

**AUTOMATED QUEUING AND THE EXPERIENCE OF  
KENYA COMMERCIAL BANK RETAIL CUSTOMERS  
IN NAIROBI KENYA**

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## **DECLARATION**

I declare that this is my original work and has not been presented for a degree in any other university.

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**D61/77623/2015**

This project has been submitted for examination with my approval as the university supervisor:

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## **DEDICATION**

I dedicate this research project to my best friend and Brother Ibrahim H. Abubakar for his tirelessness support throughout my daily endeavors to attain my full potential and to my wonderful family members for their unconditional love, patience and support throughout the MBA course.

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## ABSTRACT

The current proliferations of technologies have allowed service providers to incorporate many different technologies into the delivery of their services. These technologies have been implemented in the service encounter for the customer to use with varying degrees of success. In the Kenyan banking industry, automated queuing system is being adopted to allow customers deliver service themselves using some form of a technological interface. There is still a great deal unknown about automated queuing system, in particular its impact on consumer experience. With that in mind, this study explores the influence of automated queuing system on customer experience of Kenya commercial bank retail customers in Nairobi Kenya. The study adopted descriptive cross-sectional survey design. The descriptive survey is appropriate for studies whose objectives are to describe characteristics of an object of the study. A survey design involves collection of data from a sample or the entire population using structured research instrument. The population of the study consisted of members of the public who are adult account holders at the Kenya commercial bank and who access banking services by physically visiting premises of the bank within the Central Business District in Nairobi City County. The survey was a sample survey and adopted a systematic random sampling technique. Data was collected through structured questionnaire. Data was analyzed through descriptive and inferential statistics. Mean scores and standard deviations were used to describe the characteristics of customers in terms of demographics and customer's experience with automated queuing. Regression analysis was used to analyze the relationship between automated queuing system and customer experience. Correlation and regression analysis also revealed that a strong relationship between automated queuing machine and customer experience, hence, suggesting that it was an important factor in customer satisfaction both from the point of view of the customer in improved service and also from the perspective of employee motivation. It can be concluded that the automated queuing machine was of considerable assistance to the bank in enabling it to track the customer experience of all its products and services and to monitor the traffic of knowledge in its set up. It was an important factor in customer experience both from the point of view of the customer in improved service and also from the perspective of employee motivation.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

The banking industry is experiencing revolution due to variations in the market as well as variations in customer needs, competition and decreasing customer loyalty. Several interacting forces in the industry continue to make the banking business more complex, challenging and difficult for firms to succeed with undergoing transformation of strategies, operations and mindset of employees. In such a complex and demanding industry, organizations cannot entertain the possibility of neglecting changes in the macro-environment as well as developments within the industry. To survive in an era of innovation driven performance, several banks continuously review their operation strategies with the aim of adopting technologies that improve customer experience with the service encounter (Achimba et al., 2014). Modern technologies in the service sector enable banks to enhance interactions with customers. Technology empowers banks to overhaul their service operations and to package and offer reliable services faster than ever before and in a way that meets customer expectations. Therefore, technology is the means through which banks deliver superior value to customers and differentiate themselves from competitors. Consequently, survival in the banking industry depends on the preparedness by management to promote innovative culture including supporting adoption of modern technologies.

Commercial banking is evolving into a highly competitive and technologically driven industry (Morisi, 1996). The transformation within the industry was triggered by policy changes that created room for market entry by rival firms that ultimately intensified competition. While the use of technology in the banking industry was

initially intended to assist firms reduce costs, innovations in terms of products, processes and systems have enhanced different functions leading to improved customer experience (Curry & Penman, 2004). Oakland (2000) suggests that improving process management is better approach towards meeting customer needs than investing in training that require large sums of money. Computer technology enables firms to compete in a changing market through the provision of services that are attractive to customers. Technological innovations adopted by banks include the automated teller machine (ATM), mobile banking and more recently, the automated queuing system (Movisi, 1996). Service delivery technologies influence customer satisfaction and relationship with the service provider. For instance, the introduction of automated teller machine in the banking industry provides convenience to customers. According to Walley and Amin (1994), automation of operations in the banking industry may improve convenience and reliability of service delivery due the eradication of operator induced errors.

The banking industry has been going through numerous challenges ranging from competition, regulatory reforms and capitation constraints. Due to intense competition, banks have been trying to ride on technology to improve their operations and in turn improve customer experience (Ruchi, Rahman & Qureshi, 2014). While service automation is not relatively new in Kenya, its use has been limited to automated teller services and mobile banking platform. More recently, the Kenya commercial bank (KCB) introduced automated queuing that allows customers to interact with automated queuing machine and request for services they intend to obtain. The system then automatically puts the customer on a queue and generates a printout and a serial number.

### **1.1.1 Automated Queuing System**

A queuing system consists of inputs, queues and servers. Parimula and Palaniammal (2014) contend that a queue develops when demand outstrips the existing capacity of the service provider to the point that customers cannot receive immediate service delivery on arrival. Queue represents the number of customers waiting for service (Al-Jumaily & Al-Jobori, 2011). Automated queuing system is the use computer technology to schedule customers for service delivery. In 1950s, the application and utilization of computers in banking sector began having an invention of a large viable computer for the Bank of America (Movisi, 1996). Initially, the use of computers was limited to dispensation of transactions using a form of magnetic ink character identification. Over time, as the competition within the industry increased, banks turned to computer technology to reduce operational costs and to improve customer understandings in the relationship.

The use of computer technology to automate service delivery has been expanding in scope and depth over the years. Additional automated services including the distribution of mini-statements, making payments and service process automation are some of the examples that demonstrate the evolving nature of computer aided automation in the service sector (Marinkoric & Obradovic, 2015). Other technological developments telephone banking and automated audio response system. The latter enables customers to make calls to the service provider and obtain immediate response.

### **1.1.2 Customer Experience**

As defined by Ruchi, Rahman & Qureshi, (2014) this is an emotional association between the customer and the firm. It is influenced by a combination of factors and

interacting forces during the service delivery process. Good customer experience should emphasize speed of service delivery and continuous improvement of customer satisfaction (Achimba et al., 2014). Customer experience is determined by the quality of service and the manner in which organizations manage relationships with customers. The manner in which service providers package and deliver services has been changing as a result of developments in the technological landscape and changing nature of customers (Curry & Penman, 2004). The ability of organizations to retain customers is hinged on commitment to improving service delivery by leveraging on the appropriate blend between technology and human input.

