

**INFORMATION SYSTEMS IMPLEMENTATION AND PERFORMANCE OF  
FLORICULTURAL FIRMS IN NAIROBI METROPOLITAN, KENYA**

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**APRIL 2022.**

**DECLARATION**

The scholarly work has never been submitted in other University/College for awarding of degree, meaning that it is my unique work.

Sign .....

Date.....

**JOSEPH NTHENGE MULEI**

**D53/OL/CTY/PT/38235/2016**

I approve that the research project was done in my guidance.

Sign .....

Date .....

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## **DEDICATION**

This work is devoted to the Almighty God because He gave me the strength, opportunity, and capability to pursue this course. I also dedicate the work to my wife Yvonne, my children, Leticia and Gianna, my parents, siblings, and friends for their support.

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## TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>DEDICATION</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>LIST OF TABLES</b> .....	<b>viii</b>
<b>LIST OF FIGURES</b> .....	<b>ix</b>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>x</b>
<b>OPERATIONAL DEFINITION OF TERMS</b> .....	<b>xi</b>
<b>ABSTRACT</b> .....	<b>xii</b>
<b>CHAPTER ONE: INTRODUCTION.</b> .....	<b>1</b>
1.1 Background.....	1
1.1.1 Firm performance.....	2
1.1.2 Information Systems Implementation.....	3
1.1.3 Floricultural industry in Kenya.....	5
1.2 Problem statement.....	6
1.3 Objectives of the Study.....	8
1.3.2 Specific objectives.....	8
1.4 Study Queries.....	8
1.5 Significance of the study.....	9
1.6 Scope of the Research.....	9
1.7 Study Limitations.....	9
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	<b>11</b>
2.1 Overview.....	11
2.2 Theoretical Literature.....	11
2.2.1 Technology Acceptance Theory Model (TAM).....	11
2.2.2 Diffusion of Innovations (DOI) Theory.....	12
2.3 Empirical review.....	13
2.3.1 Top Management Support and Performance.....	13

2.3.2 Organizational Structure and Performance.....	14
2.3.3 Technology infrastructure and organization performance .....	14
2.3.4 Systems security and organization Performance.....	15
2.4 Research Gaps and Literature Review Summary.....	16
2.5 Conceptual outline .....	17
<b>CHAPTER THREE:RESEARCH METHODOLOGY.....</b>	<b>19</b>
3.1 Introduction.....	19
3.2 Research Design.....	19
3.3 Target Population.....	19
3.4 Sampling Technique and sample size .....	20
3.5 Data Collection Procedures.....	20
3.6 Reliability and Validity of the study. ....	21
3.6.1 Validity .....	21
3.6.2 Reliability.....	22
3.7 Data Analysis and presentation.....	22
3.8 Ethical Considerations .....	23
<b>CHAPTER FOUR:RESEARCH, FINDINGS AND DISCUSSIONS.....</b>	<b>25</b>
4.1 Overview.....	25
4.2 Response Rate.....	25
4.3 Sample Characteristics.....	25
4.3.1 Gender.....	25
4.3.2. Respondents Age.....	26
4.3.3: Employees work experience in floricultural sector.....	27
4.3.4: Number of years the firms have operated .....	28
4.3.5 Employees per firm.....	29
4.4 Responses of the variables .....	30
4.4.1 Performance.....	30

4.4.2 Top management support.....	31
4.4.3 Information System Organization structure.....	33
4.4.4 Technology infrastructure.....	34
4.4.5 IS security.....	35
4.6 Correlation Analysis.....	36
4.7 Regression Analysis.....	37
4.7.1 Model Summary.....	38
4.7.2 ANOVA (Analysis of Variance).....	39
<b>CHAPTER FIVE:SUMMARY, CONCLUSION, RECOMMENDATIONS .....</b>	<b>40</b>
5.1 Overview.....	40
5.2 Summary.....	40
5.2.1. Top management support in IS implementation on performance of Floricultural firms ....	41
5.2.2 Organization structure in IS implementation and performance of Floricultural firms.....	41
5.2.3 Technology infrastructure and performance of floricultural firms. ....	42
5.2.4 IS Security of the performance of floricultural firms.....	42
5.3 Conclusions.....	42
5.4 Recommendations.....	43
5.5. Further study recommendations.....	44
<b>REFERENCES.....</b>	<b>45</b>
<b>APPENDIX I: COVER LETTER .....</b>	<b>49</b>
<b>APPENDIX II: APPROVAL LETTER 1 .....</b>	<b>50</b>
<b>APPENDIX III: APPROVAL LETTER 2.....</b>	<b>51</b>
<b>APPENDIX IV: RESEARCH PERMIT .....</b>	<b>52</b>
<b>APPENDIX V: QUESTIONNAIRE.....</b>	<b>53</b>

## LIST OF TABLES

<b>Table 2.4 Research gaps.....</b>	<b>16</b>
<b>Table 3.4 Sample Size.....</b>	<b>20</b>
<b>Table 4.3.2: Age response rate.....</b>	<b>26</b>
<b>Table 4.3.3: Employee work experience.....</b>	<b>27</b>
<b>Table 4.3.4: Years of operation.....</b>	<b>28</b>
<b>Table 4.3.5: Employees per firm.....</b>	<b>29</b>
<b>Table 4.4.1: Performance variable.....</b>	<b>30</b>
<b>Table 4.4.2: Top management support.....</b>	<b>32</b>
<b>Table 4.4.3: Organization structure.....</b>	<b>33</b>
<b>Table 4.4.4-Technology infrastructure.....</b>	<b>34</b>
<b>Table 4.4.5: Systems security.....</b>	<b>35</b>
<b>Table 4.6.1: Coefficient correlation.....</b>	<b>36</b>
<b>Table 4.7.1: Regression Coefficient.....</b>	<b>37</b>
<b>Table 4.7.1: Model Summary.....</b>	<b>39</b>
<b>Table 4.8.2: Analysis of Variance (ANOVA).....</b>	<b>39</b>

**LIST OF FIGURES**

**Figure 2.5: Conceptual outline .....18**

**Figure 4.3.1 Gender response rate.....26**

## **ACRONYMS AND ABBREVIATIONS**

DTIS	Diagnostic Trade Integration Study
EFITA	European Federation for Information Technology in Agriculture
GFAR	Global Forum on Agricultural Research
HCDA	Horticultural Crops Development Authority
FAO	Food Agricultural organization
ICT	Information and Communication Technology
IS	Information Systems.
IT	Information Technology
PC	Personal computers
KFC	Kenya flower council
NACOSTI	National Commission for Science, Technology, and Innovation
ANOVA	Analysis of variance
NGO	Non-Governmental Organization
SLA	Service level agreement.

## **OPERATIONAL DEFINITION OF TERMS**

<b>System Security</b>	Ability of the information systems to restrict unwanted access to data and information or any unwanted modification either using passwords or firewalls.
<b>Performance</b>	Performance is defined as the extent to which the Information Systems helps the organizational meeting the goals.
<b>Technology Infrastructure</b>	Refers to the organization of information technology components which helps the organization in collection analysis and dissemination of the information to the organization such as hardware, software, and networking equipment's
<b>Top Management Support</b>	Senior employees of the organization who have the major roles of ensuring the departments and the company long term plans are achieved.
<b>Organizational Structure</b>	Systems that direct how the activities of the organisation are done to achieve the organization positive performance.
<b>Floricultural Firm</b>	Refers to a business that deals with the activity of growing and selling of flowers and ornamental products.

## ABSTRACT

Floricultural sector in Kenya has been a key contributor to the economic growth though it has not performed optimally as compared to other global floricultural firms. Floricultural farming was introduced in Kenya by Europeans in 1960s. The demand for the Kenyan floricultural sector products has increased and this has made the local farmers to join the sector. From the literature, it is evident that the performance of this sector was not doing well due to failure on implementation of information's systems which could help in cutting down the cost of operation. The performance of floricultural firms can be significantly improved through an Information system that supports long-term improvements in terms of productivity, firm efficiency, and effectiveness. The specific goal of this study was to determine the information systems implementation factors, and floricultural firms' performance in Nairobi metropolitan. In order make a clear, consistent outcome in this study, the researcher used the Technology Acceptance Model and Diffusion of innovative. Additionally, empirical literature was used in this study to exemplify the need. The Study utilized a descriptive research design. Additionally, stratified random sampling was utilized in selecting firms from the sample size of 170 floricultural firms. The study narrowed down to 51 firms. The researcher collected primary data using structured questionnaire, which were distributed to the selected sample size. The list of the flowers firms was obtained from the Kenya flower council (KFC) website which a Kenyan certification for flower firms in Kenya. The target population comprised 51 floricultural firms of the total population in Nairobi Metropolitan. Data analysis included quantitative techniques for this research performed using multiple regression and descriptive analysis. The study results indicates that most of the floricultural firm's management level was mainly male dominated. The study concluded most respondents agreed that top management should allocate enough financial resources select the best vendors who are involved in implementation of the outsourced information systems. Additionally, organization structure was not composed of the information systems expert and should be emphasized when implementing information systems to enable the firms to optimize the performance as majority of the respondent agreed that this was not the case. Majority of the respondent were neutral about the contribution of the technology infrastructure to the performance of the firm. Information systems security plays a critical role in all sectors and as such, floricultural sector should also ensure that their information system security is guaranteed as majority of the respondents agreed that a single breach of information security could affect the performance of the firm. The multiple linear regression analysis results showed that Information system security and top management support to be the significant factors respectively, while organization structure and technology infrastructure were not significant respectively. From the results the researcher concludes that the top management should support training and provision of the required financial support to be the most important aspect driving the performance of the floricultural sector. Moreover, Information systems security trainings should be emphasized and provide the required skilled workforce in managing the IS security. The study further recommends that for performance of the floricultural firms to remain competitive, the management should consider supporting the trainings of information's systems and security of the systems.

