



**UNIVERSITY OF NAIROBI**

**FACULTY OF BUILT ENVIRONMENT AND DESIGN**

**DEPARTMENT OF REAL ESTATE, CONSTRUCTION MANAGEMENT AND QUANTITY  
SURVEYING**

**MITIGATING CHALLENGES IN THE IMPLEMENTATION OF THE ONE STOP SHOP  
MODEL FOR APPROVAL OF CONSTRUCTION PROJECTS IN KENYA**

**(A CASE OF NAIROBI CITY COUNTY)**

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**RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF AWARD OF  
MASTERS OF ARTS DEGREE IN CONSTRUCTION MANAGEMENT.**

**MAY 2022**

**DECLARATION**

I hereby declare that this project is my original work, and that it has never been submitted for a degree at another university.

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This research project has been presented for examination with my approval as the university supervisor.

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## **DEDICATION**

This work is dedicated to my entire family for their constant support and encouragement throughout my education journey.

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## TABLE OF CONTENTS

|  |            |
|--|------------|
| <b>DECLARATION</b> .....                               | <b>ii</b>  |
| <b>DEDICATION</b> .....                                | <b>iii</b> |
| <b>ACKNOWLEDGEMENT</b> .....                           | <b>iv</b>  |
| <b>TABLE OF CONTENTS</b> .....                         | <b>v</b>   |
| <b>LIST OF TABLES</b> .....                            | <b>ix</b>  |
| <b>LIST OF FIGURES</b> .....                           | <b>x</b>   |
| <b>ABBREVIATIONS AND ACRONYMNS</b> .....               | <b>xi</b>  |
| <b>ABSTRACT</b> .....                                  | <b>xii</b> |
| <b>CHAPTER ONE</b> .....                               | <b>1</b>   |
| <b>INTRODUCTION</b> .....                              | <b>1</b>   |
| 1.0 Introduction.....                                  | 1          |
| 1.1 Background .....                                   | 1          |
| 1.2 Problem Statement .....                            | 3          |
| 1.3 Research Questions.....                            | 5          |
| 1.4 Research Objectives.....                           | 5          |
| 1.5 Research proposition .....                         | 6          |
| 1.6 Justification of the Study .....                   | 6          |
| 1.7 Significance of the Study.....                     | 6          |
| 1.8 Limitation of the study.....                       | 6          |
| 1.9 Delimitation of the study .....                    | 6          |
| 1.10 Assumptions of the study.....                     | 7          |
| 1.11 Scope of the Study.....                           | 7          |
| 1.11.1 Geographical scope .....                        | 7          |
| 1.11.2 Theoretical scope.....                          | 7          |
| 1.11.3 Methodological scope.....                       | 7          |
| 1.12 Organization of the study.....                    | 8          |
| 1.13 Definition of key terms as used in the study..... | 8          |
| <b>CHAPTER TWO</b> .....                               | <b>10</b>  |
| <b>LITERATURE REVIEW</b> .....                         | <b>10</b>  |

|   |           |
|---|-----------|
| 2.0 Introduction.....   | 10        |
| 2.1 Theoretical review.....                                       | 10        |
| 2.1.1 Systems Theory.....   | 10        |
| 2.1.2 Coordination Theory.....                                    | 11        |
| 2.1.3 Actor-Network Theory (ANT).....                             | 11        |
| 2.2 Empirical review.....   | 13        |
| 2.2.1 One Stop Shop concept.....                                  | 13        |
| 2.2.2 One stop shop requirements.....                             | 15        |
| 2.2.3 Best Practice in Implementation of One Stop Shops.....      | 18        |
| 2.3 One Stop Shop Centre in Rwanda.....                           | 27        |
| 2.4 One stop shop center in Malaysia.....                         | 28        |
| 2.5 One stop shop Centre in Singapore.....                        | 30        |
| 2.6 Building Plan Approval in Kenya.....                          | 32        |
| 2.6.1 Building Approval process in Kenya.....                     | 34        |
| 2.7 Challenges in implementation of one stop shop.....            | 35        |
| 2.7.1 Technical challenges.....                                   | 36        |
| 2.7.2 Organizational challenges.....                              | 38        |
| 2.7.3 Social Challenges.....                                      | 41        |
| 2.7.4 Financial Challenges.....                                   | 42        |
| 2.8 Interventions to the Challenges in implementation of OSS..... | 43        |
| 2.9 Research gaps.....  | 44        |
| 2.10 Conceptual Framework.....                                    | 45        |
| 2.11 Summary of Literature.....                                   | 46        |
| <b>CHAPTER THREE.....</b>   | <b>47</b> |
| <b>RESEARCH METHODOLOGY.....</b>                                  | <b>47</b> |
| 3.1 Introduction.....   | 47        |
| 3.2 Research Design.....  | 47        |
| 3.3 Target Population.....  | 47        |
| 3.4 Sample Size and Sampling Procedure.....                       | 48        |
| 3.5 Data Collection Method.....                                   | 50        |
| 3.5.1 Data Collection Instruments.....                            | 51        |
| 3.6 Validity and Reliability.....                                 | 51        |
| 3.7 Data Analysis and Presentation.....                           | 52        |

|   |           |
|---|-----------|
| 3.8 Ethical Issues.....   | 52        |
| 3.9 Matrix of data needs, sources and analysis technique.....   | 53        |
| <b>CHAPTER FOUR .....</b>   | <b>54</b> |
| <b>DATA ANALYSIS, FINDINGS AND DISCUSSION .....</b>   | <b>54</b> |
| 4.0 Introduction.....   | 54        |
| 4.1 Survey response rate.....   | 54        |
| 4.2 Bio data.....   | 56        |
| 4.2.1 Professional background.....  | 56        |
| 4.2.2 Age of firm.....  | 57        |
| 4.2.3 Number of projects currently being undertaken in Nairobi City County .....  | 59        |
| 4.2.4 Firm’s average annual expenditure on developments .....   | 60        |
| 4.3 E –Development Permit System .....  | 62        |
| 4.3.1 Acquisition of building approvals .....   | 62        |
| 4.3.2 Average time in acquiring the construction approval .....   | 63        |
| 4.3.3 Average cost in acquiring construction approval.....  | 64        |
| 4.3.4 Rating of the e-Development permit system of approval.....  | 66        |
| 4.3.5 Challenges experienced in the e-Development Permit System of Approval.....  | 67        |
| 4.3.6 Measures to address the challenges in the e-Development Permit System of approval .....                           | 68        |
| 4.4 One Stop Shop Model of Approval.....  | 69        |
| 4.5 Challenges behind the implementation of OSS Model of Approval.....  | 71        |
| 4.6 Strategies to mitigate the challenges in the implementation of OSS Model of Approval of construction projects ..... | 74        |
| 4.7 Research Proposition.....   | 76        |
| 4.8 Challenges that were encountered in the field investigation .....   | 77        |
| <b>CHAPTER FIVE .....</b>   | <b>78</b> |
| <b>SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION .....</b>   | <b>78</b> |
| 5.0 Introduction.....   | 78        |
| 5.1 Revisiting the research Objectives .....  | 78        |
| 5.2 Summary of main findings .....  | 78        |
| 5.2.1 Bio-data.....   | 79        |
| 5.2.2 Building approvals.....   | 79        |
| 5.2.3 Challenges facing the e-Development Permit System. ....   | 79        |

|  |           |
|--|-----------|
| 5.3 Measures to address the challenges facing the e-Development Permit System .....                                      | 80        |
| 5.4 One stop shop model .....  | 80        |
| 5.4.1 Best practice in the implementation of the OSS model.....  | 80        |
| 5.4.2 Challenges in implementation of the OSS of approval of construction projects.....                                  | 82        |
| 5.4.3 Strategies to mitigate the challenges in implementation of OSS of approval of construction projects in Kenya ..... | 83        |
| 5.5 Revisiting the Study proposition.....  | 83        |
| 5.7 Recommendations .....  | 83        |
| 5.7 Areas of further research .....  | 84        |
| <b>REFERENCES .....</b>  | <b>85</b> |
| APPENDIX I: CONSENT STATEMENT.....   | 90        |
| APPENDIX II: GENERAL QUESTIONNAIRE .....   | 91        |
| APPENDIX III: INTERVIEW SCHEDULE FOR THE STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (SDHUD).....                  | 97        |
| APPENDIX IV: INTERVIEW SCHEDULE FOR THE ARCHITECTURAL ASSOCIATION OF KENYA (AAK).....                                    | 100       |
| APPENDIX V: INTERVIEW SCHEDULE FOR THE NAIROBI METROPOLITAN SERVICE (NMS)  | 103       |
| APPENDIX VI: RESEARCH AUTHORISATION LETTER.....  | 105       |



## LIST OF TABLES

|   |    |
|---|----|
| Table 2.1: Definition of some essential concepts of Actor –Network Theory (ANT).....                                    | 13 |
| Table 2.2: Development application approvals (Nairobi City County) .....  | 33 |
| Table 2.3: Challenges in the Implementation of one stop shop model.....   | 36 |
| Table 3.1: Registered Architects, Structural Engineers and Physical planners.....                                       | 48 |
| Table 3.2: Disproportionate stratified random sampling from respondents.....  | 50 |
| Table 3.3: Data needs, sources and Analysis technique .....   | 53 |
| Table 4.1: Survey response rate .....   | 54 |
| Table 4.2.1: Professional background.....   | 56 |
| Table 4.2.2: Age of Firms.....  | 58 |
| Table 4.2.3: Number of projects undertaken.....   | 59 |
| Table 4.2.4: Annual expenditure on developments.....  | 61 |
| Table 4.3.1: Average time in acquiring approvals.....   | 62 |
| Table 4.3.2: Average cost in acquiring approvals.....   | 65 |
| Table 4.5: Challenges in the implementation of OSS in approval of construction projects.....                            | 72 |
| Table 4.6: Strategies to mitigate the challenges in the implementation of OSS in approval of construction projects..... | 75 |

## LIST OF FIGURES

|   |    |
|---|----|
| Figure 2.1: Building approval process in Malaysia.....                                  | 29 |
| Figure 2.2: Building Plan Approval Process in Singapore .....                           | 31 |
| Figure 2.3: Institutions involved in the different stages of Construction in Kenya..... | 34 |
| Figure 2.4: Conceptual framework.....   | 45 |
| Figure 4.1: Survey response rate .....  | 55 |
| Figure 4.2.1: Professional background.....  | 57 |
| Figure 4.2.2: Age of Firms.....   | 58 |
| Figure 4.2.3: Number of projects undertaken.....  | 59 |
| Figure 4.2.4: Annual expenditure on developments.....                                   | 61 |
| Figure 4.3.1: Acquisition of approvals.....   | 62 |
| Figure 4.3.2: Average time in acquiring approvals.....                                  | 64 |
| Figure 4.3.3: Average cost in acquiring approvals.....                                  | 65 |
| Figure 4.3.4: Rating of the e-Development Permit System.....                            | 66 |
| Figure 4.4: Commitment of Kenyan Government to implement OSS.....                       | 70 |

## ABBREVIATIONS AND ACRONYMNS

|               |  |
|---------------|--|
| <b>AAK</b>    | Architectural Association of Kenya                     |
| <b>BCA</b>    | Building and Construction Authority                    |
| <b>EIA</b>    | Environmental Impact Assessment                        |
| <b>E-DAMS</b> | Electronic Development Application Management System   |
| <b>E-DPS</b>  | Electronic Development Permit System                   |
| <b>EMCA</b>   | Environmental Management and Coordination Act          |
| <b>GOK</b>    | Government of Kenya.                                   |
| <b>KNBS</b>   | Kenya National Bureau of Statistics.                   |
| <b>NEMA</b>   | National Environmental Management Authority.           |
| <b>NCA</b>    | National Construction Authority.                       |
| <b>NMS</b>    | Nairobi Metropolitan Service.                          |
| <b>NLC</b>    | National Land Commission.                              |
| <b>OSS</b>    | One Stop Shop  |
| <b>OECD</b>   | Organization for Economic Co-operation and Development |
| <b>SDHUD</b>  | State Department of Housing and Urban Development      |
| <b>UK</b>     | United Kingdom   |
| <b>UN</b>     | United Nations   |
| <b>UNPD</b>   | United Nations Development Program                     |

## **ABSTRACT**

Implementation of One Stop Shop (OSS) model has the potential of enhancing the building approval process. However, there are many challenges that impede its implementation. This study focusses on mitigating the challenges in the implementation of the OSS in the building approval process in Kenya. The study employed a qualitative research methodology based on the Systems theory, Coordination theory and Actor Network theory. Data was collected via questionnaires administered to 91 respondents (31 Architects, 48 structural engineers and 12 physical planners) as well as interview schedules with experts from the Architectural Association of Kenya, Nairobi Metropolitan Services and the State Department of Housing and Urban Development. The findings indicate that 94.3% of the respondents had acquired the necessary approvals. Majority of the respondents indicated that it took 3-4 months to acquire the approvals and over ksh.60, 000 as the average cost of approvals. The study established the following challenges in the implementation of OSS: lack of top management support; lack of collaborations between government agencies; resistance to change to electronic ways; poor security systems; threats and breaches; poor ICT infrastructure; high cost of implementation and maintenance of OSS; lack of qualified personnel to manage the OSS; digital divide; cultural issues and unprotected individual privacy. The study proposed the following strategies to mitigate the challenges in the implementation of OSS: enhancing collaborations between governments agencies involved in approval process; Improving ICT infrastructure; harmonization of laws in the built environment to avoid multiplicity of functions among various institutions; enhancing government support including funding, advocacy; developing and embracing technology by OSS developers; improving training programs for members of staff for the various institutions involved in approval as well as users on the importance of OSS; adopting comprehensive privacy and security policies and benchmarking with countries which have successfully implemented the OSS model. The study recommends that the Kenyan government should be keen to allocate adequate resources and prioritize the implementation of the OSS model in their development agenda. The government should also be keen to engage all the agencies, stakeholders as well as the professionals in the built environment to ensure that they get support to ease the implementation of the OSS. The study also recommends that harmonization of all construction laws and policies and its institutionalization under one government agency which will ease the implementation of OSS. This study provides insight for further study of technological advancements that can be implemented alongside the OSS model to enhance its effectiveness, such as the BIM technology and a study to investigate the performance and adequacy of the OSS at Mavoko, Machakos County, for they exclusively identify themselves as a OSS.

## CHAPTER ONE

### INTRODUCTION

#### 1.0 Introduction

This chapter presents the research plan: a background of the study which will include the basics of the one stop shop concept as well as the building approval process in Kenya. It also outlines the problem statement, research questions, objectives, proposition, significance, limitations, delimitations, assumptions, scope and organization of the study and the definition of key terms as used in the study.

#### 1.1 Background

The construction industry is an important part of the economy of Kenya and is a key driver of economic development. The sector provides the buildings and infrastructure on which virtually every other sector depends. It is part of the major pillars of Vision 2030 that seeks to upsurge its impact to Gross Domestic Product by at least 10% (ROK, 2007). In 2018, the industry contributed 5.4% of Gross Domestic Product (KNBS, 2018) and expanded by 6.3% from a revised growth of 8.5% recorded in 2017 (KNBS, 2019). It is a significant source of employment since for every 10 jobs created directly by a building project, another ten jobs are generated in the resident economy (Price Waterhouse Coopers, 2013)

One of the constraints to sufficient and affordable housing, according to Wamuyu (2017), is the procurement of statutory construction approvals necessary by developers. She goes on to say that, with Kenya's expected urbanization rate of 32.8 percent and an annual housing need of 200,000 units and hence evaluating the development clearance procedure is unavoidable.

The OSS approach entails combination or integration of related government services in order to make them appear all-in-one to service seekers (Onyango, 2017). The One Stop Shop approach entails the delivery of a wide range of services in a centralized manner under one roof or website ensuring that the need to visit multiple service points is eliminated. This makes it easier to access all the services from a single point of access (Saravanan & Shreedhar, 2011).

The One Stop Shop Model also makes it economically viable for the government to decentralize the building approval services to diverse regions hence negating the distance traveled to urban centers and capital cities to access these services. The innovative use of technology such as

government portals reduces the cost of accessing the building approval services as well as the ease of access of the services (Carter & Belanger, 2004).

Customers of a OSS do not have to coordinate the tasks to obtain a range of services themselves, as all interactions can be performed in one place (Bannister & Connolly, 2012). Hence, One Stop Shops reduce the frequency of interaction by integrating access to public services (Schuppan & Koehl, 2017).

According to Carter and Belanger (2004), private-sector businesses are under growing pressure to function successfully and proficiently while also focusing on customer satisfaction. These issues have also surfaced in the public sector. As a result, information and communication technology (ICT) has been implemented to deliver an increasing range of electronic services. These efforts fall under the e-government umbrella, which aims to “allow and increase the efficiency with which government services and information are given to citizens, employees, enterprises, and government agencies”.

Modern-day public groups, according to Christensen & Laegreid (2011), have become increasingly expressive and complicated. This stems mostly from the adoption of similar sophisticated reform strategies in an effort to stay in touch with their environments and to ensure control, cultivate efficiency, coordination, authenticity, and legitimacy, among other things. The OSS model should thus be viewed as one of the organizational patterns explored by modern governments in order to adapt to the diverse necessities, interests, situations, and goals that governments face.

The OSS approach of service delivery across the world has been characterized by diverse aspects. This includes government efforts to improve on staff training and the use of technologies such as Queue Management Systems (QMS) (Saravanan & Shreedhar, 2011). These have served to professionalize and modernize service provision within public service delivery along with advance the quality of services provided. The other notable aspect has been the speed of public service delivery (Wanjiru & Wafula, 2015). The use of technology in the OSS platforms in conjunction with the implementation of support infrastructure in the OSS Models such as the use of service charters have notably improved the pace of service delivery as well as the quality of services (Waruhia, 2018)

Many developed and emerging countries, including Australia, Canada, Brazil, Singapore, South Africa, and India, have adopted Integrated Sector Delivery as a global standard for public service innovation in service delivery. As of 2016, 90 countries (or roughly 47 percent) of the 193 members of the United Nations had implemented One Stop Shops, including more than 50 developing countries (United Nations, 2016). One Stop Shop approach appears to be particularly advantageous in the setting of developing countries and Least Developed Countries (LDCs) with limited resources and few old IT systems to replace (Hoque & Sorwar, 2015). Accessing a package of services and information from a single spot, such as via one-stop service centers, directly benefits the public in LDCs, as such service centers assist individuals in bridging the digital divide that exists there (Nkohkwo & Islam, 2013).

## **1.2 Problem Statement**

Kenya was placed 124th in the World Bank study on the ease of doing business in Kenya based on the criteria of obtaining building licenses and development approvals, behind Rwanda (112), Botswana (59), and Namibia (107). The low ranking was ascribed to the lengthy processes and timeframes required to obtain a development permit, with some applications taking up to 156 days to complete.

According to a recent survey undertaken by the Architectural Association of Kenya (AAK, 2020), while e-construction permit systems exist in Nairobi, Mombasa, Machakos, and Kisumu counties, users continue to experience plenty of issues, including frequent downtimes and delays in the processing of applications. According to Wamuyu (2017), obtaining building permissions takes 430 days, compared to an estimated 169 days based on institution charters in Kenya. The delays are largely due to the human interaction with the portal. These delays not only undermine investor confidence and make it difficult to do business in Nairobi, but they also pave the way for construction of unauthorized structures and urban sprawl.

The process of obtaining these approvals takes far too long, the licensing regime is extensive, and the procedure is burdensome (Muiruri, 2014). These delays have also been mentioned as a major role in the rise in the cost of owning a home in Nairobi, as the developers' overhead costs are passed on to the buyers (Gachie, 2011).

The construction cost in Kenya has risen due to the increase in the cost of labor and construction materials (Wamuyu, 2017). Apart from this, obtaining statutory building permits and the costs

associated with them has been cited as a significant challenge due to the lack of a centralized system from which all required approvals could be obtained, as well as from numerous regulatory authorities at the national and county levels (Muiruri, 2014). The cost of obtaining these permits has also escalated significantly, particularly since the Nairobi City County administration passed the Finance Bill in 2013. (Kenya Gazette, 2013).

Due to the multiple parts of regulation distributed over many statutes, the construction industry likewise lacks a coherent and integrated framework within which to function. The legislation's disjointed character makes it difficult for developers to understand and comply with the standards, and also creates additional uncertainties that make successful implementation difficult (Kimani, 2010). The multiplicity and length of regulatory requirements in the construction industry have been repeatedly mentioned as a major impediment to Kenya being a globally competitive investment destination (Musyoki, 2015).

AAK (2020) acknowledged that while county governments had done their part to make development control information accessible, undertaking a construction project in Kenya was still marred by unclear government approval processes which makes completing an application for the required documents unpredictable, long and tedious.

In Kenya, the building approval process is also fragmented and one has to visit different Authorities including, County Governments, National Construction Authority (NCA), National Environmental Management Authority (NEMA), Water Resource Management Authority (WRMA), Kenya Civil Aviation Authority, Kenya Ports Authority, Kenya Airports Authority, Kenya Railways and other bodies as per the nature of the project. This makes the process tedious and expensive hence the recommendation for the OSS model for approval. The variety of entities involved in the planning and regulation of the construction sector, according to Kimani and Musungu (2010), produces conflicts and misunderstandings that impede the industry's competitiveness for local and global market investors.

The building approval process has been cited as an impediment and a significant red tape that needs to be addressed (Muiruri, 2014). With all these factors: Uncertainty of approval time, cost, the multiplicity of institutions and statutes it is worth considering alternative strategies to improve the process. Given the growing number of dissatisfied investors, built environment professionals, and developers, it is past time for Kenya to begin discussions about establishing an



OSS center that harmonizes development control procedures and standards while incorporating all agencies involved in the issuance of building permits and planning approvals (AAK,2020)

In Kenya's Mid-Term Plan for 2013–2017, the One Stop Shop model is specifically mentioned as a flagship project for accomplishing Vision 2030. (Onyango, 2017). The One Stop Shop has not been implemented despite the recommendations by professionals and investors in Kenya to improve the building approval process. Therefore, this study seeks to identify the challenges behind the application of the OSS in the approval of construction projects in Kenya and propose strategies through which these challenges can be mitigated.