Oakland (2000) suggests that improving process management is a more efficient approach towards improving customer experience than investing in recruitment and development of staff. While technology improves the effectiveness of service delivery, it makes it difficult for customers who are not knowledgeable about technology to access services. Consequently, automation of services may negatively affect customer experience particularly among customers who are not interested in the technology and who lack the capacity to use it.

### **1.1.3 Kenya Commercial Bank**

Financial service providers are important part of the service sector and play the intermediary role in facilitating the flow of funds for investment. Commercial banks are financial institutions that offer finance oriented services including management of finances, raising funds by receiving deposits, provision of loans and financial advisory services. The Central Bank of Kenya regulates and monitor the commercial banking firms. The banking industry consists of 43 commercial banks and one mortgage finance institutions with total assets estimated at 3,199 billion shillings.

The banking industry has significantly changed since the 1990s when it faced problems of under-capitation, non-performing loans and weak corporate governance. The capital requirement for commercial banks was enhanced by the Central Bank of Kenya in 1998 and the gearing ratio increased by 2.5% from 5% to 7.5% (Fusion, 2015). In addition sweeping reforms targeting financial stability in the banking industry were introduced including the staggered increase of capital requirement from 250 million Kenya shillings to 1 billion Kenya shillings. Although the reforms contributed to stability of capitation in the banking industry, weak corporate governance has led to collapse of a few commercial banks over the past 2 years.

## **1.2 Research Problem**

In the changing face of industry competition, focus by firms has shifted towards managing customer experience (Kaushik & Rahman, 2015). The waiting experience that customers go through determines their satisfaction level and relationship with a service provider. Kumar, Kalwani and Dada (1997) argue that several service oriented firms are putting in place a variety of programs to improve customer's experience. The programs instituted by service providers range from operational issues to creative management of customer's perception of waiting (Larson, 1987). Queue processing system is one of the operations-based initiatives that focus on improving customer experience by reducing the amount of waiting time in a service provision environment. The use of automated queuing system is an emerging practice in Kenyan service sector. Despite its growing popularity, the impact of automated queuing on customer experience remains unanswered.

Wachira (2013) state technology advancements offer banks the flexibility to select appropriate tools and applications that suit different needs of customers. Although the

electronic queuing system has been adopted in several parts of the world, its use in Kenyan banking industry is relatively new. Whereas a few banks have adopted automated queuing system, little information is known about the influence of the technology on customer experience. Taking into consideration the unique operational characteristics of financial service industry such as heterogeneity of customers, recurring service encounters and lasting relationships; it is necessary to assess the contributions of automated queuing system on customer experience.

The automated queuing system by Kenya Commercial Bank is a recent phenomenon in operations management in the Kenyan banking sector. Unlike the past, it allows customers to wait for service delivery while waiting on comfortable seats. The system reduces the chances of people jumping over the queues and potentially improves customer confidence. Furthermore, the system potentially improves customer experience. Despite the potential benefits of the system, little information is documented particularly from customer perspective (Wachira, 2013). The proposed study has a purpose to enlighten the client know-how and service encounter in the banking industry.

Globally, considerable attention has been directed towards investigating operational issues in the banking industry, more emphasis has been put on model development (Osuna, 1985; Katz, Larson and Larson, 1991). Limited research has been specifically focused on assessing the influence of service automation on customer experience. Whereas Clemmer and Scnieder (1989) inched closer to investigating customer experience in the service sector, analysis of experience was limited to customer satisfaction under the constraint of waiting time. Therefore, little information is known about the relationship between automated queuing in the banking industry and

customer experience. While studies on waiting time (Hsu, 2011; Shyfur, 2013) are important in determining customer experience with a service encounter, they are generic with respect to operational management and cannot specifically be relied when assessing the perceived influence of service automation on customer experience.

Locally, there are a number of studies conducted that are related to automated queuing and customer experience. For instance a study by Wachira (2013) concluded that technological innovation is a key driver to bank's performance. Nonetheless, Ruchi, Rahman and Qureshi (2014) established that service experience in the banking industry has not received research attention in the context of changing technological landscape. Thus, Wachira (2013) recommends that studies should be carried out to determine the perceptions of customers of technological innovations in the banking industry.

From the above studies, none has been conducted that is related to automated queuing and customer experience of Kenya Commercial Bank retail customers in Nairobi Kenya. This study responds to this call and seeks to contribute to the ongoing debate on service automation by addressing the research question: What is the contribution of automated queuing system to customer experience in Kenya Commercial Bank in Nairobi, Kenya?

### **1.3 Research Objective**

The objective of the study is to determine the influence of automated queuing system on customer experience.



## **1.4 Value of the Study**

Diffusion of technology is important for up-scaling innovations in competitive industries. However, the uptake of technology can be affected by consumer oriented factors including customer experience with the service and encounter with technology. The study will contribute to policy by generating information that may be used by policy makers to improve adoption of technology in the banking industry. Specifically, the findings of the study will be of benefit to the Central Bank of Kenya and Banking Association of Kenya. Results of the study will offer insights to the Central Bank of Kenya with regards to its supervisory role and encouraging the use of technology to enhance customer satisfaction in the banking industry.

The study will provide feedback information to managers at the Kenya Commercial Bank on the customer's evaluation of automated queuing system. Considering the relative newness of adoption of automated queuing in the Kenyan banking industry, the findings of the study will provide information that may enable banks to use technology for improving customer experience and to differentiate themselves from competition.

Studies on queuing in developing countries are scant. In addition, existing studies have taken mathematical orientation with little focus on behavioral aspects from customer perspective. Therefore, extant literature to a large extent explains queuing in terms of waiting time. Consequently, little information is known about automated queuing and customer experience. The current study contributes to theory by incorporating customer experience in the queuing research. Therefore, findings of the study will help in enlarging the frontiers of the queuing theory in explaining behavioral issues associated with customers in a service encounter context.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

The chapter presents a review of theories that provide the basis for the study. In addition, the chapter presents conceptual and empirical literature based on the objectives of the study. Literature review covers the concepts of automated queuing and customer experience.

