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## **INFORMATION COMMUNICATION TECHNOLOGY CONSIDERATIONS AND REVENUE COLLECTION IN NAIROBI CITY COUNTY, KENYA**

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### **Abstract**

*Many counties in Kenya had adequate revenue based in financing the current services, but collection levels were often low. Improvement of revenue collection in Kenyan counties is the key to meet their mandate to offer quality and timely service delivery to the residents. The study was guided by specific objectives such as the Information Communication Technology policies, Employee's perception and financial allocation on revenue collection. The theories which were used to support the study were Unified Theory of Acceptance and use of Technology, Technology, Organization and Environment (TOE) and Technology Acceptance Model (TAM). The study came out with findings, summary, conclusion and recommendations. The study concluded that, Information Communication Technology policies on revenue collection, Employee's perception on revenue collection and financial allocation on revenue collection all had influence on Revenue collection. Based on the variables of the study; ICT policies and revenue collections, Employees perception on the use of ICT on revenue collection and financial allocation on revenue collection, the findings of the study are beneficial to a number of stakeholders if put to use for instance the revenue collections departments in the county government since it aids in boosting revenue collections. Also on the other hand the findings of the study were beneficial to the Kenya Revenue Authority since they were too concern with collections of revenues in the country. The study recommended that county governments should make the ICT policies on revenue collection awareness, training employees on the use of ICT on revenue collections and proper mechanism of funds allocation for revenue collections policies so as to handle technological changes.*

**Keywords:** *Employees Perception, Information Communication Technology, Policies, Revenue Collection, Resources*

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### **1.0 INTRODUCTION**

Information Communication Technology is the fastest growing technology in the world today, ICT adoption for running daily administrative and business transactions has made organizations; small, medium and large to use it as a tool for managing their daily activities and making work easier. The perceived benefits and usefulness of ICT has led to the adoption of Information Technology systems (IT) in many organizations both privates and public (Al-mamary, Shamsuddin, & Aziati,

2014). ICT on revenue collection through Electronic tax management applications started in USA, and then spread to the developing nations (Muthama, 2013). Value Added Tax (VAT) revenue collection in India has been boosted through the use of ICT as a tool for collecting revenue. ICT adoption addresses the loopholes and seal the leakages of corruption in revenue collection and thus it is efficient and effective to use. ICT adoption replaces inefficient production on revenue collection. Through harnessing the power of ICT for the revenue collection; the new system enhances effectiveness of the revenue collection and seal the leakages and increase revenue collection. (Githinji, 2014).

Revenue collection in Kenya has been majorly run by both the KRA and the county government. The use of the ICT and the manual systems both had been used to collect revenues in Kenya. (Maisiba & Atambo, 2016). The use of ICT on revenue collection in local authorities has boost the revenue collection however the revenue has not been to its optimal peak level of collection due to some hindrances factors which inhibits maximum revenue collection. The study seeks to research on the use of ICT on revenue collection in Nairobi county government. Also (Ndunda, Ngahu, & Wanyoike, 2015a) I identify two components which affects optimal revenue collection, however they too calls for research about other challenges on revenue collection since their research only narrowed only two variables.

The use of ICT in revenue collection has boost the revenue collection in terms of efficiency, reduce corruption, seal the leakages and increase the amount of revenue collection. However, ICT has not been fully used since there were some inhibitors factors which derails ICT use for revenue collection in the counties (Okiro, 2015). According to (Maisiba & Atambo, 2016) who took a study on Effects of Electronic- Tax System on the Revenue Collection Efficiency of Kenya Revenue Authority narrowed down to Uasin Gishu county KRA office and not the county government though both sectors collects revenue. On the other hand (Okiro, 2015) under research on effects of e-payment system on his research reveals that the use of ICT in Nairobi City County government however the research study did not reveals the challenges of the use of ICT on revenue collection in the county government and that opened a gap for research. According to (Karimi, 2017) about research on effect of technology and information systems on revenue collection by the county government of Embu, identified that ICT plays a key role in revenue collection though there were other factors which affects the use of ICT on revenue collection, and thus recommends for further research on those factors which affects revenue collection apart from the once which he researched on.

According to (Lundu & Shale, 2015) on research about effects of IFMIS on performance in Supply Chain Management (SCM); found that organization policies and other policies from external on IFMIS had played much part in the implementation of the IFMIS. However a coherent policy framework on overall public finance slow down the IFMIS system for SCM. Through the use of the system it has resulted in elimination of corruption and minimizes the wastage in use of public asset. Top management also affects the implementation of the IFMIS which trigger downs to impact on the performance on SCM. IFMIS in general had a positive attractive performance and it eliminates corruption and fraud. Likewise to the adoption of ICT system on revenue collection, it has some other related Considerations and impact on revenue collection which I would like to research on them. In some cases manual government procurement has been faced by several

Considerations such as lack of transparency and inefficient public expenditure. But E-procurement (ICT system) adoption offers many benefits such as enhance transparency and compliance, increase performance and quality. Though the system encounters some Considerations during implementation and adoption (Odago & Dr. Mwajuma, 2013).

According to (Githinji, Mwaniki, Kirwa, & Mutongwa, 2014) under the use of ICT on revenue collection in Kenyan counties; found that tax revenue collection was down and poor in most of the counties. County government should adopt the use of ICT for running their daily transactions for instance service delivery and revenue collections in their entire counties since. VAT revenue collection in India has been boosted through the use of ICT as a tool for collecting revenue. ICT adoption addresses the loopholes and seal the leakages of corruption in revenue collection and thus it was efficient and effective to use. ICT adoption replaces inefficient production on revenue collection (Githinji et al., 2014). According to (Kenya, e-Government Master plan, 2013) Government has developed a government common core network (GCCN). That was to be used to share and to secure interoperability government-wide ICT architecture. The system will integrate workflow process, information flows, improves ministerial sharing of data base to eliminates data redundancies, improves service delivery for instance revenue collection, public access to government services and ensure responsiveness in reporting, monitoring and evaluation.

