

Design of A Customer Relationship Management for E-Government - A Public Service Delivery System Case Study (Paper ID: CFP/1281/2019)

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ABSTRACT

This study is an evaluation design of a Customer Relationship Management for E-Government, a Public Service Delivery System Case Study. The objectives of the study are: - i) To design a functional C-CRM system for the Municipality and the Local Government; ii) To design and delivery a secured and user-friendly system for simplified access for information by citizens and the municipality local authorities from central data system; and iii) To find out measures which can be taken to implement a design of a Customer Relationship Management for e-Government in Public Service Delivery.

The study revealed that, it is understood that a number of private companies have adopted the use of CRM to attain different advancements in their businesses through the interactions and customer

focused products. Most CRM systems are either Internet/online or Intranet-based systems.

The municipalities focused mostly on land matters, for instance how much land is under a particular council, as opposed to addressing matters surrounding a citizen of a particular ward or community.

Private companies use CRM to profile customers in order to serve them better with improved product and service delivery. The same is the case by introducing a Citizen-Centric CRM in the local government.

KEYWORDS: CRM, Municipality, Public Service Delivery, Citizen-Centric CRM, e-Government, Local Government

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CHAPTER ONE

INTRODUCTION

1.0 Overview

In the business system world, we have understood the term Customer Relationship Management (CRM) refers to managing private or capital businesses whose major interest serves that of its customer's needs and desires much more effectively and efficiently. Zambia recently launched a program to promote efficient transaction of business through the Smart-Zambia initiative to raise awareness of the benefits in the utilizations of Information and communication technology (ICT) and also addressing the ICT challenges surrounding that affect government programs. This is largely aimed at improving coordination, implementation ICT projects and to ensure that the services required by citizens and other stakeholders from various government sections are automated. However, to the contrary very little efforts can be seen on the ground especially public institution, such are the municipalities that serve multitudes, do not have established ICT platforms to benefit the citizen. It is thus important that strategic institutions that mostly relate with the public citizens to formulate ICT solutions that focus on their interest, a Citizen-centric CRM (C-CRM), that can be developed to enhance service delivery for both public sectors as it is the case with the private sectors.

1.1 Background

The public service delivery mandate can be made effective to many expectations from the people who desire them. Currently very little can be desired as the delivery process is almost degenerated by the manual processes. Government makes strides to improve on the public service delivery system, however without proper

communication channels it becomes dissolute to make all systems to talk to each other and make decisive decisions as leaders responsible. Government should make all efforts possible for the public citizen to be able to access related information in a cost-effective manner.

The research paper suggests that the CRM be utilized in the public governing pillars, municipalities in particular, with allocated resources to manage the relationship between public entities and the citizenry, termed customer needs and resource requirement, to initiate the change on how council business is conducted. Though its common to understand that CRM relates to marketing concepts, which places emphasis on a client or customer, Customer-Centric. However, we see this in governments where they pledge to deliver quality service to its citizens and also to cut cost in the delivery processes. This in itself builds up pressure in the public departments when they struggle to meet targets. They need to ensure that there is a buildup of a relationship between the public sector and the citizens that would influence a positive response to the needs required and the delivery of service trajectory, satisfaction in the communities and public institutions.

1.2 Problem Statement

It is understood that a number of private companies have adopted the use of CRM to attain different advancements in their businesses through the interactions and customer focused products. Most CRM systems are either Internet/online or Intranet-based systems.

The municipalities focused mostly on land matters, for instance how much land is under a particular council, as opposed to addressing matters surrounding a citizen of a particular ward or community.

The paper deliberately looks at how CRM can influence efficiency in the manual workflow processes whilst providing a service to the citizens. Private companies use CRM to profile customers in order to serve them better with improved product and service delivery. The same is the case by introducing a Citizen-Centric CRM in the local government.

1.3 Purpose of Study/Justification

Currently in Zambia, the municipalities are still using manual processes to receive and process enquiries and applications. The existing Back-office systems are mostly used for finance activities such as issuing of receipts and payroll. Computers acquired are used for basic desktop applications e.g. MSOffice Word and Excel and lack central electronic filing system for easy reference and archiving. In recent past government has shown keen interest to have most of its institutions to be automated with electronic systems, e-Government, through the Smart Zambia initiative. However, this only targets the mother ministries and still in its infancy stage.

