retention. This study suggests that financial institutions should pay more attention to relationship banking in order to retain customers (Coetzee, van Zyl, and Tait, 2013:3-8). Interestingly, Korda and Snoj (2010:4-9) have a different view, stating that banks should embrace lean thinking which is based on value rather than service quality which will enhance customer satisfaction in retail banking. Capgemini Analysis (2013:7) states that "customer satisfaction levels often overestimate customers' likelihood to stay with their bank, whereas positive experiences are more closely correlated with retention". This is an interesting point of view as banks often confuse customer satisfaction with customer experience. At Absa branches, customers derive satisfaction from the banking services but waiting too long for the service undermines the quality of the service offered to customers.

Figure 2.4: Five Core Areas of the Customer-Bank Relationship

Source: Capgemini Analysis, (2013). World Retail Banking Report. Available: http://www.capgemini.com/ sites/default/files/resource/pdf/wrbr_2013.pdf

In order to enhance knowledge of their customers, banks can leverage customer data and make predictions to try and understand customers' needs and choice of services. This will enable the provision of customer-centric services. Leveraging customer data can help the bank to acquire capabilities in the five core areas of building relationship with customers illustrated in figure 2.4. To further understand customers' needs and preferences, the bank can make use of social media to obtain real time insights into online banking services and offerings (Capgemini Analysis, 2013). The core areas of the customer-bank relationship presented by Capgemini Analysis (2013) are in line with Izquierdo's (2006:57) observations on consistency, simplicity and professionalism in service provision by banks. The essence of the customer-bank relationship is that the bank must understand its customers in order to provide the most appropriate and value-adding services to them, thus earning their faith in banking. Consequently, the bank will provide consistent service which will ensure an improved customer experience.

2.11 Technology

Technology enables retail banks to gain an advantage over their competitors and exploit new opportunities. The "big four" South African banks; Absa, Nedbank, Standard Bank and First National Bank all acknowledge technological advancement as an enabler and a solution

to most banking complexities (SARB, 2012). However, not all solutions offered by technology are utilised by retail banks, primarily due to the significant capital injection required by continuous upgrades and service customisation. Burgelman (2009: 9) notes, that retail banks directly transfer the costs associated with technology to their customers. To avoid this, retail banks should embrace lean and agile with a focus on cost, quality, service (Narasimah, 2006), flexibility and speed (Gunakaran, 2008:344).

The big four banks are also evaluating their current branch networks. They currently operate a total of 2 877 traditional branches which is forecast to decrease by 21% to 2 285 by 2016 (AMPS, 2013:2). This is consistent with their stated intention to transition more customers to electronic distribution channels. This does not necessarily mean that their distribution networks will be negatively affected. Instead, banks are reaching out to customers through new, self-service touch points and smaller, lower-cost branches (PriceWaterCoopers, 2013).As the speed of technological innovation increases, banks are facing immense challenges as to where to focus their investment and what technology to use. The majority of banks have indicated that they will invest significantly in upgrading IT platforms over the next three to five years. The big four banks are forecast to invest R3-R5 billion each during the next three years (PriceWaterCoopers, 2013).

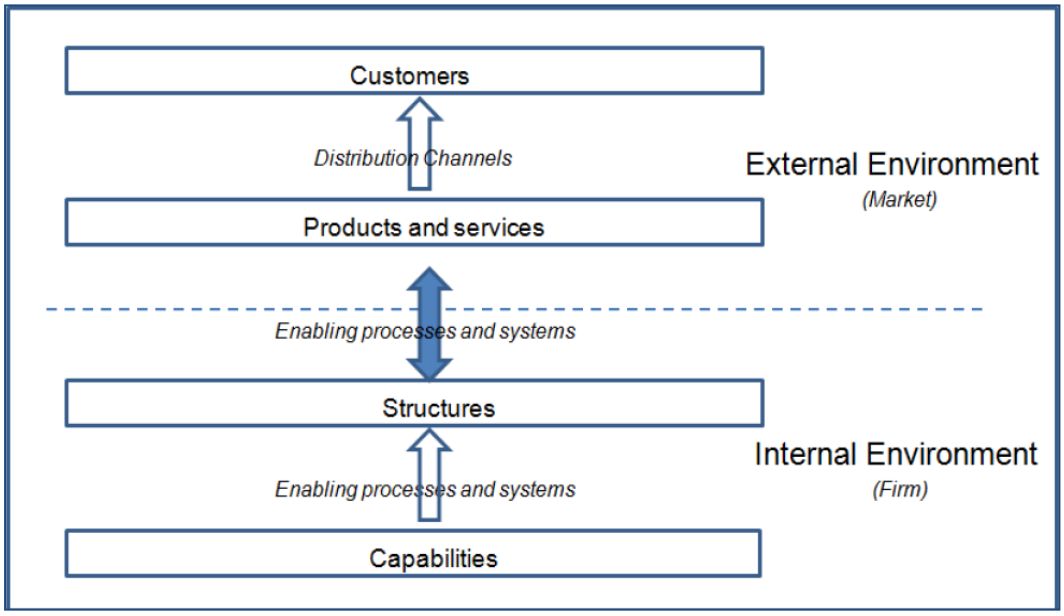
2.12 Effects of Push and Pull theory of innovation on banks embracing technology

The push–pull theory provides a framework for exploring customer motivation by presenting two sets of motivation: (i) customers are pushed into decisions by internal forces; and (ii) customers are pulled into making decisions by external forces such as service attributes (Crompton, 1979; Dann, 1977; Jang and Cai, 2002; Yuan and McDonald, 1990). In other words, push theory act as internal energy for an individual to increase customer's desire to purchase services, whereas pull theory focuses at attracting a customer externally and influence what the customer decides, given the initial willingness to purchase (Jang and Wu, 2006:12-13). Traditionally, banks are known to use product-centered logic with services pushed towards customers rather than pulled and determined by them. Banks have recently adopted a more customer-centered logic where end-to-end processes like credit applications, etc. are determined by customers (Partners, 2013:3). The customer defines the service offered and the delivery of that service.

The pull approach offers enormous potential for process improvement by identifying and eliminating all waste. By adopting Lean, all types of waste found in a bank such as process errors, the use of paperwork and unnecessary verification points could be eliminated (Johns, Crute and Graves, 2002:26). In other words, by allowing the customers to choose their

specific services (pull), banks can save a lot of money, for example, no unnecessary inventory (documents) will be kept but only what the customer needs at that certain point. There is a noticeable push-pull effect in banks embracing technology which involves the automation of processes and activities. The human element gradually disappears from banking processes. This poses a threat as technological or automated processes are more efficient then human-based processes. The banks have introduced cash accepting ATMs; self-service systems like internet banking, which in turn enhances customer experience significantly as customers decides which system or service they need.

Figure 2.5: Framework for Capability



Source:Liu, D., Chen, S., and Chou, T. (2011). Resource fit in digital transformation lessons learned from the CBC bank global e-banking project. *Management Decision*, (10), 1728-1742.

Figure 2.5 depicts a snapshot of end-to-end service provision from internal processes to the customer. Retail banks should embrace the pull theory of innovation which supports the notion that the customer determines the value. From a value stream perspective, retail banks should focus on the service offered, where the customer determines the value in a service and map the service provided (Johns, Crute and Graves, 2002:26). In the above figure, the push-pull boundary is represented by a horizontal-dotted line. Simply put, once the customer has determined the value, retail banks focus their processes on delivering the service as per customer specifications. A combination of an organisation's internal capabilities and value (as determined by the customer) results in service and product provision. Services are delivered to customers through different distribution channels (Liu, Chen, and Chou, 2011). Technology plays a critical role in distribution channels as it enables a bank to conveniently

deliver quality service to customers. Therefore banks need to align their processes and structures, with value defined by the customer, to ensure that customers are satisfied with the final service received. According to Barney, Ketchen, and Wright (2011:13), the synchronisation of resources and capabilities required for a business to succeed and remain competitive signals the need for various contemporary services. This further highlights the importance of managing processes and capabilities, which improves efficiency and the ability to deliver quality services faster to customers (Liu, Chen, and Chou, 2011:17-18).

Grosskopf (2013:6) states that "the evolving competitive environment, coupled with the external developments will require banks to continually rethink their strategies. Executives will need to adapt to new trends that may manifest over the medium to long term. This means constant evaluation of business and operating models. Ultimately, the winners will be those banks that can execute flawlessly to achieve alignment to these long-term trends." Product innovation alone is insufficient. The secret to banking lies in how successfully the bank is able to collectively implement new products and services, new distribution and service channels and new business processes (Keraan, 2010:5)

2.13 Conclusion

The banking business environment is transforming at a rapid rate. Retail banks face challenging times as customer demands and expectations change rapidly. Customers are demanding flexibility and better service at lower cost. In this ever-changing environment, banks are under pressure to reconfigure their business models to align with customer needs. The literature reviewed and lean related studies support the notion that lean is applicable to service organisations. By implication, this suggests that lean can be implemented in the banking sector. The following chapter presents the research approach and design guided by the objectives outlined in chapter one.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology used in this study. According to Polit and Beck (2004:731), a research methodology is the technique chosen to structure a study and collect and analyse information in a systematic manner. De Vos (2005:252) states that the methodology describes the participants, research design, the population, data collection instrument and procedure. This chapter discusses the research objectives and hypothesis of this study, the nature of the study, research approach and design, research setting, study population and sample, and ethical considerations. The instrument used to collect data and the methods employed to maintain reliability and validity of this instrument are also discussed. This is a descriptive study that used a quantitative research method in the form of questionnaires.

3.2 Research approach and design

A research approach and design refers to the overall structure and plan to address a research question, as well as the patterns to enhance the study's integrity. A plan is specifically formulated and implemented to bring experimental evidence to bear on a research problem, question and hypothesis (Stommel and Wills, 2004; Houser 2008). This research study employed a quantitative method. This method seeks to gather data in order to establish facts about the phenomenon under investigation. In quantitative research, a questionnaire is the most effective data gathering instrument (Sale, Lohfeld and Brazil, 2002). Quantitative research does not explain why the variables are related, but has the ability to point out the relationship between variables (Quinlan, 2011:326)

3.3 Univariate Data Analysis

According to Bryman and Bell (2007:37), univariate analysis involves the examination across observations of one variable at a time. Univariate analysis will be used in this study and will make use of:

Frequency tables: These tables present the number of respondents and the percentage belonging to each category for the variable under discussion.

Diagrams: Diagrams such as bar charts and histograms can be used to display quantitative data. This study uses bar charts and histograms to present data. According to Cooper and

Schindler (2008), bar charts, pie charts and histograms are used when nominal or ordinal variables are analysed, and distribution, central tendency and dispersion are used to summarise the nature of the variable.

3.3.1 Descriptive Statistics

A descriptive study was chosen as it presents an accurate portrayal of the characteristics, such as the knowledge, opinions, belief and abilities of a particular individual (Polit and Beck 2004:716). The major aim of descriptive research is to describe the characteristics of a population or phenomenon (Walliman, 2001:255). Descriptive statistics quantify the characteristics of the data in terms of its distribution, central tendency and dispersion. The description of a situation provides answers to who, what, when, and where questions; descriptive information can be useful in solving business problems (Sekaran, 2010).

Distribution: Distribution is mostly used to summarise cross-sectional data which can be displayed using a frequency histogram. Cooper and Schindler (2008:47) define distribution as a description of how often the unit values occur.

Central tendency: Holt and Lewis (2010:70) state that **c**entral tendency provides a signal of a typical value in a sample. Central tendency can be analysed using mean, median and mode. The mean is the most widely used measure of central tendency and is the arithmetic mean across the observations.

I. The mean explains the average value in the sample. It should be noted that the mean is sensitive to extremely large or small value.
II. Median is a measure of central tendency. It provides the centre of each group or variable.
III. Mode explains the most common value in the sample.

The mean, median and mode can be compared to explain the skewness of the distribution. Sekaran (2009:316) explains the conditions that should be noted about the mean, median and mode. If:

I. Mean > Median > Mode = Distribution skewed to the right
II. Mean < Median < Mode = Distribution skewed to the left
III. Mean = Median = Mode = Distribution is symmetric

3.4 Bivariate data analysis

Bivariate analysis is used to determine the relationship between the variables, which is a form of inferential statistics (Brynman, and Bell, 2007:360). Different research tools are used to classify the association, difference, and correlation between two variables. These are inferential statistics, cross-tabulations, Pearson's correlation, and Spearman's correlation.

3.4.1 Cross-Tabulations

Cross-tabulations determine the correlation between two variables; if so, data can be displayed by cross-tabulating the variables in a two-dimensional frequency. Cooper and Schindler (2008: 458-460) define cross-tabulation as a method of evaluating categorical data from demographic variables and the study's target variables.

3.4.2 Inferential Statistics

Inferential statistics is the logic of making generalisations from the sample to the population. Inferential statistics use hypothesis testing, where the goal is to reject the null hypothesis. Inferential statistics determine the probability of the characteristics of population based on the characteristics of the sample. They help the researcher to assess the relationship between the independent (causal) variables, and dependent (effect) variables. The null hypothesis can be explained as the null condition. For this study, data were collected to enable the researcher to decide whether or not to reject the null hypothesis with some level of confidence (Walliman, 2001:257).

Hypothesis testing: The major purpose of hypothesis testing is to decide between two competing hypotheses about the value of a population parameter. The hypothesis to be tested is given the symbol $H_{o,}$ and is referred to as the null hypothesis, whilst the alternate hypothesis (H_1) is the exact opposite of the null hypothesis, stating that there is a relationship between two variables or that, significant differences exist between two groups. Both the null and alternative hypothesis should be stated before any statistical test of significance is conducted (Holt and Lewis, 2010:1999). This study will use a two-tailed test analysis 0.05 level of significance which corresponds to a confidence level of 95%. The decision rule in hypothesis testing is that, if $p<0.05$, the study rejects the null hypothesis and therefore fails to reject the alternative hypothesis. The conclusion is thus reached that the variables attain statistical significance.

Chi-square: the chi-square statistics are used to establish the strength of the relationship. Chi-square is useful when nominal data are tested as it is a non-parametric test of significance (Wegner 2006:247-249). Wegner (2006) explains that, the decision rule in a Chi-square is to preserve the null hypothesis and reject the alternative hypothesis if $p>0.0$, and fail to reject the alternative hypothesis and reject the null hypothesis if $p<0.05$. Chi-square provides relationship answers between two nominal variables.

ANOVA: ANOVA is used when categorical and continuous variables are analysed. It is also used when mean scores of two or more groups are compared (Beins and McCathy,

2012:204). To make a decision using ANOVA, the F statistic is used to establish if the groups have significantly different means. If the probability associated with the F statistics is .05 or less, the researcher can assert that there is a difference in the means (Pallant, 2009).

3.5 Multivariate Data Analysis

Multivariate data analysis is used when more than one independent variable and dependent variable is analysed. Multivariate analysis determines the relationships between a set of variables, where the intention is to predict which variable has a contingency effect on another. The corresponding analysis is called multivariate regression. The decision rule in multivariate regression is that, if the probability associated with the F statistic is .05 or less, the researcher can conclude that independent variable has an impact on the outcome, independent of the other variables. The value of the T statistics can be compared across the independent variables to establish the relative value of each (Bryman and Bell, 2007). This study will make use of multiple regression as a means of analysing the data.

3.5.1 Multiple regression

Multiple regression is a statistical tool to predict a variable's score on the basis of other variables' scores. It is an extension of the bivariate linear regression model, the only difference being that multiple regression uses three or more variables (Cooper and Schindler, 2008:46).

Cooper and Schindler (2008:548-550) state that, "Collinearity exists when two independent variables are highly correlated" and these variables have a negative impact on the model. Multiple regression can be used when exploring linear relationships between the predictor and criterion variable. Multiple regression requires a large number of observations. The number of participants should substantially exceed the number of predictor variables used for regression (Johnson, 2009).

3.5.2 Pearson's and Spearman's Correlation

Correlation research is an efficient and effective means of gathering a high volume of data about a problem area. It is realistic and therefore has intrinsic appeal for the solution of many practical problems. It allows the researcher to scrutinise a large number of variables in a single study, and provides an assessment of the strength of the relationship between two variables, and a basis for experimental testing (Babbie and Mouton, 2001:194)

According to Houser (2008:193), correlation research explores the interrelationships among variables of interest without any active intervention by the researcher. The intention is to explain the nature of correlations, rather than to determine the cause and effect.