## **CHAPTER ONE: INTRODUCTION.**

### **1.1 Background**

Information system implementation and progression keeps on becoming requisite for the business performance. Floricultural sector has also seen an enormous growth in implementation of the information systems globally in all areas of operations (Teymouri & Ashoori, 2011). Information Systems-related frameworks have opened new skylines for business undertakings and improved financial performance and empowered them to do their business exercises by utilization of cutting-edge innovations. Because of the changing industry climate, globalization, rivalry, changing shopper needs and developments, current serious associations need to check the performance components of Information Systems to improve their exhibition (Petter & DeLone, 2013). According to Mondal, (2017) most floricultural firms globally are implementing information systems to ease their daily operations and improve the performance.

Implementation of information systems in floricultural industry has also improved on standardization on global level players enabling competitiveness among the industry players. A look at the floricultural sector in the East and central African region, floricultural performance remains lower due to improper implementation of the information systems (FAO ,2017). Any venture achievement is straightforwardly recognized with the nature and level of data innovations and frameworks, used by the firm and the capability of utilizing those frameworks effectively. Major tests for Information Systems in different areas, for example, horticulture, has been the implementation factors which contribute to the performance of the floricultural industry. According to KFC (2017), most firms performance can be improved by implementing information systems which allow them to compete at global level in terms data sharing, daily operations hence reducing the cost of operation and improve financial stability.

Implementation factors are additionally compounded by explicit attributes of the floricultural area, which incorporates the enormous number of operators along with the production network and the heterogeneity of those entertainers. The subsequent are extremely helpless data stream along with the production network (World Bank Gathering, 2012). In business, IS can possibly contribute towards accomplishing critical and manageable monetary, social, and ecological advantages (GFAR, 2015). Syed (2009) upholds this and surely noticed that business execution would progressively be educated by information system utilize whose execution is subsequently inescapable. Regarding horticulture, he noticed that Information Systems is quickly impacting worldwide floricultural execution

### **1.1.1 Firm performance**

Performance involves the genuine yield of a firm as estimated against its planned yields. As indicated by Gomez-Mejia et al, (2014), the performance of a firm envelops three principal, financial performance, and the ease with which the operations can be done in service delivery. These spaces are the monetary presentation, item market execution, including the business, portion of the overall industry, and the investor return. Specialists in numerous grounds are more centered around the presentation of the organizations, including key organizers, measures, accounts, consents, and improvement of an association (Sabharwal, 2014). Execution estimation is the usage of factual signs to find progress toward specific characterized targets of an association.

According to Choi & Davis (2014), performance of floricultural firms alludes to the level of acknowledgment of the organization's financial growth as attributed to direct implementation of information systems. These targets can be monetary, like a portion of the overall industry and development rate, just as monetary destinations such as productivity, proportion, sell-outs, operational goals including item nature and authoritative goals (Short & Palmer, 2013). Then

again, saw authoritative performance estimates data framework's impact on organization execution (Saddique, et al, 2013). Advantages toward progress in proficiency and execution of organization, diminishing in costs, improving in quality, raising adaptability, advancing client fulfillment, higher monetary execution is normal with the data innovation venture of organizations.

In an examination of 40 organizations in the protection industry, a positive connection is called attention to between authoritative execution and data innovation speculation. Potential advantages that may be acquired after cautious thought of IS execution elements of a framework are gigantic. According to Chepngeno & Mote, (2019), on a recent study, the advantages can move from improved information in the board to diminished operating and various expenditures. It ought to be noticed that those advantages don't show quickly. The advantages can become apparent only when association's structures start to adequately utilize Information Systems effectively (Chepngeno & Mote, 2019). The interaction can be long and require plenty of assets, top administration support, project group, innovative framework, and security time. This study measured performance of floricultural firm as a result of information system implementation in terms of financial growth, accuracy of relevant data and efficiency in service delivery.

### **1.1.2 Information Systems Implementation**

IS implementation thought can be ordered into inward and outer. Interior components incorporate an association's capacities like monetary strength, the overall business performance, techniques, hierarchical construction/size, top administrative help, frameworks security and abilities, and past inheritance innovation frameworks (Laudon & Laudon, 2011).

According to Laudon & Laudon, (2011) Information systems implementation constitutes a process of identifying the how the IT systems will be operationalized, to ensure that it used to

efficiently and effectively to meet the quality standard. Outer elements are changes due innovation and patterns, security of the systems, rivalry powers, the strength of innovation suppliers, consistency with prerequisites from different associations, and consistency with the legitimate structure inside which the association is domiciled (Maguire, 2002). In measuring the success of operationalized information's systems, authors have measured IS success as a degree to which the systems users believed that it solved a particular organization problem hence improving the performance (DeLone & McLean, 2016).

Top management refers to the senior most employees in an organization who are the vision bearers of the organization. They give directions to the junior levels of the organizations and implement the directors' directives. This directive includes implementations of the projects such information systems which enable the firms to remain competitive by improving the firm's performance (DeLone & McLean, 2016). For any implementation of a project to be successful, top management/leadership must be active and provide the much-needed support. Leadership should ensure that the constant communication and reviews of the project are done. This is basic key factor for top management to ensure any barriers to implementation of the information's systems and provision of resources.

Organization structure is defined as systematic way in which the teams of the organization share tasks or subdivisions of the organization according to the authority (Saddique et al., 2013). Organization is structured differently depending on the culture and performance goals. The structure of the organization dictates how the implementation of information systems can be done at each subdivision to achieve the desired target. According to Borja's (2012), the effectiveness of the organizations structures determines the success of projects implementation and performance of the firm.

Technology infrastructure is a set all IT components, both software and hardware that helps the organization in collection, analysis, storage, and retrieval of information for decision making (Maoz, 2006). Technology infrastructure plays a crucial role when it comes to communication in organization. Additionally, technology infrastructure is of critical part in aiding organization to process the data which can give organization competitive advantage.

Systems security refers to the ability of the information systems to restrict unwanted access to data and information or any unwanted modification either using passwords or firewalls (Maguire, 2002). For every organization that is implementing information systems, security of the data is very critical otherwise it can make the organization make poor decisions leading to poor performance. Nowadays most organization are moving to bring your own device (BYOD), whereby the organization are allowing employees to use their devices in accessing corporate file. As such, the security of this devices needs to be checked or controlled from a central location by either use of PIN or face recognition.

### **1.1.3 Floricultural industry in Kenya**

Evolution of floricultural industry in Kenya started in 1960s when the Europeans in Kenya started exporting to the European countries (Hughes, 2004). In Kenya flowers are grown in different geographical locations including, Muranga, Kiambu, Nakuru, Naivasha and Thika region among others. These regions have favourable climatic conditions as well as reliable labour. Over the years, the demand for flowers from Kenya has been increasing by 5% annually (KFC, 2013). This has resulted expansion of the flowers firms and demand for more labour and implementation of the information systems which can be able to help the firms meet the required performance.

The firms are required to use this information's systems in areas of operation such as irrigation operations, chemicals applications, labour optimization and planning and storage which is not

the case right now. Some of the flowers which have managed to partially implement information systems are attracting foreign investors because of favourable performance achieved through the new IS technologies (KFC, 2014). In a report by World Bank (2011) entitled “global competitiveness of the Kenyan flower sector”, it is noted that leaders of floricultural sector are Netherlands, Kenya, and Ethiopia. Additionally, the report indicates that continues to increase and the implementation of new information’s systems to boost performance of the is inevitable.

According to World Bank (2012), It is highlighted that little been done on factors affecting implementation of information systems in the Kenyan floricultural sector. At the global level, several research have been done in Netherlands done on ICT adoption and performance of floriculture. In Kenyan flower sector, floricultural sector operations are mainly divided into four phases which includes, planning, production, harvesting and post harvesting phase. Each of this phase has a unique challenge which can be solved by implementing information systems hence improving the performance of the firm. According to the research done, such as KFC (2014), HCDA (2013) there is urgent need to research on factors affecting implementation of information systems as a key contributor of floricultural performance in Kenya hence the need for the research.

