UNIVERSITY OF NAIROBI

SCHOOL OF COMPUTING AND INFORMATICS

EVALUATING THE IMPACT OF E-GOVERNMENT SERVICES: A CASE OF NAIROBI CITY COUNTY ELECTRONIC PAYMENTS SERVICE

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A research project submitted to the School of Computing and Informatics in partial fulfillment of the requirements for the award of the degree of Master of Science in Information Technology Management of the University of Nairobi.

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DECLARATION

Student Declaration

This research is my original work and has not been presented for a degree in any other university.

Signature ……. Date……..

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P54/85679/2016

Supervisor's declaration

This research has been submitted for review with my approval as a university supervisor.

Signature…… Date …….....

DR. ELISHA ABADE

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DEDICATION

This work is dedicated to my family especially my wife Christine, my sons Fabian & Kilian, and daughter Nicollete for their patience during the period I was undertaking this study. To my father Dickson Onyango who instilled in me the value of education early in life.

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My sincere gratitude goes to the almighty God for giving me strength, both physical and mental to endure the pressures during the period of study. Secondly my sincere thanks goes to my Supervisor Dr. Elisha Abade for his guidance, encouragement and patience that ensured I completed this project. I wish to acknowledge my fellow students especially Ms. Ruth Okoth whom I consulted with in various occasions during the course of the study.

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ABSTRACT

Currently, most organizations and businesses are adopting technology as a means of offering quality service and transactions. The public service and more so government institutions are not left behind in embracing technology in order to offer services to the citizen. The Nairobi county government implemented an e-payment service (e-Jiji pay) to improve on its service delivery, where the users directly interact with the system. However, the users complained of system unavailability, tedious processes, and public awareness. This study adopted a descriptive research design, to obtain views from Citizens in regard to the effectiveness of NCCG portal guided by the independent variables identified in the research tool. The study was conducted on a sample size of 400 respondents. Questionnaires were administered to collect the data on citizens' perspectives. A Cronbach's alpha of 0.875 was obtained in order to establish the internal consistency of data. The results showed that the cost of service, service quality and user satisfaction has an impact on e-government, while, e-readiness was seen as not having a significant value on e-government services. Every sector thinking of deploying a successful e-service for the citizens must consider the cost of accessing the services, quality of e-services, and User satisfaction to those e-services. The county managers should, therefore, consider a better quality of e-services by enhancing; a user-friendly interface, information quality, 24/7 availability of services, response time, and have a variety of access options.

Keywords: e-government, evaluation, e-payment, e-service, evaluation

CHAPTER ONE: INTRODUCTION

1.1 Background

In the present business setting, modernization, and conversion of public services over the use of ICT are in progress. Consequently, both State and County Governments have been taking serious steps to ensure that their services and the information available online have brought about development of appropriate interaction mechanisms between the government and citizens (Sarisas, 2015). It is with this in mind that the Nairobi City County Government (NCCG) the administration that came in after the 2013 general elections in Kenya identified 7 key pillars of service delivery to transform the County, with technology being identified as an enabler in achieving its transformation objectives. In light of this, NCCG partnered with Information Communication Authority of Kenya (ICTA) to initiate the Nairobi City County transformation road map project. This initiative was aimed at increasing efficiency, improving on the delivery of services and revenue collection by implementing and deploying a suitable solution at the headquarters of the County and also the satellite offices (PWC, 2013). PWC was engaged through ICTA to assist NCCG to develop the Information Communication Technology (ICT) transformation Road Map. One of the specific projects identified to achieve the desired ICT vision was the Nairobi City County Self Service e-payments service. This modern way of transacting is expected to allow 24/7 interactive access through one-stop web portals and other emerging technologies like mobile payments. Wirtz, and Kurtz, (2016) argues that the provision of public e-service has moved towards three main areas that include the provision of full online service, m-government, and social media. The NCCG e-payments service therefore was implemented to enable Citizens to conveniently transact with the County, without having to visit County offices. These type of public e-services enables citizens to engage in public administration without the need to visit government office (Wirtz & Kurtz, 2016). The NCCG e-payments service provides a fully automated end-end solution, therefore, eliminating handling of cash by County revenue employees, increase transparency and enhance revenue collection. Several revenue streams were automated and made available on the web portal and other payment channels. All users were required to register with the e-payment service first before they could be allowed to make any transactions. The e-payments services that were automated at the point of conducting this study included; electronic payments

for Land levies, business license, Parking fees, County houses/markets, Building plans, Buildings Regularization, loading zones, and miscellaneous levies like Food & hygiene certificates, Medical certificates, Towing charges, court fines amongst many others Following is a description of some of the services mentioned above:

Land rates

Land rates levies are charged on private owners of land and are paid to County governments in Kenya. Landowners are issued with a rates clearance certificate after they pay all the rates arrears due to the Counties. The NCCG self-service e-payments service allows rates payers to access and make payments for land rates levies. The service also allows them to obtain a payment receipt for proof of payment. They can also query the system to know their rates dues.

Business license

The NCCG is mandated with the provision of a business license that gives the legality for a business to operate within the City of Nairobi. A business owner is therefore required to register the business and obtain a business license before it can be allowed to operate. The process of obtaining a business license involves a business owner declaring business details online and making payments electronically. Eventually, the business is issued with a Provisional business license pending inspection by county officials.

Daily and monthly parking fee

The provision of parking space within the City is among the services offered by the NCCG. Parking services within the County are classified into two major categories namely on-street parking and off-street parking. On-street parking is where Motorists Park in parking slots adjacently located on the streets or roads. These parking slots are easily accessible due to their close proximity to the road and they do attract a standard rate throughout the day. Off-street parking on the other hand is situated away from the roads or streets. The parking areas for off-street are usually barricaded at the entrances and exits and timings are captured for vehicles coming in and getting out. Levies charged for off-street are time-based where the time stayed is multiplied by the hourly rate.

County houses/Markets

The NCCG prides itself on a number of housing estates spread across the city more significantly on the eastern side of the city. The provision of affordable housing in the city is within the mandate of the NCCG and as such, those who reside in its houses are expected to pay an affordable rental fee to carter mainly for maintenance services. Similarly, the County government also owns a sizable number of markets where traders sell their wares and remit a small levy to the county. The payment for these levies, both rental houses, and market stalls is done through the e-payment service.

Building plans approvals

It is the responsibility of the NCCG to ensure those planning to set up commercial and residential housing units adhere to architectural, structural, health and safety standards. Though these requirements are handled by a separate system, the payments for the same have been made possible through the self-service portal.

Management and Payments for loading zones

Loading zones are parking areas leased to business entities. The lease expires within a period of one year and is subject to renewable. Most established businesses within the city would want to preserve parking bays at the front or back of their premises mostly for the purposes of supporting their business operations. A good example is where a bank would want to preserve a parking slot located in front of the bank for its clients. Both the management and payments for these preserved parking slots (loading zones) have been automated through the NCCG self-service portal.

1.2 Problem statement

There has been an outcry from the system users about the system availability and or accessibility of the system, especially the Unstructured Supplementary Service Data (USSD) platform. Some users complained of the long procedures users have to follow before they could complete a task, while others were much concerned about the training and system awareness among themselves. We noted the above issues could derail the use of the system (NCCG). Therefore, we saw a requirement to conduct the evaluation of this e-government solution, in order to ascertain whether it has positively or negatively impacted businesses or society at large.

The last evaluation of NCCG self-service portal was done by (Wambui, 2016) when only three e-services were available compared to now when other e-services have been added. There have been

many improvements and innovations on the portal since the last evaluation. The researcher also used the updated DeLone and Mclean (2003) Model to evaluate the level of success, therefore, there is a need to re-evaluate the portal.

Otieno, et al., (2016) recommended investigations to establish whether the outcome can be supported in a different e-government setting where citizens interact directly with the systems as opposed to visiting common service delivery points. The researchers, in this case, got motivations from the recommendation and the public outcry and wishes to evaluate the impact of e-government services in a fully automated setup the case of NCCG self-service portal, where users interact directly with the system.

1.3 Research Objectives

Main Objective

To evaluate the impact of Nairobi City County self-service portal from the citizen's view.

1.3.1 Specific Objectives

1. To determine what's the current status of e-government payment services.
2. To determine what influences the use of e-jiji pay among users.
3. To determine the impact of e-jiji pay self-service portal to system users.

1.4 Significance and purpose of the study

The outcome of our research will be of importance to policymakers, academia, and development partners searching for facts around what works in development. This study will provide much detailed improved impact evaluation that will assist reinforce the fact ground for making policies and initiatives around the globe and locally. Resources will be used more effectively if public authorities and their partners in development can make policy decisions anchored on evidence including evidence produced through this impact evaluation. Consequently, this assists in poverty reduction and improve the lives of citizens. Policymakers can use the results of this evaluation in suggestions to strategically improve implementation of e-management systems in reference to future projects. Service providers can get meaningful feedback that they can utilize to improve the solutions they are offering to the benefit of both the Management and the Citizen. Public authorities are answerable to the public they serve and they are required to notify them of the achievement of

public initiatives. This study will provide meaningful feedback that can be used by the County government to inform the public about the outcomes of the initiative.

1.5 Scope of the Study

The study was conducted within the CBD of NCC. Data used were collected from citizens registered and interacting with the NCCG electronic payments services.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section begins by defining various concepts related to our research. The approach was to cover the topics from a broad spectrum and zero into the specific areas. The chapter defined terminologies related to the study in general and in the context in which they were applied in the research. It further discussed a number of studies undertaken within the area of electronic management of government resources and services, particularly impact evaluations of systems ultimately leading to the development of a conceptual framework that guided data collection.