Pearson's Correlation: Pearson's correlation is employed when a continuous independent and a continuous dependent variable is analysed. Pearson's correlation coefficient measures the magnitude and direction of linear association. The measure can only take values in the range between +1 and -1 (McBurney and White, 2004:380). The significance of the sign is only indicative of the direction of the relationship. The decision rule on Pearson's correlation coefficient is that, when the probability associated with the T statistics is .05 or less, the researcher can assume that there is a relationship between the dependent and independent variables (Cooper and Schindler, 2008:510). Table 3.1 below displays the range of values, strengths and the directions of Pearson *r* values:

Table 3.1: Pearson's Correlation

Pearson r	Strength and Direction
+1	Perfect positive
+0.7	Strong positive
+0.4	Moderate positive
0.0	No relationship
-0.4	Moderate negative
-0.7	Strong negative
-1	Perfect negative

Source: Cooper and Schindler, (2008). *Business Research Methods*. New York: McGraw Hill.

Spearman's Correlation: Spearman's rank correlation coefficient is used to identify and test the strength of a relationship between two sets of data. It is mainly used as a statistical method to provide a hypothesis. It is important to make a distinction between Pearson's correlation and Spearman's correlation. Pearson's correlation measures the strength of a linear relationship between two variables. It requires the following data assumptions:

- Interval or ration level;
- Linearly related;
- Bivariate normal distribution.

If the data does not meet any of the above-mentioned requirements, Spearman's rank correlation is used.

Spearman's correlation coefficient: Spearman's correlation coefficient measures the strength of a monotonic relationship between two variables**.** In a sample it will be shown as r_s and it is interpreted in the same way as the Pearson's correlation coefficient (Cooper and

Schindler, 2008:510). Correlation is an effect size and the strength of the correlation can be interpreted using the following guide for the absolute value of r_s:

Table 3.2: Spearman's rank correlation

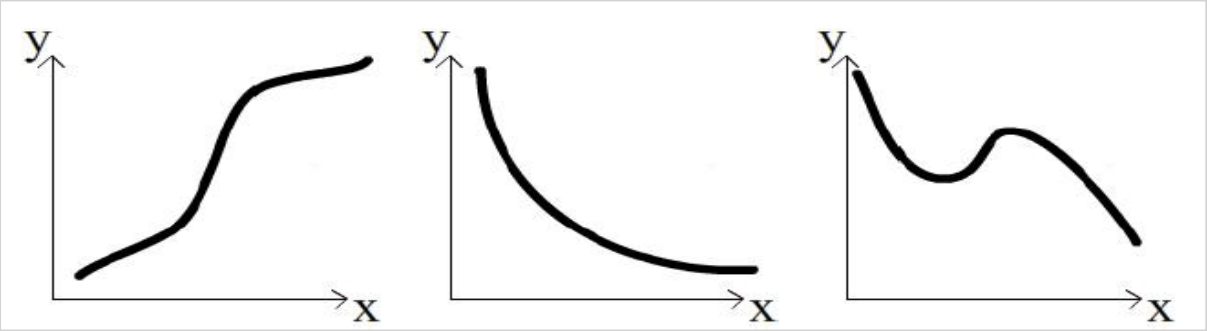
Spearman rs	Strength
.00 - .19	Very weak
.20 - .39	Weak
.40 - .59	Moderate
.60 - .79	Strong
.80 – 1.0	Very strong

Source: Cooper and Schindler. (2008). Business Research Methods. New York: McGraw Hill.

Spearman's rank correlation makes use of monotonic function to indicate a variable that either increases or never decreases as its independent variables increase (Beins and McCarthy, 2012:299 -380).

The following graphs depict monotonic function:

Figure 3.1: Monotonic Function



Source: Higgins, J. (2005). Excerpted from the radical statistician.http://www.statstutor.ac.uk/resources/uploaded/spearmans.pdf

A monotonically increasing diagram indicates that as the x variable increases, the y variable never decreases. A monotonically decreasing graph depicts that as the x variable increases, the y variable never increases; and the not monotonic graph shows that as the x variable increases, the y variable sometimes decreases and sometimes increases. The study will make use of Spearman's correlation.

Due to the weakness of correlational studies in revealing casual relationships, the researcher self-selected the groups of respondents to participate in the study. The participants for this study areAbsa branch staff members, including managers, consultants, tellers, and sales personnel.

3.6 Research Objectives and Hypothesis

Objective 1: To examine the effects of service operational waste reduction practices on productivity enhancement and customer-centric initiatives.

Objective 2: To understand the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer.

Objective 3: To explore the correlation between the value-stream system and serving customers and the influence of self-service systems on delivery channels

$H_0$1: There is no relationship between turn-around time and reliability
H_a1: There is a relationship between turn-around time and reliability

$H_0$2: There is no relationship between queue reduction and simplicity
H_a2: There is a relationship between queue reduction and simplicity

$H_0$3: There is no relationship between gender and speed
H_a3: There is a relationship between gender and speed

Objective 4: To evaluate the extent to which internal lean-principled service operation processes influence continuous retail banking performance outcomes in terms of increased business performance velocity.

3.7 Research Setting

ABSA has approximately 800 retail branches in South Africa, with which approximately 150 branches are located in the Gauteng area. The study was conducted at 15 Absa branches in Gauteng.

3.8 Target Population and Sample size

Sample size determination is an important and often difficult step when planning an empirical study. A population is a theoretically-specified aggregation of an element, where a sample is a subset of a population element (Agresti and Finlay, 2009:4). The target population for the study was Absa branch managers, consultants, tellers, and branch general workers. This study employed a non-probability sampling method (convenience sampling). Schiffman (2010) defines a non-probability sample as one where the population under study is predetermined in a non-random fashion on the basis of the researcher's judgment or a decision to select a given number of respondents from a particular group. In selecting a more representative sample that would provide more accurate results, the researcher opted for the judgemental method. The study also employed convenience sampling in order to obtain quick information, and judgemental sampling enabled the researcher to gain access to the individuals with the requisite information. Absa has approximately 800 retail branches in South Africa, with which approximately 150 branches are located in Gauteng area. Among those branches, only 15 strategic Absa branches have been instituted with the new lean oriented systems participated in the study (commissioned by the gatekeepers). Within these branches there are multiple departments, namely, home loans, vehicle finance, transactional-based. However, this study only focuses on the transactional-based department of the branch (activities performed by tellers, consultants, general workers, and managers). The estimated sample size on 15 branches constitutes approximately 225 potential participants, although the actual sample size reflects an average of 10 participants per branch multiplied by 15 branches = 150 returned questionnaires). The response rate is 66.67% (=150/225x100).Given the high levels of confidentially in the banking sector, it is expected that getting access to conduct a study would be a problem. Furthermore, the response rate is expected to be low due to busy schedules.

3.8.1 Sampling criteria

Respondents were selected to meet the following specific criteria:

- Experience in working at the bank.
- Willing to participate.
- Engage with customers on daily basis.
- Understand Absa bank branch processes.

3.9 Data Collection

3.9.1 Data collection instrument

A questionnaire was used to collect data designed by the researcher. A questionnaire is a pre-formulated written set of questions to which respondents record their answers, usually within closely defined alternatives (Sekaran, 2010). The questionnaire comprised of closed-ended questions only. These were designed to elicit how strongly the subject agrees or disagrees with statements using dichotomous questions, a five-point Likert scale, and ranks. A five-point Likert scale has got higher reliability than six or nine Likert scale (Matell and Jacoby, 1971). Aaker, Kumar, and Day, (2012) advocates that a five-point scale is likely to produce slightly higher mean score relative to the highest possible attainable score, compared to that produced from a 7 or 10-point scale.

3.9.2 Administering of Questionnaires

Data were gathered by means of a questionnaire to evaluate the Absa branch staff members' views on internal lean-principled processes. The decision to use a questionnaire was motivated by the following: questionnaires ensure a high response rate as they are circulated to respondents to complete and were collected by the researcher, where 68 questionnaires were distributed and collected electronically, with 82 questionnaires were distributed and collected manually; questionnaires offer the possibility of anonymity as the participants' names were not recorded on the completed questionnaire; and there is less opportunity for bias as questions are presented in a consistent manner.

3.9.3 Questionnaire Design

This research study employed a quantitative method. This method is geared to gather facts about a phenomenon. Questionnaires are the most effective data gathering instrument for such studies (Quinlan, 2011:326).The questionnaire was divided into three sections. Section A focused on participants' biographic data including age, level of employment, gender, and experience. Section B contained dichotomous questions which aimed to ascertain Absa branch staff members' views on waste reduction practices and internal lean-principle processes, while Section C presented questions in a five-point likert scale and rankings format to solicit Absa bank branch staff members' views on value stream systems and self-service systems.

The questionnaire contained 27 questions in total, including gender, position, and dichotomous information.The mix of questions allowed for a comprehensive analysis ofthe bank's internal service operations, focusing on the effects of non-value adding processes on customer satisfaction, and the effects of self-service systems on customer service. The

questionnaire made use of three rating scales: dichotomous (yes or no), five-point likert scale, and ranking. According to Quinlan (2011:329), a rating scale helps study participants to participate in a study by rating the phenomenon under discussion. In evaluating self-service systems, respondents were asked to rank their perceptual experience of the effectiveness of self-service systems at Absa branches. The ranking scale varied from '1= Least Important', to '2= Not Important', '3= Important', and '4= Most Important'. In the likert scale, the rating scale varied from '1= Strongly Disagree', to '2=Disagree', '3= Neutral', '4= Agree', and '5= Strongly Agree'.

In figure 2.5, Liu, Chen, and Chou, (2011:96) states that, "a combination of an organisation's internal capabilities and value (as determined by the customer) results in service and product provision. Services are delivered to customers through different distribution channels". This study carefully considered some key concerns with respect to internal processes and self-service systems at the bank. First, an employee's knowledge and experience accumulates over time (Chaminade, 2005:46). Therefore, it was decided to use the length of time an employee have spent in the organisation as an indicator of experience, and to get some insight into depth of knowledge. Therefor the first section of the questionnaire included biographic data relating to the individual including age, level of employment, gender, and experience. Secondly, the study seeks to investigate the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer. To achieve this objective, a set of dichotomous questions (Yes or No) were presented to the participants, in order to understand the extent of waste reduction practices on enhancing productivity and customer centric initiatives; and the influence of internal lean-principled service operation processes on banking performance and performance velocity. Thirdly, Lebides, (2012:14) in his study revealed that, customers are frustrated by errors occur at bank branches. These errors emanate from bank employees servicing products instead of servicing the customer. This study investigated the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer. To achieve this objective, a set of statements were presented to participants on a likert scale of 1 to 5 to get their views on how the value-added processes can channel the banking focus from servicing the product to servicing the customer.

3.9.4 Pre-testing of the questionnaire

The purpose of pre-testing the questionnaire aligns the researcher's expectations in terms of the required information obtained through questionnaire instrument. Questionnaire

pretesting is one way of identifying and eliminating those questions that could pose problems. Only after all the deficiencies have been corrected, the final questionnaire can be compiled and distributed. In a pre-test, the respondents should be reasonably representative of the sample population (Aaker, 1995:8). In this study, an informal pre-test was done to test the validity of the questionnaire to people involved in bank branch environment. All participants were happy with the questionnaire and the questions were easily understood. Once the inputs had been received, the questionnaire was distributed to all the participants.

3.9.5 Data collection procedure

Questionnaires were distributed by the researcher to Absa bank branch staff members, where 68 questionnaires were distributed and collected online and 82 questionnaires were distributed and collected manually. All the questionnaires were collected within a period of one month. All participants are located in different branches in the Gauteng area.

3.10 Reliability and Validity

Reliability and validity are used to determine the credibility of a study. Validity focuses on the degree to which the study is considered plausibly sound and if it was performed in an appropriate manner. Reliability and validity assess the approach employed to gather data and the degree to which the data are accurate and credible.

3.10.1 Reliability

Reliability refers to the extent to which a study can be replicated. It requires that a researcher using the same methods obtain the same results as those of a prior study (Sekaran, 2010). Reliability focuses on the consistency with which study procedures deliver their results (Seale 2004:72). According to Sarantakos (2005:432); and LoBiondo-Wood & Haber (2006:345), reliability measures objectivity, dependability of data, precision, consistency, and the stability of data. Cronbach's alpha was used to assess internal consistency and the reliability of a measure. A Cronbach Alpha value of above 0.7 might be viewed as a good measure to assess internal consistency (Chase and Jacobs, 2011). As the coefficient gets closer to 1, the instrument used to measure becomes more reliable in predicting the required results (Sekeran, 2010).

3.10.2 Validity

Validity tests how well an instrument that wasdeveloped measures the particular concept it was supposed to measure (Sekaran, 2010). Content validity was used to determine whether

the correct concepts are measured with the data collection method, that is, the questionnaire. To achieve content validity, questionnaires included mixed questions on Absa branch staff members' knowledge of internal lean-principled service operations (Polit and Hungler, 1993:20).

The questions were informed by the literature review. All questionnaires were distributed and collected by the researcher, 68 questionnaires were distributed and collected electronically, while 82 questionnaires were distributed and collected manually, in order to ensure content validity. The questions were posed in simple language for clarity and ease of understanding. Clear instructions were given to the respondents as to how to complete each section. All the respondents approached to participate in the study completed questionnaires. None refused to participate. The generalisation of the findings to the population is therefore justified. Burns and Grove (1993:270) state that the number of respondents who were approached and refused to participate should be reported so that the threat to external validity can be assessed. As the percentage of those who decline to participate, increases, external validity decreases.

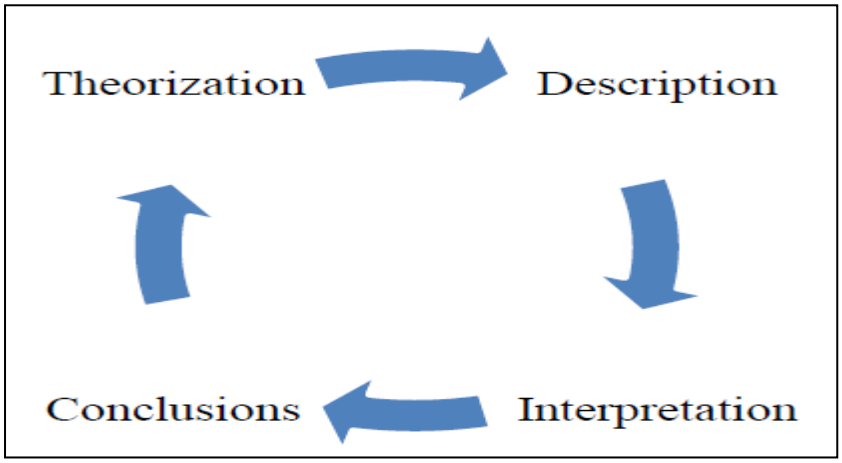
3.11 Data Analysis

The data gathered were analysed using a data analysis software tool, namely, SPSS. The study employs descriptive statistics under univariate methods which describe the phenomena of interest using frequencies, measures of central tendency (the mean, median, and mode), and measures of dispersion (range, variance, and the standard deviation) (Sekaran, 2010). A graphical presentation is provided using bar graphs and figures for the descriptive statistics. The bivariate method is also used to determine the relationship between the variables, which is a form of inferential statistics. A Pearson and Spearman correlation coefficient was used to indicate the nature, direction, and significance of the bivariate relationships of the variables used in the study (Sekaran, 2010).

3.12.1 Quantitative data analysis

The principle of data analysis is to analyse and understand the collected data in order to provide constructive recommendations. Quinlan (2011:352) explains quantitative data as numerical data, which uses the statistical approach, graphs, charts, and tables to analyse the data. Quinlan (2011:36) identifies the following four important phases in quantitative data analysis:

Figure 3.2: Four Phases of Analysis



Source: Quinlan, C. (2011). Business research methods. Hampshire, UK: South-Western Cengage Learning, Andover.

The four simple phases of analysis shown in figure 3.2 present the process the researcher goes through during the data analysis stage when using the quantitative approach. The initial phase is description; the researcher explains what is presented in the data. After the description phase, the researcher moves to the interpretation phase, where the data are interpreted and the researcher expresses his/her observations on what the data indicate. The researcher then uses the interpreted data to draw conclusions in the conclusions phase. The final phase of data analysis is theorisation, where the researcher revisits the literature review in order to establish the extent of alignment between his/her findings and theories (Quinlan 2011:366).