Nairobi City County has not fully transferred the system to its sub-counties due to some limiting factors such as lack of enough resources and policy framework on ICT adoption (East African Digital Business week Newspaper, 2014). ICT adoption for revenue collection in the counties; maximizes returns and promotes transparency. However adoption of ICT on revenue collection had some determinants such as budget allocation which hinders the implementation (Business Digital Business Daily Nation, 2015).

### **Revenue Collection**

County governments in Kenya originates from the promulgation of constitution of Kenya in the year 2010. Devolved governance were distributed to all 47 counties in Kenya. They were meant for good effective governance and efficient service delivery to the citizens of the entire Nation. County governments requires efficient and reliable sources of revenue for them to run their operations effectively (E. A. Tax, 2014). County governments had constitutionally powers to imposed taxes and charges on various sections on the economy in within their areas of jurisdiction as per the constitution of Kenya; Article 209. Counties gets it revenue from various sources such as car parking, single business permit, rates, rent and other sources allocation from the national government. Counties uses these revenues for various development projects in the respective counties for the main purpose of service delivery to the citizens.

The bodies which were responsible for collecting revenue in Kenya is the national government through Kenya Revenue Authority and the County governments. KRA has digitalized its system of revenue collection. For instance initially since 1989 it was using a system called Bishop office Freights Forwarders Integrated Network (BOFFIN) and now it has upgraded to electronic system called Simba as from 2005 to date. Counties too had not been left behind; Nairobi county government has launched JamboPay system which it will aid on revenue collection and management (Muthama, 2013).

Information Communication Technology development, implementation and exploration were an integral to Kenya government and its entire counties. Though it's affected by some factors such as policy framework and resources allocation among other factors (IMF Report, 2010). Revenue collection among the counties in Kenya reduces the dependencies from the National government and it increases their ownership of the development process as well as strengthening the county capacity. (United Nations Report, 2005). All the counties in Kenya were responsible in revenue collection and they are ranked by the County Revenue Authority (CRA) as per performance of collection and their distribution (E. A. tax and governance Tax, 2014). Some of these counties had introduced the use of ICT so as to aid in revenue collection. ICT adoption will seal the loopholes which were existing through the use of the IT system. For instance Nairobi City County had adopted a financial information system called JamboPay system that will aid in revenue collection (Nairobi City County Fiscal policy, 2013/2014).

World Bank had been assisting the developing countries through donations. It has support Nairobi County with funds so as to adopt the use of ICT in revenue collection so as to enhance accountability. The Kenya Transparency and Communication infrastructure Project (KTCIP); has help the counties with funds to develop master plan for ICT. JamboPay system which was used for revenue collection by Nairobi City County was funded by World Bank through the Information Communication Technology Authority also ICT adoption in the counties for revenue collection sealed the loopholes, curbed corruption and promoted transparency on revenue collection (World Bank report, 2014).

According to (Cherotich & Okibo, 2016) under study on factors affecting effective implementation of Integrated Financial Management Information System (IFMIS) by the county governments of Kenya. Found that counties in Kenya faces several Considerations in adoption and implementation ICT in their counties. The use of IFMIS was to start from county headquarters then to their respective sub-counties but so far no any county had transferred it to sub-county. Some of the counties headquarters had not yet fully integrated due to some limitations. The public Finance Management (PFM) Act, 2012 requires counties to adopt IFMIS since 2003; but the implementation has not been fully implemented.

Revenue collection among the counties enables them to acquire assets which are not liable to debt and which the government uses to develop its economy and improves living standards of its people as well as better service delivery. However, revenue collection in the developing economies in counties has not always been as effective as it should be (Ngotho & Kerongo, 2014). To eliminate or significantly reduce corruption, the e-payment revenue collection project provides an alternative means of payment of county revenue that do not require cash to exchange hands (Kinyanjui & Kahonge, 2013).

Nairobi County government was the first county to adopt ICT on revenue collection through e-payment system called JamboPay in Kenya, which went live to bring efficiency and convenience in revenue collection. Users of city parking space can make payments using mobile money, debit cards, over-the counter payments at 29 partner banks and at independent agent stalls spread across the city. All the digital payment options offered were linked to the system through the Nairobi County e-wallet that was created on signing up. No charges were incurred when making payments

through independent agents, the e-county mobile app and using mobile money, but banks offering the service may impose a charge on transactions. The ICT e-payment system in Nairobi County was used for collecting revenues from parking fees, single business permit, rent and land rates. (Njanja, 2014).

### **ICT in Relation to Revenue Collection**

Information communications technology (ICT) refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions.

Information communication technologies (ICTs), and e-Government improves efficiency and effectiveness of internal administration within government and facilitates re-locations of government service from government offices to locations closer to the citizens. Examples of such locations were Huduma Centers, cyber cafe, telecenters or a personal computer at home or office or even the use of mobile phones. Benefits of ICT in government cannot be disputed, there were several concerns about its success as well as the plans to be adopted in implementation of systems in various countries. There were several drivers for success of ICT in the government as well as there were also inhibitors of failures which hinders the ICT in both developing and developed countries. Developing nations were far behind the e-government and the complete installations of the ICT projects in the government especially for revenue was a strong milestone foundation for e-government initiative progress though its application was affected by several factors. Taking Kenya as a developing Nation also faces several inhibitors or determinants to the success of the use of the ICT system on revenue collection though the benefits were paramount (Gichoya, 2005). According to (Maisiba & Atambo, 2016) on effects electronic tax system on revenue collection efficiency on Kenya revenue authority. Found that through the use of the electronic tax system (Etax) on revenue collection was efficient and it has resulted in positive deviation on revenue collection and also seal the loopholes of corruption. Since the system accepts the use of mobile phone for filling returns online. ICT was efficient on revenue collection and for faster service delivery (Maisiba & Atambo, 2016). Through rapid technological changes in tax and revenue systems, it has make work to be more efficient than before. There was a demand need to integrate the revenue system modules since the new upcoming programs were being developed to facilitate financial process (Adams, 2002). The amount of data being processed each year demands for suitable setup, so as to accomplish the process of financial fiscal (Maxwell, 2005).