2.2 Impact Evaluation

Impact is defined as a notable effect or force by the oxford English dictionary. The Cambridge dictionary on the other hand defines impact as an influential effect that a thing, especially a recent one has on a setting or an individual. From these definitions, it therefore, follows that impact has to do with influence or effect. This study adopted the definition presented by the Cambridge dictionary and defined impact as a powerful effect that something has on a situation or a person. Relating this definition to our study, the "powerful effect" is the impact and "something" is the e-service system (ejiji pay) while "situation or person" is the citizens. We therefore, define Impact as the powerful effect that the e-service system has on the citizens. Evaluation on the other hand is the technique of quantifying the quality, usefulness, or value of a thing (Cambridge dictionary). Impact evaluation is therefore the technique of quantifying the quality, usefulness, or value of something which is influential on a given setting or individual the e-service system on the citizens.

Impact evaluations analyses the positive or negative intended or unintended impact of programs, projects or policies on target populations and determine how huge that impact is. They determine the causal effect of a program, project, or policy on one or several outcomes. Impact evaluations, therefore, show whether measurable changes in people's lives are as a result of a certain initiative. While most project evaluations target on whether the implementation of operations or provision of service delivery was successful, impact evaluations on the other hand focuses on whether a project or program had a casual effect on the lives of people. Impact evaluations constitute a shift from activities to results (Outcomes) that help organizations to decide whether to scale up or stop projects based on the results.

2.3 E-government

For the purposes of putting the principles of e-government into proper perspective, it was important to define government. Several definitions of government have been advanced by many scholars, however within the context of our study, Government is referred to as state organs, and the administrative functions, workings, and processes. The government's world over through its governing functions focuses on the provision and administration of policies internally and externally. Internally, Governments are keen on administrative and management functionalities while externally the focus is majorly on the provision of services to the public, business outfits or other government authorities. Government agencies charge levies in the form of taxes from the public in different schemes and then use these monies to offer varied services to its citizens in several areas that include healthcare, education, defense, and security. If the Government authorities use ICT to conduct all these functions with less effort and resources, it is called e-government. Shailendra and Shuhil, (2018) therefore defines E-government as the delivery of federal or county authority services and information online or through electronic systems to the public, business outfits, or other government authorities. It provides an integrated platform to primary services of the state through the internet. UN–DPADM, (2003) defines electronic government as the deployment of electronic technologies comprising of the cyberspace, computers and other related technologies in the workings of the government. Several other definitions of e-government follows, therefore; E-government involves the use of ICT in state institutions, together with changes in the organizations and deployment of new expertize to better public service, public policies and democratic practice (European Commission, 2003).

As evidenced by various definitions, one common theme is electronic government entails the usage of IT and in particular internet to better the services offered by the government to members of the public, private businesses and other government authorities. E-government, therefore, facilitates interaction and provision of services to citizens from the National and local governments 24/7. It, therefore, follows that having computers or developing complex websites is not the concern of E-government. It is about introducing a radical transformation in the elementary association between the Government and the public. Government agencies in their crusade for e-government, must, therefore, ask themselves these crucial questions: what business are we concerned within government? How can the present business set up be transformed through the use of new and

emerging technologies? Are the new set-ups a reflection of the interests and preferences of citizens?

2.3.1 Categories of E-government

The four categories of E-Government include; Government to Citizens (G2C), Government to Business (G2B), Government to Government (G2G) and Government to Employees (G2E) as referred by (World Bank, 2002). G2C is where state agencies are able to offer Government services and information online for the public to access. This category provides the main aim of e-government which is to serve the public and improve interactions by making information available as well as reduce the time and cost of transacting. While exercising the concept of G2C, citizens enjoy immediate and easy access to state information and services conveniently from any place any time via the use of multiple channels. G2B is where governments and businesses exchange information and services. Business services offered by the government include filing taxes, dissemination of regulations, Policies, registering businesses, and obtaining permits (Alshehri & Drew, 2010). (G2G) involves performing electronic transactions and sharing data between government agencies. (G2G) aims at enhancing, improving and streamlining inter-government organizational processes. The other categories (G2E) and (C2G) in our view should not be considered to stand on their own. (G2E) can be categorized under (G2G) while (C2G) can be classified under (G2C). This view is also shared by other researchers who consider G2E as part of G2G as it is concerned with employees and their relationship with the Government only (Riley, 2001). This therefore, leaves three categories; (G2C), (G2B) and (G2G). This study majorly concentrated on Government to Customer (G2C) category.

2.3.2 Impact evaluation of E-government

We earlier on defined impact evaluation as the technique of quantifying the quality, usefulness, or value of something which is influential on a given setting or individual. Keeping in line with this definition and in according to our study, e-government impact evaluation is concerned with quantifying the amount or value of these systems on the citizens, a position well supported by several other researchers. Alalwany and Alahmari, (2007) define the evaluation of information systems as the process that attempts to establish the worth or value of information systems by quantitatively and qualitatively. E-government being a sub-area of IS provides a more complex evaluation scenario because of the technical and social contexts and differing views of interested

parties. This provides myriads of challenges some of which include addressing the general as well as specific requirements of target groups such as members of the public (Alalwany & Alahmari, 2007). Impact in the perspective of e-government, therefore, is the constant and long term transformations in public institutions, business communities and citizens lives as a result of e-government implementation. It is in the interest of the public and other stakeholders therefore to assess e-government impact for the purposes of justifying the use of public monies and to inform future projects (Otieno et al., 2016).

It is important worth noting that with the evaluation of e-government impact, different target groups must be taken into consideration. These groups include citizens, government agencies, businesses, and the wider society. Literature indicates that researchers tend to apply methodologies that evaluate the impact of e-government from a technological and economic view. (Alalwany & Alahmari (2007) provided holistic evaluation factors that covered technical, economical and societal dimensions affecting utilization of e-government services. A departure from this approach is required since government authorities are motivated by the desire to serve the public. This desire is the benefit created by the state through its services, legislation and regulations. Verdegem et al., (2010) asserts even as many e-government evaluation frameworks exist, most of them concentrate on front government-side but disregard Citizen's side. The reasoning of moving from efficiency to effectiveness implying more concern on a Citizen-focused approach which stipulates the effectiveness of services rendered by e-government (Codagnone et al, 2008). Several studies on the evaluation of e-government impact has been done world over with several theories, concepts and frameworks being advanced to appraise e-government initiatives. The following section provides studies conducted in relation to evaluation of IS and e-government and gives a clear set of important factors that can assist attain better utilization of services by the citizens. These factors can be used to appraise e-government impact with respect to the views of citizens.

2.4 Theoretical Frameworks

2.4.1 COBRAS (Cost Opportunity, Benefit Risk Analysis for Satisfaction)

The developers of this framework aimed at addressing a specific stakeholder within the e-government services. The stakeholder identified, was the user, and the framework identified factors impacting user satisfaction in an e-service. These factors were grouped into four categories namely; cost, opportunity, benefit, and risk.

The framework tries to balance the casual-effect relationships between the cost-benefit on one hand and the risk-opportunity on the other hand. The cost and benefit constructs are tangible while the opportunity and risk constructs are intangible. This framework is analogous to a management tool known as SWOT: Strengths, weaknesses, opportunities and threat analysis, where strengths conform to benefits, weaknesses conform to costs, threats conform to risks and opportunities are equal in both models.

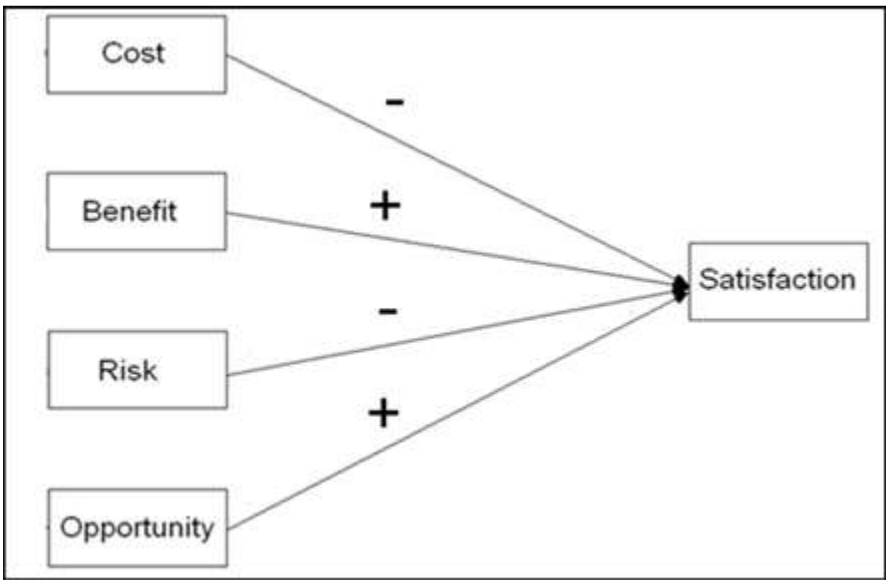


Figure 2.1: The COBRAS framework for user satisfaction (Osman et al., 2011)

Cost

This variable is tangible and is measurable, it includes indicators like real cost incurred to access an e-service and the time taken to complete a request from an e-service. The time it takes to get a requested service (Access time), post-interaction time (time taken to get feedback after placing a request and also to get a service e.g to obtain a business license are all considered as costs. Osman et al., (2011), concluded that lower e-service cost would lead to more user satisfaction.

