

**ESTABLISHING THE RELATIONSHIP BETWEEN QUEUE MANAGEMENT
PRACTICES AND CUSTOMER SATISFACTION AT HUDUMA CENTRE
IN NAKURU COUNTY**

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**A Research Project submitted to Graduate School in Partial Fulfillment of the
Requirement for the Award of Degree in Master of Business Administration of Egerton
University**

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DECLARATION AND RECOMMENDATION

Declaration

I declare that the research project is my original work and has not previously been accepted in substance for any degree to the best of my knowledge.

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DEDICATION

This research project is lovingly dedicated to my husband Vincent Kipngetich who has been my constant source of inspiration and whose words of encouragement have given me the drive and discipline to tackle tasks with enthusiasm and determination.

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LIST OF ABBREVIATIONS AND SYNONYMS

AFMS	Accounting Finance and Management Science
ATM	Automated Teller Machines
CSE	Customer Service Excellence
EDB	Economic Development Board
EOQ	Economic Order Quantity
FIFO	First In, First Out
ICT	Information Communication Technology
ID	Identification Card
IDA	Industrial Development Authority
ISD	Integrated Service Delivery
LIFO	Last In First Out
MDAs	Ministries, Departments and Agencies
MIDA	Malaysian Industrial Development Authority
NHIF	National Hospital Insurance Fund
NSSF	National Social Security Fund
OSSs	One Stop Shops
VIP	Very Important Persons

ABSTRACT

Huduma Kenya seeks to optimize the efficiency and effectiveness of Huduma Centre. One important area that defines how well and efficient the Centres deliver its services to customers is its queue management practices. To enhance service delivery, a proper queuing system is needed. Thus the main purpose of this study is to establish the relationship between queue management practices and customer satisfaction in the Huduma centers in Kenya. The specific objectives are to determine the relationship between customer arrivals, waiting line, service time and service facility layout and customer satisfaction in the Huduma Centre. The study focused on the customers of the Huduma Centre. The sample size of the population was determined by simple random sampling strategy. The target population is the customer of Huduma Centre in Nakuru County. The study targeted a population sample size of 384 customers. Data was collected using a structured questionnaire comprising of closed-ended questions that were administered by the researcher. The quantitative data was organized and processed using Statistical Package for the Social Sciences (SPSS) version 17. The presentation of the research was done using descriptive statistics by way of percentages, proportions and frequency distributions of responses to summarize the data. In order to test the hypothesis the inferential statistics such as the Pearson Product-Moment correlation and Regression analysis tests statistics were used in order to establish the relationship between queue management practices and customer satisfaction. For general reasons, this study used 5% significance level for all the tests statistics. The study established a significant and positive relationship between queue management practices and the customer satisfaction. The results of this study would assist policymakers to improve public services rendered in Huduma Centre in Kenya and help these Centres to employ best queue management practices in order to enhance success and economic growth.

CHAPTER ONE

INTRODUCTION

This study established the relationship between queue management practices and customer satisfaction in the Huduma Centre. This part therefore consists of the background study of queuing, statement of problem, objective, scope, significance and limitations.

1.1 Background of the Study

The Public sector in Kenya has witnessed dramatic reforms contextualized within the new Constitution, promulgated in 2010 and took shape after the 2013 elections all in an effort to establish citizen service centres as primary service delivery channels in all the 47 Counties (Waiguru, 2013). Despite these entire spurious efforts, one phenomenon remains inevitable: queue. Queues are often employed in order to achieve discipline and serenity at facility centers. The word queue comes through French and the Latin Cauda meaning “tail.” The act of queuing is associated with waiting, which is an inevitable part of the day to day life (Hillier, 2012).

Unmanaged queues are detrimental to the gainful operation of service systems and results in a lot of other managerial hitches. Queue management has received increased attention in the last couple of years, due to the fact that swiftness of service has been shown to provide a firm with a competitive edge in the market (Chase, Aquilano, and Jacobs, 2001). The study of queues deals with quantifying the phenomenon of waiting in lines using descriptive measures of performance, such as average queue length, average waiting time in queue and average facility utilization (Hillier, 2012).

A queuing system consists of inputs, queue, and servers at facility centers. Generally, it consists of one or more servers for serving customers arriving in some manner and having some service requests. The customers represent transactions, jobs, users, or programs. They arrive at the service facility for service, waiting for service if there is a waiting chamber, and leave the system after being served (Kariuki and Mageto, 2015). Every so often the customer is lost for directions for receiving services. The arrival of these customers is not necessarily regular and so the time taken for service is not uniform. Queues build up during hours of demand and disappear during the lull period. Service rendered to customers almost always demand that they form queues. It is a normal phenomenon for people to spend a great deal of time in queues or in waiting lines.

Udayabhanu, Kekre, and Srinivasan, (2010) established that overcrowding in queuing systems has serious consequences so that it is never optimal to operate at 100% utilization levels. He developed an expression for the optimal utilization level for an M/D/1 queue and established its similarity to the Economic Order Quantity (EOQ) model of the inventory literature. The model can be used to achieve an optimal mean arrival rate, or to appropriately adjust the attainable capacity so that the desired utilization level is achieved.

Brahma, (2013), stated that queuing theory employs mathematical models and performance measures to evaluate and absolutely improve the movement of customers through a queuing system. Queuing theory has been used widely by the service industries and has uncountable applications. Queuing theory has been used in the past to evaluate such things as the working environment, staff schedules, customer waiting time, customer waiting environment and productivity. Hence, queuing theory is appropriate to be applied in the management of these queues, since it is associated with queue or waiting line, where customers who cannot be served instantly have to queue and wait for service for a long time and time being a resource, ought to be managed effectively and efficiently since time is money.

Customer satisfaction has come to be viewed as a key business strategy of every business and a benchmark against which many organizations have set their standards. Sustaining prevailing customers for organizations is ever more important than the ability to capture new ones because customers are vital to any organization's success (Anubav, 2010). Without customers, organizations would have no profits, no resources and therefore no market niches that can enable them to compete in the global arena (Mburu, Zyl, and Cullen, 2013).

This study established the degree of implementation of Huduma Centres' queue management practices in terms of customer arrival, waiting line, service time and service facility. It also established the level of satisfaction of the customers in the Huduma Centres' queue management practices in areas mentioned. The study is beneficial to the customers because their waiting line and waiting time are very significant factors that enhance satisfaction to customers.

1.1.1 Huduma Centre

Huduma Kenya is a top project in Kenya's Vision 2030 flagship captured under the Mid Term plan for 2013 – 2017. It seeks to transform public service delivery by providing citizens' access to various public services and information from One Stop Shops (OSSs)

citizen service centers called Huduma Centres and through integrated technology platforms provided in each and every county in Kenya. Ultimately, the government aimed at transforming the public service into a professional and customer-centered public service, (Public Service Compliance, 2014).

According to Kiragu, Kariuki, and Ikuu, (2015), Huduma Kenya is a ‘one stop shop’ methodology in restructuring service delivery in the public sector of Kenya. The crucial part of the project is to have access to the remote server and running the entire operations over the thin client connecting to a session of all ministries under one roof. This means that one is able to get birth certificates, national identity cards, passports, registration of business names, and applications for marriage certificates, driving license, police abstracts, electricity payments and many other services in one place rather than moving from one office to another. Thus Huduma Kenya involves bringing services closer to the citizens, effectively and conveniently under one roof.

Kiragu *et al.*, (2015), states that “So far, there are thirty Huduma centers already operational in Kenya, they include, Nairobi – GPO Nairobi, City Square- Haile Sellasie Avenue, Makadara, Machakos, Nakuru, Eldoret, Kakamega, Kisumu, Nyeri, Embu, Mombasa and others. Huduma Kenya Program incorporated online e-citizen web portal to provide integrated services offered by various government ministries, agencies and departments and a unified and integrated channel. Payments are done through Posta-pay or M-Payment for government services obtained in the Huduma centres”.

1.2 Statement of the Problem

In the current competitive business environment, there is a realization that customers do not only demand for quality but demand speed in service delivery according to (Leoven, 2015). In many organizations, queues are thriving in their day-to-day operations due to money and time constraints hence making most customers wait for a service. In Huduma Centre the existent problem of long queues for hours causes loss of precious time, limits productivity and makes patronage more tiresome. In view of the vital role that Huduma Centre play in the economy of the country Kenya, a slight decline in performance may largely have an adverse effect on the country’s economy and politics. Queuing during peak hours and towards the end of the country’s financial year when the demand is high has great negative consequences apart from leading to chaos and loss of man hours per day. According to Kiragu *et al.*, (2015) it was discovered that majority of customers complained about the amount of time spent in

queues before they are attended to and that the cyber cafés are overwhelmed causing delays and congestion. The demand is higher than the suppliers of services in the Huduma Centre. The Huduma Centre was established so as to bring services closer to the customers and reduce congestion witnessed in most service centres. Despite this, customers still complain about the long queues and congestion in the centres. Studies have previously been done that focused on queuing in banks and hospitals and little has been done on Huduma Centre in Kenya. Therefore, it is prudent to establish the relationship between queue management practices and customer satisfaction in Huduma Centre.

1.3 Objective of the Study

The general objective of this study was to establish the relationship between queuing management practices and customer satisfaction in Huduma Centres in Kenya

1.3.1 Specific Objectives

- i. To determine the relationship between customer arrival and customer satisfaction
- ii. To determine the relationship between waiting line and customer satisfaction
- iii. To determine the relationship between service time and customer satisfaction
- iv. To establish the relationship between service facility layout and customer satisfaction

1.4 Research Hypotheses

- i. **H₀₁:** Customer Arrival has no significant relationship with the customers' satisfaction in the Huduma Centre
- ii. **H₀₂:** Waiting lines has no significant relationship with the customers' satisfaction in the Huduma Centre
- iii. **H₀₃:** Service time has no significant relationship with the customers' satisfaction in the Huduma Centre
- iv. **H₀₄:** Service facility layout has no significant relationship with the customers' satisfaction in the Huduma Centre

1.5 Significance of the Study

With the increasing population, queuing theory and queue management becomes an important tool to the public service in modeling a system that ensures efficient service delivery at the service counters and satisfaction of the services offered. Carrying out a study on the effects of queue management practices on customer satisfaction empirical analysis of

the model being used is of great importance since the findings will be useful in making administrative decisions.

According to Kariuki and Mageto, (2015), the modern business environment is very competitive and the society is progressively turning into a service dominating one. This means that focus will be more on customer satisfaction and service quality in order to provide a competitive edge in the marketplace. Therefore this has led to an increasing importance in service operations management. As a result, waiting line/queue has drawn great attention to all business operation management specialists.

Since so far there is no study that has been conducted on queuing management systems of Huduma Centre in Kenya, this study, therefore, is of relevance since it adds to existing literature on queue management with particular reference to the Huduma Centre in Kenya. Thus this study is quite enriching to researchers, academic institutions and scholars. The study will also benefit organizations or companies like banks and others to improve customer satisfaction especially existing customers as it brings in another dimension that is mostly ignored by many. This study thus helps these organizations to employ best queue management practices in order to enhance success and business growth.

1.6 Scope of the study

The study was conducted at Nakuru Huduma Centre GPO Nakuru. This study was limited to Huduma Centers operations. This research focused only on the queuing management practices and customer satisfaction in Nakuru County. The target population was the customers of Huduma Centre. Data collection using questionnaires were administered and done during peak days and hours to represent the real scenario of the problem.

1.7 Limitations of the study

The research was conducted in light of a few limitations; there was the likelihood of respondents not willing to divulge information for fear of being chided, this impacted negatively on the response rate. The staff and customers were thus informed clearly that the study was for an academic purpose and that their support in getting responses from the customers would help in getting feedback that would help in improving the service delivery of Huduma Centre to the public. This helped to increase trust and the response rate.