### **Statement of the Problem**

Revenue collection process has been challenged with several malpractices such as corruption, misallocation, low revenue collection, collusions by tax collectors and tax payers on revenue collections, evasions of revenue collections and disrespect of the rule of law on revenue collections among the County Governments in Kenya. Most government faces serious limitations in their revenue collection they were not able to collect sufficient funds to cover their budget expectations. Many counties collect minimal revenue due to the poor methods of collection. (Kamande, 2014). Significant measures had been integrated for instance the adoption of ICT JamboPay system in Nairobi County government to aid in revenue collection so as to achieve the expected objective. (Okiro, 2015),

According to (Otieno *et al.*, 2013), who studied on Effect of Information Systems on Revenue Collection by Local Authorities: a case of HomaBay County found that ICT boost the revenue collection. However, ICT systems on revenue collection was not sufficient as it was expected. That was due to ICT on revenue collection was affected by other factors such as Revenue policies, political situation, or ICT support systems among other causes these results in either low or higher performance on revenue collection.

Study done by (Ndunda, Ngahu, & Wanyoike, 2015), on Analysis of Factors Influencing Optimal Revenue Collection by County Governments: a case of Nakuru County, found that competence of clerks and compliance of policy frame work about revenue collection had impact on revenue in the County Government. However, their study hence failed to show the other challenges which affects the optimal revenue in County Governments since the researcher uses only two variables and thus opens a gap for the study on ICT considerations on revenue collection in Nairobi County Government. The reviewed researchers had studied Revue collections in Kenya, but had not addressed ICT Consideration on Revenue collection in County Governments. It was against the background that the study sought to investigate the ICT consideration on revenue collection in Nairobi County Government.

### **Specific Objectives**

The study research was guided by the following specific objectives: -

- i. To investigate how ICT government revenue policies affects revenue collection in Nairobi City County government.
- ii. To determine the effect of employees' perception on revenue collection in Nairobi City County government.
- iii. To examine the influence of financial allocation on revenue collection in Nairobi City County government.

### **Research Questions**

The study was guided by the following research questions: -

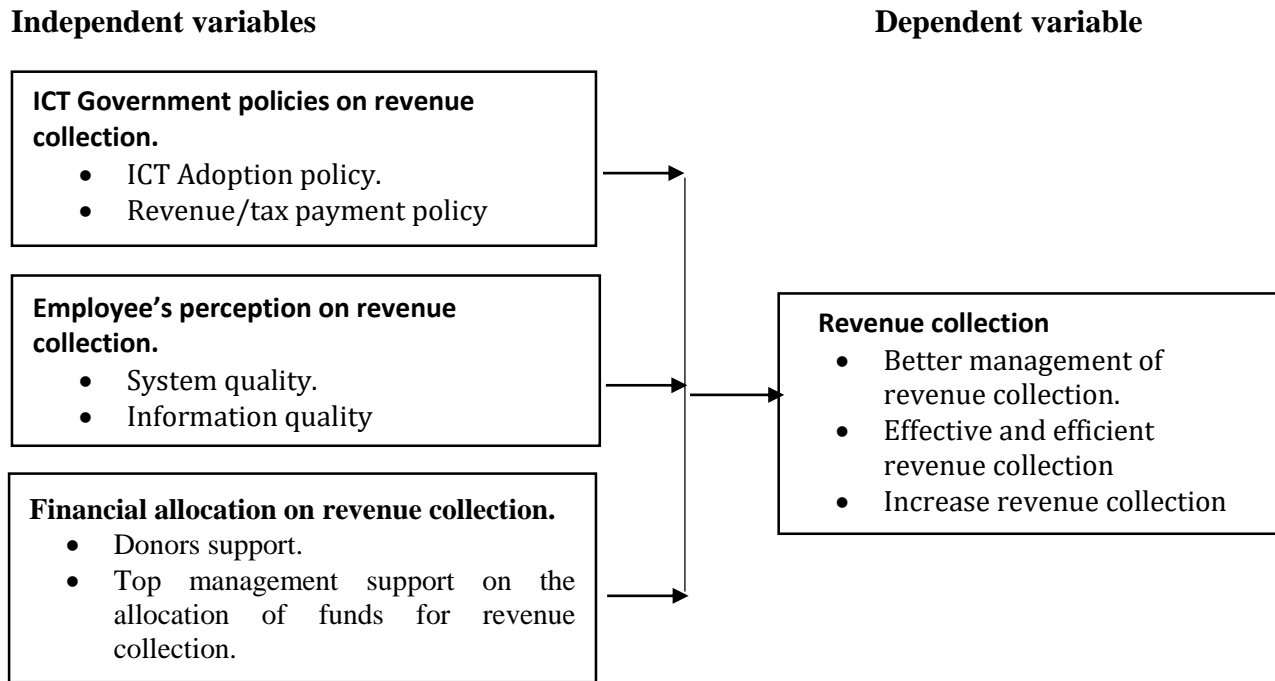
- i. How does ICT government revenue policies affect revenue collection in Nairobi City County city government?
- ii. What effect can employees' perception had on revenue collection in Nairobi City County government?
- iii. What effect does financial allocation had on revenue collection in Nairobi City County city government?

### **Significance of the Study**

The study report was expected to be of help to Nairobi City County government policy makers in identifying the key challenges in ICT on revenue collection and coming up with strategies that will lead to improved quality and efficiency on revenue collection. The study was also helpful to future researchers who could use the study as a source of reference. It was also meant to assist the decision makers in ICT sector from playing its rightful role in national, County and sub-counties strategies

on revenue collection among the county leaders such as the governor and his deputy, county ministers, members of county assembly (MCA) and county employees in general to know the importance of the use of ICT towards revenue collection and the extent to which it can increase revenue collection in the county especially on the employees perception and the financial allocations on ICT related equipment and support. The researcher expects that result of the study will be useful to future researchers with interest in examining further on ICT on revenue collection among other counties. That could lead to the generation of new ideas for the better use of ICT on revenue collection.

**Figure 2.1: conceptual framework**



Source: Researcher (2018)

## METHODOLOGY

This study adopted a descriptive research design to acquire information about the current state of the phenomena and to also describe the relationship between the variables. A sample of 46 respondents was selected, representing 76.1% of the population. Statistical software for social sciences SPSS (version 16) was employed in data analysis. Qualitative data was analyzed using content analysis. Quantitative data was analyzed through the use of descriptive statistics which include: frequencies, percentages, means, standard deviations as well as multiple linear regression model.

