INFLUENCE OF AUTOMATION OF BUILDING PLANS APPROVAL PROCESS ON PERFORMANCE OF EMPLOYEES AT THE PLANNING DEPARTMENT OF KISUMU CITY-KENYA

BY:

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DECLARATION

This research project report is my original work and has never been presented or submitted for a degree or any other award in any university or college.

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DEDICATION

This research project is dedicated to my beloved mother Safina Abdallah, for her unending and immense support, my son Tajj for being a source of inspiration in enabling me to accomplish this proposal and focus purposefully in life.

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TABLE OF CONTENT

CONTENT **PAGE**

DECLARATION.....iii
DEDICATION.....iii
ACKNOWLEDGMENT.....iv
TABLE OF CONTENT.....v
LIST OF TABLES.....vii
LIST OF FIGURES.....viii
ABBREVIATIONS AND ACRONYMS.....iix
ABSTRACT.....x
CHAPTER ONE.....1
INTRODUCTION.....1
1.1 Background of the study.....1
1.2 Statement of the problem.....4
1.3 Purpose of the study.....6
1.4 Research objectives.....6
1.5 Research Questions.....7
1.6 Research Hypothesis.....7
1.6 Significance of the study.....7
1.7 Basic assumptions of the study.....8
1.8 Limitations of the study.....8
1.10 Delimitations and scope of the study.....8
1.11 Definition of significant terms used in the study.....8
1.12 Organization of the Project Chapters.....9
CHAPTER TWO.....11
LITERATURE REVIEW.....11
2.1 Introduction.....11
2.2 Leveraging technology by departments in organization to improve on efficiency 11
2.3 Tools and resources availability on organizational performance.....12
2.4 System integration on organizational performance.....14
2.5 Government policies and regulations on adoption of computer technology.....16
2.6 Theoretical framework.....17
2.7 Conceptual Framework.....19
2.8 Knowledge gaps.....20
CHAPTER THREE.....23

RESEARCH ME THODOLOGY 23
3.1 Introduction 23
3.2 Study design 23
3.3 Target population 23
3.4 Sample size and sample selection 24
3.5 Research instruments 25
3.6 Data collection procedures 28
3.7 Data analysis techniques 28
3.8 Operational definition of variables 29
3.9 Ethical considerations 30
CHAPTER FOUR 31
DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION 31
4.1 Introduction 31
4.2 Response rate 31
4.3 Availability of tools and resources on performance of the planning department of City of Kisumu 31
4.4 System integration on the performance of the department of planning of Kisumu City 36
4.5 Real time feedback mechanisms on the performance of the department planning of Kisumu City 40
CHAPTER FIVE 44
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 44
5.1 Introduction 44
5.2 Summary of Findings 44
5.3 Conclusions 46
5.4 Recommendations 47
5.5 Contribution to body of knowledge 48
5.6 Suggestions for further research 49
REFERENCES 50
APPENDICES 54
Appendix I: Letter of Transmittal 54
Appendix II: Questionnaire for the Staff at the Planning Department 55
Appendix III: Sample Size Determination Table 60
Appendix IV: Permit letter from National Commission for Science, Technology and Innovation (NACOSTI) 61

LIST OF TABLES

Title **Page**

Table 1.1 Illustration of distribution of respondents in the sample …….....24
Table 4.1 Sharing of computers among staff……32
Table 4.2 Security and accessibility of data……..34
Table 4.3 Information about building plans & approval processes……...36
Table 4.4 Progress of building plans…….37
Table 4.5 Timeliness of information on building plans & approval processes…….....38
Table 4.6 Information reliability and detail……...39
Table 4.7 Availability of online platform……..40
Table 4.8 Information on building plans approval available in the online platform…….41

LIST OF FIGURES

Title **Page**

Figure 1.1 Conceptual framework ……20
Figure 5.1 Sample size determination table……...62

ABBREVIATIONS AND ACRONYMS

CIA	Confidentiality, Integrity and Availability
CSE	Computer Self Efficacy
GIS	Geographical Information System
GOK	Government of Kenya
IEBC	Independent Electoral & Boundaries Commission
IT	Information Technology
KIWASCO	Kisumu Water and Sewerage Company
MOU	Memorandum of Understanding
NHPC	National Housing Population Census
NCC	Nairobi City County
PDA	Personal Digital Assistant
RRI	Rapid results initiative
TTF	Task Technology Fit

ABSTRACT

This research project sought to establish the influence of automation of building plans approval process on performance of the planning department of the City of Kisumu, in line with the dynamic and techno savvy neo world. With the recent automation of the system, there is still little impact on building plans approval process. The study therefore, sought to identify measures for improvement of operational efficiency through automation, and management support at all levels in the organization and to embrace the modern and progressive performance index as anchored in the Rapid Results Initiative propounded by the Kenya national government. The study was guided by the following objectives: To examine the influence of tools and resources availability on the performance of the department of planning of Kisumu City, To determine the influence of system integration on the performance of the department of planning of Kisumu City, To examine the influence of real time feedback mechanisms on the performance of the department planning of Kisumu City. The study was anchored on the innovation adoption theory. It was also built on computer automation and validation adoption process theory. The target population of the staff at the department was fifteen. The study adopted descriptive survey methodology approach. Data collection was done through questionnaires while data analysis was done through frequencies, percentages, chi-square and p-value significance test. The validity of the study was achieved through expert review while reliability was done through test and re-test. The results were presented through tables and narratives. There were significant relationships between access to a computer by staff to carry out daily activities $p=0.0011<0.05$, working condition of the computer $p=0.041<0.05$ and tools and resource availability $p = 0.000 <0.05$ and performance of department of planning of Kisumu. There was also significant relationship between information reliability and detail $p=0.043<0.05$, system integration $p = 0.014 <0.05$ and the performance of the department of planning of Kisumu city. Similarly, significant relationships were noted between availability of online platform $p=0.036<0.05$, data security and accuracy $p=0.027<0.05$, real time feedback mechanisms $p = 0.039<0.05$. In the first objective, the researcher concluded that access to computer by staff is important in enhancing the performance of the planning department. In the second objective, the researcher concluded that most developers, architects and clients still preferred visiting the department physically to check on the progress of their building plans. In the third and last objective, the researcher concluded that the availability of an online platform would be important in influencing the performance of the planning department. The researcher recommended: Strengthening of capacities and skills of the skilled employees to enable them use the tools and resources effectively, Strengthening of the security features of the automated system , Wider publicity and sensitization among developers, architects and clients to access real time information as opposed to physically visiting the planning department offices, Strengthening of system integration to enhance effectiveness and efficiency of the department of planning of Kisumu City and, Enhancement of co-ordination between the planning department with other departments in the county government.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Automating building plans is the process of computerizing the approval process of issuance of permits for construction. Major large economies like Britain, France, German, Spain, Korea, Taiwan, Singapore, Japan and China transformed from traditional operational and financial forecasting to technologically advanced systems (Hong and Zhu, 2006). This enabled these economic giants to improve staff morale, working environment as others would work at remote locations or satellite stations and improve trade efficiently around the globe.

However, this adoption of technology resulted in fewer employees needed to perform tasks and the cost of operation going high. In Britain, Wagner (2003) asserts that the government of Britain injected Kshs 25 million in 2005 for a period of three years to help public organizations adopt computer technology leading to automation of services delivery, internet services and a one-stop shop. Managing large organizations efficiently is now increasingly becoming difficult, if not impossible, without the use of computers (Onunga, 1997).

A report by Olson and Lucas Jr.(1982) concludes that monotonous, repetitive work and overall work overload tend to cause stress to workers at various organizations. In their research on impact of office automation, they aver that automated systems can affect job satisfaction of both skilled and unskilled office workers in a department. Further evidence from their research on job satisfaction shows that greater satisfaction and higher perceived

status can result from increasing the task variety, skill requirements and direct feedback of a job. This literally explains the scenario at the planning department.

In Canada, the government has a long standing commitment to automation of services ranging from the service industry to manufacturing and military. Automation of services especially in construction permit issuance and building of city-wide networks offering homes and businesses and employments.

In Africa, specifically in Nigeria and according to Oluwatayo (2012), a good automated system should include efficiency that allows for input and output of data and providing an objective for recording and aggregation of information. It should be able to quickly collect and edit data, summarize results, and adjust as well as correct errors promptly.

In the East African region, automation of systems has been witnessed in countries like Rwanda and South Africa among others that have seen efficient management of rapid urbanization and infrastructure development. In Rwanda, the World Bank Group was instrumental in the set-up of Kigali's new online construction permit management information system (MIS). It has made it easier through automation of procedures for application processing and review instead of provision of blue prints and paper work. The system works is geared to work as a one stop shop centre and department of urban planning that supports the entire process of client relations, assessment, construction administration and allows clients to monitor the status of their project applications. (2013-2014 World Bank Doing Business Report).

Nationally, the Nairobi County Government has already developed a pioneer automated building plans approval process that is geared towards minimizing corruption, better work culture and person to person transaction that is an avenue for leakages in revenue collection, negotiation and malpractices, according to the Nairobi County Chief Revenue Officer Jimmy Kiamba (2014).

The City of Kisumu is also facing challenges of rapid urbanization and urban sprawl that has witnessed mushrooming, at an exponential rate, of both residential and commercial houses. With the rapid speed of construction of houses in the urban and semi-urban areas of the city, the slow pace of approval of building plans at the planning department of the City of Kisumu is proof enough that it cannot cope efficiently with this emerging trend. Hence, it is envisaged that this problem will be solved by automation of the operations and transforming the overall organizational atmosphere to a computer based system and the subsequent influence it will have on the performance of the staff at the department.