1.8 Operational Definitions of Terms

- Arrival:** This element is concerned with the rate of entry by customers into the system.
- Arrival pattern:** This is the manner in which customers arrive in the system for service.
- Balking:** This is the refusal of a customer to join the queue if the queue is long.
- Customer satisfaction:** Customer satisfaction is a personal feeling of either pleasure or disappointment resulting from the evaluation of services provided by an organization to an individual in relation to expectations.
- FIFO (First-in-First-Out):** This method allows the first customer to enter the service facility system to be served first.
- Huduma Centre** This is “all in one place shop” which makes the citizenry and clientele to be able to get various services and information from one place and via diverse customer points.
- Jockeying:** When a customer withdraws from a queue to join another one because the new queue is shorter.
- LIFO (Last-in-First-Out):** In this type the last customer on queue that enters the system is served first
- Server:** An operation fed by a queue
- Service time:** This is the total time which the customer entered the Huduma Centre, made an inquiry, documented his transaction, waited in a queue, served by a processor and left the banking hall.
- Reneging:** This is the withdrawal of a customer from the queue because of the length of the waiting line.
- Queue:** A queue can be defined as an aggregation of items waiting for a service function.
- Queuing discipline:** This element is concerned with what goes on between the arrival time of a customer and when service is rendered to him/her.
- Queue Management** is the way in which customers join a queue in order to wait for service
- Queuing theory:** This is the construction of a mathematical model of varying forms of queuing systems.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section framework the previous research works done on the relationship between queue management practices and customer satisfaction in Huduma Centres in Kenya. It covers queuing management practices that were often used in analysis and solving queuing problems in Huduma Centres. The fundamental aspects that will be considered include Customer Arrival, Waiting Line, and Service Facility. This section also gave empirical literature that guides the study variables.

2.1 Theoretical Literature Review

2.1.1 The Development of Queuing Systems

Queuing has been in existence for many centuries. Queuing is very important to humans in all aspects of life since it is used to create order and serenity in the facility centres and to also provide fair service to customers. The first historical reference of queuing can be seen during the times of Noah who built the Ark in the Bible. According to Bible in Genesis 7:8, it reads "Of clean beasts, and of beasts that are not clean, and of fowls, and of everything that creepeth upon the earth, There went in two and two unto Noah into the ark, the male and the female, as God had commanded Noah. "This means that there was order in moving the animals into the ark that was built by Noah, (Brueggemann, 2010).

The name queue never existed in the time of Noah who built the ark. The conventional story of the origin of the queue is that it is from the French cue, a word originally meaning "tail", but evolving over time by the 1700s. Bhat, (2015), states that the study of the history of queuing theory dates back to over a century, the first article was published in 1907 called "Waiting Times and Number of Calls". This paper was reprinted in the Post Office Electrical Engineers Journal, London, October 1910. Since the paper was not mathematically exact, it brought historical importance in Erlang's (1909) article on "The Theory of Probabilities and Telephone Conversations", which contains some of the most important concepts in queuing theory and techniques; for instance the notion of statistical equilibrium and the method of formulating the balance of state equations which was later called Chapman-Kolmogorov equations.

Queuing can also be traced back to the days of food rationing during the World Wars when queuing meant the difference between an empty and a full stomach (Collingham, 2012). The research study in this article noted that the drive to the queue is determined by the need of the customer and there being alternative modes of getting the service. For instance, it is more likely for a customer to queue for an Identity Card in Huduma centre and get it in less than 3 weeks than to queue in Identity Card (ID) registration officer and get the ID after one and half months. The use of ICT in Huduma speeds the process of acquiring an Identity Card.

2.1.2 Queuing theory

Allen, (2014), defines queuing theory as being basically the study of a queue through the use of mathematical modeling to evaluate the efficiency of queues. It is the basis for finding the optimal solution to queue management. Queuing theory is the formal study of queues or waiting in line and is an entire discipline in operations management. The first article on queuing theory was first written in Erlang, a Danish Engineer who worked in Copenhagen. He wrote a paper in the field of telephony in 1909. The study identified that the number of telephone conversations and telephone holding time fit into Poisson distribution and are exponentially distributed. To this date queuing theory is used in related situations from serving customers at service stands to managing traffic congestion in a cosmopolitan city and from designing switching equipment for telecommunications to understanding internet behaviour. The load in circuit switching system is measured in Erlang (Erlang, 1909). It has applications also in diverse fields including traffic engineering, telecommunications, computing and design of factories, shops, banks, offices, and hospitals.

Brahma, (2013), stated that queuing theory utilizes mathematical models and performance measures to assess and optimistically improve the flow of customers through a queuing system. Queuing theory has been used in the past to assess such things as the working environment, productivity, staff schedules, customer waiting time, and customer waiting environments. A queuing system or waiting line phenomenon consists essentially of six major components: the populations, the arrival, queues itself, queue discipline, service mechanism and the departure or exit. Vazsonyi, (1979), observed that queuing theory provides a good conceptual model of waiting line conditions because it gives one a general understanding of the influence of such factors as arrival distribution, service distribution and a number of servers on queue environments.

In a study by Brown, (2012), queuing models can help managers to understand and control the effects of rework, but often this tool is overlooked in part because of concerns over accuracy in complex environments and/or the need for limiting assumptions. Generalizations are made with regards to the use of this tool for allocation of jobs to specific workers and/or machines based on known rework rates with the ultimate aim of queue time minimization. Khalaf, (2012), in his work, ascertained that during the next two decades several mathematicians became interested in these problems and developed general models which could be used in more complex situations. (Kendall, 1951), the first use of the term "queuing system" occurred in 1951 in the Journal of the Royal Statistical Society when D.C. Kendall published his article "Some Problems in the Theory of Queues".

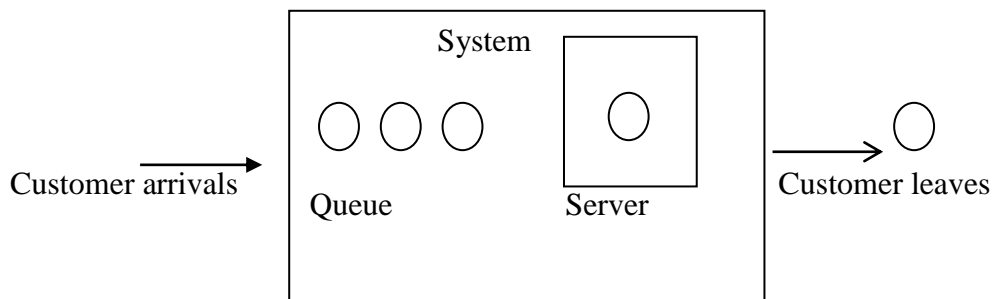


Figure 2.1: A single channel queue system

Source: Olaniyi, (2004)

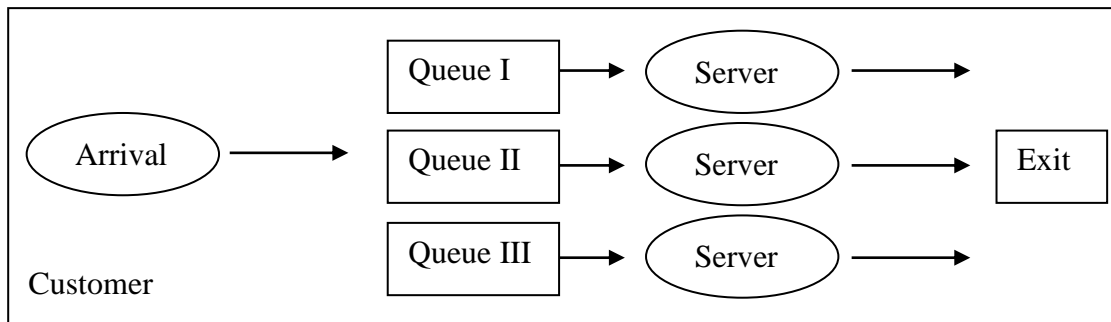


Figure 2.2: Multiple waiting lines with multiple parallel servers

Source: Olaniyi, (2004)

2.2 Empirical Literature Review

2.2.1 Queue Management Practice

Queue management has been defined by Daintith, (2004) the way in which customers or processes join a queue in order to wait for service(s), and by the way in which customers already in the queue are selected for service. Thus, queue management practices are measures that are put in place in the organization to ensure effectiveness and efficiency of service

delivery. Organizations that offer service environments deal with customers queues on a day-to-day basis. These customers arrive to receive different kinds of services, so management should labour to ensure that customers' time is pleasing and hassle-free. These queue management practices are categorized into three major groups, customer arrival, waiting line; and service facility, (Leoven, 2015).

On the other hand, Chase *et al.*, (2001) outlined three factors used in queue system management as the number of lines, the length of a line and queue discipline. Most organizations offering service facilities have limited line capacity whereas some have infinite potential length. In multiple lines, customer arrivals often shift lines/jockey. Factors like the number of customers in line, average waiting time, and efficiency of the service facility affects the choice of priority rule. Thus it is noted that it is usually difficult to ensure customers know and follow the adopted rule and that a queue system exists to enable servers to manage the lines in the service facility.

According to Gosha, (2007), Queue management in the organization has been noted as being a problem over a century in many fields including the Financial Services e.g. banks, health care, public sectors and retail and commercial sectors. In this era of technology, it is important to gather statistics about the queue in order to identify trends that could be anticipated. The study also suggested that a Queue Management System such as Queue Administration that is a database driven and an online application to manage the different waiting list of a barbershop will improve the satisfaction of a shop's customers as well as their barbers

Chin, (2010), investigated the submittal review and the approval process. He used queuing theory to determine the major causes of long lead times by exploring the underlying causes of waiting in a process flow in his study and found the improvement methods from the queuing perspective.

Adan, Boxma, and Resing, (2001), further discusses that insufficiencies in services also occur due to an undue wait in service may be because of a new employee. Delays in service delivery beyond their due time may result in losing future business opportunities.

2.2.1.1 Customer Arrival

Customer arrival is the way in which customers arrive and enters the Huduma Centre for service (Brahma, 2013). Whenever customers arrive at a rate that exceeds the processing

system rate, a line or queue will form. Arrivals may come in singly or in batches; they may come in consistently spaced or in a completely random manner. A potential customer can also leave if, on arrival, he or she finds the line too long.

According to Okoye, (2011), the arrival pattern may be the arrival of an entity at a service point. This process involves a degree of uncertainty concerning the exact arrival times and the number of entities arriving. And to describe this process there are some important attributes such as the sources of the arrivals, the size of each arrival, the grouping of such an arrival and the inter-arrival times.

2.2.1.2 Waiting Line

Brahma, (2013), explains that waiting line systems can have single or multiple lines. Customers wait in line until an agent is free and then proceed to that agent's position. The advantage of using a single line when multiple servers are available is the customer's perception of fairness in terms of equitable waits. That is, the customer is not penalized by picking the slow line but is served in a true First-Come, First-Server fashion. The single-line approach eliminates the jockeying behavior. Finally, a single-line, multiple-server system has better performance in terms of waiting times than the same system with a line for each server. The multiple line configurations are appropriate when servers specialized is used or when space considerations make a single line inconvenient.

According to Yakubu and Najim, (2014), the queue length or the number of customer in the line reflects one of two conditions. The short line means either a very good customer service or it means the system has too much service capacity. Similarly, a long queue may indicate poor service or the need to increase capacity. However, efficient system can be determined by a large number of customers being served in short period.

Stevenson, (2002), states that "there is a major difference between a number of customer in line and number of customer in the system. The number of the customer in the line implies those customers who are waiting in line but are not being served, but the number in the system means not only those waiting in line but also those who are being served. This measure reflects service efficiency and capacity. A large number of customers in the system can create congestion and overcrowding resulting in dissatisfaction, unless capacity for waiting is increased. This criterion mainly indicates the need to increase space where customers can wait."

According to Maina, (2013), customers wait in line until an agent is free and then proceed to that agent's position. Waiting line systems can have single or multiple lines. The advantage of using a single line when multiple servers are available is the customer's perception of fairness in terms of equitable waits. The single-line approach eliminates the jockeying behavior. That is, the customer is not penalized by picking the slow line but is served in a true first-come, first served fashion. Finally, a single-line, multiple-server system has better performance in terms of waiting times than the same system with a line for each server. The multiple line configurations are appropriate when servers specialized are used or when space considerations make a single line inconvenient. In this case Huduma Centres have specialized serves hence multiple lines is mainly employed.

2.2.1.3 Queue Discipline

The queue discipline is the rule for determining the formation of the line or queue and the order in which jobs are processed. Queuing discipline is the order in which customers are picked to receive service (Oliver, 2014). First Come First Serve, the order of service is the order of arrival. Last Come First Serve, customers are served in the reverse order of arrival. Service in Random Order, the selection is in a way that every customer in the queue is equally likely to be selected for the service. Hence the time of arrival is of no consequence in this selection. Priority service, this is when customers may be selected for services according to some identifiable character e.g. emergency places.