## DATA ANALYSIS PRESENTATION AND DISCUSSION

### ICT Government Policies on Revenue Collection

Various policies awareness from varied employees from various departments from Nairobi City County government were interviewed on ICT government policies on revenue collection. The researcher established some policies justifications to employees and how it affects revenue collection. From the finding the results shown below as from each supportive questions on ICT Government policies on revenue collection.

**Existence ICT Policies on Revenue Collection**

The findings about ICT policies existence on revenue collections among the respondents shows that 80 percent of those who were interviewed accepted that there was ICT policies on revenue collection in the Nairobi City County Government. While 20 percent of the interviewed staffs shows that there was no existence of the ICT policies on revenue in the county. Therefore the majority of the employees accepted that there was existence of ICT policies on revenue collection in the county. The management of the county should inform all employees about the ICT policies on revenue collections so that they will work and walk together toward a common objectives of the County and to share the same notes as well as working on the same platform for better streamlining of the core activities as shown in table 1.

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>Yes</b>	28	80.0	80.0	80.0
<b>No</b>	7	20.0	20.0	100.0
<b>Total</b>	35	100.0	100.0	

**ICT Policies on Revenue Collections Improvement**

Various staff were interviewed from varied perspectives about the ICT policies where it improves revenues collections in Nairobi City County Government, these were the responses, had no idea, agree and strongly agree. Therefore from the findings the majority of the staff accepts that ICT policies on revenue improves collections of revenue. The results of the study was in line with the study of (Maisiba & Atambo, 2016) who found that the right procedures of revenue collections affects the production of the revenue in an organization either positively or negatively as shown in table 2.

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>No Idea</b>	8	26.7	26.7	26.7
<b>Agree</b>	14	46.7	46.7	73.3
<b>Strongly Agree</b>	8	26.7	26.7	100.0
<b>Total</b>	30	100.0	100.0	

Source: Research (2018)

**ICT Revenue Policy Awareness among the Employees**

Among the staff interviewed, about the awareness of ICT policies on revenue collection in Nairobi City County Government; 22.9 percent had no idea of those policies, 28.6 percent were often being informed, 8.6 percent accepted that ICT policy awareness were made available to them or were being updated, 34.3 percent and 5.7 percent accepted that ICT policies on revenue collections were being informed in a most frequent rates. The results of the study was in line with the study of (Maisiba & Atambo, 2016) who found that those who were aware of the right procedures of revenue collections affected the production of the revenue in an organization



either positively or negatively. Therefore the findings shown that majority of the staffs were aware of the ICT Revenue policy existence and thus there was a positive significant in revenue collection in Nairobi City County government as shown in table 3.

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>None</b>	8	22.9	22.9	22.9
<b>Often</b>	10	28.6	28.6	51.4
<b>Most Often</b>	3	8.6	8.6	60.0
<b>Frequently</b>	12	34.3	34.3	94.3
<b>Most Frequently</b>	2	5.7	5.7	100.0
<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### ICT Policies and Revenue Collections

Among the staffs of Nairobi City County Government who were interviewed about the adhering of the ICT policies during revenue collections, from the study analysis, it was noted that 31.4 percent has no idea, 8.6 percent strongly disagree, and 42.9 percent agree and 17.1 percent strongly agree. Therefore from the findings, it can be noted that majority of the staff agree that ICT polices on revenue collections were being followed during revenue collections. The results of the study contradicts with the findings of (Odago & Dr. Mwajuma, 2013) and (Ndunda *et al.*, 2015) who found that more training should be done on those who were collecting revenues since they were colluding with those who were submitting revenue. That implies majority of staffs of Nairobi City County government were adhering of the set policies on revenue collections as shown in table 4.

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>No Idea</b>	11	31.4	31.4	31.4
<b>Strongly Disagree</b>	3	8.6	8.6	40.0
<b>Agree</b>	15	42.9	42.9	82.9
<b>Strongly Agree</b>	6	17.1	17.1	100.0
<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### Ease of ICT Policies on Revenue Collections

Varied employees of Nairobi City County Government were interviewed about ICT policies on revenue ease revenue collections, the following were the output results, 17.1 percent has no idea, 5.7 percent, 45.7 percent agree and 31.4 percent strongly agree. It was therefore noted that majority of the employees accepted that the ICT policies on revenue collections ease revenue collections in Nairobi City County Government. The study agree with the study of (Maisiba & Atambo, 2016) who found that through the use of ICT on tax pay process reduces costs and make the entire process to be much easier during tax pay collections as shown in table 5.

**Table 5 Ease of ICT Policies on Revenue Collections**

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>No Idea</b>	6	17.1	17.1	17.1
	<b>Strongly Disagree</b>	2	5.7	5.7	22.9
	<b>Agree</b>	16	45.7	45.7	68.6
	<b>Strongly Agree</b>	11	31.4	31.4	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### ICT Policies on Revenue Collection Productivity

The findings from the staff of Nairobi City County Government who were interviewed about ICT policies on revenue collection productivity shows that, 20 percent has no idea, 8.6 percent strongly disagree, 45.7 percent agree and 25.7 percent strongly agree. From the results from analysis it shows that majority of the respondents agree that ICT policies on revenue collections improves productivity. The results of the study concurred with the findings of (Kirimi *et al.*, 2017) , (Githinji *et al.*, 2014) and (Maisiba & Atambo, 2016) who found out that the used of ICT on revenue collection increased the quantity of revenue collection since the ICT system sealed the loop holes of corruptions as shown in table 6.

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>No Idea</b>	7	20.0	20.0	20.0
	<b>Strongly Disagree</b>	3	8.6	8.6	28.6
	<b>Agree</b>	16	45.7	45.7	74.3
	<b>Strongly Agree</b>	9	25.7	25.7	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### Sufficiency of ICT Policies on Revenue Collections

Among the staffs who were interviewed about ICT policies sufficiency on revenue collections, the findings shows that 68.6 percent accepted while 31.4 percent responded that ICT policies on revenue collection was not sufficiently adequate. It was therefore, noted that majority of the respondents accepted that ICT policies on revenue collection was sufficiently adequate as shown in table 7.