Further, the growth and survival of organizations and businesses is linked both to the creation of new products and services and to the adoption of novel ways of doing business with constantly improving the internal processes, procedures, policies and business models (Damanpour and Schneider, 2006). Automation of operations at the department has enabled the management to adequately and efficiently respond to the ever dynamic technological world and improve competitive advantage. Kisumu, the third largest city in Kenya, after Nairobi and Mombasa respectively is the City within the larger County Government of Kisumu (GOK, Urban Areas and Cities Act 2011). It developed progressively from a railway terminus and internal port in 1901 to become the leading

trading, economic and communication hub in the Lake Victoria Basin, a regional bloc comprising of Tanzania, Rwanda, Uganda, Burundi and an area that traverses the counties of Kisumu, Migori, Homabay, Siaya and Busia. According to the Kenya Demographic Statistics and the National Census (2009), Kisumu City had a population of about 968, 909 and covers an area of approximately 417 Km^2, of which 297 Km^2 is dry land and approximately 120 Km^2 under one of the largest fresh water bodies in the world, Lake Victoria.

The City of Kisumu is administratively housed within the same County Government which consists of seven (7) constituencies viz: - Kisumu Central, Kisumu West, Nyando, Kisumu North, Seme, Nyakach and Muhoroni, (Devolution Act 2010 & IEBC 2011).

The overall mandate of the City Planning and Architecture Department, one of the departments at the City of Kisumu, is to provide a general spatial framework for the sustainable physical and socio-economic development of Kisumu. It is a technical arm of the City of Kisumu which is to remain autonomous according to the Laws of Kenya under The Urban Areas and Cities Act No. 13 of 2011 Section No. 2-3 and Section No. 60. The 2010 Constitution of Kenya, under the Transition to Devolved Government Act, Article 5 on devolution also recognizes Mombasa and Kisumu as cities.

1.2 Statement of the Problem

The development of automated building plans approval system in the department raised a number of issues. For example, How will this technology be received by department staff? How will it affect the definition of traditional office work? What will be its impact on individuals, clients, work groups, and the entire structure of the organization? Any fears of

job loss? Any potential positive and negative effects to the staff in the department. This study therefore sought to present a descriptive model and propositions concerning the potential influence of office automation in the department. According to the Nairobi County Government Chief Revenue Officer (2014), plans are afoot to convert their pioneer automated building plans approval process to a fully-fledged automated system. This is geared towards mitigating corruption and person to person transactions that are avenues for fraud and malpractices. Ease of doing business especially issuance of construction permits and building plans approval process is hampered by lengthy and complex administrative formalities which ultimately create unnecessary barriers to investment, economic efficiency and service delivery. A World Bank Group report (2013-2014), Doing Business in Kenya noted that lengthy and complex administrative formalities related to building plans approval has led to inconveniences, inefficiencies, and created unnecessary barriers to investment and economic efficiency. This has led to loss of client records, missing files of submitted plans for approval or those not approved.

According to the County Government of Kisumu (2015), the challenge of rapid urbanization and urban sprawl has witnessed mushrooming, at an exponential rate, of both house for rental and for commercial houses. With the rapid speed of construction of houses in the urban and semi-urban areas of the city, the slow pace of approval of building plans at the planning department the City of Kisumu is proof enough that it cannot cope efficiently with the emerging trend. It was envisaged that this problem will be solved by automation of the operations and transforming the overall organizational atmosphere and departmental performance. However, with several months into the automation not much

achievement has been realized. This study therefore sought to investigate the influence of automation of building plans approval process on performance of the planning department of Kisumu City-Kenya. This is because of concerns raised from the public, clients and stakeholders about a lot of malpractices, fraud and grabbing in land transactions that occur at the department. It is also the department that generates substantial amount of revenue from sources like land rates, plan approvals, T.O.L. (Temporary Occupation License) and valuation of land.

1.3 Purpose of the Study

The purpose of this study was to assess the influence of automating building plans approval process on the performance of employees of the planning department, City of Kisumu.

1.4 Research Objectives

The study objectives were as follows:

1. To examine the influence of tools and resources availability on the performance of the department of planning of Kisumu City.
2. To assess the influence of system integration on the performance of the department of planning of Kisumu City.
3. To establish the influence of real time feedback mechanisms on the performance of the department of planning of Kisumu City.

1.5 Research Questions

1. Is there significant relationship between tools and resources availability and performance of the department of planning of Kisumu City?
2. Is there significant relationship between system integration and performance of the department of planning, Kisumu City?
3. Is there any significant relationship between real time feedback mechanisms and performance of the department of planning, Kisumu City?

1.6 Research Hypothesis

1. H_0 There is no significant relationship between tools and resource availability and performance of the department of planning of Kisumu City.
2. H_0 There is no significant relationship between system integration and performance of the department of planning of Kisumu City.
3. H_0 There is no significant relationship between performance of the department of planning of Kisumu City and real time feedback mechanisms.

1.7 Significance of the Study

Presently the department operates an online system for approval of building plans which was recently automated. With the introduction of an automated system, the study presented propositions and descriptive model concerning the potential impacts to the performance of the department, both positive and negative with emphasis on further research to examine the potential effects to the whole organization.

In the modern technology, the automated system is expected to be a land mark since vital information is just be a click away, networking and integration of the departments made easier and finally, client data and information secured, confidential and maintained.

The pressures to automate are great. In this age of instant information, there is an increasing demand for speedy access to information, services, records and archives. In contrast to manual systems which lead to duplication of effort and repetition of work, prone to human error, the automated system proved to be efficient and reliable. Under this premise, the researcher was convinced that it was necessary to warrant carrying out the study at the department and also evaluate how the staff would benefit from the automated system.

1.8 Basic Assumptions of the Study

The researcher assumes that the respondents will give the required information correctly, accurately, honestly and will provide sufficient time. Being a county government institution, the researcher presumes that there will be no political interference, labour unrest and that the subjects of the study will all belong to the City of Kisumu.

1.9 Limitations of the Study

The respondents felt that they were obliged to paint a positive image of the performance of the planning department of the City of Kisumu, this would introduce bias on the extent of automation of building plans approval process. This limitation was overcome by requesting the respondents to be sincere as possible to enhance accuracy and recommendations that will improve the automation process. The other limitation was that some of the employees did not have very good knowledge of the automation of building plans approval process and how it influences the performance of the department planning of Kisumu city. The researcher overcame this limitation by simplifying the questions and picking staffs that have been trained on the automation process as respondents.

1.10 Delimitations and Scope of the Study

The study was based specifically at the planning department, City of Kisumu, Kisumu County. It did not explore the influence of automation of building plans approval process on performance at departments in other counties, neither compare the performance of automation of building plans in such counties. Again, the study did not target the clients, architects, stakeholders or land valuation officers as respondents because they would not be in a position to comprehensively answer questions on the research objectives, the research placed more focus on the supply side of the equation other than the demand side.

1.11 Definition of Significant Terms Used in the Study

Automated process – refers to mechanized or computerized process in the department of planning of Kisumu City.

Devolved System – refers to decentralized system of government to the county structures as in the Kisumu County Government.

Performance appraisal – refers to performance assessment or evaluation of the permanent staff in the department of planning of Kisumu City.

Tools and resources – refers to the computer accessories and software available for employees at the department of planning to aid in automation.

System integration – refers to sharing of critical information between the county government offices/departments and between the staff at the department of planning and clients or stakeholders.

Urban sprawl – refers to urban spread out or the rapid expansion of growth of urban places in the county government of Kisumu.

Real time feedback mechanisms –refers to devices of remitting information on approval of building plans from the department of planning to clients instantaneously via online medium.

1.12 Organization of the Project Chapters

The project is organized into five chapters with chapter one giving a general introduction and background of the study. It gives a general global overview of the research which eventually narrows down to the local level. Secondly is the statement of the problem. This gives the definition of the problem and helps to identify the variables that are to be investigated in the study. It also provides the direction the study will take. The purpose of

the study which describes the potential premium of the study, the study findings and identifies the stakeholders and how they will benefit from the study results. It is followed by the research objectives, research questions and hypothesis, scope of the study, basic assumptions, limitation and delimitation, definition of terms as used in the study and organization of the study.

Chapter two gives the reader a comprehensive literature reviewed relating to the problem under investigation. It contains theories and models related to the problem, a historical overview, current trends and significant data published about the problem.

A description of methodologies used to conduct the study is given in Chapter three. These include; research design, sampling techniques, the target population from which the data was obtained, data collection methods and means of data analysis.

Chapter four will consist of data analysis, presentations and discussions while chapter five will contain the summary of findings, conclusions and recommendations to be possibly undertaken for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter mentions the literature reviewed that were specific to the title of the study. In an effort to streamline the automation process, the researcher reviewed relevant and similar research done to influence and gauge staff performance at various institutions. The literature reviewed provided a theoretical framework which formed the basis upon the development of a conceptual framework which enabled the identification of gaps in the previous studies and issues that remained unresolved and are recommended for further studies. In a research article by Conrad (2012), performance empowering is the process of identifying, measuring and developing human performance or success in the organization. Employee performance reviews are a critical tool for ensuring staff know what is expected of them, and are accountable for their results and performance. For this reason, Bielawski and Lew and (1990) devoted considerable attention to understanding and selecting alternative development tools for performance appraisal and or empowerment. A good research project is the beginning of a great deal and automation of the building plans approval process at the planning department of the City of Kisumu was likely to be a good tool towards this direction.