For this study, the data analysis process was mainly computerised and is presented numerically. Quantitative data are analysed and presented mainly in tables created by Microsoft Office Word and Microsoft Excel. Once the results were analysed and illustrated, the data in relation to internal lean-principled service operations was presented and discussed in detail. Conclusions were drawn from the presented data and relevant recommendations were made.

The statistical tool used to analyse data in this study is SPSS. Data will be analysed using frequency and inferential analysis (Pearson and Multiple-regression analysis) Inferential analysis was used to determine the correlation between independent variables, including lean and agile, customer experience, value stream processes, customer education, and catalogued products. The conclusions and recommendations of the study were drawn from

the data presentation, while frequency analyses were used to determine the participants' demographic characteristics such as age, gender, employment level, and years of experience.

3.12 Ethical Considerations

Ethical clearance for the study was obtained from the University of KwaZulu-Natal (UKZN). The letter of approval authorised the researcher to proceed with the study. All data collected will be securely stored at UKZN, and will then be disposed of in accordance with instructions from the Ethical Clearance Committee. The researcher obtained a letter of consent to conduct research at the branch premises. Letters granting permission were received from the relevant gatekeepers.

3.13 Conclusion

The selected methodology made it possible for the study to be conducted appropriately. The methodology advocated the manner in which data were gathered and analysed. A literature review was conducted to gain insight into the application of lean principles in the service sector. This is used as the foundation to evaluate lean implementation in the service sector.

The researcher adopted a quantitative approach. Questionnaires with closed-ended questions were administered by the researcher. The sample includedAbsa branch managers, supervisors, consultants, tellers, and general workers.

Permission was obtained from Absa bank to conduct the study. The anonymity, self-determination and confidentiality of the participants were ensured. The questionnaires were delivered to the respondents to ensure validity. This chapter described the research methodology, including the population, sample, data collection instrument and the strategies employed to ensure ethical standards. Chapter four analyses the data collected from the questionnaires and presents the research findings.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter analyses the data collected from the questionnaires. Overall, 68 questionnaires were distributed and collected electronically, while 82 questionnaires were distributed and collected manually, which makes a total of 150 responses. All the valid responses are analysed with figures and tabulated with graphs. The responses are based on the questions outlined in the questionnaire. The respondents were selected on basis of their direct engagement and involvement with customers at selected Absa branches. All the sections of the questionnaire made use of closed-ended questions to collect data to answer the four research questions outlined in chapter three.

4.2 Univariate data Analysis

The measuring tools that encompass univariate data analysis include distributions, and descriptive statistics.

4.2.1 Analysis of biographical data

This section of the questionnaire aimed to gather data relating to the participants' gender, employment level, and years of experience.

All the participants have experience in working with bank customers, which makes the results more reliable for the research objectives. Figure 4.1 illustrates that, of the 150 respondents, 67 are male and 83 are female.

Figure 4.1: Gender equity in the bank

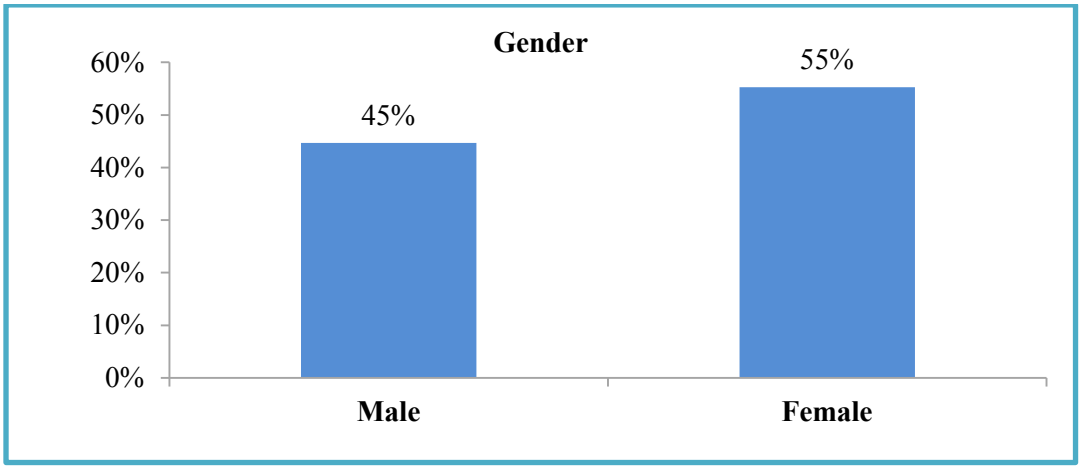
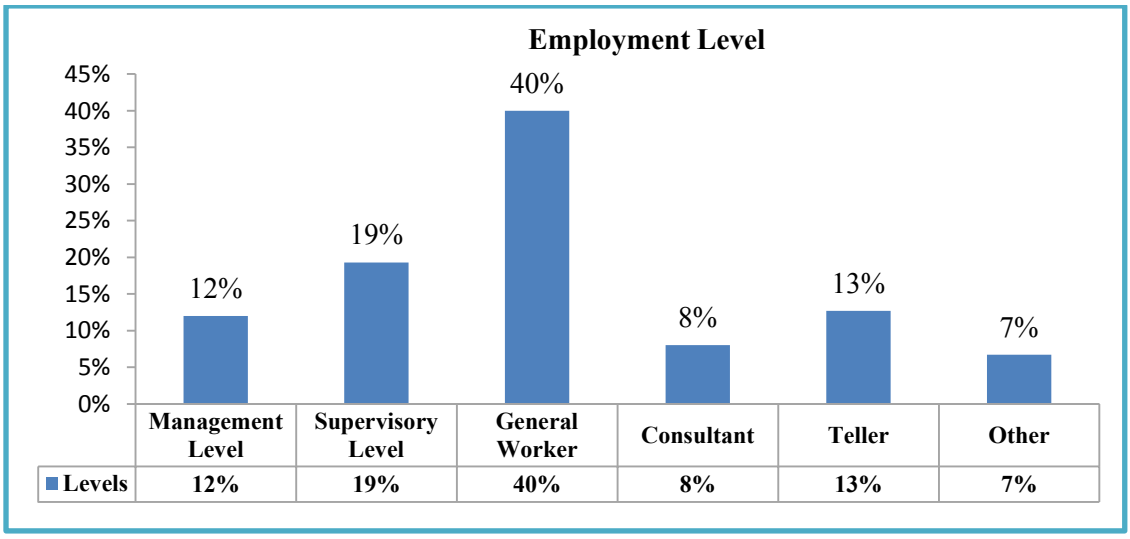


Figure 4.1 shows that, the majority of the respondents who participated in the study are female (55%) and the remaining 45% of respondents are male regarding the equity distribution among the branches.

Figure 4.2: Levels of Employment



The respondents are all branch staff members that work closely with customers on daily basis. Figure 4.2 shows that general workers (workers who performs multiple tasks at the branch, they are referred to as "floor marshals"), who are always on the floor in the branches assisting customers, accounted for the largest proportion of respondents(40%), while supervisors, tellers, managers, and consultants constituted 19%, 13%, 12%,and 8%, respectively. Some respondents (7%) indicated their employment level as 'other'. This means that the sample comprises of respondents from different levels of employment which is good for the study as different perspectives will be provided.

Figure 4.3: Years of Experience in the bank

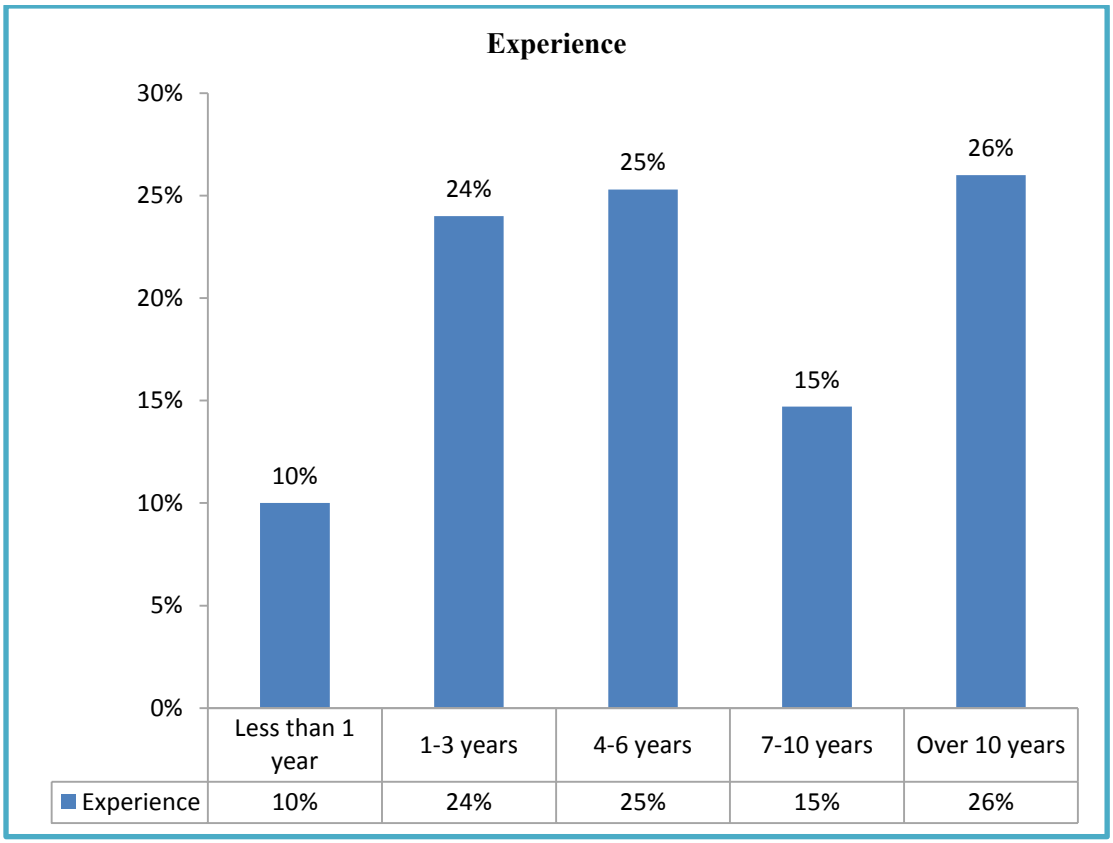
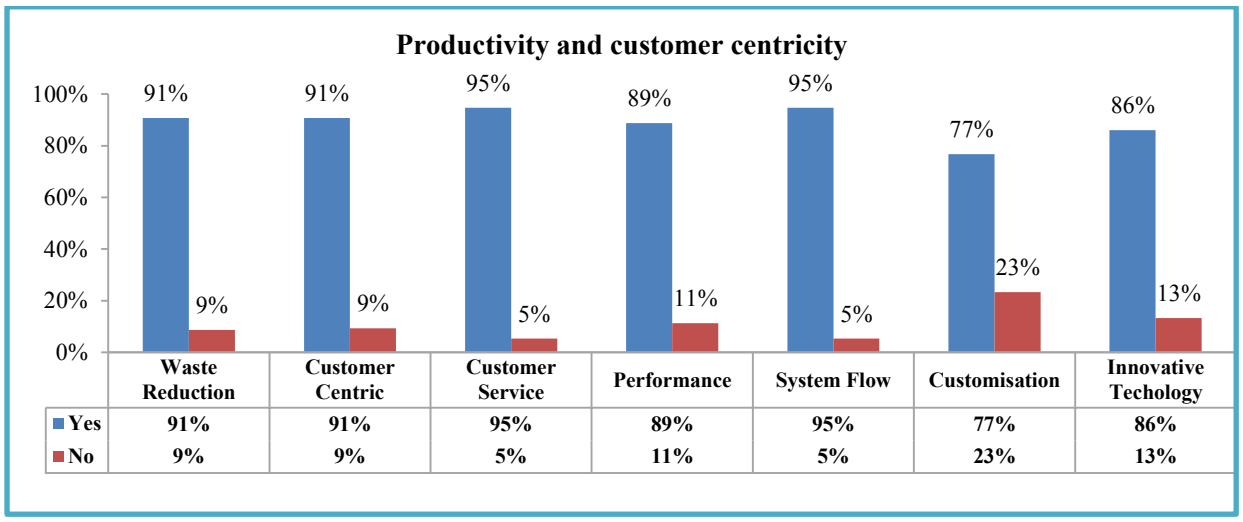


Figure 4.3 shows, that only 10% of the sample is made up of respondents with less than a year's experience while 24% have been with Absa for one to three years. Respondents with more than 10 years' experience make up the largest percentage of the sample (25%), followed by 25% with 4-6 years' experience. Only 15% of the sample is made up of respondents with 7-10 years' experience. This means that the study will provide views from respondents with different levels of exposure to banking projects and processes.

4.2.2 Dichotomous Questions

In this section, the respondents were presented with dichotomous or "yes" or "no" questions. This section is divided into two sub-sections. The first captures respondents' views on waste reduction while the second focuses on internal lean-principled service operation processes. This section of the questionnaire was designed to gather the respondents' perceptions and experience of the effects of waste reduction practices on enhancing productivity and customer centricity.

Figure 4.4: Waste Reduction effect on productivity and customer centricity



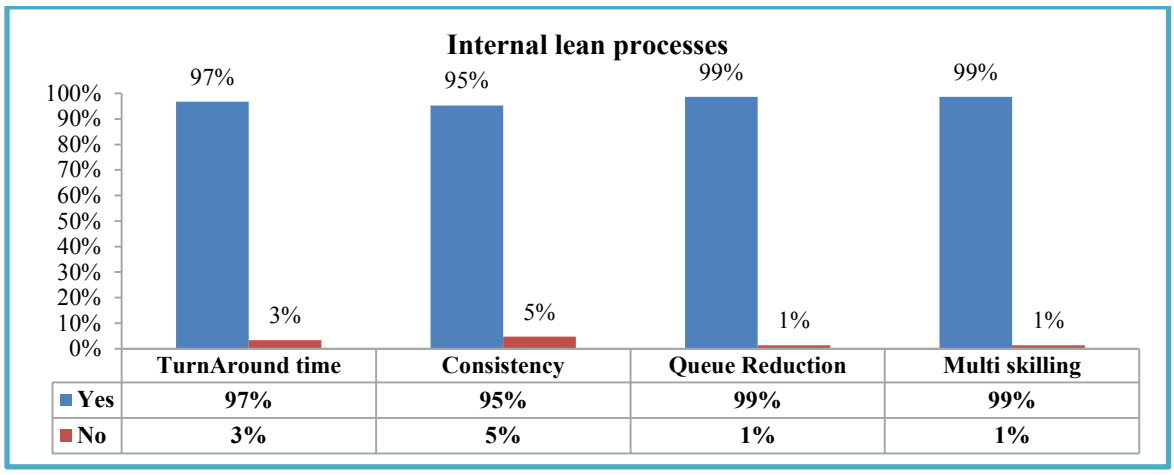
	Waste Reduction	Customer Centric	Customer Service	Performance	System Flow	Customisation	Innovative Techology
Yes	91%	91%	95%	89%	95%	77%	86%
No	9%	9%	5%	11%	5%	23%	13%

Figure 4.4 illustrates the overwhelming majority of the respondents feel that waste reduction practices enhance productivity and customer-centric initiatives. It shows that 91% of the respondents believe that the removal of waste improves productivity and customer-centric initiatives at the bank, whilst 9% disagreed. The figure shows that 5% of the respondents did not believe that waste reduction improves customer service, while 95% believe that waste reduction does improve customer service. This finding is in line with Simon and Canacari's (2012:85) view that the main focus of lean is to maximise customer value while utilising fewer resources and eliminating non-value-adding activities. 89% of respondents said that non-value-adding processes constrain performance, 11% disagreed. Furthermore 5% of the respondents did not agree that the smooth flow of the system results in faster customer service, while 95% stated that that smooth flow of the system does result in faster customer service. The data reveal that 77% of the sample believes that lean practices of delivering only what customers want removes waste, whilst 86% agreed that a sophisticated performance system affects productivity.

4.2.3 Internal Lean-principled service processes

This part of the questionnaire sought to ascertain respondents' views and perceptions with regards to the internal lean processes. The question posed was: "To what extent do internal lean-principled service operation processes influence banking performance and performance velocity?" This was a closed question, so the responses have been categorised with reference to the literature. Overall, most respondents believe that internal lean-principled service operation processes do influence banking performance and performance velocity.