### **1.3 Research Questions**

The research questions were:

- i. What is the best practice in the implementation of the OSS model in the construction industry?
- ii. What are the challenges in the implementation of the OSS model in the approval of construction projects?
- iii. What are the challenges facing the e-Development Permit System in approval of construction projects in Nairobi County?
- iv. What are the possible strategies to mitigate the challenges in the implementation of the OSS model in the approval of construction projects in Kenya?

### **1.4 Research Objectives**

The main objective of this study was to mitigate the challenges in the implementation of the OSS model in the building approval process in Kenya.

The specific objectives are:

- i. To compile the best practice regarding the implementation of the OSS model in the construction industry.
- ii. To investigate the challenges in the implementation of the OSS model in the approval of construction projects
- iii. To investigate the challenges facing the e-Development Permit System in approval of construction projects in Nairobi County.

- iv. To formulate the possible strategies to mitigate the challenges in the implementation of the OSS model in the approval of construction projects in Kenya.

### **1.5 Research proposition**

The challenges in the implementation of the OSS model have led to a slowed uptake of the OSS model for approval of building projects in Kenya.

### **1.6 Justification of the Study**

Every person has the right to "accessible and adequate housing and a decent degree of sanitation," according to Section 43(1) (b) of Kenya's 2010 Constitution. Kenya has a yearly housing demand of 250,000 units, with an anticipated supply of 50,000 units, resulting in a housing shortage of two million units, or an 80% shortage, according to UN Habitat (2010). The findings of this study will bring to the fore the challenges in the implementation of the OSS model and give recommendations on how best it can be implemented to ensure the building approval process is effective. This will, hopefully, lead to greater ease and convenience of doing business by the developers and hence a high supply of building stock of which housing is a significant component in the industry.

### **1.7 Significance of the Study**

The findings of this study will enable the government to be aware of and address the issues that have arisen in the implementation of the One Stop Shop for construction process approval (globally and locally). The study also proposes various interventions to mitigate these challenges in order to enable the implementation of the OSS model that will replace the e-Development Permit System in the approval process of proposed construction projects in Nairobi County and Kenya at large.

### **1.8 Limitation of the study**

The main limitation of the study is that of time and other resources. Due to the high cost of transportation, communication and purchase of stationery the study was limited to Nairobi City County.

### **1.9 Delimitation of the study**

The study was based specifically within Nairobi City County. Therefore, the study does not explore the challenges in the implementation of the OSS model in the approval of construction

projects in the other counties. The study did not target the clients, property developers, Quantity surveyors, contractors, and land valuation officers as respondents because they would not be in the best position to comprehensively answer questions on the research objectives as they are not directly involved in the approval process of construction projects.

### **1.10 Assumptions of the study**

To fulfill the stated objectives, the study expected that the intended respondents would offer objective and appropriate information at the time of data collection. The study assumed that there is political goodwill and adequate interest from stakeholders and users of the e-Development Permit System that will ensure that the OSS model is implemented in the approval of construction projects in Kenya.

### **1.11 Scope of the Study**

#### **1.11.1 Geographical scope**

The study was based in Nairobi City County because it has the most active construction sector cutting across all the NCA classes and the results can be replicated in the other counties in Kenya. The study focusses on the challenges in the implementation of the OSS model in the building process and its economic value to county governments and developers when fully implemented.

#### **1.11.2 Theoretical scope**

In terms of theories to underpin the research, the study was limited to the Systems theory, Coordination theory and Actor-Network theory.

#### **1.11.3 Methodological scope**

The study is qualitative in nature and the research sample comprised of 91 respondents (31 Architects, 48 Structural engineers and 12 Physical planners) working in the Nairobi City County. It also includes interviews with experts from the State Department of Housing and Urban Development, Architectural Association of Kenya (AAK) and Nairobi Metropolitan Services (NMS) who have actively been involved in the formulation of the OSS. The primary data collection method was questionnaires that were used to determine the perspectives of the target population on the challenges in the implementation of the OSS model.

### **1.12 Organization of the study**

This research is divided into five sections. The background of the study, the statement of the problem, the goal of the study, the research objectives, research questions, the constraints of the study, justification of the study, significance of the study, the scope of the study, the organization of the study and the definition of key terms used in the study are all covered in Chapter 1.

In accordance with the study's aims, Chapter 2 offers the theoretical underpinning of the investigation through a literature review. The empirical review consists of the OSS concept, the OSS requirements, best practice principles of OSS, the OSS in Malaysia and Singapore and the building approval process in Kenya. The challenges in the implementation of OSS model, the interventions to these challenges, summary and research gaps and the conceptual model are also discussed therein.

The research technique is discussed in Chapter 3: research design, target population, sampling procedure and sample size, data collection methods, validity and reliability of research instruments, and operationalization of the independent and dependent variable of study variables.

The fourth chapter explains how the data was processed, interpreted, and presented in accordance with the study's goals as well as the challenges that were encountered in the field investigation. The fifth chapter contains a summary of the study findings, a discussion of these findings, discussions, conclusions, recommendations, and suggested areas of further research.

### **1.13 Definition of key terms as used in the study**

**Development.** Development is defined under the Physical Planning Act Cap 286 as "any considerable change in the use or density of any structure or land, or subdivision of any area." The works that the Local Authority allows under section 33 of the Physical Planning Act are included in this study's definition of development.

**Statutory building approval** is an authorized document that allows one to undertake a development (The State of Queensland, 2016)

**One stop shop.** A OSS is a consolidated platform for citizens to access e-government services, or "a single point of entry to electronic services and information provided by several public entities" (Tambouris, 2001).

**Building permit.** An official document that allows a developer to build on a plot of land or make alterations to an existing structure (AAK, 2020).

**The construction industry regulatory bodies** refer to the institutions mandated to foresee the rightful implementation of the regulations set in the construction industry (Wamuyu, 2017)

**One-Stop-Government** refers to the combining of governmental services from the perspective of a citizen or a client of public services (OECD, 2013).

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter presents and discusses the theoretical review, empirical literature, the study variables as summarized in the conceptual framework, research gaps and summary of reviewed Literature. The literature was reviewed from working papers, peer-reviewed journals, reports, periodicals, the internet and the past studies in the research field.

#### 2.1 Theoretical review

This segment presents the theories that were used to underpin the study. The theoretical review of the study was undertaken through the use of the Systems theory, Coordination theory and Actor-Network theory as explained below.

##### 2.1.1 Systems Theory

According to Capra (1997) Systems theory is an interdisciplinary theory that applies to all systems in nature, society, and many scientific areas, as well as a framework for investigating events from a holistic perspective. The shift in attention from the part to the whole (Jackson, 2003) leads to systems thinking, which views observed reality as an integrated and interacting unique phenomena in which the individual properties of the single parts become indistinct.

According to the systemic perspective, we cannot fully comprehend a phenomenon by breaking it down into elementary parts and then reforming it; instead, we must use a global vision to highlight its functioning. Although we can begin by analyzing the fundamental components of an event, we must observe it from a higher level in order to properly appreciate it in its entirety: a holistic perspective (Bertalanffy, 1968).

Therefore, systems theory is a theoretical approach that considers a phenomenon in its entirety rather than its pieces. In order to comprehend an entity's organization, functioning, and outcomes, the focus is on interactions and relationships between pieces.

This theory is useful to this study in understanding the OSS system for construction project approval, its operation, and the relationships between its constituent parts in order to offer the best strategy for its implementation.

### **2.1.2 Coordination Theory**

Malone and Crowston introduced Coordination Theory in 1994 as a set of ideas for coordinating the activity of various actors. Coordination is one of the most common problems in coordination theory. It aims to address the following issues: breaking down overall goals into tasks, assigning these tasks to groups or individuals, distributing resources to these various actors, and merging diverse actors' knowledge and conflicting preferences to arrive at overall goals (Malone, 1994)

The coordination theory, according to Kaplan (1998), offers a variety of ideas that can be used to identify phenomena and relate them to others, and therefore satisfies this important purpose of theory. It recommends categorizing the dependencies between the tasks carried out by different group members and the coordination methods used by the group to coordinate their work, and then proposing alternate strategies. Actors must conduct extra work referred to as coordination mechanisms to overcome these coordination issues. If a certain level of skill is required to do a task (a task-actor dependence), for example, an actor having that level of experience must be found and the assignment assigned to him or her (Malone & Crowston, 1994)

In studying the OSS model, this theory will be applicable in studying the interactions between the many actors in the approval process and the social-technical challenges that hinder the implementation of OSS. It will also help propose the possible interventions to ensure coordination of the approval process and hence the successful implementation of the OSS

### **2.1.3 Actor-Network Theory (ANT)**

According to Twum-Darko (2011), Actor-Network Theory is used as a lens to explain and analyze not only the process and interactions between actors, but also the meanings that individuals attribute to the form of interactions between actors to align varied interests. When this process of aligning different interests is successful, it produces a network of actors linked by associations.

Non-human factors in the context of a OSS could include policies, technology, government services, and so on. Actors, whether human or non-human, have goals they want to achieve. Actors, according to Tatnall & Gilding (1999), are defined by their relationships with other actors in the network, not by themselves. Actors can either initiate or be acted upon. In a heterogeneous network, all actors are treated equally, with no distinction made between humans and non-humans. (Nijland, 2004).

Humans and machines are both actors in the networks. An actor-network, according to Callon & Latour (1981), exists when human and non-human actors interact and generate a result. ANT also sees the world as a web of interconnected parts with no social order. Moments of translation help to establish such a network.

The four moments of translation, according to Callon (1986), are problematization, in which the key actor makes himself indispensable to others by presenting the problem to them and convincing others to view things his way. The second type of interest is when a key player tries to lock the others into place by interfering in other actors' interactions and establishing the linkages between them. The third stage is enrolment, in which the key actor outlines the roles that other actors must play and how they must play them, and the last stage is mobilization, in which the key actors act as representatives or spokespersons for the other actors.

These four moments of translation applies to this study in that they can be used to explain the process of implementing of the OSS, for example the key actor, the State Department of Housing and Urban Development, is expected to present the problem and convince other actors, establish their relationships, defining their roles and mobilizing them to achieve a common goal of implementing the OSS.

The actor network last stage is irreversibility. The strength of inscriptions determines whether they are followed or ignored. The network grows more irreversible as the inscriptions become stronger (Mpazanje, 2009). The strength of an inscription influences whether or not it is followed (Mähring et al., 2004). Irreversibility refers to a stage in which the network's development has progressed so far that it is difficult to go back to the old practices. The network has been developed and enhanced at this point. Before the actor-network reaches an irreversible state, iterative inscriptions may be required (Mähring et al., 2004).

An inscription is the product of one's interest being translated into material form (Callon 1991). In this study the examples of inscriptions can be any component of the heterogeneous network of skills, practices, artifacts, institutional arrangements, texts and contracts establishing a social order.



Table 2.1 below explains the key concepts in the Actor Network theory.

*Table 2.1. Definition of some central concepts of ANT.*

| <b>Concepts</b>          | <b>Definitions</b>  |
|--------------------------|---|
| Actor                    | Any element which bends space around itself makes other elements dependent upon it and translates their will into the language of its own [Callon and Latour, 1981].  |
| Actor-Network            | Heterogeneous network of aligned interests [Callon and Latour, 1981]  |
| Problematization         | The first moment of translation during which a focal actor defines identities and interests of other actors which are consistent with its own interests, and establishes itself as an obligatory passage point (OPP), thus rendering itself indispensable [Callon, 1986]. |
| Obligatory Passage Point | A situation which has to occur for all of the actors to be able to achieve their interests, as defined by the focal actor [Callon, 1986].   |
| Interessement            | A process of convincing actors to accept the definition of the focal actor [Callon, 1986].  |
| Enrolment                | A situation when actors accept roles defined for them by the focal actor [Callon, 1986].  |
| Mobilization             | A situation where actors choose to become legitimate spokespersons of the groups they claim to represent [Callon, 1991].  |
| Inscription              | A process of creation of technical artefacts which would ensure the protection of certain interests [Latour, 1992].   |
| Irreversibility          | Degree to which it is subsequently impossible to return to a point where alternative possibilities exist [Walsham, 1997]  |

*Source: Sidorova and Sarker (2000)*

This theory is significant to this research because it proposes an outline on how the interests of the different actors in the approval process can be aligned in the implementation of the OSS model of approval of construction projects in Kenya. This will mainly address the challenge of the multiplicity of actors, statutes and procedures in the approval process in Nairobi City County.

## **2.2 Empirical review**

### **2.2.1 One Stop Shop concept**

According to Wanjiru and Wafula (2015), the One Stop Shop model has been given a variety of titles around the world, including one-door services, single-window services, information centers, information kiosks, citizen service centers, and community service centers.

A One Stop Shop (OSS), according to Forkou (2009), is a site, generally a shop, where numerous requirements can be addressed in one place. The theory behind this strategy is that by combining many services in one location, shops can provide customers with the ease of receiving all of their needs in one location.

Also, Wimmer (2002) defines a OSS as an integrated platform for delivering e-government services to citizens, or “a single point of access to electronic services and information offered by different public authorities. Citizens must contact different government departments individually if there is no OSS. In a OSS, the data is distributed by the government once the citizen submits the information to the single point of access, whereas in a OSS, the citizen distributes pertinent data to each involved government agency himself or herself. The front office of a OSS is integrated, while the back offices are left to their own devices. As a result, a One Stop Shop merges government services from the perspective of citizens (Tambouris, 2001).

Iran et. al (2006) define a One Stop Shop as the most mature stage of e-government where the back-office is fully integrated across functionalities, as well as government levels, to provide a customer-oriented service structure. The OSS concept aims to reduce these bureaucratic and administrative costs for the citizens and businesses by transforming the public service delivery in a citizen-oriented way (Kohlborn, 2014; Wimmer, 2002).

According to Bannister & Connolly (2012), Customers of a OSS do not have to coordinate the tasks to obtain a range of services themselves, as all interactions can be performed in one place. Hence, OSSs reduce the frequency of interaction by integrating the access to public services.

The OSS is one of the most popular e-government concepts in practice and tackles the e-government aim to enhance service delivery from a customer perspective (Blackburn, 2016; Schuppan & Koehl, 2017). Public services in the sense of a OSS should be available via one single electronic or physical access point, regardless of the underlying administrative structure (Bannister & Connolly, 2012; Wimmer, 2002).

One Stop Shops are underpinned by several key capabilities (Wimmer, 2002). A OSS, for example, necessitates interconnection and interoperable IT systems among all participating governments (Wimmer & Tambouris, 2002). Furthermore, OSSs should be organized around life events and business situations and should deliver the citizen with help when completing an online form (Wimmer, 2002). For governments, implementing an electronic OSSs and thereby integrating data collecting can have a number of advantages, including cost savings through electronic form distribution and a reduction in inaccurate form submissions and processing (Gouscos et al., 2007).

The difference between a OSS and a no-stop shop is summarized by Scholta et al. (2019), namely that where "a OSS reduces the number of forms by integrating the front end, a no-stop shop omits information exchange from the citizen to the government altogether in the course of service delivery and its subsequent operational execution". Consequently, a no-stop shop provides a service in a proactive way to its client and thereby eliminates all interactions between service recipient and service provider. Hence, no application and no form filling are necessary on the client side along the whole service delivery process.

### **2.2.2 One stop shop requirements.**

A one stop shop has a single access point, multiple access channels, meaningful service bundles and an enhanced user experience and service quality (Kircher, 2019). These requirements and many more are discussed below.

#### ***2.2.2.1 Single-window access***

First, a One Stop Shop requires a single window, where citizens can access a bouquet of public services within one place (Blackburn, 2016; Wimmer, 2002). The single point of access represents the front office interface between the service recipient and provider (Golden et al., 2003).

Lindgren et al (2019) noted that without an OSS, citizens and businesses are required to communicate with many single administrative bodies, which results in a government-centric one-sided communication. He also adds that the single point of access transforms government to customer communication in a customer-centered way and enables a two-sided transaction-oriented communication. Hence, the portal has to provide secure two-way communication, where both communication partners can push and pull information to and from each other.

Furthermore, the single access point has to provide back-office processes electronically in the sense of real transaction services, like dynamic electronic forms, electronic signature, or payment (Kunstler & Ventra, 2004).

In practice, the interface through which citizens can gain access is often referred to as a government portal. Several researchers refer to a government portal as a front-end application for

governments that allows holistic access to data and information of the citizen, as well as of the government (Iran et al., 2006; Kohlborn, 2014). Additionally, it serves as the end-user interface, where a vast landscape of information and services can be accessed by citizens and businesses, in the sense of a life event portal (Lebed et al., 2004).

In delimitation, Bannister and Connolly (2012) show that in practice government portals often merely serve as a gateway, through which several existing services become electronically available. These services are not designed for customer value and do not implement an enhanced customer experience. Government portals are widely popular, but still account for a failed vision, since they do not provide an extra benefit or comfort to its users (Bannister & Connolly, 2012).

### ***2.2.2.2 Multiple access channels***

According to Blackburn (2016), an OSS provides multiple access channels that can be online or offline. This means that the customer can obtain services through a variety of channels. Online public services are not yet highly adopted by citizens, because of the digital divide, privacy and security concerns, and regulatory requirements. Lenk, (2002) notes that, by offering an integrated multi-channel approach this liability is tried to be overcome. Chan & Pan, (2005) also argues that, OSS services are provided via multiple access channels, which means a service provision can take place online via e-services or physically within an offline location. Thereby it is important to intertwine access channels, as the introduction and maintenance of multiple access channels is costly and can even lead to greater inefficiencies.

A One Stop Centre should, according to Tambouris (2002), offer a range of distribution mechanisms (or "channels"), such as government portals, call centers, and physical presence. Furthermore, through citizen relationship management, individualized services should be able to be offered across several channels.

Bent, Karnaghan et al (1999) argued that the OSS delivery channels comprise physical shops, websites, kiosks, and contact centers. Service is provided face to face and frequently over the counter at the physical site. Front-line staff require information technology support in order to gain access to consumer data and information on services provided by back-office institutions that are integrated at the physical location. The Internet/websites, on the other hand, have proven to be a potent new medium for delivering a wide range of services, including financial

transactions. Governments can utilize websites to engage with their constituents and conduct business. Websites can be visited from the comfort of one's own home, the workplace, or public computer terminals (PC- or kiosk-based).

Self-service kiosks can also be utilized to give services directly to customers, according to Bent Karnaghan et al (1999). All interactions with the service provider, including payment operations, are totally automated. A One Stop Kiosk combines services from various vendors. Kiosks can be placed in more places than office buildings. Finally, call centers are ideal, which can range from an agency's main phone number to an outsourced operating unit that handles all or most customer communications for one or more agencies.

### ***2.2.2.3 Meaningful service bundles***

According to Janenova & Kim (2016), it is not only enhanced access that a OSS provides, but the concept also demands a meaningful service bundling that is based on customer needs.

Kohlborn (2014) describes service bundling as “the act of aggregating services into a packaged offering, which is aligned with a citizen or business need”. A widely acknowledged technique to achieve meaningful bundling is the mapping of services according to life or business events.

Böhm et al (2010) suggest having a more complex way of bundling services by combining specific target group profiles with a life event into distinct profiles. Hereby, also contextual factors like age, work role, or family situation can be taken into account and a higher quality of service bundling can be achieved. In their work, they detail the example of having a portal for German expatriates. Here, not only a life event is addressed, but also a specific target group.

Meaningful in the context of service bundling relates to the right selection of service bundles in terms of customer value-added and researchers have investigated the definition of quality for service bundling. One approach is to measure the quality of a service bundle with the degree of service development, describing how advanced the electronic delivery of a service is (Kunstelj & Vintar, 2004).

Another factor is the degree of service integration. This describes the integration of a single service within a service bundle. A fully integrated service provides the communication and delivery of a single service as a part of a service bundle (Kunstelj & Vintar, 2004). Kubicek et al

(2003) describe service integration as the reuse of the user's data input of one service for another service. Leben et al (2004) evaluate service integration within a OSS by assessing the level of coordination. This level is described by how e-services are combined within a life event and how this integration is perceived by the customer.

To create meaningful service bundles the public administration has to integrate the public administration's tasks and expertise and drive the involvement and integration of all relevant stakeholders (Wimmer, 2002). The task- and expertise-driven integration is defined by Wimmer (2002) as the connection of all public entities participating within OSS system and providing services for one integrated service bundle. It aims to ensure viable cooperation of all stakeholders and flawless coordination of the processes involved. Several researchers agree with this view identify the reengineering of related business processes as a critical success factor for OSS development, which is also referred to as back-office integration (Iran et al., 2006; Kunstelj & Vintar, 2004; Lenk, 2002).

According to research by Brain Child (2020) one of the innovation teams of the City Government of Muntinlupa- Philippines, the following recommendations were given to ensure success in the building approval process: formulation of OSS (Unified area solely for building permit application), Unified Billing System (One-time payment for all building application-related fees) Joint Inspection ( Unified inspection for all concerned offices to address the unavailability of the vehicle during inspections) and Online App System ( to update applicants about the status of their application via text message).

### **2.2.3 Best Practice in Implementation of One Stop Shops**

#### ***2.2.3.1 Political commitment.***

Political commitment is an important ingredient for all public policy. Previous research indicates that political commitment is one of the most critical factors to ensuring the success of One Stop Shops. It has been noted that a permanent communication channel with high political levels is necessary to provide progress updates, as well as to get assistance to overcome any problems or difficulties that arise (OECD, 2013)

United Nations (2005) highlighted Ministerial reassignments as a particular communication challenge, breaking the understanding built up between the user community and politicians. This

in turn may delay needed changes to the OSS (for example, to infrastructure and so on) as new ministers familiarize themselves with the portfolio. Research indicates that political will in the form of both upfront and ongoing commitment is needed for the survival and growth of OSSs

According to Organization for Economic Corporation and Development, OECD, (2013), appropriate planning is central to ensuring that political input supports the development of OSSs. Instances have existed where political decisions have been made to create OSS without due regard to establishment issues. This has meant that processes were rushed in the development of OSS and that problems arose during design, which was then passed onto users.

### ***2.2.3.2 Leadership.***

OSS management must carry out realistic planning, establishing clear and practical objectives for each phase, and assigning adequate timing for each task. It is also important to consider critical paths and bottlenecks, so that special attention can be given to the tasks carried out by agencies with limited resources or less involved in the OSS (OECD, 2013)

As is the government case more broadly, managers are ultimately responsible for securing funding, and OSSs are no different. Where the service provision and/or delivery is like a public good, the associated costs would be expected to be funded through more traditional fiscal means (United Nations, 2005)

According to the Government of Canada (2015), the Norwegian OSS solution Altinn fulfills the most sophisticated OSS model. It is a common web portal for transactions and information, but it is also a platform where governmental agencies can develop and run their services. The annual expenditures for management costs and basic maintenance costs of Altinn are funded by specifically allocated amounts in the annual government budget on a multi-year basis. Funding of development costs is applied for on an annual basis, by a separate application to the respective ministry. If approved, the funds are included in the government budget for the succeeding year.