2.2 Leveraging Technology by Departments in Organization to Improve on Efficiency

According to Oluwatayo (2012), a good automated system should include efficiency that allows for input and output of data and providing an objective for recording and

aggregation of information. It should be able to quickly collect and edit data, summarize results, and adjust as well as correct errors promptly.

A good automated and integrated system should also be effective in enabling attainment of goals of the organization. It should be capable of providing current information to appropriate users**.** He further avers that a good automated system should be able to enhance productivity of the users of the system, communication channels among them and to deliver complicated ex material throughout an organization with ease.

It should also be reliable with capability to process and compile data with consistency and uniformity.

Further, Enwere (1992) argues that the non-integrated records management programme in Nigerian public service has led to inefficiency in administration and to the loss or unavailability of vital information needed for decision-making. These decision-making cut across a wide range of government sector and departments that are mandated to offer efficient services to her citizens.

In Rwanda, the new online construction permit management information system implemented with support from World Bank has made it easier to process and review applications for construction (2013-2014 World Bank Doing Business Report).

2.3 Availability of Tools and Resources on Organizational Performance

In a study conducted by Stajkovic and Luthans (1998), it was found that there was a strong positive correlation between self-efficacy and task performance, with self-efficacy as a predicting factor; related research supports this result (Wood & Bandura). It is safe to say that Computer Self Efficacy (CSE) is the judgment of one's ability to apply computer skills

to complete the specified tasks. Chalmers (2003) also avers that CSE represents an individual's perceptions of his or her ability to use computers in accomplishing a task.

Lee, Cheng & Cheng (2007) also demonstrated that CSE positively affected Task Technology Fit (TTF) of applying PDA technology for insurance tasks. Other studies investigated consequences of CSE, such as increased performance and there also exists empirical evidence of a positive relationship between CSE and user performance (Compeau & Higgins, Johnson,1998).

In a study by Pech and Slade (2006), it was argued that there is an increase in employee disengagement and it becomes more important to create workplaces that positively influence workforce. Pech and Slade continue to state that the focus is on employee disengagement signs such as distraction, lack of interest, poor decisions and high absence, rather than the root causes. The workplace environment is considered a major root cause of employees' engagement or disengagement. It was indicated in another research that improving the working environment reduces complaints and absenteeism while increasing productivity (Roelofsen, 2002). Wells (2000) indicated that a good measure of employee productivity was dependent on employee comfort on the job, workplace conditions and or environment.

Hosseinian, Salagegheh, & Gholami (2014) studied the effect of office automation on managers and employees' performance of grains company and business. A random sampling method was used to select samples. Calculated correlation coefficients show that there is a significant relationship between the automation components and performance aspects at 1% level. The correlation coefficient for various aspects of automation with

performance is like that (modified work process (48/0), the quality of decision -making 42/0, data analysis 49/0 accountability quality 59/0, new idea entrance 49/0). As comes from the results accountability quality automation has the highest impact and correlation and working reform process has the lowest.

2.4 System Integration on Inter-Departmental Performance

Data and information sharing and integration (terms are used interchangeably in research literature) is key to organizations that collaborate, integrate their activities and processes beyond firm boundaries. In a study by Lee and Whang (2000), information integration is referred to as sharing of important pertinent data and information among the supply chain partners. Information sharing has been defined to include same aspects as in information integration, and it refers to sharing of critical information between a supplier and a buyer. This information should be detailed enough, frequent enough and timely enough to meet the requirements of the firms (Carr and Kaynak, 2007). The amount of critical information which needs to be shared has expanded during the last decades and continues to do so. Information integration has been extended to include numerous suppliers and customers. The extent of information integration pays attention to the scope of shared information and to the level of intensity on which information is shared. Also, direction of shared information is an important factor when defining information integration.

Several researchers Saeed, Malhotra & Grover (2005), have acknowledged that adopting new ways of using information technology is one important resource for staying afloat on the ever dynamic changing market. By integrating systems and exploring opportunities created by the new Information and Communication Technology firms are able to gain

competitive advantage. According to Magnan, Brau and McCarter (2007), major leading companies have injected huge resources to analyzing just about anything with their information systems. These major leading firms have invested heavily on their IT operations in efforts geared towards improving their performance. As a result, information is nowadays integrated by utilizing variety of different information technologies and systems. Information systems, enterprise resource planning (ERP) systems, software applications or other information technology based systems provide a variety from which to choose. Again, cloud computing and sharing information via a cloud service has added a new aspect to traditional sharing of information (Pervilä,2012).

The intended result of integrating information is to enhance an organization's processes and overall performance. By integrating and sharing information, firms have been able to improve their operational and strategic performance. By sharing of information on demand, capacity or inventory with key clients and suppliers, organizations have been able to improve co-ordination of supply chain activities, decrease inventory levels, as well as increase service levels and demand forecasting. Irrespective of the gains derived from information sharing and integration, the implications of empirical studies suggest that there is still a need for cautious interpretations.

A study done by Javadi and Safari (2013) to determine the influence of automation of office processes established that automation brings about easy and rapid access to statistics and information, enhances the performance with the significance level of the symbol shown as

p=0.001) and the critical ratio of 0.752. Automation also leads to speed of affairs and which has direct, positive and significant effect on organizational performance.

2.5 Government Policies and Regulations on Adoption of Computer Technology

In a research by Achieng (2011), adoption of computer integration in an organization or a business significantly helps in financial forecasting that leads to projections and growth. This will augur well with the computerization of the operations at the department. He further states that the regulations put across by the government of the day will either impede or improve the rate of adoption of computer model by organizations.

According to Popoola (2000), what actually keeps the public organizations, governments and civil service going in any modern system of government is automated transactions and recorded information that are utilized in planning and decision making. The need for automation of systems and records management programme in all organizations should be prioritized in this digital age.

In summary, this chapter contains reviewed literature that is related to studies done on the influence of automation of systems or processes on the overall operations and staff performance and improvement. Top managerial support to make the adoption of new automated systems successful for production and service delivery is also paramount. It is generally recognized that in any sector where effectiveness and efficiency of production of goods and services depends on various kinds of automation in the modern world,

computers are therefore special in that they help in automation of many procedures and processes.

In September 2011, the City Council of Nairobi launched the first online construction permit system in sub-Saharan Africa outside of South Africa. This milestone was achieved with support from the Kenya Investment Climate Programme (KICP), working closely with the European Union, the Netherlands and the United Kingdom's department for international development DFID. This was a one stop shop centre to streamline the issuance of construction permits, including better information and workflow systems. This was essential to enhance transparency, increased efficiency, reduce processing times and delays in clearing of construction permits.

2.6 Theoretical Framework

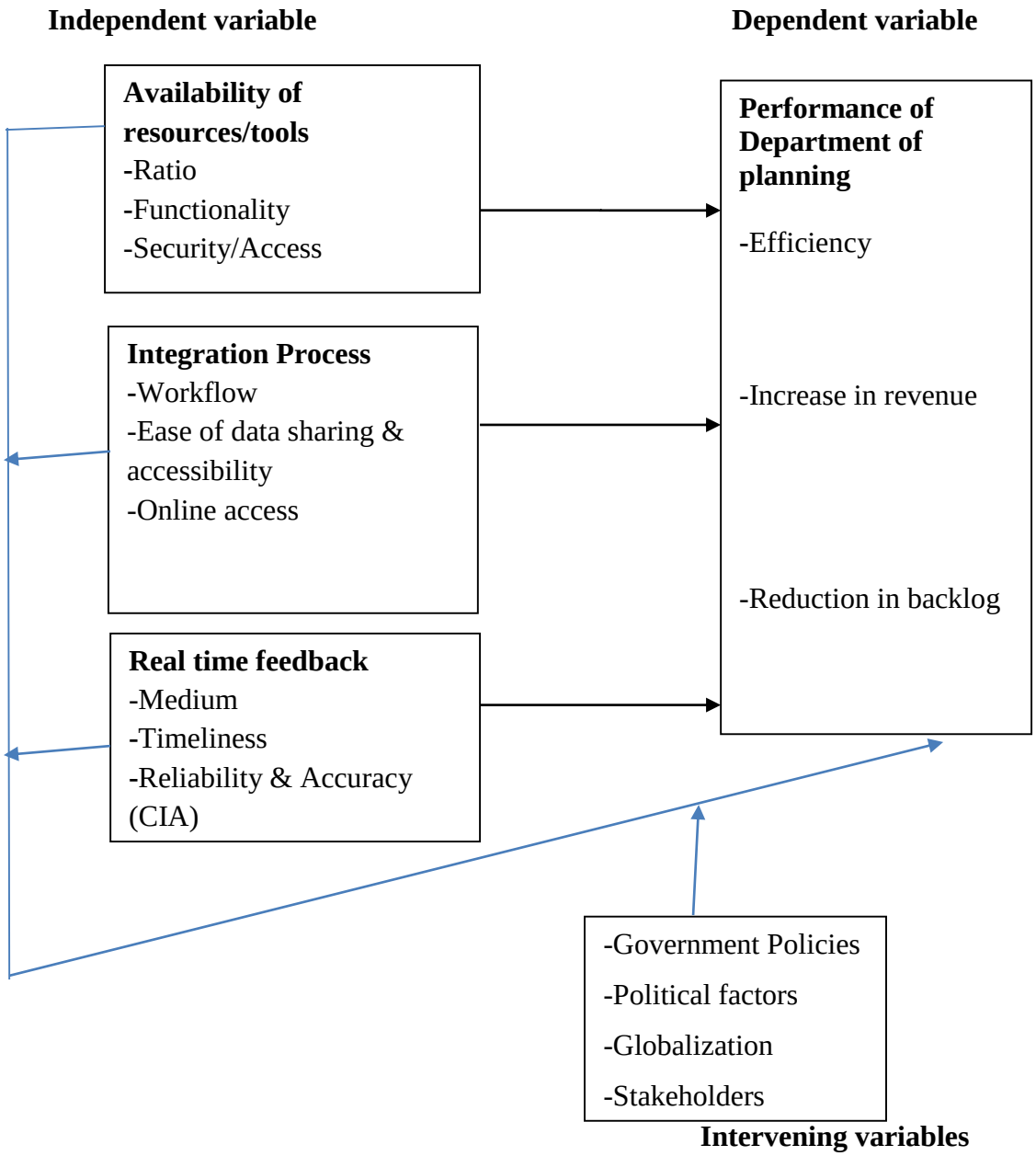
The innovation adoption theory advanced by Rogers (1995) in his book, "diffusion of innovations" was the key guiding theory used. Rogers suggests that readiness to accept new ideas and put them into practice varies from individual to individual and from one organization to the other. The automated system was premised on ensuring operational efficiency with better service delivery. In order to effectively discharge its mandate, the department is organized into eight (8) sections, each of them responsible for a particular core function area. The sections are: - administration sections, forward planning section, land survey section, urban design and development section, Research section, Development control section, Policy implementation section and Core function section.