Figure 4.5: Internal lean-principled processes



Partners, (2013:2-3) states that, "banks are very process-intensive with complex flows of information across the business; Lean offers an enormous potential for operational improvement by eliminating process wastes". Ninety seven percent of the respondents indicated that simple processes improve turn-around time in service provision at Absa branches, while 95%, and 99%, and 99% respectively, agree that consistency in service provision promotes customer retention and that lean processes help to reduce queues. Not surprisingly, 99% of the respondents advocated that multi-skilling staff ensures consistency in customer service in branches. The data also indicates that some respondents did not agree that internal lean principled processes improve speed and consistency and reduce queues at Absa branches. Three percent, 5%, 1%, and 1% of the population, respectively, disagree that internal lean principled processes influence banking performance and performance velocity.

4.2.4 Self-service systems

This section of the questionnaire sought to solicit respondents' perceptions and experience of the effects of waste reduction practices on enhancing productivity and customer centricity.

Figure 4.6: Self-service Systems

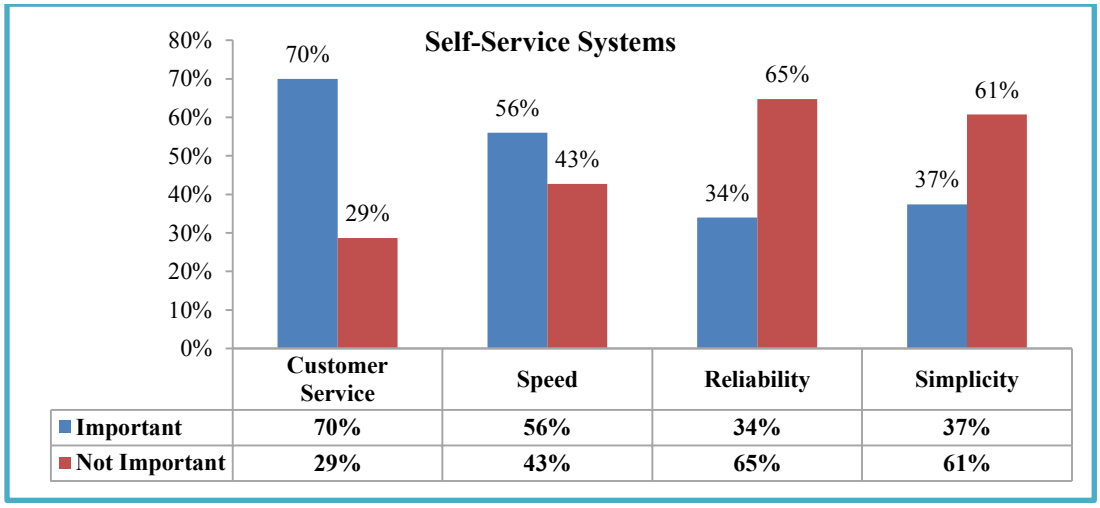


Figure 4.6 illustrates the responses from the respondents when asked to rate their opinions on self-service systems on scale of 1 to 5 ('1= Least Important', '2=Not Important', '3=Important', and '4= Most Important'). The researcher decided to group the responses into two categories; important and not important, where least important and not important are grouped as not important and important and most important are grouped as important.

As illustrated in figure 4.6, most respondents advocate that the most important variables enhanced by self-service systems are customer service and speed. Not surprisingly, most respondents perceive reliability and simplicity as "not important" variables in self-service systems, representing 65% and 61%, respectively. This is evident at the branches as customer queues remain a problem even though self-service systems are available.

4.2.5 Descriptive Statistics

According to Burns and Grove (1993:29), a descriptive study provides an accurate portrayal of characteristics, such as the beliefs, knowledge, abilities, and opinions of particular individuals. This design is used to achieve the objectives of this study, namely, to determine the views of Absa branch staff members with regards to the internal lean-principled service operations.

Table 4.1: Descriptive Statistics

	N	Mean	Std. Deviation	Median	Mode	Skewness	Kurtosis
Customer Education	150	4.23	.984	4.000	4	-1.412	1.756
Catalogued Product	150	4.18	.795	4.000	5	-.985	1.365
Value Adding Process	150	4.09	.897	4.000	5	-1.134	1.616
Customer Experience	150	4.06	.971	4.000	4	-.968	.628
Customer Specifications	150	4.05	1.048	4.500	5	-1.101	.608
Lean & Agile	148	3.97	1.017	4.000	4	-.970	.544
Cycle Time	150	3.94	.892	4.000	4	-.572	-.075
Internal Process	150	3.85	.915	4.000	4	-.503	-.006
Value Stream System	150	3.77	1.124	4.000	4	-.719	-.273
Valid N (listwise)	**148**						
Cronbach's Alpha							
0.860							

Table 4.1 provides the descriptive statistics for the sample of respondents for nine dimensions of a value stream. The results indicate that the average scores for the variables are high, with customer education in particular scoring a large mean of 4.23. As a variable of a value stream, catalogued products or services, and value adding processes also scored the highest mean of 4.18, 4.09, respectively. The total number of the respondents who answered questions on specified variables was 150. The mean for customer education, which measures the central tendency and is the arithmetic mean across the observations is 4.23 and is greater than the mode 4, and median 4, indicating that the distribution is positively skewed. This indicates that on average more than 50% of the sample believes that educating a customer about self-service systems reduce queues at the branches.

The standard deviation measures the spread of a set of observations. The customer education standard deviation value is 0.984; it is closer to 1, which indicates that the distribution of responses was spread out. A negative value of skewness -1.412 indicates the direction where the data is clustered; the respondent's views are clustered towards the upper end and with a long tale to the left (right hand side of the graph). A positive kurtosis value of 1.756, which provides information about the peakedness of distribution, indicates that the respondents' views are clustered in the centre, with long thin tails. The study reveals that the majority of the respondents in the distribution lie towards the upper limit. This means that most respondents believe that educating a customer about self-service systems can reduce queues at the branches. The measure of reliability, Cronbach's Alpha, estimates the proportion of the variance that is consistent in a set of test scores; it shows that, if 'customer education' is deleted, Cronbach's Alpha value will drop from 0.860 to 0.847. This mean that 'customer education' is a valid variable for the study; moreover, the study participants see it as a compulsory attribute.

Catalogued products and services has a mean of 4.8 and standard deviation of 0.795, The arithmetic mean for catalogued product is the second highest, 4.18, which is lower than the mode 5, and greater than the median 4. This indicates that the distribution is positively skewed. A negative value of skewness -0.985 indicates the direction where the data is clustered and shows that the respondents' views are clustered towards the upper end and with a long tale to the left. A positive kurtosis value 1.365 for catalogued products indicates that the respondents' views are clustered in the centre, with long thin tails. The standard deviation value 0.795, which represents the amount of deviation from the mean, is relatively smaller than other standard deviation values, which signals that more accurate future predictions may be made, because there is more variability. If 'catalogued product' was deleted for the variables list, Cronbach's Alpha value would drop from 0.860 to 0.852. This variable has a relatively highest Alpha value, this could mean beyond this item being a valid variable, it is observed as the most important variable.

Looking at the third variable, value adding processes, where respondents were requested to rate the statement that value-added processes can channel the banking focus from servicing the product to servicing the customer, all 150 respondents participated in rating this variable, where the arithmetic mean for value adding processes is 4.09. The arithmetic mean value 4.09 is below the mode value 5, which indicates that the distribution is negatively skewed. In fact, on average, less than 50% ofthe respondents disagreed with the statement, which indicates that value-added processes can somehow channel the bank focus to customer centricity. The measure of reliability, Cronbach's Alpha would drop from 0.860 to 0.843 if

customer centric variable was deleted in variables list. Since this variable shows a lower Cronbach's Alpha value when deleted, it means it is a valid variable for this study.

Customer experience has an arithmetic mean value of 4.06, median of 4 and a mode value of 4. This statistical output indicates that, on average, 50% of respondents believe that self-service systems enhance customer experience in terms of simplicity, and fast and efficient service delivery. Customer education standard deviation value is 0.971; it is closer to 1, which indicates that the distribution of responses was spread out. A skewness negative value of -0.968 also indicates clustering of respondents views at the high end (right hand side of the graph). A positive kurtosis value 0.628 indicates that the respondents' views are clustered in the centre, with long thin tails. Cronbach's Alpha, which measure reliability of data and estimates the proportion of the variance that is consistent in a set of test scores, shows that if 'customer experience' is deleted, Cronbach's Alpha value would decrease from 0.860 to 0.841. This signals that customer experience is a valid variable in this study.

The variable with the lowest mean value 3.77, value stream system, with the mode value 4 and median value of 4, indicates that, on average, less than 50% percent of the respondents did not believe that the value stream system and self-service systems affect customer service. This is supported by the highest standard deviation value of 1.124, which represents the amount of deviation from the mean, which signals that more inaccurate future predictions may be made, because there is more variability. A negative value of skewness -0.985 indicates clustering of respondents' views at the high end (right hand side of the graph). A positive kurtosis value 1.365 indicates that the respondent's views are clustered in the centre, with long thin tails. The measure of reliability, Cronbach's Alpha will drop from 0.860 to 0.846,if 'value stream system' was deleted from the variables list, while if 'cycle time' is deleted, Cronbach's Alpha value would drop to 0.850 and both these variables are valid for the study.

The table shows the overall Cronbach Alpha value is 0.860. Table 4.1, each variable has an alpha value below 0.860, which means, if each of these variables are deleted from the variables list, the Cronbach's Alpha value would drop. Since all values will decrease in Cronbach Alpha if variables are deleted; this means the variables should remain in mix.

4.3 Bivariate Data Analysis

4.3.1 Cross-Tabulations

When hypothesis testing is used in the study, two hypotheses are created, the null hypothesis (H_0)and the alternative hypothesis (H_a),only one of which cannot be rejected. The null hypothesis states that there is no relationship in what was observed. Hypothesis testing can be defined as the process of determining whether to reject the null hypothesis compared with the alternative hypothesis, which states that there is a meaningful difference. The researcher attempts to make decisions about a population based on samples drawn from that population by stating the null hypothesis. If the decision is to reject a null hypothesis while a null hypothesis is true, a Type I error occurs. Alternatively, if the researcher fails to rejects a null hypothesis that is false, a Type II error occurs (Cunningham and Aldrich, 2012:216).

The null hypothesis, H_0: there is no relationship between employment level and "customer centric"

The alternative hypothesis, H_a: there is a relationship between employment level and "customer centric"

Objective 1: To examine the effects of service operational waste reduction practices on productivity enhancement and customer-centric initiatives.

Table 4. 2: Employment level and customer centricity

Waste reduction practices enhance productivity and customer-centric initiatives.			CustomerCentric		
			Yes	No	Total
EmploymentLevel	Management Level	Count	18	0	18
		% within EmploymentLevel	100 %	0.0%	100%
		% within CustomerCentric	13.4%	0.0%	12.2%
		% of Total	12.2%	0.0%	12.2%
	Supervisory Level	Count	28	1	29
		% within EmploymentLevel	96.6%	3.4%	100%
		% within CustomerCentric	20.9%	7.1%	19.6%
		% of Total	18.9%	.7%	19.6%
	General Worker	Count	49	11	60
		% within EmploymentLevel	81.7%	18.3%	100.0%
		% within CustomerCentric	36.6%	78.6%	40.5%
		% of Total	33.1%	7.4%	40.5%
	Consultant	Count	12	0	12
		% within EmploymentLevel	100%	0.0%	100%
		% within CustomerCentric	9%	0.0%	8.1%
		% of Total	8.1%	0.0%	8.1%
	Teller	Count	18	1	19
		% within EmploymentLevel	94.7%	5.3%	100%
		% within CustomerCentric	13.4%	7.1%	12.8%
		% of Total	12.2%	.7%	12.8%
	Other	Count	9	1	10
		% within EmploymentLevel	90%	10%	100%
		% within CustomerCentric	6.7%	7.1%	6.8%
		% of Total	6.1%	.7%	6.8%
Total		Count	134	14	148
		% within EmploymentLevel	90.5%	9.5%	100.0%
		% within CustomerCentric	100%	100%	100%
		% of Total	90.5%	9.5%	100%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.268	5	.068
Likelihood Ratio	12.454	5	.029
Linear-by-Linear Association	.278	1	.598
N of Valid Cases	148		

Just over twelve percent (12.2%) of the respondents at management level and 18.9% at supervisory level believe that waste reduction practices enhance productivity and customer-centric initiatives, of the people at management level, 100% said “yes” for “customer centric” and 0% said “no”. Of the people at supervisory level, 28/29 = 96.6% said “yes” for customer centric and 3.4% said “no”. General workers at Absa branch are called ‘floor marshals’; they engage with all customer queries when customers enter the bank. The study reveals that 49/60 = 81.6% said “yes” for customer centric and 18.4% said “no”. Of the people at a consultant level, 100% said “yes” for customer centric and 0% said “no”, while at a teller level, 18/19= 94.7% said “yes” for customer centric and 5.3% said “no”. These findings are credible as general workers, tellers, and consultants engage with customers on a daily basis and direct customers to either tellers or consultants for service desk transactions.

Overall, 90.5% of the total sample believes that waste reduction practices enhance productivity and customer centric initiatives, with only 9.5% disagreeing. The Chi square test in this case will not be a valid test, because the number of people reporting "no" is too little. Thus, from the above results, the researcher infers that no conclusion can be made regarding the relationship between employment level and "customer centric".

Table 4.3: Experience and customer centricity

			CustomerCentric		
			Yes	No	Total
Experience	Less than 1 year	Count	13	2	15
		% within Experience	86.7%	13.3%	100%
		% within CustomerCentric	9.6%	14.3%	10%
		% of Total	8.7%	1.3%	10%
	1-3 years	Count	31	5	36
		% within Experience	86.1%	13.9%	100%
		% within CustomerCentric	22.8%	35.7%	24%
		% of Total	20.7%	3.3%	24%
	4-6 years	Count	34	4	38
		% within Experience	89.5%	10.5%	100%
		% within CustomerCentric	25%	28.6%	25.3%
		% of Total	22.7%	2.7%	25.3%
	7-10 years	Count	21	1	22
		% within Experience	95.5%	4.5%	100%
		% within CustomerCentric	15.4%	7.1%	14.7%
		% of Total	14.0%	.7%	14.7%
	Over 10 years	Count	37	2	39
		% within Experience	94.9%	5.1%	100%
		% within CustomerCentric	27.2%	14.3%	26%
		% of Total	24.7%	1.3%	26%
Total		Count	136	14	150
		% within Experience	90.7%	9.3%	100%
		% within CustomerCentric	100%	100%	100%
		% of Total	90.7%	9.3%	100%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.641	4	.620
Likelihood Ratio	2.776	4	.596
Linear-by-Linear Association	2.268	1	.132
N of Valid Cases	150		

Table 4.3 depicts the response according to the number of years' experience atAbsa bank. Just over eighty six percent(86.7%) of the respondents with less than a year experience and 86.1% with experience between 1 to 3 years believe that waste reduction practices enhance productivity and customer-centric initiatives, while 13.3% and 13.9% of the respondents, respectively, with less than a threeyear's experience do not believe that waste reduction practices enhance productivity and customer-centric initiatives. It is evident that 22.7% of respondents with 4-6 years of experience advocate that waste reduction practices enhance productivity and customer-centric initiatives, while 2.7% of respondents in the same category disagree. The results from table 4.4 indicate that 14% of the sample with 7-10 years' work experience believes that waste reduction practices enhance productivity and customer-centric initiatives, while 0.7% of those in this category disagree. The majority of

the respondents (24.7%) with more than 10 years' work experience agree that waste reduction practices enhance productivity and customer-centric initiatives, while 1.3% in this category does not concur. Overall, 90.7% of the sample believes that waste reduction practices enhance productivity and customer-centric initiatives, while only 9.5% disagree. At 5% level of significance, the researcher rejects the null hypothesis which states that there is no relationship between experience and customer-centricity. The research results show that 90.7% of the sample indicated that there is a relationship between experience and customer-centric initiatives. Thus from the above results, the researcher infers that there is a relationship between experience and the effect of waste reduction practices on productivity and customer-centric initiatives.