OECD (2013) also note that in addition to the overall funding envelope, managers are also responsible for its distribution, allocating it to the various aspects of OSSs. Depending on the particular financing arrangements for One Stop Shops, this may include investments into capital and operational expenses. Whilst finding solutions to this funding gap is important in the OSS

context, due care must be given to avoid creating additional unnecessary localised levels of taxation.

Expenses will differ and primarily relate to the type of OSS. For example, physical One Stop Shops will have expenses associated with the purchase or lease of buildings and the training of frontline staff. Online OSSs tend to have more capital expenses associated with the technology mix or design. Management also needs to allocate appropriate funds to gathering user feedback and input to future design changes, and training of staff (OECD, 2013).

### ***2.2.3.3 Legal framework***

According to OECD (2013), the legal framework is integral in both facilitating and constraining the potential scope of OSSs. There are legal considerations that affect the potential establishment of OSSs, and those that affect its potential operations. In terms of establishment issues, these may relate to issues such as constitutional questions, e.g., division of powers between various levels of governments. Operational legal issues could relate to administrative arrangements within governments, such as the extent to which data can be shared. In both cases, it is important to identify potential barriers early and ascertain whether they can be changed and if not, how that might affect the feasibility of OSSs

The design of One Stop Shops might cause governments to consider how their current policies may hinder OSSs from reaching their potential. In the case of digital OSSs, additional issues are raised such as electronic data submission, data exchange, electronic signature systems, information sharing, and potential delegation of responsibility (United Nations, 2005).

For example, The UK published its Government Digital Strategy in November 2012, which, among other things sought to "remove legislative barriers which unnecessarily prevent the development of straightforward and convenient digital services". The strategy led to a series of actions with the Cabinet Office responsible for working with departments to achieve the removal of remaining legislative barriers. Public progress reports were released that detailed how and where departments had changed laws to ensure they were not hindering the potential development of digital solutions. The reports highlighted that by delivering services digitally, expected savings were in the range of GBP 1.7 to GBP 1.8 billion per year (United Nations, 2005).



United Nation also noted that proper safeguards and mechanisms should be put in place to protect users' privacy and store and protect user data appropriately, irrespective of the form that the OSS takes. Consequently, countries have created formal requirements, including legislation, to protect citizens across: data collection, data storage, data sharing, data processing and, data opening, release and publication.

#### ***2.2.3.4 Co-operation and co-ordination***

According to OECD (2013), a central aspect of One Stop Shops from the client perspective is about seamless government, particularly where One Stop Shops cut across government portfolios and/or various levels of government. They also noted that considering the government agencies involved is a necessary part of establishing One Stop Shops. For instance, whether a OSS is to be designed around user-centric approaches such as life events, for example buying a house, starting a business, and so on; whether the OSS could be designed with joined-up government services in mind; or whether there are elements of overlap between the two.

This necessitates consideration of how different government agencies will coordinate their actions and co-operate with other agencies, both those involved and not involved in the OSS. Some potential solutions highlighted from the case studies include joint management and decision-making processes to ensure that individual agencies have sufficient "buy-in", and at the same time also helping to provide clear lines of accountability (OECD, 2013).

For example in the case of Altinn (Norway) they established the Brønnøysund Register Centre (BRC) which has been responsible for the management, operation and further development of Altinn, on behalf of the co-operating agencies and the municipalities, since May 2004.

According to the Government of Canada (2015), the Director General of the BRC is responsible for the final strategic decisions, supported by the Altinn Guidance Council which is made up of nine government bodies. In turn, the Council is supported by an Executive Committee comprising lower-level representatives and was established as a preparatory body for the Council. The BRC's Digitalization Department is responsible for the day-to-day administration of Altinn and information management. Two technical working groups relating to service management and technical architecture provide input on the service delivery and future development arms of the Altinn platform, respectively.

Christensen, T, Fimreite, L and Lgreid, P. (2007) suggest that in order for municipalities to function effectively, multiple levels of government may need to coordinate responsibilities at the same geographical level and under the same leadership.

More generally, strong communication channels must exist between management and the staff responsible for designing and operating One Stop Shops. Not only does this help to build a shared sense of ownership and goals to be achieved. It is also important for the early communication of unexpected difficulties from staff to management around technical issues; and also, a top-down perspective from management regarding funding surety or changes to operations such as potential shifts in strategic direction or expansion or retraction of scope (Christensen, T., Fimreite, A. L., & Lægreid, P. 2007).

Whilst it is important for management to be responsible for the strategic directions set, this needs to be informed by operational level staff. They can provide important insights into the operations of a OSS, and for instance highlight areas where users are facing unusual difficulties which may require more investment to find better solutions. This also helps to build a shared sense of ownership of a OSS and has been identified as a central factor to their success.

#### ***2.2.3.5 Role clarity***

One Stop Shops need to have clear objectives in place before their establishment. This helps to ensure that users' expectations are appropriately set – and subsequently are met. It also helps to provide an important accountability mechanism when it comes to reviewing the performance of One Stop Shops (OECD, 2013).

Askim et al (2011) notes that the specific sphere of activity of One Stop Shops is important to consider. For instance, whether a OSS is to have narrow or broad policy coverage, and the depth of information available to clients.

OECD recommends that a range of user research approaches can be adopted to elicit and better understand the expectations including focus groups, surveys and the like, as well as via more in-depth approaches. These should be coupled with piloting to ensure that expectations have been met. These should be undertaken to help inform the objective and design of OSSs, and separately, should form part of more general ongoing monitoring and evaluation.

### **2.2.3.5 Governance**

According to OECD (2013) Organizational issues are often more difficult to resolve than technical ones, the most difficult of which is to transform the traditional departmental view into a more collaborative environment with shared goals. A further consideration is the level of government involved.

Askim et al (2011) notes that there is a potential trade-off between the central governments' need for standardization and the subnational government's need for local adaptation and flexibility. In some countries where responsibilities are devolved or shared with subnational governments, there may be additional considerations around the type of appropriate legal model that best facilitates the smooth operation of OSSs.

Additionally, there are a series of matters relating to the operation of the OSS model, for instance, around how to distribute decision-making abilities such as funding allocations and potential areas for expansion. A range of potential solutions exists such as lead agency models, and memoranda of understanding between the partner agencies. These potential models can also cover facets such as the degree of discretion in resource allocations, management, recruitment, and overall organization (Askim et al., 2011).

Askim et al (2011) also notes that inter-agency integration raises governance issues that should be considered as part of a OSS design. For example, where the degree of integration is low – in the sense that services are collocated but are separately managed – raises different issues compared with a relatively higher level of integration between government service delivery agencies. Examples of the latter are joint management boards, joint budgets, and joint recruitment strategies as part of a OSS design.

### **2.2.3.6 Public consultation**

As is the case with regulations more broadly, actively engaging all relevant stakeholders during design processes helps to "maximize the quality of the information received and its effectiveness". It also helps to ensure buy-in from affected parties, and create a sense of shared ownership. For OSSs, public consultation is particularly relevant to the undertaking of feasibility studies; the types of communication mediums most likely to be of use to clients; and

participating in periodic reviews of the operation of OSSs. The focus of these activities should be to reduce administrative burdens to the minimum necessary, which takes time and is often an iterative process (OECD, 2012).

Public consultation can assist designers after One Stop Shops have gone “live” to help establish the extent of potential problem areas that may have developed, as well as providing a sound basis for the potential expansion and/or amalgamation of/with other government services (OECD, 2012). It is important to adopt a phased approach in the implementation of OSSs. Such an approach helps to better facilitate understanding of users’ needs, as well as identifying difficulties and challenges that can then help to provide important learnings for future developments at later phases.

#### ***2.2.3.7 Communication and technological considerations***

There is no single approach that fits all countries or all levels of government within a country. Communication methods must be designed to represent the specific country environment and be functional (OECD, 2013)

Askim et al (2011) notes that designers need to give appropriate thought to the "face" of the OSS. For instance, where One Stop Shops provide information to clients that allows them to navigate to additional information, consideration needs to be given to how this can best be facilitated. It could, for example, be that a physical shopfront is most appropriate, a central landing webpage, or a combination of communication mediums may be necessary. One Stop Shops' communication methods should be determined by user preferences.

According to OECD (2013), the Norwegian OSS, Altinn adjusted its visual identity online in 2013 for the first time since it was created in 2003. In interviews and user tests that were conducted, it was found that people were fearful of making mistakes when they were in Altinn. An additional finding was that there was often too much information available for the average users' needs. As a result, Altinn was relaunched with a new design and more human language as a solution to the identified shortcomings. The new design is brighter with a more user-friendly color palette and a simpler interface that involves a clear interaction of elements and illustrations on landing and information pages.

As part of an evaluation into the operation of BizPaL (Canada), research was undertaken to gain a better understanding of the needs and expectations of business owners as well as professional intermediaries such as accountants, lawyers, and economic development staff. The research comprised of focus groups and interactive user tests and among other things found that the internet and in-person contact are generally considered the most efficient ways to access business information from the government (Government of Canada, 2015). In response to the review, BizPaL commenced a process to allow for transactions to take place online. Despite user preferences for internet means, a recent review found that only 3% of BizPaL's permits and licenses database can be downloaded, completed electronically, and submitted online. Around three-quarters of all permits and licenses relating to the municipal level (Government of Canada, 2015)

The introduction of IT systems has been an important theme in the above examples. The experience of Canada's BizPaL indicated that while a technological solution may be appropriate, as services mature, they may no longer be fit for purpose. This highlights that it is important to appropriately plan for the design, development, testing, and improvement of such systems. (OECD, 2013)

#### ***2.2.3.8 Human capital***

A critical element in the operation of OSSs is its people. It is therefore important to ensure that the project team has sufficient resources and appropriate staff. As part of this, where OSSs emerge from existing government services, consideration needs to be given to matters such as change management, and the design of tailor-made programs for training the staff. Training ought to be broader than technical competencies and especially for physical OSSs should also include interpersonal skills as the staff are often the face of the organization (PWC, 2016)

PWC also noted that OSSs must focus on a customer/client-centric culture which helps to form the basis for establishing a range of client-based performance metrics to assess and evaluate the OSS's performance. This necessitates decision-making and resource balancing on the part of management to ensure that the scope of OSSs is consistent with their resourcing to deliver the key services to clients.

### ***2.2.3.9 Monitoring and evaluation***

In the regulatory policy context, it is recognized that monitoring and evaluation form central parts of adopting a continuous policy cycle. They are central as they provide the opportunity to assess whether the objectives of the regulation are being met, and whether they are being met in the most efficient manner possible. In a similar vein, the performance of OSSs should be monitored and evaluated to ensure that they continue to meet both users' and governments' needs and expectations (OECD, 2012).

According to OECD (2020), the scope of any evaluation ought to consider whether "the stated objectives have been met, determining whether there have been any unforeseen or unintended consequences, and considering whether alternative approaches could have done better". For citizen OSSs, the main goal is usually to improve access to government services. From the government's perspective, OSSs can be used as a means of reducing public/private transaction costs, whilst also potentially lowering government service delivery costs.

According to PWC (2016), performance requires a range of criteria or indicia to be collected over a period of time. For OSSs, this means creating meaningful performance indicators and continuous improvement mechanisms early in the design phase. Performance ought to be assessed at the strategic, operational, and tactical levels. At the strategic level, key performance indicators and targets should be set to monitor the success of service improvements. At the operational level, metrics should be linked to management responsibilities and operations at the whole government level. At the tactical level, metrics should focus on progress within the government agency or agencies involved in the OSS.

According to the Government of Canada (2015) BizPaL had developed web metrics to assess completion rates where businesses can locate the permit and licensing information they need. The metrics allow tracking on a step-by-step basis and provides accurate information on how many users get the actual results page and if not, at what step they are leaving the system. Quarterly reports are presented to internal management and help to inform decisions on system improvements.

Askim et al (2011) notes that although several potential approaches exist, common data sources tend to be user satisfaction surveys and questionnaires, mystery shoppers, and internal audits.

They also note that additional performance metrics that are more germane to online OSSs include matters such as take-up rates, service completion rates, and costs per transaction that can feedback into continuous improvement programs.

### **2.3 One Stop Shop Centre in Rwanda**

The Kigali construction and urban planning One Stop Centre was established on 14 April 2010 by a cabinet decision, with the following responsibilities: to ensure that safety standards in the construction sector are adhered to, to develop and review key area detailed physical plans, to ensure quick service delivery, particularly in the issuance of building permits, and to monitor and advise Districts' land bureaus for efficient segregation. (Government of Rwanda, 2013)

The Kigali construction and urban planning One Stop Centre was also tasked with implementing the Kigali Master Plan, which was supposed to help the city create a livable environment that supports the city's sustainable growth while embracing the three E's Ecology, Equity, and Economy, a livable community that fosters a sense of belonging, cooperation, and healing, and optimism.

It is a web-based MIS software program for processing Construction Permits (CPs), Inspections, and Occupancy Certificates that automates the application and review procedures (OCs). It allows applicants to keep track of the progress of their project applications and gives better management data. The system includes the City of Kigali's current online system for issuing building permits, Construction Permit Management Information System (CPMIS), which will be scaled up to service all District One-Stop Centers. Inspection and digitalized reporting tools have been added to it (Government of Rwanda, 2013)

The government of Rwanda (2013) also mentions that the digitization was accomplished through the creation of an online Building Permits Management Information System (BPMIS) with features that allow applicants to access information, closely follow up on applications, and be notified of progress made as a result of the assessment conducted by the City of Kigali or District One-Stop Centers. Rwanda Housing Authority conceived and implemented the BPMIS project in partnership with the World Bank Group WBG/IFC. The UK Department for International Development contributed funding for the initiative (DfID).

The Construction permit applications can be submitted online at [www.kcps.gov.rw](http://www.kcps.gov.rw). From submission to delivery, the web-based system manages the whole construction permit procedure. The system supports the complete process of client relations, evaluation, construction administration, and other associated permissions provided by the City of Kigali and District one-stop Centers (occupation, renovation, change of use, transformation, and permit to erect a fence). The Rwandan OSS accommodates Property Owners, Architect, engineer and supervising firm or contractor, however the e-Development Permit System in Nairobi City County accommodates only Architects, Planners and Structural engineers. There is no proper tracking system of the approvals in Nairobi City County while The Rwandan system has a clear system to track of the progress of their project applications and gives better management of data. Also, whereas the applicant has to resubmit blue prints for stamping in Nairobi, this is not so with the Rwandan OSS.

#### **2.4 One stop shop center in Malaysia**

Malaysia has a body referred to as One-Stop Center (OSC) which receives applications for various development permission. Applications for building permits are submitted by an Architect, who is referred to as Principal Submitting Person (PSP). Once the applications are received at the OSC they are distributed to the Local Authority Building Department (NCA, 2019).

This center receives applications for planning authorization, construction plan approvals, land-use conversion, subdivision, and merger of land. The center sends the application to the appropriate departments and collects feedback. The OSC's most time-consuming tasks include distributing applications to appropriate technical departments and tracking their progress.

According to Ibrahim et al. (2019), technical departments have 14 days to respond to applications in areas with a local plan and 40 days to respond to applications in areas without a local plan. The decision-making meeting is held at the OSC, which serves as the meeting's secretariat and is responsible for all relevant correspondence with the applicants.

According to NCA (2019) The OSC committee membership comprises of: Mayor, OSC Director, Deputy Mayor, four Ordinary Members of the Council, Director of State Urban and Town Planning, Director of Mineral and Land, Land Administrator, Director of Public Works,



Director of Department of Drainage and Irrigation, Director of Department of Environment, Director of Department of Fire Fighter and Life Savings, Director of Department of Sewage Services, Manager of Telekom Malaysia, Manager of Department of Planning, Manager Department of Building, Manager of Department of Engineering, Manager of Department of Landscape, Manager Department of Health and Technical Departments that are relevant.

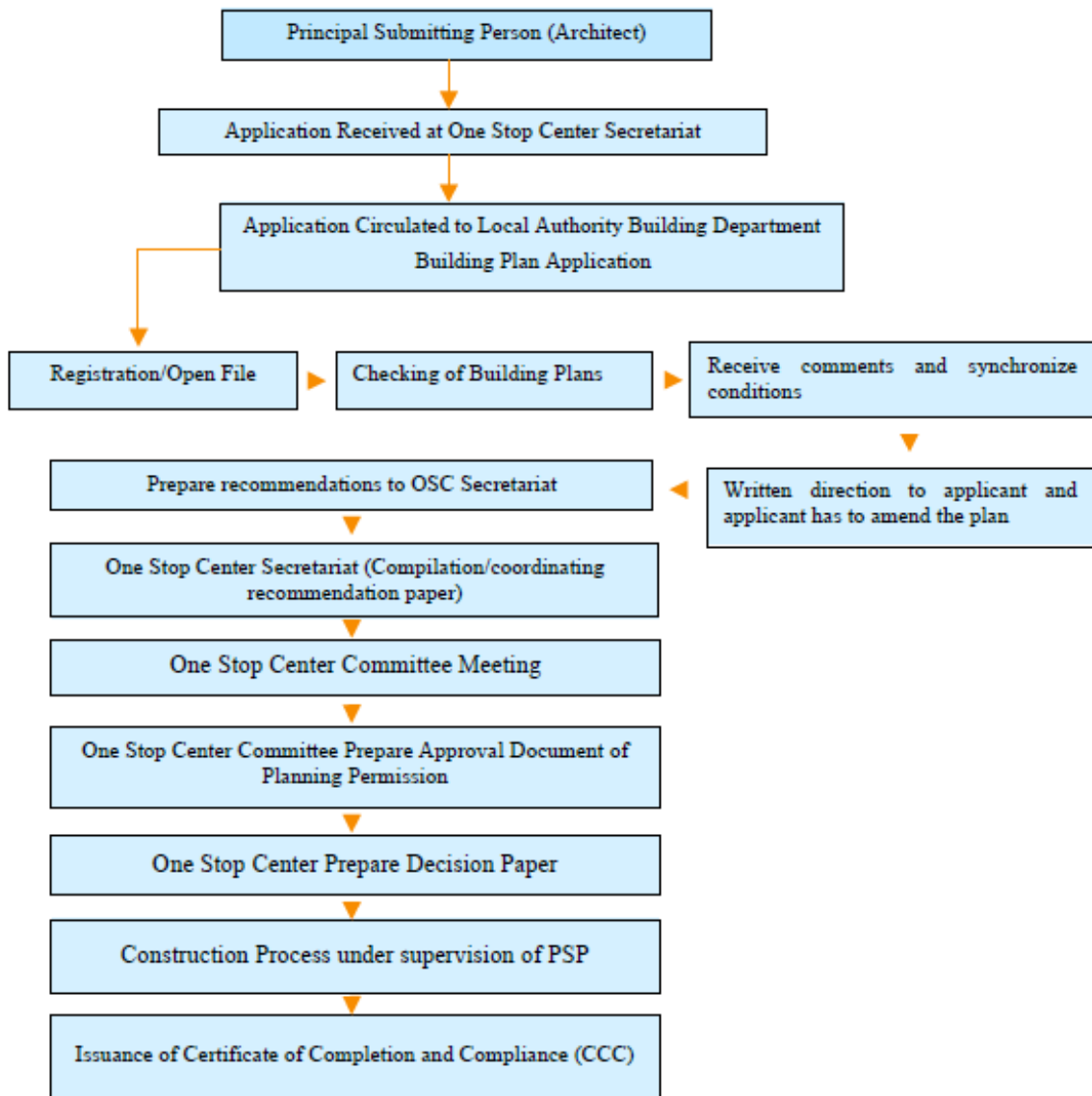


Figure 2.1: Building plan approval process in Malaysia.

Source: Ministry of Housing and Local Government Malaysia, 2008

In summary, the application received by the One Stop Center (OSC) is distributed to Building Departments of the Local Authority. The departments vet the applications and give their recommendations to the OSC secretariat. A site visit is scheduled to study the site's characteristics to ensure that the requirements are met or may be met. The recommendations are deliberated during the OSC Committee Meeting and decision on approval or rejection is arrived at. Approval Decisions from the OSC meeting are released to the applicant with or without conditions (NCA, 2019)

The e-Development Permit System in Nairobi City County allows not only the Architect but also the structural engineer and the planners to register and make applications. The OSS in Malaysia takes a maximum of 40 days to process the applications while in the Nairobi e development permit system takes 430 days against estimated 169 days from institution charters (Wamuyu, 2017). There is no clear structure of the e development system as compared to the one stop center in Malaysia as shown in fig 2.2 above.

## **2.5 One stop shop Centre in Singapore**

According to the Singapore Building and Construction Authority (BCA), a one-stop online portal called Construction and Real Estate Network (CORENET), <http://www.corenet.gov.sg>, was created to allow industry professionals to submit project-related electronic plans and documents for approval to various regulatory authorities. This CORENET site offers a One Stop Shop for submitting plans to numerous authorizing agencies from anywhere, at any time, as well as online access to check submission status.

A person who wants to do construction work hires a Qualified Person (QP) to submit building and structural plans to the Building and Construction Authority (BCA) for approval. QPs must get formal approval from the Urban Redevelopment Authority (URA), prepare building plans, communicate with relevant technical agencies, and include their requirements into the plans. After that, he or she will submit the blueprints with a fee, and the BCA will approve the plans within seven days if the building plans meet the building standards' requirements. The plans approval applications are submitted through Construction and Real Estate Network (CORENET) e-Submission System (BCA, 2010).

BCA (2010) further states that before beginning any construction, the QP, builder, and applicant must all submit a joint application to the BCA for a permit to begin work after receiving

structural plan approval and planning authorization. Following the start of construction, the QP must submit to the BCA a progress report on the building work at regular intervals.