Computer technology has been applied to the automation of office tasks and procedures. Much of the technology is not only aimed at improving the efficiency of current office

procedures, but also at altering the nature of the office work altogether. The development of an automation system at the department brought to the fore issues like the ease in reception of the new system by the administration, how it will define their normal work, its effect on the individuals and the structure of the organization.

Automation of building permit issuance process was envisaged to assist in reduction of backlogs in building permit applications. The benefits of increased construction extend beyond employing more construction workers. Construction related materials and services are also purchased from local suppliers through local tendering, local jobs are created, and these workers will spend the income they earn at local establishments. It is estimated that for every ten (10) jobs directly related to a construction project, another eight (8) jobs are created in the local economy (The Economic Impact of Accelerating Permit Processes on Local Development and Government Revenues, Price Waterhouse Coopers, December 2005). Other proponents of the theory are Christensen in his book, “The Innovator’s Dilemma”, where he provides an insightful analysis of changing technology and its importance to the future success of a company or organization and Moore, in his book, “Crossing The Chasm” where he argues the Technology Adoption Life Cycle in an organization.

2.7 Conceptual Framework



1.1 Figure The conceptual framework used by the researcher

In the conceptual framework, the researcher identified independent variables as automated building plans approval process. This included components like availability of tools and or resources, integration process of the system and real time feedback mechanisms of the

system. This further included the medium of communicating information to stakeholders and clients, timeliness of the information and reliability and accuracy of the information provided. Staff appraisal can only be achieved when management has put in measures to assess performance of the staff with possible promotion and award of best performing staff. To assess the contribution of feedback mechanisms as one of the variables used in the framework, the researcher observed suggestion boxes installed at the department that contained responses from clients, architects and surveyors. This acted as yardsticks for informing the management to fast-track automation of services for better and improved services delivery.

The identified dependent variable in the framework is performance of the planning department. The components in this variable included staff efficiency, increase in revenue generated in the department and reduction in backlog of construction permits applications or process. The following are the intervening variables identified that likely influenced the automation of approval process; both the national and county governments policies and regulations, political factors, globalization and stakeholders. Staffs interviewed were of the opinion that unstable political temperatures, globalization of the market especially with the regulations set up by the World Bank for ease of doing business, public entities had to adhere to the laid down rules and procedures for doing business.

2.8 Knowledge Gaps

Studies have been done on influence of automation of processes and systems on the performance of employees in a department or entire organization. However, employee performance reviews in a department or entire organization are not done unless in instances of promotions or reward. Employee reviews are often critical tools for ensuring staff know

what is expected of them, and are accountable for their results and performance. For example, how will it affect the definition of traditional office work? What will be its impact on individuals, clients, work groups, and the entire structure of the organization? Any fears of job loss?

2.8.1 Summary of Literature Review

In a research by Conrad (2012), public sector organizations face ongoing pressures to be transparent, efficient and accountable. Automation of systems and processes remains the yardstick in efforts to accomplish this feat. However, employee performance reviews in a department or entire organization are not done unless in instances of promotions or reward. Employee reviews are often critical tools for ensuring staff know what is expected of them, and are accountable for their results and performance. For example, how will the intended change or technology be received by department staff? How will it affect the definition of traditional office work? What will be its impact on individuals, clients, work groups, and the entire structure of the organization? Any fears of job loss?

The enforcement of building or construction permits is so complex that it continues to foment informality. In most developing countries, this rate hovers between 60 to 80 per cent. The end result is poor oversight on safety, and higher costs for the community; while the cost in human lives is most evident, counties will lose the opportunity to generate more revenues. Entrepreneurs lose the chance to access formal financing sources, as they are unable to back their loans with formally-registered assets. However, with the automation of system at the department built entirely on best practice open-source technologies with no licensing costs, an improved service delivery, efficiency, accountability and

transparency will be achieved, (NCC 2014). The enforcement arm of the City of Kisumu, in conjunction with the planning department are able to track areas of concern in compliance with the system.

Time delays, human factors and bureaucracies will be a thing of the past with the automated system. Further, management oversight on automated construction plans issuance and administration shall increase through the various reports that can be configured into the system. This way, section heads shall be able to monitor the volumes processed by their staff and any bottlenecks arising will be quickly identified and dealt with.

In addition, due to increased compliance with the system requirements through the adherence to good and lawful practices supported by the system, the public safety influenced by buildings is expected to be enhanced. For example, buildings complying with the outlined fire protection bylaws are less likely to result in loss of life during a fire outbreak. Again, availability of data from archives of building plans submitted and their outcome will, provide statistics for further research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the method used in guiding the study. These included study design, target population where data was obtained from, sample size and sample selection, research instruments, data collection procedure, techniques applied in data analysis and ethical concerns.

3.2 Study Design

This study employed a descriptive survey design which involves both qualitative and quantitative approaches. In the context of this study, descriptive survey design is ideal since it is an efficient way of collecting information from a large number of respondents and appropriate for a substantial range of information (Mugenda, 2008). Kothari (2008), avers that research design is the preparation of circumstances for collecting of and analysis of data in a manner that intends to convey significance.

3.3 Target Population

The study was conducted among employees within Town Hall, City of Kisumu with the sample frame being the staff at the planning department. This is because, with automation of the system at the planning department, some other departments will be affected either directly or indirectly. A target population of twenty-five (25) was selected. According to Mugenda and Mugenda (1999), a target population is that population to which the researcher would want to generalize the results of the study and which directly satisfies the researcher's interest.

3.4 Sample Size and Sample Selection

The researcher used stratified sampling and convenience sampling procedures and the samples were divided according to their job description, level of qualification, gender and position at the department. The City of Kisumu comprises of eleven departments each of which have smaller divisions called sections and units that are all geared towards accomplishing the vision and mission of the organization. The researcher got the sample of 15 technical employees from each department using convenience sampling since the study would directly or indirectly affect their area of operation.

The researcher used a sample consisting of employees selected at the City of Kisumu. According to Glenn D. Israel (2009), a pre-determined scientific table for determining sample sizes from given populations, a population size of 25 will have a complete representation of 16 respondents at ±7% precision as illustrated in Appendix III.

Table 1.1illustration of distribution of respondents in the sample

Category	Number of employees (N)	Sample size (n)
Land surveyors	05	04
Inspectors	05	02
Invoicing Officers	02	02
Directors	04	02
IT Officers	04	02
Administrators	02	02
Clerical officers	03	02
TOTAL	25	16

Source: City of Kisumu, Human Resource Management Dept. 2012

3.5 Research Instruments

The researcher employed a set of methods, tools or techniques of data collection which included the use of both quantitative and qualitative methods. Qualitative data is to be expressed on nominal scale that will provide in-depth explanation of the area under study. In this case data was collected using questionnaires and interviews. Scheduled interviews provided data that could not be directly observed like perceptions, views and feelings of respondents. The researcher administered questionnaires to respondents who were mostly educated and responded to the questions with ease. The researcher employed both open-ended and closed questions in the questionnaires to achieve a wider scope and quantity of data for analysis.

3.5.1 Piloting of the Study

The researcher selected a small number of respondents at the facility to conduct a pilot test to ascertain the understanding of the questions. The researcher carried out a pretest within a unit at the facility on a smaller scale to get feedback and suggestions whether the instruments are likely to work as envisaged. It involved administering the instruments to individuals with same traits to the target group which would help in identifying possible areas of improvement.

According to Mugenda and Mugenda (1999), correlation coefficient (r_{xy}) within the range of (0.6 – 0.9), will lead to a conclusion that the two sets of scores by the employees will be related. Using Statistical Package of Social Sciences (SPSS), a correlation co-efficient of 0.83 will be generated which will assure the researcher that the instruments which are intended to be used for data collection are reliable. Reliability of the instruments will also be measured by previous success stories at different locations.