Table 4.4: Waste reduction and Innovative technology

			Innovative Tech		
			Yes	No	Total
Waste Reduction	Yes	Count	118	17	135
		% within Waste Reduction	87.4%	12.6%	100%
		% within Innovative Tech	92.2%	85%	91.2%
		% of Total	79.7%	11.5%	91.2%
	No	Count	10	3	13
		% within Waste Reduction	76.9%	23.1%	100%
		% within Innovative Tech	7.8%	15%	8.8%
		% of Total	6.8%	2.0%	8.8%
Total		Count	128	20	148
		% within Waste Reduction	86.5%	13.5%	100%
		% within Innovative Tech	100%	100%	100%
		% of Total	86.5%	13.5%	100%

Chi- square tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.115	1	.291
Continuity Correction	.399	1	.528
Likelihood Ratio	.967	1	.325
Linear-by-Linear Association	1.108	1	.293
N of Valid Cases	148		

The majority (91.2%) believes that the removal of waste from sophisticated performance systems improves productivity, while only 8.8% of the total sample does not believe this is true. The data reveals that 79.7% of the respondents believe that the removal of waste from sophisticated performance systems improves productivity, while 6.8% disagree. Overall, 86.5% of the total sample believes that the removal of waste from sophisticated performance systems improves productivity, while 13.5% of the total population disagrees. The Chi square test in this case will be a valid test, because the number of respondents reporting "No" is quantifiable.

Theory proves that putting customers first on everything can reduce waste and improve productivity and customer service. Overall, more than 90% of the respondents at management level with more than 10 years' work experience agrees that waste reduction practices enhance productivity and customer-centric initiatives

Objective 2: : To investigate the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer.

Table 4.5: Performance and Customisation

			Customisation		
			Yes	No	Total
Performance	Yes	Count	109	24	133
		% within Performance	82%	18%	100%
		% within Customisation	94.8%	68.6%	88.7%
		% of Total	72.7%	16.0%	88.7%
	No	Count	6	11	17
		% within Performance	35.3%	64.7%	100%
		% within Customisation	5.2%	31.4%	11.3%
		% of Total	4.0%	7.3%	11.3%
Total		Count	115	35	150
		% within Performance	76.7%	23.3%	100%
		% within Customisation	100%	100%	100%
		% of Total	76.7%	23.3%	100%

Chi-Square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.346	1	.000
Continuity Correction	15.830	1	.000
Likelihood Ratio	15.335	1	.000
Linear-by-Linear Association	18.223	1	.000
N of Valid Cases	150		

Table 4.5 shows that out of a total of 150 respondents, 88.7% agree that delivering only what customers want removes waste and improves a bank's performance, while 11.3% disagree. Just over seventy two percent (72.7%) of the respondents said "yes" for "customisation", while 16% said "no". Overall, just over seventy six percent 115/150 = 76.7% of the total population agrees that delivering only what customers want removes waste and improves a bank's performance, while 23.3% disagree. The Chi square test will not be a valid test in this case because the number of respondents reporting "no" is too little. Thus, from the above results, the researcher infers that no conclusion can be made regarding the relationship between performance and customisation. The Chi square test in this case will be a valid test, because the number of respondents reporting "No" is reasonable.

Table 4.6: Experience and multi-skilling

Multi-skilling of staff members ensures consistency in customer service.			Multiskilling		
			Yes	No	Total
Experience	Less than 1 year	Count	15	0	15
		% within Experience	100%	0.0%	100%
		% within Multiskilling	10.1%	0.0%	10%
		% of Total	10.0%	0.0%	10%
	1-3 years	Count	36	0	36
		% within Experience	100%	0.0%	100%
		% within Multiskilling	24.3%	0.0%	24%
		% of Total	24%	0.0%	24%
	4-6 years	Count	37	1	38
		% within Experience	97.4%	2.6%	100%
		% within Multiskilling	25%	50%	25.3%
		% of Total	24.7%	.7%	25.3%
	7-10 years	Count	22	0	22
		% within Experience	100%	0.0%	100%
		% within Multiskilling	14.9%	0.0%	14.7%
		% of Total	14.7%	0.0%	14.7%
	Over 10 years	Count	38	1	39
		% within Experience	97.4%	2.6%	100%
		% within Multiskilling	25.7%	50%	26%
		% of Total	25.3%	.7%	26%
Total		Count	148	2	150
		% within Experience	98.7%	1.3%	100%
		% within Multiskilling	100%	100%	100%
		% of Total	98.7%	1.3%	100%

N=150

Table 4.6 depicts the proportion of respondents and the corresponding years of work experience at Absa Bank. Of the people with less than one year experience and less than three years' experience, 100% said "yes" for multi-skilling and 0% said "no", while respondents with 4 to 6 years' experience, 24.7% said "yes" and 7% said "no" for multiskilling. Just over fourteen percent (14.7%) of the respondents with 7 to 10 years' experience and 25.3% with over 10 years' experience believes that multi-skilling of staff members ensures consistency in customer service. This is interesting as these respondents are more likely to understand the dynamics of the bank.

Overall, 98.7% of the sample of respondents with different levels of experience believe that multi-skilling of staff members ensures consistency in customer service, while only 1.3% disagree. The Chi square test in this case will not be a valid test, because the number of respondents reporting "no" is too little. Thus, the researcher infers that no conclusion can be made regarding relationship between experience and multi-skilling.

Objective 3: To explore the correlation between the value-stream system and serving customers and the influence of self-service systems on delivery channels.

Table 4.7: Reliability and Turn-around time

			Not Important	Important	
Turnaround time	Yes	Count	94	49	143
		% within Turnaround time	65.8%	34.3%	100%
		% within Reliability	96.8%	95.7%	96.6%
		% of Total	63.6%	43.1%	96.6%
	No	Count	3	2	5
		% within Turnaround time	60%	40%	100%
		% within Reliability	6.3%	8.6%	3.4%
		% of Total	2.1%	1.4%	3.4%
Total		Count	97	51	148
		% within Turnaround time	65.6%	34.5%	100%
		% within Reliability	100%	100%	100%
		% of Total	65.5%	34.5%	100%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.768	3	.857
Likelihood Ratio	.773	3	.856
Linear-by-Linear Association	.399	1	.528
N of Valid Cases	148		

$H_0$1: There is no relationship between the importance of reliability and service turn-around time.

H_a1: There is a relationship between the importance of reliability and service turn-around time.

The results show that just over sixty three percent (63.6%) of the respondents believe that self-service systems do not improve consistency in service provision, while 43.1% believes that they do. It is evident that the majority of the respondents (96.6%) said "yes" that self-service systems do not improve consistent service provision. Overall, 97/148 = 65.5% of the sample believes that self-service systems do not improve consistency, while51/148 = 34.5% believe it does improve consistency. The Chi square test in this case will be a valid test, because the number of respondents reporting "not important" is large. Thus, the researcher can infer, at 5% level of significance, that the study fails to rejects the null hypothesis which states that there is no relationship between reliability and turn-around time.

Table 4.8: Self-service systems simplicity and Queue Reduction

Self-service systems facilitate simplicity in using banking services and help to reduce queues.			Not Important	Important	Total
Queue Reduction	Yes	Count	91	25	146
		% within Queue Reduction	62.3%	37.7%	100%
		% within Simplicity	97.8%	96.8%	98.6%
		% of Total	61.5%	37.2%	98.6%
	No	Count	1	1	2
		% within Queue Reduction	50%	50%	100%
		% within Simplicity	2.2%	3.2%	1.4%
		% of Total	0.7%	0.7%	1.4%
Total		Count	92	56	148
		% within Queue Reduction	62.2%	37.8%	100%
		% within Simplicity	100%	100%	100%
		% of Total	62.2%	37.8%	100%

$H_0$2: There is no relationship between importance of simplicity and queue reduction
H_a2: There is a relationship between importance of simplicity and queue reduction

Just over sixty one percent (61.5%) of the respondents and 0.7% believes that self-service systems do not facilitate simplicity in using banking services, hence the long queues witnessed at the branches, while only 37.2% said "self-service systems facilitates simplicity". Overall, 62.2% of the sample disagrees that self-service systems facilitate simplicity in using banking services and help to reduce long queues at Absa branches, while 37.8% said "important". The sig. value 0.568 (chi-square table) is greater than significance level 0.05 and indicates that there is no significant relationship between simplicity and queue reduction. At 95% confidence level, the study fails to rejects the null hypothesis which states that there is no relationship between simplicity and queue reduction. The researcher can infer that, the self-service system does not facilitate simplicity in using banking services; thus self-service systems do not help to reduce long queues at Absa branches.

Table 4.9: Gender and Speed of service provision

			Not Important	Important	Total
Gender	Male	Count	28	39	67
		% within Gender	41.7%	58.2%	100%
		% within Speed	81.7%	95.9%	45.3%
		% of Total	18.9%	26.3%	45.3%
	Female	Count	36	45	81
		% within Gender	44.4%	55.6%	100%
		% within Speed	59.1%	52.0%	54.7%
		% of Total	14.3%	30.4%	54.7%
Total		Count	64	84	148
		% within Gender	43.2%	56.8%	100%
		% within Speed	100%	100%	100%
		% of Total	43.2%	56.8%	100%

$H_0$3: There is no relationship between gender perception and speed of service provision
H_a3: There is a relationship between gender perception and speed of service provision.

The results indicate that among male respondents who constituted 45.3%,just over twenty six percent (26.4%)believes that self-service systems elevate the speed of service provision at Absa branches, while 18.9% disagrees. On the other hand, most female respondents (30.4%)believe that, self-service systems elevate the speed of service provision at Absa, while 14.3% disagree, thus long queues are witnessed at Absa branches. Overall, 84/148 = 56.8% of the sample believes that self-service systems elevate the speed of service provision, while 64/148 = 43.2% disagree. The Chi square test in this case will not be a valid test, given the minimum number of respondents who reported "not important".

Objective three is achieved as the tested hypothesis reveals that value stream systems or electronic self-service systems do not improve consistency, do not facilitate simplicity in using banking services, hence long queues at the branches which translate into poor customer experience.

Objective 4: To evaluate the extent to which internal lean-principled service operation processes influence continuous retail banking performance outcomes in terms of increased business performance velocity.

Table 4.10: Employment level and System Flow

			SystemFlow		
			Yes	No	Total
EmploymentLevel	Management Level	Count	18	0	18
		% within EmploymentLevel	100%	0.0%	100 %
		% within SystemFlow	12.9%	0.0%	12.2%
		% of Total	12.2%	0.0%	12.2%
	Supervisory Level	Count	28	1	29
		% within EmploymentLevel	96.6%	3.4%	100%
		% within SystemFlow	20%	12.5%	19.6%
		% of Total	18.9%	.7%	19.6%
	General Worker	Count	54	6	60
		% within EmploymentLevel	90%	10%	100%
		% within SystemFlow	38.6%	75%	40.5%
		% of Total	36.5%	4.1%	40.5%
	Consultant	Count	12	0	12
		% within EmploymentLevel	100%	0.0%	100%
		% within SystemFlow	8.6%	0.0%	8.1%
		% of Total	8.1%	0.0%	8.1%
	Teller	Count	18	1	19
		% within EmploymentLevel	94.7%	5.3%	100%
		% within SystemFlow	12.9%	12.5%	12.8%
		% of Total	12.2%	.7%	12.8%
	Other	Count	10	0	10
		% within EmploymentLevel	100%	0.0%	100%
		% within SystemFlow	7.1%	0.0%	6.8%
		% of Total	6.8%	0.0%	6.8%
Total		Count	140	8	148
		% within EmploymentLevel	94.6%	5.4%	100%
		% within SystemFlow	100%	100%	100%
		% of Total	94.6%	5.4%	100%

Table 4.10 shows that 100% of respondents at management level and 0% said “no”. Just over eighteen percent 28/29 =18.9% of the respondents at supervisory level said “yes” for “system flow”, while 0.7% said “no”. The study shows that54/60 = 36.5% of the people at general worker level said “yes” for “system flow” and 100% of the respondents at consultant level also said “yes” for “system flow”, while 4.1% at general worker said “no”. At teller level,18/19 = 12.2% of the respondents in the sample and 6.8% in the ‘other’ level category said “yes” for “system flow”, while 0.7% at teller level said “no”.

The main aim of this objective was to evaluate the influence of the internal lean-principled service operation processes on continuous retail banking performance. Overall, 140/148 = 94.6% of the sample believes that the smooth flow of the system results in fast service to customers, while only 5.4% disagree. The Chi square test will not be a valid test to use in this case, because the number of respondents who answered "no" is too little.

Table 4.11: Experience and System Flow

			System Flow		
			Yes	No	Total
Experience	Less than 1 year	Count	15	0	15
		% within Experience	100%	0.0%	100%
		% within System Flow	10.6%	0.0%	10%
		% of Total	10%	0.0%	10%
	1-3 years	Count	32	4	36
		% within Experience	88.9%	11.1%	100%
		% within System Flow	22.5%	50.0%	24%
		% of Total	21.3%	2.7%	24%
	4-6 years	Count	35	3	38
		% within Experience	92.1%	7.9%	100%
		% within System Flow	24.6%	37.5%	25.3%
		% of Total	23.3%	2.0%	25.3%
	7-10 years	Count	21	1	22
		% within Experience	95.5%	4.5%	100%
		% within System Flow	14.8%	12.5%	14.7%
		% of Total	14%	.7%	14.7%
	Over 10 years	Count	39	0	39
		% within Experience	100%	0.0%	100%
		% within System Flow	27.5%	0.0%	26%
		% of Total	26%	0.0%	26%
Total		Count	142	8	150
		% within Experience	94.7%	5.3%	100%
		% within System Flow	100%	100%	100%
		% of Total	94.7%	5.3%	100%

Table 4.11 illustrates the proportion of respondents and the corresponding years of experience atAbsaBank. Only 10% of the respondents with less than a year's experience believe that the smooth flow of the system results in fast service to customers at Absa branches.

In the total sample of 24% of the respondents with work experience of 1-3 years, 21.3% agree that the smooth flow of the system results in fast service to customers, while only 2.7% disagree. It is evident that 23.3% of respondents with 4-6 years experience feel that the smooth flow of the system results in fast service to customers, while 0.2% of those with 4-6 years of experience did not believe that the smooth flow of the system results in fast service to customers. Table 4.11 indicates that 14% of the sample with 7-10 years work experience believes that the smooth flow of the system results in fast service to customers, while 10% disagree. This is interesting as these respondents have spent more than seven years working at the bank and thus understand most of the banking systems.

The majority of respondents (26%) with more than 10 years experience believe that the smooth flow of the system results in fast service to customers at Absa branches. These are interesting and credible results from those who have a substantial amount of experience at the bank; they understand the processes and banking systems and their effect on customer service. Overall, 94.7% of the sample believes that the smooth flow of the system results in fast service to customers, while only 5.3% disagrees. Thus from the above results, the researcher infers that there is a relationship between experience and that the smooth flow of the system results in fast service to customers.

4.3.2 Pearson's and Spearman's correlation

Table 4.12: Pearson's Correlation: Value Stream System and Customer experience

		Value Stream System	Customer Experience
Value Stream System	Pearson Correlation	1	.326**
	Sig. (2-tailed)		.000
	N	150	150
Customer Experience	Pearson Correlation	.326**	1
	Sig. (2-tailed)	.000	
	N	150	150

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

The Pearson correlation statistic indicates the strength of the relationship. The relationship between value stream system and customer experience was investigated using the Pearson product-moment correlation coefficient. It is conventional that if p-value is less than .05, then the correlation is considered to be significant (Cooper and Schindler, 2008). This study indicates that the *p*-value (0.000) is less than the p-value (0.05); the researcher infers that there is a significant correlation between value stream systems and customer experience. The study also indicates Pearson (*r*) value of 0.326; this signals that there is a strong positive significance correlation between value stream system and customer experience. In other words, as value stream systems increase, customer experience also increases. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There is a moderate, positive correlation between the two variables [$r= 0.326, n=150, p<0.005$].

Since the p-value (0.01) <0.01, the study reveals that there is no relationship between value stream systems and customer experience. This indicates that the value stream system and

self-service systems affect customer service and enhance customer experience in terms of simplicity, and fast and efficient service delivery.