The queue discipline can include balking (customers deciding not to join the queue if it is too long), reneging (customers leave the queue if they have waited too long for service), jockeying (customers switch between queues if they think they will get served faster by so doing). Maister, (2005), there are two possible outcomes after a customer is served. The customer is either satisfied or not satisfied and requires re-service.

2.2.1.4 Service Time

The service time is the duration that the customer takes to be served in the service counters. According to Odunukwe, (2013), service time is the rate in which the service channel renders service to a customer. The service pattern is usually specified by the service time, the time required by one server to serve one customer. The service time may be deterministic or it may be a random variable whose probability distribution is presumed known. It may depend on the number of customers already in the facility or it may be state independent. Also of

interest is whether a customer is attended to completely by one server or the customer requires a sequence of servers. Unless stated to the contrary, the standard assumption will be that one server can completely serve a customer, (Bakari, Chamalwa, and Baba, 2014).

Odunukwe, (2013), states that “the service pattern is the rate in which the service channel renders service to a customer. The service pattern is usually specified by the service time, the time required by one server to serve one customer. The service time may be deterministic or it may be a random variable whose probability distribution is presumed known. It may depend on the number of customers already in the facility or it may be state independent.

2.2.1.5 Service Facility

System serving capacity is a function of the number of service facilities and server proficiency. It is assumed that a server or channel can serve one customer at a time. Taha, (1976), stated that the system capacity is the maximum number of customers, both those in service and those in the queue(s), permitted in the service facility at the same time. Furthermore; whenever a customer arrives at a facility that is full, the arriving customer is denied entrance to the facility. Such a customer is not allowed to wait outside the facility (since that effectively increases the capacity) but is forced to leave without receiving service. A system has an infinite capacity i.e. no limit on the number of customers permitted inside the facility, while a finite system has limited capacity.

2.2.2 Customer Satisfaction

According to Oliver, (2014), Customer satisfaction is a personal feeling of either pleasure or disappointment resulting from the evaluation of services provided by an organization to an individual in relation to expectations. Leisen and Vance, (2001), Service providers frequently place a higher priority on customer satisfaction, because it has been seen as a prerequisite to customer retention. Anderson, Fornell, and Lehmann, (1994), as a positive outcome of marketing activities, high customer satisfaction leads to repeat visitation to stores, repeat product purchases, and word-of-mouth promotion to friends. On the other hand, low customer satisfaction has been associated with complaining behavior according to (ZeithamI, Berry, and Parasuraman, 1996). A satisfied customer often stays loyal longer and is likely to patronize the firm in future, (Bloemer and Kasper, 1995).

Daintith, (2004), states that “Applying the principles of queuing psychology, and having the proper physical line management tools on hand, is essential practices for any site or event at

which people must wait in line. When lines are perceived as fair and efficient, patrons are happier and the business reaps the benefits of having a customer-friendly atmosphere”.

According to Sokefun, (2013), Customer satisfaction is derived largely from the quality and reliability of products and services. The long queues and huge crowds in the banking halls can be highly devastating and discourage most times, especially when the weekend is near. Most times, these long queues are as a result of the breakdown of the computers used by these cashiers, sometimes it occurs as a result of the cashiers, pushing duty to one another as to who is to attend to the customers or not.

Furthermore, research has demonstrated that customer satisfaction is affected not just by waiting time but also by customer expectations or attribution of the causes for the waiting (Taylor and Baker, 1994). The degree of customer satisfaction depends on the correlation between the customer’s expectations and experience. Noriaki Kano developed a model to further explain customer satisfaction as shown on Figure 2.3 below.

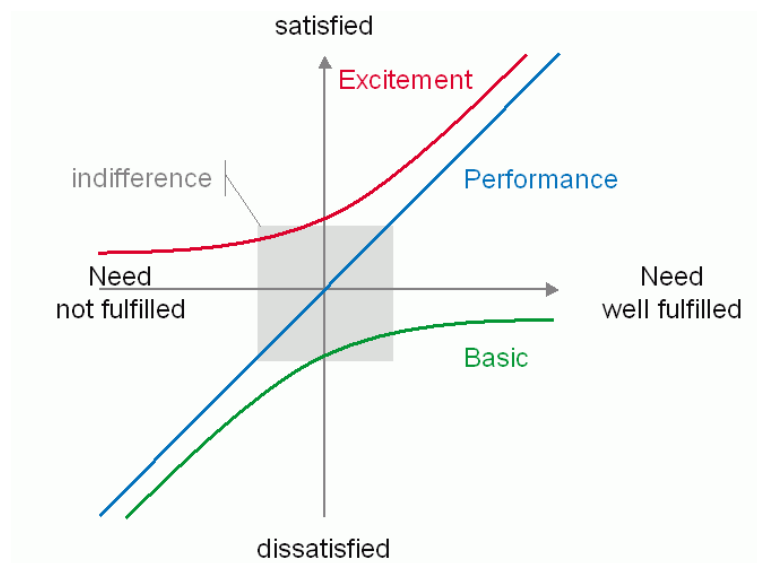


Figure 2.3: The Kano model of customer satisfaction

Source: Kano, (1993)

According to Kano, (1993) the basic needs are expected to be met by the customer and most likely the customer will not be satisfied if only the basic needs are fulfilled. The expected needs are depicted as the performance in the model. These expected needs are those that the customer is aware of and would prefer to be fulfilled but not always a requirement.

Obamiro, (2010) explains that there are several key factors that greatly influence satisfaction. They include customer's intention, attitudes, and expectations about the service provided. Intentions are the decisions the customer makes about future actions toward the hospital producing the health service. Attitudes consist of the customer's evaluations, emotional feelings, and action tendencies toward a product or service that has developed over time. Expectations are the customer's anticipated beliefs about a product or service prior to the interaction. These factors therefore, together influence the future behavior or the actual future action taken by the customer. Customers form service expectations from past experiences, word of mouth and advertisement, (Nkuruma, 2014).

Finally, Swaidan, Smith, and Honeycutt, (2015), discussed that customer satisfaction has a linear relation with loyalty and repeat use or purchase. It has multiplying effects of happy and unhappy customers and that often; a satisfied customer is the best advertisement for service organizations or firms.

2.2.3 Queue Management Practices and Customer Satisfaction

A customer has been given a very important position in the marketplace due to global interactions of businesses. Therefore, the long-term survival of an organization is determined by the level of satisfaction of the customer. Customer satisfaction and service operation capabilities have shown how to provide an organization a competitive advantage in the marketplace. This means that in order for the organization to survive in this current global environment, there must be a culture of customer focus with satisfied customers. Gronroos, (2007), put across that majority of the organizations put "excellent customer service or a similar tag in their vision or mission statements, but most do not really mean what they say. Customer service is often viewed as an entry-level position and the wages, attitude and experience of the staff reflect that". Thus the customer service focus on the Huduma Centre queue management practices is very important.

Consequently, one of the issues in queue management is not only the actual amount of time the customer has to wait, but also the customer's perceptions of that wait (Davis and Heineke, 1994). Customers often rate organizations based on their experiences. The unpleasant experience of queuing in line can often have a negative effect on the rest of a customer's experience with a particular organization. "The way in which managers of organizations address the waiting time issue is critical to the long-term success of their organizations," (Davis and Heineke, 1994).

Swaidan, Smith, and Honeycutt, (2015), conducted a study at a branch office of the bank of Boston. They found out that increased distractions make the waiting experience more interesting and tend to increase customer satisfaction. Also that expected time in queue tend to make perceptions of waiting length more accurate but does not affect customer satisfaction.

Sarel and Marmorstein, (2013), observed that more affluent customers would not tolerate delay in service delivery and were even willing to pay a premium due to the opportunity cost of waiting. Queuing is psychologically stressing to the customer especially if the customer is doing nothing. The expected waiting time is much less than the actual time in the mind of the customer.

The study also proved as the perception of waiting time increased, customer satisfaction tends to decrease. (Tom & Lucey, 1995) did a study at a supermarket and found that customer satisfaction/dissatisfaction is dependent not only on the perceived waiting time but also on the customer identification of the causes, as well as the stability and control of the causes. However, City, (2015), the time of the customers should be occupied while waiting. Occupied time feeds the mind, keeps the hands busy, and distracts the customers from the wait at hand. A fast food restaurant can provide digital signage in the queue that plays interesting or entertaining videos or informational advertisements.

Maina, (2013) found that customer satisfaction at Safaricom was rated good but not excellent and revealed fairly inefficient customer service as the most likely cause for dissatisfaction. On her SWOT analysis on Safaricom, one of the weaknesses noted were the very long queues at the customer service offices leading to relatively low levels of customer satisfaction.(Brahma, 2013), review the use of queuing theory in pharmacy applications with particular attention to improving customer satisfaction. Customer satisfaction is improved by predicting and reducing waiting times and adjusting staffing.

Oyatoyeet *al.*, (2011), carried out a study stressing the importance of queuing theory to the problem of port congestion in order to enhance sustainable development of Nigeria ports. Nigeria Ports are characterized with incessant congestion problem in the recent past and this has resulted in the diversion of ships scheduled for Nigeria Ports to other neighboring country ports which has caused the country to lose a lot of revenue. The queuing model was applied to the arrival and services pattern which causes the problems of congestion and proffer solutions to the problem areas. The study found out that the number of birth in Nigeria port is

adequate for the traffic intensity of vessels but other factors leading to port congestion were also identified.

In a study by Kiragu *et al.*, (2015), it was revealed that majority of customers complained about the amount of time spent in queues before they are attended and that the cyber café are overwhelmed causing congestions and delays. The demand is higher than the suppliers of services in the Huduma Centre. Owing to these complaints it has become prudent to study the effects of queue management practices in relations to customer satisfaction in Huduma Centre. Most studies have also focused on queuing in banks and other areas and little has been done on Huduma Centre in Kenya.

Kariuki Mwangi, (2015), carried out a study on An Empirical Analysis of Queuing Model and Queuing Behavior in Relation to Customer Satisfaction at JKUAT Students Finance Office. The study compared the single server model against the multi-server model and concluded that M/M/1 model was not the best for the Finance department. The study found out that almost all customers are not satisfied with the nature of waiting lines and some students have turned away at regular occasions due to the long queues. The time students wait to be served should not be overlooked; constant check for their changing needs and improvement in the time spent when serving them has been emphasized by the study. The students wait in the queue for 33.4 minutes to be served which is a long period of time to wait to be served.

Udayabhanu *et al.*, (2010), established that congestion in queuing systems has serious consequences so that it is never optimal to operate at 100% utilization levels. They developed an expression for the optimal utilization level for an M/D/1 queue and demonstrate its similarity to the EOQ model of the inventory literature. The model can be used to achieve an optimal mean arrival rate, or to appropriately adjust the available capacity so that the desired utilization level is attained.

In a study done by Yakubu and Najim, (2014), on an application of queuing theory to ATM service optimization, they concluded that the problem of queues and long waiting time is multifaceted and related to; the number of service windows, the arrival rate and service rate and other external factors. It has been determined that two ATMs that are currently offered to customers are sufficient to handle customer demands at an optimal service rate of 0.60. However, waiting times are still high during certain hours of the day and the month. This is because much of the presented system capacity is unused during such periods primarily

brought about by failures in system operation. When this capacity suddenly becomes available for use, possibly huge demands from customers who were denied service prior to a particularly active period creates congestion at the center since customer arrivals are not scheduled. Therefore, the problem of long waiting at the ATM terminals is not caused only because of insufficient ATMs but also because of service unavailability, which is due majorly to component faults. This has been determined as a major weakness of the case ATM operations.

In a study by Bonga, (2014), it uses Little's Theorem to analyze data collected from Croc Foods Restaurant in Beit Bridge over a three-week period. The study showed that on average 60 customers arrive every hour and the service rate is 84 customers per hour. The study compared the single server model against the multi-server model. Using a questionnaire of 171 respondents, the study found out that about 43.3% of customers are not satisfied with the nature of waiting lines and about 69% customers have at least turned away at regular occasions due to the queues. The long-term value of existing customers should not be overlooked due to their changing needs and improvement in the time spent when serving them has been emphasized by the study.

2.3 Conceptual framework

A conceptual framework is collection of concepts or models from literature which informs a research study. It relates a study to existing ideas or principles. The dependent variable in this study is the queue management practices at Nakuru Huduma. The customer satisfaction constituted the independent variables as illustrated in Figure 2.4.