## **1.2 Problem statement.**

Floricultural farming is a subsector of horticulture farming and is one of the biggest contributors of the Kenyan GDP (Gakuo, 2011). According to KFC (2014), floricultural sector is composed of foreign and local owners. This has made the floriculture sector very competitive and raised the need of implementing modern technologies. Despite been the largest contributor to the economy in Kenya, it has not been competitive enough with other global producers of flowers who are already performing better in their daily operations. A study conducted by KFC

(2013) shows that only 20% of the Kenyan floricultural firms have managed to partially implement information's in their daily operations. Kinuthia (2012) investigated the relationship on ICT implementation and performance for NGOs and inferred that ICT was essential for endeavours to improve performance, and Waruguru (2012) investigated how the information systems affect businesses' performance in Kenya and presumed that Information Systems enhanced organization performance generally.

According to the survey done by HCDA (2013), it shows that 60% of the floricultural firm's performance is not up to the international level because of the challenges experienced by firms in implementing the information systems which can help them in reduction of the cost in operations and better decision making. Albar \$ Hoque (2017) states that the challenges in IS implementation are due to low skilled personnel and inadequate innovativeness of the firms toward technological infrastructure. Currently, this floricultural firms are rigid to implement the information's systems despite the rife competition due to lack of knowledge on the factors which can help in implementing the information's successfully enabling performance of their day-to-day activities and that of the firm at large (Magutu and Lelei , 2010).As other studies were mainly done on implementation of information systems and performance of government sectors, none was done on agricultural sector and mainly floricultural firms in Nairobi metropolitan. Subsequently, this study was done in context of information systems implementation and performance of floricultural sector in Nairobi Metropolitan, Kenya.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

In this study, the main objective was to determine information systems implementation and performance of floricultural firms in Nairobi metropolitan.

#### **1.3.2 Specific objectives**

This research was pursued to.

- 1) Establish how top managerial support influences the performance of floricultural firms in Nairobi metropolitan.
- 2) Determine how organizational structure affects the performance of floricultural businesses Nairobi metropolitan.
- 3) Determine how the technological infrastructure affects the productivity of the floral businesses in the Nairobi metropolitan area.
- 4) Find out the association among IS security and the performance of floricultural businesses in Nairobi metropolitan.

### **1.4 Study Queries**

The scholarly work sought to answer the research queries below:

- 1) How do top managers support for IS implementation affect the performance of the floricultural firm in Nairobi metropolitan?
- 2) How does the organization structure in IS implementation affect the performance of floricultural firms in the Nairobi metropolitan?
- 3) What is the connection amid the technological infrastructure and the performance of the floricultural businesses in the Nairobi metropolitan?

- 4) How do the IS security concerns in implementation affect the performance of the floricultural firm in the Nairobi metropolitan?

### **1.5 Significance of the study**

This scholarly work is going to be important in many areas, including researchers or academicians, floricultural government sectors, and private floricultural farms both locally and multinational. The academicians and researchers who have an interest in this topic will utilize the outcomes of the current study as a reference point. Also, the study will assist government sectors in identifying the gaps and challenges in the usage of information systems to achieve competitive advantage and help increase the income for both local and foreign. Finally, this study will assist the floricultural industry in the private sector in getting the data and information of the key areas which should be considered during the implementation of information system to achieve a competitive advantage at global levels and achieve their mission and vision.

### **1.6 Scope of the Research**

The scholar concentrated on floricultural businesses at Nairobi metropolitan, Kenya. The research was limited to information systems implementation and performance of the floricultural businesses. The results were collected using questionnaire from the selected samples. The study particularly concentrated on implementation factors of information system on floricultural firms in Nairobi metropolitan.

### **1.7 Study Limitations**

The research's study limitations lied on type of the instrument that the scholar used to collect data. The researcher used a questionnaire to gather information from the participants. The common challenge associated with using questionnaires when collecting data was that the study subjects might have decided not to give true and honest answers. Also, sometimes the

participants did not answer the questionnaires. The scholar addressed the challenge by ensuring that the study participants completely understood that the study was conducted for scholarly reasons and that the answers given by the respondents were to remain private and confidential. The questionnaire was also accompanied by introductory letter from the University.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Overview**

In chapter two, scholar presented breakdown of theoretical foundation for research, empirical review, and conceptual framework, which showed the implementation factors of information systems implementation.

### **2.2 Theoretical Literature**

A theory is an explanatory for comprehension, clarifying, and making forecasts about a given topic (Kothari, 2006). This research focused on or employed two key theories which have been used widely in information systems implementation namely; technology acceptance theory and diffusion of innovation theory.

#### **2.2.1 Technology Acceptance Theory Model (TAM)**

TAM framework was proposed in 1989 by Fred Davis. The increasing innovations in terms of data are unable to convey enhanced hierarchical viability in case it is not recognized and utilized by potential customers. According to Davis (1989), models on innovation acknowledgment are quite possibly the appropriate for PC use estimations among scholars and professionals. This is a predictable advancement dissemination hypothesis in which innovation reception is a component of variables assortment such as relative benefit and convenience (Rogers, 1983). TAM theory investigates the attributes that influence the information system implementation or technology adoption in organization. The theory examines how the users/organization will accept the modern technology been implemented.

This theory, which has undergone several revisions, is an extension of Ajzen and Fishbein's Theory of Reasoned Action. The two TAM convictions are usability and the value of the systems from the information systems point of view. According to Dutton and Meyer (2018) seen handiness is how much a person admits that the use of a model can enhance their

exhibition. Seen usability refers to how much a person admits that the use of a theory will not be difficult. Hat endeavours for the prediction and for explanation to assist experts and analysts understand why a certain framework can be unsatisfactory as well as look for appropriate advances.

The main purpose for implementation of information systems in flower sector is improve the performance and this can be explained through TAM theory by checking the usefulness of the systems been implemented in improving the performance and the ease of use to ensure that the organization structure and technology infrastructure easily accessible by the required teams. This theory can be expanded to include the variables that account information systems implementation success technological changes in infrastructure.

### **2.2.2 Diffusion of Innovations (DOI) Theory**

DOI theory is among the oldest social science frameworks. The theory was developed in 1962 by Everett M. Rogers. The origin of DOI theory was communication and is used in describing how, over time, products advance impetus and spread (diffuse) through specific populations. The process of delivering innovation like products, new ideas, systems, and technologies through a certain network among some social system members is known as diffusion. The theory describes numerous exogenous factors affecting the decisions of applying ISs technology innovation (Rogers, 2003). The theory is useful in this research as it focuses on introducing new ideas or ways of working by implementing the information systems to improve the performance of the floricultural sector.

Diffusion of innovation theory offers the foundation which is used in understanding the factors that influence the implementation of information systems in organization and the challenges which might performance. This theory can be aligned with top management support in supporting the new innovations to support the firms process in achieving the performance. For

this study, DOI theory will be applied in understanding uncertainty of top management in adopting the information systems and the performance. According to Rogers (2003), innovation diffusion process is an uncertainty process of reduction. Thus, diffusion of innovation theory is concerned with what, how and the rate at which implementation of new technological systems (IS) disseminate through the organizations. In understanding the factors that influence the information systems implementation and performance of the floricultural sector, this theory will be of great importance as it has been used in other studies help in decision making and understanding the underlying challenges of implementation.

### **2.3 Empirical review**

Empirical Literature part offered an analysis of literature concerning factors affecting ISs implementation and the firm performance. The section contains a discussion of different gaps identified in the previous research and ways of filling such voids.

#### **2.3.1 Top Management Support and Performance.**

The leaders assume fundamental roles in generating advancements by ensuring conducive environments and making decisions that improve development and implementation of ISs successfully (Story, 2000). Ideal top managers show profound consciousness to the needs of other employees and provide motivators that are wellsprings of inspiration and consolation for them to be able to deal with problems and advance. According to Jung et al. (2003), leaders help employees with tending to their necessities for improving character, strengthening, attaining accomplishments, and upgrading self-viability. Agbim et al. (2013) argue that many analysts believe that top leaders in organizations assume important parts in authoritative outcomes. Jung et al. (2003) add that various specialists believe that organizations' administration assumes critical parts in impacting advancement exercises appropriation in associations.

### **2.3.2 Organizational Structure and Performance.**

The hierarchical construction takes a significant piece of interests of the two specialists and professionals in the field of the executives, as it assumes a significant part in accomplishing the authoritative objectives. As indicated by Ignorant (2010), authoritative construction is characterized as a structure that recognizes the way assignments and assets are being appropriated, as well as organizing between the different offices and divisions to accomplish explicit objectives.