Given the above situation, it is however not to state that automation of the municipalities is an overkill but a complimented step to ensure that citizens are able to access services through a much efficient manner which also complements efforts of creating a faster and agile environment for the officials that tend to the citizens requests.

Implementing a CRM system encourage greater integration between back and front offices. The constant exchange of information within the system demands a more connected and integrated organization (I&DeA, 2003).

1.4 Research Aim

The research aims at building a proposal for the Design of a CRM-for-eGovernment. The design

targets to contribute towards the CRM e-Government development and utilization resulting to the poor citizen information inquiry processing, information access, and also CRM failure rate in public institutions. The study also makes relevance towards the contribution of finding solutions of the failures that only surrounds the field of study. Deliberately, the study will not confront those failures commonly found in the text books or journals regards to CRM and e-Government but those from the real-world perspective.

Equally, it aims at formulating a preventive strategy for the CRM in the Southern African region; specifically, for citizen-centric CRM for local government, particularly different from customer-centric CRM. This is not to say that CRM are entirely different but that there are certain segments that arise exclusively unique when addressing for the public service.

1.5 Proposed System Design

The fundamental purpose of the above described design process is to implement a CRM that shall allow interface with the e-Government system located in the Backoffice for easy information access and transactions by citizens from local government municipalities in Zambia.

The web-based system shall be made accessible online to ensure that information and communication by the municipalities is available and shared for quick response to enquiries locally and remotely generated.

1.5.1 System Development

The solution is developed using integrated development environment (IDE) software suite, used to consolidates basic tools required to write and test software (Rouse, 2018). The suit comprised of Visual Studio IDE, PHP for language. For data management SQL back-end, MySQL and HTML CSS are applied; and as for

the front-end development, JavaScript's and Bootstrap are incorporated.

1.5.2 System Agility

The IT Agility is the proposed system agility to be used in the customer relationship management (CRM) system development process because it is effective (rapid and adaptive) response to change, effective communication among all stockholder. Drawing the customer onto team and organizing a team so that it is in control of work performed. - The Agile process, light-weight methods are People-based rather than plan-based methods.

In general, agility is a common business term that refers to how fast an organization responds to opportunities. It is typically recognized as the time in between an organization becoming aware of a potential business opportunity and acting on it.



Figure 1. 1 IT Agility Framework

IT agility, then, is a measurement of how efficiently the IT infrastructure of an organization can respond to external stimuli. This can mean how effectively it embraces the pressure to change or how successfully it creates a new opportunity. Instead of being thought of as another task to complete, IT agility should be

viewed as more of an overall mindset, eventually becoming part of the organization's culture.

The agile approach shall complement the SDLC to ensure relevance and efficiency in the system and also provides consistency from the external and internal demands.

1.5.2 Extreme Programming – Software Engineering

- Extreme programming is the best-known agile process in software engineering for effective (rapid and adaptive) response to change, effective communication among all stakeholders (Valentino, 2019).
- Extreme programming uses an object-oriented approach as its preferred development paradigm.
- Extreme programming encompasses a set of rules and practices that occur within the context of four framework activities: planning, design, coding, and testing.



Figure 1. 2 Extreme Programming (XP): Agility Delivery

1.5.1 System Infrastructure

The system shall be hosted under the national data center to allow for Tier III support to the solution

for business continuity purposes. The external hosting provides connectivity via internet and intranet data service (WAN) providers to remove any restriction that can affect virtual private data network circuits that would inhibit communicating with the data center/ back-office.

1.6 Objectives of the C-CRM system

The General objective of the project is to design a citizen centric CRM system to assist the municipalities transformation using single point of contact approach for its customers.

1.6.1 Specific objectives

- a) To Design a functional C-CRM system for the municipality;
 - b) To design and delivery a secured and user-friendly system for simplified access for information by citizens and the municipality authorities from centrally located data system
 - c) To find out measures which can be taken to implement the design of a Customer Relationship Management for e-Government in Public Service Delivery
- 1.7 General question

How to design a citizen centric CRM system to assist in the municipalities transformation using single point of contact approach for its customers.