Benefit

This variable presents the intangible benefits of using an e-service. These include indicators such as quality of information, quality of services, and quality of the system. Information quality presents indicators such as; Accuracy, adequacy, Information availability, relevancy, completeness,

understandability, and reliability; Service quality include measures such as accessibility, design, quick delivery, well–organized site and ease of navigation; System quality include: visually attractiveness, responsiveness, quick loading, and adequacy of links. The study results showed that the higher the benefit, the higher the user satisfaction.

Cost – benefit analysis

Users of the system will compare what they will incur visa vi the benefits, higher costs compared to benefits would discourage the users from using the e-service.

Risk

Risks would arise where factors external to the e-service would jeopardize the availability of e-service. System users will have worries about the safety of their personal information. Risk variables include; Use of personal data for unintended purposes, longer period storage of individual information worrying users for a possibility of re-audits, social risks which will affect the interactions behaviors amongst users especially those who don't use e-services may perceive themselves inferior to those using them. The lower the risk the higher the user satisfaction.

Opportunity

Opportunities like risks are also external factors and are brought about by the surroundings which the e-service operates. System users can take advantage of opportunities presented as a result of introducing the e-service. This construct does not come out clear though the authors highlighted some measures which included; service support (24/7 access), flexibility in access (access anywhere); Technological support (access to e-services in public areas; Omitting third party players and avoiding bureaucratic procedures; Incentives in using the e-service like extended deadlines and fewer costs. The higher the service opportunity, the higher the user satisfaction.

COBRAS presents a valuable tool as it presents factors that are necessary for evaluating the impact of e-services on user satisfaction. This study is keen on two of those factors; Cost of service (actual monies spent to access an e-service, the time to get a service) and benefits (which includes attributes such as system quality, information quality and quality of service).

2.4.2 Updated DeLone and McLean 2003 IS Success Model

Delone and Mclean originally developed the Delone and Mclean IS success Model (1992). This model had six constructs: system quality, information quality, user satisfaction, individual benefits, and organizational benefits. After a period of ten years of empirical research and suggestions from other researchers, they modified this model and developed the Delone and Mclean (2003) revised IS success model. The new framework had an additional construct named service quality and a new one named net benefits (a combination of individual benefits and organization benefits from the original model). Service quality in this case presented a measure of the quality of the organization providing the IS. It measured things like the support the users get from the service provider.

Delone & Mclean further made two additional changes to the revised 2003 model. The first change being renaming the "net benefits" construct to "net impacts". They argued that Net impacts were more meaningful than net benefits because benefits imply only positive outcomes though, in reality, both positive and negative outcomes are possible. The second change was additional feedback loops from "use" and "user satisfaction" to "system quality", "information quality" and "service quality". This change was necessitated with the argument that increased use of the system brings to light issues that warrant system changes and updates in the name of system maintenance.

A brief description of individual success measures of the Modified make of Delone & Mclean (2003) model as below:-

System Quality – which are desirable features of an IS that include user friendliness, reliability, flexibility, quick response times and sophistication.

Information Quality – features of system outputs (look and feel of web pages and management reports). These includes aspects such as how current is the information displayed on the web sites, how relevant is the information displayed on the site and how usable is the information produced from reports

Use – The extent to which users of an IS exploit the potential of the system. This will include measures such as amount, frequency and nature of use and appropriateness.

User satisfaction – The level of self-contentment with the system's outputs such as reports and web sites. This also includes the level of support users receive from the organization providing the IS

Net impacts – The positive results or lack of it by various groups attributable to usage of an IS. These groups include individuals, organizations, nations and industries. Impacts may include quality decisions, timeliness and effectiveness.

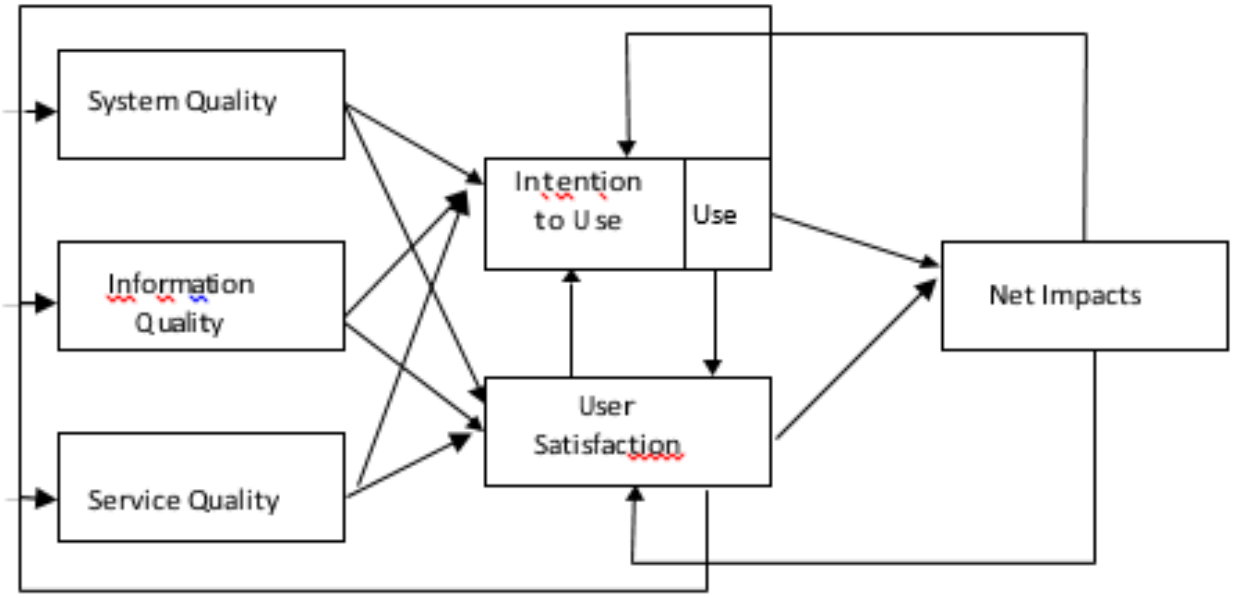


Figure 2.2: Revised DeLone and McLean 2003 Information Systems Success Model.

From the improved Delone and Mclean 2003 IS success Model, our research picked system quality and information quality and combined them into one variable. The resultant variable was named quality of service. This was because we considered the two constructs to be standard and value measures. The other variable we considered was user satisfaction because it had a direct influence on Net impacts, which was a subject of our research. DeLone and McLean describe service quality as that of the organization providing the service and not the actual quality of system (service). They considered service quality in terms of support services provided to the system by the sponsoring organization. This is in contrast to our study as we are looking at service quality from the aspect of the actual quality of the application and in doing so considering measures such as

system features, response times amongst many others. The Net impact is considered by Delone & Mclean to include impacts on various groups. This study is concerned in measuring the impact that the eservice would have on these groups.

2.4.3 E-government impact evaluation framework (Otieno, et al., 2016)

Otieno, et al., (2016) developed a framework to evaluate the impact of e-government. Their study identified four factors that impact on e-government from the citizen perspective. These factors included; cost of service, quality of service, user satisfaction and e-readiness. They described the cost of service as what citizens pay for when accessing e-government services and also the time they take in terms of travel time in order to access services or the time the government official takes to offer services. Quality of service is the experience that citizens get when accessing services from the portal. This would include attributes such as information quality and services integration. They described User satisfaction as a good experience by members of the public brought about as a result of e-government. They considered multiple channels of e-service provision and user requirements satisfaction as metrics that can be used to measure user satisfaction. E-readiness attributes include environmental and facilitating conditions that affect the utilization of e-services such as ICT infrastructure and ICT literacy levels. The four factors described above were considered to affect the intermediate impact of e-government (the immediate benefits accrued because of the uptake of e-government). These benefits included; degree of improvement in service delivery, citizenry involvement in governance and better economic and social standings of the public. The framework also established the existence of a casual-effect relationship between the quality of service and user satisfaction

The relationships between the four independent variables (cost, quality of service, user satisfaction and e-readiness) and the dependent variable (impact) were moderated by three variables. The moderating variables included gender, age, and education level.