Before occupying these buildings, the applicant must apply for a Certificate of Statutory Completion (CSC) or, at the very least, a Temporary Occupation Permit (TOP). The QP can use the CORENET e-submission to seek a date for a joint site inspection. This request must be made at least one month prior to the scheduled site visit. When all of the prerequisites have been met, an application for a CSC can be made directly. Building plan clearances from relevant technical agencies such as the Fire Safety & Shelter Department and the National Environment Agency will be among these requirements. Otherwise, a TOP application may be considered if the non-completion of the works is modest, not of a serious nature, and not in any way endangering the well-being or safety of the people who may inhabit the building (BCA, 2010).

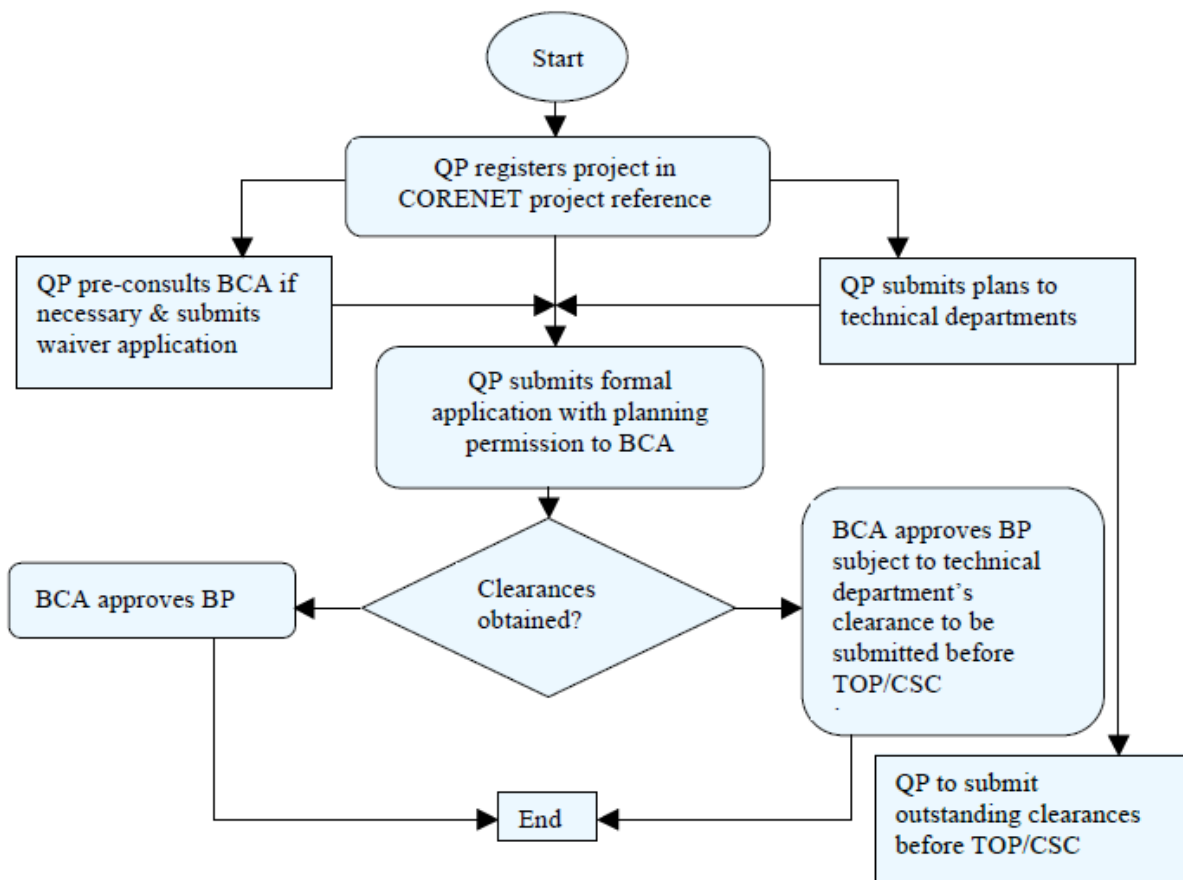


Figure 2.2: Building Plan Approval Process in Singapore

Source: BCA, 2010

The approval of plans via the CORENET system is conditional and not guaranteed, for example following the start of construction, the QP must submit to the BCA a progress report on the building work at regular intervals. This is not so with the Nairobi e- development system since the county government doesn't require any submissions during construction to guarantee the certificate of practical completion. The CORENET system is also very fast and efficient compared to other approval systems in the world in that it takes only 7 days to process the approvals.

## **2.6 Building Plan Approval in Kenya**

The construction industry is an important part of the economy of Kenya and is one of drivers of economic growth. It is part of the major pillars of Vision 2030 that seeks to increase the country's contribution to Gross Domestic Product by at least 10% and propel Kenya towards becoming Africa's industrial hub. In 2018, the industry contributed 5.4% of Gross Domestic Product (KNBS, 2018). According to Economic Survey, 2019, the sector employed 334,600 persons both in the public and private sector.

Kenya, like many other African developing countries, has long struggled with severe housing shortages and poor living conditions. Since independence, Kenya's government has worked to create houses through planned public housing programs in order to increase supply and reduce the deficit. As a result, until the 1980s, the housing deficit was kept below 60,000 units each year (Chirchir, 2006).

According to a report by the Architectural Association of Kenya (2020), the total number of approved plans between January and June 2020 was 1067 which represents an 11.72% increase compared to the 955 plans approve in H'2 OF 2019. The total amount collected was Ksh. 270,959,678 which was an 18.65% decline from 2019.

Table 2.2 Development application approvals (Nairobi City County)

| <b>Development Applications Approvals (Nairobi County Government)</b> |                              |  |
|---|------------------------------|--|
| <b>January - June 2020</b>  |                              |  |
| <b>DATE OF COMMITTEE MEETING</b>                                      | <b>NO. OF PLANS APPROVED</b> | <b>PERMITTING FEES COLLECTED (Kshs.)</b> |
| 30 <sup>TH</sup> JANUARY 2020   | 209                          | 52,322,637                               |
| 27 <sup>TH</sup> FEBRUARY 2020  | 242                          | 68,229,660                               |
| 11 <sup>TH</sup> MARCH 2020   | 159                          | 43,366,172                               |
| 24 <sup>TH</sup> MARCH 2020   | 104                          | 27,242,216                               |
| 9 <sup>TH</sup> APRIL 2020  | 149                          | 37,168,280                               |
| 23 <sup>RD</sup> APRIL 2020   | 204                          | 42,630,713                               |

Source: AAK, 2020

According to a recent survey performed by the Architectural Association of Kenya (AAK), while e-construction permit systems exist in Nairobi, Mombasa, Machakos, and Kisumu counties, users continue to experience a slew of issues, including frequent downtimes and delays in the processing of applications. In Kenya, obtaining building approvals takes 430 days, compared to a projected 169 days based on institution charters (Wamuyu, 2017). According to Kieti et al. (2020), there also exist many agencies involved in the approval and licensing of housing development proposals and this makes the process of approval lengthy, costly and complicated.

The bodies involved in approval include The Survey of Kenya, County governments, National Construction Authority (NCA) Kenya Power, Directorate of Occupational Safety and Health Services (DOSHS), Water Resource Management Authority, Kenya Port Authority amongst others. Figure 2.3 below shows the institutions involved at different stages of construction process. Some of the institutions in the Figure 2.3 are sometimes required to give approval for specialized building projects.

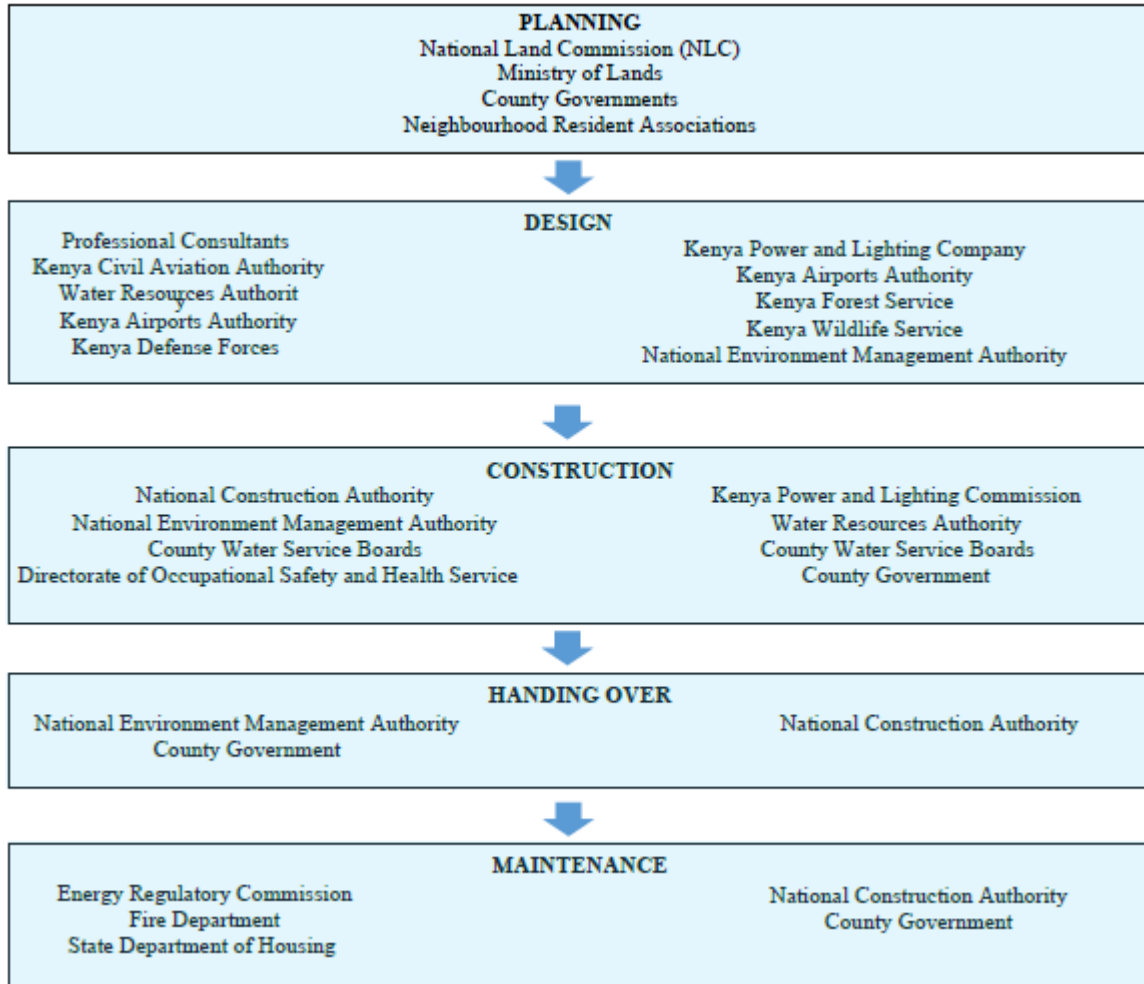


Fig 2.3: Institutions Involved at Different Stages of Construction in Kenya

Source NCA, 2019

### 2.6.1 Building Approval process in Kenya

One of the most important prerequisites for starting a construction project in Kenya is obtaining a permit from a county or sub-county authority. A certified and practicing physical planner applies for a planning permit on behalf of the developer to the county or sub-county authority, whereas a registered and practicing architect applies for a building permit on behalf of the developer to the county or sub-county authority (AAK 2020).

The developer provides some of the required documentation for the application's preparation and pays the required approval fees when the application is submitted. The authority receives the application, double-checks that it complies with the standards, and then distributes it to several

offices for examination and discussion. Following that, the county's development control department or division convenes a technical committee meeting to determine a final decision on the application, which is then communicated to the applicant. The authority can approve the application with or without conditions, deny it with reasons, or defer it (AAK 2020)

The approval process runs from the county government, National environment Management Authority (NEMA) and National Construction Authority (NCA) for registration (HPD Consult 2020). When the construction is complete, the developer applies for occupancy certificate. This application is forwarded to the enforcement department and the building inspector is assigned for final inspection of the construction. If satisfied that the building is in compliance with the approved drawings, he issues occupancy certificate subject to payment of requisite fee (NCA, 2018)

## **2.7 Challenges in implementation of one stop shop**

Organizational cooperation, legal concerns, technical infrastructure, integration on current procedures, funding, and political support are among the challenges to e-government identified by Tambouris et al. (2001). Technical, data, structural, and cultural hurdles, as well as skill and knowledge deficits, security, suspicion, privacy concerns, social exclusion, and the digital divide, are more detailed barriers.

Implementation of e-government and one-stop initiatives is often challenged by a broad range of barriers. Weerakkody et al (2011) categorize these barriers as political, social, technological and organizational, whereas Nkohkwo and Islam (2013) classify them as infrastructural, financial, socio-economic, political, organizational and human issues-related. The variety and complexity of e-government efforts, according to Alsheri & Drew (2010), suggests a wide range of obstacles and hurdles to their implementation and management. The challenges include social, technical, organizational and financial.

This study adopts a hybrid model from the studies above by combining the challenges and grouping them into four categories namely: technical, organizational, social and financial. This is as represented in table 2.3 below.

Table 2.3: Challenges in implementation of OSSs

| CATEGORY                  | BARRIERS  |
|---------------------------|---|
| Technical challenges      | -Poor ICT infrastructure<br>-Unprotected individual Privacy<br>-Poor security systems, threats and breaches   |
| Organizational Challenges | Lack of Top management support<br>Resistance to change in adoption of electronic ways<br>Lack of collaboration between government agencies<br>Lack of Qualified personnel to manage the OSS |
| Social Challenges         | Digital divide – Lack of internet access<br>Culture negatively affecting the implementation of OSS  |
| Financial Challenges      | High cost in the implementation and maintenance of OSS.   |

Source: Author (2021)

### 2.7.1 Technical challenges

The adoption of a OSS confronts some technological challenges, according to the OECD (2013), such as a lack of shared standards and suitable infrastructure throughout departments and agencies. Furthermore, in the eyes of citizens, privacy and security are major roadblocks to the deployment of a OSS. The government's assurance will be insufficient unless it is supplemented with technical solutions, procedural transparency, and possibly independent auditing.

#### 2.7.1.1 Technical infrastructure (Communication and technical issues)

IT support is required for One-Stop-Government. As a result, developing proper technology infrastructures is a must for one-stop government (Tambouris et.al, 2001). One of the primary



problems for e-government deployment, according to Ndou (2004), is the lack of weakness of ICT infrastructure. Internetworking is essential to enable appropriate information sharing and to open up new channels for communication and service delivery.

The majority of service seekers are unable to access the e-citizen platform due to the inaccessibility of ICT services due to a lack of financial resources and ICT capabilities (Onyango, 2017)

In Kenya, a OSS is more of an urban than a rural experience. This means that in instances where both ICT and urban infrastructures are generally well established, a OSS can be more successful (Onyango, 2017). Applicants in Nairobi County still experience challenges in e development system downtime and failure for example, When the contract between the Nairobi City County and the service provider – Jambo-Pay expired in May 2019, the Nairobi County system began to experience problems and eventually crashed (AAK, 2020). This is a key concern since it can also be evident with the OSS system.

#### ***2.7.1.2 Privacy***

Privacy is a critical concern in the deployment of e-government in both developed and developing countries, according to Basu (2004). The assurance of an appropriate level of protection for information ascribed to an individual is referred to as privacy. One Stop Shopping, according to Seifert and Bonham (2003), should be approached with an eye toward protecting individual privacy. When dealing with the privacy issue in the context of OSSs, both technical and policy remedies may be required. The challenge of maintaining individual privacy can be a significant impediment to the introduction of e-government.

Citizens' trust in the privacy of personal information exchanged with government organizations, according to Alsheri (2010), is critical for e-government applications. Furthermore, residents are also concerned about the privacy of their personal life and the confidentiality of personal information they provide in exchange for government services. Kenya has a data protection policy however the back stops at how best it is implemented to assure the public on the safety of their data since a OSS model holds huge amount of data

### ***2.7.1.3 Security***

Security refers to the safeguarding of all information and systems against unauthorized access, alterations, or destruction (Udo, 2001). According to Shama (2003), it is a critical component in the citizen-government trust relationship. The most significant impediment to the development of OSS may be security concerns. As a result, resolving these concerns requires security rules and standards that match citizen expectations.

The e development permit system has severally been hacked which has been a key concern by the applicants, especially on the safety of the data in the system , for example with key documents such as title deed of land which is one of the approval documents required. The OSS being a digital system is not exempted from such issues, hence security becomes a key challenge in the implementation of OSS.

### **2.7.2 Organizational challenges**

The deployment of e-government is more of an organizational issue than a technical one (Feng, 2003). Top management support, resistance to change to electronic methods, collaboration, and a lack of trained employees and training are some of the organizational hurdles.

#### ***2.7.2.1 Lack of Political support***

According to Tambouris et al. (2001), at least to some extent, challenges of organizational cooperation, infrastructure development, process integration, and funding rely on strong political leadership. According to Alsheri (2010), the successful adoption of e-government requires the backing of government leaders and senior management. The promise from leaders to embrace,

support, and adopt e-government technologies and applications is known as top management support. As a result, it is critical to the adoption and implementation of e-government.

McClure (2006) notes that leadership is one of the most important driving forces in any new and innovative project or endeavor, therefore OSSs require it. For a successful e-government deployment, high-level support is critical for OSS creation, obtaining essential resources and training, and cooperating and coordinating with partners and stakeholders.

Because Kenya's OSS model is mostly a result of regime change, it is based on political learning rather than organizational learning and internal bureaucratic processes. This means that, with a change of government, it is likely to face political will challenges, particularly if the model is not sufficiently institutionalized and absorbed by county governments. (Onyango, 2017)

#### ***2.7.2.2 Resistance to change to electronic ways***

According to Feng (2003), a One Stop Shop is a new phenomenon in the workplace that entails the transition from manual to electronic labor practices. These modifications will generate a new advanced environment that will be radically different from what has been employed in government agencies for many years.

Many employees, according to Realin (2004), regard the OSS implementation as a danger to their careers and fear losing their control. Employees must comprehend the importance and significance of OSS in order to reduce opposition to the system. In implementing the OSS, governments should ensure that they will not jeopardize the employees' jobs; nevertheless, employees can be allocated other positions through retraining and skill development.

Furthermore, it is critical that OSS leaders identify areas of opposition and devise a strategy for dealing with them.

#### ***2.7.2.3 Lack of organizational Cooperation***

Power structures and balances are influenced in every One-Stop-Government project. As case studies of One Stop Shops in Austria, France, Finland, and Germany indicate, agency heads will always be afraid of losing control over human, legal, and financial resources. The complexity of institutional contexts may explain the vexing challenges of accountability reforms, such as

bureaucratic corruption, which has plagued Kenyan government agencies since independence (Onyango, G. 2017).

It might be claimed that Kenya's pursuit of a OSS for efficient service delivery contains certain organizational discrepancies between the concept and accountability rules or acts in specific individual agencies or by bureaucrats (Brunsson 1993). As a result, there is an inherent gap between values and structures in Kenya when it comes to institutionalizing or implementing the OSS concept in terms of accountability (Onyango, 2017).

Onyango, (2017) further contends that, whereas OSSs might develop technical environments for service delivery, they can become politicized or caught up in political tugs-of-war, ostensibly causing the implementation process to fail. Similarly, bureaucratic oversight can only be sustained through changes in institutional contexts as well as the bureaucracy's instrumental-cultural components. Ndou (2004) stressed the importance of public-private collaboration in providing resources, strategies, skills, and experiences that the government might not otherwise have. All sectors should be encouraged to participate in the implementation and development of a One Stop Shop.

#### ***2.7.2.4 Lack of Qualified personnel to manage the OSS***

According to Shama (2003), the e-government system can be successfully deployed if qualified employees are available to initiate and develop the system. Focusing on training and education programs is crucial to the success of e-government projects Training becomes necessary as the rate of change accelerates and new technology, processes, and competitive models arise. The full economic benefits of ICT are contingent on a process of skill development and training, which is currently in its early stages for all countries (OECD, 2003)

In Kenya the OSS is not very common concept and it is likely to be opposed by some of professionals who do not understand how the system works. It being a new concept there are very few people skilled to develop the OSS model as well as managing it. This becomes a huge challenge which must be thought to ensure that the OSS is well implemented.

### **2.7.3 Social Challenges**

According to Alsheri (2010), social issues are primarily concerned with the usefulness of a wide range of people. This means that the interface must be usable by the users of the system. Many variables contribute to social barriers, including the digital divide, culture, education, and income as discussed below.

#### ***2.7.3.1 Digital divide***

The digital divide is the gap in opportunity between people who have access to the Internet and those who do not (Alsheri, 2010). Those without Internet connectivity will be unable to take use of OSS (OECD, 2003) As a result, the digital divide is defined as "the disparity between those who have access to computers and the internet and those who do not." As a result, not everyone has appropriate access to computers and the Internet, whether owing to a lack of funds, required skills, or internet connectivity.

According to Feng (2003), the absence of Internet access among the general public is the most significant impediment to the establishment of a One Stop Shop. Internet reliability is also a key aspect in this regard since the users of the OSS must be online to access these services. Most of the users in Nairobi have access to the internet except for some in the low income settlements, the main concern therefore remains to be the reliability of the internet within the different parts of the county.

#### ***2.7.3.2 Culture***

Culture is difficult to examine, according to Davison and Martinsons (2003), in part because it is a difficult notion to define. Individual behavioral patterns and cultural variables play a role in the acceptance and utilization of new technology (West 2001).

According to Swartz (2003), cultural factors have hampered the acceptance and deployment of OSS systems in several developed countries, such as the United Kingdom and Japan. However, because the cultural issue is not clearly tangible, additional planning is required to ensure that technical change is done successfully.

In Nairobi County, most of the people have embraced the digital culture. This has been proven with the e development permit system where most developers and applicants have embraced the system, however there still remains a number of applicants against the digital migration in provision of building approval services.

#### **2.7.4 Financial Challenges**

Funding is a critical issue for One-Stop-Government projects, as it is for all IT projects. This is especially true because they are projects involving multiple organizations. Because monies are appropriated for each agency and its tasks individually in typical budgets, this raises significant funding challenges. Projects involving multiple organizations "slip between the cracks" (Tambouris et.al, 2001)

Demand for resources and other infrastructures characterizes the OSS model, which may present both short- and long-term issues for governments seeking such changes. This entails securing cheap Internet connectivity as well as other urban-related facilities. (Onyango, 2017)

Onyango, (2017) also points out that the political-administrative corrupt cartels that are claimed to control the country's bureaucratic finance structures appear to be unaffected by the One Stop Shop's operations. Despite the adoption of a OSS, it was discovered that decision-making and management structures for service delivery had remained largely same.