Chen (2007) brought up that the interest in data innovation has prompted more decentralization by emphatically diminishing the level of custom in a hierarchical design. This thus positively affects the advancement of new items, prompting better execution. According to Brynjolfsson et al. (2002), organizations which broadly practice Information systems are abler to receive work rehearses that include a bigger utilization of workgroups, decentralization, and expanded staff preparation. What's more, the cooperative energy between Information systems and authoritative construction makes more worth to associations. Hierarchical help influences development (Al-Harashsheh & Al-Hiti, 2006). Hierarchical environment affects the selection of imaginative conduct (As-Safar et al., 2009). The authoritative design influences the imagination of the items (Saddique et al., 2013). Natural design influences the production of creative thoughts, while robotic construction influences the execution of imaginative thoughts (Agbim et al., 2013).

### **2.3.3 Technology infrastructure and organization performance**

The significance of the data innovation foundation has expanded in the present associations. According to Zhang et al. (2004), its basic role is the arrangement of fast data support for the association and its different units, to react to the unique difficulties in various conditions, to empower the association to manage these developing difficulties.

The developing dependence on Information systems has a reasonable job when it comes to shaping and designing the authoritative exhibition by giving data decisions scope and improving the hierarchical presentation. Utilizing Information systems advances the capacity of organization to enhance, increment its functioning proficiency and its advertising viability (Chen, 2007). Data innovation possesses progressed and data positions in associations; this exhibits the data heading for modern and administration organization's interests in data innovation (Peffer and Saarinen, 2002).

#### **2.3.4 Systems security and organization Performance**

Information systems security has been a space of extensive consideration for Information systems (IS) supervisors for various years. Information systems security was first introduced as an important theme and as a possible concentration for IS research in 1987 (Brancheau & Wetherbe, 1987). Since that time, security concerns have kept on filling in importance as enterprises have gotten significantly more interconnected and use networks for a more prominent number of hierarchical capacities. Besides, part of the ramifications of working a business in the "computerized age" is that data about most corporate resources are carefully chronicled. While digitalization offers amazing benefits and various advantages, it additionally makes chances on account of the overall simplicity of duplication, defilement, or burglary of carefully addressed resources and assets. As a result, IS security addresses a fundamental ability in many associations due to the reliance on advanced resources and the synchronous need to situate these resources on networks that are presented to outside specialists (e.g., colleagues, clients, and so on) Late studies, for example, the Security Organization Wrongdoing and Security Review show a proceeded with want by corporate Security chairmen for more noteworthy ventures and assets for network security organization (Richardson, 2009). With new dangers of illegal digital intimidation and corporate surveillance expanding, the significance of Information systems security has become more noteworthy compared to any

other era in current memory. While the significance of information systems security in the professional workplace is apparent, the data capability of *information systems* security stays neglected. Most corporate information systems security trained professionals and specialists the same see Information systems security as receptive in nature and a vital expense of working together.

## 2.4 Research Gaps and Literature Review Summary

The empirical literature review offers proof to several study gaps and a lack of empirical proof on this scholarly work. Most of the studies and research were done on other fields of study other than the floricultural sector and outside Kenya. Some research were grounded on descriptive analysis and others on correlation analysis.

**Table 2.4 Research gaps**

Researcher	Area of Focus	Design	Findings	Current study effect
Magutu lelei (2010)	ICT adoption in parastatals	Survey	Most parastatals have implemented several practices in IS implementation.	The study focused on practises of implementing the IS while the current study engrossed on core factors of implementing information systems in floricultural sector.
Kenya national bureau of statistics, (2016)	Digitization level of Kenyan Enterprises	Survey	High level of digitization in Kenyan enterprise sectors	The study concentrated on general enterprises while the current study narrowed

				down to floricultural sector and how I.S impact the performance of the firms
PK Mathenge, (2014)	ICT adoption in floricultural sector	Survey	ICT adoption was a key driver in improving the performance of the floricultural firms	The scholar concentrated on use of ICT applications hardware's current study focused on information systems
World bank Group, (2012)	Adoption of ICT and the uses of ICT in agriculture	Survey	The adoption of ICT is changing the nature of business operations in agriculture especially in rural areas	The research was done ICT in general, while the current study specialist on IS hence outlaying contextual gaps identified in the study

**Source: Author (2019)**

## 2.5 Conceptual outline

This section provided a conceptual outline/diagram used in visualizing and clearly explaining how to study variables relate. It describes the critical concept, factors, and relationships

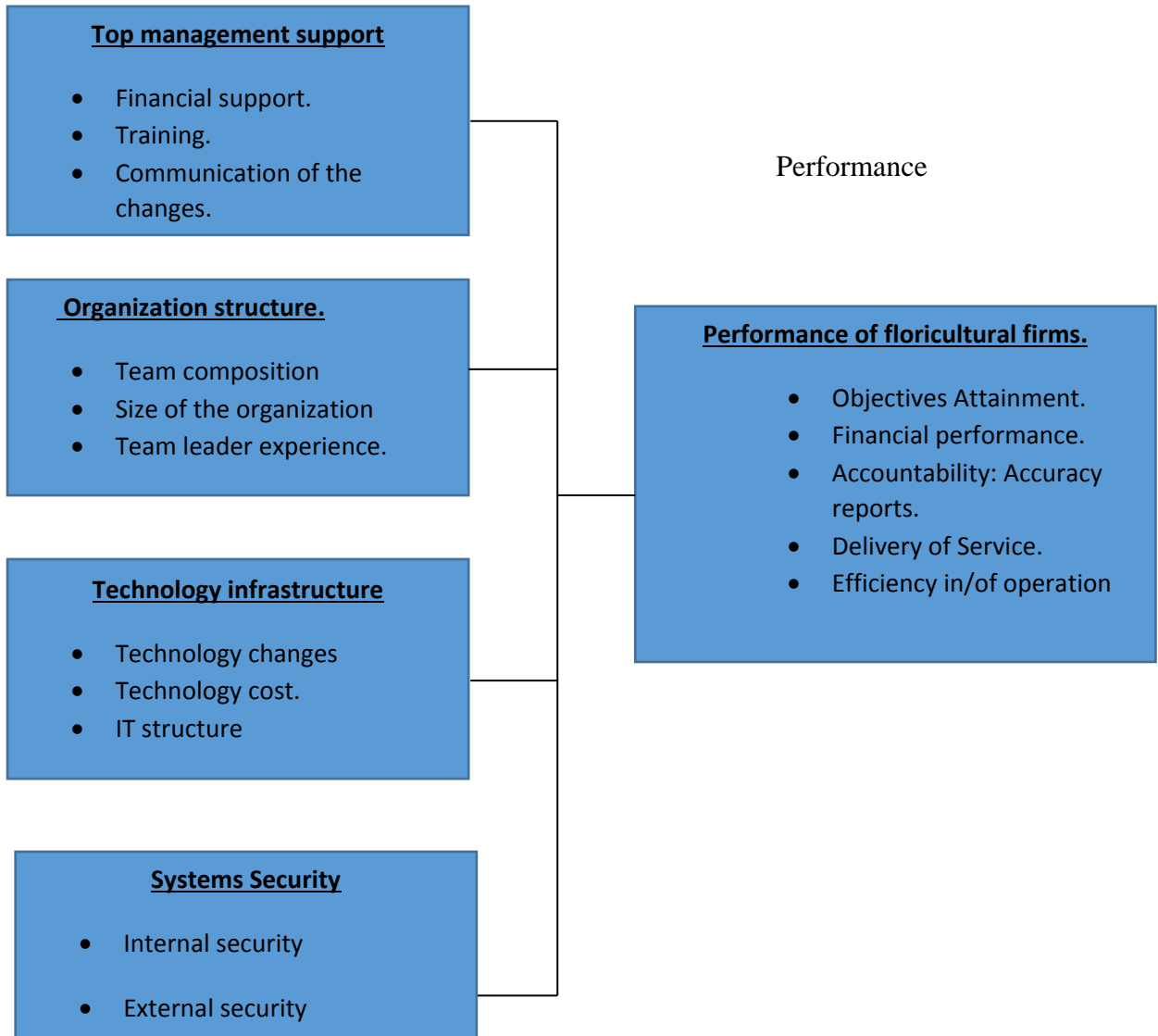
between them. The conceptual framework highlights how dependent and independent associates as variables.

**Figure 2.5: Conceptual Outline**

**Independent Variables**

**Dependent variable**

Information systems implementation



**Source: Author (2020)**

## **CHAPTER THREE:RESEARCH METHODOLOGY**

### **3.1 Introduction**

The research's methodology is described in Chapter 3. The researcher used a descriptive research design and described the many steps that were used to successfully complete the investigation. Section three explains the design utilized in the research and justifies why it was used. Additionally, it describes the type of data to collected, how it was obtained, and the data analysis method employed by the researcher. The subsections of part three are "Research Design," "Used Population," "Sampling Technique," "Data Collection," and "Examination."