#### **2.1 Theoretical Underpinnings of the Study**

The section presents a review of the queuing theory, disruptive innovation theory and the diffusion of innovation theory. While the queuing theory is the overarching theoretical foundation for the study, disruptive innovation theory and diffusion of innovation theory are used to support the postulations of the study.

##### **2.1.1 Queuing Theory**

Originally, the queuing theory was known as the waiting line theory. The waiting line theory was initially developed to explain how productive facilities can be used to achieve output targets in a manufacturing context. Nonetheless, over the years, the applicability of the theory has been extended to several areas of business including service provision. Therefore, the theory explains situations where service facilities can be coordinated with demands for the service (Voorhis, 1956). The Queuing theory explains waiting experience as an everyday occurrence in the service sector. The theory argues that arrival of customers, waiting line and service facilities are the basic aspects of a queuing process (Shyfur, Chowdhury, Rahman & Kabir, 2013). A queue is considered limited on condition that it cannot increase infinitely in terms of length. On the contrary, unlimited queue is one whose length is unrestricted. Queuing models assume that customers who join a queue in a service provision context wait until they

are served by the service providers. Commonly used laws in queuing theory include first in first out; last in last out; random service; and priority.

An important attribute of the first come first serve queuing system is the flexibility it provides for adjusting the number of service providers as the demand for service provision increases during different times of the day (Hatzakis, Nair & Pinedo, 2010). Queuing theory facilitates better understanding of waiting lines (Shyfur et al., 2013) and enables operations managers to develop service with tolerable waiting. The theory is relevant to the study since it explains the waiting experience in the banking industry and the automated queuing system where customers are served on the basis of first come first come. Although the theory effectively typifies the waiting situation in the service sector, it fails to explain situations where customers fall off the queue before they are served. In addition, the theory falls short of explaining the service provision scenario involving different service categories and where machines are programmed to queue customers not necessary in the order of arrival at the service provision area, but on the basis of priority.

### **2.1.2 Disruptive Innovation Theory**

The theory maintains that incumbents in the industry make improvements with the intention of sustaining innovation; service providers overshoot customer needs; incumbent firms own the ability to react to threats that disrupts the organization, while the executives in the end are left out struggling due to the disruption. The theory argues that there is distinctly differently trajectory of improvement that innovative companies provide as they introduce new and improved products. The theory of disruptive innovation provides a warning against management myopia particularly when they fail to understand the value in innovation by rival service providers.

The hypothesis illuminates the phenomena by which advancement changes a current market or part by presenting simplicity, time consciousness, accessibility, and new item or thought totally reclassifies the business (Christensen, 1997). The hypothesis is applicable to the study as it clarifies the impact of technological advancements in the administration business.

## **2.2 Automated Queuing and Customer Experience**

Service provision requires customers to interrelate with technology either as a substitute for or as a match to face-to-face service communications (Curran et al., 2003). The consumption experience is the personal encounter that customers have with a service that elicits significant emotional reactions (Mukerjee, 2012). Customer experience has been viewed by Ruchi, Rahman and Qureshi (2014) as the service. According to Gentile et al. (2007), the experience is personal to individual customers and affects their emotional, rational and sensorial levels.

Service providers adopt technological innovations and promote their use to promote the establishment of friendly and rewarding relationships with customers. Although the use of technological innovations is laudable, the adoption of innovations by customers is not guaranteed. Walker et al. (2002) contend that the decision by customers to either adopt or reject a new technology depends on their individual capacity and willingness. The capacity to use technologically facilitated service delivery such as automated queuing system is determined by perceived ability to use the technology. Customer willingness to use technological innovation is conditioned by perceived complexity and risks associated with the new technology.

The adoption of technology in the banking industry is evident through the development of self-service technologies that affect customer experience. Nearly all

service industries have encountered new technological innovations that have transformed service delivery into value creating process (Kaushik & Rahman, 2015). Studies have found a link between waiting time and customer's perceived service quality. A study by Taylor (1994) found that service delays negatively affect customer's particularly when the cause for the delay is within the control of the service provider. Queuing system collects data on queue length and customer waiting times. These kinds of data can be used by operations manager to improve customer experience by reducing service provision delays. Most banks implement automated queuing system that places customers on a line (Al-Jumaily & Al-Jobori, 2011). The automated queuing system uses scheduling algorithm to order customers and choose the next customer from the queue.

Competitive industries place more demands on service providers as customers continuously look out for service quality in terms of efficiency, speed of service delivery, accuracy and convenience. In an attempt to address concerns by customers, service providers leverage on technologies that include service automation. Markides (2006) explain that an innovation may be disruptive on condition that the new business model attracts new customers to the service provider or encourage existing customers to enjoy using the service. Organizational innovation involves adoption of a process, system and behaviors that are new to the organization adopting it. Within this perspective, automated queuing system qualifies as an innovation not only in the banking industry, but also in the service sector in majority of developing countries. However, Daft (1978) cautions that innovations. According to Zaltman et al. (1977), innovations are well-defined in relation to particular organization or context.

Pine and Gilmore (1999) argue that creating a distinguishing customer understanding can deliver considerable economic worth for companies. The experience is created by factors both within the control and outside the control of management. Service providers institute measures to improve customer experience. Some of these measures include engaging customers by playing of music within the service provision area, audio-visual display and provision of beverages as well as comfortable seats as customers wait for service delivery (Hsu, 2011). Liang (2016) maintains that enjoyment is the background variable associated with a customer's willingness to queue.

The evaluation of customer experience depends upon the comparison made by customers between his expectations and the stimuli arising the interface with the organization and its service offerings in association with different instants of service touch points such as a waiting line. A waiting line arises when customers require a service, but are forced to wait because of a shortage of service delivery facilities of service delivery personnel. The shortage may be as result of limited facilities, understaffing or due to inefficient scheduling of existing facilities. In a waiting line, time is lost by customers. To effect changes and save time, operations managers must manipulate factors such as customer arrival rate, service order and number of service facilities as well as service delivery personnel (Voorhis, 1956).