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>Yes</b>	24	68.6	68.6	68.6
	<b>No</b>	11	31.4	31.4	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### ICT Policies on Revenue Collection and Timely Report

The researcher wanted to know the impact of ICT policies on revenue collection and the timely reports being produced by the current ICT system in place. The findings shows that 17.1 percent has no idea, 2.9 percent

disagree, 54.3 percent agree and 25.7 percent strongly agree. It was therefore noted that majority of the employees agree that ICT policies on revenue collection helps much in providing timely reports for decision making. The results of the study concurred with the findings of (Almanary *et al.*, 2014) who found that the use of information systems in an organization was of great significant because of the effectiveness and efficiency of the system on managing the tasks of the organization as shown in table 8.

**Table 8 ICT Policies on Revenue Collection and Timely Report**

	Frequency	Percent	Valid Percent	Cumulative Percent
No Idea	6	17.1	17.1	17.1
Disagree	1	2.9	2.9	20.0
Agree	19	54.3	54.3	74.3
Strongly Agree	9	25.7	25.7	100.0
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>100.0</b>	

Source: Research (2018)

**ICT Policies on Revenue Collection and Corruption Minimization**

The findings from those who were interviewed among Nairobi City County Government staffs about ICT policies on revenue collection and corruption minimization shows that 14.3 percent has no idea, 2.9 percent strongly disagree, 22.9 percent disagree, 45.7 percent agree and 14.3 percent strongly agree. From the results the majority of the staff from Nairobi City County Government agree that ICT policies on revenue collections minimizes corruptions during revenue collection and processing. Therefore, the majority of Nairobi City County Government staffs agree that ICT policies on revenue collection minimizes corruption. The results of the study concurred with the findings of (Otieno *et al.*, 2013) and (Maisiba & Atambo, 2015) who found that the use of ICT on revenue collections was in line with the objectivity of revenue collection since the use of ICT on revenue collection sealed and minimized the loop holes of corruptions on revenue collections as shown in table 9.

**Table 9 ICT Policies on Revenue Collection and Corruption Minimization**

	Frequency	Percent	Valid Percent	Cumulative Percent
No Idea	5	14.3	14.3	14.3
Strongly Disagree	1	2.9	2.9	17.1
Disagree	8	22.9	22.9	40.0
Agree	16	45.7	45.7	85.7
Strongly Agree	5	14.3	14.3	100.0
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>100.0</b>	

Source: Research (2018)

**ICT Policies on Revenue Collection and Revenue Maximization**

Among those who were interviewed, the results from analysis shows that 11.4 percent has no idea, 2.9 percent strongly disagree, 17.1 percent disagree, 48.6 percent agree and 20 percent strongly agree. Therefore it was noted that majority of the respondents in Nairobi City County Government agree that ICT policies on revenue collection maximizes revenue collection in the county. The results of the study concurred with the findings of (Okiro, 2015) who found that the use of ICT on revenue collections was in line with the objectivity of revenue

collection since the use of ICT for revenue collection increased the quantity of revenue collection since the ICT system seals the loop holes of corruptions as shown in table 10.

**Table 10 ICT Policies on Revenue Collection and Revenue Maximization**

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>No Idea</b>	4	11.4	11.4	11.4
	<b>Strongly Disagree</b>	1	2.9	2.9	14.3
	<b>Disagree</b>	6	17.1	17.1	31.4
	<b>Agree</b>	17	48.6	48.6	80.0
	<b>Strongly Agree</b>	7	20.0	20.0	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

**ICT Policies on Revenue Collection and Accomplishment of More Work**

The study findings shows that among those who were interviewed about ICT policies on revenue collection and accomplishment of more work, 11.4 percent had no idea, 2.9 percent strongly disagree, 11.4 percent disagree, 54.3 percent agree and 20 percent strongly agree. It was noted that majority of the staff agree that ICT policies on revenue collection and accomplishment on much work in Nairobi City County Government. The results of the study concurred with the findings of (Almanary *et al.*, 2014) who found that the use of information systems in an organization was of great significant because of the effectiveness and efficiency of the system on managing the tasks of the organization. It meets the objectivity of revenue collection since the use of ICT for revenue collection increased effectiveness and efficiency on the revenue collection as shown in table 11.

**Table 11 ICT Policies on Revenue Collection and Accomplishment of More Work**

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>No Idea</b>	4	11.4	11.4	11.4
	<b>Strongly Disagree</b>	1	2.9	2.9	14.3
	<b>Disagree</b>	4	11.4	11.4	25.7
	<b>Agree</b>	19	54.3	54.3	80.0
	<b>Strongly Agree</b>	7	20.0	20.0	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

**Employees Perception on the Use of ICT on Revenue Collection**

**Training on the Use of the Information System for Revenue Collection**

The researcher wanted to know if the staffs from various departments in Nairobi City County Government were trained on the use of the system which they were using for revenue collections and processing of the reports. The findings shows that 37.1 percent had been trained while 60 percent had not been trained. Thus it was noted that majority of the staffs were not trained about the use of the current system for revenue collection. The results of the study concurred with the findings of (Ndunda *et al.*, 2015) and (Odago & Dr. Mwajuma,

2013) who found that more training should be done to those who were collecting revenues since they were colluding with those who were submitting revenue. That implies majority of staffs of Nairobi City County government were not trained on the use of the ICT system for revenue collection as shown in table 12.

**Table 12 Training on the Use of the Information System for Revenue Collection**

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>Yes</b>	13	37.1	38.2	38.2
	<b>No</b>	21	60.0	61.8	100.0
	<b>Total</b>	34	97.1	100.0	
<b>Missing</b>	<b>System</b>	1	2.9		
<b>Total</b>		35	100.0		

**Source: Research (2018)**

**ICT System Preferred For Revenue Collection**

The finding about the kind of the system which was liked by those who were interviewed between the Current JamboPay system and Office Automation system among Nairobi City County Government staffs, shows that those who preferred JamboPay system were 45.7 percent while those who preferred Office Automation system were 51.4 percent. Therefore it was noted that majority of the users of the system preferred office automation than the JamboPay system which was in used as shown in table 13.