Independent Variables

Dependent Variables

Queue Management Practices

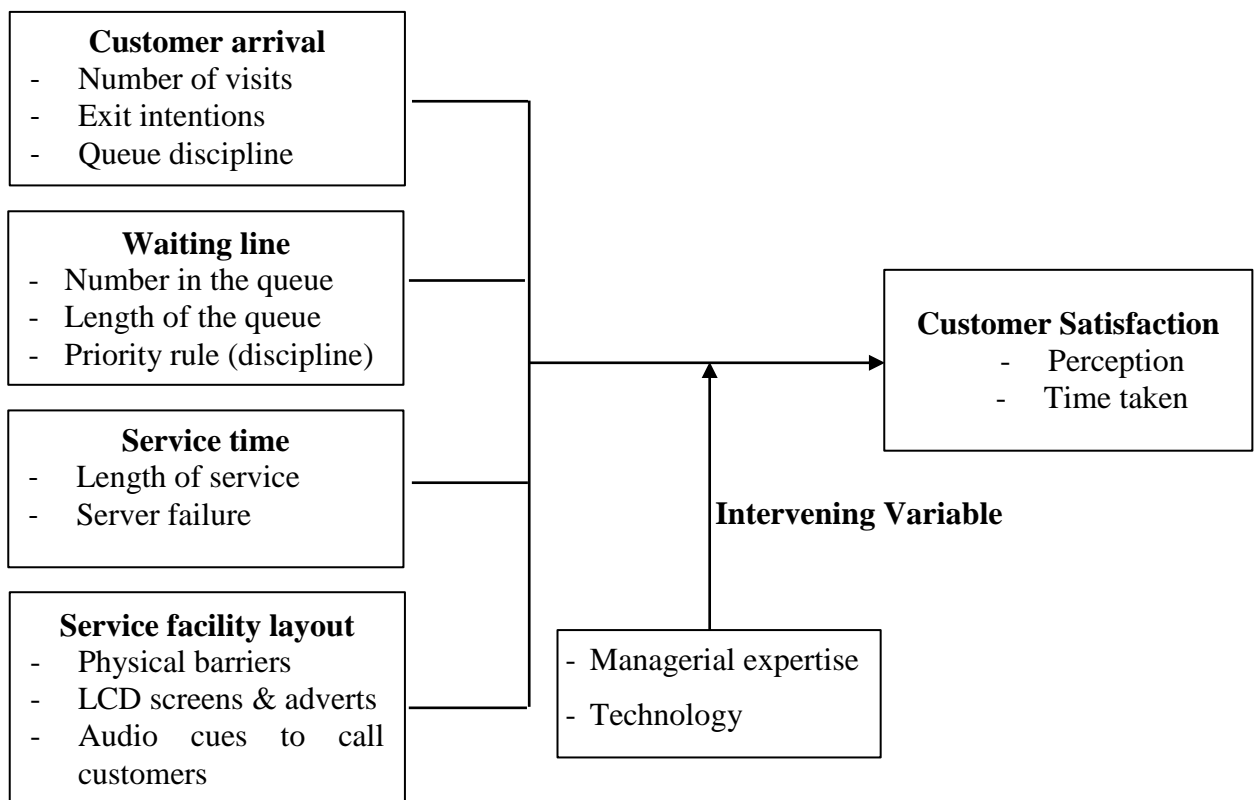


Figure 2.4: The Conceptual Framework

Source: Researcher, 2017

From the above conceptual framework it is evident that Queue Management Practices as an independent variable is measured by customer arrival, waiting time, service time, and service facility layout in relations to customers' satisfaction a dependent variable as stipulated the level of satisfaction in each queue management variable. In this research, managerial expertise and technology are the intervening variables since if they are not controlled they may affect the relationship.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This Research methodology is the fundamental component of the study since it presented the procedures followed by the researcher in collecting, managing and analyzing data. This basically comprised of; research design, the target population of the study, sample and sampling procedure, research instrument and administration, sample and sampling procedure, data collection procedures and data analysis techniques and presentation.

3.2 Research Design

A research design is a procedure for collecting, analyzing, and reporting research in quantitative and qualitative research, (Creswell, 2012). This study employed cross-sectional survey due to its ability to allow the researcher to collect data at one time from the sample population and to comparatively analyze customers' perceptions, thoughts and opinions on the queue management practices employed in the Huduma Centre in terms of waiting lines, queue discipline and facility layout of the Centre. The design was effective in obtaining information relating to people's thoughts feelings and opinions and were suitable where the population under study was relatively large and the phenomenon under investigation can be observed directly by the researchers. This research adopted the data processing and analysis suggested by Patton, (1990), which comprises of the quantitative method used in the gathering of data on queue management practices.

3.3 Targeted Population

The study targeted the customers who visit Huduma Centre in Nakuru. Population according to Kombo and Tromp, (2006), is a group of individuals, items or objects from which samples are taken for measurement that have at least one thing in common. In this study, the population is infinite hence the study targeted all the customers who visit Huduma Centre between 8.30a.m to 4.30p.m for a month. The study was done by collecting data from different service counters every day for a month.

3.4 Sampling Design and Procedures

The sample size of the population was determined by simple random sampling procedure by choosing only individuals who visit the Huduma Centre. This is because each customer in the

population has an equal and independent chance of being selected. This population includes children, women and men. According to Chase *et al.*, (2001) when the number of customers or arrivals on hand at any given moment is just a small portion of all potential arrivals, the arrival population is considered to be infinite population. In this study, the arrival population is considered to be infinite.

The Sample Size for Nakuru County customers is estimated to be an approximate total population of 1.6 million people. Cochran, (1977) developed a formula to calculate a representative sample for proportions as:

$$n_0 = \frac{z^2 Pq}{e^2}$$

Where, n_0 is the desired sample size, z is the selected critical value of desired confidence level, p is the estimated proportion of an attribute that is present in the population, $q = 1 - p$ and e is the desired level of precision. The degree of variability of the population is not known hence we assume the maximum variability, which is equal to 50% ($p = 0.5$) and taking 95% confidence level with $\pm 5\%$ precision. Therefore, the calculation for required sample size will be as follows:-

$$p = 0.5 \text{ and hence } q = 1 - 0.5 = 0.5; e = 0.05; z = 1.96$$

$$\text{So, } n_0 = \frac{(1.96^2) (0.5) (0.5)}{0.05^2}$$

$$n_0 = 384.16 = 384$$

Thus the sample size was 384 customers of Huduma Centres.

3.5 Data Collection procedures and instrument

The primary data was collected using structured questionnaires which are set of questions that are carefully designed and were given exactly the same form to a group of people in order to gather data. The questionnaires comprised of closed-ended questions to elicit facts or statements from respondents. The questionnaire has three sections: section one targets general information of the customer. Section two had questions that seek to establish the queue management practices and efficiency. Section three had questions to assess customer satisfaction. The researcher administered the questionnaires to the customers. Data was

collected during peak hours. The questionnaires were issued to customers randomly so that they could fill them during the queuing process anywhere within the facility.

3.6 Validity and Reliability of the Instrument

3.6.1 Validity of the Instrument

AL-Jumaily and AL-Jobori, (2011), argued validity means that “we are measuring what we want to measure”. On the other hand, Kothari, (2004), defines validity as the extent to which a scale or set of measures accurately to represents the concept of interest. Content validity was used in this study. Content validity is a measure of the degree to which data collected using a particular instrument represents the content of the concept being measured. The validity of the data collection instrument involved experts in the Faculty of Commerce of Egerton University for advice on the content validity of the instrument and also go through the questionnaires in relation to the set objectives and make sure that they contain all the necessary information needed. Concurrent Validity denotes results of the redesigned questionnaire were consistent with results of established measures.

3.6.2 Reliability of the Instrument

According to Kothari, (2004), Reliability means the consistency or repeatability of the measure. Reliability measures the degree to which a research instrument yields consistent results or data after repeated trials. In order to ensure the reliability of this research the researcher tested internal consistency using Cronbach’s alpha formula and obtained a coefficient of 0.923. The general rule of thumb in research according to Orodho, (2003) is that the reliability should bear a coefficient of at least 0.7 to be considered as having adequate internal consistency, hence reliable.

3.7 Data analysis techniques and presentation

Data processing was carried out through various steps which include; data editing, coding, classification, tabulation and finally presentation. The Data gathered was organized and processed using Statistical Package for Social Sciences (SPSS) version 17 to establish the relationship between queuing practices and customer satisfaction in the Huduma Centre. To determine the relationship between queuing management practices and customer satisfaction, descriptive statistics were used by way of percentages, proportions and frequency distributions of responses to summarize the data. In order to test the significance of the

association between attributes, the inferential statistics such as the Pearson Product-Moment correlation and Regression analysis were used.

3.7.1 Pearson moment correlation

Pearson Product Moment correlation coefficient ($-1 \leq r \leq 1$) was utilized to determine the extent to which queue management practices influences customer satisfaction in the Huduma Centre in Nakuru. The significance level ranges from 1% level of significance, 5% level of significance and 10% level of significance, which one percent level of significance is considered stronger than others (Khrawish, Siam, and Khrawish, 2011). However, for general reasons, this study used 5% significance level for all the tests statistics.

3.7.2 Multiple Regression Model

Regression analysis was done to establish the relationship between queue management practices and customer satisfaction in the Huduma Centre. The following regression equation was used by the researcher to establish the relationship.

$$C_S = \beta_0 + \beta_1 \times_1 + \beta_2 \times_2 + \beta_3 \times_3 + \beta_4 \times_4 + \epsilon_i$$

Where, $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ are known parameters

C_S is the customer satisfaction as a Dependent Variable

β_0 is constant or the C_S intercept when the value of X is zero

X_1 Customer Arrival

X_2 Waiting line

X_3 Service time

X_4 Facility Layout

ϵ_i is an error term

3.7.3 Data Presentations

Data presentation refers to the systematic arrangement of results into meaningful information. This helps the reader to conceptualize the information by attaching meaning. The results were presented using tables and charts.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the research findings and discussion of the results with reference to the specific objectives.

4.2 Background information

The researcher distributed 384 questionnaires and managed to collect back 292 of them giving a return rate of 76.04% which was significant enough to establish the relationship between queue management practices and customer satisfaction in the Huduma Centre in Nakuru County.

4.3 Demographic of the Respondents

This section presents a brief description of the demographic characteristics of sampled respondents involved in this study. Such a description is considered to be very important in providing a better understanding of the respondents included in the study and therefore provide a good foundation for detailed discussion of the results based on the stipulated objectives of the study. The demographic characteristics include gender, marital status, age, and level of education.

4.3.1 Distribution of the Respondents by Gender

The researcher sought to find the distribution of customers or the respondents by gender. Study findings (Figure 4.1) indicated the distribution of the respondents by gender. These comprised of 56.2% male and 43.8% females. This shows that the male responded more than female in this study.

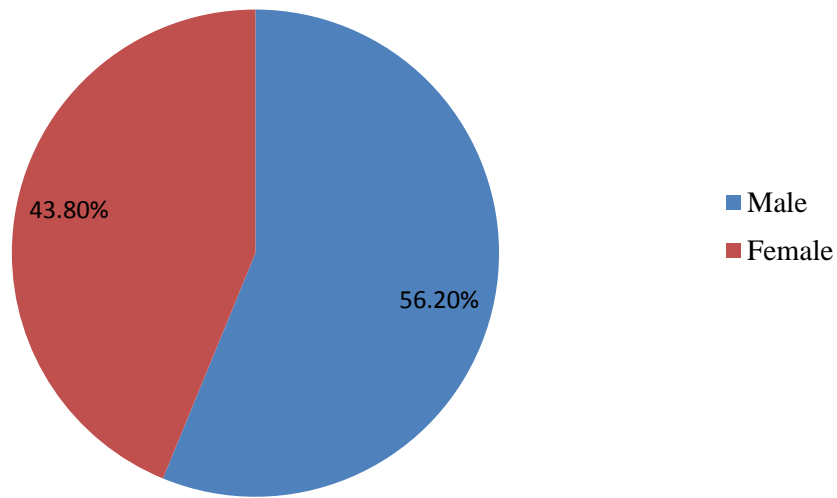


Figure 4.1: Gender of Respondents

Source: Research data, (2017)

4.3.2 Distribution of the Respondents by Marital Status

Table 4.1: Marital Status of Respondents

	Marital Status			
	Frequency	Percent	Valid Percent	Cumulative Percent
Married	82	28.1	28.1	28.1
Single	135	46.2	46.2	74.3
Divorced	48	16.4	16.4	90.8
Widowed	27	9.2	9.2	100.0
Total	292	100.0	100.0	

Source: Research data, (2017)

The results in Table 4.1 indicate that 28.1 percent of the respondents were married, 46.2 percent were single, 16.4 percent were divorcees and 9.2 percent were widowed. This shows that majority of the respondents were single followed by married, the widowed represent a small percentage of the respondents.