According to Carvin et al. (2004), many countries face a financing issue when it comes to e-government initiatives due to the high cost of implementation and maintenance of computer systems, even when a government body has a plan for successful and accessible e-government. According to Feng (2003), a key impediment to e-government is a shortage of funding for capital investment in new technologies. Finally, the total cost of ownership, which includes the high cost of systems hardware and maintenance, software, training, and education, is always cited as a key impediment to agencies and governments adopting new technology.

## **2.8 Interventions to the Challenges in implementation of OSS**

According to Tambouris et al. (2001) creating appropriate technology infrastructures is a requirement for one-stop-government. It is necessary to identify institutional and ICT capacity gaps and provide recommendations for technology and staffing improvements required to operationalize and sustain full functional OSS.

A complete privacy policy, according to Teeter & Hart (2003), should specify citizens' rights to privacy and require that personal data be gathered and handled only for lawful purposes. The gathering and handling of huge amounts of citizen data, including as names, addresses, phone numbers, work histories, medical records, and property records, is at the heart of most e-government operations. It's crucial to keep in mind that different countries have varied legal and cultural definitions of privacy.

Smith (2002) underlined that OSS applications can benefit from the adoption of security solutions such as digital signatures, encryption, user names, passwords, customer unique numbers, bank account numbers, and others that are transferred over the Internet and stored electronically. According to Feng (2003), a group of security professionals should be established to respond to threats and breaches. The necessity for authority as well as an infrastructure encryption system must be prioritized.

According to Alsheri (2010), the successful adoption of OSS requires the backing of government leaders and senior management. The promise from leaders to embrace, support, and adopt e-government technologies and applications is known as top management support. Any government should be willing to fund the process of the implementation of the OSS and enhance advocacy by considering the OSS in their development agenda.

Internetworking, according to Ndou (2004), is essential to enable appropriate information sharing and to open up new channels for communication and delivery of new services. Ndou (2004) further stressed the importance of collaboration between the public and private sectors in providing resources, strategies, skills, and experiences that the government might not have otherwise. All sectors should be encouraged to participate in the implementation and development of the OSS.

According to Shama (2003), any e-government system can be successfully deployed if qualified employees are available to initiate and develop the system. Improving staff training programs for the institutions involved in approval, as well as users, on the importance of a One Stop Shop is therefore encouraged. Those involved in developing the OSS as well as the managers should be well trained to ensure the OSS model is successfully implemented.

Wamuyu (2017) recommend the harmonization of laws in the built environment to avoid multiplicity of functions among various institutions. This is a key step towards the implementation of the OSS model since it will be easier to institutionalize these laws under one agency hence making it easier to implement the OSS.

As of 2016, 90 countries (or roughly 47 percent) of the 193 members of the United Nations had implemented One Stop Shops, including more than 50 developing countries (United Nations, 2016). This gives a good opportunity to any jurisdiction considering to implement OSS to benchmark from countries who have successfully implemented the OSS model.

## **2.9 Research gaps**

Similar studies carried out in Kenya includes a study by NCA (2019) which examined the best practice of construction in Developed countries in comparison with Kenya. This study proposed OSS as the solution to the challenges in the building approval process, however (NCA 2019) didn't focus in depth on the model and its challenges in implementation in Kenya as it has been done in this study

Wamuyu (2017) examined the building approval processes on construction project delivery with respect to Time and Cost. This study also recommended establishment of a OSS to reduce the time required for these approvals. However, Wamuyu, (2017) didn't go in depth to evaluate the one stop model and how best it can be implemented in Kenya. This research gap has been addressed in this study



## 2.10 Conceptual Framework

The interrelationships of the variables of the study is displayed in the conceptual framework in Figure 2.10 below.

### Independent Variables

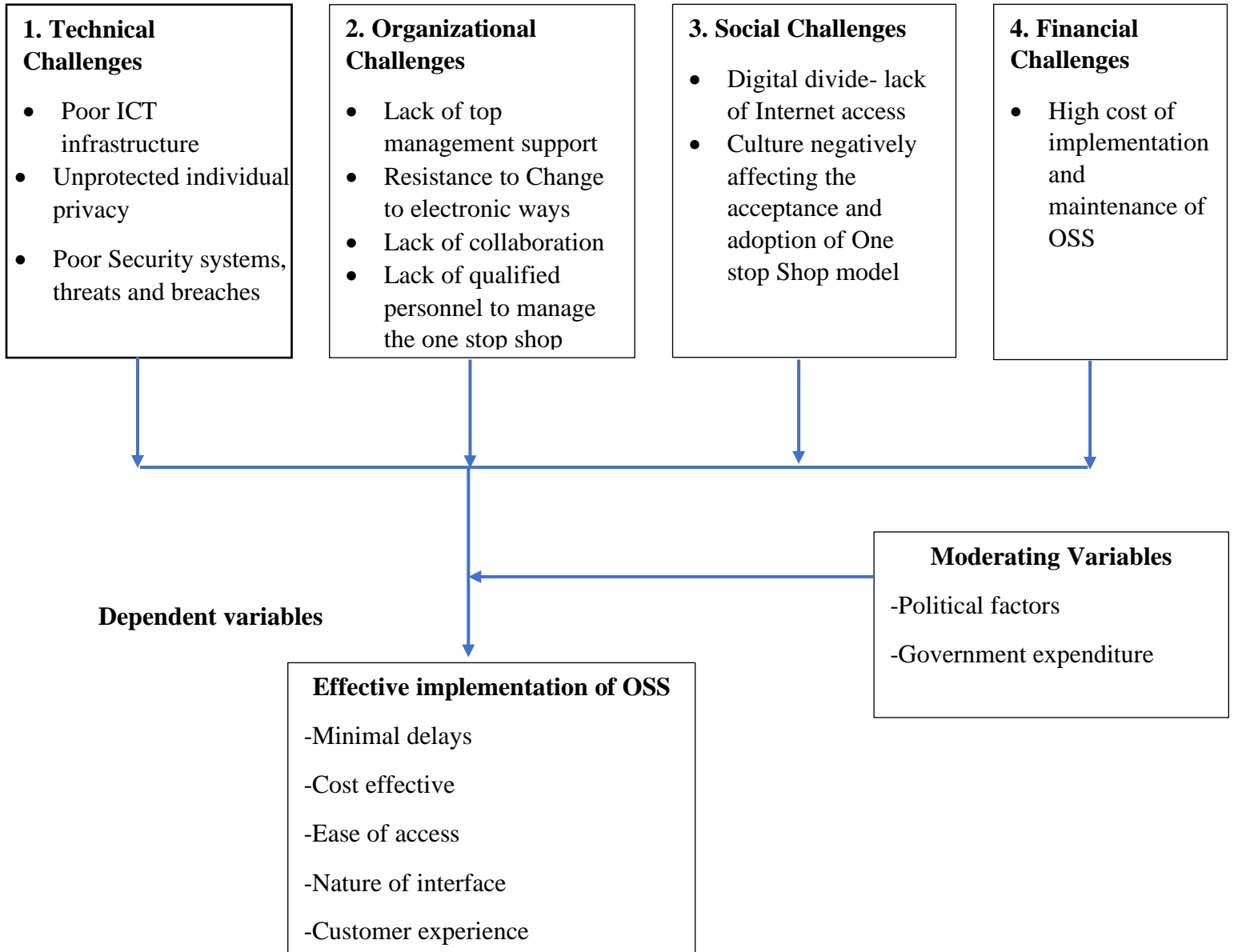


Fig 2.4: Conceptual Framework

Source: Author, 2021

## **2.11 Summary of Literature**

In summary the OSS model is a key solution to the challenges in the building approval process. When successfully implemented it ensures that the approval process is fast, less expensive and generates few errors in the process. Most of the developed countries have implemented the OSS model to achieve success including the United Kingdom, Malaysia, Canada, Singapore, and Rwanda amongst others that were discussed in this chapter. Kenya has a lot to learn from these countries to ensure the OSS model is implemented successfully.

Technical hurdles, such as ICT infrastructure, privacy, and security issues, face the implementation of the OSS. Organizational challenges include a lack of top-level support, a reluctance to move to electronic methods, a lack of collaborations, and a shortage of trained staff to manage the OSS. There are also face social difficulties such as the digital divide and cultural differences. Finally, there are financial concerns that have been identified as a substantial impediment to the implementation of the OSS model.

The following are some of the strategies to mitigate the challenges in the implementation of OSS: Improving ICT infrastructure, adopting comprehensive privacy and security policies, enhancing government support, enhancing collaborations between governments agencies involved in approval process, developing and embracing technology by OSS developers, improving training programs, harmonization of laws in the built environment, and benchmarking from countries which have successfully implemented the OSS model.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter presents the research techniques and methods used to conduct the study. The research design, target population, sample size and sampling procedures, methods of data collection, data collection instruments and data analysis and presentation are discussed. The units of analysis, units of observation, ethical issues, questionnaire, reliability and validity of the methods are also discussed.

The study aimed to mitigate the challenges in the implementation of the OSS model in the approval of construction projects in Kenya.

#### 3.2 Research Design

A research design is a framework for determining the relationship between the variables in a study (Kothari, 2012). The researcher used a descriptive research strategy in this study because it allowed the variables to be evaluated in their natural state without being manipulated in any way (Sekara & Bougie, 2011). Descriptive research aims to produce new ideas, hypotheses, and insights while also reviewing previous research. According to Wren, Steven, and Loudon (2002), in order to fully and objectively answer the research questions, a literature review technique and personal interviews should be used.

This study administered 91 structured questionnaires to registered Architects, Physical Planners and structural engineers coupled with literature review to achieve the set objectives. The study also recorded three interview sessions collectively with experts from the State Department of Housing and Urban Development, Nairobi Metropolitan Services and Architectural Association of Kenya.

#### 3.3 Target Population

Polit and Hungler (1999) define the population as the entirety or aggregate of all things, subjects, or individuals that meet a set of criteria. In this study the population are the Architects, Structural engineers and Physical planners within Nairobi City County who are the users of the e-Development System of Approval. The study also focused on the key agencies actively involved

in the building approval process which include the State Department of Housing and Urban Development, Nairobi Metropolitan Services and Architectural Association of Kenya.

The target population for this study are the architects, structural engineers and physical planners in Kenya who are the users of the e-Development Permit System. The study population also includes the State Department of Housing and Urban Development, Architectural Association of Kenya and Nairobi metropolitan Service.

As at September 15, 2021 the Board of Registration of Architects and Quantity Surveyors (BORAQs) recorded that there were 781 registered Architects in Kenya. The Engineers board of Kenya (EBK) noted that there were 1216 registered structural engineers in Kenya. According to Kenya Gazette Notice No.2719 released on March, 19 2021 the Registrar of the Physical Planners Registration Board notified the public that there were 294 registered physical planners in Kenya as per the register. This is as summarized in Table 3.1 below.

***Table 3.1 Registered Architects, Structural Engineers and Physical planners in Kenya***

| Category                        | Number      |
|---------------------------------|-------------|
| Registered Architects           | 781         |
| Registered Structural Engineers | 1216        |
| Registered Physical Planners    | 294         |
| <b>Total</b>                    | <b>2291</b> |

Source, GOK 2021

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

A sample is a subset of a population. It is a proportion of the total population that has been chosen to take part in the research effort (Polit & Hungler, 1999). They also mentioned that a sample size refers to the total number of observations in a study.

The sampling plan used in the study was guided by the fact that the number of elements sampled from each stratum was not proportional to their representation in the total population. This disproportionate representation in the total population prompted the use of disproportionate stratified sampling as the preferred method of sampling.

To maximize precision, the researcher used a stratified sample, with three strata consisting of Architects, Structural engineers and Physical planners. The researcher adopted the Nachmias and Nachmias formula, (2014) in determining the sample size from the population of 2,291, while assuming 95% confidence level;

$$n = \frac{(z^2)(p^*q) N}{e^2(N-1) + (z^2)(p^*q)}$$

where;

n= sample size

z= standard deviation at 95% confidence level (in this case 1.96 worked from tables showing areas under normal curve)

p= % of target population assumed to have similar characteristics (taken as 95% for this study)

q= 1-p

N= population size

e= margin of error at 95% confidence level (1-0.95=0.05)

Therefore, the sample size, n, is;

$$n = \frac{(1.96^2)(0.95)(0.05)(2291)}{(0.05^2)(2290) + (1.96^2)(0.95)(0.05)} = \frac{418.053}{5.91} = 70 \text{ respondents}$$

According to Kloffstad, (2005) nonresponse errors occur when those who complete the interview are consistently different from those who were unable to be contacted or who choose not to participate. To correct this error the sample size was multiplied by 130% (Israel, 2012), to make the sample size 91

From this sample size, sample sizes for each stratum were determined by the following formula;

$$n_r = \left(\frac{N_r}{N}\right) n$$

Where  $n_r$  is the sample size for the stratum r;  $N_r$  is the population size for stratum r; N is the total population size for e-Development Permit System users in Nairobi City County and n is the total

sample size for e-Development Permit System users in Nairobi City County. The results are tabulated in table 3.2 below;

**Table 3.2 Disproportionate stratified random samples of respondents**

| Stratum              | Population size (frequency) | Sample size | Percentage  |
|----------------------|-----------------------------|-------------|-------------|
| Architects           | 781                         | 31          | 34.1%       |
| Structural engineers | 1216                        | 48          | 52.7%       |
| Physical planners    | 294                         | 12          | 13.2%       |
| <b>TOTAL</b>         | <b>2846</b>                 | <b>91</b>   | <b>100%</b> |

**Source:** GOK, 2021

Each of the individual respondents and firms of the architects, structural engineers and physical planners constituted the unit of analysis, which was also the unit of observation. The study also includes the State Department of Housing and Urban Development (SDHUD), Architectural Association of Kenya (AAK) and the Nairobi Metropolitan Services (NMS) who are stakeholders in the e-Development Permit System

### **3.5 Data Collection Method**

Polit and Hungler (1999) define data as information gathered throughout the course of a study. In this study the primary data was collected using self-administered questionnaires, supplemented by interviews and observation.

The researcher administered the questionnaire as both soft copy and hard copy depending on the availability of the respondents. The researcher met the respondents who were available physically, introduced them to the study, assured them of the confidentiality of the information given and gave them humble time to fill and the same was collected after one week. The soft copies were shared via email or as a google sheet and the response was received in a weeks' time.

The secondary data was derived from published materials such as theses, dissertation, peer-reviewed journals and tertiary level textbooks with content materials related to the study

### **3.5.1 Data Collection Instruments**

The general questionnaire to Architects, Structural engineers and Physical planners as attached in appendix (1) was outlined as follows: general information from the respondents regarding their years of experience, the number of projects they are involved in and average annual expenditure; their experience in the approvals they have engaged; the challenges they have faced in acquiring the approvals using the e-Development Permit System, the challenges behind the implementation of the OSS model and the interventions that can be employed to ensure successful implementation of the OSS model.

Three different structured interviews schedules were also prepared and conducted for the policy makers namely: The state Department of Housing and Urban Development, The Nairobi Metropolitan Service and The Architectural Association of Kenya.

The Interview to the State Department of Housing and Urban Development and Architectural Association of Kenya sought to establish the effectiveness of the e-Development Permit System, its challenges and possible measures to address these challenges. It also sought to establish the progress the government has made towards implementing the OSS model, the challenges in the process and the necessary interventions to fast track the process.

The Interview schedule to the Nairobi Metropolitan Service was aimed at establishing the number of developments approved in 2020, whether all the approvals are done through the e-Development System and also to check their capacity with regard to the approval process in Nairobi County. The challenges facing the e-Development Permit System and the possible measures to address these challenges were also sought. The researcher also aimed at establishing their view on the OSS model, the challenges behind its implementation and the possible strategies to address these challenges.

### **3.6 Validity and Reliability**

The validity and reliability of the questionnaire was determined to ensure that the instrument delivered credible data. The degree to which items in the questionnaire measure what they claim

to (validity) was determined using the inputs of five peer experts and research supervisors. The researcher also conducted a pilot study to test the validity of the research questionnaire.

The degree to which the questionnaire can produce the same results after repeat trials under the same condition (reliability) was determined using an internal consistency test (Kothari, 2012). The test utilized the Cronbach alpha coefficient with a minimum threshold of 0.7. Therefore, items from the Cronbach alpha above 0.7 were deemed reliable.

### **3.7 Data Analysis and Presentation**

Data analysis, according to Gliner et al. (2000), is the act of giving meaning to the data obtained in order to answer research questions and achieve the study's goal. According to Connaway & Powel (2010), data analysis entails cleaning, organizing, recognizing patterns, interpreting the results, and deciding what to publish in order to meet the research goals.

Data was first scrutinized to determine whether it was consistent. This was done during a process of cleaning and editing the data. The Data collected was analyzed both qualitatively using MS Excel, SPSS computer software and results presented as charts, percentages and frequencies.

### **3.8 Ethical Issues**

According to Mugenda et al. (2003), ethical considerations such as secrecy, anonymity, and the sample population's free agreement are crucial in research. During and after the study, the researcher ensured that all participants were treated with the utmost privacy and discretion to guarantee anonymity and utmost confidentiality in the study.



### 3.9 Matrix of data needs, sources and analysis technique

*Table 3.3 Data needs, Sources and analysis technique*

| Investigative Questions  | Data needs  | Data Sources   | Analysis Technique        |
|--|---|--|---------------------------|
| 1. What is the best practice in implementation of the OSS model in the construction industry?  | Requirements in implementing OSS<br>Best practice of OSS      | Secondary data   | Bar graphs<br>Percentages |
| 2. What are the challenges in the implementation of the OSS model in the approval of construction projects?  | challenges in the implementation of the OSS model             | Secondary data   | Bar graphs<br>Percentages |
| 3. What are the challenges facing the e-Development Permit System used in approval of construction projects in Nairobi County?                           | challenges facing the e-Development Permit System             | Primary data<br>Interviews with institutional stakeholders   | Bar graphs<br>Percentages |
| 4. What are the possible strategies to mitigate the challenges in the implementation of the OSS model in the approval of construction projects in Kenya? | Suggested interventions from Literature<br>Challenges Reviews | Secondary data<br>Interviews with institutional stakeholders | Bar graphs<br>Percentages |

Source: Author, 2021

## CHAPTER FOUR

### DATA ANALYSIS, FINDINGS AND DISCUSSION

#### 4.0 Introduction

This study aimed at mitigating the challenges in the implementation of the OSS model of approvals of construction projects in Kenya. This chapter contains a presentation of the findings from the field investigation, discussion of these findings, and analysis conducted to support the study objectives, as well as to validate or invalidate the study proposition. The challenges that were encountered during the field survey are also discussed in outline.

#### 4.1 Survey response rate

The willingness of people to respond to questionnaires determines the response rate. Rogelberg & Stanton (2007) noted that even if questionnaires are administered to the target population and incentives such as reminders used, a response rate of 100% is rarely achieved.

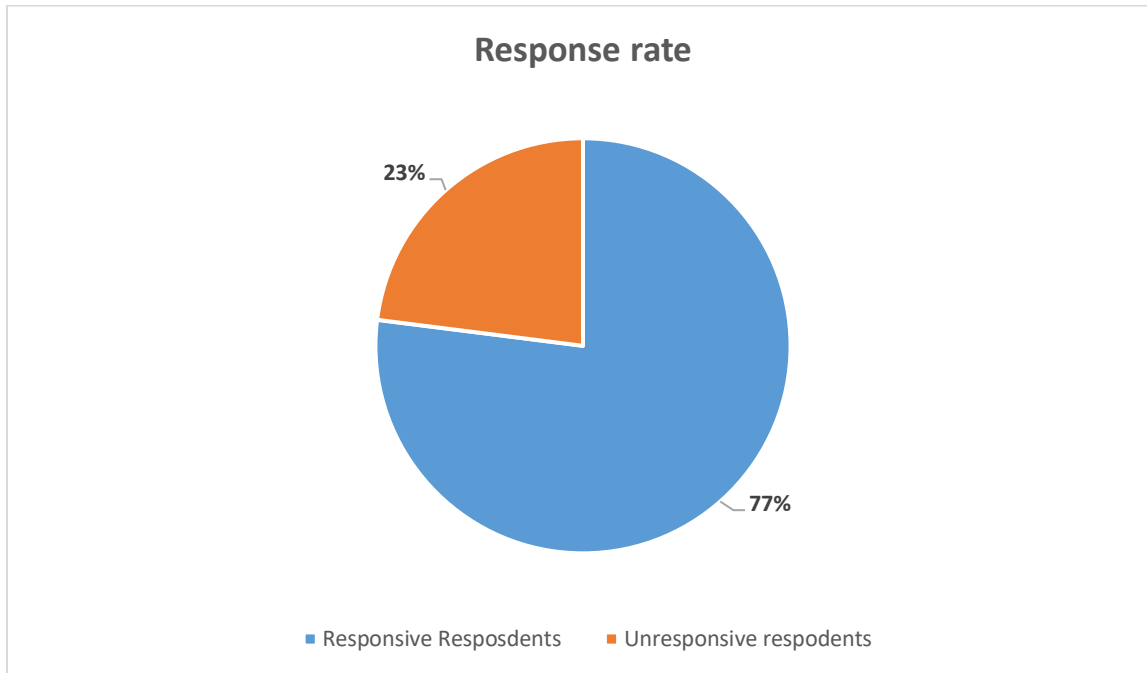
From the sampling frame in this study: 31 registered architects, 48 registered structural engineers and 12 registered physical planners within Nairobi City County were surveyed. The researcher also scheduled interview sessions with the experts from the Architectural Association of Kenya, The Nairobi Metropolitan Service, and The State Department of Housing and Urban Development. The researcher received 70 filled questionnaires from the respondents, giving a response rate of 77% and a non-response rate of 23 %. The response rate in this study is represented in the Table 4.1 below.