**Table 13 ICT System Preferred for Revenue Collection**

		Frequency	Percent	Valid Percent	Cumulative Percent
	<b>JamboPay system</b>	16	45.7	47.1	47.1
	<b>Office Automated System</b>	18	51.4	52.9	100.0
	<b>Total</b>	34	97.1	100.0	
<b>Missing</b>	<b>System</b>	1	2.9		
<b>Total</b>		35	100.0		

**Source: Research (2018)**

**ICT System on Revenue Collection and Quality of the System**

Various parameters about the ICT system on revenue collection in relation to quality ICT system were formulated in the study and interviewed among the staff of Nairobi City County Government. Those parameters of quality of the ICT system includes:-

**Ease of Using the System**

The findings about the employees of Nairobi City County Government on the perception on ease of using the system shows that 20 percent has no idea, 5.7 percent strongly agree, 5.7 percent disagree, 60 percent agree and 8.6 percent strongly agree. Therefore the majority of the staff in Nairobi City County Government agree that the use of the ICT on revenue collection was easy to use. The results of the study on ease of the ICT system on revenue collection concurred with the findings of (Almanary *et al.*, 2014) who found that the use of

information systems in an organization should possess qualities which meets users needs so as to meet certain objective as shown in table 14.

**Table 14 Ease of Using the System**

	Frequency	Percent	Valid Percent	Cumulative Percent
No Idea	7	20.0	20.0	20.0
Strongly Disagree	2	5.7	5.7	25.7
Disagree	2	5.7	5.7	31.4
Agree	21	60.0	60.0	91.4
Strongly Agree	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Source: Research (2018)

**Data security**

Among the staff of Nairobi City County Government who were interview about ICT system on revenue collection, the findings shows that 28.8 percent has no idea, 8.6 percent strongly disagree, 17.1 percent disagree, 40 percent agree and 5.7 percent strongly agree. It was therefore, concluded that majority of staff agree that the ICT on revenue collection in secures data as shown in table 15.

**Table 15 Data security**

	Frequency	Percent	Valid Percent	Cumulative Percent
No Idea	10	28.6	28.6	28.6
Strongly Disagree	3	8.6	8.6	37.1
Disagree	6	17.1	17.1	54.3
Agree	14	40.0	40.0	94.3
Strongly Agree	2	5.7	5.7	100.0
Total	35	100.0	100.0	

Source: Research (2018)

**ICT System on Revenue Collection and Quality of Information**

Various parameters about the ICT system on revenue collection in relation to quality of information produced by the system were formulated by the researcher and interviewed among the staff of Nairobi City County Government. The results of the study on quality of the information from the system on revenue collection concurred with the findings of (Almanary *et al.*, 2014) who found that the use of information systems in an organization should had qualities which meets users satisfaction. Those parameters of quality of information includes:-

**Completeness of Information**

The findings from those employees of Nairobi City County Government who were interviewed shows that 17.1 percent has no idea, 2.9 percent strongly disagree, 20 percent disagree, 48.8 percent agree and 11.4 percent strongly agree. From the results it shows was noted that majority of the employees agree that the ICT system on revenue collection produces complete information. The results of the study on completeness of information on ICT system on revenue collection concurred with the findings of (Almanary *et al.*, 2014) who found that

the use of information systems in an organization should have qualities which meets users needs as shown in table 16.

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
	<b>No Idea</b>	6	17.1	17.1	17.1
	<b>Strongly Disagree</b>	1	2.9	2.9	20.0
	<b>Disagree</b>	7	20.0	20.0	40.0
	<b>Agree</b>	17	48.6	48.6	88.6
	<b>Strongly Agree</b>	4	11.4	11.4	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

**Accuracy of Information**

The findings from those who were interviewed among the staffs of Nairobi City County Government about ICT system on revenue collection and accuracy of information shows that 20 percent has no idea, 2.9 percent strongly disagree agree, 20 percent disagree, 51.4 percent agree and 5.7 percent strongly agree. From that data analysis it was clear that majority of the staff agree that ICT system produces accurate information. The results of the study on accuracy of the ICT system on revenue collection concurred with the findings of (Almanary *et al.*, 2014) who found that the use of information systems in an organization should had qualities which meets users needs as shown in table 17.

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
	<b>No Idea</b>	7	20.0	20.0	20.0
	<b>Strongly Disagree</b>	1	2.9	2.9	22.9
	<b>Disagree</b>	7	20.0	20.0	42.9
	<b>Agree</b>	18	51.4	51.4	94.3
	<b>Strongly Agree</b>	2	5.7	5.7	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

**Security of Information**

The parameter on ICT system on revenue collection in relation to data security. Among the staffs of Nairobi City County Government who were interviewed, the findings shows that 28.6 percent has no idea, 5.7 percent strongly disagree, 22.9 percent disagree, 37.1 percent agree and 5.7 percent strongly agree. Therefore, it was noted that majority of the staff agree that the system secures information and it has authentications. The results of the study on security of the ICT system on revenue collection concurred with the findings of (Almanary *et al.*, 2014) who found that the use of information systems in an organization should had qualities which meets users needs so as to meet certain objectives as shown in table 18.

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
	<b>No Idea</b>	10	28.6	28.6	28.6

<b>Strongly Disagree</b>	2	5.7	5.7	34.3
<b>Disagree</b>	8	22.9	22.9	57.1
<b>Agree</b>	13	37.1	37.1	94.3
<b>Strongly Agree</b>	2	5.7	5.7	100.0
<b>Total</b>	35	100.0	100.0	

**Source: Research (2018)**

**Financial Allocation on Revenue Collection**

Various parameters about the ICT system on revenue collection in relation to financial allocation on revenue collection to the system were formulated by the researcher and interviewed among the staff of Nairobi City County Government. Those parameters of financial allocation on revenue collection includes but not limited to:-

**Funds Allocation on ICT Resources for Revenue Collection**

The findings from various employees who were interviewed among the Nairobi City County Government staff on financial allocation on revenue collection were depicted below. The results shows that 48.6 percent has no idea, 28.6 percent strongly disagree and 22.9 percent agree. From the results it was noted that majority of employees has no idea about the budget of ICT resources and revenue collection. The results of the study concurred with the findings of (Pudjianto & HanyJung, 2010) and (Muthoni, 2015), who found that top management influences the allocation of resources among the projects in an organization and also the allocated fund to the projects were not enough. The study too found that top management had a great influence on allocation of funds on the collections of revenues as shown in table 19.