4.3.3 Distribution of the Respondents by Age

The study sought to investigate the distribution of respondents by age so as to know the distribution of the customers. The results were as indicated in Figure 4.2 with under 18

having 1.4%, age between 19 – 34 were 48.6%, between 34 – 54 having 39% and age between 55 and over is 11%. This implies that majority of the respondents are youth.

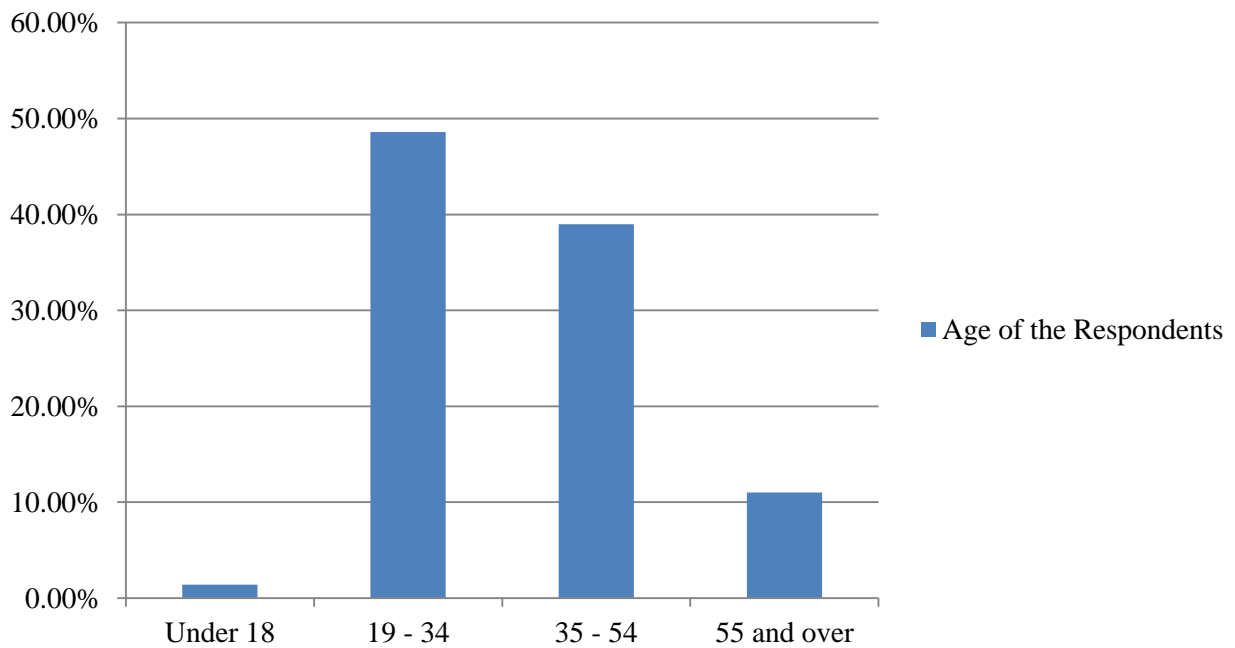


Figure 4.2: Age of Respondents

Source: Research Data, (2017)

4.3.4 Distribution of Respondents by Level of Education

The research also determined the distribution of respondents by Level of Education as this has an influence on the level of awareness, knowledge and experience with various services of the Huduma Centre. Table 4.2 indicates respondents' level of Education. 10.3% represent respondents with primary education, 19.9% with Secondary education, 23.3% of the respondents were at the Tertiary level and 46.6% were at the university level. This implies that the majority of the customers and the respondents had a university education.

Table 4.2: Respondents Level of Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Primary	30	10.3	10.3	10.3
Secondary	58	19.9	19.9	30.1
Tertiary	68	23.3	23.3	53.4

University	136	46.6	46.6	100.0
Total	292	100.0	100.0	

Source: Research data, (2017)

4.4 Customer Arrival

4.4.1 Number of visit to Huduma Centre

The results below show that 9.2% visit Huduma Centre more than three times a week, 2.1% visit up to three times a week, 22.3% visit once a week and finally 66.4% hardly ever visit. This implies that the majority of the respondents rarely visit Huduma Centre.

Table 4.3: Number of times of the visit to Huduma Centre

	Frequency	Percent
More than three times a week	27	9.2
Up to three times a week	6	2.1
Once a week	65	22.3
Hardly ever	194	66.4
Total	292	100.0

Source: Research data, (2017)

4.4.2 The types of services that the customers normally seek

The findings show that majority of the customers seek ID/Passports services with 15.8%, followed by KRA services and NHIF services both having 12%. The respondents seeking NSSF services were 9.6%, while those seeking for birth certificates were 5.5%, Business Registration was 5.1%, Driving Licenses 3.4%. This therefore implies that the majority of the respondents were seeking ID or passports.

Table 4.4: The types of services that the customer normally seek

	Frequency	Percent
KRA services	35	12.0
ID/Passports	46	15.8
NHIF	35	12.0
NSSF	28	9.6
Driving License	10	3.4

Birth Certificates	16	5.5
Business Registration	15	5.1
Payment of Electricity	2	.7
Others	105	36.0
Total	292	100.0

Source: Research data, (2017)

4.4.3 Customers' most concern in the use of Huduma Centre

In the findings given in Table 4.5, the respondents' are concerned with the queue or the waiting line in the Huduma Centre given by 32.5% while service unavailability is 6.8% and high service charges are 9.6%. This implies that the respondents are certainly sure of receiving services and willing to pay for the services and they do not like to queue for the services.

Table 4.5: Customers' most concern in the use of Huduma Centre

	Frequency	Percent
Queues/Waiting lines	95	32.5
Service unavailability	20	6.8
High service charges	28	9.6
Others	149	51.0
Total	292	100.0

Source: Research data, (2017)

4.4.4 Customers having to turn away due to longer time being taken to be served

The findings in the above Table 4.6 show that 38% of the respondents have turned away due to longer time being taken to be serviced while 48.3% did not turn away. 13.7% of the respondents do not remember ever turning away due to longer time being taken to be served. This implies that the highest percentages of the respondents are willing to wait for the services rather than turning away.

Table 4.6: Customers having to turn away due to longer time being taken to be served

	Frequency	Percent
Yes	111	38.0

No	141	48.3
I don't remember	40	13.7
Total	292	100.0

Source: Research data, (2017)

4.4.5 The extent of implementation of Huduma Centres' Queue Management Practices in terms of customer arrival practices

The study sought to determine the extent to which queue management practices in term of customer arrival. According to the summary on Table 4.7, majority 292 believe that the management avoids congestion or bottleneck in the counter by managing the arrival rate of the customers is implemented (4.4486) and that the arriving customers are required to join in a line that promotes justice and fairness in waiting is also implemented (4.1301), Capacity is adjusted for single customer arrival and for batch customer arrival is somewhat implemented (3.8699), Offers time-based promotions or discounts to alter or shift the arrival of the customer is also somewhat implemented (3.6747) and finally the Arriving customers are made aware of how long they will have to wait before they get served is somewhat implemented (3.6130).

Table 4.7: The extent of implementation of Huduma Centres' Queue Management Practices in terms of customer arrival practices

	N	Mean	Std. Deviation
The management avoids congestion or bottleneck in the counter by managing the arrival rate of the customers	292	4.4486	.91986
Arriving customers are required to join in a line that promotes justice and fairness in waiting	292	4.1301	.83121
Capacity is adjusted for single customer arrival and for batch customer arrival.	292	3.8699	1.11079
Offers time-based promotions or discounts to alter or shift the arrival of the customer	292	3.6747	1.32656
Arriving customers are made aware of how long they will have to wait before they get served	292	3.6130	1.36131

Source: Research data, (2017)

4.5 Waiting Line

4.5.1 The extent of implementation of Huduma Centres' Queue Management Practices in terms of waiting line practices

The study sought to determine the extent to which queue management practices in terms of waiting line practices. The findings in Table 4.8, shows that the majority indicated that the facility Utilized definite priority rule to determine the sequence of customers to be served to give a mean of 4.3014 and Prioritize elderly, pregnant women and people with disabilities customers in serving with a mean of 4.1815 as implemented practice. The practices that are somewhat implemented are that there is no separate waiting line for VIP customers (3.9692) and the management send some of their staff into the queue to begin inquiry before the start of the transaction or service with a mean of 3.8527.

Table 4.8: The extent of implementation of Huduma Centres' Queue Management Practices in terms of waiting line practices

	N	Mean	Std. Deviation
Utilize definite priority rule to determine the sequence of customers to be served	292	4.3014	1.06083
Prioritize elderly, pregnant women and people with disabilities customers in serving	292	4.1815	1.06067
There is no separate waiting line for VIP customers	292	3.9692	1.09783
Send some of their staff into the queue to begin inquiry before the start of the transaction or service	292	3.8527	1.16458

Source: Research data, (2017)

4.6 Service Time

4.6.1 Time taken for the customer to be served once at the customer counter

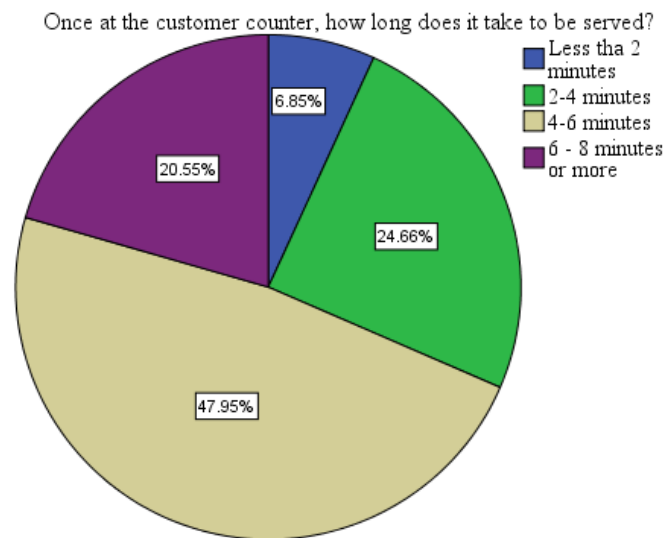


Figure 4.3: Time taken for the customer to be served once at the customer counter

Source: Research data, (2017)

According to the indications on Figure 4.3 where the respondents were supposed to indicate how long they take to be served once in the service counters. The majority take 4-6 minutes to be served with 47.95 percent, 2 - 4 minutes having 24.66 percent, 6 – 8 minutes having 20.55 percent and less than two minutes with 6.85 percent.

4.6.2 The cause of delay when the customers take more than five minutes in the queue

Table 4.9: The cause of delay when the customers take more than five minutes in the queue

	Frequency	Percent
Slower workers	36	12.3
Network or System failures	150	51.4
Inadequately trained personnel	29	9.9
Workers busy with the activities	49	16.8
Inadequate resources	28	9.6
Total	292	100.0

Source: Research data, (2017)

The findings in Table 4.9 further indicate the reasons causing the delays in the time taken to be served. 12.3 percent of the respondents attribute the delays to slower workers, 51.4 percent put blame on the network or systems failures, 9.9 percent indicate that the delays are due to inadequately trained personnel, 16.8 percent that the workers were busy with other activities and finally 9.6 percent indicated the cause of delay to inadequate resources.

4.6.3 Things that should be done to increase the service time

On what should be done to increase the service time, the findings in Figure 4.4 shows that 177 of the respondents indicated both A and B in that the staff should work harder and the management to increase the staff. 62 of the respondents indicated that the staff is increased while 34 of the respondents indicated that the staff should work harder. Finally 19 of the respondents were not sure on what should be done to increase the service time.