3.5.2 Validity of the Instruments

The researcher ensured validity of the questionnaires by subjecting them to review by experts and peers. This is as propounded by Mugenda and Mugenda (2003), who avers that validity is the degree to which results obtained from data analysis actually represent phenomena. Hence, a valid instrument should actually measure what it is supposed to. According to Cohen (1988), validity of a study can be generalized by conducting a pilot study. Hence, the researcher achieved this will intend to achieve validity by conducting a pilot study to ensure that all procedures, instructions and questions or manuals are clear. Again, the researcher will exploit the supervisors as experts to assess the appropriateness of the questions and language to be used to ensure validity of information to be obtained from respondents. The researcher also intends to subject the study through peer review to ascertain if all details are captured adequately.

3.5.3 Reliability of the Instruments

For reliability to achieved, the researcher administered the questionnaires twice to the employees in the department after an interval of two weeks and correlating the responses independently. According to Kothari (2008), reliability of research instruments is the extent to which research results are consistent and replicable.

Cooper and Schindler (2008) maintain that a reliable instrument is that which yields consistent results after repeated measurements or trials. After administering the questionnaires, a test of split-half method of using the r-function of Spearman Brown formula will be employed. The method involves scoring two halves, odd and even items separately and then calculating correlation between them. The coefficients give the degree to which the two halves give same results hence internal consistency.

Reliability = $\frac{\text{2 x Corr. Between the even half}}{\text{1 x Corr. Between the odd half}}$

$$R = \frac{2\, r_e}{r_0 + 1}$$

where R is the coefficient of reliability, r_e is the correlation in the even half, and r_0 is the correlation in the odd half. A value of R was obtained to be 0.72 denoting high reliability. Correlation co-efficient was calculated to indicate the relationship between the two set of scores. Kerl Pearson product Moment Correlation (PPMC) co-efficient was be used to determine the correlation co-efficient (r_{xy}).

$$r_{xy} = \frac{S_{xy}}{S_x S_y}$$

Where;

x - result on the first score

y - result on the second score

r_{xy}- Correlation coefficient between x and y

S_xS_y – covariance between x and y

$$\text{Cov}(x,y) = \frac{1}{n}\sum x_i y_i - \bar{x}\,\bar{y}$$

S_x – Standard deviation of x

$$S_x = \sqrt{\left(\frac{1}{n}\sum x_i^2\right) - \bar{x}^2}$$

S_y –Standard deviation of y

$$S_y = \sqrt{\left(\frac{1}{n}\sum y_i^2\right) - \bar{y}^2}$$

3.6 Data Collection Procedures

In this section, the researcher provides details of how data collection is to be carried out using the Spearman Brown formula of split-half method and Karl Pearson's Product Moment Correlation Coefficient. After obtaining a research permit from the National Ministry of Education and an introductory letter from the University of Nairobi, the researcher used the granted permits to obtain a letter of introduction from the county government of Kisumu in order to collect data from the city of Kisumu employees. The researcher thereafter administered the questionnaires personally to the respondents to ensure no ambiguity in the questions and any clarification needed dealt with to emphasize on confidentiality and importance of the study.

3.7 Data Analysis Techniques

According to Biklen and Bogdan (1992), data analysis is the process of systematically searching and scrutinizing data collected from the field. It mostly involves organizing the data, breaking the data into categories and examining trends and patterns for eventual report generation. Data analysis also seeks to fulfill research objectives and answer research questions. The choice of analysis will depend on how the tools are suited to the study objectives and scale of measurements of the variables. In this case, quantitative data obtained from questions will be analyzed using quantitative techniques like frequency tables and percentages aided by the Statistical Package for Social Sciences (SPSS) which is now referred to as the IBM Predictive Analysis Software (PASW) while qualitative data obtained will be transcribed, common themes identified and organized for discussion under the objective area of study.

3.8 Operational Definition of Variables

The variables in the study will be operationalized as shown:

	Objectives	**Independent variable**	**Indicators**	**Measurement Scale**	**Tools of Analysis**
1	To examine the influence of tools and resources availability on the performance of the department of planning of Kisumu City.	Tools and resource availability	• Ratio • Functionality • Security/ Access	• Nominal • Ordinal	Descriptive statistics Correlation Chi-square
2	To determine the influence of system integration on the performance of the department of planning of Kisumu City.	System integration	• Workflow • Ease of data sharing & accessibility • Online access	• Nominal • Ordinal	Descriptive statistics Correlation Chi-square
3	To find out the influence of real time feedback mechanisms on the	Real time feedback mechanism	• Medium • Timeliness • Reliability & Accuracy (CIA)	• Nominal • Ordinal	Descriptive statistics Correlation Chi-square

	performance of the department of planning of Kisumu City.				

3.9 Ethical Considerations

From the onset, the researcher sought the consent from the respondent to participate in the study and an assurance to them of their voluntary participation. The researcher explained to each respondent, the purpose of the study. In the spirit of confidentiality, the respondents were not required to provide their names or any specific form of identification on the research instruments. The respondents were also assured that the information provided by them was for research purposes only. During administration of the tools, the researcher observed openness and honesty during the whole process.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents data analysis results, interprets the findings of the study and discusses the findings in light with empirical literature. The analysis, presentations, interpretations and discussions of the findings are in accordance with the three objectives of the study.

4.2 Response rate

The response rate for the questionnaires was worked out as discussed below:

Out of the sample size of 16 respondents, 14 were reached and completed their questionnaires and returned for analysis. This gave a response rate of 97.73%. This was considered very good for analysis. A response rate of 50% is considered adequate for analysis and reporting, 59% is good and that of 69% and above is very good (Mugenda and Mugenda, 2003).

4.3 Availability of tools and resources on performance of the planning department of City of Kisumu

This section presents data, interpretations and discussions on the first objective of the study; To examine the influence of tools and resources availability on the performance of the department of planning of City of Kisumu.

4.3.1 Access to a computer to carry out daily activities

The respondents were asked whether they have access to a computer at their desk while carrying out your daily activities, the results were as discussed below:

The respondents were able to indicate whether they have access to computer in their desk while carrying out their daily activities, all the respondents at 14(100%) said yes. This meant that computers were readily available to all the skilled employees working at the planning department of Kisumu City, this would make automation of building plans a lot easier. The researcher established that there was a significant relationship between access

to a computer by staff to carry out daily activities and the performance of the department of planning of Kisumu City, $p=0.0011<0.05$, this meant that access to a computer by staff is important in explaining the variations in performance of the department. This converges with the findings of Compeau and Higgins, 1995; that there is a positive relationship between Computer Self Efficacy, user performance and the overall performance of an organization. This further illustrates that automation is good for operationalization of processes and enhancement of revenue collection which eventually improves the living standards of employees from salary increment.

4.3.2 Sharing of computers among the skilled staff

The respondents who said that they had access to a computer to carry out daily activities were further asked if their same the computers are shared with a colleague, the results were as shown in Table 4.1

Table 4.1

Sharing of computers among the staff at the planning department

Response	Frequency	Percent
Yes	2	1.4
No	12	98.6
Total	14	100.0

The respondents were able to indicate whether they were sharing computers with their colleagues or not, majority of the respondents at 12(98.6%) did not share computer with colleagues with only 2(1.4%) respondents mentioning that they shared a computer with a colleague. This gave the indication that there were adequate working tools to support the automation of the building plans and staff could therefore support clients more effectively. According to Wells (2000) the fact that majority of the staff have their own computers can be a motivating factor and that workplace satisfaction has been associated with job satisfaction. They also noted that the best measurement of employee productivity and efficiency is through their comfort on the job which was further determined by workplace conditions and environment.

4.3.3 Working condition of the computer

The respondents who had said that they had access to a computer to carry out daily activities were further asked if the computer was functional or does it needed repair, the results were as discussed below:

The respondents were able to point out whether the computer allocated to them was functional or needed repair, all the respondents at 14(100%) said that the computer was functional. This shows the commitment of the planning department in ensuring that the tools and resources are in good condition to facilitate faster and efficient service delivery. Given that all the computers used by the skilled staff were found to be in working condition, the departmental output in terms of effectiveness and efficiency is likely to be enhanced. The researcher also established that there was a significant relationship between the working condition of the computer and the performance of the department of planning in Kisumu City, $p=0.041<0.05$, this meant that the working condition of the computer was an important determinant of whether the department would perform well or not. These findings converge with the argument of Pech and Slade (2006) that the employee disengagement is increasing and it becomes more important to make workplaces that positively influence workforce, if computers are not in working condition then the employees are likely to be disengaged. Another research indicates that improving the working environment reduces complaints and absenteeism while increasing productivity (Roelofsen, 2002), having all the computers in a working condition is actually a good sign of improved working condition at the department of planning of Kisumu City.

4.3.4 Security and accessibility of data

The respondents were asked to state the extent to which the data was secure and accessible for transaction purposes, the results were as shown in Table 4.2

Table 4.2

Security and accessibility of data

Response	Frequency	Percent
Secured and Accessible	2	2.8
Secure and Restricted	2	2.8
Not secure and accessible	08	79.2
Not secure and not restricted	2	15.3
Total	14	100.0

Source: Researcher 2012

The respondents were able to rate the extent to which the data was secure and accessible for transaction purposes, majority of the respondents at 10(79.2%) said that the data was not secure and but accessible, 2(15.3%) respondents said that the data was not secure and not restricted, 1(2.8%) respondents said that the data was secured and accessible with a similar number 1(2.8%) saying that the data was secure and restricted.