### **3.2 Research Design**

Descriptive research design was utilized for this scholarly work, where it involved the selected floricultural businesses in Nairobi metropolitan to establish the performance of businesses in relation to the implementation of the information systems. Descriptive research design was used to provide more information for the selected samples under study. The data obtained from the descriptive research design supports the inferences of cause and the impacts on the research under study. This type of research is of great value to the scholars who are looking into investigation and analysis of inter-relationships several effects involved in the study and are difficult to comprehend individually (Schindler & Cooper, 2014).

### **3.3 Target Population**

Population alludes to all out of multitude of people who have certain qualities and are important to a scientist, as per (Cooper and Schindler 2014). The objective populace for this research involved the floricultural firms in the Nairobi metropolitan Territory, Kenya. The target population of interest was the operational level of the floricultural firms in Nairobi metropolitan, Kenya. The delamination used was consideration of flower firms in Nairobi metropolitan from the Kenya Flower Council certified firms for this study. Nairobi

Metropolitan had about 170 flower firms certified by Kenya Flower Council, however the study targeted 51 flower firms.

### 3.4 Sampling Technique and sample size

In research, a group of respondents, cases, or records comprising part of entire study population that is selected to represent the study population is known as a sample. A good sample must be accurate, precise, and a representative of the total population (Cooper & Schindler, 2014). For this study, stratified sampling was obtained from Floricultural firms in Nairobi Metropolitan. The used sample was 51 firms as guided by Schindler (2014), who proposed 30 percent of the population in the study to be enough representative. From the selection of the firms which was done through stratified sampling, the researcher distributed one questionnaire per firm to either mid or senior management team to collect the data.

**Table 3.4 Sample Size**

<b>Types of Firms</b>	<b>Number firms certified firm</b>	<b>Sample size</b>	<b>Percentage (%)</b>
Floricultural firms	170	51	30%

### 3.5 Data Collection Procedures

The way towards social events and approximating information on focused factors in an orderly design set up that empowers individuals to deal with important inquiries as well as evaluate findings is known as information assortment. The strategies that were used in information assortment were optional and essential information assortment. Essential information alludes to the assortment of information that is exceptional to the examination, and that has never been utilized by others (Cooper and Schindler, 2014). There are various approaches to gather essential information and a portion of the more normal ones are through meetings, surveys, and

contextual analyses (Saunders, Lewis, and Thornhill, 2006). According to Saunders et al. (2006), auxiliary information is the term utilized for information that has effectively been gathered for a particular reason and afterward is utilized again during different conditions for different reasons.

In the current investigation, the researcher used different strategies to reach out to the firms. Different method was utilized using organized surveys regulated through emails, WhatsApp, drop and pick later approach. Optional information was acquired from the past investigations which have been done with respect to IS in the floricultural area.

### **3.6 Reliability and Validity of the study.**

Reliability and validity in research need were addressed in a concise manner in a research methodology. This was done to ensure that the instruments used in collecting data were ready before the process of gathering information and making conclusions started.

#### **3.6.1 Validity**

Validity is how precisely research methods measure what they are intended to measure. If a study's validity is high, it means that the research generates results that match with the real characteristics, variations, and properties in the social or physical world. According to Oliver (2010), validity is an essential prerequisite in all studies. Different types of study validity exist; however, Cohen et al. (2007) argue that the key ones include face, content, concurrent, criterion-related, external, construct, and internal validities. The accuracy of the study instruments is measured by validity. For this case, the questionnaire was structured properly and tested earlier to ensure that the findings of the research were valid. Construct validity was safeguarded by reviewing of theoretical framework. To ensure that the content validity is achieved, the study ensured that the IS implementation team and the top management are involved.

### **3.6.2 Reliability**

Research reliability is the level at which research methods generate consistent and stable results. Specific measures are regarded as reliable if their application on similar objects of measurement number of times generates similar results. Unwavering quality tends to be a concern when solitary eyewitnesses are the wellsprings of data because there is lack of a specific protection from the onlookers' subjectivity effect (Babbie, 2010). A pilot study was done to guarantee that surveys utilized were dependable. This was achievable by measuring internal consistency by use of Cronbach Coefficient alpha method. The Coefficient mainly differs from 0 to 1. If the coefficient is 0.6, then the item reliability on the scale is better. The internal consistency shows the level at which the selected items are in a test measures a related concept of the construct. (Tavakole & Dennick 2011). To guarantee the unwavering quality, the exploration was led by will have an all-around prepared group who were very much persuaded. The pilot study was likewise expanded, having the huge number of the group gathering the information to at least ten and giving them comparable inquiries. The respondents were drawn from the major floricultural firms in Nairobi metropolitan. The principal point of this pilot exercise was to catch the blunders which were distinguished in the polls.

### **3.7 Data Analysis and presentation**

The process of systematic application of logical and statistical techniques to illustrate, describe, recap, condense, and evaluate data is known as data analysis. Several analytic procedures offer methods of drawing inductive inferences from information and differentiating the phenomenon of interest from the statistical fluctuations that exist in the data (Shamoo & Resnik, 2003). Analysis of this research was done through a quantitative approach using descriptive statistics. The descriptive analysis provided the basic features of the data, which guided the analysis. The reason for performing a regression is because it allows one to confidently determine the factors

that matter most, and the factors can be ignored and how influence each other. Further, researcher used regression analysis to determine how the IS implementation factors related with the floricultural companies' performance within Nairobi metropolitan, as shown by the model below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon;$$

Where: Y stands for floricultural firms' performance.

$X_1$  = Top management support

$X_2$  = Organization structure

$X_3$  = Technological infrastructure

$X_4$  = Systems Security

$\beta_1, \beta_2, \beta_3$  = Regression Coefficients

$\varepsilon$  = Error term

### **3.8 Ethical Considerations**

Ethics, which are moral principles that guide people's behaviour, reflect individual's beliefs on what is good, wrong, unjust, right, just, and bad when it comes to the behaviour of human beings. According to Walliman (2017), ethics are rules that lead human conduct that have significant impacts on people's well-being. Before collecting data, scholars obtained ethical clearances from Kenyatta University. Also, the scholar obtained a study approval/research letter approval from the National Commission for Science, Technology, and Innovation (NACOSTI). The researcher also received consent from the study participants' firms to participate in the research. The scholar ensured respondents' confidentiality by making sure

that the participants were aware that the data they shared was only used for scholarly purposes. The researcher informed the study participants in advance that they were not to get any monetary rewards as they were voluntary participating in the investigation.

## **CHAPTER FOUR:RESEARCH, FINDINGS AND DISCUSSIONS**

### **4.1 Overview**

Chapter four covers data analysis on information system implementation in relation to performance of the floricultural businesses or firms in Nairobi metropolitan, Kenya. Data was collected using electronic questionnaire. Data analysis was done use of tally method.

### **4.2 Response Rate**

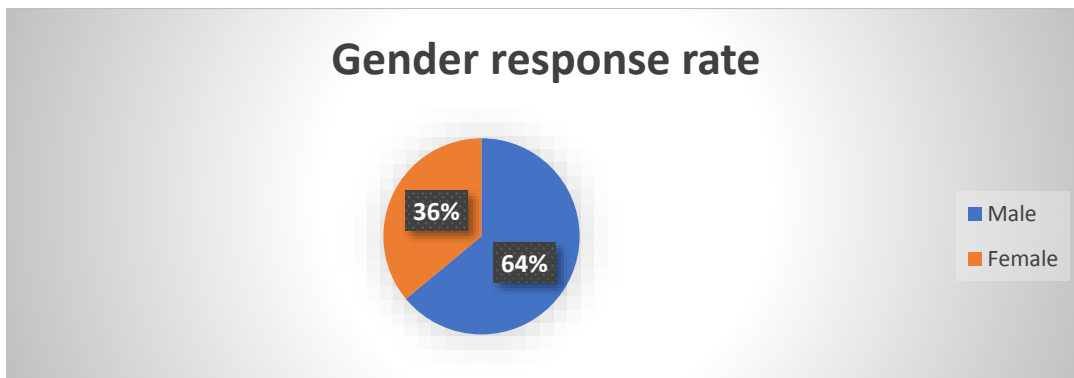
The questionnaire was shared to 51 respondents through emails and WhatsApp. Out of the 51 distributed questionnaires,45 respondents answered indicating a response rate of 88.2% which is a sufficient and good response as proposed by Schindler (2000), who proposes 30% as a good representative for analysis research. This response rate was attributed by follow ups done through mobile phone calls, WhatsApp messages and emails for reminder. This chapters covers the demographic and information system variables that influence the performance of the floricultural firms in Nairobi metropolitan.

### **4.3 Sample Characteristics**

#### **4.3.1 Gender**

Researcher investigated the respondent's gender according to firms and tabulated the results as shown in Table. 4.3.1. From the gender response rate 64% (29) of the respondents were male whereas 36% (16) of respondents were female

**Figure 4.3.1 Gender response rate.**



**Source: Survey Data (2021)**

From the gender response rate table, it was clear that most of the respondents were male with 64% compared to female at 36%. This illustrates a huge disparity in terms of gender. This result corresponds with Jung et al. (2003) who argue that most of the management in organizations are composed of men.