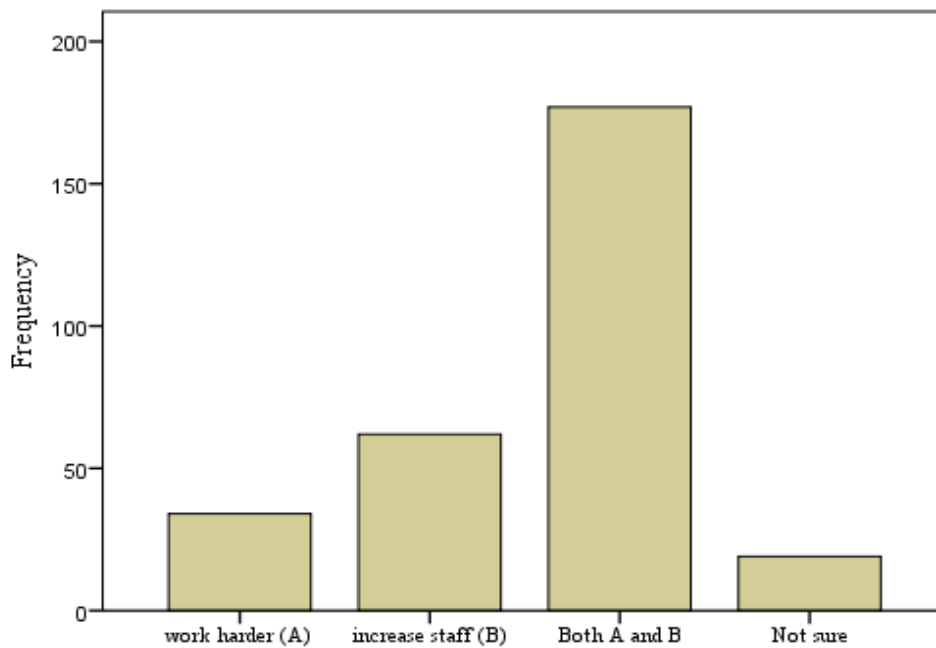


Figure 4.4: Things that should be done to increase the service time

Source: Research data, (2017)

4.6.4 Customer's opinion

The study sought to study the customers' opinions on the queue management practices in terms of service time.

Table 4.10: Customer's opinion

Descriptive Statistics		
	Mean	Std. Deviation
The staff is well trained	4.5342	.89030
The staff is well Supervised	4.3870	.91807
The staff adheres to professional standards of conduct	4.1678	.95027
The queues are supervised	3.8699	1.14131
There are many queues which serve customers	4.0377	1.00272
There are many people who serve the customers to reduce the waiting time	3.8836	1.20143

Source: Field Data Analysis (2017)

The results in Table 4.10 shows that majority of the respondents somewhat agree that the staff is well trained indicating a mean of 4.5342 and that the staff adheres to professional standards of conduct indicating a mean of 4.1678 and finally that the staff is well supervised

with a mean of 4.3870. As to whether the queues are supervised and that there are many people who serve customers to reduce the waiting time, the respondents neither agreed nor disagree. On the other hand the respondents somewhat agreed that there are many queues which serve the customers.

4.7 Service Facility Layout

4.7.1 The extent of implementation of Huduma Centres' queue management practices in terms of service facility practices

The findings on Table 4.11, sought to study on the extent of the implementation of Huduma Centre's Queue management practices in terms service facility practices.

Table 4.11: The extent of implementation of Huduma Centres' queue management practices in terms of service facility practices

	Mean	Std. Deviation
Employs sufficient number of servers to efficiently cater all customers	4.3938	.94471
Serves the customers within the customer's expected service time	4.1267	1.08459
Provides LCD Screens/ television with, Wi-Fi access to customers in the queue to occupy the time while waiting so as to avoid boredom and dissatisfaction	3.7423	1.18565
There are Station lights to point customers to open counters	4.1301	.98625
There are Audio cues to call customers to point of service	4.0171	1.06960
There are Reading materials provided to the customers to give guidance	3.7808	1.20419
There is a Single-line queuing	3.9452	.94728

Source: Research data, (2017)

Table 4.11 shows the respondents' results that the facility employs sufficient number of servers to efficiently cater for all customers indicating a mean of 4.3938, serves the customers within the customer's expected service time (4.1267), that there are Station lights to point customers to open counters (4.1301) and that there are Audio cues to call customers to point of service (4.0171) as being implemented by the Huduma Centre. As whether the facility provides LCD Screens/ television with, Wi-Fi access to customers in the queue to occupy the time while waiting so as to avoid boredom and dissatisfaction (3.7423) and that there are

reading materials provided to the customers to give guidance (3.7808) and that there is a Single-line queuing (3.9452), the response indicate as somewhat implemented.

4.8 Correlation analysis on the relationship between queue management practices and customer satisfaction

The study was guided by four hypotheses. The hypothesis states that: Customer Arrival, Waiting lines, Service time and Service facility layout has no significant relationship with the customers' satisfaction in the Huduma Centres. The result in Table 4.12 below indicate the slope of each variable against the dependent variable and the degree of associations. The study used Pearson correlation analysis to establish the relationship between the queue management practices and customer satisfaction. Queue management practices in the study constitute customer arrival, waiting lines, service time and service facility layout.

Table 4.12 Correlations Analysis

		Correlations				
		Customer Arrival	Waiting Line	Service Time	Service Facility Layout	Customer Satisfaction
Customer Arrival	Pearson Correlation	1	.592**	.598**	.562**	.567**
Waiting Line	Pearson Correlation	.592**	1	.511**	.609**	.605**
Service Time	Pearson Correlation	.598**	.511**	1	.643**	.639**
Service Facility Layout	Pearson Correlation	.562**	.609**	.643**	1	.692**
Customer Satisfaction	Pearson Correlation	.567**	.605**	.639**	.692**	1

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

Source: Field Data Analysis (2017)

Table 4.12 results show the significance of the variables at the $p < 0.01$ level (*) level of correlation significance. There is a significant positive relationship observed between queue management practices ($r = 0.567$, $p < 0.05$) and customer satisfaction. The independent variables i.e. customer arrival, waiting line, service time and the facility layout are highly correlated with each other. Hence, all the four independent variables can be used to estimate the relationship between queue management practices and customer satisfaction.

4.8.1 The correlation analysis on the relationship between customer arrival and customer satisfaction

The first hypothesis was; customer arrival has no significant relationship with the customers' satisfaction in the Huduma Centres. According to the correlation results in Table 4.12 above, there is a significant positive, the relationship between customer arrival and customer satisfaction ($r = 0.567, p < 0.05$). This implies that customer arrival has a positive significant relationship with customer satisfaction. A unit increase in customer's arrival leads to 0.567 units increase in customer's satisfaction in Huduma Center. Therefore, we reject the null hypothesis. Hence customer's arrival has significance relationship between customer's satisfaction in the Huduma Centre. The findings of this study agree with a study by Olaniyi, (2004), that argued that there is a positive correlation between customer arrival rates and bank service times.

4.8.2 The correlation analysis on the relationship between waiting lines and customer satisfaction

The second hypothesis was; waiting line has no significant relationship with the customers' satisfaction in the Huduma Centres. The findings in Table 4.12 indicates that there is a significant positive relationship between waiting line and customer satisfaction ($r = 0.605, p < 0.05$). It suggests that waiting lines has a positive significant relationship with customer's satisfaction. A unit increase in waiting lines leads to 0.605units increase in customer's satisfaction in Huduma Centers. Therefore, we reject the null hypothesis. The finding of this study indicates that waiting line has a significant and positive relationship. The study findings agree with Sheikh, Singh, and Kashyap, (2013), who concluded that when the queuing time queuing is reduced; the customer satisfaction is increased. This agrees with the findings by Tom and Lucey, (1995) that proved that as the perception of waiting time increased, customer satisfaction tends to decrease. It also agrees with City, (2015), that suggests that the time of the customers should be occupied while waiting since occupied time feeds the mind, keeps the hands busy, and distracts the customers from the wait at hand by providing digital signage in the queue that plays interesting or entertaining videos or informational advertisements. The study also by Maina, (2013), agrees with the study that managers are ready to deploy measures to improve customer satisfaction by having approaches and practices that will decrease actual waiting time and manage customers' expectations of the wait.

4.8.3 The correlation analysis on the relationship between service time and the customers' satisfaction

The third hypothesis was; service time has no significant relationship with the customers' satisfaction in the Huduma Centre. The results in Table 4.12 indicate that there is a moderate significant positive relationship between service time and customer satisfaction ($r = 0.639$, $p < 0.05$). It implies that the time that the customer takes upon reaching the service counter has a significant positive, moderate relationship with customer's satisfaction. A unit change in service time leads to 0.639 units increase in customer's satisfaction in Huduma centers. Therefore, the findings of this study indicate that the service time has a significant and positive relationship with customer satisfaction. The study findings agree with Bonga, (2014), who argued that improving the rate of serving customers improves customer satisfaction. Hence, service time has a significant relationship with the customers' satisfaction in the Huduma Centre. The hypothesis test results confirm that of Nkuruma, (2014) who argued that the association between system's time and queuing time are important to study as the two provide bases for making a decision.

4.8.4 The correlation analysis on the relationship between service facility layout and customer satisfaction

The fourth hypothesis states that Service facility layout has no significant relationship with the customers' satisfaction in the Huduma Centres. The results in Table 4.12 indicate that there is a moderate significant positive relationship between service facility layout and customer satisfaction ($r = 0.692$, $p < 0.05$). It implies that the physical layout of the Huduma Centre has a significant positive, moderate relationship with customer satisfaction. A unit change in service facility layout leads to 0.692 units increase in customer's satisfaction. Therefore, we reject the null hypothesis. The findings of this study indicate that service facility layout has a significant and positive relationship. The study findings agree with Swaidan *et al.*, (2015) who argued that increased distractions make waiting experience more interesting and tend to increase satisfaction.

4.9 Hypothesis testing on the relationship between Queue Management practices and Customer Satisfaction

The study sought to establish the relationship between of queue management practices on customers' satisfaction in the Huduma Centre. The literature review and theoretical reasoning

led to the belief that customer arrival, waiting line, service time and facility layout is associated with customer satisfaction. Regression analysis was done to test the hypothesis that queue management practices have a relationship on customer satisfaction in Nakuru Huduma Centre.

Table 4.13: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763 ^a	.583	.577	.41485

a. Predictors: (Constant), Service Facility Layout, Customer Arrival, Waiting Line, Service Time

From the regression results in Table 4.13, multiple regression models on the relationship between queue management practices and customer satisfaction are significant at the set confidence interval of 95% (significance = 0.0000). This model is a good predictor of the relationship between queue management practices and the customers' satisfaction. This regression model shows a very strong significant relationship between queue management practices and customer satisfaction of the Huduma Centre in Nakuru, implying that customer arrival, service facility layout, waiting line and service time explain 57.70% of the customer satisfaction level. Thus the relationship between queue management practice and customer satisfaction is positive

Table 4.14: ANOVA

ANOVA^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	68.990	4	17.247	100.217	.000 ^a
	Residual	49.393	287	.172		
	Total	118.382	291			

a. Predictors: (Constant), Service Facility Layout, Customer Arrival, Waiting Line, Service Time
b. Dependent Variable: Customer Satisfactions

As shown in Table 4.14 above the queue management practices (that customer arrival, service facility layout, waiting line and service time) have a positive and significant relationship with the customer satisfaction level with $F = 100.217$; $p\text{-value} = 0.0000$ (a). This is a clear indication that queue management practices are a significant predictor of the customer satisfaction level. Hence, at 5% level of significance, we reject the null hypothesis. This study shows that the queue management practices explain 58.3% of the variance in the customer satisfaction level. The relationship between queue management practices and the

customer satisfaction is significant and positive. This agrees with Nkuruma, (2014) that there is a positive relationship between the factors of customer satisfaction and queue systems management in Ghanaian banks.

Table 4.15: Queue management practices and customer satisfaction

Model	Coefficients ^a								
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	1.177	.154		7.637	.000	.874	1.480		
Customer Arrival	.077	.041	.100	1.889	.060	-.003	.157	.522	1.917
Waiting Line	.160	.041	.204	3.917	.000	.079	.240	.535	1.868
Service Time	.210	.045	.250	4.641	.000	.121	.299	.503	1.989
Service Facility Layout	.301	.048	.351	6.324	.000	.208	.395	.471	2.123

a. Dependent Variable: Dependent

The coefficients of this predictive model on the relationship between queue management practices and customer satisfaction are given in Table 4.15. The specific Beta (β) coefficients for the queue management practices that contribute to the customer satisfaction in the Huduma Centre when well managed have a significant ($p \leq 0.000$) positive effect on the level of customer satisfaction. Customer arrival ($\beta = 0.100$), Waiting line ($\beta = 0.204$), Service time ($\beta = 0.250$) and service facility layout ($\beta = 0.351$). Thus to establish the relationship between queue management practices and customer satisfaction the following equation was modeled.

$$C_S = 1.177 + 0.077 \times_1 + 0.160 \times_2 + 0.210 \times_3 + 0.301 \times_4$$

This implies that for every unit of customer satisfaction, customer arrival contributes 7.7%, waiting line contribute 16%, Service time contribute 21% and service facility layout contributes 30.1%.