4.3.5 Departmental performance and implementation of automation

The respondents were asked to give their opinion on whether they think performance will improve with the implementation of system automation; the results were as discussed below:

The respondents were able to give their opinion on whether system automation would result in the improvement of performance of the planning department of Kisumu City, all the respondents at 14(100%) said that system automation would improve the performance of the department. This finding mirrors those of Hosseinian *et al* (2014) who established that there is a significant relationship between the automation components and performance aspects at 1% level. The correlation coefficient for various aspects of automation with performance is like that (modified work process (47/0), the quality of decision-making 41/0, data analysis 49/0 accountability quality 59/0, new idea entrance 49/0).

4.3.6 Relationship test between tools and resource availability and performance of the department of planning of Kisumu City

The researcher sought to test the null hypothesis that; there is no significant relationship between tools and resource availability and performance of the department of planning of Kisumu City, the tests were done at 5% confidence interval, the results were as discussed below:

It was established that there is a significant relationship between tools and resource availability and performance of department of planning of Kisumu City, χ^2 (1,144) = 13.290, p = 0.000<0.05. This means that the variations in performance of the planning department would be explained partly by the availability of tools and resources to the skilled staff. The researcher therefore rejects the null hypothesis and upholds the alternative hypothesis that there is a significant relationship between tools and resource availability and performance of the department of planning of Kisumu City. This finding diverges those of AL-Gharaibeh & Malkawi (2013) who found out that there is no impact of hardware and software equipment on the performance of governmental organizations or departments.

4.4 System integration on the performance of the department of planning of Kisumu City

This section presents data, interpretations and discussions on the second objective of the study; to determine the influence of system integration on the performance of the department of planning of Kisumu City.

4.4.1 Information about building plans and approval processes

The respondents were asked how clients and developers get information about building plans approval process, the results were as shown in Table 4.3

Table 4.3

Information about building plans and approval processes

Response	Frequency	Percent
Website	01	2.8
SMS	06	87.5
Radio	03	4.2
Newspaper	04	5.6
Total	14	100.0

Source: Researcher 2012

The respondents were able to state how clients and developers get information about building plans approval process, majority of the respondents at 06(87.5%) said that they got the information through SMS, 04(5.6%) said they got through newspaper, 03(4.2%) said they got the information through radio and with the least at 01(2.8%) saying that the information was received through the website. This meant that the information about building plans and approval process can be accessed through multiple media in an integrated manner.

4.4.2 Progress of building plans

The respondents were asked to state how clients and developers check for progress of their building plans; the results were as shown in Table 4.4

Table 4.4

Progress of building plans

Response	Frequency	Percent
Website	02	1.4
SMS	04	27.8
Any other	08	70.8
Total	14	100.0

Source: Researcher 2012

Respondents were able to indicate how clients and developers check for progress of their building plans, majority of the respondents at 08(70.8%) said any other, 04(27.8%) SMS and least respondents 2(1.4%) use Website. This meant that most developers, architects and clients still preferred visiting the department physically to check on the progress of their building plan. Internet technology largely remains un-adapted as a way of checking the progress of building plans. The department of planning had not yet automated and properly integrated the information system which according to Lee and Whang (2000) is the sharing of pertinent information.

4.4.3 Timeliness of information on building plans and approval processes

The respondents were asked to state how timely the information on building plans and approval processes is sent to developers, architects or clients, the results were as shown in Table 4.5

Table 4.5

Timeliness of information on building plans and approval processes

Response	Frequency	Percent
Real-time	02	1.4
After a day	04	2.8
Weekly	06	94.4
Monthly	02	1.4
Total	14	100.0

Source: Researcher 2012

Respondents were able to state the timeliness with which the information on building plans and approval processes is sent to developers, architects or clients above information is sent to the developers, architects or clients, majority of the respondents at 06(94.4%) weekly, 04(2.8%) after a day and least respondents at 02(1.4%) Real-time and another at 02(1.4%) responded monthly. This meant that information on building plans and approval processes are largely done on a weekly basis, this could be enhanced if the automation fully takes effect. The researcher also established that there was a significant relationship between timeliness of information on building plans and approval processes and the performance of the department of planning of Kisumu city, $p=0.034<0.05$, this meant that the timeliness of information on building plans and approval processes is an important determinant of the performance of the department of planning of Kisumu City. According to Carr & Kaynak (2007) integration would lead to more timely sharing of information with all the stakeholders, this would actually see most of the clients access the information real-time.

4.4.4 Information reliability and detail

The respondents were asked whether the information they send to the clients are reliable and detailed about their specific building application plans as shown below:

Table 4.6

Information reliability and detail

	Frequency	Percent
Very reliable and very detailed	02	2.8
Reliable and detailed	04	9.7
Not reliable and detailed	01	1.4
Not reliable and not detailed	03	6.9
Reliable and not detailed	06	79.2
Total	16	100.0

Source: Researcher 2012

The respondents were able to indicate whether the information they send to clients are reliable and detailed, majority of the respondents at 06(79.2%) said that the information was reliable but not detailed, 04(9.7%) said that the information was very reliable and very detailed,02(2.8%) of the respondents said that the information was not reliable and detailed with only 01(1.4%) mentioning that the information was not reliable but specific. It is clear that the information is reliable but is not specific to the clients' satisfaction. This would mean that after getting the information from one medium, they have to get to another medium to get the required detail. Carr & Kaynak (2007) also observed that information integration would also ensure the sharing of critical information between a supplier and a buyer that is detailed and reliable enough. The researcher also established that there was a significant relationship between information reliability and detail and the performance of the department of planning of Kisumu city, $p=0.043<0.05$, this meant information reliability and detail was of critical consideration in explaining the variation on performance of the department of planning of Kisumu City.

4.4.5 Relationship test between system integration and performance of the department of planning of Kisumu City

The researcher sought to test the null hypothesis that; there is no significant relationship between system integration and performance of the department of planning of Kisumu City, the test was done at 5% confidence interval, the results were as discussed below:

It was established that there is a significant relationship between system integration and performance of department of planning of Kisumu City, χ^2 (1,144) = 8.491, p = 0.014 <0.05. This means that the variations in performance of the planning department would be explained partly by the level of system integration in the department. The researcher therefore does not agree with the null hypothesis and upholds the alternative hypothesis that there is a significant relationship between system integration and performance of employees at the planning department.

4.5 Real time feedback mechanisms on the performance of the department planning of Kisumu City

This section presents data, interpretations and discussions on the third objective of the study; To find out the influence of real time feedback mechanisms on the performance of the department of planning of Kisumu City.

4.5.1 Availability of online platform

The respondents were asked to state whether there was an online platform for application process by clients, the results were as shown in Table 4.7

Table 4.7

Availability of online platform

Response	Frequency	Percent
Yes	10	97.2
No	4	2.8
Total	14	100.0

Source: Researcher 2012

Respondents were asked whether the system has an online platform for application process by clients, majority of the respondents at 10(97.2%) agreed and said yes and least respondents at 04(2.8%) disagreed that the system has an online platform. The researcher also established that was a significant relationship between availability of online platform and the performance of the department of planning of Kisumu city, $p=0.036<0.05$, this meant that availability of an online platform is important in influencing the performance of the department of planning of Kisumu City. This finding converges with those of Elsaadani (2014) that ICTs dimension positively affect workforce productivity and organizational performance with regard to the randomly investigated industrial organizations.

4.5.2 Information on building plans approval available in the online platform

The respondents were asked whether the information on the building plans approval process is available in the online platform; the results were as shown in Table 4.8

Table 4.8

Information on building plans approval available in the online platform

Response	Frequency	Percent
Yes	12	98.6
No	2	1.4
Total	14	100.0

Source: Researcher 2012

The respondents were able to state whether the information about building plans approval process were readily available in the online platform, majority at 12(98.6%) said that such information was available with only 2(1.4%) respondents saying that the information was not readily available in the online platform. This meant that the information on the building plans was readily available for clients to access in the online platform.

4.5.3 Coordination between the departments in data sharing

The respondents were asked to state whether there was sufficient coordination between the departments for ease of data sharing in the organization, the results were as discussed below:

The respondents were able to state whether there was sufficient coordination between the departments for ease of data sharing in the organization, all the respondents at 14(100.0%) said that there was no coordination between the department. The poor coordination between the departments in data sharing was a possible hindrance towards effectiveness in the department of planning of Kisumu City. In the same breadth AL-Gharaibeh & Malkawi (2013) established that there is a significant impact of networks, individuals and procedures, and management information system as a whole on the performance of governmental organizations since it enhances coordination and information sharing among departments and organizations.

4.5.4 Potential of automated tracking and notification for efficiency and timeliness

The respondents were asked to give their opinion whether the implementation of an automated tracking and notification system for all building plans applications submitted would improve on efficiency and curb delays, the results were as discussed below:

Respondents were asked to state whether there will be improvement on efficiency and curb delays if the department implemented an automated tracking and notification system for all the building plans applications submitted, all at 14(100.0%) responded yes. This finding supports those of Davis (2001) who noted that ICT is capable of enhancing productivity by reducing time and effort needed to acquire information resources.