**Table 19 Funds Allocation on ICT Resources for Revenue Collection**

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>No Idea</b>	17	48.6	48.6	48.6
<b>Strongly Disagree</b>	10	28.6	28.6	77.1
<b>Agree</b>	8	22.9	22.9	100.0
<b>Total</b>	35	100.0	100.0	

**Source: Research (2018)**

**Sources of Funds for Financing Revenue Collection**

The findings from those who were interviewed among the staffs of Nairobi City County Government, about sources of funds for financing revenue collection, the results shows that 8.6 percent was from donors, 51.4 percent national government, 34.3 percent revenue collected and 2.9 percent other investments. From the analysis of the data shown that majority of the staff agree the finance for revenue collections was from national government. That was supported by the constitution of Kenya; Article 209 which implies that County governments had constitutionally powers to impose taxes and charges on various sections on the economy in within their areas of jurisdiction and requires efficient and reliable sources of revenue for them to run their operations effectively (E. A. Tax, 2014) as shown in table 20.



		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
	<b>Donors</b>	3	8.6	8.8	8.8
	<b>National Government</b>	18	51.4	52.9	61.8
	<b>Revenue collection</b>	12	34.3	35.3	97.1
	<b>Other (Business Investments)</b>	1	2.9	2.9	100.0
	<b>Total</b>	34	97.1	100.0	
<b>Missing</b>	<b>System</b>	1	2.9		
<b>Total</b>		35	100.0		

Source: Research (2018)

### **Top Management Support on Allocation of Funds for ICT Revenue Collection**

The findings from those who were interviewed among Nairobi City County Government staffs about top management support on allocation of funds for ICT components for revenue collections, the results from data analysis shows that 37.1 percent has no idea, 2.9 percent strongly disagree, 11.4 percent disagree, 40 percent agree and 8.6 percent strongly agree. It was therefore noted that majority of those who were interviewed agreed about top management support on allocation of funds for ICT revenue collection. The results of the study concurred with the findings of (Lundu & Shale, 2015) and (Pudjianto & HanyJung, 2010) who found that top management influenced the allocation of resources among the projects in an organization. The study too found that top management had great influence on allocation of funds for the collections of revenues as shown in table 21.

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
	<b>No Idea</b>	13	37.1	37.1	37.1
	<b>Strongly Disagree</b>	1	2.9	2.9	40.0
	<b>Disagree</b>	4	11.4	11.4	51.4
	<b>Agree</b>	14	40.0	40.0	91.4
	<b>Strongly Agree</b>	3	8.6	8.6	100.0
	<b>Total</b>	35	100.0	100.0	

Source: Research (2018)

### **Inferential Results**

#### **Regression Analysis**

The following table show the relationship among the predictions and influence of the independent variables (ICT policies and revenue collection, employee’s perception and funds allocations) to the dependent variable (revenue collections). The regression model indicated that R=0.78 which shows that there was correlation and that was statistically precise for the interpretation. The coefficient of determination R<sup>2</sup> =0.60 was used to explained the variation in ICT policies on revenue collections, Employees perception and funds allocations on

revenue collection. Therefore the independent variables contributed 60.2 percent to the dependent variable revenue collection. Therefore, other factors not included in the study contributed to 39.8 percent to the dependent variable. Such as trainings and awareness motivations, strict follow ups and policies controls among others. Future studies therefore ought to be conducted to investigate those factors. The finding of the study concurred with (Mitullah *et al.*, 2016) and (Kirimi *et al.*, 2017) who argued that ICT has become basic in increasing transparency and accountability of government agencies; reduced process expenditure in service delivery and the workings of governments as shown in table 22.

**Table 22 ICT Policies on Revenue Collection, Employees Perception, Fund Allocation**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.776 <sup>a</sup>	.602	.517	.626

Predictors : ( Constant), ICT policies on revenue collection, Employees Perception, Fund Allocation. Source: **Research (2018)**

**Analysis of Variance**

The relationship between ICT Considerations and revenue collection in the county government of Nairobi, ANOVA were done at 95 percent confident level and 0.05 significant level. The F statistic value of 7.069 (71 percent) was statistically significant and it shows that there was relationship between ICT considerations and revenue collections. The p-value of 0.05 (5 percent) was also significant since a p-value of 0.004 were found which was lower than the conventional p-value of 0.05. That implies the relationship between ICT Considerations (ICT policies on revenue collection, employees Perception and Fund Allocation on revenue collection) and revenue collection was statistically significant as shown in table 23.

**Table 23 Analysis of Variance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.311	3	2.770	7.069	.004 <sup>a</sup>
	Residual	5.487	14	.392		
	Total	13.798	17			

Predictors: (Constant), Predictors: (Constant), ICT policies on revenue collection, employees Perception, Fund Allocation. b. Dependent Variable: Revenue collection.

Source: **Research (2018)**.

**Coefficients for the Overall Model**

The relationship of the variables were analyzed in table 24 and the results were obtained as follows.

**Table 24. Regression Analysis Model**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.947	.436		2.170	.048
ICT policies on revenue collection	.372	.147	.436	2.533	.024
Employees Perception on revenue collection	.271	.122	.405	2.219	.044
Resource Allocation	.377	.120	.565	3.136	.007

- a. Predictors :( Constant), ICT, Perception, Allocation
- b. Independent: Revenue collection

**Source: Research (2018).**

These study results indicated that ICT policies on revenue collection, employee perception and resource allocation at 5 percent level of significance of 0.48, depicted a positive relationship with revenue collection (dependent variable). Independent coefficients were (ICT policies on revenue collection =0.372), (Employees Perception on revenue collection =0.271), and (Resource Allocation =0.377) respectively.