The performance of service oriented industries is sensitive to the experiences that customers encounter in real life. Several firms in the service sector draw their profitability from a small percentage of customers. Therefore, poor management of operations in a service company can result in long queues and subsequent delays in service provision (Hatzakins et al., 2010). However, delayed service provision attracts

negative publicity that contributes to customer dissatisfaction. Waiting time makes customers to spend a lot of time on non-service activities per service encounter depending on the congestion of the queue. Past studies have considered waiting time as unproductive in the provision of a particular service (Sloan & Lorant, 1977). Long queues in a service provision context have been associated with dead weight loss.

Liang (2016) argues that the reactions by customers to waiting for a service may be both positive and negative and that the main concern of customers with respect to a queue is the waiting time. The customer's perception of time depends on the activities in which the customer is involved. Waiting time can either be real or perceived. The subjective aspect of the waiting is measured in terms of perceived time which is linked to the actual time clients wait to obtain a service (Pruyn & Smidts, 1998). Perceived waiting time affects disconfirmation of the wait time. Disconfirmation is the difference between customer's expectation of delivery time and the perception of the delivery time (Davis & Heineke, 1998). Therefore, wait evaluation usually comprises of cognitive component and the emotional response to actual waiting such as frustration, monotony, frustration or anger (Hui & Tse, 1996).

The exact time for waiting is termed as the time it takes customers from the time they enter a service provider's premises and the time they leave immediately after getting the service (Nathalie & Demoulin, 2013). Disconfirmation is considered favourable when the expected delivery time is longer than the perceived delivery time (Nathalie & Demoulin, 2013). In other words, customers evaluate the acceptability of the wait by comparing their expectation with their perception of the company's delivery performance. Previous studies have assessed the reactions of customers to wait situations in the banking industry (Houston et al., 1998). Majority of the studies

conclude that waiting for a service at an external site differs significantly from waiting in a queue within the service provider's premises. The underlying logic is based on the fact that customers waiting in a queue within the organization's premises can estimate wait time based on the length of the queue and the average time taken by service provision personnel to serve each customer (Nathalie & Demoulin, 2013). On the contrary, customers waiting for a service virtually cannot observe the service delivery process and are not capable of estimating the length of time taken to serve each customer in the queue. Therefore, the amount of time taken to deliver a service influences the customer's location choice for service access. For instance, customers are more likely to obtain banking services from a branch perceived to take shorter time to serve customers. However, customer's reactions to waiting depend on their subjective waiting time.

### **2.3 Summary of Literature Review and Conceptual Framework**

The reviewed literature have demonstrated that studies have found a link between customer waiting time and satisfaction. Customers who wait longer for a service are dissatisfied while lesser time taken to deliver services delights customers and keeps the in the relationship. Literature further shows that operations department in an organization plays a key role in reducing customer waiting time by making use of modern technology including automated queuing system. While extant studies have concentrated on waiting time and customer satisfaction, little research focus has been specifically directed towards investigating the influence of automated queuing system on customer experience.

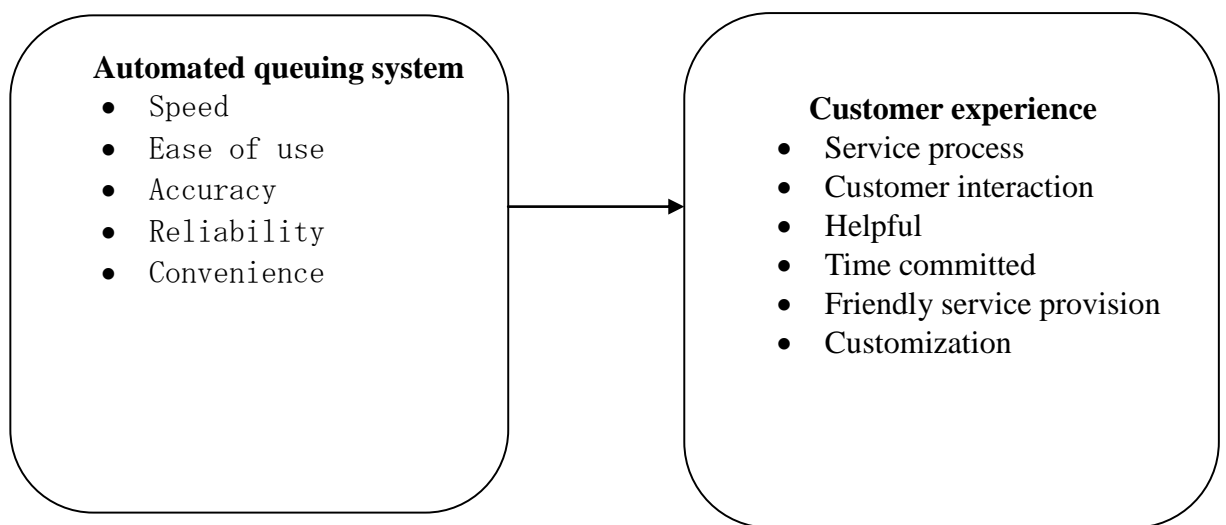


The current study addresses this gap by testing the hypothesized relationship as shown on the conceptual framework in Figure 2.1. The independent variable in this research will be automated queuing system while the dependent variable will be customer experience.

**Figure 2.1 Conceptual Model**

Independent variable

dependent variable



**Source: Researcher (2016)**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter provides information on the research design, population of the study, sample size and sampling techniques. In addition, the chapter covers data collection and analysis. The research design explains the approach that guided data collection and analysis. The sampling procedure provides details on how elements of the study were selected. Data collection entails details information about questionnaire development and administration method. Data analysis section explains the statistical techniques that was used to process and summarize data.

#### **3.2 Research Design**

The study was guided by descriptive cross-sectional survey design. Adams, Khan and Raeside (2007) argue that descriptive research entails unfolding a phenomena and that it is not concerned with unearthing the underlying behavior. The descriptive survey is appropriate for studies whose objectives are to describe characteristics of an object of the study. The objectives of the current study are to describe customer experiences with automated queuing system. Hence, the descriptive research design is suitable for the study.

Cross-sectional design is suitable when data is collected from the respondents at one point in time. A survey design involves collection of data from a sample or the entire population using structured research instrument. Taking into consideration that the study seeks to describe perceived service quality, structured questionnaire was used and hence the necessity to use survey design.

### **3.3 Population of the Study**

The population of the study consisted of members of the public who are adult account holders at the Kenya commercial bank and who access banking services by physically visiting premises of the bank within the Central Business District in Nairobi City County. The population of interest was Kenya Commercial Bank retail account holders who are at least 18 years old and have held the bank account for a minimum of 2 years.