#### **4.3.2. Respondents Age**

Research similarly investigated age distribution of respondents. Data collected was examined as shown below.

**Table 4.3.2: Age response rate**

<b>Years</b>	<b>Frequency</b>	<b>percentage</b>
24 - 28	4	9%
29 - 34	7	16%
35 - 39	9	20%
40-44	12	27%
45-49	8	18%
Above 50	5	11%

**Source: Field work (2021)**

Regarding the age distribution of the respondents, the above table shows that most of respondents were between ages 40-44(27%), followed by 35-39(20%),45-49(18%) with least been the youngest age of 24-28(9%). This indicates that many of the respondents are the past youth age and active economically. From the research, youths are not active in the floricultural sector. This result corresponds with Agbim et al. (2013) who acknowledges that many top leaders in organizations are mid aged who assume important parts in authoritative outcomes.

**4.3.3: Employees work experience in floricultural sector.**

Researcher sought to establish respondents work experience according to the years worked. The findings are as stipulated in below 4.3.3.

**Table 4.3.3: Employee work experience**

<b>Experience in flower industry</b>		
<b>Years</b>	<b>Frequency</b>	<b>Percentage</b>
> 5	7	16%
6_10	12	27%
11_15	14	31%
16_20	6	13%
21_25	4	9%
<26	2	4%
<b>Total</b>	<b>45</b>	<b>100%</b>

**Source Fieldwork (2021)**

From analysis of Table 4.3.3, popular respondents 31% have been in the working in floricultural industry for 1-15 years, 27% have worked for six to ten years, 13 percent have experience of 16-20 years. Minority of the employees (4%) have worked for more than 26 years. This shows that respondents have worked for floricultural sector for enough time provide reliable data on implementation of information system and performance of floricultural firms in Nairobi metropolitan, Kenya. This also showed that the respondents were extremely knowledgeable because of the years worked in this sector. The findings correspond to Maoz, A. (2006) who recognises that adoption of IS by employees in floricultural sectors is inevitable to floricultural industries for them to remain competitive.

#### **4.3.4: Number of years the firms have operated**

The research also was done to establish the number of years firm have been operational. Below table showed how the results of the data collected.

**Table 4.3.4: Years of operation**

<b>Tables of years firm have operated</b>		
<b>Years</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1_5</b>	6	13%
<b>6_10</b>	12	27%
<b>11_15</b>	15	33%
<b>16_20</b>	8	18%
<b>&gt;20</b>	4	9%
<b>Total</b>	<b>45</b>	<b>100%</b>

**Source Fieldwork (2021)**

From the data collected, it showed that most the firms had operated for 11-15 years (33%). Other firms have operated for 6-10 years (27%), 16-20 years (18%), 1-5 years (13%) respectively, while the firms that had operated for more than 20 years having 9%. This implies that most of businesses have been in operational for 11 to 15 years. The findings are acknowledged by HCDA (2013) which indicates that most the floricultural industries in are gaining stability in operations and increased market share globally.

#### 4.3.5 Employees per firm

The research wanted to find out how many employees each firm had. Data was collected and analysed shown on the below table.

**Table 4.3.5: Employees per firm**

Number of employees	Frequency	Percentage
26_50	2	4%
51_75	1	2%
76_100	2	4%
101_125	3	7%
126_150	4	9%
151_175	3	7%
176_200	7	16%
> 200	23	51%
<b>Total</b>	<b>45</b>	<b>100%</b>

**Source Fieldwork (2021)**

From the data collected, most of the firms had more than 200 employees in operation which was 51% of the total firms. The firms with least employees had 2% and they had operated with

employees between 51-75. This indicates that most of the floricultural firms were big as shown on the data. According to HCDA (2013), floricultural sector has highest number of the employees which coincides with the results of this study. Majority of this employees were females who belonged the non-management team.

#### 4.4 Responses of the variables

The researcher sought to find out to what extend information systems provision/implementation impacted the performance. Additionally, researcher sought the range at which the already implemented Information systems impacted the results. Responses were assessed using Likert scale of one to five indicating, where: 5 is strongly agree, 4 is agree, 3 is neutral, 2 is disagree and 1 is strongly disagree.

##### 4.4.1 Performance.

The researcher wanted to examine how provision of Information systems at the firm influenced performance of employees and the firm.

**Table 4.4.1: Performance variable**

	Sample size	Mean	STDv
Provision of required IS helps me in achieving my targets	45	4.16	0.37
The firm have required information system in place that control the financial performance.	45	3.69	1.65
Almost departments in the firm use IS in their operations to ensure efficiency in delivery of core services	45	3.04	2.55

Users are trained on the IS operations to improve accuracy of data	45	3.82	1.51
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**Source fieldwork (2021)**

From the findings most of the respondents with a mean (4.16) agreed with the statement that the provision of the required information systems helps them in achieving the target performance which translate to the overall performance of the firm. Additionally, most respondents agreed that the firms had implemented information system that control finance performance with a mean of (3.69). Moreover, majority of the respondent didn't or agree or disagreed that most departments in the firm had implemented information to ensure efficiency in delivery of the core services (Mean of 3.04) Respondents also agreed that the training was done on the already implemented system to improve data accuracy with a mean of 3.82. This results were acknowledged by Choi & Davis (2014), who states that performance alludes to the level of acknowledgment of the organization's destinations or targets which is the overall performance.

#### **4.4.2 Top management support**

The first objective was to seek the respondents' opinions regarding the top management support and influence it has on the performance of the firm.

**Table 4.4.2: Top management support**

	Sample size	Mean	STDv
Top managers provide enough financial resources and time for IS implementation to boost the organization's performance.	45	2.91	2.88
The executive leaders select the best and suitable vendors in implementing the IS.	45	2.73	3.18
Top management ensures that any changes regarding the IS are done to all levels of the organization.	45	3.67	1.78
Top management ensures that training is done for all the users and levels of IS.	45	3.56	1.92

**Source fieldwork (2021)**

From the findings on the above table (Table 4.3.2) almost all respondents were disagreeing that the management provides enough financial support needed to implement information system for performance improvement and that the management it gets the best vendors to implement IS had 2.91 and 2.73 as the mean respectively. However, some respondents were neutral on whether the top management ensures communication and training on performance regarding IS changes are done with mean of 3.67 and 3.56 respectively. This was supported by Jung et al. (2003) who recommends that the top administration assumes critical parts in impacting advancement of the information systems of any organizations.

### 4.4.3 Information System Organization structure

The researcher also sought to establish to what extent the information system organization structure influenced the performance. The researcher used a Linkert scale of one (1) to five (5) by posing the below statements to the respondents with 5 been strongly agree while 1(one) been strongly disagree. Results were tabulated and indicated on Table as shown below.

**Table 4.4.3: Organization structure**

	Sample size	Mean	STDv
The organization's size can support all the IS changes to advance the performance of a firm.	45	2.84	3.00
The organization structure composed different team leaders who have expertise in Information systems.	45	3.29	2.31
The current organization structure (IS) does not influence the firm's performance.	45	3.31	2.39

**Source fieldwork (2021)**

From the research findings of the given three statements, respondents moderate/neutral extend that the organizations size is able to support the information systems implementation changes needed to improve the firm performance with an average of 3.16. Additionally, respondents approved that the organization structure team leaders at different levels had the expertise in information systems implementation for better performance and that the current information systems organization structure impacts the firms performance with an average of 2.71 and 2.69 correspondingly. The results have acknowledged by Jung et al (2003), and Agbim et al (2013)

agrees that the organization top administration assumes critical roles impacting the advancement of the information systems.

#### 4.4.4 Technology infrastructure

The research additionally sought to establish to what extent the respondent agreed with the below statements regarding the Technology infrastructure.

**Table 4.4.4-Technology infrastructure**

	Sample size	Mean	STDv
Technology infrastructure supports the firms’ innovative capabilities /technological changes	45	3.42	2.19
The organization can support all the necessary costs related to the IT infrastructure.	45	3.27	2.39
The firm should outsource vendors who are specialist in managing the technology infrastructure	45	3.42	2.18

**Source fieldwork (2021)**

As per the finding, the researcher recognised that almost all respondents were neutral with the statements that technology infrastructure if well implemented can support firms’ innovative capabilities boosting the performance of the firm with a mean of 3.42. Additionally, majority respondents neutral that the firm should outsource specialist in implementing and managing the firm’s technology infrastructure with a mean of 3.27. Regarding outsourcing specialist vendors in supporting technology infrastructure, popular respondents were neutral at an average of 3.42. The finding of the research contradicts with Zhang et al (2004) who argues

that technology infrastructure critical part of enabling fast data support to enable the react to unique difficulties of innovation and decision.

#### 4.4.5 IS security

To investigate how systems security and performance are related, researcher used the below statements, and the outcomes were tabulated as indicated on the below.