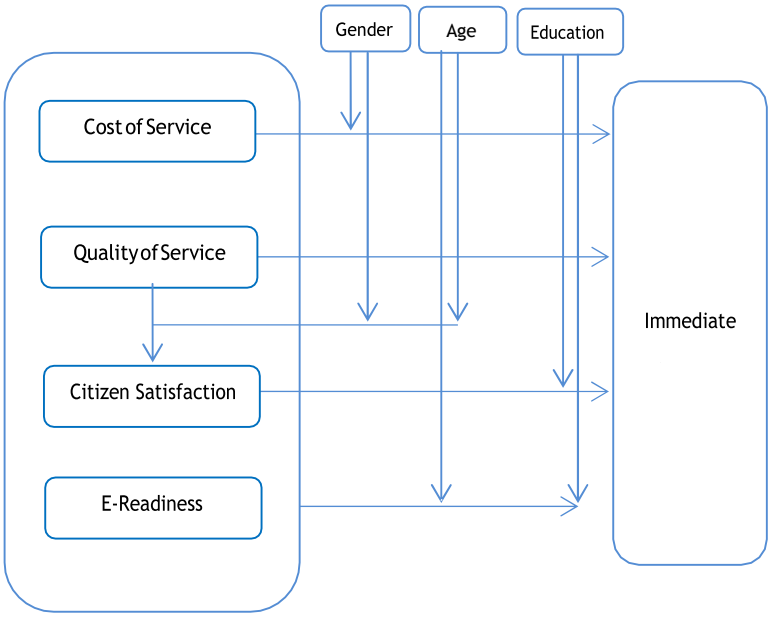


Figure 2.3: E-government evaluation impact framework (Otieno, et al., 2016*)*

2.5 Conceptual framework

The study adopted the variables of cost, quality, user satisfaction, and e-readiness as independent variables for the research. Three moderating variables namely age, gender, and education were also adopted since they were well supported by literature and fit well in our research. A description of these variables follows;

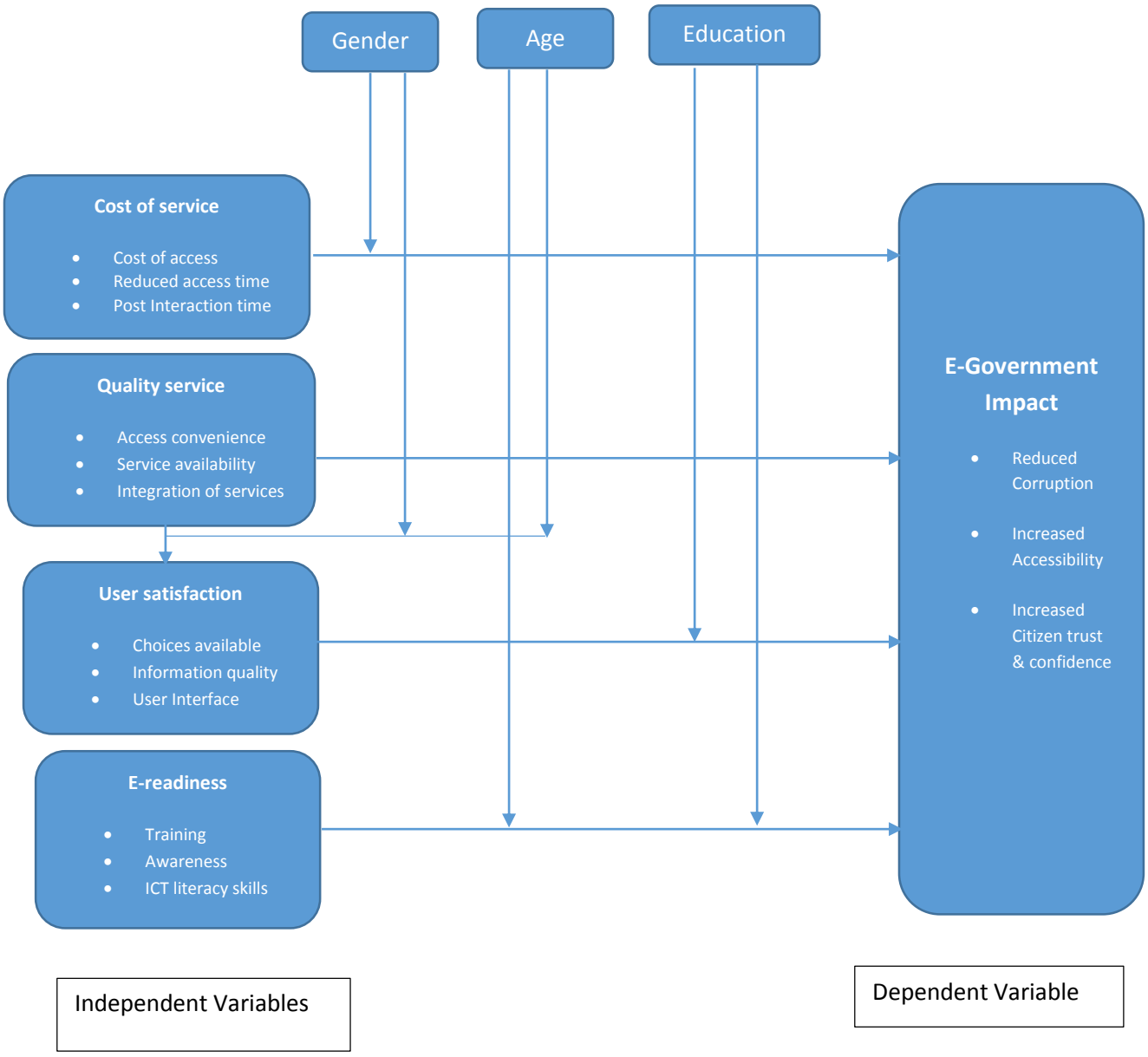


Figure 2.4: Conceptual framework

Cost of service

Osman et al., (2011) argues that the cost incurred the providing and accessing services is key to user satisfaction of e-services. The issue of cost is not only limited to the amount of money Citizens incur to access the services but also the time taken in accessing the service that includes both response times and post-interaction time(time taken to get a service like obtain a business license, driving license amongst others). This position is also supported by several other researchers. Bhatnagar and Singh, (2010) identified the cost of service as a key dimension to be considered when assessing e-government from a client's view. The measurable attributes for the cost of service included the actual cost in monetary terms incurred in accessing the service, cost of bribes (amount paid in bribes) by members of the public to get government services and the time saved.

Quality of service

This refers to what the public perceives as quality when using e-government services. This dimension has been advanced by several researchers. Otieno, et al., (2016) in their revised citizen-centric impact evaluation framework identified quality of service as one of the variables that has an impact on e-government. Some of the measurable attributes for quality of service identified included the integration of services, access convenience and reliability. Bhatnagar and Singh, (2010) in recognition of the significance of this variable, identified attributes such as complaint handling. Delone and Mclean, (2003) also incorporated quality of service to their revised model, even though they considered quality from a marketing perspective where quality would mean the support service offered by the organization providing the service and would include measures such as complain handling. Quality, as defined by our study, is the quality of the e-service system and with the following indicators: integration of services, access convenience and service availability as advanced by (Otieno, et al., 2016).

User satisfaction

Delone and Mclean, (2003) defines user satisfaction as the levels of satisfaction experienced by system users as a result of excellent reports, well-designed web sites and support services from the service providers. Doll and Torkzadeh, (1988) developed a model for measuring the levels of user satisfaction. The researcher targeted users who accesse certain applications directly using computers. The survey was done on 618 end-users and the results suggested five factors that affect end user-satisfaction. These factors included: timeliness, content, user friendliness,

accuracy, and format. Ilias et al., (2009) conducted a study on 90 End-users of computerized Accounting System (CAS). They confirmed that content, ease of use and accuracy affected end-user satisfaction. The empirical support of their study supports Doll and Torkzadeh model (1988). Otieno, et al., (2016) attributed measures such as choices available, information quality (content and accuracy), user interface (ease of use) and support as significant indicators in measuring user satisfaction.

E-readiness

Otieno, et al., (2016) posits that from a client's perspective, e-readiness measures such as levels of ICT literacy, training, and awareness has a direct impact on the uptake of e-government which in turn impacts e-government. This study will adopt User training, service awareness and Literacy levels as measurement indicators of e-readiness.

Impact of eservices

Our earlier definition of impact according to this study is that impact is a powerful effect that the e-service system has on the citizens. The concern of this study was therefore to measure this effect quantitatively or qualitatively. The first step in doing so was to identify the metrics to use in the measurement. These measures as identified from literature included the cost of service, the quality of service, user satisfaction and e-readiness. Stanimirovic and Vintar, (2013) identified some indicators of the impact on e-government services. These included reduced corruption (due to limited interactions with government officials), improved service delivery (due to the concept of self-use and fewer intermediaries), and confidence and trust (due to increased transparency levels). The following table summarizes the concepts discussed above, their measurable attributes (indicators) and the frameworks/models from which they were derived.

Table 2.1: Variables Operationalization

Sno.	Construct	Attributes	Description	Framework/Model
1.	Service costs	-Access Costs to e-service	-Cost incurred in accessing the service	- Osman, et al., 2011 , (Otieno, et al., 2016)
		-Access time	-Time taken find a service (time taken to access eservice, time taken to receive downloads, access response times,)	- Osman, et al., 2011 , (Otieno, et al., 2016)
		-Post interaction time	-Waiting time to get a service(e.g Business license receipt)	- (Osman, et al., 2011)
2.	Quality of service	-Integration of services	- E-services consolidate in one place	- (Otieno, et al., 2016)
		-Access/convenience	- Convenience of working hours and ease of access to the service	- Bhatnagar & Singh (2010),
		- Availability of service	-E-service always available when needed	- Delone & Mclean (2003)
3.	User Satisfaction	- Choices available	- Options available for accessing service	- (Otieno, et al., 2016) - Doll & Torkzadeh,

		- Information Quality -User Interface	-Content, Accuracy, completeness reports generated from system -Ease of use	(1988), Otieno, et, al 2016, Delone & Mclean(2003) - Doll & Torkzadeh, (1988)
4.	E-readiness	-ICT infrastructure -E-service Awareness - literacy skills (ICT)	- Existence of ICT infrastructure to support service (Environmental) -Citizen awareness of e-service existence -Level of ICT literacy skills	- (Otieno, et al., 2016) - (Otieno, et al., 2016) - (Otieno, et al., 2016)
5.	Impact	-Corruption eradication -Improved service delivery	-Reduced level of corruption due less interactions with county officers -Increased accessibility to services due to concept of self-use, reduced transaction processing time, fewer intermediaries	- Stanimirovic & Vintar, (2013) - Stanimirovic & Vintar, (2013)

		-Confidence and trust levels	-increased confidence in the institution	- Stanimirovic & Vintar, (2013)

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter covers the methodology that was applied in the study. This covers research design, the population of the study, sampling, data collection procedures and analysis that were relevant in meeting the research objectives.