1.7.1 Specific questions

- a) How to design a functional C-CRM system for the municipality;
- b) How to design and delivery a secured and user-friendly system for simplified access for information by citizens and the municipality authorities from central data system
- c) What measures which can be taken to implement a design of a Customer

Relationship Management for e-Government in Public Service Delivery

1.8 Scope of Study

The research paper is aimed at investigating on the current manual workflow challenges in the councils in order to provision a solution that which is computer based focused on capturing the customer needs. To be able to design a system that shall reduce on the setup challenges of the municipalities. The scope will be limited to one municipality; no comparison with other municipalities or cases will be made. The study will cover design phase <and analysis phase> of the systems. Time and resources created difficulties to implement the system with various tests and obtain results.

1.9 Limitations of Study

The study will be limited to the matters concerning the design of a C-CRM and not the replacement of existing Backoffice (running Admin and finance applications) and other core systems (ERP/eGov). The change will relate to collaborations the front office (first point of contact) and the Backoffice. It shall demand going through different literature and constant communication and interactions with the municipality were required.

The underlisted in table 1.1 are sections under the Kabwe Municipal council were the research survey shall be undertaken to the design and development of the CRM e-Government system based on the findings:

Table 1. 1 Sections Under Kabwe District Municipality

Section/Department	Activities
Engineering and Housing	Water and Sanitation
	Building maintenance
	Street lights Maintenance
	Road and traffic lights management
	Construction Equipment
Public Amenities and Health	Waste Management
	Community centers
	Public Libraries
	City Halls
	Public Parks and Toilets
Applications	Land Ownership
	Building Ownership
	Lease (Building / Land)
	Housing facility
	Market Trading (Stand / Space)
Finance	Rates and Rentals
	Certification
	Levy payments
	Administration
Social Welfare	Marginalized Children
	Community Awareness and Sensitization
	Girl and Women Care
Administration	Employee management
	Office management
	Skills Training
	Fleet management

1.10 Summary of the chapter

This chapter has presented the background of the study CRM system, the statement of the problem, objectives of the study research questions, significance of the study, limitation of the study and operational definition of terms.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter deals with the review of literature on the studies that have been done on the area under study. (Collis and Hussey, 2003) state that literature refers to all sources of published data and is a written summary from literature research. (Leedy and Ormrod, 2010) stated that literature review describes theoretical perspectives and previous research findings regarding the problem at hand. The purpose of literature review is described by (Akpo, 2006) as that of providing the context for the research by looking at the work of what has already been done in the subject area. It is guided by the following sub headings.

2.1 Customer Relationship Management - CRM

Many definitions have been referred to customer relationship management concept stretching back as far as in the 1970s, when customer satisfaction was evaluated using annual surveys or by front-line asking. It describes the identification, attracting, developing and maintaining a positive customer-based relationship, built over a period of time to maximize on the retention of profitable customers. CRM can also be defined as the strategies, processes, people and technologies used by companies to successfully attract and retain customers for maximum corporate growth and profit. May also be considered as the establishing, maintaining and enhancing relationships with the customer so that objectives are achieved. It goes further to understand the needs and what are the potential areas that be distinct to market segments that may become critical driving force to the organization. Thus, creating profitable partners,

converting prospect clients and lasting strategic partnerships that are of benefit to the firm.

By maintaining customer retention, the company is able to be profitable through the benefits surrounding with reduced sales expenses and increased profits. Mostly termed as the critical carrier of revenue growth. Managing of CRM can take different types of form or fragmented, with no distinct approach has been established. For instance, the process of CRM involves storing and analyzing the bulk data produced by sales call center, customer service centers and from the actual purchase points, which gives in-depth understanding of customer behavior. The whole essence for CRM is to harness and completely leverage of knowledge they shall utilize to improve the organizations' long-term profitability by customizing its offering on a personalized basis with the customer. From an enterprise point of view, to understand and influence a customer, there must be meaningful communications which shall lead to customer acquisition, retention, loyalty and profitability.