Table 4.13: Spearman's Correlation: Value Stream system and Self-service

			Self Service (Customer Service)	Speed	Reliability	Simplicity
Spearman's rho	Value Stream System	Correlation Coefficient	-.146	.108	.032	.001
		Sig. (2-tailed)	.076	.191	.697	.988
		N	148	148	148	148

A Spearman's rho indicates the direction and the strength of the relationship between value stream system and customer service, speed, reliability, and simplicity. Table 4.13 shows a statistically significant negative relationship between value stream system and self-service system; the strength is (r = -.146, p = .076), therefore the study fails to reject the null hypothesis (H_0) which states that there is no relationship between value stream systems and self-service (customer service) since a *p*-value (.076) is greater than a significant level (0.01). Table 4.13 also indicates that there is a statistically insignificant positive relationship between value stream systems and speed; the strength is ((r= .108, p = .191); since a *p*-value 0.191 is greater that a significant level 0.01, the study fails to reject the null hypothesis (H_0) which states that there is no relationship between value stream systems and speed. Value stream and reliability have a statistically insignificant positive relationship. The strength is ((r = .032, p = .697); the study fails to reject the null hypothesis (H_0) which states that, there is no relationship between value stream systems and reliability, since the *p*-value 0.032 is greater than a significant level (0.01). Value stream and simplicity also have a statistically insignificant positive relationship; the strength is ((r= 001, p = .988). The *p*-value 0.988 is greater than a significant level (0.01); the study fails to reject the null hypothesis (H_0) which states that there is no relationship between value stream systems and simplicity.

Table 4.13 indicates that, in terms of self-service attributes, which are improved customer service, elevated speed, improved consistency, and facilitating simplicity; only improved customer service demonstrates a statistically significant relationship on value stream systems p = .076. In as much as the other attributes have a favourable impact on value stream, their contribution is statistically not significant.

4.4 Correlations

The purpose of regression models is to determine how well variables can explain the variation of the dependant variable. Pearson's correlation also measures the relationship between two or more variables. It should be noted that Pearson's correlation only indicates the strength and direction of the relationship between two variables and fails to show which variable contributes significantly to predicting the dependent variable.

Table 4.14: Correlation

		IP	L&A	VAP	VSS.	CE	CT	CE	CS	CP
Pearson Correlation	IP	1.000	.446	.556	.582	.440	.583	.252	.260	.332
	L&A	.446	1.000	.523	.564	.433	.395	.283	.256	.249
	VAP	.556	.523	1.000	.455	.446	.506	.321	.247	.369
	VSS	.582	.564	.455	1.000	.341	.376	.32	.164	.266
	CE	.440	.433	.446	.341	1.000	.4102	.567	.415	.416
	CT	.583	.395	.506	.376	.402	1.000	.418	.438	.418
	C E	.252	.283	.321	.321	.567	.418	1.000	.655	.583
	CS	.260	.256	.247	.164	.415	.438	.655	1.000	.550
	CP	.332	.249	.369	.266	.416	.418	.583	.550	1.000
Sig. (1-tailed)	IP	.	.000	.000	.000	.000	.000	.001	.001	.000
	L&A	.000	.	.000	.000	.000	.000	.000	.001	.001
	VAP	.000	.000	.	.000	.000	.000	.000	.001	.000
	VSS	.000	.000	.000	.	.000	.000	.000	.023	.001
	CE	.000	.000	.000	.000	.	.000	.000	.000	.000
	CT	.000	.000	.000	.000	.000	.	.000	.000	.000
	C E	.001	.000	.000	.000	.000	.000	.	.000	.000
	CS	.001	.001	.001	.023	.000	.000	.000	.	.000
	CP	.000	.001	.000	.001	.000	.000	.000	.000	.

Explanation of abbreviation:

IP =Internal Process; L&A=Lean & Agile; VAP=Value Adding Processes; VSS=Value Stream Systems; CE=Customer Experience; CT=Cycle Time; CE=Customer Education; CS=Customer Specifications and CP=Catalogued Products

Pearson correlation measures the magnitude and direction of the linear association. This is carried out by looking at Pearson coefficient which classifies relationships as per the correlation value. Cooper and Schindler, (2008) state that a variable with a correlation value of greater than 0.7 is considered to have a strong positive relationship; variables with correlation value between 0.4 and 0.6 are considered to have moderate relationships. All variables with the correlation value between 0.3 and 0.1 are considered to have a weak relationship. This study reveals correlation matrix to predict the relationship between all

possible pairs of variables using significance level of alpha = 0.05. The significance level shows how possible it is that the correlations reported may be due to chance in the random sampling error. A correlation matrix provides details of acceptable positive correlation values between each pair of variables with significance less than 0.05 It is evident that there are no strong correlations (between 0.3 to 0.5) between the dependent and the independent variables.

4.5 Multivariate Analysis

Table 4.15: Factor Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy					**.819**
Bartlett's Test of Sphericity			**Approx. Chi-square**		**564.684**
Df					**36**
			Sig.		**.000**
	Rotated Component Matrix				
	1	2	% of Variance	Mean	Std Deviation
Factor 1: Internal Lean Process Engineering					
Internal Process	.802		47.830	3.85	.921
Value stream System	.792			3.76	1.127
Lean & Agile	.755			3.97	1.017
Value Adding Process	.746			4.08	.900
Cycle Time	.580*			3.93	.893
Factor 2: Customer Centricity					
Customer Experience		.855	15.843	4.05	.974
Customer Specification		.854		4.05	1.052
Catalogue Product		.766		4.18	.797
Customer Education		.571*		4.22	.989
*= Rounded off to .60; Total Variance explained = 63.673					

Factor analysis is mainly utilised to reduce the sum of items to manageable factors. Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity are statistical measures that help to determine the factorability of the data and sampling adequacy. The Bartlett's test of Sphericity validates the assumption of homogeneity of variance. The Bartlett's test depicts a significant *p*-value (0.000) at 95% level of significance. This significance of Bartlett's test verifies that there is correlation between the variables and thus fail to reject the alternate hypothesis and reject the null hypothesis. This indicates that the data matrix has satisfactory correlation of factor analysis.

The score of 0.819 presented by Kaiser-Meyer-Olkin (KMO) depicts the strength of the other variables in explaining the correlation between potential factors, thus the KMO values are good. Pallant (2010) states that, the data set is considered suitable if it is above .60. In this factor analysis, the KMO (.819) and Bartlett's test of sphericity (564.68) scores are suitable at degree of freedom (36).

To extract factors, component analysis was employed, and for clarification, the varimax rotation method was utilised. Varimax rotation searches for values of the loadings that bring the total communality prediction closer to the total of the observed variances. The varimax method advocates the discovery of factors, each of which is related to few variables while rejecting the discovery of factors manipulating all variables. Garson, (2012) and Costello and Osborne (2005) state that, the intention is to search for the rotated loadings that exploit the variance of the squared loadings for each, with the intention of converting some of these loadings to be larger, and the other variables to be smaller in absolute value. A varimax solution yields results which simplify the identification of each variable with a single factor as an orthogonal rotation of the factor axes.

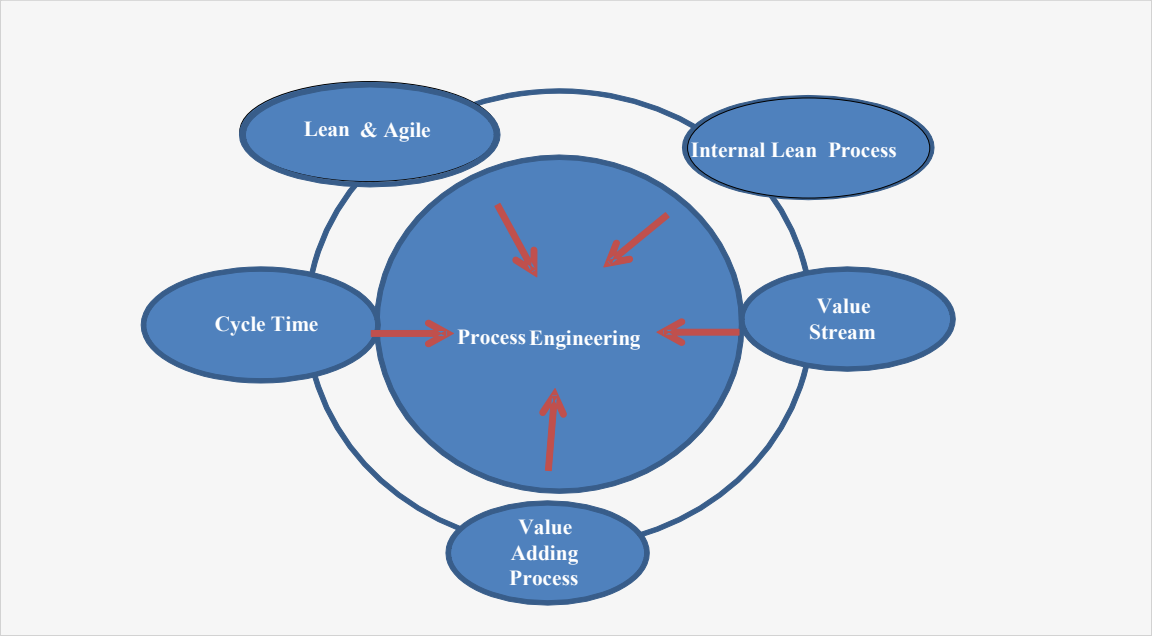
The factor extraction procedure has the ultimate intention of reducing the complexity of the factors by stating the factor loadings in a more clear, understandable and interpretable manner. Hatcher (1994:21) states that, "principle components analysis converts a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components". According to Garson (2012) the loadings of likert scales with 0.60 may be considered as "high". All the items loading equal or greater than 0.60 were selected for factor loading after rounding off items between .59 to provide 0.60 requirements. All the values with lower correlation (<58) from SPSS output were removed as they were meaningful.

4.5.1 Interpretation and labelling of factors

According to Costello and Osborne (2005:3), the intention of rotation is to simplify and explain the data structure. This study employs factor loadings as the basis for imputing a label to the different factors wherein the researcher examines the most highly or heavily loaded indicators in each column and assigns a factor label. The factor interpretations and labels are confined to the assumption of face valid imputation of factor label (face validity) that is rooted in theory.

Factor 1: Process Engineering

Figure 4.7: Process Engineering



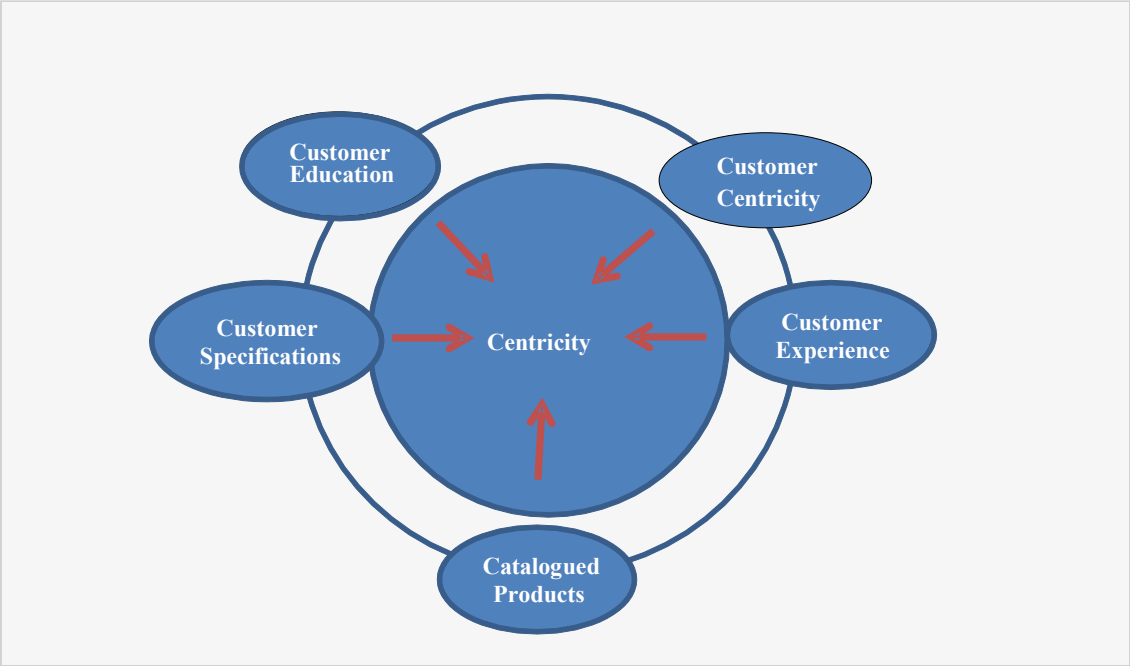
Source: Designed by the researcher from empirical findings

Factor 1, noticeably, demonstrates the greatest variable loadings of the five extracted factors. Therefore, the loadings of five out of nine variables have the highest variance figure of 47.830%. This critical factor encompasses internal processes, value stream process, lean and agile and value adding processes. These five items encourage an organisation to reduce waste by instituting process engineering based on value stream, meaning that lean processes will enhance flexibility through agile. Thus they are appropriately interpreted as Process Engineering.

When processes are engineered and optimised to deliver customer demands, it will be easier for the bank staff to respond quickly to the customers within a short period of time. The bank needs to simplify internal processes in order to allow flexibility in terms of staff functions and duties. Put simply, optimised processes will lead to consistency, simplicity, and reliability in customer service provision. The overall performance of the business will be directly affected by process engineering, hence the bank needs to review and optimise its processes.

Factor 2: Centricity

Figure 4.8: Centricity



Source: Designed by the researcher from empirical findings

The loadings of five out of nine variables have the highest variance figure of 15.843%. These factors are related to customer-centric, and are hence interpreted as *Centricity*. If customers are educated about banking services and products, they can specify the services that add value to them; hence customer experience will be improved.

The context of centricity, in simple terms, focuses on prioritising customers in every decision that the bank makes. This will give customers a sense of belonging and involvement. To afford customers with some flexibility, customer education initiatives must be undertaken in order to enable customers to choose their specific services from the products or services catalogue, hence customer experience will be improved.

The study reveals that when discussing lean at a bank, there are two important sets of elements, namely, process engineering and centricity. Process engineering encompasses cycle time, the value stream process, lean and agile and value adding processes. The second element, Centricity, includes customer experience, customer centricity, customer specifications, customer education and catalogued products.

Table 4.16: Statistics on Mode, ANOVA, Coefficients, diagnostics and Residuals

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.583[a]	.340	.335	.751	.340	75.135	1	146	.000	
2	.702[b]	.493	.486	.660	.153	43.827	1	145	.000	
3	.726[c]	.527	.517	.640	.034	10.260		144	.002	1.916

a. Predictors: (Constant), CycleTime, b. Predictors: (Constant), CycleTime, Value Stream System, c. Predictors: (Constant), CycleTime, Value Stream System, ValueAddingProc, d. Dependent Variable: InternalProcess

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.380	1	42.380	75.135	.000
	Residual	82.350	146	.564		
	Total	124.730	147			
2	Regression	61.493	2	30.747	70.502	.000
	Residual	63.236	145	.436		
	Total	124.730	147			
3	Regression	61.699	3	21.900	53.423	.000
	Residual	59.030	144	.410		
	Total	124.730	147			

a. Dependent Variable: Internal Process; b. Predictors: (Constant), Cycle Time; c. Predictors: (Constant), Cycle Time, Value Stream System d. Predictors: (Constant), Cycle Time, Value Stream System, Value Adding Proc

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.488	.280		5.322	.000	.935	2.040					
	CycleTime	.601	.069	.583	8.668	.000	.464	.738	.583	.583	.583	1.000	1.000
2	(Constant)	.832	.265		3.141	.002	.309	1.356					
	CycleTime	.437	.066	.424	6.646	.000	.307	.567	.583	.483	.393	.859	1.165
	Value Stream System	.345	.052	.422	6.620	.000	.242	.448	.582	.482	.391	.859	1.165
3	(Constant)	0.461	0.282		1.634	0.104	-0.97	1.018					
	Cycle Time	0.346	0.07	0.336	4.964	0	0.209	0.484	0.83	0.382	0.285	0.717	1.394
	ValueStream System	0.288	0.054	0.353	5.381	0	0.182	0.394	0.82	0.409	0.309	0.764	1.308
	Value Adding Proc	0.231	0.072	0.226	3.203	0.002	0.088	0.374	0.556	0.258	0/184	0.663	1.51

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Mahal. Distance	.095	23.689	2.954	3.475	150
Cook's Distance	.000	.148	.009	.022	150
Centered Leverage Value	.001	.161	.020	.024	150

Table 4.16 reveals that the model that included only cycle time accounted for 34% of the variance (adjusted $R^2 = 0.335$) while the second model included value stream system with an additional 15% of the variance being explained and accounted for 48% of the variance (adjusted $R^2 = 0.486$). The third model included the value adding process and accounted for 51% of the variance (adjusted $R^2 = 0.517$).