*Table 4.1: Survey response rate*

|             | Questionnaires issued | Questionnaires returned | Non response |
|-------------|-----------------------|-------------------------|--------------|
| Respondents | 91                    | 70                      | 21           |
| Percentage  | 100%                  | 77%                     | 23%          |

Source: Field Survey, 2021

The information in the table above can be represented as a pie chart as shown in figure 4.1



*Figure 4.1: Survey response rate*

Source: Field survey, 2021

A response rate of 70% is deemed appropriate for analyzing and reporting based on the representativeness of the population which is being studied (Mugenda and Mugenda, 2003). Babbie (2007) asserts that any rate of over 50% can be reported and a return rate of over 60% is good. A study by Baruch & Holtom (2008) aimed at assessing the long term trends in response rate to surveys used in management and behavioral science research pointed out a clear trend of decline in response rate through the years and noted an average rate of 50% by 2008.

The questionnaire response rate of 77 % for this study was very good, and therefore adequate in aiding the study to achieve the research objectives. The non-response by the 21 persons be because they were too busy to find time to complete the questionnaires. The survey was conducted for two months period from August to September 2021.

## 4.2 Bio data

The goal of this section was to gather demographic and general information from the respondents. The researcher sought to establish the professional background and the experience of the respondents with using the current building approval process in Nairobi City County.

### 4.2.1 Professional background

The respondents were in three groups based on their professional background (Architects, Structural Engineers and Physical Planners). The data on table 4.2.1 and figure 4.2.1 summarizes the professional background of the respondents.

*Table 4.2.1: Professional background*

| Professional background | Frequency | Percentage (%) | Cumulative percentage (%) |
|-------------------------|-----------|----------------|---------------------------|
| Architects              | 26        | 37             | 37                        |
| Structural engineers    | 36        | 52             | 89                        |
| Physical planners       | 8         | 11             | 100                       |
|                         | 70        | 100            |                           |

Source: Field Survey, 2021

The information on the table above can be represented as a pie chart as shown in figure 4.2.1

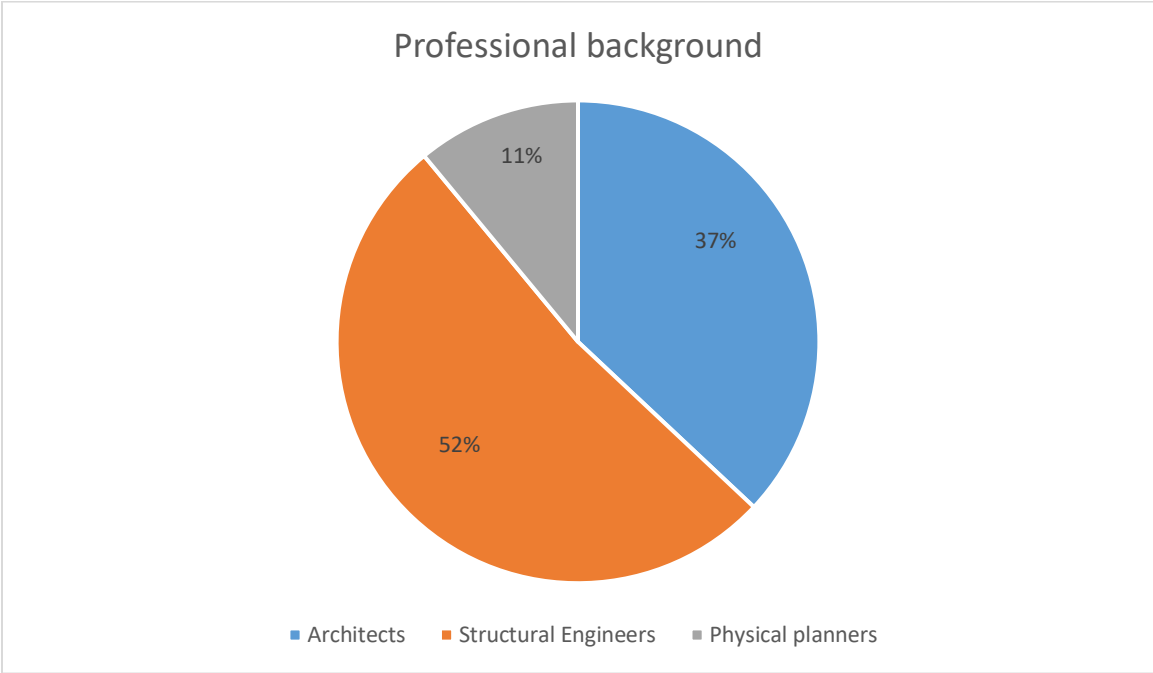


Figure 4.2.1: Professional background

Source: Field Survey, 2021

Majority of the respondents were Structural engineers, with 57 %, while the architects came second with 37% and the physical planners were the least with 11 %. The structural engineers were majority since the population sample comprised a higher number of structural engineers of 48 while registered architect sample was 31 and lastly the registered physical planners who were 12.

**4.2.2 Age of firm**

The age of the firm was grouped into 5 years up to twenty years. The data on table 4.2.2 and figure 4.2.2 summarizes the age of the respondent firms.

Table 4.2.2: Age of Firms

| Working Experience | Frequency | Percentage (%) | Cumulative percentage (%) |
|--------------------|-----------|----------------|---------------------------|
| 1 – 5 Years        | 38        | 54.3           | 54.3                      |
| 6 – 10 Years       | 23        | 32.9           | 87.2                      |
| 11 – 15 Years      | 5         | 7.1            | 94.3                      |
| 16 – 20 Years      | 1         | 1.4            | 95.7                      |
| Over 20 Years      | 3         | 4.3            | 100                       |
| Total              | 70        | 100            |                           |

Source: Field Survey, 2021

The information on the table above can be represented as a pie chart as shown in figure 4.2.2

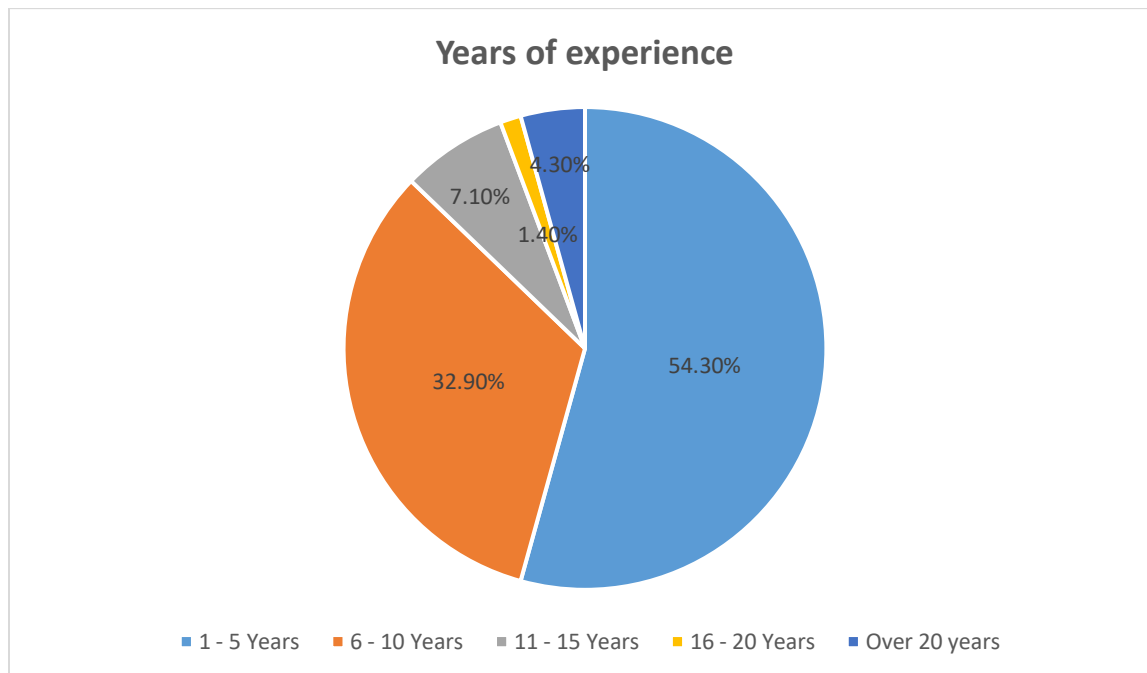


Figure 4.2.2: Age of firms

Source: Field survey, 2021

Majority of the firms, 54.3% had 1 to 5 years of experience. This indicates that there is a growing number of new firms in the construction industry.

The other firms were: 6 to 10 years at 32.9%, 11 to 15 years at 7.1%, 16 to 20 years at 1.4% while those over 20 years at 4.3%. These firms 45.7% of these firms were in operations for some time in the industry and gained sufficient experience with the approval system in Nairobi City County even after the change of regime from the Nairobi City County to the Nairobi Metropolitan Services.

#### **4.2.3 Number of projects currently being undertaken in Nairobi City County**

The aim of this section was to establish the active involvement of the respondents in the acquisition of the construction approvals by establishing the number of projects they are undertaking in Nairobi City County. The data in the Table 4.2.3 below summarizes the number of projects undertaken by the respondents.

*Table 4.2.3: Number of Projects undertaken*

| <b>Number of projects</b> | <b>Frequency</b> | <b>Percentage (%)</b> | <b>Cumulative percentage (%)</b> |
|---------------------------|------------------|-----------------------|----------------------------------|
| 1 – 5 Projects            | 51               | 72.9                  | 72.9                             |
| 6 – 10 Projects           | 12               | 17.2                  | 90.1                             |
| 11 – 15 Projects          | 5                | 7.1                   | 97.2                             |
| 16 – 20 Projects          | 1                | 1.4                   | 98.6                             |
| Over 20 Projects          | 1                | 1.4                   | 100                              |
| <b>Total</b>              | <b>70</b>        | <b>100</b>            |                                  |

Source: Field Survey, 2021

The information on the Table 4.2.3 above can be represented as a bar chart as shown in figure 4.2.3

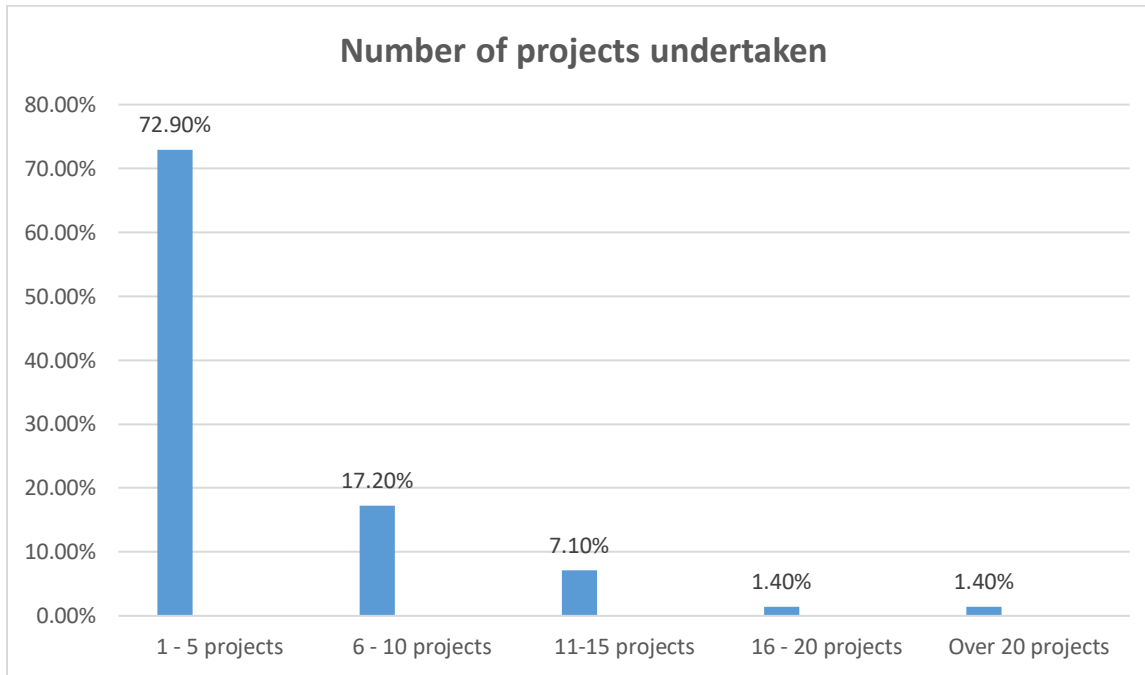


Figure 4.2.3: Number of projects currently undertaken

Source: Field survey, 2021

Majority of the respondents, 72.9 % had 1-5 projects. 17.2% had 6-10 projects, 7.1% had 11-15 %. 1.4% had 16-20 projects while 1.4% had over 20 projects. The engagement of these firms with projects/building works was sufficient for them to adequately respond to the issues in the questionnaires.

#### 4.2.4 Firm's average annual expenditure on developments

This section was intended to establish the respondent firm's annual expenditure so as to project the amount that goes into development as well as scale of the projects undertaken by the respondents. The data on table 4.2.4 and figure 4.2.4 summarizes the annual expenditure on developments of the respondent firms.



Table 4.2.4: Annual expenditure on developments

| Average expenditure  | Frequency | Percentage (%) | Cumulative percentage (%) |
|----------------------|-----------|----------------|---------------------------|
| Less than 10 million | 32        | 45.7           | 45.7                      |
| 11 – 20 million      | 18        | 25.7           | 71.4                      |
| 21 – 30 million      | 12        | 17.2           | 88.6                      |
| 31 – 40 million      | 6         | 8.6            | 97.2                      |
| 41 – 50 million      | 1         | 1.4            | 98.6                      |
| Over 50 million      | 1         | 1.4            | 100                       |
| Total                | 70        | 100            |                           |

Source: Field Survey, 2021

The information on the table above can be represented as a bar chart as shown in figure 4.2.4

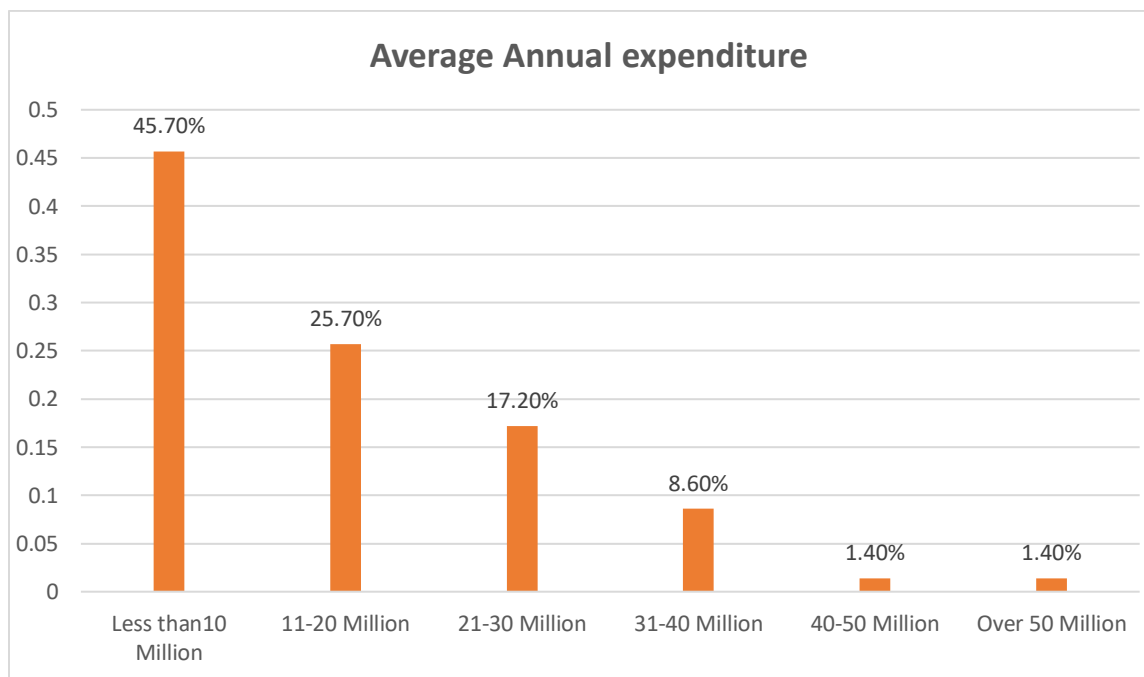


Figure 4.2.4: Annual expenditure on developments

Source: Field Survey, 2021

45.7% of the respondent firm had an expenditure less than 10 million Kenya shillings. This corresponds with data on table 4.2.3 where majority of the firms had 1-5 projects. 25.7% spend 11-20 millions, 17.2% spend 21-30 million, 8.6% spend 31-40 million, 1.4% spend 40-50million and 1.4% spend over 50 million. This showed the firms' commitment on developments for different values of projects and thus the respondents had different experiences on approval of projects of different values via the e-Development Permit System.

### 4.3 E –Development Permit System

This section was to examine the compliance with the respondents to the approval requirements, the effectiveness of the e-Development Permit System used in Nairobi City County in terms of time and cost as well as the challenges in the e-Development Permit System and the measures to address these challenges.

#### 4.3.1 Acquisition of building approvals

The objective of this section was to establish whether the respondents had acquired the required approvals while carrying out their developments. The results are as shown in figure 4.3.1 below

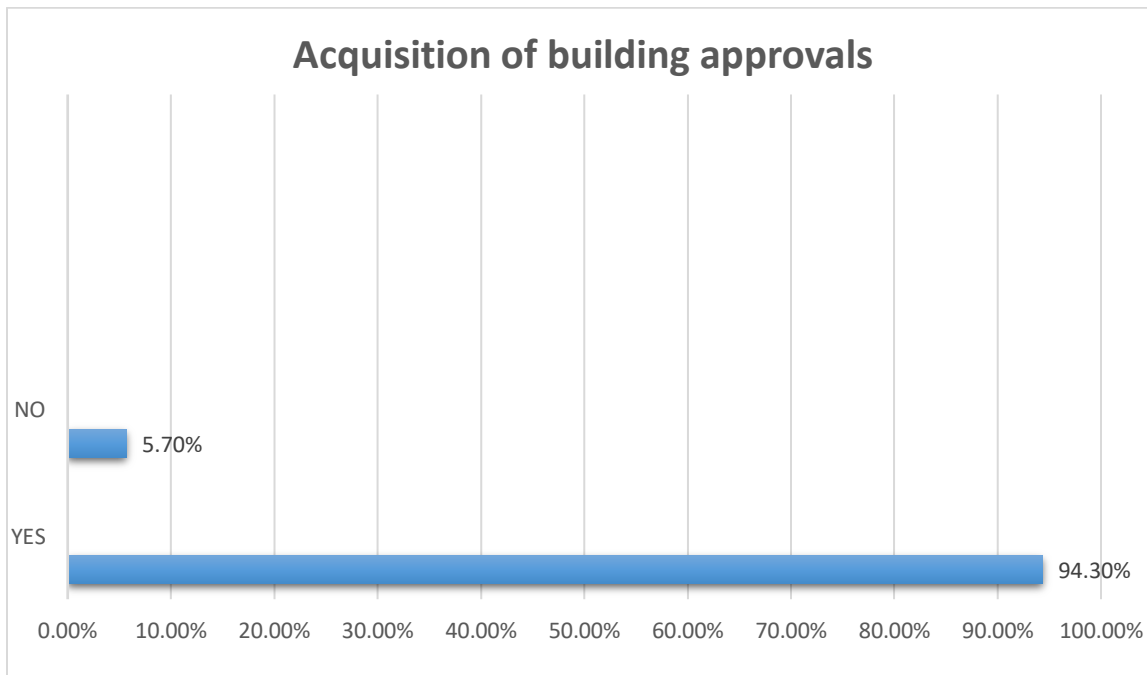


Figure 4.3.1: Acquisition of building approvals

Source: Field Survey, 2021

Majority, 94.3% obtained the necessary construction approvals while 5.7% didn't obtain the approvals. This therefore suggests that respondents had the necessary experience in dealing with the e-Development Permit System in approval of construction projects.

#### 4.3.2 Average time in acquiring the construction approval

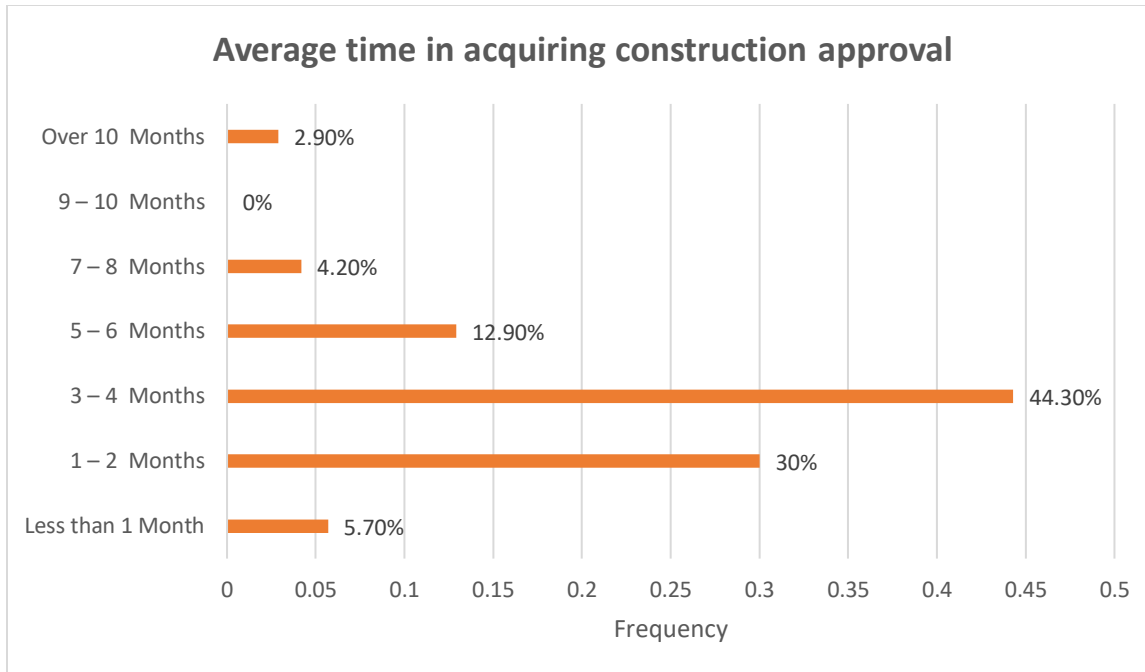
The respondents were required to indicate the time taken to acquire the construction approvals via the e- Development System in Nairobi City County. Table 4.3.2 below summarizes the time taken by the respondents.