3.1 Research Design

Research design is the blueprint for collecting, measuring and analyzing of data according to Kothari (2003). It also refers to the structure of how a study is designed. This study adopted a descriptive research design, to obtain views from Citizens in regard to the effectiveness of NCCG portal guided by the independent variables identified in the research tool. Descriptive studies require a researcher to precisely define what is to be measured and use adequate methods of measuring including a proper definition of the population under investigation. Descriptive research design is preferred since it's more accurate and precise as it involves a description of events in a carefully planned manner (Babbie, 2004). The respondent's conversations were transcribed and coded, this was analyzed to determine the impact NCCG portal has on the portal users.

3.2 Target Population

This is the specific population from which information is sought. Some researchers refers to population as all members with information required for the study. The target population comprised of 700,000 registered users on the NCCG portal (source: Webtribe Ltd, a subcontracted company supporting the system, 2018).

3.3 Sampling Framework and Sample size

This is a tool from which a sample is withdrawn, comprises of listing of all items included in a population to be sampled (Mugenda & Mugenda, 2003). The study adopted a model by Yamane (1967) as illustrated below:

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = sample size

N = Population size

e = Degree of tolerable error

1 = Constant

Allowing 5% error margin we will apply;

$n = 700,000/(1 + 700000(0.05)^{2)}$

700,000 / (1+ 700000(0.0025))

700,000 / 1750.0025

n = 400

3.4 Sampling Technique

The study adopted a probability sampling technique, where a sample is randomly selected in order to capture every element of the population.

3.5 Research Instruments

This study used structured and unstructured questionnaire as data collection tool. Questionnaires were used since they are effective data collection tools, allowing respondents to give much of their opinions regarding the research objectives or interests (Cooper & Schindler, 2008). This research collected both primary and secondary data. Primary data is data that a researcher collects directly on his/her own for specific purpose. The methods used to collect primary data was by conducting interviews using questionnaires, observation checklists, and rating scales. The use of these methods was possible because the dimensions and characteristics of the phenomena are known or believed to be known. These instruments yielded qualitative and quantitative data, or a combination of both open and closed questions. The questionnaires were given and picked after the respondents had filled them.

3.6 Reliability and Validity

Reliability refers to the consistency of scores obtained from the study (Fraenkel & Wallen, 2009). The questionnaire was subjected to peer reviewers and scrutiny from the study area experts. A

pilot study was done to check reliability of the questionnaires and adjustments done as noted. Cronbach's alpha index (Cronbach, 1951) was employed to assess the internal consistency (average correlation) of the questionnaire.

3.7 Data Analysis and Presentation

Jwan and Ong'ondo, (2011) referred to data analysis as a systematic process of collecting, transcribing, editing, coding and data reporting in a way that makes sense to readers for the purpose of interpretation and study. After data had been collected from the field, the new data were arranged in a manner that enabled analysis to be conducted. This involved editing of data to detect errors, omissions, corrections, coding, and classification in order to determine whether any meaningful relationships come out and to tabulate the data to facilitate analysis.

The data were coded in SPSS version 24 and analyzed using descriptive and inferential analysis. Descriptive analysis used tables, charts, and graphs to show the study results, while inferential statistics were done on correlation and regression analysis to find the relationship between the independent variable and dependent variables.

3.7.1 Correlation Analysis

The findings of the study were subjected to a correlation analysis to determine whether any relationship exists between the independent variable and dependent variables. The strength of the relationship between the variables were established too.

3.7.2 Regression analysis

This model sought to establish the relationship between dependent and independent variables of the study. Below is the regression blueprint:

$$\mathbf{Y = \beta o + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + \varepsilon}$$

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION

4.1 Introduction

The segment is concerned with presenting results of the study in a number of formats that include tables, pie-charts, and graphs. This is in accordance to the study objectives. The research questions were answered through the Interpretations of the findings. The presentation of the findings was organized around the key variables such as e-service awareness, service quality, and cost of services, user satisfaction, and impact of e-service. The data was collected in the month of March 2019. The bio-data information was also analyzed and presented to provide relevant characteristics of the study respondents.

4.2 Questionnaire Return Rate

The research distributed (400) questionnaires to Nairobi County residents using the e-service platform provided by the County Government. 400 questionnaires were completed and returned representing a return rate of 100%.

Table 4.1: Questionnaire return rate

Sample size	Number	Percentage
Total Sample size	400	100
Total Responses	400	100
Total Usable Responses	400	100

4.3 Demographic Information

4.3.1 Gender of Respondents

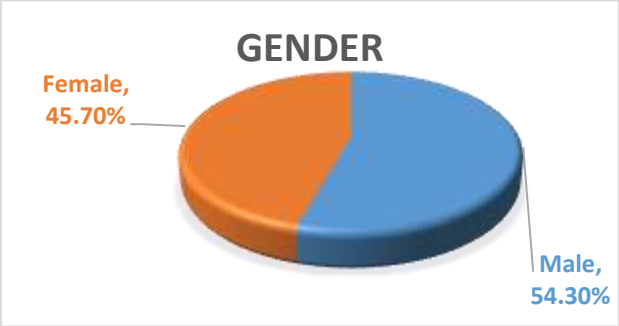


Figure 4.1: Gender of respondents

Source: Author (2020)

There were more male than female citizens in Nairobi County using eJiji Pay system. From the whole sample, 54.3% of the respondents were male while 45.7% were female as shown in figure 4.1 above. The finding is that both genders were represented in the study.

4.3.2 Age of the respondents

The study while seeking to find out the age distribution of the people using the e-service, found out that the majority of the users, represented by 35.5% are aged between 26-35 years, these were closely followed by those in the age bracket of between 36-45 years at 25.5%, while those between 46-55 years were 15.8%. It was equally noted that the users who were 56 years and above, were represented by 5%, representing the lowest number of users of the e-service as shown in table 4.2 below.

Table 4.2: Respondents Age frequency

In which age bracket are you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	73	18.3	18.3	18.3
	26-35	142	35.5	35.5	53.8
	36-45	102	25.5	25.5	79.3
	46-55	63	15.8	15.7	95.0
	56 and above	20	5.0	5.0	100.0
	Total	400	100.0	100.0	

4.3.3 Respondents' Education level

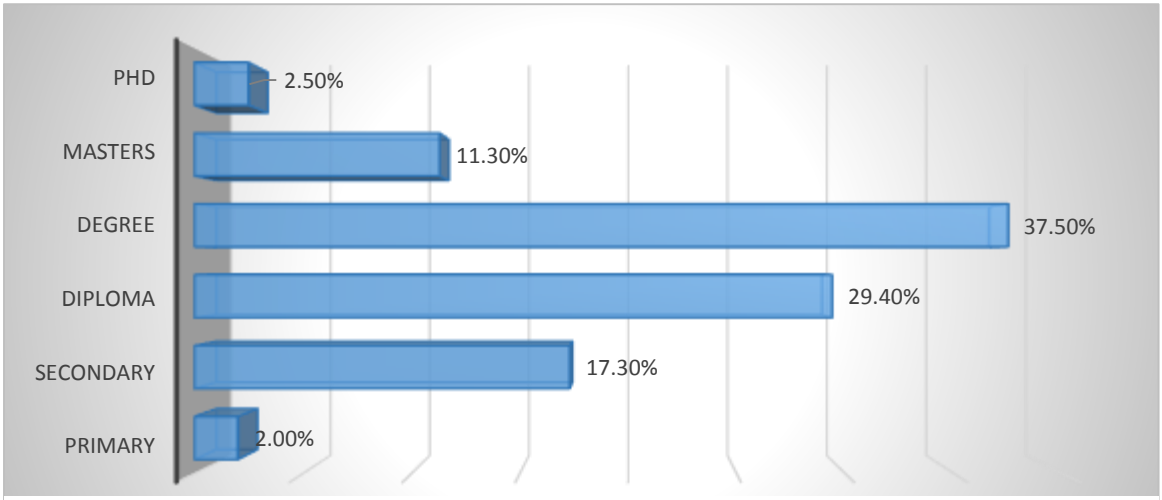


Figure 4.2: Education level

Source: Author (2020)

Out of the 400 participants who completed the study, 37.5% have bachelor's degree, 29.4% have diplomas, 17.3% have secondary school certificates and 11.3% possess master's degree. The lowest ranked categories were those with primary school certificates and PhD at 2% and 2.5% respectively as shown in figure 4.2 above.

4.4 E- services and their usage

The county government provided several services that are meant to help Nairobi County residents pay for the services they needed. The study found out that the majority of the e-service users pay for parking fees represented by 38%, 31% pay for business license while 12.5% pay for land rates. Other e-services accessed on the platform included payment for house rents/market stalls at 11.8%, payment for loading zones at 3.8%, payment for building plan approvals at 2.3% and 0.6% payments for other services as shown in figure 4.3 below.