4.5.5 Data Security and Accuracy

The respondents were asked to give their opinion on whether they though data was kept secure and accurate just for them or was shared with other clients and stakeholders; the results were as discussed below:

The respondents were able to state whether their data was kept secure and accurate just for them, all the respondents at 14(100.0%) said that the data was neither secure nor accurate. This meant that the staff and clients do not have confidence on the department insofar as security and accuracy of their data is concerned. This is likely to affect the performance of the department negatively. In support of this, the researcher also established that there was

a significant relationship between data security and accuracy and the performance of the department of planning of Kisumu city, p=0.027<0.05, this meant data security and accuracy was essential in explaining the variation on performance of the department of planning of Kisumu City. The findings are in line with those of Hall, Sarkani and Mazzuchi (2011) who established that the ability to orchestrate the means to respond to information security threats, are positively associated with effective implementation of information security strategy, which in turn positively affects organization performance.

4.5.6 Relationship test between real time feedback mechanisms and performance of the department of planning of Kisumu City

The researcher sought to test the null hypothesis that; there is no significant relationship between real time feedback mechanisms and the performance of the department of planning of Kisumu City, the test was done at confidence interval of 5%, the results were as discussed below:

It was established that there is a significant relationship between real time feedback mechanisms and performance of department of planning of Kisumu City, χ^2 (1,144) = 3.380, p = 0.039<0.05. This means that the variations in performance of the planning department would be explained partly by the real feedback in the department. The researcher therefore disagrees with the null hypothesis and upholds the alternative hypothesis that there is a significant relationship between real time feedback mechanisms and the performance of the department of planning of Kisumu City. These findings converge with those of Javadi and Safari (2013) that automation leads to easy and rapid access to statistics and information, enhances the performance with the significance level of the symbol shows p=0.001) and the critical ratio of 0.752. Also automation leads to speed of affairs and which has direct, positive and significant effect on organizational performance.

CHAPTER FIVE
SUMMARY OF RESEARCH FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the main study, conclusions, recommendations arrived at and contribution to body of knowledge including suggestions on future research.

5.2 Summary of Findings

The first objective was to examine the influence of tools and resources availability on the performance of skilled staff at the department of planning of Kisumu City. All the respondents at 14(100%) had access to a computer to enable them carry out their daily tasks out of which majority of the respondents at 12(98.6%) did not share computer with colleagues with only 2(1.4%) shared. There was a significant relationship between access to a computer by staff to carry out daily activities and the performance of the department of planning of Kisumu City, $p=0.0011<0.05$. All the computers were in good working condition, a significant relationship between the working condition of the computer and the performance of the department of planning in Kisumu City was established, $p=0.041<0.05$.The data was not secure and but accessible as indicated by majority of the respondents at 22(79.2%), 12(15.3%) said that data was not secure and not restricted, 2(2.8%) said the data was secured and accessible with a similar number 2(2.8%) saying that the data was secure and restricted. It was established that there is a significant relationship between tools and resource availability and performance of department of planning of Kisumu City, $\chi^2 (1,144) = 13.290$, $p = 0.000<0.05$.

The second objective was to determine the influence of system integration on the performance of the department of planning of Kisumu City. Majority of the respondents at 12(87.5%) said that clients and developers got information about building plans approval process, through SMS, 8(5.6%) said they got through newspaper, 6(4.2%) said they got the information through radio and with the least at 4(2.8%) saying that the information was received through the website. Most of the respondents at 10(70.8%) said that developers, architects and clients still preferred visiting the department physically to check on the

progress of their building plan, 9(27.8%) used SMS while 2(1.4%) said they used website. Majority of the respondents at 13(94.4%) said that the information on building plans and approval processes was sent to developers, architects or clients weekly,4(2.8%) said after a day, 2(1.4%) real-time and another at 2(1.4%) said monthly. Majority of the respondents at 11(79.2%) said that the information sent was reliable but not specific,11(9.7%) said that the information was reliable and specific,4(2.8%) of the respondents said that the information was very specific and very reliable with only 2(1.4%) mentioning that the information was not reliable but specific. There was a significant relationship between information reliability and detail and the performance of the department of planning of Kisumu city, $p=0.043<0.05$. It was also established that there is a significant relationship between system integration and performance of department of planning of Kisumu City, $\chi^2 (1,144) = 8.491$, $p = 0.014<0.05$.

The third objective was to find out the influence of real time feedback mechanisms on the performance of the department of planning of Kisumu City. The system did have an online platform for application process by clients as indicated by majority of the respondents at 14(97.2%) responded yes with only 4(2.8%) saying no. There was a significant relationship between availability of online platform and the performance of the department of planning of Kisumu city, $p=0.036<0.05$. Information about building plans approval process was readily available in the online platform as mentioned by majority of the respondents at 12(98.6%), only 2(1.4%) said the information was not readily available online. All the respondents said there was poor coordination between the departments for ease of data sharing in the organization; they also had the view that there will be improvement on efficiency, curb delays if the department implemented an automated tracking and notification system for all the building plans applications submitted. The data was neither secure nor accurate as indicated by all the respondents. A significant relationship was also established between data security and accuracy and the performance of the department of planning of Kisumu city, $p=0.027<0.05$. Furthermore, there is a significant relationship between real time feedback mechanisms and performance of department of planning of Kisumu City, $\chi^2 (1,144) = 3.380$, $p = 0.039<0.05$.

5.3 Conclusions

On the first objective, to examine the influence of tools and resources availability on the performance of employees at the department of planning of Kisumu City. The researcher concluded that access to computer by staff is important in enhancing the performance of the planning department and a key component in automating of processes and procedures. There were adequate working tools to support the automation of the building plans and staff would therefore support clients more effectively. Client data was not securely stored. The availability of tools and resources to the staff influences the performance of the department of planning of Kisumu City.

In reference to the second objective, to determine the influence of system integration on the performance of the department of planning of Kisumu City. The researcher concluded that most developers, architects and clients still preferred visiting the department physically to check on the progress of their building plan, system automation would change this. Timeliness in sharing of information on building plans and approval processes as well as its reliability and detail are key determinants in the performance of the department of planning of Kisumu city. System integration is a key consideration in enhancing the performance of department of planning of Kisumu City.

In relation to the third objective, to find out the influence of real time feedback mechanisms on the performance of the department planning of Kisumu City. The researcher concluded that, the availability of an online platform is very key in influencing the performance of the department of planning of Kisumu City. There was poor coordination between the departments in data sharing which was a possible hindrance towards effectiveness in the department of planning of Kisumu City. There would be improvement on efficiency; delays would also be eliminated if the department implemented an automated tracking and notification system for all the building plans applications submitted. Real time feedback mechanisms would influence the performance of department of planning of Kisumu City.

5.4 Recommendations

1. There is need for the planning department of Kisumu City to strengthen the capacities and skills of the skilled employees to enable them use the tools and resources effectively for the greater improvement in performance.
2. Again, there is need for the planning department to strengthen the security features of their systems to ensure that all the client data are safe and secure this will boost public confidence.
3. Thirdly, with the launch of the automation, there is need for wider publicity, sensitization and encouragement among developers, architects and clients to access their information real time as opposed to visiting the department physically to check on the progress of their building plan. In addition, there is need for the planning department to strengthen system integration as a major step in enhancing the effectiveness and efficiency of department of planning of Kisumu City.
4. Lastly, automation of processes in an organization is always foreseen to bring to the fore a number of issues like potential positive and negative effects. There is need for structures put in place to address the case of possible job loss to the staff.

5.5 Contribution to Body of Knowledge

Objective	Contribution to body of knowledge
The first objective was to examine the influence of tools and resources availability on the performance of the department of planning of Kisumu City.	There was a significant relationship between access to a computer by staff to carry out daily activities and the performance of the department of planning of Kisumu city, p=0.0011<0.05.The relationship between the working condition of the computer and the performance of the department of planning in Kisumu City was found to be significant, p=0.041<0.05.Similarly,there was a significant relationship between tools and resource availability and performance of department of planning of Kisumu City, χ^2 (1,144) = 13.290, p = 0.000 <0.05.
The second objective was to determine the influence of system integration on the performance of the department of planning of Kisumu City.	There was a significant relationship between information reliability and detail and the performance of the department of planning of Kisumu city, p=0.043<0.05. It was also established that there is a significant relationship between system integration and performance of department of planning of Kisumu City, χ^2 (1,144) = 8.491, p = 0.014 <0.05.
The third objective was to find out the influence of real time feedback mechanisms on the performance of	There was a significant relationship between availability of online platform and the performance of the department of planning of

the department planning of Kisumu City.	Kisumu city, p=0.036<0.05. Correspondingly, a significant relationship was also established between data security and accuracy and the performance of the department of planning of Kisumu city, p=0.027<0.05. Furthermore, there is a significant relationship between real time feedback mechanisms and performance of department of planning of Kisumu City, χ^2 (1,144) = 3.380, p = 0.039<0.05.

5.6 Suggestions for Further Research

The study investigated the influence of automating building plans approval process on the performance of employees at the planning department of the City of Kisumu, it was however noted that the developers, architects and clients will also benefit. It is therefore important to investigate the cost-saving aspects to the developers, architects and clients with the advent of the automation of building plans approval process by the planning department of the City of Kisumu.

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APPENDICES

APPENDIX I: Letter of Transmittal

Dear Respondent,

RE: REQUISITION TO CONDUCT A RESEARCH PROPOSAL STUDY.

I am carrying out a research proposal titled: **Influence of automation of building plans approval process on performance of employees at the planning department of City of Kisumu in Kenya.** This is a requirement for partial fulfillment of the award of a Master of Arts Degree of the University of Nairobi. I am happy to inform you that you have been selected as a participant in this survey to obtain your views and concept on the influence of automation of processes towards delivery of services.