2.2 Definition of Citizen-Customer Relationship Management (C-CRM)

A C-CRM system enables the public service employees to have access to citizen profiles while they are in contact with the constituents or build other databases. In this way, they can offer more personalized information and services and also identify possible emerging problems (O'Looney 2002). Beyond that, the systems can give the clerks low in the hierarchy more accountability as the rules they are to follow are embedded within the software and not the decision maker (Fountain 2001). As claimed by (Janowitz, 1957) such a system might finally connect the substantive knowledge (e.g. clients, face-to-face contacts) of lower level employees with the functional

knowledge (e.g. strategy, communication, management) of upper-level administrators and avoid their isolation and at the same time give them clear information.

Therefore, C-CRM can be defined as a strategy, enabled by technology with a broad citizen focus, to maintain and optimize relationships and encourage citizenship. Since we are currently in the early stage of the emergence of CiRM this is a working definition. C-CRM could be part of the New Public Management just like TQM or seen as an additional concept to the eGovernment framework. One-Stop Government also (Hagen 2000, Wimmer 2001, Fountain 2001) has a lot in common with the concept of C-CRM. Successful implementation requires a network-oriented organization, collaboration between government levels, multi-channel options, and a reengineering of public services and the underlying laws. The internet channel has the potential to reduce government information, communication and transaction costs and plays a vital role in the One-Stop concept as well as IT and the Internet in C-CRM.

2.3 e-Government with CRM

E-Government is the transformation of public sector internal and external relationships through net-enabled operations, information technology and communications, to optimize government service delivery, constituency participation and governance. It can be broadly defined as a government's use of ICT, particularly Web-based Internet/Online applications, to enhance the access to and the delivery of government information and service to stakeholders such as citizens, business partners, public sector employees, and other governments, agencies and entities. It can change the relationship between governments and the

various stakeholders mentioned above from hierarchical command-and control to interactive collaboration.

A good CRM software system should provide a single, searchable knowledge repository on each citizen or public service customer (White 2007). Van den Berg (2006) refers to e-governance as concerning public policy with regard to ICT. He further observes that e-government goes beyond the take up of ICT by the local authority and includes the role of the local authority in influencing take up by the communities, business sectors and other relevant users. Van den Berg defines e-government as “the capacity of local administrators in a dialectic exchange with social organisations, citizens and firms, to deploy information and communications technologies to achieve urban policy goals.” (Silcock, 2000) defined e-government as “enhancing access to and delivery of government services to citizens, business partners and employees through the use of technology”.

It has been argued that technology can be used to the benefit of ratepayers and citizens as it “... has the power to create a new mode of public services where all public organizations deliver a modernized, integrated and seamless service for their citizens” (Silcock, 2000). The utilization of technology provides a powerful tool to modernize and integrate public services to benefit all stakeholders, internal and external. Advocates of e-government claim that ICT is the basis of modernism in the 21st century and beyond (Banister, 2017). And (King, 2007) lists three outcomes namely i) customer services that are citizen oriented, ii) cost effective and getting it right the first time, and iii) avoiding exclusion of communities from services and encouraging democracy, openness and accountability.

2.4 Previous Studies

2.4.1 South Africa: Customer Relationship Management Within the Local Government: A Case Study of Ethekwini Municipality.

To remain competitive and survive, companies are dependent on strategies that provide them with a competitive edge such as CRM. CRM initially was used describe software that collected and analyzed data on customers assisting companies to become agile in responding to their clients, to enable them to reward their loyal customers and to be able to predict and pre-empt changes in buying behavior and preferences of their customers. It evolved into a philosophy on customer service focused on providing customers with a satisfying experience in every interaction with the company. It is used to identify improvements in the business operating model to improve delivery to the customer and to the market (Chetty, 2010).

This study is based on a case study of the experiences of the eThekwini Municipality in implementing CRM initiatives and the impact on relations with municipal customers. The study is based on test sampling, review of documentation and interviews with senior management in eThekwini Municipality.

2.4.2 Mozambique: Implementation of CRM systems in Portuguese Municipalities

Customer relationship management is a business strategy which dynamically integrates a set of services with the purpose of creating value for the organisation and for their customers. In Portugal, the 2009/2010 edition of ‘Simplex for Municipalities’, the action plan carried by the Portuguese government through the Secretary’s Office of State for Administrative Modernization, makes a commitment to promote a set of initiatives in order to help citizens using the public services.