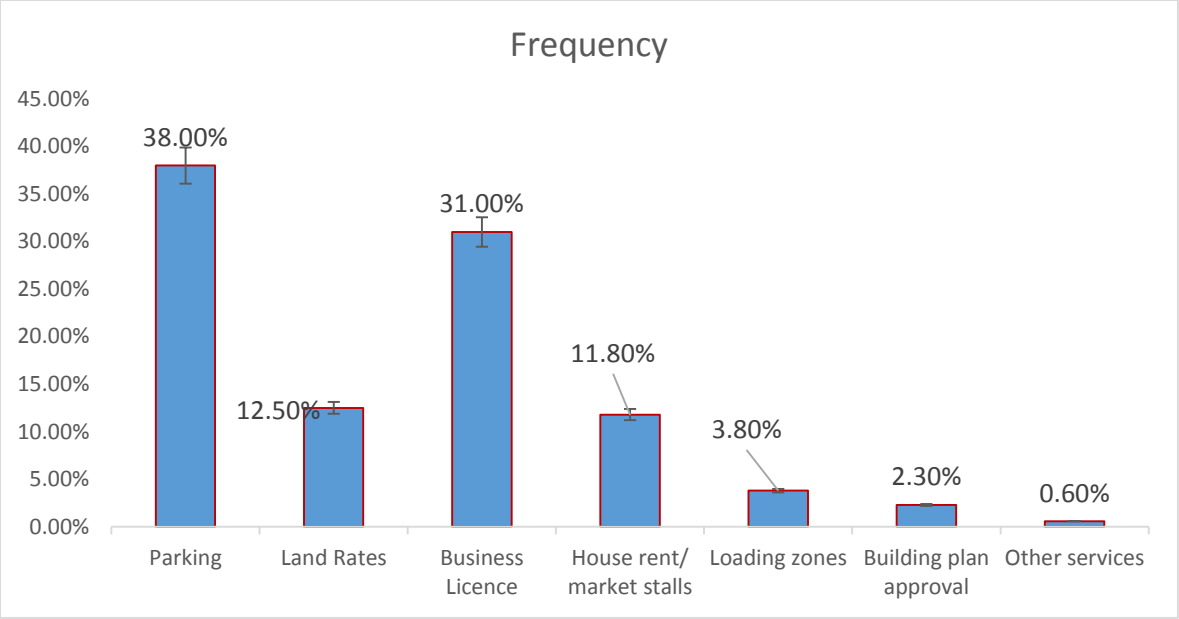


Figure 4.3: E-service usage frequency

Source: Author (2020)

4.5 Duration of System Use

The results showed that 42.3% of the e-service users have interacted with the platform for a period of between 1-2 years, 23.2% have been using the system between 3-4 years, 21% below 1 year and 13.5% above 4 years. This is summarized in table 4.3 below.

Table 4.3: Duration of system usage

For how long have you been using the services(s) you have indicated above?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 1 year	84	21.0	21.0	21.0
	1-2 years	169	42.3	42.3	63.3
	3-4 years	93	23.2	23.2	86.5
	Above 4 years	54	13.5	13.5	100.0
	Total	400	100.0	100.0	

4.6 Implementation of e-service

The study used a Linkert scale of 1-5 (where 1=Strongly disagree, 2= Disagree, 3= Don't know, 4= Agree, 5= Strongly agree) to establish how the respondents gauged the variables in study and how they impact the Government e-services. The analyzed data showed that 60.5% of the respondents were in agreement that e-service had reduced costs incurred previously in terms of travels, transactions, bribes as well as brokers' fees. 64.2% of the respondents equally agreed that the e-service has made it convenient for them to access County payment services due to its availability on portable devices like mobile phones and laptop computers, and that they can access payment services from one place. On user satisfaction, 65.8% of the respondents indicated that there are many payment choices/alternatives available on the user-friendly system and that they are able to get accurate, up to date and easily understandable information. While looking at the quality of services, the study established that 66.3% of the respondents agree that the e-service has made it easier for them to access county payment services since it is always available when they need it and that they can access many payment services from one place. While accessing the impact of e-service, 57.8% of the respondents indicated that e-service has increased transparency which has led to the reduction of corruption levels, the platform has improved on service delivery as well as the confidence and trust level of Nairobi citizens to the County Government. This information is summarized in the figure below:-

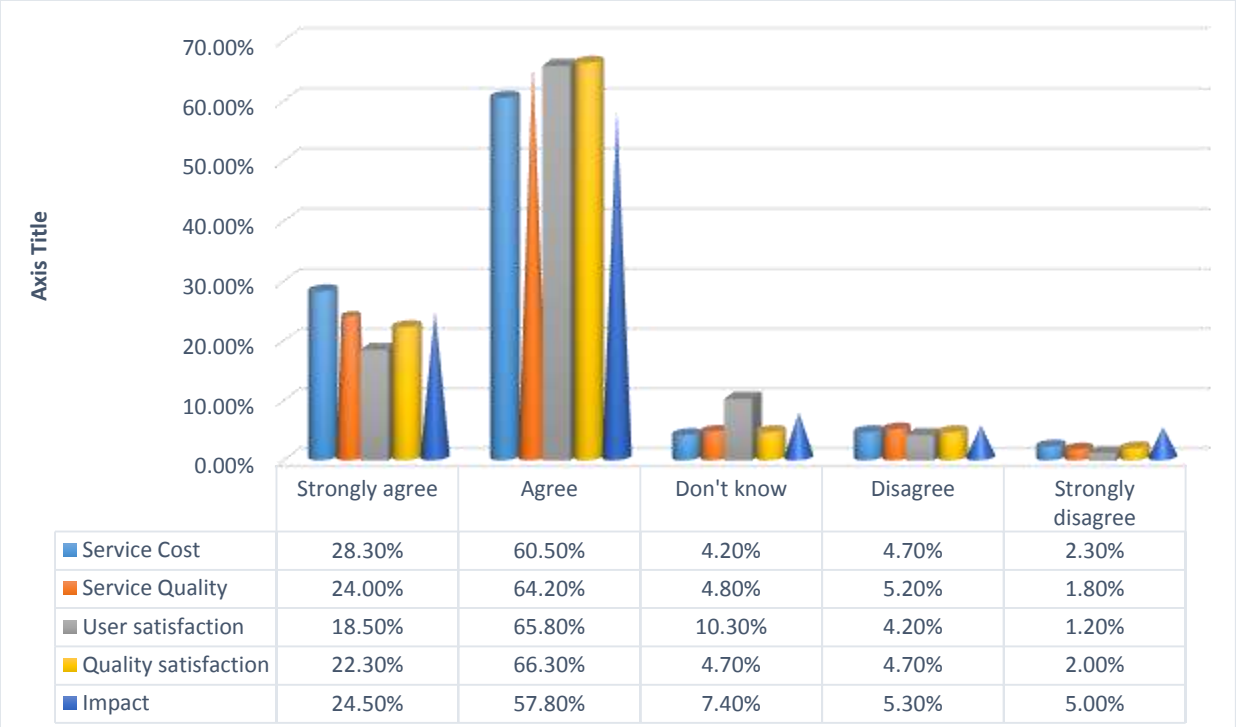


Figure 4.4: Responses on e-service usage

Source: Author (2020)

4.7 Training

Table 4.4: E-service training

Has the Nairobi County carried out sensitization about the e-services (ejiji pay) in your area? * If yes, how helpful was it? Cross tabulation

Count

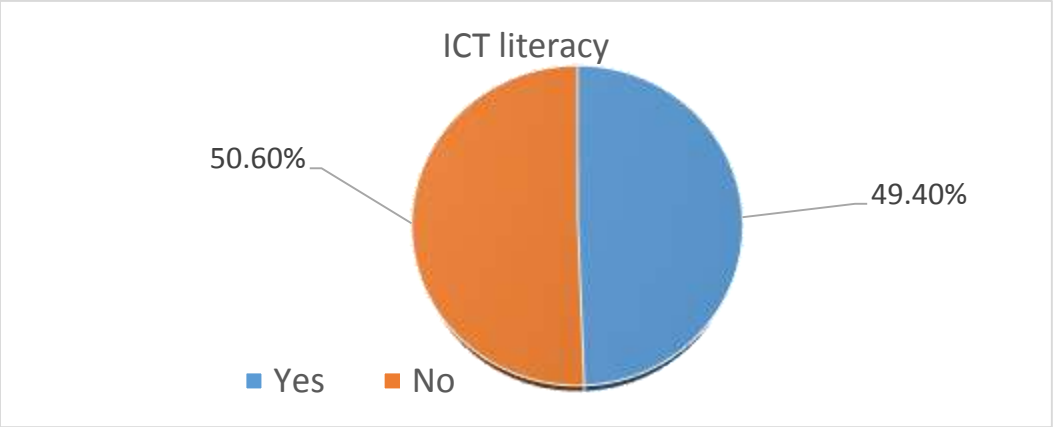
		If yes, how helpful was it?					
		Very helpful	Helpful	Somehow helpful	Not helpful	Not Applicable	Total
Has the Nairobi County carried out sensitization about the e-services (ejiji pay) in your area?	Yes	15.5%	33.5%	8%	1.5%	0%	58.5%
	No	0	0	0	0	41.5%	41.5%
Total		15.5%	33.5%	8%	1.5%	41.5%	100%

A cross tabulation analysis between training offered and how helpful it was, indicated that 58.5% of the respondents agreed that Nairobi County has carried out sensitization about e-services in their area while 41.5% indicated that the sensitization has not been carried out in their area. Amongst

those who have been sensitized on the e-services, 15.5% indicated that the training was very helpful, 33.5% said it was helpful, 8% indicated that it was somehow helpful while 1.5% said that the training was not helpful to them. This is shown in table 4.4 above.