**ICT Policies on Revenue Collection**

The first objective aimed at investigating ICT policies on revenue collection. The model indicated that ICT policies had positive impact on revenue collection. The relationship with revenue collection with a beta value of ( $\beta =0.372$ , p-value =0.024). The p-value of 0.024 was significant since that was less than 0.05 ( $p < 0.05$ ), and therefore at 5 percent significance level ( $\alpha = 0.05$ ), enough evidence exists to conclude that ICT policies had a great influence on revenue collection. That was as a result of the ICT system eliminating the excesses of the malpractices on the revenue collection process therefore making the revenue collection more efficient and effective.

The findings of the study were in agreement with those of (Okiro, 2015) and (Otieno *et al.*, 2013) whose study found out that ICT on revenue collection boosted the revenue collection and sealed the loop holes of corruptions among those who were involved in collection of the taxes. The study also revealed that the system provided security for personal data, and that ICT on revenue colocations was safe to use providing high levels of data integrity for its users. The county government of Nairobi should strengthen their ICT revenue systems to realize more improvement in revenue collection.

**Employees Perception on Revenue Collection**

The second objective was to determine the effect of employees’ perception on revenue collection. The model indicated that Employees perception on the use of ICT on revenue collection had positive change. The relationship with revenue collection with a beta value of ( $\beta =0.271$ , p-value =0.044). The p-value of 0.044 was significant since that was less than 0.05 ( $p < 0.05$ ), and therefore at 5 percent significance level ( $\alpha = 0.05$ ), enough evidence exists to conclude that employees perception on the use of ICT on revenue collection had a great influence on revenue collection. That was as a result of the ICT system promotes efficiency and effectiveness on revenue collection.

The findings of the study were in agreement with those of (Schaik, 2009) and (Almanary *et al.*, 2014) whose study found out that ICT systems on the use on aiding the certain process had a great perceived ease of use and perceive usefulness for accomplishing certain objective. Thus it concluded that the ICT system on revenue collection revealed that the system provides security for personal data, and that ICT on revenue collections were safe to use providing high levels of data integrity for its users. The county government of Nairobi should strengthen their ICT revenue systems to realize the positive appreciations.

### **Resource Allocation**

The third objective aimed at examining the influence of financial allocation on revenue collection. The model indicated that financial allocation had positive impact on revenue collection. The relationship with revenue collection with a beta value of ( $\beta = 0.377$ , p-value = 0.007). The p-value of 0.007 was significant since that was less than 0.05 ( $p < 0.05$ ), and therefore at 5 percent significance level ( $\alpha = 0.05$ ), enough evidence exists to conclude that financial allocation had a great influence on revenue collection. That was as a result to allocation of finance on revenue collection or any other project helps in facilitation and running of the objective smoothly or else when the resources were minimal for the project it hinders the objectivity due to the straining of the available resources at that given time.

The findings of the study were in agreement with those of (Muthoni, 2015) and (Pudjianto & HanyJung, 2010) whose study found out that resource allocation on any project had either positive or negative effects, that was because when the resources were not enough it hinders the success attainment. But on the other hand when there was enough resource allocation to any project promotes positive impact on to success factors. Also during resource allocation to projects in an organization, those who were at the top level of management influenced the awarding of the funds to the projects. Thus on the use of ICT on revenue collection in Nairobi County, the findings indicated that resources allocations had effects on revenue collection.

**Thus;**

**Revenue collection = 0.947 + (0.372 ICT Policies) + (0.271 Employees Perception) + (0.377 Recourse Allocation).**

### **SUMMARY**

ICT is useful in an organization and its output benefits out ways the perceived negativity factors. The factors which were brought out by the respondents in Nairobi City County Government. ICT increases the productivity of an organization, improves efficiency and effectiveness of the employees in an organizations and also adds the value proposition to an organization.

ICT policies on revenue collection in the County Governments in Kenya was in existence. Those policies had caused a tremendous positive changes since ICT inception for revenue collection in the counties. Those policies had improved revenue collection, make the collections of the revenue much easier, and increase the level of revenue collection productivity. It had also provided the timely information reduced the cost of revenue collections provided better means or easier error detections sealed the loop holes of corruptions and helped to accomplish much tasks which had not been possible within shortest time through the other systems.

Employee's perception on the use of ICT for revenue collection in County Governments plays a critical role in the overall revenue collection in the county. Many staffs had not been trained on the use of the current ICT system for revenue collection. However some of them had been trained on the use of the system for revenue

collection. The issue of more staff not trained on the use of the current system was linked with the system preferred for the revenue collection by the employees. That was deduced about the systems preference for revenue collections and the respondents selected the previous system than the current system. The current ICT system had positive perception on revenue collection, for instance it was noted that it was easy to use, it was secured in terms of information access and authenticity. ICT on revenue collection had positive impact for instance the system provided complete information, traceability of transactions, there was accuracy of information for better decision making and the ICT system secures information.

Sources of funds for financing revenue collections in the county originated from national government apart from other sources such as county revenue collections, donors and other county investments. That had a great influence in collection of revenue using ICT systems since the top management had an upper hand impact on allocation of finances for funding the ICT revenue project.

## CONCLUSIONS

The study concluded that ICT had a positive relationship on revenue collection in the county government. Further it was concluded that ICT government policies has a significant relationship on revenue collections, employees perceptions on the use of ICT relates with revenue collection and it had a significant impact on it and financial allocation too has a significant impacts on revenue collection. The study results therefore, concluded that all the independent variables; ICT government revenue policies, employees' perception on the use of ICT and financial allocation positively relate revenue collections and they had significant impact. Thus a changed in either of ICT Considerations would significantly affects revenue collection.

## Suggestions for Further Research

The study only considered the questionnaire as the main tool of data analysis, other methods such as interviews can be employed in the collection of data so as to facilitate counterchecking of the information provided. The study was carried out in focusing Nairobi City County government; representing all focusing in Kenya. The research therefore, recommends that the similar study should be conducted on the same in relation to ICT Considerations on revenue collection in other counties or ICT challenges in Kenyan counties when collecting revenue.

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