This process intends to reduce costs of context which burden the economic activities, making way for the modernization of administration. Customer relationship management assumes a central role in this context (JORGE DUQUE, 2013).

This paper presents the main results of a survey that was carried out with Portuguese municipalities, aiming a general characterization of the adoption of customer relationship management systems, covering several aspects, from the motivations for CRM adoption to the obtained results. The improvement of the relationship with citizens and a higher information quality are some of the most important results obtained by municipalities.

2.5 Demand for CRM in Local Government

2.5.1 Global perspective

By 2050, 70% of the world's population will be living in cities, meaning that the time to engage automation of our local government municipalities is more imperative than ever (Force, 2019). A special case is that from the United Kingdom, were Liverpool City Council (LCC) received a National Business Award for the best use of technology for the innovative use of customer relationship management (CRM) (Saran, 2019). The LCC uses technology as an accelerator for change in the council. The future only holds values from information as opposed to the current land debates that shall surely diminish. The council has applied the private sector CRM techniques, such as data analysis on retail customers, to capture the public citizen. This provide informed decisions conducted by the councils to create better services. An example from a Liverpool council that used refuse collections to measure their performance by tracking them. In addition, they have integrated sensors with the bins to provide weights, how much refuse is generated by each household. GIS

has been integrated to provide information on such as demographic trends, the spread of single parenthood households, in short to have a sense of what is happening in the city.

The move to CRM quoted "intelligence-led local government" was supported through a joint venture with BT to provide the council with ICT, maintenance and repair of IT systems as well as a new call center. The idea was that LCC targeted providing a single-point of contact for the services it was offering. It has now staffed 240 agents who operate 24/7, 365 days a year, the call centre now accounts for 75% of all customer contact at Liverpool City Council and handles 37,000 calls per week. 20% of customer contact is now is handled through one of seven "one-stop shops", set up around the city to provide the public with a single point of contact for council services (Liverpool, 2019). The City's Website takes just 5% of customer inquiries.

2.5.2 A Zambian Perspective

The law relating to Local Authorities in Zambia is contained in the Republican Constitution Article 109(1). The detailed law on Local Government is contained in the Local Government Act, Cap 281 of the Laws of Zambia. It provides for the establishment of Councils, their constitution, proceedings, Committees, Finance, functions, manner of regulation and by-laws, and appointment of Local Government Administrators. Under the Act, the Minister of Local Government may establish a City, Municipal, District, Township Council, or Management Board. There are 4 City Councils, 14 Municipal Councils and 54 Local Authorities (Districts) today in Zambia (Council, 2019).

The councils are met with challenges that are affecting performance towards service delivery and

simply just meeting obligations. These are cited as follows:

- i. Lack of ICT systems, hardware and software, for effective planning, implementation, monitoring and management of municipalities.
- ii. Illegal Land Allocation by politically motivated individuals who have taken over the “planning” and “allocation” of Land illegally thereby distorting the development pattern of the entire City of Lusaka due lack of automated tracking and land tracing systems.
- iii. Politicization of Public Places such as Markets and Bus Stations are prone to politicization which has made it difficult for the Council to effectively manage them.
- iv. Some municipals lack of equipment such as graders, excavators, tipper trucks, rollers, water bowsers, front-end loaders for road and drainage maintenance, inadequate equipment such as tower wagons for maintenance of street lighting and traffic signals, inadequate reliable equipment for effective firefighting in the city, and generally.
- v. Cash flow Problems that have led to Council’s failure to meet all the demands for service delivery and effective and efficient operations.
- vi. Non-Compliance by Clubs and Societies to obtain Annual Operational Permits.
- vii. For a long time now, the Councils have endeavored to cause all social clubs, societies, associations and traditional healers conducting business in the City, to register with the local authority. However, the response from these has proven futile.

2.6 Personal Critique Summary

The studies conducted CRM in the public sector should have a drive towards social inclusion and a wish to provide an equitable level of service to everyone.

CRM needs to enable local government to have a complete view of their customers and the many and various interactions people have with their local authority.

The local government services should be citizen-customer character packaged. The CRM should contain that needs to be held such as children at risk, relationships, history, interventions, activity and trends. Information on free meals and clothing grants need not be held.