**Table 4.4.5: Systems security**

	Sample size	Mean	STDv
The firm conducts regular IS security training for the stakeholders to ensure that no breach to affect performance of the firm	45	3.69	1.73
IS security breach can affect the overall sales/performance of the firm	45	3.78	1.61
All the devices (mobile/laptops) are secured with passwords and PIN	45	3.84	1.45

**Source fieldwork (2021)**

Majority of the respondents expressed strong agreement regarding the system security of the firms. Majority agreed that the firms conduct training on information systems security with a mean of 3.69. Majority also agreed that any Information security breach can have implications on performance of a firm with an average of 3.78. Additionally, majority agreed that security of the company devices/information systems devices was done well with a mean of 3.84. From the literature, Richard (2009) acknowledges that new dangers of illegal digital threats and

corporate surveillance are expanding, and information systems should be a noteworthy compared to any other area. As such regular training on information systems security and securing of corporate devices should be a priority number one.

#### 4.6 Correlation Analysis.

To investigate the perceived relationship between the independent and dependent variables, in implementation of information systems in floricultural firms in Nairobi metropolitan, the researcher utilised Pearson correlation analysis through determination of coefficient, regression analysis and regression coefficient. To calculate the correlation coefficient, the researcher used Pearson method. The outcomes were tabulated as indicated on the output below.

**Table 4.6.1: Coefficient correlation**

		<b>Correlations</b>				
		Performance	Top Management support	Organization structure	Technology infrastructure	Systems security
Performance	Pearson Correlation	1				
	N	45				
Top Management support	Pearson Correlation	.972	1			
	Sig. (2-tailed)	<.001				
	N	45	45			
Organization structure	Pearson Correlation	.961	.979	1		
	Sig. (2-tailed)	<.001	<.001			
	N	45	45	45		
Technology infrastructure	Pearson Correlation	.968	.979	.978	1	
	Sig. (2-tailed)	<.001	<.001	<.001		
	N	45	45	45	45	
Systems security	Pearson Correlation	.974	.938	.925	.945	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	45	45	45	45	45

**Source fieldwork (2021)**

From the results shown on the table 4.6.1, it was evident that there was a correlation between all the independent variables and the dependent variable.

#### 4.7 Regression Analysis.

To determine the relationship between the deployment of information systems and the performance of the floricultural enterprises in Nairobi Metropolitan, Kenya, the researcher computed regression coefficient. The results were collated as indicated in the table below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon;$$

Where: Y stands for floricultural firms' performance.

$X_1$  = Top management support

$X_2$  = Organization structure

$X_3$  = Technological infrastructure

$X_4$  = Systems Security

$\beta_1, \beta_2, \beta_3$  = Regression Coefficients

$\varepsilon$  = Error term

Becomes,

$$Y = 0.098 + 0.304X_1 + 0.104X_2 + 0.015X_3 + 0.465X_4$$

**Table 4.7.1: Regression Coefficient**

Model		Coefficients <sup>a</sup>		Standardized Coefficients Beta	t	Sig.
		Unstandardized Coefficients B	Std. Error			
1	(Constant)	.098	.064		1.520	.136
	Top management support	.304	.118	.353	2.584	.014
	Organization structure	.104	.109	.125	.955	.345
	Technology infrastructure	.015	.118	.017	.124	.902
	Security systems	.465	.066	.511	6.991	<.001

a. Dependent Variable: Performance

**Source: Survey data (2021)**

From the regression, equation it shows that taking all the independent variables to 0.0, the performance of the floricultural firms will be 0.98. This suggests that if independent variables are (0), a rise in a unit of top management support cause to 0.304 rise or growth in performance,

a rise in a unit of organization structure caused to 0.104 rise in performance, an increase in a unit of technology infrastructure lead 0.015 growth in performance and one unit growth in systems security lead to rise of performance by 0.465.

This result shows that top management support and systems security were the variables that had positive significant impact on the dependent variable whereas organization structure and technology were not significant.

#### 4.7.1 Model Summary

The scholar as well did multiple regression analysis to establish degree to which independent variable variance had on dependent variable variance. The researcher used the statistical package for social sciences (SPSS) for computation of regression analysis of this study.

The results were as indicated on the below model summary table. From the four dependent variables studied (Top Management support, Organization structure, Technology infrastructure and systems security) the coefficient of determination resulted to 97.8%. This means that other aspects that were not part of this study contributes to 2.2% of the dependent variable (performance of floricultural firms within Nairobi metropolitan, Kenya) which should be a subject of further research/study. The results were adjusted 97.6% to higher margin error.

**Table 4.7.1: Model Summary**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989 <sup>a</sup>	.978	.976	.16341

a. Predictors: (Constant), Systems security, Organizations structure, Top management support, Technology infrastructure

Source fieldwork (2021)

#### 4.7.2 ANOVA (Analysis of Variance)

Researcher utilised the variance analysis to do analysis that provided the data about variability levels in regression model to give the results of significance. The results were computed as shown in the table below, which showed that the significance value was less than 0.001 which was below 0.05( $p < 0.05$ ). This indicates that the general model is significant statistically in determining information systems implementation as a factor of performance in Nairobi Metropolitan. Empirically, performance of the organization in the modern floricultural business is driven by the implementation of information systems which are key in enabling data driven decisions has acknowledged by Morales-Alzate &, L. F., Solano (2018).

**Table 4.8.2: Analysis of Variance (ANOVA)**

		<b>ANOVA<sup>a</sup></b>				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.732	4	11.933	446.874	<.001 <sup>b</sup>
	Residual	1.068	40	.027		
	Total	48.800	44			

a. Dependent Variable: Performance

b. Predictors: (Constant), Security systems, Organization structure, Top Management, Technology infrastructure

## **CHAPTER FIVE:SUMMARY, CONCLUSION, RECOMMENDATIONS**

### **5.1 Overview**

This section gives a detailed summary of researcher's results, conclusion, and detailed recommendations on the study of information systems implementation and performance of the floricultural firms in Nairobi metropolitan, Kenya.

### **5.2 Summary.**

Researcher aimed to establish the information system implementation factors and performance of floricultural firms in Nairobi metropolitan, Kenya. The study was guided by four independent factors of information systems implementation: top management support, organization structure, technological infrastructure, and systems security. The study used SPSS in data analysis. The researcher distributed 51 questionnaires whereby only 45 were answered and this was enough for this research. Out of 45 respondents, 64 % were male while 36 % were female respondents. From the years of operations, many of businesses had been operational for over 11-15 years. The researcher also used regression analysis to find out the relationship between the independent variables and the dependent variables. From the regression analysis results, researcher found that two factors under the study top management support, systems security to have positive significant to the performance of the floricultural firms while technology infrastructure and organization structure were not significant.

### **5.2.1. Top management support in IS implementation on performance of Floricultural firms**

The study findings regarding top management support, shows that the top management support in implementation of information was key contributor in enhancing the performance of the floricultural firms in Nairobi metropolitan through implementation of IS. Majority. Almost all respondents were disagreeing that the management provides enough financial support needed to implement information system for performance improvement and that the management it gets the best vendors to implement IS. Additionally, some respondents were neutral on whether the top management ensures communication and training on performance regarding IS changes are done. Respondents agreed that the top administration assumes critical parts in impacting advancement of the information systems of any organizations. From the regression analysis, it was evident that a rise in top management support caused a rise in performance of organization because of Information System implementation.

### **5.2.2 Organization structure in IS implementation and performance of Floricultural firms**

Organization structure was another key factor that was part of this research. The researcher aim was to get the opinions regarding how organization structure of information systems implementation impacts performance of floricultural firms. Research showed that organizations size can support the information systems implementation changes needed to improve the firm performance. Additionally, the respondents agreed the organization structure team leaders at different levels had the expertise in information systems implementation for better performance and that the current information systems organization structure impacts the firms. However, regression analysis showed that the organization structure is not a strong contributing factor in implementation of systems in affecting the performance.

### **5.2.3 Technology infrastructure and performance of floricultural firms.**

Technological infrastructure is also an important aspect for performance of floricultural sector. This research explored the result of technology infrastructure implementation on the performance of firms. The findings indicate that technology infrastructure if well implemented can support firms' innovative capabilities boosting the performance. The research further indicate that technological infrastructure implementation was insignificant to the performance of the firms as indicated by the regression analysis where a rise in technological infrastructure translates to rise of the floricultural firm's performance.

### **5.2.4 IS Security of the performance of floricultural firms.**

IS security being a major aspect in any organization to enable it to perform. This study sought to establish how the firms IS security enabled the performance of the floricultural firms. Respondents were examined regarding the various method of ensuring the security of IS systems within and outside their organization. Majority of the respondents expressed strong agreement regarding the system security of the firms. Moreover, the regression results shows that an increase in a unit of IS security translated to increase in the performance.

## **5.3 Conclusions**

On the influence of the top management support on implementation of information systems as a factor of performance, this study concludes that's management support for the trainings and funding of the projects plays a critical part in impacting the performance of firm hence it cannot be replaced with anything. Majority of the respondents cited training and financial support as the key supports that are needed from the top management.