### **3.4 Sampling Procedure and Sample Size**

The survey was a sample survey and adopted a systematic random sampling technique. The survey was conducted outside the banking hall and involved sampling every fifth person that walks out of the bank after service delivery. To have sufficient sample size for statistical analysis, 150 customers were randomly selected for administration of the questionnaire.

The systematic random sampling is more appropriate because it introduces randomization in selection of the elements of the study in situations where obtaining access to a sample frame is difficult due to the bank's policy of non-disclosure of client's details. The sample size of 150 respondents is sufficient for descriptive analysis as well as inferential statistics.

### **3.5 Data Collection**

For the purposes of data collection, the study utilized primary as well as secondary data sources. A planned questionnaire was used to collect primary data which had, both open and closed questions. The questionnaire was prepared based on Likert measurement scales. However, the measurement scales was tailored to suit the present study. The researcher sought services of a research assistants, who were trained on

striking a rapport and convincing respondents to cooperate. The research assistants explained the purpose of the study then give the questionnaire to the respondent for self-administration. However, the research assistants assisted respondents who are semi-literate to complete the questionnaire.

### 3.6 Data Analysis

Data was analyzed through descriptive and inferential statistics. Mean scores and standard deviations were used to describe the characteristics of customers in terms of demographics and customer's experience with automated queuing. Descriptive statistics was also used describe customer's perceived service quality. The relationship between automated queuing system and customer experience was established using regression analysis. The regression model was in the form:

$$\text{Customer Experience} = \beta_0 + \beta_1 X_1 + e$$

Where:

$\beta_0$  is the regression constant

$\beta_1$  is the regression coefficient

$X_1$  = automated queuing system

**Table 3.1 Summary of Data Collection and Data Analysis.**

Objective	Questionnaire	Data Analysis
General information	Section A	Descriptive statistic
To establish the influence of automated queuing system on perceived service quality for customers of KCB	Section B, C and D	Descriptive statistic Correlation and Regression Analysis.

Source: Researcher (2016)

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter presents the findings of the study, data analysis and interpretation as set out in the research methodology. The purpose of the study was to determine the influence of automated queuing system on customer experience.

#### 4.2 Response Rate

The target population comprised of 150 members of the public who are adult account holders at the Kenya commercial bank and who access banking services by physically visiting premises of the bank within the Central Business District in Nairobi City County. Table 4.1 indicates that out of the 150 questionnaires administered, 121 responded, which gave a response rate of 80.67% that was found adequate for the analysis. According to Mugenda and Mugenda (2003) the statistically significant response rate for analysis should be at least 50%. The collected data was mainly qualitative but quantifications were made where possible, thereby using both descriptive statistics and content analysis to analyze the data.

**Table 4.1: Response Rate**

<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
Responded	121	80.67
Did not respond	29	22.92
<b>Total</b>	<b>150</b>	<b>100.00</b>

**Source: Researcher (2016)**

### 4.3 General and Demographic Information

This section includes the general demographic information. Respondents were asked about their Gender, age and level of education attained, marital status, the period they have been customers and types of accounts owned.

#### 4.3.1 Gender of the Respondents

The study sought to establish the gender characteristics of the respondents. The findings were as indicted in Table 4.2

**Table 4.2: Gender of the Respondents**

	Frequency	Percent	Cumulative Percent
Valid Male	50	41.3	41.3
Valid female	71	58.7	100.0
Total	121	100.0	

**Source: Researcher (2016)**

From the findings, 41.3% of the respondents were male while 58.7% were female. The above finding reveals that the respondents were both male and female though majority of the respondents were female.

#### 4.3.2 Age Category of the Respondents

The study sought to establish the age of the respondents. The findings were as shown in Table 4.2

**Table 4.3: Age Category of the Respondents**

	Frequency	Percent	Cumulative Percent	
Valid	Under 20	26	21.5	21.5
	20-29	23	19.0	40.5
	30 -39	11	9.1	49.6
	40-49	34	28.1	77.7
	50-59	27	22.3	100.0
	Total	121	100.0	

**Source: Researcher (2016)**

Form the findings, it was established that 21.5% of the respondents were below the age of 20 years, 19% of the respondents were between 20-29 years, 9.1% were at an age bracket of between 30 to 39 years, the other population consisted of an age bracket of between 40 and 49 with a representation of 28.1 and 22% were between 50 and 59 years of age. This shows that majority of the clients from the sampled banks were young people mostly below 40 years of age. This study actually serves to prove that unlike the olden days; more young people are now accessing banking services early in life and that the self service automation system are meant to target this segment of the population.

### **4.3.3 Highest Level of Education**

The respondents were asked to indicate the highest level of education, the finding were indicated in Table 4.3.

**Table 4.4: Highest Level of Education**

	Frequency	Percent	Cumulative Percent
Valid	No formal education	3	2.5
	Primary	9	7.4
	Secondary	28	23.1
	Bachelor Degree	61	50.4
	Postgraduate	20	16.5
	Total	121	100.0

**Source: Researcher (2016)**

Figure 4.4 shows that majority (50.4%) of the respondents had attained an undergraduate degree while 23.1% had attained secondary education, 16.5% had attained a post graduate degree as their highest level of education. This shows that majority of the respondents were educated thus they understood well the automated queueing system in their specific banks. This findings are very much consistent with earlier studies that were done that showed that the majority of the people who seeking banking services are more knowledgeable nowadays.

#### **4.3.4 Marital status**

**Table 4.5: Marital status**

	Frequency	Percent	Cumulative Percent
Valid	Single	42	34.8
	Married	62	51.2
	Declined to respond	17	14.0
	Total	121	100.0

**Source: Researcher (2016)**



From figure 4.5 the study established that majority (51.2%) of the respondents were married while 33.9% were married and 14% declined to respond on this question possibly because they considered the question too personal. This means that the majority of the respondents were marries and also this findings are consistent with the findings on age of the respondents which shows that majority of the respondents were at an average age of 35 years.