2.7 Conceptual Framework

The structural framework and the necessary elements for implementing C-CRM are shown in the Figure 2.1.

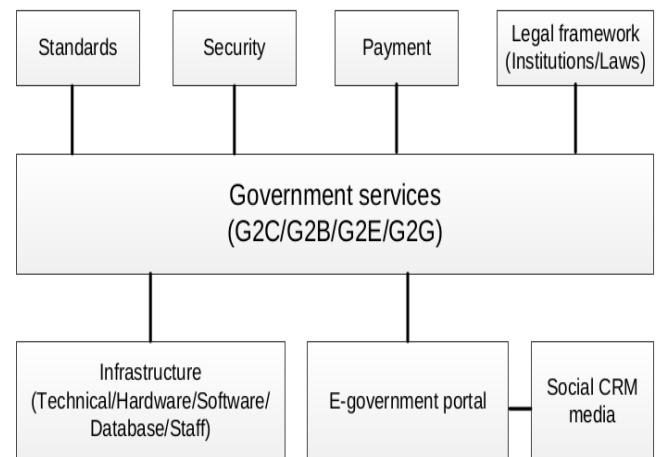


Figure 2. 1 Structural framework for e-Government

The standard building block for successful CRM projects contains [17]:

- i. CRM vision and strategy,
- ii. CRM valued student experience and collaboration,
- iii. CRM processes,
- iv. CRM metrics,
- v. CRM technology,
- vi. CRM information.

The framework can therefore be used for government citizen centric version and are subject to discussions towards developing the CRM vision and CRM strategies.

The government institution must take a proactive approach in creating a citizen relationship management. The CRM vision should be used as the guide to the creation of a CRM strategy which should allow the development of, very critical, citizens database. It must set objectives and metrics for attaining that goal. It directs the objectives of other operational strategies and the CRM implementation strategy.

The citizen experience must be designed in line with the CRM vision and must be constantly refined, based on actively sought citizen feedback. The relationship with the citizens needs to be viewed and managed in terms of the citizen life-cycle and formalized processes must exist to manage/maintain that life-cycle. Collecting data is important for good relationship and adjustment government system to the needs of each citizen, and personalization of government services.

In order to have a successful e-government process it is therefore important to create

processes that not only meet citizens' expectations and support the citizen value proposal, but also provide competitive deviations and contribute to a positively designed citizen experience. In order to define an adequate set of metrics, we need to identify key processes within the e-government system.

In this paper it further considers the government processes for citizens for a local government. The CRM software solution should provide variety of features that enables implementation of CRM activities in e-government, such as: collaboration and communication among citizens and department, providing citizens with appropriate information about services, government portal promotions, citizens' roles and management, citizens' activities analytics. We identified the following processes are of importance for this research:

- CRM in government;
- promotion of e-government portal;
- usage of e-government portal;
- issuance of documents.

In Table 2 below shows metrics for each relevant process

Table 2. 1 CRM Process Matrix for e-Government

Process	Performance Attribute	Description	CRM Matrix
CRM in government	Number of access to the portal	Automatically collected data from the web server logs	Intensity of use
	number of group members	Interactivity between citizens and government in social networks is measured through the number of posts. Significant indicator of citizens' interest for the web site	The intensity of the interaction
	Processing time	Time metrics evaluate the time to deliver a product or service to customers, the portion of time that is spent processing the documents or idle time, whether citizens receive documents or responses on time, and other time-related considerations.	Total time
	number of posts on forum	Interactivity between citizens and government in the portal is measured through the amount of comments, which clearly shows the interest of both sides for good communication and obtaining the necessary information.	The intensity of the interaction
Issuance of documents	Number of citizen referrals	The number of citizens who have previously finished work with the government institution.	Reputation with Government
	Satisfaction with the work of institution	Availability of staff in government for consultation and help, as well as recommendations for practice and work.	Expertise and availability of government
	Number of open opportunities	Percentage of citizens who were employed in the profession.	Employed citizens

Summary of the chapter

This chapter has reviewed the literature review, based on the historical and philosophical, background of Customer Relationship Management (CRM), Definition of Citizen Customer Relationship Management (C-CRM), Previous Studies on CRM and Conceptual Framework.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter discusses the methods that was used in collecting data. It describes the research design that was employed, the research site, the target population, sample size and sampling procedure, data collection procedure and data analysis as well as the instruments that was used with reasons for choosing them and finally ethical consideration.