*Table 4.3.2: Average time in acquiring construction approval*

| Average time      | Frequency | Percentage (%) | Cumulative percentage (%) |
|-------------------|-----------|----------------|---------------------------|
| Less than 1 Month | 4         | 5.7            | 5.7                       |
| 1 – 2 Months      | 21        | 30             | 35.7                      |
| 3 – 4 Months      | 31        | 44.3           | 80.0                      |
| 5 – 6 Months      | 9         | 12.9           | 92.9                      |
| 7 – 8 Months      | 3         | 4.2            | 97.1                      |
| 9 – 10 Months     | 0         | 0              | 97.1                      |
| Over 10 Months    | 2         | 2.9            | 100                       |
| Total             | 70        | 100            |                           |

Source: Field Survey, 2021

The information on the table above can be represented as a bar chart as shown in figure 4.3.2



*Figure 4.3.2: Average time in acquiring construction approvals*

Source: Field Survey, 2021

Most of the respondents, 44.3% took 3 – 4 Months to acquire the necessary construction approvals. This shows that the e-Development Permit System has some potential to approve the construction projects faster with the challenges facing it being addressed. A OSS Model will therefore be one of the steps to ensure that building approvals are carried out faster. 30 % of the respondents took 1-2 Months, 12.9% took 5-6months, 5.7% took less than a month, 4.2% took 7-8months, and 2.9% took over 10 months. None of the respondents took 9-10 months. With some developments taking over 10 months to be approved shows how the system can be ineffective and inconsistent especially with the frequent downtimes experienced. This is a great lesson in the implementation of the OSS model since the developers should be keen to create a robust system that will offer consistent results with minimal downtimes. Regular system checks and maintenance are also key in enhancing the performance of the OSS system.

### **4.3.3 Average cost in acquiring construction approval**

This section aimed at establishing the cost incurred by the respondents in approval of their construction drawings using the e-Development Permit System in Nairobi City County. Table 4.3.3 below summarizes the respondent’s response of the cost of approval

Table 4.3.3: Average cost in acquiring Construction approvals

| Average Cost (Ksh)   | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------------------|-----------|----------------|---------------------------|
| Less than Ksh 10,000 | 1         | 1.4            | 1.4                       |
| Ksh 11,000 – 20,000  | 4         | 5.7            | 7.1                       |
| Ksh 21,000 – 30,000  | 8         | 11.4           | 18.5                      |
| Ksh 31,000 – 40,000  | 13        | 18.6           | 37.1                      |
| Ksh 41,000– 50,000   | 9         | 12.9           | 50.0                      |
| Ksh 51,000– 60,000   | 2         | 2.9            | 52.9                      |
| Over Ksh 60,000      | 33        | 47.1           | 100                       |
| <b>TOTAL</b>         | <b>70</b> | <b>100</b>     |                           |

Source: Field Survey, 2021

The information in the Table 4.3.3 above can be represented as a bar chart as shown in figure 4.3.3

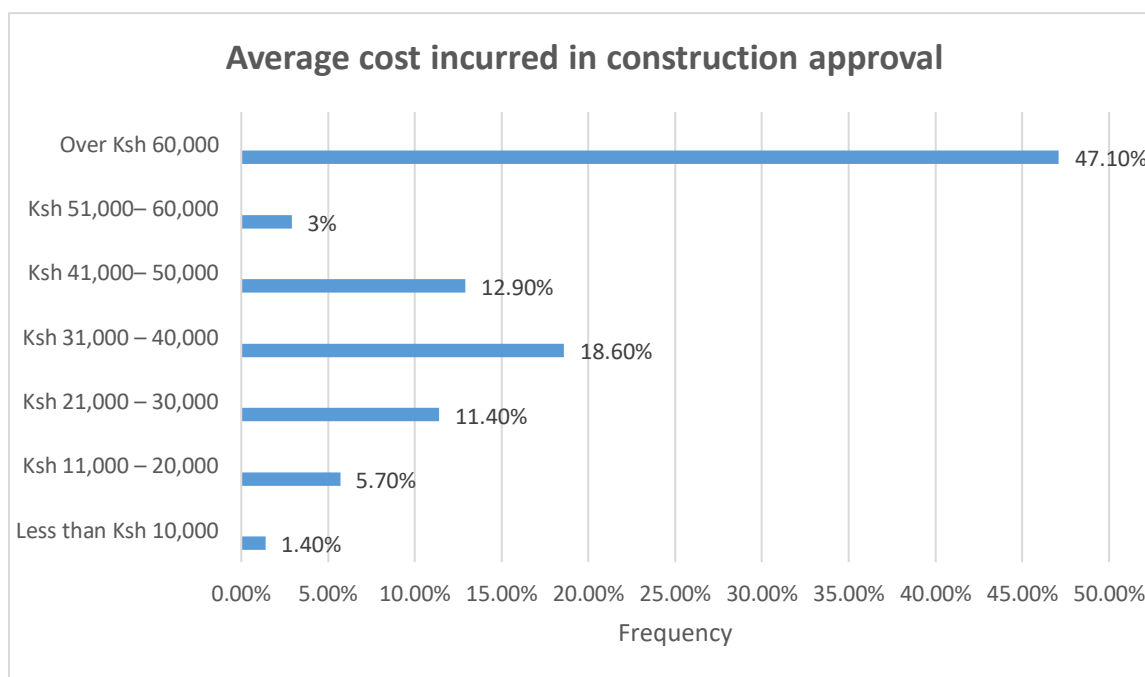


Figure 4.3.3: Average cost in acquiring building approval

Source: Field Survey, 2021

Most of the respondents, 47.1% incurred over ksh.60, 000 in acquiring the necessary construction approval. This is a clear indication that the approval process of construction projects via the e-Development Permit System is quite expensive and the approval authorities should be keen to address it. 18.6% of the respondents incurred Ksh 31,000 – 40, 0000, 11.4% incurred Ksh 31,000 – 40,000, 12.9% incurred Ksh 41,000 – 50,0000, 5.7% incurred Ksh 11,000 – 20,0000, 3% took Ksh 51,000-60,000 while 1.4% took less than 10,000.

#### 4.3.4 Rating of the e-Development permit system of approval

The aim of this section is to get the respondents’ opinions in rating the e-Development Permit System used in Nairobi City County. The results are as presented in bar chart as shown in the figure 4.3.4 below

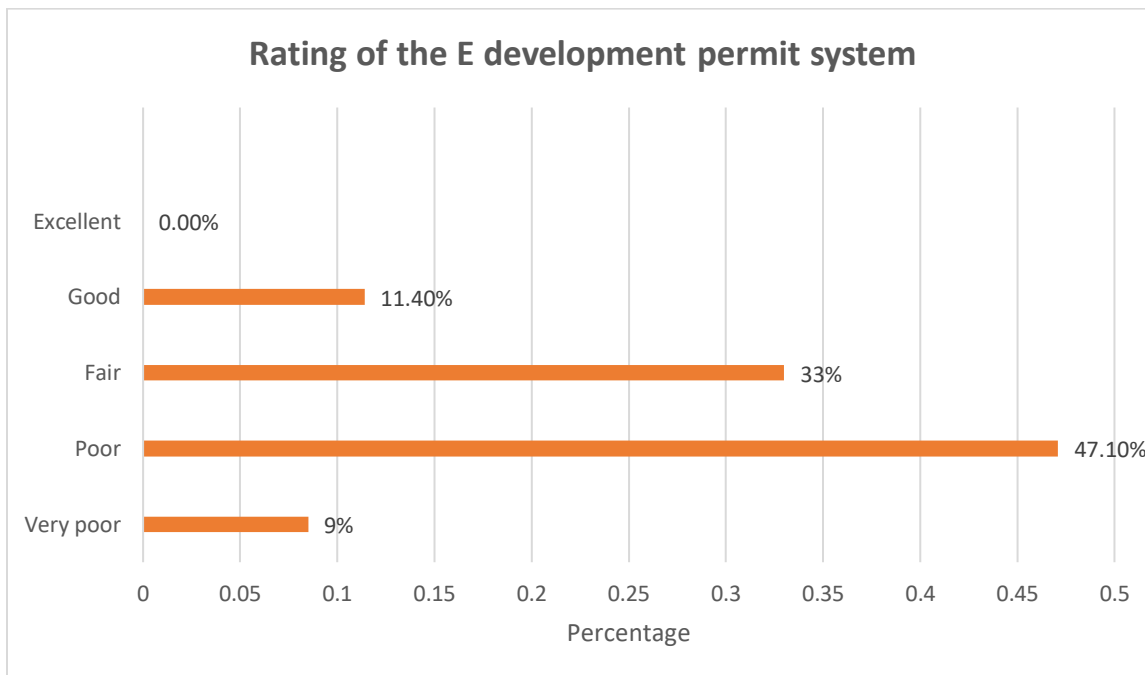


Figure 4.3.4: Rating of the e-Development Permit System of approval

Source: Field Survey, 2021

47.1% of the respondents noted that the e-Development Permit system is poor. This is mostly due to the challenges the respondents face while using the e-Development Permit system. Also, 33% noted that it was fair, 11.4% noted that it was good while 8.6% noted that it was very poor. None of the respondents voted the system to be excellent. These findings indicate that the current

system of building construction approvals is adequate and needs to be greatly improved or overhauled for better performance.

#### **4.3.5 Challenges experienced in the e-Development Permit System of Approval**

In this section the respondents were required to give the challenges that they had experienced in their interaction with the e-Development Permit System. The challenges are as listed below:

- a) Physical stamping that negates the effectiveness of the system as far as elimination of human interaction is concerned. This creates a repeat process since the Architect, planner or civil engineer has to return the blue prints for approval. This in turn makes the process lengthy.
- b) Change in administration from the Nairobi City County to the Nairobi Metropolitan Services has led to delays and confusion in the e Development Permit System. This is because it took time for the Nairobi Metropolitan Services to adapt to the existing system and resume the approval committee meetings.
- c) Regular system downtimes and shutdowns that results to delays making the system unreliable. This has also been associated with loss of information.
- d) Lack of adequate and qualified human resource capacities including physical planners, architects & engineers to review and approve the submitted applications.
- e) Lack of timely feedback due to delayed approval process.
- f) Lack of clear communication channel; a monologue type of communication. The consultants have to go by what the county officials suggest.
- g) Lack of information on the requirements for an approval; if you are not privy to the system, it becomes difficult to know the requirements for approval.
- h) Online submission challenges including internet failure.
- i) Difficulties in submission of documents in the prescribed format, hard follow up avenues, unavailable web page at times.
- j) Redundancy in that the system still requires manual approval by the officers in the back end of the system. The system still needs facilitation.
- k) Multiplicity of laws.
- l) Many agencies are involved and hence duplication of roles among the approval bodies making the process lengthy.

- m) The system is always under attack by cartels who bring it down and open back door approvals where you pay extra fee.
- n) No clear guidelines on the set of requirements needed during the approval process. This leads to subsequent delays since the approval may bounce back when some of the required documents in the approval process are missing.
- o) It is expensive to carry out approval via the system.
- p) Bureaucracy and the culture of kickbacks for fast tracking of approval still persists.

#### **4.3.6 Measures to address the challenges in the e-Development Permit System of approval**

This section aimed at establishing measures to address the challenges in the e-Development Permit System. The measures are as presented below:

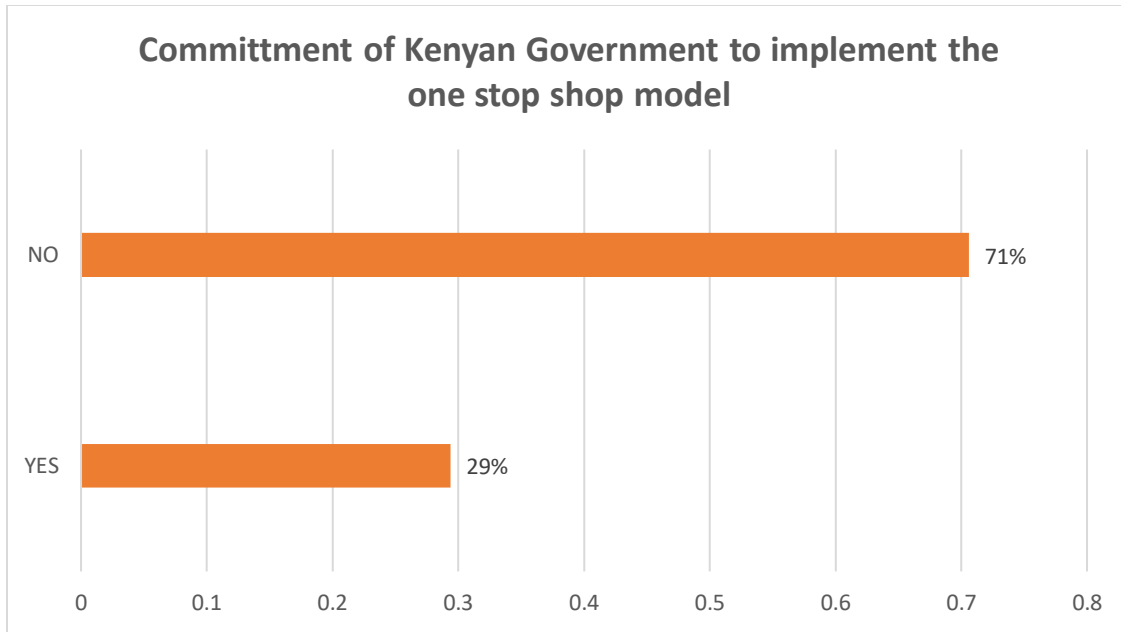
- a) Introduction of a QR code system to eliminate manual stamping of drawings and hence making the process faster and effective.
- b) The introduction of centralized One Stop Shop automated development control system for counties to plug into, that is a model similar to the IFMIS system.
- c) Increasing the human resource capacities of county governments to strengthen their development control capacities.
- d) Regular consultative meeting with various stakeholders.
- e) Train staff, developers and professionals on how to use the system for efficient results.
- f) Implement affordable approval charges.
- g) Making the system user-friendly would encourage its usage.
- h) Good will & integrity from political and governance leadership.
- i) Investment into systems, especially IT infrastructure, digitization & transparency.
- j) Make the channels that are to be followed clear and simple so as to make it easy for investors to make investments in the construction platform.
- k) Improved system real-time checks.
- l) Establish a proper communication platform.
- m) Regular maintenance and upgrading of the website to ensure that the issues are identified and addressed accordingly. This will reduce the number of system downtimes and failures.



- n) Provision of a dedicated team conversant with building services to tackle any arising issues in Real time.
- o) Harmonization of laws.
- p) Research and Development by the agencies involved led by the State Department of Housing and Urban Development to ensure that the system is improved at par with the international standards.
- q) They should have weekly vetting meetings to speed up the process.
- r) Integration of systems with lands and counties approval system.
- s) Implement Privileged Account Management (PAM) and Network Access Control (NAC) in those systems to enhance the security of the system.
- t) Coming up with a single office that is self-sufficient with all the approval competencies to cut on time and cost.
- u) Reduce the cost of approval.
- v) Establish a project approval database that will link the various government agencies, that is county government, NCA, NEMA amongst others.
- w) Improved customer service and timely feedback.

#### **4.4 One Stop Shop Model of Approval**

The One Stop Shop (OSS) model of approval of construction projects has been recommended by several researchers, professional organizations and in several conferences in Kenya. However it has not been implemented. The respondents were required to rate the commitment of the government of Kenya towards implementing the OSS model of approval of construction projects. From this, 71% of the respondents denied that the Kenyan government was committed to ensure the implementation of the OSS while the 29 % agreed that the government was already in the process of implementing the OSS system. This is as represented in figure 4.4 below.



*Figure 4.4: Commitment of Kenyan Government to implement OSS*

Source: Author, 2021

Those who agreed on the commitment of the government highlighted that having the e-Development Permit System in several county governments is one of the key steps in the move to implement the OSS. Some respondents also noted that the government has been under constant pressure from the professional associations and has also engaged in research to ensure the system is implemented. Some also acknowledged that the concept of digital approval of drawings was a key step despite the repetition in submission of blue prints.

Some of the respondents also noted that the implementation of the OSS is costly and therefore, it takes time and hence the government of Kenya has to allocate more resources to ensure that the process is achieved. The effort by the government of Kenya to successfully implement The National Land Information Management System (NLIMS) is a clear indication that the government is committed to digital migration and is able to implement the OSS model of approval in the same spirit.

Some agreed that initiatives from the central government have been made especially by documenting the OSS as a flagship project for achieving vision 2030, but implementation has been very slow. Others recommended that the government had to enhance its consultation and

collaboration with other governments which have already implemented the OSS model to ensure that they benchmark on the best procedure to follow in implementing the OSS model of building approval in Kenya

#### **4.5 Challenges behind the implementation of OSS Model of Approval**

This section was to examine the challenges in the implementation of the OSS model in approval of construction projects. The following parameters were used: **1** = Strongly Disagree, **2**=Disagree, **3**=Neutral, **4** = Agree and **5** = Strongly Agree. Due to the subjective nature of the data the following were used to analyze the main challenges in the implementation of OSS where measures **4** = Agree and **5** = Strongly Agree were added up. Similarly to analyze the least challenges in the implementation of OSS, measures **1** = Strongly Disagree and **2**=Disagree were added up. In the analysis, parameter 3-Neutral was excluded since it was interpreted as undecided responses. The data collected is as presented in table 4.5 below.

Table 4.5: Challenges in the implementation of OSS Model of Approval

| Challenges     | Category  | Least challenges | Response |    |    |    |    | Main challenges |
|----------------|---|------------------|----------|----|----|----|----|-----------------|
|                |   |                  | 1        | 2  | 3  | 4  | 5  |                 |
| Technical      | Poor ICT infrastructure   | 14%              | 5        | 5  | 16 | 28 | 16 | 63%             |
|                | Unprotected individual privacy  | 23%              | 5        | 11 | 21 | 20 | 13 | 47%             |
|                | Poor Security systems, threats and breaches                           | 13%              | 4        | 5  | 9  | 31 | 21 | 74%             |
| Organizational | Lack of top management support  | 10%              | 4        | 3  | 1  | 25 | 37 | 89%             |
|                | Resistance to change to electronic ways                               | 19%              | 7        | 6  | 4  | 28 | 25 | 76%             |
|                | Lack of Collaborations between government agencies                    | 13%              | 6        | 3  | 6  | 25 | 30 | 79%             |
|                | Lack of qualified personnel to manage the OSS                         | 36%              | 10       | 15 | 8  | 22 | 15 | 53%             |
| Social         | Digital divide- lack of Internet access                               | 33%              | 11       | 12 | 11 | 23 | 13 | 51%             |
|                | Culture negatively affecting the acceptance and adoption of OSS model | 34%              | 10       | 14 | 12 | 24 | 10 | 49%             |
| Financial      | High cost of implementation and maintenance of OSS                    | 26%              | 9        | 9  | 15 | 19 | 18 | 53%             |

Source: Field Survey, 2021

Lack of top management support was the main challenge with 89% which is mostly attributed to the low commitment of the government of Kenya to fund and spear head the implementation of

the OSS model. The second major challenge, at 79% ranking was lack of collaboration between government agencies which makes it difficult to bring all the services under one agency.

Resistance to change to electronic ways of operation was third, at 74% which was also experienced during the implementation of the e-Development Permit System. The fourth challenge was poor Security systems, threats and breaches which is of great concern by applicants especially with safety of the lots of data required to be submitted to the one stop system by the applicants. The e- Development Permit System has severally experienced hackings and this translates to doubts from the applicants especially that the OSS will be expected to capture data from all parts of the country.

The fifth major challenge was poor ICT infrastructure, at 63% ranking. A OSS requires a robust and highly developed system, however there is great danger in a situation where limited resources prevent investment in building such advanced systems. Lack of qualified personnel to spearhead the implementation of the one stop system is also a key challenge since there are few professionals who have the knowledge of developing the infrastructure required in the OSS as well as training other personnel.

The seventh main challenge was high cost of implementation, maintenance of OSS at 53% response. The eight major challenge was the digital divide where some areas lack of Internet access or people can't afford internet services. With the OSS model targeting the whole country it is difficult to reach the people in the area which lack internet access. The ninth main challenge was culture negatively affecting the acceptance and adoption of OSS model and the last main challenge was unprotected individual privacy.

Some of the other challenges as mentioned by the respondents are as follows: Poor legal framework on planning and development, corruption, lack of awareness and government full contribution for the growth and implementation of the permit approval systems and lack of political goodwill.

#### **4.6 Strategies to mitigate the challenges in the implementation of OSS Model of Approval of construction projects**

This objective of this section was to identify the strategies to mitigate the challenges in the implementation of OSS model in Kenya. The following parameters were used: **1** = Strongly Disagree, **2**=Disagree, **3**=Neutral, **4** = Agree and **5** = Strongly Agree. To analyze the most effective strategies in mitigating the challenges in the implementation of OSS, measures **4** = Agree and **5** = Strongly Agree were added up. Similarly, to analyze the least effective strategies in mitigating the challenges in the implementation of OSS, measures **1** = Strongly Disagree and **2**=Disagree were added up. In the analysis, parameter 3-Neutral was excluded since it was interpreted as undecided responses by the respondents.

*Table 4.6 Strategies to mitigate the challenges in the implementation of OSS model of approval of construction projects*

| No | Intervention   | Least effective | 1 | 2 | 3  | 4  | 5  | Most effective |
|----|--|-----------------|---|---|----|----|----|----------------|
| 1  | Improving ICT infrastructure   | 9%              | 5 | 1 | 3  | 29 | 32 | 87%            |
| 2  | Adopting comprehensive privacy and security policies   | 10%             | 4 | 3 | 6  | 28 | 29 | 81%            |
| 3  | Enhancing government support including funding, advocacy   | 7%              | 5 | 0 | 6  | 19 | 40 | 84%            |
| 4  | Developing and embracing technology by Developers  | 10%             | 5 | 2 | 5  | 28 | 30 | 83%            |
| 5  | Enhancing collaborations between government agencies involved in approval process  | 10%             | 6 | 1 | 1  | 21 | 41 | 89%            |
| 6  | Improving training programs for members of staff for the various institutions involved in approval as well as users on the importance of OSS | 10%             | 5 | 2 | 5  | 22 | 36 | 83%            |
| 7  | Harmonization of laws in the built environment to avoid multiplicity of functions among various institutions                                 | 9%              | 4 | 2 | 4  | 17 | 43 | 86%            |
| 8  | Benchmarking from countries which have successfully implemented the OSS model  | 10%             | 5 | 2 | 11 | 19 | 33 | 74%            |

Source: Field Survey, 2021

The strategies ranked as follows:

- a) Enhancing collaborations between governments agencies involved in approval process was the highest ranked at 89%
- b) Improving ICT infrastructure was second at 87%
- c) Harmonization of laws in the built environment to avoid multiplicity of functions among various institutions came third at 86%
- d) Enhancing government support including funding, advocacy was fourth at 84%
- e) Developing and embracing technology by Developers was fifth with 83%
- f) Improving training programs for members of staff for the various institutions involved in approval as well as users on the importance of OSS was also fifth with 83%
- g) Adopting comprehensive privacy and security policies came sixth with 81%
- h) Benchmarking from countries which have successfully implemented the OSS model ranked last with 74%

Some of the other strategies proposed by the respondents includes, involvement of all stakeholders in the industry in formulation and execution of the OSS system, collapsing the multi corporations / organization to one, integration of National systems on lands with county systems, and establishment of a water tight data bank for all information pertaining to development in the built environment.