#### 4.3.5 Duration they have held an account with KCB Bank

**Table 4.6: Duration they have held an account with KCB Bank**

	Frequency	Percent	Cumulative Percent
Valid Less than 2 years	21	17.4	17.4
2-5 years	21	17.4	34.7
5- 8 years	49	40.5	75.2
More than 8 years	30	24.8	100.0
Total	121	100.0	

**Source: Researcher (2016)**

The study established that most of the respondents (17.4%) had stayed with the bank for duration of less than two years while another 17.4% indicated that they had stayed with their respective bank for a period of between two and five years. Majority of the respondents have been having account for the last five years and another 24.8 % have been having an account for more than 8 years.

This therefore implies that majority of the respondents had stayed with their banks for a longer period thus they were conversant with the products and automated queueing system offered by their banks. This will be explained by the fact that more young people especially college going children are now encouraged to open and run accounts.

### 4.3.6 Type of accounts

**Table 4.7: Type of accounts**

	Frequency	Percent	Cumulative Percent
Current accounts	32	26.4	26.4
Fixed deposits accounts	32	26.4	52.9
Savings accounts	57	47.1	100.0
Total	121	100.0	

**Source: Researcher (2016)**

From the findings, respondents indicated a number of accounts that can be categorized in to three. Savings accounts had 47.1%, consisting of student account and smaller amount required to open a savings account than a fixed deposit account. Withdrawal through the ATM can be done as many times as possible but with a weekly maximum limit. Fixed deposits accounts had 26.4% and Current accounts had also 26%.

## 4.4 Service Delivery Waiting Time

### 4.4.1 Duration they have been using the machine at the entrance to book for service

**Table 4.8: Duration they have been using the machine at the entrance to book for service**

	Frequency	Percent	Cumulative Percent
Less than 3 months	17	14.0	14.0
3-7 Months	32	26.4	40.5
8-12 Months	36	29.8	70.2
More than 1 year	36	29.8	100.0
Total	121	100.0	

**Source: Researcher (2016)**

Respondents of the study were asked to indicate the duration they have used the machine at the entrance of the bank to book your service. 14% of the respondents admitted that they have used it for less than 3 months, 26.4% have been using it for the last 7 months, 29.8% have been using it for the at least an year and another 29.8% have been using the machine for over a year.

#### **4.4.2 Duration of time spent to obtain banking services before introduction of service booking machine**

**Table 4.9: Duration of time spent to obtain banking services before introduction of service booking machine**

	Frequency	Percent	Cumulative Percent
30-39 minutes	45	37.2	37.2
More than 40 minutes	76	62.8	100.0
Total	121	100.0	

**Source: Researcher (2016)**

From the findings in Table 4.9, 62.8% of the respondents agreed that spend in excess of 40 minutes to obtain banking services before the introduction of service booking machine, while 37% were of the opinion that they spend an average of half an hour.

#### **4.4.3 Dates of the month likely to spend more time at the banking hall to obtain services on the queue**

**Table 4.10: Dates of the month likely to spend more time at the banking hall to obtain services on the queue**

	Frequency	Percent	Cumulative Percent
Beginning of the month	41	33.9	33.9
Mid-month	7	5.8	39.7
Valid End month	42	34.7	74.4
All the time	31	25.6	100.0
Total	121	100.0	

**Source: Researcher (2016)**

When asked information regarding the dates of the month one is likely to spend more time at the banking hall to obtain services. 25% indicated all the time, there seemed to be no consensus between end month and beginning of the month as shown by responses of 34.7% and 33.9% while a paltry 5.8% indicated mid-month.

#### **4.4.4 Time spent when one use KCB service booking machine at the banking hall**

**Table 4.11: Time spent when one use KCB service booking machine at the banking hall**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Valid 10-19 minutes	8	6.6	6.6
20 – 29 minutes	36	29.8	36.4
30-39 minutes	31	25.6	62.0
More than 40 minutes	46	38.0	100.0
Total	121	100.0	

**Source: Researcher (2016)**

When asked the duration of time spent at the banking hall after the introduction of KCB service booking machine 7% agreed they could spend an average of between 10 and 20 minutes, 30% of the respondents could spend between half an hour and 40 minutes and a good number of them (38%) were of the opinion that they could spend in excess of 40 minutes

#### 4.4.5 Average time spent on the service booking machine to select service and obtain a ticket

**Table 4.12: Average time spent on the service booking machine to select service and obtain a ticket**

	Frequency	Percent	Cumulative Percent
Valid Less than 2 Minutes	121	100.0	100.0

**Source: Researcher (2016)**

When asked the average time spent on the service booking machine to select service and obtain a ticket, all the respondents (100%) admitted that they spend less than 2 minutes.

#### 4.4.6 Need for assistance to use the service booking machine at the banking hall

**Table 4.13: Need for assistance to use the service booking machine at the banking hall**

	Frequency	Percent	Cumulative Percent
Valid Yes	44	36.4	36.4
no	77	63.6	100.0
Total	121	100.0	

**Source: Researcher (2016)**

When asked whether they ask for assistance to use the service booking machine at the banking hall, 63% were of the opinion that they don't need any assistance while 36% have sought assistance.

### 4.5 Automated Queuing System

The study in this part aimed at identifying the extent at which the following automated queueing systems are used at KCB. Data was collected using Linkert scale of Completely False (1), False, (2), Unlikely (3), True (4) and Very True (5). The

larger the standard deviation is, the more spread out the observations are, while mean is the arithmetic mean across the observations, it is the most extensively used measure of central tendency. It is usually called the average. The Table 4.14 shows the research findings.

**Table 4.14: Automated Queuing System**

<b>Descriptive statements</b>	<b>Mean</b>	<b>Std. Deviation</b>
I do not drop off the queue after the introduction of automated service booking machine	3.2397	1.34799
Services are rendered much faster nowadays	3.3636	1.38444
Nobody jumps the queue after introduction of automated service booking machine	3.6917	1.22848
I save more time than I used to do at the banking hall with introduction of service booking machine	3.4793	1.25233
Automated service booking machine is convenient	3.8099	1.05920
Automated service booking machine is easy to use	3.3306	1.40469
Automated service booking machine is accurate	3.2975	1.41801
Automated service booking machine is reliable	3.2645	1.40694
Automated service booking machine announces my booking number loudly when my turn to be served comes	3.7934	1.08718
Automated service booking machine clearly displays my ticket number on the screen when my turn to be served comes	3.6198	1.19203

**Source: Researcher (2016)**

From the findings in Table 4.14 above, all the statements were given an approval rating of above 3.0. specifically respondents strongly agreed that automated service booking machine is convenient, automated service booking machine announces my booking number loudly when my turn to be served comes and that automated service booking machine clearly displays my ticket number on the screen when my turn to be served comes as shown by means of 3.8099, 3.7934 and 3.6198 respectively.