4.8 ICT Literacy

It is assumed that ICT is a skill that is required for one to be able to access and utilize the e-service system. The study sought to find out from the respondents if this is true. Results showed that 50.60% of the respondents disagreed while 49.40% agreed that ICT literacy affect their access and utilization of the e-services. Figure 4.5 below gives a pictorial view of this finding.



Source: Author (2020)
Figure 4.5: ICT literacy response

4.9 Inferential statistics

4.9.1 Normality test

Kolmogorov-Smirnov Test and the Shapiro-Wilk Test was used to do normality test in this study. The Shapiro-Wilk Test is more suitable for small sample sizes (less than 50 samples), but can also be used to handle sample sizes as large as 2000 (Ghasemi, & Zahediasl, 2012). For this reason, we used the Shapiro-Wilk test as our numerical means of assessing normality. The research considered the p-value to determine whether normality test is met or not. The rule of thumb states that, when Shapiro-Wilk Test p-value is greater than the significance level of 0.05 then, the study fails to reject the null hypothesis (Jarque, & Bera, 1987).

Null hypothesis H_0 : Data follow a normal distribution

Alternative hypothesis H_1 : Data do not follow a normal distribution

From table 4.5 below, we can see that all the variables (Impact, Service cost, Service quality, user satisfaction, e-readiness) have significant figures more than 0.05 therefore, we failed to reject the null hypotheses of normality. From the results, the study was free to use any of the parametric methods for the analysis (Neideen, & Brasel, 2007).

Table 4.5: Normality test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
E-govt services	.357	400	.200*	.753	400	.815
Service Cost	.351	400	.200*	.722	400	.782
Service Quality	.365	400	.200*	.719	400	.881
User Satisfaction	.364	400	.200*	.746	400	.673
E-Readiness	.151	400	.200*	.942	400	.742

a. Lilliefors Significance Correction

4.9.2 Reliability test

Reliability in the field of statistics refers to the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions (Drost, 2011). Scores that are highly reliable are accurate, reproducible, and consistent from one testing occasion to another. The higher the correlation coefficient in reliability analysis, the greater the reliability. While looking at reliability, research studies use Cronbach alpha. Drost (2011), suggests that a reliability of Cronbach's alpha .70 or higher as a sufficient measure. In this study, the Cronbach alpha was .875 signifying a sufficient measure of internal consistency as shown in table 4.7 below

Table 4.6: Case Processing summary

Case Processing Summary

		N	%
Cases	Valid	400	100.0
	Excluded[a]	0	.0
	Total	400	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Table 4.7: Reliability Test

Cronbach's Alpha	N of Items
.875	5

4.9.3 Correlation

Correlation is a statistical measure showing how strongly pairs of variables are associated. Pearson's (r) values ranges from -1 to 1, when r = -1 it indicates a perfect negative linear relationship, r = 0 it indicates no linear relationship and r = 1 shows a perfect positive linear association between the two variables (Hauke, & Kossowski, 2011). Correlation analysis indicates that there is a strong positive relationship between cost of service, quality of service and user satisfaction. However, it was equally established that there is a weak positive relationship between E-readiness and cost of service, quality of service and user satisfaction as shown in table 4.8 below.

Correlation Test

Table 4.8: Correlation Test

	Service Cost	Service Quality	User Satisfaction	E-Readiness
Service Cost	1			
Service Quality	0.626499	1		
User Satisfaction	0.610283	0.662571	1	
E-Readiness	0.115439	0.210489	0.210726	1

4.9.4 Regression Analysis

By dividing this explained variance by the total variance of the dependent variable, we arrive at the proportion of the total variance that is accounted for by the regression equation. This proportion varies between 0 and 1 and is symbolized by R^2 (R Square). As can be seen from Table 4.9 below, the value of R^2 is 0.583, which means that 58.3 percent of the total variance in impact of e-services has been 'explained'.

The study tested for autocorrelation in the residuals using Durbin Watson (DW) test. The Durbin-Watson statistic will always have a value between 0 and 4. A value of 2.0 means that there is no autocorrelation detected in the samples. Values from 0 to less than 2 indicate positive autocorrelation and values from 2 to 4 indicate negative autocorrelation (Nerlove, & Wallis, 1966). In this study, there is a positive autocorrelation given that the DW value was 1.542 closer to 2, hence there was positive autocorrelation in the model's residuals as shown table 4.9 below; We therefore, failed to reject the null hypothesis of DW (there is no autocorrelation among residuals).

Model Summary

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.532[a]	.583	.276	.841	1.542

a. Predictors: (Constant), E-Readiness, Service Cost, User Satisfaction, Service Quality
b. Dependent Variable: Impact

4.9.5 Analysis of Variance

ANOVA is a collection of statistical models and their associated estimation procedures used to analyze the differences among group means in a sample. The analysis in table 4.10 presented the model regression significance. The significance value (p = 0.000), showed there was 0% probability of the model giving a false information, hence, the model used was significant.

Table 4.10: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110.046	4	27.512	38.941	.000[b]
	Residual	279.064	395	.706		
	Total	389.110	399			

a. Dependent Variable: E-Service
b. Predictors: (Constant), User Satisfaction, E-Readiness, Service Cost, Service Quality

4.9.6 Regression model

Table 4.11: Regression analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.434	.182		2.381	.018
	E-Readiness	.132	.080	.073	1.665	.097
	Cost of service	.365	.068	.312	5.374	.000
	Quality of service	.164	.075	.134	2.173	.030
	User Satisfaction	.180	.079	.138	2.267	.024

a. Dependent Variable: e-service

The regression analysis showed that Service cost, Service quality, and user satisfaction have significant influence on e-service (e-jiji pay) used by Nairobi citizens while E-readiness has an insignificant impact. This is shown in table 4.11 above.

A unit increase in e-readiness leads to 0.132 (p=0.097) increase in e-service use. A unit increase in Cost of service leads to 0.365 (p=0.000) increase in e-service use. A unit increase in Quality of service leads to 0.164 (p=0.030) increase in e-service use. A unit increase in User-satisfaction leads to 0.180 (p=0.024) increase in e-service use.

Coefficients

$y= C +X_1a + X_2b +X_3c + X_4d$

$I = C + X_1 ER + X_2 US + X_3 QS + X_4 CS$

$I= 0.434 + 0.132 ER + 0.180 US + 0.164 QS + 0.365 CS$

Where

I = e-service use

ER = E-Readiness

US = User Satisfaction

QS = Quality of Service

CS = Cost of Service

4.9.7 Regression Analysis for moderating variables

In statistics and regression analysis, moderation occurs when the relationship between two variables depends on a third variable. The third variable is referred to as the moderating variable or simply the moderator. The study sought to find out how gender, age and education moderated relationships between dependent and independent variables as well as among independent variables as summarized in table 4.8 below;

1. The gender of individuals using e-services has a significant impact on the relationship between cost of e-service they use and e-government services.
2. The education level of an e-service user has a significant moderating influence between user satisfaction and e-government services.
3. The age of an e-service user has a significant moderating impact between e-readiness and e-government services.
4. Education level of e-service users has an insignificant moderation influence on the relationship between e-readiness and e-government services.
5. An individual's age and education levels combined have a significant moderation effect on e-readiness and e-government services.
6. Individual age has a significant moderation between service quality and e-government services.
7. The gender of an individual is significant in moderating the relationship between service quality and e-government services.
8. A combination of an individual's age and gender has a significant moderating influence between quality of service and user satisfaction

Table 4.12: Regression analysis for moderating variables

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.984	.108		9.132	.000
Gender (CostoSer)	.015	.044	.015	.347	.029
(Constant)	.936	.129		7.273	.000
Edu U-Satisfaction	.044	.047	.042	.924	.036
(Constant)	2.087	.050		42.121	.000
Age E-Readiness	.030	.049	.030	.608	.014
(Constant)	2.080	.049		42.204	.000
Edu (E-readiness)	.099	.051	.097	1.937	.843
(Constant)	2.086	.050		42.121	.000
AgeEdu(Ereadines)	.015	.045	.017	.338	.036
(Constant)	2.042	.038		54.145	.000
Gender Q-Service	-.056	.038	-.074	-1.476	.041
(Constant)	2.041	.038		53.976	.000
Age Q-Service	.028	.041	.035	.694	.008
(Constant)	1.989	.039		51.044	.000
Age Gender Q-Service	.060	.014	.205	4.174	.000

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study analyzed and evaluated the possible incidents of e-government payment services used by the Nairobi county residents. The predictors were discovered by examining several e-government models, frameworks and literatures. Lastly, the research analyzed the influence of moderating variables introduced.

5.2 Achievements

The study established the below framework to be used in a government e-services systems evaluation.