3.1 Research design

Every effective research needs to have a research design. According to Larson (1994), a research design is simply the frame work for a study used as a guide in collecting and analyzing data. This research was designed in both qualitative and quantitative in nature. Larson (1994:231) defines a Qualitative as a “method of inquiry employed in many different academic disciplines, including in the social sciences and natural sciences”. On other hand quantitative simply denotes the gathering and analysis of measurable data to generate statistical models and numbers to explain data. However, a mixed research approach was used in order to obtain rich data from a small number of respondents.

3.2 Location of study

The study was carried out in Kabwe district of central province, Zambia. Kabwe district is found in central, Zambia. It is located -15.41 latitude and 28.29 longitude and it is situated at elevation 1203 meters above sea level.

3.3 Population of the study

A population is a collection of individual’s objects or events having some common characteristics that a researcher is interested in studying (Kombo and

Tromp, 2006). The sample size for this study comprised of 100 respondents. This included twenty-five (25) E- government officials, twenty-five (25) integrates, one (1) project manager, one (1) CRM manage, one (1) E-government manage. Each of the selected responded was provided with questionnaires and interview guides.

3.4 Sampling procedure

Sidhu (2012: 253) defines sampling as “the process of selecting sample from the population.” In this study, purposive sampling technique was used to select respondent from the targeted population. Purposive sampling was used to select these institutions based on population. Institutions with relatively large population was preferred.

3.5 Research instruments

Data collection is the precise, systematic gathering of information relevant to the research, using methods such as participant observation, questionnaires and interview guide (Hiatt, 1986). The main research instruments that were used are questionnaires and interview guides to obtain data from E-Government offices and CRM members.

3.6 Data collection procedure

Data collection involves the collection of views on the attitudes and characters of the people about the problem under study (Kombo and Tromp: 2006). Data collection is important in research as it allows a research to prove or refute the facts about the phenomena under study. The researcher obtained a letter of introduction from Information and communication university after satisfying the requirements of the school of Engineering. Upon being given permission, the researcher with prior arrangements with the E-government institutions on when the data will be collected. The researcher collected data by visiting the interviewee one by

one and some of them have already been mentioned.

3.7 Data Analysis

Data analysis refers to examining what has been collected in the field and making deductions and inferences. It involves uncovering underlying structures, extracting important variables, detecting any anomalies and testing any underlying assumptions. It involves scrutinizing the acquired information and making inferences (Kombo and Tromp, 2006). Data collected from questionnaires was checked for reliability, correctness and consistency. The data collected was coded and entered into a computer. Data analysis and tabulation of findings to be done using computer software known as statistical package for social sciences. The researcher used qualitative methods to analyze the data obtained.

3.8 Reliability and Validity of the Instruments

According to Lawton (2000:127), “validation involves taking those weak points into consideration”. It must be noted that as one is validating, he or she is also testing the reliability of the instruments to be used in any given study. Tooley (2001:97) also note that, “validity is a measure of how well a test measures what it is supposed to measure”. For example, they assert that, “the examiner’s manual or technical manual for most tests will have information on the validity

of the test”. On reliability they note that, “it is a measure of how consistent the results from a test are”. For example, they have also posed a question as follows: “if you administer a test to a subject twice do you get the same score on the second administration as you did on the first?” As such the reliability of the test is to answer to this question. To ensure reliability and trustworthiness, the researcher made sure that the instrument that were used, were fully checked by the supervisors

3.9 Ethical consideration

The study ensured that the anonymity and confidentiality of participants is kept and also ensure that all information collected is kept in privacy and would remain a private property. The publishing of research findings was done in such a way that it was not related to the respondents. Participants were asked consent to the study before taking part. The consent was done by signing the prior informed consent (PIC) form.

Summary of the chapter

This chapter has highlighted the methodological procedures which was undertaken in this study. The chapter has given detailed steps which were taken from the research design through research site, target population, sample size, sampling procedure, data collection instrument, data collection procedure, data analysis, and ethical consideration.

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