## 4.6 Customer Experience

Respondents of the study were asked to rate the extent at which the following factors conform to customer experience at Kenya Commercial Bank. Data was collected using Likert scale of No extent (1), Little extent, (2), Moderate extent (3), Large extent (4) and Very large extent (5). The table below shows the research findings. The table below shows the research findings.

**Table 4.15: Customer Experience**

<b>Descriptive statements</b>	<b>Mean</b>	<b>Std. Deviation</b>
Service delivery is efficient at the banking hall	3.3636	1.31656
Service provision is interactive	3.7686	1.20250
Automation of queuing is helpful to customers	3.7769	1.11421
I spend far much less time in the banking hall these days than before automating queuing machine was introduced	3.5620	1.25759
Service provision is friendly	3.5537	1.26458
The service process is relative short compared to other banks	3.6942	1.22368
The bank has customized service provision to my unique needs	3.5455	1.29743
Seats at the banking hall are adequate	3.0556	1.18500
Seats at the banking hall are comfortable	4.0345	.94559
Automated queuing machine is convenient for requesting for service at the banking hall	3.7073	1.03623
I feel entertained by TV screen at the banking hall	3.8049	1.02366

**Source: Researcher (2016)**

From the research findings, seats at the banking hall are comfortable was found to be the highest significant factor of customer experience as supported with a mean of 4.0345. other significant factors were; Service delivery is efficient at the banking hall, Service provision is interactive, Automation of queuing is helpful to customers, The

service process is relative short compared to other banks, Automated queuing machine is convenient for requesting for service at the banking hall and I feel entertained by TV screen at the banking hall as supported with a mean above 3.5. The least significant factor however was the statement that seats at the banking hall are adequate as shown by a mean of 3.0.

#### 4.7 Regression analysis

Regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables.

**Table 4.16: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
dimension0 1	.984 <sup>a</sup>	0.0968	0.962	0.12473

*Predictors:* (Constant), Customer Experience

*Dependent Variable:* Automated Queuing System

**Source: Researcher (2016)**

Analysis in table 3.8 shows that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variable)  $R^2$  equals 0.984<sup>a</sup>, that is, customer experience leaving only 16.8 percent unexplained. The P- value of 0.000 (Less than 0.05) implies that the model of Automated Queuing System is significant at the 5 percent significance. The study shows that there is a positive significant correlation between automated queuing and customer experience of Kenya Commercial Bank in Kenya.



**Table 4.17: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.256	1	2.907	186.849	.000 <sup>a</sup>
	Residual	.778	120	.016		
	Total	24.034	121			

a. Predictors: (Constant), Customer Experience

b. Dependent Variable: Automated Queuing System

Source: Researcher (2016)

ANOVA findings (P- value of 0.00) in table above shows that there is correlation between the predictor variable (customer experience) and response variable (Automated Queuing System). A significant F test indicates that we can reject the null hypothesis which states that the population means are equal. The P value is 0.000 which is less than 0.005 significance level.

**Table 4.18: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.772	.362		2.133	.038
	Automated Queuing System	.138	.116	.143	1.188	.240

Source: Researcher (2016)

In determine the strength of the relationship between these two variables in order to forecast Automated Queuing System.

Whereby Y = Customer experience;

X<sub>1</sub>= Automated Queuing System;

According to the regression equation established, taking all factors (Automated Queuing System) constant at zero, customer experience of the commercial banks will be 13.8%.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the discussion, conclusions and recommendations of the study. In part 5.2, the summary of the study is presented. The discussion and conclusion of the study is in part 5.3 and 5.4 respectively. Part 5.5 demonstrates the recommendations.

#### **5.2 Summary**

The objective of this study was to determine the influence of automated queuing system on customer experience at Kenya Commercial Bank. The results also indicated that upon the introduction of the automated queuing system services are rendered much faster nowadays, nobody jumps the queue after introduction of automated service booking machine, they save more time than previously used to do at the banking hall with introduction of service booking machine. They further confirm that the automated service booking machine is convenient, easy to use, accurate and reliable. Respondents further posits that the automated service booking machine announces my booking number loudly when my turn to be served comes and the automated service booking machine clearly displays my ticket number on the screen when my turn to be served comes.

The concentrate additionally tried to build up the level of consumer loyalty in the bank. This was the reliant variable and was measured by requesting that the respondents give their perspectives on the levels of consumer loyalty in the bank. The status of this goal was measured by the client responses to their encounters in the

bank, their suggestions and steadfastness. The status of this variable was appraised on a 5 point Likert scale running from; 5 = emphatically consent to 1 = firmly oppose this idea. These outcomes are exhibited. The discoveries showed that the greater part of their clients valued the way that seats at the managing an account corridor are sufficient and agreeable, benefit conveyance is productive at the keeping money lobby, benefit arrangement is intuitive, mechanization of lining is useful to clients and that they invest far considerably less energy in the saving money lobby nowadays than before robotizing lining machine was presented

. They also commended the fact that service provision is friendly, the service process is relative short compared to other banks, the bank has customized service provision to my unique needs, automated queuing machine is convenient for requesting for service at the banking hall and they feel entertained by TV screen at the banking hall.

Correlation and regression analysis also revealed that a strong relationship between automated queuing machine and customer experience, hence, suggesting that it was an important factor in customer satisfaction both from the point of view of the customer in improved service and also from the perspective of employee motivation.

### **5.3 Conclusion**

In view of the consequences of the study, it can be presumed that the mechanized lining machine was of impressive help to the bank in empowering it to track the client experience of every one of its items and benefits and to screen the movement of information in its set up. It was an essential consider client encounter both from the perspective of the client in enhanced administration furthermore from the point of view of representative inspiration. The specialist prescribed that the bank's needs to frequently prepare its workers on innovation application to clients as the more often

than not the innovation was outpacing the capacity of staff to handle it and this could bring about deferrals in the framework and bother the clients..