#### **4.7 Research Proposition**

The research proposition was that the challenges in the implementation of the OSS model have led to a slowed uptake of the OSS model for approval of building projects in Kenya. The study targeted 91 respondents of which 70 responded back. The study was conducted under the assumption that there is political goodwill and adequate interest from stakeholders and users of the e-Development Permit System that will ensure that the OSS model is implemented in the approval of construction projects in Kenya.

The study found out that the major challenges in the implementation of OSS are: lack of top management support, lack of collaboration between government agencies, resistance to change in adoption of electronic ways, poor security systems, poor ICT infrastructure, lack of qualified personnel to manage the OSS, high cost of implementation, digital divide culture negatively



affecting the acceptance and adoption of the OSS and unprotected individual privacy concerns. With these challenges the implementation of the OSS model has been close to impossible.

The study findings therefore fully support the proposition that the challenges in the implementation of the OSS model have led to a slowed uptake of the OSS model for approval of building projects in Kenya

#### **4.8 Challenges that were encountered in the field investigation**

The main challenge was COVID 19 pandemic which saw the government impose strict measures on movement and physical interactions hence physical collection of data was a challenge. In this regard the researcher adopted online questionnaire forms as well as online interview schedules to collect data from the respondents within Nairobi County. The other challenge was delayed response from the respondents which contravened the researchers work plan. The researcher engaged with a lot of follow up calls and emails with the respondents to remind them on their response which ultimately resulted to a response rate of 70%.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION**

#### **5.0 Introduction**

This chapter presents the conclusion of the study. It revisits the research objectives and provides a summary of the findings on the basis of these objectives. In addition, it also presents the study recommendations and areas of further research.

#### **5.1 Revisiting the research Objectives**

The study aimed at mitigating the challenges in the implementation of the OSS model of approval of construction projects in Kenya. The specific objectives of the study were:

1. To compile the best practice regarding the implementation of the OSS model in the construction industry.
2. To investigate the challenges in the implementation of the OSS model in the approval of construction projects.
3. To investigate the challenges facing the e-Development Permit System in approval of construction projects in Nairobi County.
4. To formulate the possible strategies to mitigate the challenges in the implementation of the OSS model in the approval process of construction projects in Kenya.

#### **5.2 Summary of main findings**

The theoretical underpinning of the study, namely: Systems theory; Coordination theory; and Actor Network theory, was found to be sufficient and accurate in anchoring the study and its findings. Regarding the first objective: to compile the best practice regarding the implementation of the OSS model in the construction industry, the study described the best international practice on One Stop Shop approval systems from selected countries in Chapter 2, and was able to isolate the key content. The content has been used in proposing mitigating strategies for overcoming the challenges in the implementation of the One Stop Shop approval system for construction projects in Nairobi, and Kenya at large. A summary of the findings is as follows:

### **5.2.1 Bio-data**

The respondents (Architects, structural engineers and physical planners) had adequate experience, with majority over 5 years of experience. Majority of the firms had between 1-5 active projects in Nairobi City County which meant they had interacted with the e-Development Permit System and were conversant with the challenges in the process of approval of construction projects in Kenya.

### **5.2.2 Building approvals**

94.3% of the respondents had acquired approval with the Nairobi Metropolitan Service via the e-development permit system. Most of the respondents rated the approval system to be poor which may be attributed to the challenges they have faced in their interaction with the system. The average time taken in acquiring the approvals was 3 to 4 months while the average cost in acquiring approvals was over Ksh. 60,000.

### **5.2.3 Challenges facing the e-Development Permit System.**

Regarding the third objective : to investigate the challenges facing the e-Development Permit System in approval of construction projects in Nairobi County, the major challenges noted by the respondents in their interaction with the e-Developments Permit System were: Physical stamping that negates the effectiveness of the system as far as elimination of human interaction is concerned, change in administration from the Nairobi City County to the Nairobi Metropolitan Services has led to delays and confusion in the e-Development Permit System, regular system downtimes and shutdowns that results to delays making the system unreliable. This has also been associated with loss of information.

Some respondents also noted lack of adequate and qualified human resource capacity, lack of clear communication channel, Lack of information on the requirements for an approval, online submission challenges including internet failure, Multiplicity of laws and Many agencies involved and hence duplication of roles among the approval bodies making the process lengthy.

Other respondents also noted that the system is always under attack by cartels to bring it down and open back door approval where applicants pay extra fees, lack of clear guidelines on set of requirements needed during the approval process, It is expensive to carry out approval via the system, too much bureaucracy and the culture of kickbacks for fast tracking of approval.

### **5.3 Measures to address the challenges facing the e-Development Permit System**

The measures proposed include: introduction of a QR code system to eliminate manual stamping of drawings and hence making the process faster and more effective; introduction of centralized One Stop Shop automated development control system for counties to plug into; increasing the human resource capacities of county governments to strengthen the development control capacities and regular consultative meeting with various stakeholders and training of staff, developers and professionals on the system.

Other measures include; implementing affordable approval charges, making the system user-friendly would encourage its usage, investing into systems, especially IT infrastructure, digitization & transparency, improved system real-time checks, proper communication platform, regular maintenance and upgrading of the website to ensure the issues are identified and addressed accordingly. This will reduce the number of system downtimes and failures.

Also, provision of a dedicated team conversant with building services to tackle any arising issues in Real time, harmonization of laws, Research and Development by the agencies involved led by the State Department of Housing and Urban Development to ensure that the system is improved at par with the international standards, implementing Privileged Account Management (PAM) and Network Access Control (NAC) in those systems to enhance the security.

### **5.4 One stop shop model**

Most of the respondents agreed that the One Stop Shop will be the best replacement for the e-Development Permit System when implemented in Kenya. The OSS model hasn't been implemented despite it being recommended and this is mainly attributed to the challenges in the implementation of the OSS.

#### **5.4.1 Best practice in the implementation of the OSS model**

On the first objective: To compile the best practice regarding the implementation of the OSS model in the construction industry, the study noted that the requirements in the implementation of a OSS include: Single window access, multiple access channel, and meaningful service bundles. To implement the OSS the following aspects must be considered; the political commitment in that the political good will in the form of both upfront and ongoing commitment is needed for the survival and growth of One Stop Shops. A permanent communication channel

is necessary to provide progress updates, as well as to get assistance to overcome any problems or difficulties that arise.

Secondly good leadership is also key and the OSS management must carry out realistic planning, establishing clear and practical objectives for each phase, and assigning adequate timing for each task. The management also needs to allocate appropriate funds to gathering user feedback and input to future design changes, and training of staff.

The legal framework is integral in both facilitating and constraining the potential scope of One Stop Shops. Proper safeguards and mechanisms should be put in place to protect users' privacy and store and protect user data appropriately, irrespective of the form that the OSS takes.

Countries should have formal requirements, including legislation, to protect citizens across: data collection, data storage, data sharing, data processing and, data opening, release and publication. In order for county governments to function effectively, multiple levels of government may need to coordinate responsibilities at the same geographical level and under the same leadership. Also strong communication channels must exist between management and the staff responsible for designing and operating One Stop Shops.

One Stop Shops need to have clear objectives in place before their establishment. This helps to ensure that users' expectations are appropriately set – and are subsequently met. It also helps to provide an important accountability mechanism when it comes to reviewing the performance of One Stop Shops.

For One Stop Shops, public consultation is particularly relevant to the undertaking of feasibility studies; the types of communication mediums most likely to be of use to clients; and participating in periodic reviews of the operation of One Stop Shops. Also actively engaging all relevant stakeholders during design processes helps to "maximize the quality of the information received and its effectiveness

The design of communication and technological methods needs to reflect the particular national context and be fit for purpose. It is important to appropriately plan for the design, development, testing, and improvement of such systems.

In its implementation it is essential to ensure that the project team has sufficient resources and appropriate staff. Training ought to be broader than technical competencies and especially for physical one stop shops, it should also include interpersonal skills as the staff are often the face of the organization.

Monitoring and evaluation form central parts of adopting a continuous policy cycle. The performance of One Stop Shops should be monitored and evaluated to ensure that they continue to meet both users' and governments' needs and expectations. The performance metrics of the online One Stop Shops include matters such as take-up rates, service completion rates, and costs per transaction that can feedback into continuous improvement programs.

#### **5.4.2 Challenges in implementation of the OSS of approval of construction projects**

Regarding the second objective: to investigate the challenges in the implementation of the OSS model in the approval of construction projects, the study ranked the identified challenges. These challenges ranking from the most significant to the least significant were as follows:

- a) Lack of top management support.
- b) Lack of Collaborations between government agencies.
- c) Resistance to change in adoption of electronic ways.
- d) Poor Security systems, threats and breaches.
- e) Poor ICT infrastructure.
- f) Lack of qualified personnel to manage the one top shop.
- g) High cost of implementation and maintenance of OSS
- h) Digital divide- lack of Internet access.
- i) Culture negatively affecting the acceptance and adoption of OSS model.
- j) Unprotected individual privacy.

Some of the other challenges as mentioned by the respondents are as follows: Poor legal framework on planning and development, alleged corruption, Lack of awareness and government full contribution for the growth and implementation of the permit approval systems and Lack of political goodwill.

### **5.4.3 Strategies to mitigate the challenges in implementation of OSS of approval of construction projects in Kenya**

Regarding the fourth objective: to formulate the possible strategies to mitigate the challenges in the implementation of the OSS model in the approval of construction projects in Kenya, the strategies most agreed on by the respondents include:

- a) Enhancing collaborations between governments' agencies involved in approval process.
- b) Improving ICT infrastructure.
- c) Harmonization of laws in the built environment to avoid multiplicity of functions among various institutions.
- d) Enhancing government support including funding and advocacy.
- e) Developing and embracing of technology by Developers.
- f) Improving training programs for members of staff for the various institutions involved in approval as well as users on the importance of OSS.
- g) Adopting comprehensive privacy and security policies.
- h) Benchmarking from countries which have successfully implemented the OSS model.

### **5.5 Revisiting the Study proposition.**

The research proposition was that the challenges in the implementation of the OSS model have led to a slowed uptake of the OSS model for approval of building projects in Kenya. This Proposition is fully supported by the research findings.

### **5.7 Recommendations**

The recommendations identified in this study include:

1. The Kenyan government through the State Department of Housing and Urban Development should be keen to allocate adequate resources and prioritize the implementation of the OSS model in their development agenda.
2. Harmonization of all construction laws and policies and its institutionalization under one government agency which will ease the implementation of OSS in all Kenyan Counties.
3. The government should be keen to engage all the agencies, stakeholders as well as the professionals in the built environment to ensure that they get support to ease the financial burden in the implementation of the OSS.

4. The government should also benchmark with other countries such as Singapore, Malaysia, UK, Canada and Rwanda amongst others which have successfully implemented the One Stop shop.

### **5.7 Areas of further research**

The areas of further research from this study include:

1. There is a need to explore the technological advancements that can be implemented alongside the OSS model to enhance its effectiveness, for example the BIM technology
2. A study should be done to investigate the performance and adequacy of the One Stop Shop at Mavoko, Machakos County, this is because they exclusively identify themselves as a One Stop Shop.



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## APPENDIX I: CONSENT STATEMENT

Dear respondent,

I am a master's degree candidate in construction management at the University of Nairobi (UON). Part of the requirement is that I conduct a research project entitled **“Mitigating Challenges in the Implementation of the One-Stop-Shop Model in Approval of Construction Projects in Kenya: A case study of Nairobi County”**.

Your firm was sampled to participate in this study and information given for this study is for academic purposes only, and as such it will be treated with utmost confidentiality. To ensure privacy, details of your identity will not be revealed.

I will greatly appreciate your co-operation and honesty in filling this questionnaire.

Thank you for your time.

Yours Faithfully,



Muoki Paul Wambua.

B53/34944/2019.

[Paulmuoki82@gmail.com](mailto:Paulmuoki82@gmail.com)

## APPENDIX II: GENERAL QUESTIONNAIRE

Please fill in the blanks spaces. Where options are provided, tick in the box alongside the appropriate choice.

### SECTION I: BACKGROUND INFORMATION

1. How long have you been involved in development?

- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- Over 20 Years

2. How many projects are you currently undertaking in Nairobi City County?

- 1 - 5 Projects
- 6 - 10 Projects
- 11 - 15 Projects
- 16 - 20 Projects
- Over 20 Projects

3. What is your firm's average annual expenditure on developments?

- Less than 0.1 Billion
- 0.1 – 0.5 Billion
- 0.6 – 1.0 Billion
- 1.1 – 1.5 Billions
- 1.6 – 2.0 Billions
- Over 2.0 Billions

## SECTION II: BUILDING APPROVALS

4. Has your firm acquired any construction approvals while carrying out any of your construction projects? (Tick one)

YES

NO

5. What is the average time and cost incurred in acquiring the construction approval

i) Time

Less than 1 Month

1 – 2 Months

3 – 4 Months

5 – 6 Months

7 – 8 Months

9 – 10 Months

Over 10 Months

ii) Cost

Less than Ksh. 10,000

Ksh. 11,000 – 20,000

Ksh. 21,000 – 30,000

Ksh. 31,000 – 40,000

Ksh. 41,000 – 50,000

Ksh. 51,000 – 60,000

Over Ksh. 60,000



6. How would you rate the system of approval of construction Projects in Nairobi City County

- Excellent
- Good
- Fair
- Poor
- Very Poor

7. What are some of the challenges experienced in the e-Development Permit System of Approval in Nairobi City County?

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8. List some of the measures to address the challenges in the e-Development Permit System of approval

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9. The One Stop Shop model of approval of construction projects has been recommended by several researchers, Professional organizations and in several conferences in Kenya, however it has not been implemented. Is the Kenyan government committed to ensure implementation of the One Stop Shop Model?

Yes

No

10. If Yes, what are some of the efforts made to ensure its implementation

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11. If No, why do you think the same hasn't been achieved.

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**SECTION III: CHALLENGES IN IMPLEMENTATION OF THE OSS OF APPROVAL OF CONSTRUCTION PROJECTS**

The following are some of the challenges in the implementation of OSS model in other parts of the world. In the context of Kenya, please indicate your opinion based on the scale of provided below.

Key: **1** = Strongly Disagree, **2** = Disagree, **3** = Neutral, **4** = Agree, **5**= Strongly Agree

| Challenges     | Category  | Response |   |   |   |   |
|----------------|---|----------|---|---|---|---|
|                |   | 1        | 2 | 3 | 4 | 5 |
| Technical      | Poor ICT infrastructure   |          |   |   |   |   |
|                | Unprotected individual privacy  |          |   |   |   |   |
|                | Poor Security systems, threats and breaches                           |          |   |   |   |   |
| Organizational | Lack of top management support  |          |   |   |   |   |
|                | Resistance to change to electronic ways                               |          |   |   |   |   |
|                | Lack of Collaborations between government agencies                    |          |   |   |   |   |
|                | Lack of qualified personnel to manage the OSS                         |          |   |   |   |   |
| Social         | Digital divide- lack of Internet access                               |          |   |   |   |   |
|                | Culture negatively affecting the acceptance and adoption of OSS model |          |   |   |   |   |
| Financial      | High cost of implementation and maintenance of OSS                    |          |   |   |   |   |

In your opinion, are there any other challenges in implementation of OSS in Kenya?

- (i) .....
- (ii) .....
- (iii) .....

**SECTION IV: STRATEGIES TO MITIGATE THE CHALLENGES IN IMPLEMENTATION OF OSS OF APPROVAL OF CONSTRUCTION PROJECTS IN KENYA**

The following are some of the strategies to address the challenges behind the implementation of the OSS model. Using the scale provided indicate your level of agreement to these measures.

Key: **1** = Strongly Disagree, **2** = Disagree, **3** = Neutral, **4** = Agree, **5**= Strongly Agree

| No | Intervention   | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1  | Improving ICT infrastructure   |   |   |   |   |   |
| 2  | Adopting comprehensive privacy and security policies   |   |   |   |   |   |
| 3  | Enhancing government support including funding, advocacy   |   |   |   |   |   |
| 4  | Developing and embracing technology by Developers  |   |   |   |   |   |
| 5  | Enhancing collaborations between government agencies involved in approval process  |   |   |   |   |   |
| 6  | Improving training programs for members of staff for the various institutions involved in approval as well as users on the importance of OSS |   |   |   |   |   |
| 7  | Harmonization of laws in the built environment to avoid multiplicity of functions among various institutions                                 |   |   |   |   |   |
| 8  | Benchmarking from countries which have successfully implemented the OSS model  |   |   |   |   |   |

In your opinion, what are the other interventions that can be put in place to ensure implementation of the OSS model for building approvals in Kenya?

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*Thank you for your response*

**APPENDIX III: INTERVIEW SCHEDULE FOR THE STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (SDHUD)**

**Challenges facing the e-Development Permit System**

1. The e-Development System has been implemented in Nairobi, Kisumu, Machakos, Kajiado, Kiambu and Mombasa, how effective is the system with regard to approval of construction projects in Kenya?

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2. List down some of the challenges arising from the e-Development Permit System?

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3. What are some of the measures that can be put in place to address these challenges?

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**Challenges facing the implementation of the One Stop Shop Model (OSS)**

4. OSS model of approval of construction projects has been one of the recommendations in different platforms and professional conferences as an alternative to the e-Development permit system, will it solve these challenges when successfully implemented? Why?

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5. You have been tasked with the mandate of ensuring the implementation of the OSS model in approval of construction projects as part of Vision 2030 program. What are some of the major developments in the process this far?

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6. List some of the challenges which you have encountered in the process of implementing the OSS model for approval of construction projects

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**Interventions**

7. What are the possible strategies that can help in addressing the challenges encountered in the implementation of OSS model in Kenya?

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**Thank you for taking time to respond to this interview.**

**APPENDIX IV: INTERVIEW SCHEDULE FOR THE ARCHITECTURAL ASSOCIATION OF KENYA (AAK)**

**Challenges facing the e-Development permit system**

8. The e-Development Permit System has been implemented in Nairobi, Kisumu, Machakos, Kajiado, Kiambu and Mombasa. How effective is the system in regard to approval of construction projects in Kenya?

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9. List down some of the challenges arising from the e-Development Permit System?

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10. What are some of the measures that can put in place to address these challenges?

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**Challenges facing the implementation of the One Stop Shop (OSS) model**

11. OSS model of approval has been one of the recommendations in different platforms and professional conferences as an alternative to the e-Development Permit System, will it solve these challenges when successfully implemented? Why?

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12. Are there any steps that have been taken by the government to ensure the implementation of the OSS model of approval? If any, kindly list them.

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13. What are the challenges encountered in the process of implementing the OSS model for approval of construction projects in Kenya?

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**Interventions**

14. What are the possible strategies that may help in addressing the challenges encountered in the implementation process of OSS model of approval?

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**Thank you for taking time to respond to this interview.**

**APPENDIX V: INTERVIEW SCHEDULE FOR THE NAIROBI METROPOLITAN SERVICE (NMS)**

**Challenges facing the e-Development permit system**

15. The e-Development permit System has been implemented in Nairobi, Kisumu, Machakos, Kajiado, Kiambu and Mombasa. Particularly in Nairobi City:

a) How many developments did you approve in 2020?

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b) Are there approvals done outside the e-Development Permit System, if so, how and why?

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c) Do you have adequate capacity to carry out approval of construction projects in Nairobi City County?

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16. List down some of the challenges arising from the e-Development Permit System?

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17. What are some of the measures that can put in place to address these challenges?

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**Challenges facing the implementation of One Stop Shop (OSS)**

18. OSS model of approval has been one of the recommendations in different platforms and professional conferences to solve the construction approval challenges, will it solve these challenges when successfully implemented and why?

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19. Are there any steps taken by the government to ensure the implementation of the OSS model of approval? If any kindly list them.

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20. What are some of the challenges you have encountered in the process of implementing the OSS model for approval of construction projects

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**Interventions**

21. What are the possible strategies that may help in addressing the challenges encountered in the implementation process of OSS model of approval?

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**Thank you for taking time to respond to this interview.**

**APPENDIX VI: RESEARCH AUTHORISATION LETTER**



**UNIVERSITY OF NAIROBI**  
**DEPARTMENT OF REAL ESTATE & CONSTRUCTION MANAGEMENT &**  
**QUANTITY SURVEYING**  
P.O. Box 30197, 00100 Nairobi, KENYA, *Tel: No. +254-020-491 3532*  
*E-mail: dept-cmqqs@uonbi.ac.ke*

**Ref: B53/34944/2019**

**Date: 4<sup>th</sup> August, 2021**

**To Whom It May Concern**

Dear Sir/Madam,

**RE: RESEARCH LETTER – MUOKI PAUL WAMBUA**

This is to confirm that the above named is a student in the Department of Real Estate & Construction Management pursuing a course leading to the degree of M.A. Construction Management.

He is carrying out a research *entitled “Challenges in the Implementation of the One-Stop-Shop Model in Approval of Construction Projects in Kenya- A study of Nairobi City County”* in partial fulfillment of the requirements for the degree programme.

The purpose of this letter is to request you to allow him access to any kind of material he may require to complete his research. The information will be used for research purposes only.

  
**CHAIRMAN**  
**DEPARTMENT OF CONSTRUCTION**  
**MANAGEMENT AND QUANTITY SURVEYING**  
**UNIVERSITY OF NAIROBI**

**Isabella N. Wachira-Towey. (PhD)**  
**Chair & Senior Lecturer,**  
**Department of Construction Management & Quantity Surveying**