The study reveals R square is 0.527, adjusted $R^2 = 0.517$, $F = 53.423$ with degree of freedom (3; 53) at significance level, $p < 0.05$. All t-statistics for the coefficients are significant at $p < 0.05$. The final model emerged from the stepwise analysis with only three predictor variables showing significance in this model. According to Garson (2012), the relationship between criterion and predictor variables is explained by only 52.7% of the variance in internal processes and the three dimensions, cycle time ($\beta = 0.583$, $p < 0.05$) , value stream systems ($\beta = 0.424$, $p < 0.05$) and value adding processes ($\beta = 0.226$) were found to be considerably and statistically related with internal processes. In testing for autocorrelation with the value of Durbin-Watson, "ranges from 0 to 4, values close to 0 indicate extreme positive autocorrelation" (standard errors of the B coefficients are too small); close to 4 indicate extreme negative autocorrelation (standard errors are too large); and close to 2 indicate no serial autocorrelation

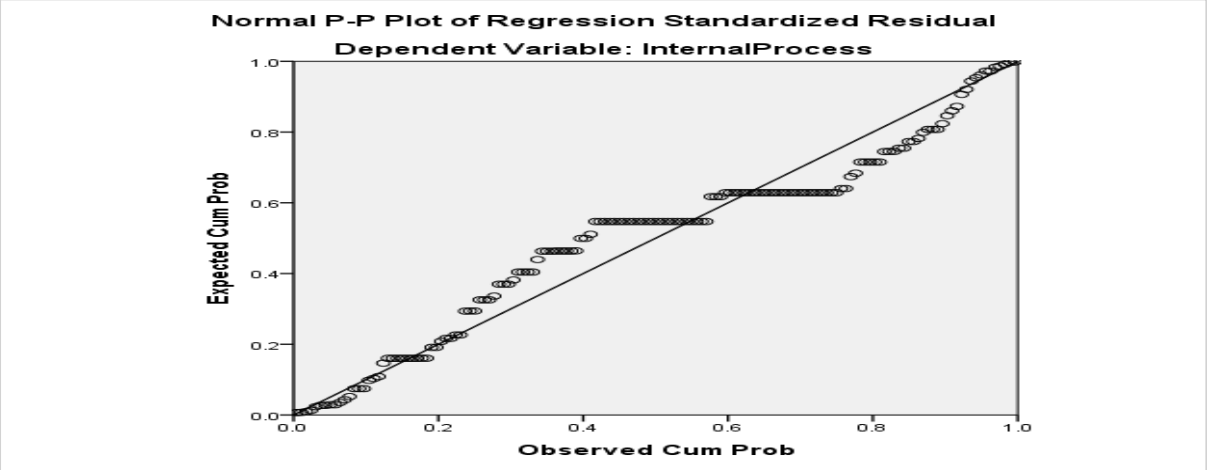
In this study, there is no autocorrelation problem; the variance inflation factors (VIF) are equal to 1 (or VIF $\leq$ 10), and tolerance scores are greater than 0.20 or 0.10. Nonetheless a tolerance value of 0.50 or higher is generally accepted, and the higher the tolerance value, the more useful the predictor is to the analysis as defined by $1 - R^2$ (Tabachnich and Fidell, 2007). Schroeder *et al.,* (1986) state that, the Durbin-Watson value is utilised to determine the degree of autocorrelation, and "this value should be within the range of 1.5 and 2.5 acceptable to show independence of observations". The statistic tests the presence of serial correlation among the residuals and the value of Durbin-Watson statistic ranges from 0 to 4. Model 3 shows the value (1.916) between 1.5 and 2.5, consistent with the ideal range of values with no problems related to autocorrelation.

4.5.2 Residuals Statistics

According to Baum, (2006); Stock and Watson, (2008), Cook's Distance measures the influence of an observation to the overall model ($D > 1$ illustrates a big outlier problem, that is, $D > 4/N \rightarrow$ sample size). This study reveals Cook's D for observations without outliers (min = 0.000 and max = 0.148) with value of D less than 1; which suggests that it does not have large effect on the regression analysis. According to Hamilton (2006:175), leverage determines the power of an observation on regression coefficients. A rule of thumb is that leverage goes from 0 to 1 while a value closer to 1 or 0.5 may indicate problems. Alternatively a leverage value greater than 3p/n should be carefully inspected as a useful rule of thumb for quickly identifying subjects which are very different from the rest of the sample on the set of predictors (Stevens, 2002). This study reveals accepted hat elements that lie between 0 (no influence on the model) and 1 (min = 0.001 and max = 0.0161).

Baum (2006); Hamilton, (2006) state that, Mahalanobis distance is the rescaled measure of leverage [m = leverage x (N-1)], and that higher levels indicate higher distance from average values. Mahalanobis distance is the distance measured by P.C. Mahalanobis as an essential correlation between variables by means of which different patterns can be identified and analysed (Mahalanobis, 1936: 49-55). It is associated with those points whose Cook distance are > 1 (Tabachnick and Fidell, 2007) to establish outliers which are influential data points (Cook values have min = 0.000 and max = 0.148, less than 1 and no effect on the regression analysis). The higher the Mahalanobis distance for a case, the more that case's values on independent variables diverge from average values.

Figure 4.9: Normal probability plot of Residuals on Internal Processes and predictor variables



The normal P-P scheme authenticates the assumption that the residuals trail a normal distribution. The sloping line symbolises the line of anticipated values and the points which overlaps with line represent actual values. Figure 4.9 illustrates the normal plot of the residuals with points close to a diagonal line. In a normal P-P plot, points cluster around the straight diagonal line from the left to the top right; this means that residuals are normally distributed, thus the assumption for multiple regression analysis is met by the variables.

The distribution of the error term is independent of the joint distribution of $x_i, x_2, \ldots, x_p$. The indefinite parameters $\beta_0, \beta_1, \beta_2, \ldots, \beta_p$ are constants. In general, predictive models (eight models) of internal processes are derived by multiple regression analysis of unstandardised coefficients using the stepwise procedure for 30 possible explanatory variables as follows: (Y = Internal Process – IP from Model 1 to 8). The researcher infers that residuals have a normal distribution.

Table 4.17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.446[a]	.199	.194	.827	1.960
2	.585[a]	.343	.334	.752	
3	.668[a]	.446	.435	.692	
4	.685[a]	.469	.454	.680	
5	.733[a]	.537	.520	.638	
6	.747[a]	.558	.539	.625	
7	.749[a]	.561	.539	.625	
8	.750[a]	.563	.538	.626	

IP=0.39 **-** 0.039 lean & agile + 0.194 Value Adding Process + 0.308 Value Stream System + 0.187Customer Education + 0.338 Cycle Time - 0.234 Customer experience + 0.053 Customer Specifications + 0.066 Catalogued Products **$R^2 = 0.563$**

It should be noted that, as the number of independent variables increases, R^2 value also increases. Therefore, in a multiple regression model, R^2 can be misleading as it is directly affected by how many variables the model contains. Therefore, adjusted R^2 is used as it takes into consideration the number of variables used and how the model fits the sample instead of R^2, hence the adjusted $R^2 = 0.533$ in table 4.5 has a better degree of explanatory power.

It is evident that as the number of independent variables, increase R^2 value also increases (Pallant, 2009). It should be noted that R^2 may result in incorrect decisions being made as its only captures how well the model fits the data, not the number of variables included in the model. Therefore adjusted R-squared is used, which takes into consideration both the number of variables used and how well the model fits the sample data. The adjusted R squared value shows that the model accounts for 19.4% of the variance in the internal processes. The model is able to explain 55.8% (table 4.17) of the variation in lean and agile, value adding processes, value stream systems, customer education, cycle time, customer experience, customer specifications, and catalogued products.

4.6 Conclusion

This chapter presented the results of the analysis including the biographic data. The analysis made use of frequency, Pearson's correlation, Spearman's correlation, descriptive statistics, multiple regressions, and ANOVA analysis. The results revealed that there was statistically positive correlation between the independent variables of lean and agile, value adding processes, customer education, cycle time, customer experience, customer specifications and catalogued products and the dependant variable, internal processes. The autocorrelation

assumption was not violated and statistical explanations explained it. Chapter five present the interpretation of the results, conclusions and recommendations for future studies.
The final model reveals that the products catalogued must be made available for customers to choose services from. In other words, the pull approach must be adopted by the bank where the whole process is initiated by the customer rather than services being pushed to them.

The majority of respondents believes that waste reduction practices does enhance productivity and customer centricity, while internal –lean principles can influence the bank performance at the branch level in terms of speed in customer service provision. Factor analysis (Table 4.15) revealed interesting results, where customer education and cycle time were two key variables within branch environment. This is in line with Figure 2.5, which shows that cycle time (from the time the customer request a service until a service get delivered to the customer) is very important. Another view presented by Figure 2.5 which is a bit obvious, is the bank and its customers meets through banking services. As shown in Figure 4.6, the study reveals that self-service systems do not afford customers simple, reliable and fast banking service.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

Chapter four presented and analysed the data collected from the respondents using diagrams, tables, and statistical descriptions. This study was a descriptive study with a quantitative methodology. The primary goal of the study was to determine whether implementing Lean manufacturing principles in service organisations can improve banks' internal processes. This chapter discusses the results presented in chapter four in conjunction with the literature. The chapter summarises the findings, provides an interpretation of the findings and discusses their context and implications. It also outlines the limitations of the study and provides recommendations for future research.

5.2 Biographical data

All Absa branch staff members who received questionnaires, 150 (100%) returned completed questionnaires. Most of the respondents (55%) were females and 45% were males; this demonstrates the dominance of female at Gauteng Absa branches. Overall, 40% of the respondents were general workers at the branch, 19% were branch supervisors, 13% were tellers, 12% were branch managers, and 8% were branch consultants, while 7% were other branch staff members. In terms of years of experience, 26% of the respondents have more than ten years' experience, 25% have four to six years' experience, 24% have one to three years' experience, and 15% have between seven and ten years' experience, while 10% have less than a year's experience.

5.3 Summary of findings

5.3.1 Objective 1: To examine the effects of service operational waste reduction practices on productivity enhancement and customer-centric initiatives.

In addressing this objective, different variables were examined to determine the effect of waste reduction practices on enhancing productivity and customer-centric initiatives. Employment level is among the variables utilised to determine the relationship between level of authority and the understanding of waste reduction practices. It was also used to determine the level of experience of the respondents. Longer experience might have afforded the respondents more opportunities to be involved in different projects and workshops that have to do with waste reduction.

Chibaira and Hattingh, (2013:6) note that lean methodology aspires to streamline processes and workflow to enhance an organisation's performance while satisfying the customer and eliminating waste. This is confirmed by the results generated in cross-tabulation between experience and customer-centric initiatives, where 90.7% of the sample indicated that there is a relationship between experience and customer-centric initiatives. Hence, if waste reduction practices are adopted by Absa, productivity will be enhanced and customer-centric initiatives would be established. The findings of the study also reveal that more than 90% of the respondents at different levels of employment at Absa advocate that, the adoption of lean can be used to enhance productivity and customer-centric initiatives. These findings are supported by the literature; Ho and Lin, (2009) state that, the quality of human capital and organisational knowledge accumulation positively persuade the adoption of lean innovative initiatives. This is an indication that service operational waste reduction practices can enhance productivity and customer-centric initiatives, thus this objective is achieved.

The literature notes, that, integrated and customer-focused activities help transform a bank into a high-performance channel with better trained, more motivated and productive employees and improved employee retention (IBM, 2005). The descriptive statistics demonstrated this with customer education mean score being the highest from all other variables. This suggests that if the Absa can integrate its activities to customer's specific needs, by ensuring that staff is well trained, customer education initiatives are implemented, then the bank can realise an increase in market share with satisfied customer. This study demonstrated conclusively that that the removal of waste from sophisticated performance systems improves productivity. Absa Bank can constantly improve its productivity by simplifying performance systems when servicing customers. The simplification of systems related to providing the service to the customers can ensure fast service provision at Absa. This will enhance customer satisfaction, thus contributing to increased profitability and business growth.

5.3.2 Objective 2: To investigate the contribution of the value-added processes which lean retail banking practices introduce to business operations in the shift from servicing the product to servicing the customer.

Cross-tabulation between variables was conducted to achieve this objective. Removal of waste from processes and delivering only what the customer want improves bank performance. The study's findings show that, non-value-adding processes constrain performance in Absa branches and that pushing products and services to customers, results in waste, in terms of service relevance to customers.

The study findings reveals that multi-skilling of staff members can ensure consistency in service provision to customers at every level of the bank. This finding is supported by the literature, which asserts that retail banks can only achieve service consistency through ensuring multi-skilling of employees in order to ensure that service quality is not compromised at any stage (Rootman, Tait and Bosch, 2007:20-31). This will ensure that staff members provide consistent service to customers whether they perform teller or consultant functions. The bank can increase its customer base as quality service will improve customer satisfaction.

Objective 3: To understand the interrelationship between internal lean processes and customer-centric practices. Khan (2012) observes that technology is assumed to provide fast, efficient, and consistent service; most banks are automating their processes. An interesting finding of the current study is that self-service systems, such as cash-accepting ATMs, do not improve consistency in service provision. This is further confirmed by the results generated by Pearson Chi-Square which shows there is no relationship between self-service systems and reliability. Hence, if customers are not getting the service they expect from the technological service, there will be longer queues at the branches. Spearman's correlation also confirmed that there is no relationship between self-service systems and consistency.

The self-service systems are supposed to help to reduce queues at Absa branches by channelling customers to ATMs and other services. These self-service capabilities can play an important role in improving customer satisfaction (IBM, 2005). However, this study found no relationship between speed of customer service provision and self-service systems. This is further confirmed by the results generated in Spearman's correlation and Pearson Chi-square which show that there is no relationship between speed of service provision and self-service systems. These findings are not in line with the literature. Absa Bank needs to devote time to understanding why self-service systems are not providing speedy service to customers.

Technological bank services are meant to make customers' lives easier (Khan, 2012). Surprisingly, the study illustrates that self-service systems at Absa branches do not facilitate simplicity in using banking services. This contradicts the literature and calls for further investigation, as these systems are clearly not doing what they are supposed to do. The introduction of innovative technological services, such as self-service systems is meant to divert customers to automated services. Hence, customers have no other option but to stand

in long queues to receive service. Spearman's correlation and Pearson Chi-square also confirm that there is no correlation between simplicity and self-service systems. Jones and Mitchell (2006), advocates that anytime spent waiting on a queue is a form of waste, this means resources are being used up but are idle, in the case of Absa such waste is evident on self-service systems.

From the findings of the study, it is evident that there are two important factors that explain the internal lean-principled processes at the bank. These are internal lean engineering and customer centricity.

a) Process engineering

The study revealed the greatest variable loadings of the five extracted factors. The loadings of five out of nine variables have the highest variance figure of 47.830%. This critical factor encompasses value stream process, lean and agile and value adding processes. These five items encourage the organisation to reduce waste by instituting internal lean process based on value stream systems, meaning that lean processes will enhance flexibility through agile. Thus they are appropriately interpreted as Process Engineering

b) Centricity

The loadings of four out of nine variables have the highest variance figure of 15.843%. These factors are related to customer-centric practices and are hence interpreted as *Centricity*. If customers are educated about banking services and products, they can specify what services adds value to them; hence the customer experience will be improved.

5.3.3 Objective 4:To evaluate the extent to which internal lean-principled service operation processes influence continuous retail banking performance outcomes in terms of increased business performance velocity.

The research findings show that overall, 90.5% of the sample at different levels of employment believes that the value stream system and self-service systems affect customer service system flow. The findings of the study also illustrated that value stream systems improve customer experience. This was further confirmed by Pearson sign. *p*-value (0.000) less than the significance level (0.05). In other words, as the introduction of value stream systems increases in the bank, customer experience also improves. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity.

Turning to the self-service attributes, which are improved customer service, elevated speed, improved consistency, and facilitating simplicity, the findings illustrates that self-service

systems do not provide speedy service to customers. This contradicts the literature which states that technological bank services make customers' lives easier (Khan, 2012). It is possible that customers are not educated about how to use self-service systems; hence they queue for service.