Multicollinearity test was conducted on regression analysis to determine the correlation of the explanatory variables. Multicollinearity occurs when two or more predictors in the model are correlated and provide redundant information about the response (Bitange, Wang, and Obara, 2015). The diagnostics Variance Inflation Factor (VIF) and tolerance were used to test multicollinearity of the independent variables. Thus, based on the Coefficient output – collinearity statistics, the VIF values for the explanatory variables are; Customer arrival (1.917), Waiting line (1.868), Service time (1.989) and service facility layout (2.123).

According to Landau and Everitt, (2004), VIFs above 10 or tolerances below 0.1 are seen as a cause of concern.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the findings, conclusion and recommendations to policymakers and suggestions for further study.

5.2 Summary of the Findings

The purpose of the study was to establish the relationship between queue management practices and customer satisfaction of the Huduma Centre in Nakuru. The sample size of the population was determined by simple random sampling strategy. With a sample size of 384, a response rate of 74.6% was obtained with 292 questionnaires returned. The male responded more than female in this study and that majority of the respondents were single followed by married, while the widowed represent a small percentage of the respondents. In terms of age the majority of the respondents are youth and in terms of education the majority had a university education. The findings of the study were presented in accordance with the research hypothesis.

5.2.1 Customer Arrival

The findings show that the customers' most concern in the Huduma Centre is the queue/waiting line in the Huduma Centre. Also the respondents are certainly sure of receiving services and willing to pay for the services. The highest percentages of the respondents also are willing to wait for the services rather than turning away. The majority of the respondents were seeking ID or passports from the Huduma Centre.

On the extent of implementation of Huduma Centres' Queue Management Practices in terms of customer arrival practices, majority of the customers believed that the management avoids congestion or bottleneck in the counter by managing the arrival rate of the customers and that the arriving customers are required to join in a line that promotes justice and fairness in waiting. On the other hand majority feel that the management should put more effort in ensuring that the capacity is adjusted for single customer arrival and for batch customer arrival and offer time-based promotions or discounts to alter or shift the arrival of the customer and that the arriving customers are made aware of how long they will have to wait before they get served.

The data provided enough evidence to reject the hypotheses; customer arrival has no significant relationship with the customers' satisfaction in the Huduma Centre. There was a significant positive, moderate relationship between customer arrival and customer satisfaction ($r = 0.567, p < 0.05$). Hence customer's arrival has significant relationship between customer's satisfaction in the Huduma Centre.

5.2.2 Waiting lines

On the extent of implementation of Huduma Centres' Queue Management Practices in terms of waiting line practices, the majority indicated that the facility utilized definite priority rule to determine the sequence of customers to be served, giving priority to elderly, pregnant women and people with disabilities customers in serving. The practices that are somewhat implemented shows that there is no separate waiting line for VIP customers and that the management sends some of their staff into the queue to begin inquiry before the start of the transaction or service.

The data provided reasonable evidence to reject the hypothesis which states that; waiting lines has no significant relationship with the customers' satisfaction in the Huduma Centre. It indicated that there is a significant positive relationship between waiting line and customer satisfaction ($r = 0.605, p < 0.05$). Hence, it suggests that waiting lines has a positive significant relationship with customer's satisfaction.

5.2.3 Service time

The findings based on the service time indicated that majority of the customers could take 4-6 minutes to be served. Further findings indicated the reasons causing the delays in the time taken to be served were that the majority blamed on the network or systems failures while others attributed the delays to slower workers or workers were busy with other activities and a few of them indicated that the delays are due to inadequate trained personnel and resources.

On what should be done to increase the service time, the findings showed a majority of the respondents indicated that the staff should work harder and the management should increase the staff. The majority of the respondents somewhat agree that the staff is well trained and that the staff adheres to professional standards of conduct and the staff is well supervised. As to whether the queues are supervised and that there are many people who serve customers to reduce the waiting time, the respondents neither agreed nor disagree. On the other hand the respondents somewhat agreed that there are many queues which serve the customers.

The data provided reasonable evidence to reject the hypothesis which states that; service time has no significant relationship with the customers' satisfaction in the Huduma Centre. There is a positive significant relationship between service time and customer satisfaction ($r = 0.639$, $p < 0.05$). It implies that the time taken by the customer upon reaching the service counter has a significant positive relationship with customer's satisfaction.

5.2.4 Service Facility Layout

On the extent of implementation of Huduma Centres' queue management practices in terms of service facility practices, the findings show that the facility employs a sufficient number of servers to efficiently cater for all customers and serves the customers within the customer's expected service time. There are Station lights to point customers to open counters and that there are audio cues to call customers to point of service. As for whether the facility provides LCD Screens/ television with, Wi-Fi access to customers in the queue to occupy the time while waiting so as to avoid boredom and dissatisfaction and that there are reading materials provided to the customers to give guidance, the respondents felt that it was somewhat implemented.

Thus the data provided reasonable evidence to reject the hypothesis which states that; Service facility layout has no significant relationship with the customers' satisfaction in the Huduma Centre. There is a moderate significant positive relationship between service facility layout and customer satisfaction ($r = 0.692$, $p < 0.05$). It implies that the physical layout of the Huduma Centre has a significant positive, moderate relationship with customer satisfaction.

5.3 Conclusion

Based on the findings, it is evident that there is a significant relationship between queue management practices and customer satisfaction of the Huduma Centre in Nakuru. Correlations analysis results indicated a moderate positive relationship between queue management practices and customer satisfaction. Regression analysis results further indicate a significant positive relationship.

The study also shows that the customers believed that the management avoids congestion or bottleneck in the counter by managing the arrival rate of the customers and that the arriving customers are required to join in a line that promotes justice and fairness in waiting. The management should put more effort in ensuring that the capacity is adjusted for single customer arrival and for batch customer arrival and offer time-based promotions or discounts

to alter or shift the arrival of the customer and that the arriving customers are made aware of how long they will have to wait before they get served.

The study also shows that the facility utilized definite priority rule to determine the sequence of customers to be served giving priority to the elderly, pregnant women and people with disabilities customers in serving. The practices that are somewhat implemented are that there is no separate waiting line for VIP customers and that the management sends some of their staff into the queue to begin inquiry before the start of the transaction or service.

The majority of the respondents somewhat agree that the staff is well trained and that the staff adheres to professional standards of conduct indicating that the staff is well supervised. As to whether the queues are supervised and that there are many people who serve customers to reduce the waiting time, the respondents neither agreed nor disagreed. On the other hand the respondents somewhat agreed that there are many queues which serve the customers.

The study also shows that the facility employs a sufficient number of servers to efficiently cater for all customers and serves the customers within the customer's expected service time. There are station lights to point customers to open counters and that there are audio cues to call customers to point of service. As for whether the facility provides LCD Screens/television with, Wi-Fi access to customers in the queue to occupy their time while waiting so as to avoid boredom, dissatisfaction and that there are reading materials provided to the customers to give guidance, the respondents felt that they are partially implemented.

5.4 Recommendation

The study recommends the management should put more effort in ensuring that the capacity is adjusted for single customer arrival and for batch customer arrival and offer time-based promotions or discounts to alter or shift the arrival of the customer. The arriving customers should be made aware of how long they will have to wait before they get served. This is to reduce customers waiting time, improve quality and subsequently increase the customer satisfaction.

The study also recommends that the management should send some of their staff into the queue to begin inquiry before the start of the transaction or service. This is to help in reducing the service time in case there will be forms to be filled or documents that need to be attached. Finally the study recommends that the Centre should provide LCD screens/television to

customers in the queue to occupy their time while waiting so as to avoid boredom, dissatisfaction and reading materials to the customers to give guidance and further information on the government services. The study also recommends customer education to make sure that the customers are up to date with all kinds of improved technology trends in the provision of government services.

5.5 Suggestions for Future Research

This research was specifically designed to study and establish the relationship between queuing management practices and customer satisfaction of the Huduma Centre in Nakuru. It is recommended that further research on customer satisfaction and queuing management practices to be carried out in other Huduma Centres in Kenya. The research can also be extended to other public institutions and corporation e.g. universities and banks because they are also confronted by the issue of queues. Other areas of further research on operations management strategies that Huduma Centre can adapt to increase customer satisfaction.

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APPENDIX I: QUESTIONNAIRE

This questionnaire is for the purpose of collecting data for the purpose of academic research. This questionnaire will benefit the researcher in accomplishing academic goals. You are kindly requested to answer the questions genuinely and exhaustively where possible to enable the study to be successful.

Questionnaire for the Customers

✓ *Tick the selected answer in the provided box and add your comments where relevant.*

SECTION A

1. Gender: Male Female
2. Marital status Married Single Divorced Widowed
3. Age: under 18 19-34 35-54 55 and over
4. The highest level of education Primary Secondary Tertiary University

SECTION B

PART ONE: CUSTOMER ARRIVAL

1. How many times do you usually visit Huduma Centre?
More than three times a week Up to three times a week Once a week
Hardly ever
2. When you visit Huduma Centre, what type of service do you normally seek?
KRA Services ID/Passport NHIF NSSF Driving Licence
Birth Certificates Business Registration Payment of Electricity
Marriage Certificate Others
3. What is of most concern to you in your use of the Huduma Centres for public services?
Queues/Waiting line Service unavailability
High service charges Others
4. Have you ever turned away due to longer time being taken to be served?
YES NO I don't remember
If yes to 4, how many times have you done such?
Many times Rarely Not many
5. What is the extent of implementation of Huduma Centres' queue management practices in terms of customer arrival practices? 5 - Fully Implemented (FI) 4 -

Implemented (*I*) 3 - Somewhat Implemented (*SI*) 2 - Less Implemented (*LI*) 1 - Not Implemented (*NI*)

	5	4	3	2	1
The management avoids congestion or bottleneck in the counter by managing the arrival rate of the customers					
Arriving customers are required to join in a line that promotes justice and fairness in waiting					
Capacity is adjusted for single customer arrival and for batch customer arrival.					
Offers time-based promotions or discounts to alter or shift the arrival of the customer.					
Arriving customers are made aware of how long they will have to wait before they get served					

PART TWO: WAITING LINE

6. What is the extent of implementation of Huduma Centres' Queue Management Practices in terms of waiting line practices? 5 - Fully Implemented (*FI*) 4 - Implemented (*I*) 3 - Somewhat Implemented (*SI*) 2 - Less Implemented (*LI*) 1 - Not Implemented (*NI*)

	5	4	3	2	1
Utilize definite priority rule to determine the sequence of customers to be served.					
Prioritize elderly, pregnant women and people with disabilities customers in serving					
There is no separate waiting line for VIP customers					
Send some of their staff into the queue to begin inquiry before the start of the transaction or service					

PART THREE: SERVICE TIME

7. Once at the customer counter, how long does it take to be served?

Less than 2 minutes 2 -4 minutes 4 -6 minutes 6 -8 minutes or more

8. If more than five minutes in 12 above in your opinion what can be the cause of the delay?

Slower workers Workers busy with other activities

Network or system failure Inadequate resources

Inadequately trained personnel

9. What do you think they should do to increase the serving time?

Work harder (A) Increase staff (B) Both A and B Not sure

10. Please indicate your opinion about each of the following statements.

5 – Strongly agree (SA), 4 – Somewhat Agree (SWA), 3 - Neither agree nor disagree (NA),

2 – Somewhat disagree (SWD), 1 – Strongly disagree (SD)

	5	4	3	2	1
The staff is well trained					
The staff is well Supervised					
The staff adheres to professional standards of conduct.					
The queues are supervised					
There are many queues which serve customers					
There are many people who serve the customers to reduce the waiting time					

PART FOUR: SERVICE FACILITY LAYOUT

11. What is the extent of implementation of Huduma Centres’ queue management practices in terms of service facility practices

5 - Fully Implemented (*FI*) 4 - Implemented (*I*) 3 - Somewhat Implemented (*SI*) 2 - Less Implemented (*LI*) 1 - Not Implemented (*NI*)

	5	4	3	2	1
Employs sufficient number of servers to efficiently cater all customers					
Serves the customers within the customer’s expected service time					
Provides LCD Screens/ television with, Wi-Fi access to customers in the queue to occupy the time while waiting so as to avoid boredom and dissatisfaction					
There are Station lights to point customers to open counters					
There are Audio cues to call customers to point of service					
There are Reading materials provided to the customers to give guidance					
There is a Single-line queuing					
Use of a physical barrier aimed at guiding queues					

SECTION C: CUSTOMER SATISFACTION

12. Customers Level of Satisfaction on Huduma Centres’ queue management practices in terms of customer arrival practices

5 - Fully Satisfied (*FS*), 4 - Satisfied(*S*), 3 - Somewhat Satisfied (*SS*), 2 - Less Satisfied (*LS*), 1 - Not Satisfied (*NS*)

	5	4	3	2	1
No bottleneck or congestion happens on the counter because the arrival of customers is constant					
The arriving customers don’t have to choose for the best or fastest waiting line to join in.					
Customers arriving in the batch are handled efficiently.					
Time-based promotions or discounts effectively alter or shift the arrival of the customer from peak hours to non-peak hours/days					
The overall waiting line management practices of the Huduma Centre with regards to customer arrival were effective.					