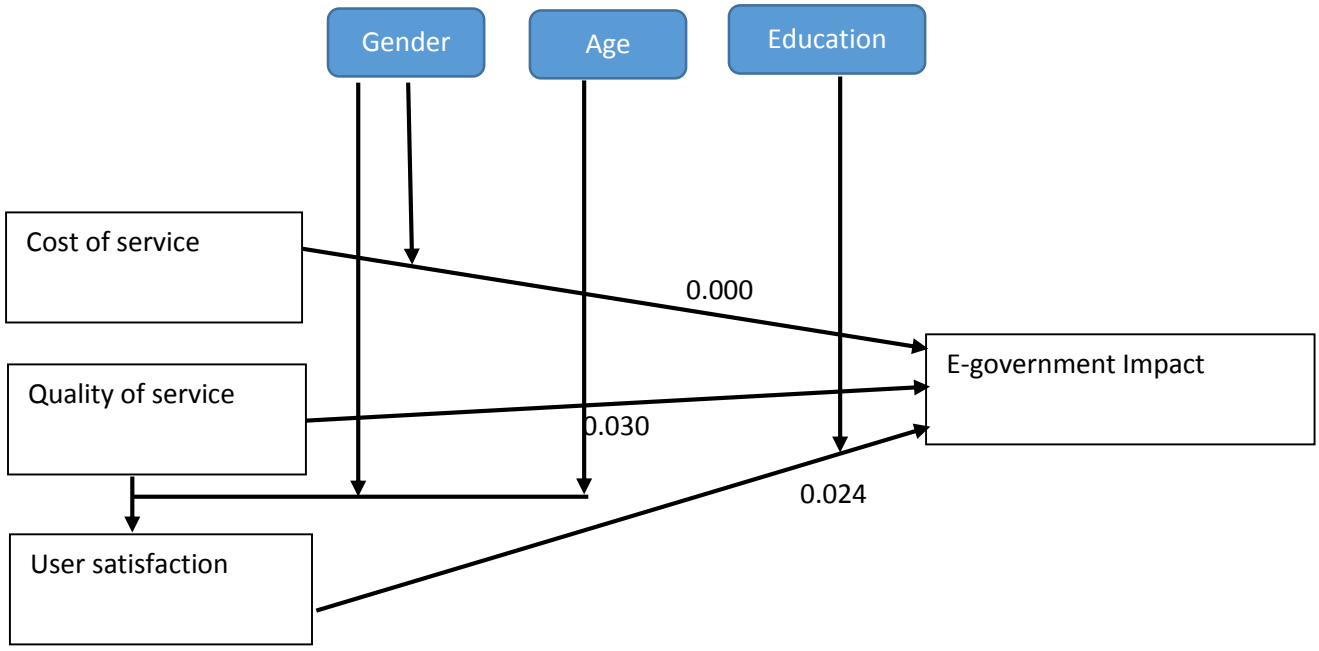


Figure 5.1: Proposed Conceptual framework

Source: Author (2020).

5.3 Conclusions

The study confirms various factors that should be considered in the e-government payments systems. Quality of service, Cost of service, and user satisfaction remains major concerns to be

considered in the e-government setup. Every sector thinking of deploying a successful e-service for the citizens must consider cost of accessing the services, quality of e-services and User satisfaction to those e-services.

According to the results, e-readiness was not supported to have an impact on e-services. This could be because the study was conducted within the Nairobi CBD where most of the people accessing the system are from the elite class and are already exposed to ICT. If the research is conducted outside the CBD or in peri-urban setting, e-readiness results could be supported. Further the e-service system had been in use for some time before this study was conducted and most users could have been conversant with it, therefore removing the need for much training and awareness campaigns.

5.4 Recommendations

From the findings, we recommend that an effective application of this model should be properly utilized in giving effective use of e-government services to system users.

The county managers should consider better quality of e-services by enhancing; user-friendly interface, information quality, 24/7 availability of services, response time and having a variety of access options. Another research should be conducted on NCCG, in order to establish the e-government impact from the supply (agency) perspective, this will enable us get a holistic view of the e-government impact. Lastly, other studies should be done to determine the 41.7% leading to e-government payment services impact on users.

5.5 Limitations of the Study

This study assumed that respondents answered questions honestly, and the data collected represented the objectives of the study. The study was only conducted on the citizens using the system who were found within the Central Business District of Nairobi City County.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Kindly mark with a **tick** (✓) to indicate your response

Section 1: Personal Information

What is your Gender? Female ☐ Male ☐

Age (years) 18-25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ 56 and above ☐

Education (highest level attained).

Primary ☐ Secondary ☐ Diploma ☐ Degree ☐ MSc. ☐ PhD ☐ Others specify ☐

Section 2: E-services awareness

Are you aware of Nairobi City County e-services (ejiji pay)?

Yes ☐ No ☐

If yes, Please indicate the service(s) you frequently pay for using ejiji pay

Parking service ☐

Land rates service ☐

Business License ☐

House rent/Market Stalls ☐

Loading zones ☐

Building plans approval ☐

Others (Please specify) _____

_____

Section 2: Cost of services

In a scale of 1 – 5 Please indicate the extent to which you think the implementation of e-services has affected the cost of service at the County

E-services (ejiji pay) has increased:

Item	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
a) The cost of accessing the services					
b) The time required to access services					
c) The time taken to get a service e.g. business permit, a receipt.					

Section 3: Quality of services

In a scale of 1 to 5, please rate the quality of e-service provided by NCCG (ejiji pay)

Items	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
E-service has made it easier for me to access County payment services					
E-service is always available when i need it					
I can access many payment services from one place through County E-service					

Section 4: User satisfaction

On a scale of 1 to 5, please indicate your level of agreement on the below statement

Item	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
There are many payment choices/alternatives available on the system.					
The information produced from the system is accurate, up to date and easily understandable.					
The interface of the system is user-friendly, hence improve user interaction.					

Section 4: Quality of service and user satisfaction

On a scale of 1 to 5 please indicate the extent in which you believe the quality of service offered by ejiji pay e-service has contributed to your satisfaction.

Items	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
I am satisfied because the E-service has made it easier for me to access County payment services					
I am satisfied because the E-service is always available when i need it.					
I am satisfied because I can access many payment services from one place through the County E-service					

Section 5: Facilitating conditions (E-Readiness)

Users training on the use of County e-service is important to its use and utilization.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Don't agree
- ☐ Disagree
- ☐ Strongly disagree

Has the Nairobi County carried out sensitization about the e-government in your area?

Yes ☐ NO ☐

If yes, how helpful was it?

Very helpful ☐ Helpful ☐ somehow helpful ☐ Not helpful ☐

Does the level of ICT literacy affect the access and utilization of the NCC system?

Yes ☐ NO ☐

If yes, please state how,

……
…….

Section 6: Impact

On a scale of 1 to 5, please indicate your level of agreement on the extent in which e-service implementation at the County has brought long term benefits to Nairobi citizens.

Item	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
E-services has reduced the level of corruption and increased transparency.					
E-services has increased the level of accessibility to County services.					
E-services has increased the level of confidence and trust by Nairobi citizens to the County Government.					

APPENDIX 2: PROJECT PLANNING AND MANAGEMENT

Table 1: Project Planning and Management

Activity	Sept	Oct 18	Dec 18	Jan 19	Jun 19	Jul 19
Research Title Submission						
Proposal preparation						
Literature review						
Proposal writing						
Proposal Submission & presentation						
Data collection						
Data analysis						
Test Research outcome						
Presentation of results						
Writing report						
Final presentation						

APPENDIX 3: RESEARCH PERMIT FROM THE UNIVERSITY

UNIVERSITY OF NAIROBI
COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES
SCHOOL OF COMPUTING AND INFORMATICS

Telephone: 4447870/4446543/4444919
Telegrams: "Varsity" Nairobi
Telefax: +254-20-4447870
Email: director-sci@uonbi.ac.ke

P. O. Box 30197
00100 GPO
Nairobi, Kenya

Our Ref: UON/CBPS/SCI/ MSC/ITM/2016

7th February 2019

Director
Human Resource Development
Nairobi

Dear Sir/Madam

RE: RESEARCH PERMIT – BONIFACE ODUOR ONYANGO P54/85679/2016

The above named is a bona fide student pursuing an MSc course in Information Technology Management at the School of Computing and Informatics, University of Nairobi. He is currently carrying out his research on the project entitled ***"Evaluating the Impact of E-government Services: A Case of Nairobi City County"***The project involves gathering relevant information from various institutions and he has informed the office that he would wish to carry his research in your organization and is under supervision of Dr. Elisha Abade.

We would be grateful if you could assist Mr. Onyango as he gathers data for his research. If you have any queries about the exercise please do not hesitate to contact us.

Yours sincerely

School of Computing & Informatics
University of NAIROBI
P. O. Box 30197
NAIROBI

DR. AGNES N. WAUSI
DIRECTOR
SCHOOL OF COMPUTING AND INFORMATICS

ANG/jsn

APPENDIX 4: DATA COLLECTION AUTHORIZATION FROM NCCG

NAIROBI CITY COUNTY

Telephone: +254 20 2221349
Web: www.nairobi.go.ke

City Hall
P .o. box 30075-00100
Nairobi
Kenya

DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT

NCC/ HRD/ HRM/10/MWN/2019

11th February, 2019

Boniface Oduor Onyango P/NO 19990013708
University of Nairobi
P. o. Box 30197-00100
Nairobi

RE: DATA COLLECTION AUTHORIZATION

I refer to your letter dated 11th February, 2019, on the above subject matter.

The Nairobi City County Government has approved your request subject to the following:

1. The period of Data Collection will be one (1) Month from 14th February, 2019 to 15th March, 2019. You will be attached to Finance and Economic Planning Sector.
2. During the Data Collection period there will be no costs devolving on the County.
3. You undertake to indemnify the County against any claim that may arise from your Data Collection.
4. Data will be on 'Evaluating the Impact of e-government Services in Nairobi City County from the citizen perspective'.

Please report to the Chief Administrative Officer, Finance and Economic Planning Sector to accord you the necessary assistance.

Nairobi City County

Sign.....

CHARLES CHOI
FOR: DIRECTOR HUMAN RESOURCE DEVELOPMENT