The study findings illustrate the dimensions that have a higher degree of explaining the criterion. The results generated by multiple regression reveal that there are three dimensions with higher degree of predicting the internal processes. The relationship between criterion and predictor variables is explained by only 52.7% of the variance in internal processes and the three dimensions, cycle time ($\beta = 0.583$, $p < 0.05$), value stream systems ($\beta = 0.424$, $p < 0.05$) and value-adding processes ($\beta = 0.226$ were found to be considerably and statistically related with internal processes. This means that cycle time, value-added processes and the value stream system are the only dimensions that have the highest degree of predicting internal processes.

The results generated from multiple regression illustrated the Bartlett's test significant *p*-value (0.000) at 95% level of significance. This significance of Bartlett's test verifies that there is correlation between the variables, thus the failure to reject the alternate hypothesis and reject the null hypothesis. This indicates that the data matrix has satisfactory correlation of factor analysis. The score of 0.819 presented by Kaiser-Meyer-Olkin (KMO) is the strength of other variables to explain the correlation between potential factors; thus the KMO values are good. Pallant (2010:97) states that, the data set is considered suitable if it is above .60. In this factor analysis, the KMO (0.819) and Bartlett's test of sphericity (564.68) scores are suitable at degree of freedom (36).

5.4 Conclusion

The purpose of this study was to determine if lean principles could be adopted by Absa bank to improve processes by examining the relationship between lean and agile, value adding processes, value stream systems, customer education, cycle time, customer experience, customer specifications, and catalogued products and the dependant variable of internal processes in Absa branches. The study also examined the relationship between value stream systems and speed, simplicity, customer service and reliability brought about by self-service systems. The study achieved all four research objectives outlined in chapter one.

All eight independent variables of lean and agile, value-adding processes, value stream systems, customer education, cycle time, customer experience, customer specifications, and catalogued products were significantly and positively correlated with the dependent variable of internal processes. When all the independent variables were subjected to factor analysis,

the findings revealed that value stream systems and cycle time were the most important variables for most of the variance in the dependent variable of internal processes.

On the other hand, one out of the four variables, customer service, was significant and negatively correlated with the dependent variable of value stream systems, while three variables, speed, simplicity and reliability were statistically insignificant and positively correlated with the dependent variable of value stream systems. The majority of the respondents that indicated dissatisfaction with internal processes were not satisfied with the self-service systems. Absa needs to work towards establishing customer education initiatives. All the objectives of the study have been successfully achieved and the researcher provides recommendations in the following chapter.

The majority of respondents believes that waste reduction practices does enhance productivity and customer centricity, while internal –lean principles can influence the bank performance at the branch level in terms of speed in customer service provision. Factor analysis (Table 4.15) revealed interesting results, where customer education and cycle time were two key variables within branch environment. This is in line with Figure 2.5, which shows that cycle time (from the time the customer request a service until a service get delivered to the customer) is very important. Another view presented by Figure 2.5 which is a bit obvious, is the bank and its customers meets through banking services. As shown in Figure 4.6, the study reveals that self-service systems do not afford customers simple, reliable and fast banking service. This has fully addressed the principal objective of this study which was to determine the impact of streamlining of the internal lean practices on service operations processes at ABSA branches.

The Cronbach's Alpha analysis revealed that all variables valid for the study (Table 4.1), which shows the reliability of the study. The Cronbach's Alpha (Table 4.1) results are in line with factor analysis (Table 4.15) results, where cycle time and customer education appeared to be two key variables. These results actually answer a question of why there are always long queues at Absa branches. While the bank invests a lot of money on technological systems to enable customers to self-service themselves, the study reveals that customers are reluctant to use these systems, therefore stand in queues. On the other hand, cycle times are relatively longer at Absa branches; hence customers find themselves queuing for a long time.

CHAPTER SIX

RECOMMENDATIONS AND CONCLUSION

6.1 Managerial Implications, Recommendations

Many previous studies have pointed to the importance of implementing technological self-service systems at banks. However, this study revealed that self-service systems have no relationship with speed of service provision, the simplicity of using banking services, and consistency in customer service. It also illustrated that internal processes are only explained by two elements, internal process engineering and customer centricity. Value stream systems and customer experience were found to have a positive correlation, which indicates that customers derive utility from value stream systems. Customer education appears to be one of the important variables the organisation should examine. This was evident when correlation between self-service systems and speed, simplicity, and consistency was conducted.

Efficient internal processes are considered to be the most important factor in ensuring that fast, efficient and consistent service is provided to customers. This study analysed the practicality of improving retail bank internal processes and the influence of waste reduction on processes and the bank's performance. The findings demonstrate initial understanding by Absa staff of retail banking internal processes. This suggests that Absa bank might need to improve its internal processes. The results of this study indicate that customer education on self-service systems can influence the bank's performance. The study found that three factors in self-service systems (speed, consistency, and simplicity) indicate an insignificant relationship between self-service systems and speed, consistency and simplicity in services offered by the bank.

Based on the discussion and the results of the analysis, the following recommendations are made to the management of Absa bank:

- Undertake a study on how self-service assists in reducing queues at branches.
- Establish customer education initiatives, where all stakeholders make a sustained effort to ensure that customers are taught to use self-service systems and are aware of the benefits associated with using such systems.
- Adopt lean principles to improve internal processes, thus eliminating queues at the branches.
- Only two set of elements should be examined when improving internal processes: internal process engineering and customer centricity.

- Review the security issues associated with using technological services to ensure that customers are comfortable with using technological banking services.
- Multi-skill staff to ensure consistency in service provision.
- Train staff on self-service systems so that they strive to improve customer service, and address any reservations regarding the security of technological self-service systems.

6.2 Limitations

The study employed a convenience sample, although an advantage of this kind of sampling technique is that that the study could provide springboard for future research, there is a limitation in that the study cannot be generalised (Bryman and Bell, 200:105).

Time and money is always an obvious limitation in almost all research studies. This study being an academic research with limited time, I only targeted 15 ABSA branches due to time period I had to conduct the research. If I had ample time, I would have preferred to target relatively more branches in different locations as possible, to be able to draw a better conclusion and generalisation.

Given the high levels of confidentially in the banking sector, it was expected that getting access to conduct a study would be a problem. Furthermore, the response rate was expected to be low due to busy schedules. Some participants had problems accessing the questionnaire from their computers, but a researcher hand delivered questionnaire to those participants with computer access difficulties. However, the return rate obtained was 100%, providing the researcher with sufficient data to make inferences. It must also be noted that, the findings of the study cannot be generalised for all ABSA branches in South Africa, as the study was only conducted in in the Gauteng area.

6.3 Delimitations

To remedy the foreseeable limitations, letters of authority to conduct the study were obtained. The research instrument was sent to participants in advance in order to afford them sufficient time to respond. Prior arrangements were made with participants to ensure their availability. Questionnaires were distributed by the researcher to Absa bank branch staff members, where 68 questionnaires were distributed and collected electronically, while 82 questionnaires were distributed and collected manually. All the questionnaires were collected within a period of one month. All participants were located in different branches in the Gauteng area.

6.4 Conclusion

This study revealed that the majority of the respondents believe that applying lean principles in internal banking processes can improve customer service and a bank's performance. The removal of waste from processes and systems improves productivity and encourages the organisation to establish customer-centric initiatives. Customer education was found to be the key factor that the bank needs to pay attention to as it impacts long queues at the branches.

The results of this study indicate that innovative technological systems, such as self-service systems do not facilitate simplicity in the use of banking services. This means that, while the bank has invested significant resources in these systems, customers do not see the value of using them. This calls for Absa Bank to establish customer education initiatives where all personnel are thoroughly trained in these systems. This will ensure that the bank's personnel spread the good news of using self-service to customers and the benefits associated with using them.

At the core of these findings lies the intention of the bank to improve internal processes and, in doing so, provide fast, efficient and consistent service to its customers. Improving internal processes will not only enhance customer service, but profitability and customer retention. Adopting lean principles in its internal processes will enable Absa Bank to move towards servicing the customer rather than the product. The objectives of the study were fully achieved as the effects of service operational waste reduction practices on productivity enhancement and customer-centric initiatives were thoroughly examined and discussed. The study findings illustrate the extent of value creation process which lean retail banking practices bring to business operations, from servicing the product to servicing the customer, and the interrelationship between internal lean processes and customer-centric practices. This study evaluated the extent to which internal lean service operation processes influence retail banking performance outcomes and increase business performance velocity. All the objectives were fully achieved and relevant analysis and conclusions informed by the literature were made. This study will have a significant impact on the banking services as it highlights how self-service systems are not helping in reducing queues at the bank. It will also help the bank in simplifying the processes to ensure that fast service is provided to customers. The findings of this study are for the convenience sample, Gauteng are, the findings cannot be generalised.

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APPENDIX A

Questionnaire

UNIVERSITY OF KWAZULU-NATAL
School of Management, IT & Governance

MCom Research Project

Researcher: Mbuso Emmanuel Nzama (0824698448)

Supervisor: Mr T. P. Mbhele (0312607524)

Research Office: Ms P Ximba 031-2603587

Title: **Internal Lean diffusion on streamlined-service operations: ABSA Bank**

The purpose of this survey is to solicit information from employees of Absa bank regarding internal Lean diffusion on streamlined-service operations. The information and ratings you provide us will go a long way in helping us identify internal Lean diffusion on streamlined-service operations. The questionnaire should only take 3-7 minutes to complete. In this questionnaire, you are asked to indicate what is true for you, so there are no "right" or "wrong" answers to any question. **Stand the chance to win a R200 Woolworths Voucher.** Thank you for participating!

I (Optional)_____(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

_____ _____

Signature of Participant *Date*

Section A

Biographical details of respondent: Please tick or encircle on the appropriate box

1. **Gender**

Male		Female	

2. What is your **position** among the following options?

Management level	Supervisory level	General workers	Other (Specify)

3. Years of **experience** in the company

Less than 1	1-3 years	4-6 years	7-10 years	Over 10

<u>Section B:</u> This section aims to obtain information on dichotomous questions (Yes or No) with regards to the general perceptions of internal Lean diffusion on value-stream business operations.

Please tick (√) or encircle the appropriate response (Yes or No)

To what extent does a waste reduction practice enhance productivity and customer centric initiatives?		
4. Removal of waste improves **productivity.**	Yes	No
5. Waste reduction practice enhances productivity and **customer centric** initiatives.	Yes	No
6. Waste reduction improves **customer service**.	Yes	No
7. Non-value adding processes constrain **performance**.	Yes	No
8. **Smooth flow** of the system results in fast service to customers.	Yes	No
9. Delivering only what customer want removes waste.	Yes	No
10. Sophisticated **system** of performing activities affects productivity	Yes	No
To what extent do internal lean-principled service operation processes influence banking performance and performance velocity?		
11. Simple processes improve the **speed** of service provision.	Yes	No
12. **Consistency** in service provision assures retention of customers.	Yes	No
13. Smooth flow in processes helps in reducing **queues**.	Yes	No
14. **Multi-skilling** of staff members ensures consistency on customer service.	Yes	No

<u>Section C:</u> The following questions are based on a Likert scale ranging from 1= strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree.

Please tick (√) the appropriate box, 1= strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree.

15. The waste reduction practice does enhance productivity and **customer centric** initiatives	5	4	3	2	1
16. Value-added processes can channel the banking focus from **servicing the product to servicing the customer**	5	4	3	2	1
17. The Value stream system and **self-service systems** affect customer service	5	4	3	2	1
18. Internal lean-principled service operation processes influence **banking performance** and performance velocity	5	4	3	2	1
19. **Educating a customer** about self-service systems reduce queues at the branches.	5	4	3	2	1

20. Self-service systems determine the difference between the start of the process and completion. **Turnaround time**	5	4	3	2	1
21. Self-service systems enhance **customer experience** in terms of simplicity, fast and efficient service delivery.	5	4	3	2	1
22. If the only services required by the customer are provided, customer service would improve. **Value**	5	4	3	2	1
23. Allowing the customers to determine what products add value to them can assure customer experience.	5	4	3	2	1

Select All and rank them from 1 = "Least important" to 4 = "Most important" in terms of importance to your work station.

Items	Critical (importance)	Rank
24. **Self-service systems** improve customer service.		
25. Self-service systems elevate **speed** in service provision.		
26. Self-service systems **improve consistency** in service provision.		
27. Self-service systems facilitate **simplicity** to use banking services		

Thank You!!!

APPENDIX B

Questionnaire response: Self-Service Systems

SelfService

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least Important	28	18.7	18.9	18.9
	Not Important	15	10.0	10.1	29.1
	Important	34	22.7	23.0	52.0
	Most Important	71	47.3	48.0	100.0
	Total	148	98.7	100.0	
Missing	System	2	1.3		
Total		150	100.0		

Speed

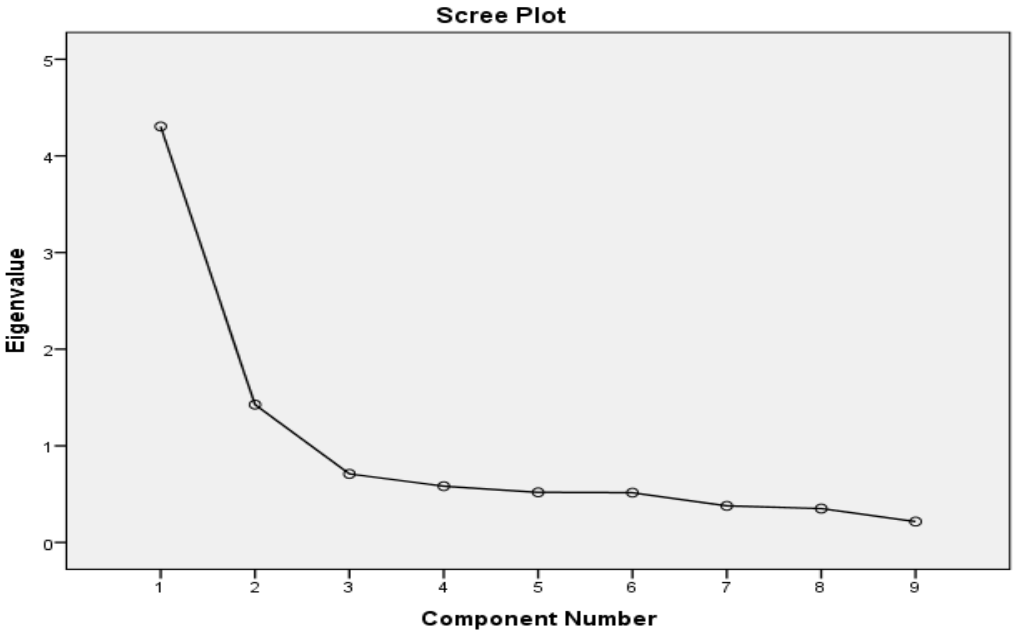
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least Important	22	14.7	14.9	14.9
	Not Important	42	28.0	28.4	43.2
	Important	54	36.0	36.5	79.7
	Most Important	30	20.0	20.3	100.0
	Total	148	98.7	100.0	
Missing	System	2	1.3		
Total		150	100.0		

Reliability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least Important	52	34.7	35.1	35.1
	Not Important	45	30.0	30.4	65.5
	Important	33	22.0	22.3	87.8
	Most Important	18	12.0	12.2	100.0
	Total	148	98.7	100.0	
Missing	System	2	1.3		
Total		150	100.0		

Simplicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least Important	46	30.7	31.1	31.1
	Not Important	46	30.7	31.1	62.2
	Important	25	16.7	16.9	79.1
	Most Important	31	20.7	20.9	100.0
	Total	148	98.7	100.0	
Missing	System	2	1.3		
Total		150	100.0		
Total		150	100.0		



APPENDIX C

Letter: Confirmation of Professional Editing

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27 November 2013

This is to confirm that I have edited the dissertation, "Internal Lean Diffusion on Streamlined-Service Operations: Absa Bank", by Mbuso Emmanuel Nzama, student number 205507912.

Yours sincerely,

D Collins

(Ms) Deanne Collins (MA)

Professional Editor

APPENDIX D

Ethical Clearance Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

28 August 2013

Mr Mbuso Emmanuel Nzama 205507912
School of Management, IT & Governance
Westville Campus

Protocol reference number: HSS/0813/013M
Project title: Internal Lean diffusion on streamlined-service operations: ABSA Bank

Dear Mr Nzama

I wish to inform you that your application has been granted Full Approval. **Expedited Approval**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Dr Shenuka Singh (Acting Chair)

/px

cc Supervisor: Mr TP Mbhele
cc Academic Leader Research: Professor B McArthur
cc School Administrator: Ms H Muteswa