I will be pleased to get your responses on the same in accomplishing the study. I also want to assure you that the responses given will be for academic purposes only and treated with utmost confidentiality.

Thank you in advance for your co-operation.

Yours faithfully,

Sign…… Date:…….

AbdallahRamadhan
L50/82214/2012

APPENDIX II: Questionnaire for the Staff at the Planning Department

Introduction

I am a student at the University of Nairobi pursuing a Master of Arts Degree in Project Planning and management. I am currently carrying out a study on influence of building plans approval's automation process on performance of employees at the planning department of Kisumu City in Kenya.

This is as part of the requirement for the fulfillment of my master's degree. The purpose of this introduction is to kindly request you to participate in the study by completing the attached questionnaire which has been designed to assist me in gathering relevant information to the study.

Let me inform you that you have been chosen to participate and your response is critical to the study. Kindly respond to all questions by filling in the provided blank spaces and by putting a tick to the appropriate response that best applies to the questions. I want to assure you that all the answers given will remain confidential and used only for the academic purpose. **Please do not provide your name anywhere on the questionnaire.**

PART ONE: AVAILABILITY OF TOOLS AND RESOURCES TO FACILITATE AUTOMATION OF THE DEPARTMENT

INSTRUCTIONS

(i) Answer all questions

(ii) Please give brief and clear answers to each question in the dotted lines.

1. **Do you have access to a computer at your desk while carrying out your daily activities?** (This is to ascertain if a staff has access to computer) ……..
……….

2. **If your answer to question one (1) above is yes, are you sharing with a colleague? ……..**

3. **If your answer to question one (1) above is yes, is the computer functional or does it need repair?**

Functional ( ) Not functional ( ) in need of repair ( )

4. **How secure and accessible is the data for transaction purposes?**

Secure and accessible ( ) Secure and restricted ( )
Not secure and accessible ( ) Not secure and not restricted ( )

5. **Do you think your performance will improve with the implementation of automation?**.....
Please give reason……
……..
…….

PART TWO: REAL TIME FEEDBACK MECHANISMS TARGETING PRIVATE DEVELOPERS AND CLIENTS

INSTRUCTIONS

(i) Answer all questions

(ii) You can choose multiple answers for a question by putting a (√) in the appropriate box.

6. **How do clients and developers get information about building plans approval process?**

Website ( ) SMS ( ) TV ( ) Radio ( )

Newspaper ( )

7. **How do clients and developers check for progress of their building plans?**

Website ( ) SMS ( ) Any other ( )

8. **How timely is the above information when you send it the developers, architects or clients?**

Real-time ( ) After a day ( ) After two days ( )

Weekly ( ) After two weeks ( )

Monthly ( )

9. **Is the information you send to them reliable and detailed about their specific building application plans?**

Very reliable and very specific ( ) Reliable and specific ( )

Not reliable and specific ( ) Not reliable and not specific ( )

Reliable and not specific ( )

PART THREE: MANAGEMENT INTEGRATION OF THE AUTOMATION PROCESS

INSTRUCTIONS

(i) Answer all questions

(ii) Please give brief and clear answers to each question in the spaces provided.

10. Does the system have an online platform for application process by clients?

    ……

    ……

(This is to ascertain whether the system can be accessed remotely anytime)

11. Is the information about building plans approval process readily available in the online platform?.....

    ……

    …….

12. Is there sufficient coordination between the departments for ease of data sharing in the organization?.....

    ……

13. If the department implemented an automated tracking and notification system for all building plans applications submitted, will that improve on efficiency and curb delays? (kindly explain) ……

    ……

14. In your opinion, how effective would it be if the department introduced time limits for building plans to be reviewed and processed for each department……..

    ……

    Do you think your data is kept secure and accurate just for you or is it shared with other clients and stakeholders? ……

    ……..

    ……..

    ……..

PART FOUR: PERFORMANCE OF EMPLOYEES OF THE PLANNING DEPARTMENT

INSTRUCTIONS

(i) Answer all questions

(ii) Please give brief and clear answers to each question in the spaces.

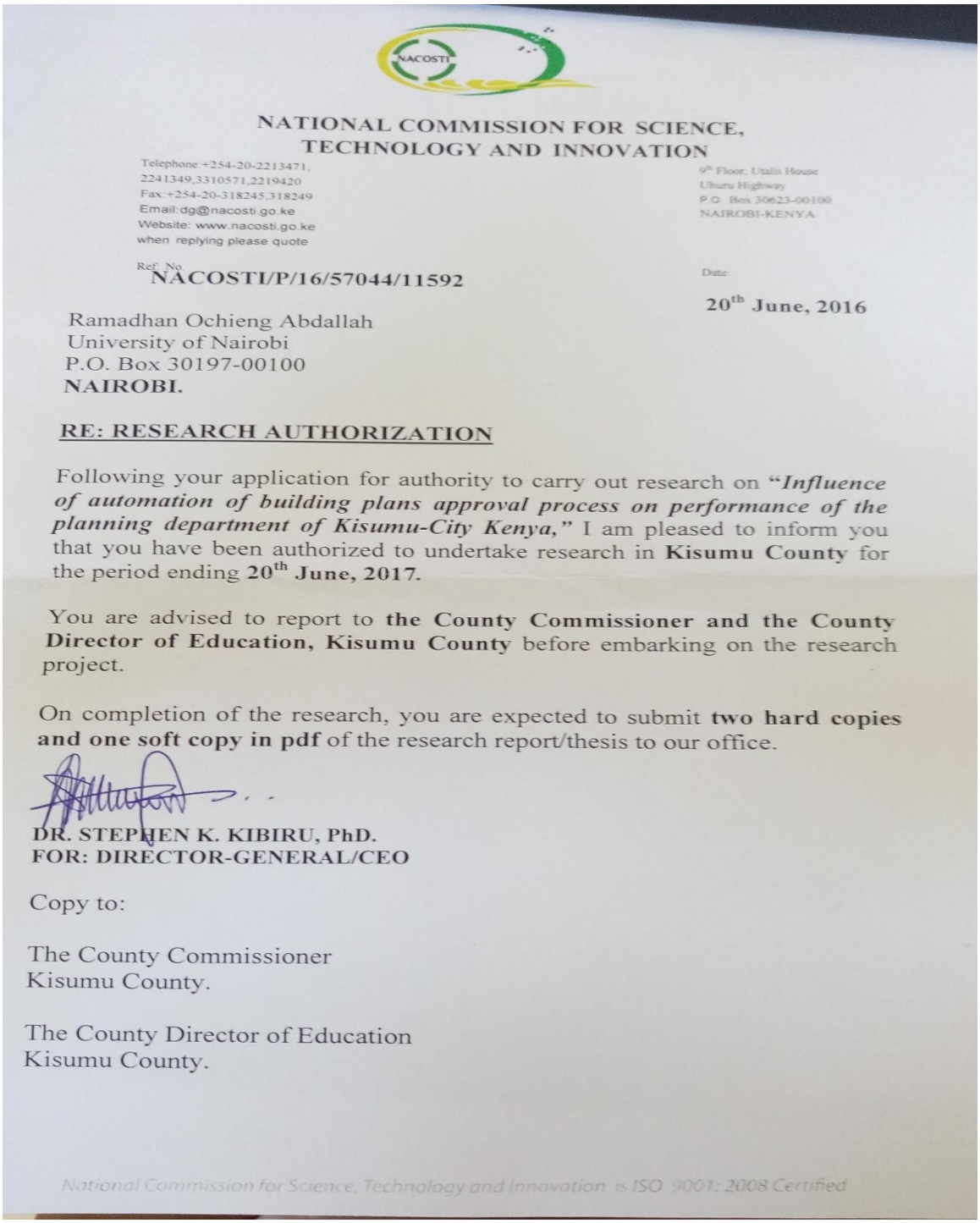
15. Do you think automation of building plans approval process will reduce the operational cost on the services offered to clients?.....
    ……
    ……
    ……
    (This is to ascertain whether operational cost will reduce substantially)
16. Do you think the automation of building plans approval process will enhance the timeliness with which services are offered to clients?.....
    ……
    (This is to establish whether the system is efficient)
17. Do you think automation of services will improve your performance on the number of plans you approve per day?.....
    ……
18 Do you think automation of building plans approval process will lead to increase in revenue for the department of planning of Kisumu City?.....
    ……
    ……
19. Do you think automation of building plans will reduce backlogs or even eliminate them completely?.....
    ……...

Thank you for answering all questions and God bless you.

APPENDIX III: Sample Size Determination Table Where confidence level is 95% and p =0.5

Size of Population	Sample Size (n) ± 3%	Precision (e) of: ± 5%	± 7%	± 10%
25	**A**	**30**	**16**	**36**
50	A	48	36	41
75	A	65	53	46
100	A	81	67	51
125	A	96	78	56
150	A	110	86	61
175	A	122	94	64
200	A	134	101	67
225	A	144	107	70
250	A	154	112	72
275	A	163	117	74
300	A	172	121	76
325	A	180	125	77
350	A	187	129	78
375	A	194	132	80
400	A	201	135	81
425	A	207	138	82
450	A	212	140	82

Source: Glenn, D. Israel (2009)



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Ref. No. NACOSTI/P/16/57044/11592

Date: 20th June, 2016

Ramadhan Ochieng Abdallah
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "***Influence of automation of building plans approval process on performance of the planning department of Kisumu-City Kenya,***" I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for the period ending **20th June, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kisumu County.

The County Director of Education
Kisumu County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

Research Permit-
Ramadhan Abdallah