13. Customers level of satisfaction on queue management practices in terms of service facility practices

5 - Fully Satisfied (*FS*), 4 - Satisfied(*S*), 3 - Somewhat Satisfied (*SS*), 2 - Less Satisfied (*LS*), 1 - Not Satisfied (*NS*)

	5	4	3	2	1
The servers were quick and highly-available to serve needs of the customers.					
The process service delivery is fast and convenient					
Customers waiting on the line don’t feel bored because something occupies their time while waiting					
The overall waiting line management practices of the Huduma Centre with regards to service facility were effective.					

14. Customers level of satisfaction on queue management practices in terms of waiting line practices

5 - Fully Satisfied (*FS*), 4 - Satisfied(*S*), 3 - Somewhat Satisfied (*SS*), 2 - Less Satisfied (*LS*), 1 - Not Satisfied (*NS*)

	5	4	3	2	1
The first come first serve (FIFO) priority rule is fair and strictly implemented					
Elderly, pregnant women and persons with disabilities customers are efficiently served.					
No VIP customers get priority service					
The overall waiting line management practices of the Huduma Centre with regards to waiting line itself were effective.					

Thank you for completing this questionnaire.

APPENDIX 2: LETTER OF INTRODUCTION

Faith Jerono Kiprop
Egerton University
P.O Box 13357,
NAKURU.

Dear Sir/Madam,

RE: DATA COLLECTION

I am a postgraduate student at Egerton University. In partial fulfillment of the requirements for the conferment of the Masters of Business Management degree, I am conducting a research titled **“ESTABLISHING THE RELATIONSHIP BETWEEN QUEUE MANAGEMENT PRACTICES AND CUSTOMER SATISFACTION AT HUDUMA CENTRE IN NAKURU COUNTY - KENYA”**.

I wish to request you to kindly assist in providing the required information, by filling the questionnaire provided, as your views are considered important to this study.

Please note that any information given will be treated with utmost confidentiality and will only be used for the purposes of this study.

Thank you.

Faith Jerono Kiprop

RESEARCHER

APPENDIX 3: WORK PLAN

The project will be undertaken for the period of time, activities and specified locations as shown below.

MONTH YEAR	MAY 2016	JUN 2016	JUL 2016	AUG 2016	SEP 2016	OCT 2016	NOV 2016	DEC 201
ACTIVITY								
Literature search and proposal writing								
Consultation and corrections								
Proposal defense and corrections								
Data Collection								
Data analysis								
Defense and corrections								
Project submission								
Graduation								

APPENDIX 4: BUDGET

Activity	Inputs	Amount
Proposal write-up and defense	Stationery (Notebooks, pens and information storage devices)	5,000.00
	Literature search	3,000.00
	Typesetting, printing, photocopying and binding	7,000.00
	Transport and communication (to Egerton for supervision and defense)	5,000.00
Data collection	Stationery (note books and pens)	2,500.00
	Printing and photocopying of questionnaires.	5,000.00
	Transport and communication	3,000.00
Data coding, cleaning, entry and analysis	Data entry expenses (also Installation of SPSS Software)	8,000.00
	Transport and communication (to experts)	5,000.00
Project write-up	Stationery	4,000.00
	Transport and communication (to supervisor)	4,000.00
	Transport and communication (to supervisor)	4,000.00
Submission of draft project for examination, Project defense, corrections and submission of final project	Typesetting and printing costs	5,000.00
	Photocopying and binding	5,000.00
	Transport and communication (to Egerton for supervision and defense)	6,000.00
Total		64,500.00
Contingency (10% of the Total)		6,450.00
Grand Budget Total		70,650.00

APPENDIX 5: LIST OF HUDUMA CENTRES IN KENYA

Here is the list of Huduma Kenya Centres;

County	Region	Location
1. Mombasa County	Coast Region	General Post Office, Opposite Safaricom Customer care, Digo Road, Mombasa
2. Kwale County	Coast Region	Kwale-Kinango Road, Opposite National Police Service
3. Taita-Taveta County	Coast Region	CDF Office, Wundanyi
4. Wajir County	Northern Region	County Commissioner's Office, Next to County Assembly, Wajir
5. Isiolo County	Eastern Region	Post Office, Hospital Road, Off Isiolo-Marsabit Highway
6. Meru County	Eastern Region	Post Office, Opposite County Commissioner's Office, Meru-Makutano Highway, Meru Town
7. Embu County	Eastern Region	Post Office, Next to County Commissioner's Office, Meru-Nairobi Highway, Embu Town
8. Kitui County	Eastern Region	Post Office, Opposite Catholic Church, Kitui Town
9. Machakos County	Eastern Region	Post Office, Opposite Cathedral Church, Machakos
10. Makueni County	Eastern Region	Post Office, Next to County Commissioner's Office, Wote
11. Nyandarua County	Nairobi and Central Region	County Commissioner's Office, Olkalau Township
12. Nyeri County	Nairobi and Central Region	Former Provincial Commissioner's Office, Nyeri Town
13. Kiambu County	Nairobi and Central Region	Assistant County Commissioner's Office (DO), Opposite Thika Stadium, Thika Town
14. Turkana County	North Rift Region	County Commissioner's Office, Lodwar

15.	UasinGishu County	North Rift Region	Post Office, Eldoret-Kitale Road, Eldoret Town
16.	Trans Nzoia County	North Rift Region	Kitale Post Office, Mak-Asembo Road
17.	Laikipia County	Central and South Rift	County Commissioner's Office, Nanyuki Town
18.	Nakuru County	Central and South Rift	General Post Office, Next to Merica Hotel, Kenyatta Avenue
19.	Kajiado County	Central and South Rift	Post Office, Nairobi-Namanga Highway
20.	Kakamega County	Western Region	Post Office, Kakamega-Kisumu Highway
21.	Bungoma County	Western Region	Post Office, Moi Avenue Road, Bungoma Town
22.	Busia County	Western Region	Post Office, Opposite Government Offices
23.	Siaya County	Western Region	Post Office, Kisumu-Busia Highway. Opposite KCB
24.	Kisumu County	Western Region	Former PC Office, Prosperity House, Next to Central Bank
25.	Kisii County	Western Region	Post Office, Kisii-Migori Road, Kisii Town
26.	Nyamira County	Western Region	Post Office, Konate-Nyamira Road
27.	Nairobi City County	Nairobi and Central Region	Huduma GPO: Teleposta Building, Kenyatta Avenue.
28.	Nairobi City County	Nairobi and Central Region	Huduma City Square: Haile Selassie, Next to Technical University of Kenya
29.	Nairobi City County	Nairobi and Central Region	Huduma Eastleigh: Eastleigh Eleventh Street
30.	Nairobi City County	Nairobi and Central Region	Huduma Kibra: District Commissioner's Office, Kibera Drive
31.	Nairobi City County	Nairobi and Central Region	Huduma Makadara: City County Offices-Eastlands Revenue Building, Off Jogoo Road, Next to DC Makadara

Source: Huduma Centre Website

APPENDIX 6: LIST OF HUDUMA CENTRE SERVICES

ID	Service	Customer Requirements
55	Liquor licensing	Authority from Liquor Board
54	Impounding charges	Bond showing charges
53	Payment of Rent & Rates	a. New applicant has to go to back office b. Old- previous payment (UPN number) c. House number
52	Issuance of Single Business Permit	a. Copy of National Identity Card b. Copy of Registration Certificate of the Company or Name c. Plot Number d. Physical address e. Renewal-Business number
51	Seasonal Parking tickets	a. Vehicle registration number b. Name of owner
50	Credit services to women entrepreneurs	a. Certificate of registration by social services valid for more than 3 months b. Bank statement for bank account active for at least 3 months
49	Certificate & Card Enquiry	None
48	Reactivation of membership	Registration Number/ ID number
47	Application for a student ID	1 passport size photo
46	Application for Exemption	Certified copies of transcripts and certificates
45	Examination booking	None
44	Registration as a new student	a. Credentials (KCSE result slip) b. 2 passport size photos Copy of ID
43	Receiving complaints on procurement	None
42	Change of Pay Point	a. Details of new bank b. Details of old bank
41	Claims for Returned Pensions	a. Original death certificate b. Dependents Birth certificate c. Letter of identification by chief/asst. chief d. Copy of ID e. Bank account
40	Application for Dependents' Pension Claims	a. Original death certificate b. Dependents Birth certificate c. Letter of identification by chief/asst. chief
39	Status of Pension Claim	Personal number/ID number
38	Issuance of Self Declaration Forms	None
37	Reporting corruption cases	None
36	Receiving complaints on service delivery	a. National ID card b. Supporting documents
35	Registration of voters	National ID
34	Closure of Accounts	Copy of ID
33	Electricity Queries	Bill
32	Registration for Electricity	Customer's contact

31	Blood Sugar	None
30	Blood Pressure	None
29	Body Mass Index and health promotion messages	None
28	Receive complaints of discrimination based on tribe and religion	None
27	Loan repayment statements	National Identity Card
26	Student Loan application (postgraduate/salaried)	National Identity Card
25	Student Loan Application (undergraduate)	National Identity Card
24	Online Renewal of Drivers' license	a. Name b. ID number
23	Log Book Search (confirmation of status)	Vehicle registration number
22	Advance tax for Commercial vehicles	a. Log book/ copy b. PIN of owner of the car
21	Clearance Certificate/ Tax Compliance Certificate	Apply from I-tax
20	Pin application/ replacement	a. Email address & ID number for individual b. For a company 2 director's PIN c. Certificate of registration d. At least 2 Directors' copy of IDs e. Acknowledgement receipt
19	NHIF member registration (Informal Sector)	a. Copy of ID card b. Colored passport photo
18	NHIF member registration (Formal Sector)	a. Introductory Letter from employer b. Copy of ID card c. Colored passport photo d. If married- spouse's ID and Passport photo e. If with children - passport photos and birth certificates
17	Receiving NSSF Claims	a. SF/BN/BF/01 Application Form b. SF/BN/CC/007 -
16	NSSF Card replacement	a. National ID card b. NSSF number
15	Registration of employer with NSSF	a. Online application on Form SF 001 b. Certificate of Incorporation c. Trading License
14	NSSF statements	NSSF Number
13	NSSF member registration	National ID card
12	Police Clearance Certificate	National Identity card
11	Issuance of Police Abstract	a. Number of lost document (if known) b. Full names
10	Registration of Limited Companies	a. Name of Company b. Memorandum of Association c. Articles of Association
9	Registration of Business Name	a. Name of Business b. Completed BN2 Form
8	Search of Business Name	Preferred name (typed)

7	Registration of Welfare Societies	a. Name of society b. Constitution c. Completed Forms A and B
6	Registration of Self-Help Groups and CBOs	a. Completed form b. Return form with attached Minutes of duly elected officials, List of members signed with ID numbers & Group by-laws
5	Application for Access to Government Procurement Opportunities	Youth, Company, Partnership and for Persons with Disability
4	Assessment of Stamp Duty and franking of documents	a. Transfer of Shares document b. Form B c. Transfer of Land
3	Issuance of Birth Certificate	Birth notification
2	Issuance of Duplicate Identity Card	Police abstract
1	Issuance of Initial Identity Card	a. Birth certificate and copy b. Parents' Identity Card and copy