On the next objective, the researcher, aimed to determine effects of organizational structure on performance of floricultural firms, the study concludes that organizational structure was not a

key aspect in performance of the firm. Respondent also agreed that structure was not a key motivator in their performance.

The researcher concludes on third objective that the technology infrastructure is the list significant to the performance of the floriculture firms. Despite that the infrastructure plays a critical role in information flow most respondent felt that the organization should not go overboard in investing on it to improve the performance.

The researcher further concludes that IS security is the most critical aspect in performance of the floricultural firms. Therefore, this study finds IS security as an inevitable that must be implemented all floricultural firms remain competitive.

#### **5.4 Recommendations.**

This scholarly work commends that floricultural firm's sector top management should support and invest on trainings and provide required financial resources to improve the performance of the firm which related to the implementation of the information's systems.

Additionally, the study recommends the floricultural firms to invest in IS security by ensuring that they are using devices/software's which are secure. Furthermore, trainings of IS security should be executed as per IS policies.

The research also commends that the organization structure ought to be kept small and simple and that it should have people who have skills of information systems implementation.

Finally, the researcher commends that the floricultural firms ought to certify that technological infrastructure can support the firms' innovative capabilities for continuous performance improvement of the firms.

#### **5.5. Further study recommendations.**

This researcher commends that further research to be done on information systems implementation and performance of agricultural firms. The future research will try to identify the gaps which were identified in this study as well as other factors that affect information systems implementation and performance of the firms. The future research can be narrowed down to specific areas of application within the organizations/firm or specific information systems applications to get the areas which need attention in floricultural firms/organization.

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## **APPENDIX I: COVER LETTER**

Joseph Nthenge

P.O. BOX 27774-00506

Nairobi, Kenya

Tel Number: +254726285383.

Email: Josephmulei0@gmail.com

May 14<sup>th</sup>, 2021

Dear Respondent,

### **RE: INVITATION TO CONTRIBUTE TO STUDY WORK**

My name is Joseph Nthenge, a Kenyatta University graduate student, pursuing a master's degree in Business Administration (MBA). My specialization is management information systems (MIS). As a requirement for completion of my studies, I am carrying out a research project on "information system implementation factors and the performance of the floricultural firms in Nairobi Metropolitan, Kenya."

I shall appreciate it, if you help me by completing the enclosed questionnaire that I will utilize to gather information relevant to my research. All respondents participating in this study are randomly selected. I believe that it will take you around 15 minutes to respond to all questions. Kindly provide honest answers about the questions asked.

As a study participant, your contribution will be important for the achievement of the current research. Information privacy and confidentiality will be ensured, and the information obtained will be utilized only for scholarly purposes. If you have any issues related to the completion of the questionnaire, kindly feel free to reach out to me via my contact that is indicated at the top of this letter.

I look forward to receiving the completed questionnaires.

Lastly, I want to thank for your time and kind cooperation.

Yours Sincerely,

**Joseph Nthenge Mulei**

## APPENDIX II: APPROVAL LETTER 1



KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 810901 Ext. 4150

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

Internal Memo

FROM: Dean, Graduate School

DATE: 1<sup>st</sup> November, 2021

TO: Joseph Nthenge Mulei  
C/o Management Science Dept.

REF: D53/OL/CTY/38235/2016

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 27<sup>th</sup> October, 2021 approved your Research Project Proposal for the M.B.A Degree Entitled, "Information Systems Implementation and Performance of Floricultural Firms in Nairobi Metropolitan, Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

A handwritten signature in blue ink, appearing to read 'J. Luvusi', is written over the printed name.

JACKSON LUVUSI  
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Management Science Department.

Supervisors:

1. Dr. David Nzuki  
C/o Department of Management Science  
Kenyatta University

DM/nn

## APPENDIX III: APPROVAL LETTER 2



### KENYATTA UNIVERSITY GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

P.O. Box 43844, 00100

NAIROBI, KENYA

Tel. 8710901 Ext. 57530

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Our Ref: D53/OL/CTY/38235/2016

DATE: 1<sup>st</sup> November, 2021

Director General,  
National Commission for Science, Technology  
and Innovation  
P.O. Box 30623-00100  
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR JOSEPH NTHENGE MULEI – REG. NO.  
D53/OL/CTY/38235/2016

I write to introduce Mr. Joseph Nthenge Mulei who is a Postgraduate Student of this University. He is registered for M.B.A degree programme in the **Department of Management Science**.

Mr. Mulei intends to conduct research for a M.B.A Project Proposal entitled, **“Information Systems Implementation and Performance of Floricultural Firms in Nairobi Metropolitan, Kenya”**.

Any assistance given will be highly appreciated.

Yours faithfully,

  
PROF. ELISHIBA KIMANI  
DEAN, GRADUATE SCHOOL

JL/nm



## **APPENDIX V: QUESTIONNAIRE**

The questionnaire is developed to help with collecting data on information system implementation factors and the performance of the floricultural firms in Nairobi Metropolitan, Kenya. Please feel free and be honest when giving your answers. This questionnaire is developed for academic purposes only. I encourage participants' cooperation because it will make it easy to complete the current study.

### **NOTES:**

- 1) Avoid writing your name, ID number, or any personal information in this questionnaire.
- 2) Please respond to all questions.
- 3) Information won't be provided to any other party without your consent.

### **SECTION ONE: DEMOGRAPHIC DATA**

**(Mark appropriately)**

1. Tick the gender

a) Male           .....

b) Female       .....

2. Give your uppermost education level

Ph.D. ( ), Masters ( ), Undergraduate degree ( ), Diploma ( ), Certificate ( ).

3. What is your age range?

i. 24-28 ( ).

ii. 29-34 ( ).

iii. 35-39 ( ).

iv. 40 -44 ( ).

v. 45-49

vi. Above 50

4. How many years have you been working in floricultural sector?

Less than 5 years ( ), 6 - 10 years ( ), 11- 15 years ( ), 16- 20 years ( ), 21 - 25 years ( ),

More than 25 years ( ).

5. For how many years has this firm operated?

- 1-5 years ( )
- 6-10 years ( )
- 11-15 years ( )
- 16-20 years ( )
- Above 20 years ( ).

6. How many employees are there in your farm has?

26-50 ( ), 51-75 ( ), 76-100 ( ), 101-125 ( ), 126-150 ( ), 151-175 ( ), 176-200 ( ), > 200

( ).

## SECTION TWO: INFORMATION SYSTEMS ADOPTION AND TRAINING

### Level of information systems implementation in the organization.

To what extent do you agree/disagree with the level of information systems implementation and training of information systems in your farm? Kindly answer the following by ticking the appropriate box.

No:	Information systems and performance	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	Provision of required IS helps me in achieving my targets					
2	The firm have required information system in place that control the financial performance.					
3	Almost departments in the firm use IS in their operations to ensure efficiency in delivery of core services					
4	Users are trained on the IS operations to improve accuracy of data					

## SECTION THREE: TOP MANAGEMENT SUPPORT

Kindly tick the appropriate box in the table below. Use the key as a guide to show the high-level management support in the application of the IS in impacting the performance of the firm.

To what extent do you agree/disagree with top management support regarding the below questions?

No:	<b>Top management support</b>	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
1	Top managers provide enough financial resources and time for IS implementation to boost the organization's performance.					
2	The executive leaders select the best and suitable vendors in implementing the IS.					
3	Top management ensures that any changes regarding the IS are done to all levels of the organization.					
4	Top management ensures that training is done for all the users and levels of IS.					

## SECTION FOUR: ORGANIZATION STRUCTURE

Kindly tick the level at which each organization structure parameters in IS implementation affects the performance of the firm. To what extend does the organization structure of Information system affect the performance of the firm?

No:	Organization structure	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	The organization's size can support all the IS changes to improve the performance of the firm.					
2	The organization structure is composed of different team leaders who have expertise in Information systems.					
3	The current IS structure does not influence the firm's performance.					

## SECTION FIVE: TECHNOLOGY INFRASTRUCTURE

Please show the level at which you concur with the following statements regarding technology infrastructure and performance of the farm.

No:	Technology infrastructure	(5) Strongly Agree	(4) Agree	(3) Neutral	(2) Disagree	(1) Strongly Disagree
1	TI infrastructure supports the firms' innovative capabilities /technological changes					
2	The organization can support all the necessary costs related to the IT infrastructure.					
3	The firm should outsource vendors in managing the technology infrastructure for better performance					

## SECTION SIX: SECURITY

Kindly show the level at which you concur with the following statements:

No:	<b>IS SECURITY</b>	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
1	The firm conducts regular IS security training for the stakeholders to ensure that no breach to affect performance of the farm.					
2	IS security breach can affect the overall sales/performance of the firm?					
4	All the devices (mobile/laptops) are secured with passwords and PIN					