## **5.4 Recommendations**

All banks are efficiently utilizing the automated queuing machine and more banks have adopted it to determine efficient utilization of resources. Banks should invest more on technologies that will ensure efficiency in serving customer and overall satisfactions of the customers. Customer experience should be considered as banks improve present systems or while acquiring new systems overall. Further, banks should re-engineer and adjust their systems in order to augment their competence in service and enhance the use of Customer Relationship Models.

In order to invest in facilities and up to date technically mediated systems to improve their competency, banks should have sufficient budgets for the growth of infrastructure to ensure their presence by extending their ATM networks, mobile banking and internet banking. It is recommended that Kenyan banks connect their efforts at each useful stage such as front office operations, customer service, and marketing in order to come up with products/services that meet customer needs and thereafter, offer quality service in order to enhance customer satisfactions. Banks should deliberately seek the customers' input before and during the development of new products/services.

In order to differentiate themselves, banks will need to go out of their way to deliberately listen to the needs of customers and ensure that strategies are customer focused. It is only when the banks know what the customer wants that it can be able to hard wire their voice and adopt voice-of-the-customer model. In resolving operational challenges associated with automated queuing machines, banks should have qualified

staff in customer service departments to ensure that customer issues are dealt with professionally and in time. Timeliness in resolving customer issues is also a key contributing factor to customer satisfaction. The bank's image to the customer is also determined by the way the staff handles the customer which in turn will determine whether the customer is satisfied or not. There is also need to invest in an efficient technology that will avoid lots of queries and serve customers faster and efficiently.

### **5.5 Limitations of the Study**

The research relied on consent of bank authorities to access most banks thus leading to less than anticipated scope. Access was denied in most banks on grounds of security, confidentiality and delayed response. The researcher had no control over which service a customer received at a counter as the services are not explicitly differentiated in some banks.

A lot of respondents were however non-committal to respond instantly to data collection. Branches of the same bank could also give varying reasons for refusal showing a great deal of disunity of command. Adequate campaign needs to be carried out by learning institutions to impress on bank authorities to relax the rules on data collection by the academia because the same information can be used to improve the way of doing business. In most cases this can be driven from the headquarters, mostly located in Nairobi. For congested retail banks it is important for bank management to consider further segregation of service to reduce distraction of the tellers and ultimately the service time.

## **5.6 Areas for Further Study**

More research needs to be carried out to cover the whole population of banks in the County. A lot of resources will be required to collect data from the banks at the same time and involvement of Kenya Bankers Association (KBA) and CBK is useful to incorporate all the banks.

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## APPENDICES

### APPENDIX I: QUESTIONNAIRE

#### SECTION A: GENERAL INFORMATION

1. Sex

a) Male ( ) (b) Female ( )

2. Age

a) Under 20 ( ) (b) 20-29 ( ) (c) 30 -39 ( ) (d) 40-49 ( ) (e) 50-59 ( ) (f) 60 and above ( )

3. Highest level of completed education

a) No formal education ( ) (b) Primary ( ) (c) Secondary( ) (d) Bachelor Degree( )  
(e) Postgraduate ( )

4. Marital status

a) Single ( ) (b) Married ( ) (c) Divorced( ) (d) Widowed( )

5. How Long have you held an account with KCB Bank?

a) Less than 2 years( ) (b) 2-5 years( ) (c) 5- 8 years( ) (d) More than 8 years( )

6. What type of accounts do you have.....

#### SECTION B: SERVICE DELIVERY WAITING TIME

7. How long have you used the machine at the entrance of the bank to book your service?

a) Less than 3 months ( ) (b) 3-7 Months ( ) (c) 8-12 Months( ) (d) More than 1 year( )

8. On average, how much time did you use to spend to obtain banking services at the banking hall before introduction of service booking machine?

- a) Less than 10 minutes ( ) (b) 10-19 minutes ( )  
(c) 20 – 29 minutes ( ) (d) 30-39 minutes( ) (e)More than 40 minutes( )

9. What dates of the month did you spend more time at the banking hall to obtain services on the queue?

- a) Beginning of the month ( ) (b) Mid month ( ) (c) End month( ) (d) All the time( )

10.How much time do you spend when you use KCB service booking machine at the banking hall?

- a) Less than 10 minutes( ) (b) 10-19 minutes ( ) (c) 20 – 29 minutes( ) (d) 30-39 minutes ( ) (e)More than 40 minutes( )

11. How much time on average do you spend on the service booking machine to select your service and obtain a ticket?

- Less than 2 Minutes( ) (b) 2-5 Minutes( ) (c) 5 minutes( )

12. Do you always need assistance from banking staff to use the service booking machine at the banking hall?

- Yes( ) (b) No( )

## SECTION C: AUTOMATED QUEUING SYSTEM

Please indicate the level to which you agree to the following statements

<b>Descriptive statements</b>	<b>Very True</b>	<b>True</b>	<b>Unlikely</b>	<b>False</b>	<b>Completely False</b>
I do not drop off the queue after the introduction of automated service booking machine					
Services are rendered much faster nowadays					
Nobody jumps the queue after introduction of automated service booking machine					
I save more time than I used to do at the banking hall with introduction of service booking machine					
Automated service booking machine is convenient					
Automated service booking machine is easy to use					
Automated service booking machine is accurate					
Automated service booking machine is reliable					
Automated service booking machine announces my booking number loudly when my turn to be served comes					
Automated service booking machine clearly displays my ticket number on the screen when my turn to be served comes					

## SECTION D: CUSTOMER EXPERIENCE

Please indicate the extent to which you agree to the following statements

<b>Descriptive statements</b>	<b>Very large extent</b>	<b>Large extent</b>	<b>Moderate extent</b>	<b>Small extent</b>	<b>Not at all</b>
Service delivery is efficient at the banking hall					
Service provision is interactive					
Automation of queuing is helpful to customers					
I spend far much less time in the banking hall these days than before automating queuing machine was introduced					
Service provision is friendly					
The service process is relative short compared to other banks					
The bank has customized service provision to my unique needs					
Seats at the banking hall are adequate					
Seats at the banking hall are comfortable					
Automated queuing machine is convenient for requesting for service at the banking hall					
I feel entertained by TV screen at the banking hall					