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Influence of Internet Access and ICT Literacy on E-Government Services Utilization by Small and Medium Enterprises in Kenya; A Case Study of Kibera in Nairobi County

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Abstract:- The use of e-government technologies and services is intended to spur businesses through effective and efficient delivery of services and information to the citizens, promote productivity among private and public servants and encourage participation of businesses and citizens in country's economic growth. The Kenyan government has invested on e-government technologies and despite this the country is crippling with utilization of e-government services. The study objectives were to determine the effect of internet access and information communication technology literacy on e-government services utilization. Amended version of the UTAUT model is used to investigate the factors influencing the e-government services utilization in Kenya. The study target population was 500 businesses. Census sampling technique was employed to collect data from 150 respondents through questionnaires. Descriptive analysis was conducted on the collected data and presented inform of tables, frequencies and percentages. The study results showed that availability of internet access enhances e-government service utilization and information communication technology literacy enables ease of use of e-government platforms.

Keywords: Internet Access, Information Communication Technology Literacy, E-government, Services Utilization.

I. INTRODUCTION

E-government concept stresses on the application of information technology in offering services to citizens and enhancing its relations with businesses, citizens and other government institution (Altman, Valenzi, & Hodgetts, 2015). The main objective of any E-government programs is to support and enhance governance for all citizens in equal measures (Amdan, 2016).

According to Tung and Rieck (2005), virtual applications of services made possible by e-government ensures that general public carry out government businesses that offer high quality, convenience, and affordable cost, so that this efficiency and accessibility can help governments to match the benefits achieved by the other sector by using information technology to increase revenue, increase profits and lower costs. Heeks (2006) explains that there is a more likelihood of success for government to business (G2B) systems than

government to citizens (G2C) systems; this is because businesses have an effective infrastructure to deal with online transactions, as well as extensive experience with digitization of services. Carter and Belanger (2004) explain that as e-commerce and e-government both use advanced technology to exchange information, services and goods, e-government therefore could be defined as a refined form of e-commerce, or similar example of this system.

In developed world like America and Europe, e-governance were adopted in early 21st century, making governance and service delivery effective and efficient (Fombrun, 2009). However, comparing with developing world like Africa, government service delivery has not fully adopted the use of technology to efficiently deliver services to it citizen. Mostly, government institutions and service delivery has been characterized by long queues, paper work, cramped spaces, bureaucracy leading to citizens' frustrations (Iqbal, 2018).

Africa in particular, governments in countries like Ghana, South Africa and Rwanda are trying to tackle the demand for effective governance by adopting the e-government processes of how government services are delivered to citizens (Jugend, 2018). In this regard, Information Communication Technology has played, and is still playing a significant role in delivering services to citizens using digital platforms that are efficient and faster. Simenda (2009) argues that if e-governance should be properly utilized, as it has the potential to improve robustness of government, enhance channels of service delivery, and citizens' communications, and finally timeliness of service delivery.

In Kenya achievement of e-Government has been one of the major priorities of the Government as outlined by the Vision 2030 back in 2010 and the current government big 4 agenda towards the realization of national development objectives and goals for wealth creation, livelihood standard improvement and employment creation (Llusar, 2018). This has been identified as the way to go as the world evolves into becoming a global digital village. Many government institutions are striving to offer their service online and through short text

messaging platforms. All this is done with the aim of increasing citizens' access to services easily and more comfortably (Paillé & Morelos, 2009).

1.1 Statement of the Problem

Small and Micro Enterprises (SMEs) are a significant component of many economies in the world (Mutula & Van Brakel, 2007). This is due to the contribution they make in creating employment and facilitating regional development and innovation thus impacting on the economy of their countries. In Kenya there has been significant growth of SMEs in both the national and county governments due to rapid developments in ICT especially with the use of e-government to register businesses (Looi, 2005). E-government main intentions is to achieve an effective and operational government through facilitation of efficient and better delivery of services and information to the citizens, encourage participation of citizens in Government, promote productivity among public servants and empower all Kenyans which would lead to enhanced convenience (Peng, Song and Xiaofeng, 2016). E-government also major benefit is reducing cost of service delivery which was initially incurred during travelling to seek services. Finally, due to its efficiency e-government saves citizens time which they previously used queuing in public offices (Salgado, 2018).

However, failure is experienced in e-government projects as a result of various factors, which includes cultural and social issues, problems advanced infrastructure, confidentiality and privacy problems, issues of accessibility and usefulness, as well as lack of understanding on importance of such platform (Suhardi, 2015). In Kenya particularly factors hindering e-government service delivery includes insufficient IT skills among the users, social and cultural barriers, insecure infrastructure, lack of awareness, lack of policy and legal requirements. Research done by Honk and Falkir (2014) examined the development of e-government and the impact on service delivery, which included technical, political and organizational factors, yet neglects the citizen's perspective that relates to demand.

A study by Wangeci (2006) found out that there was a correlation between e-government and service delivery. She also found out that the Cost of e-government implementation within the business, technical skills and IT skills amongst owners and employees would additionally encourage businesses in venturing into e-commerce. This study failed to cover other factors that influence the adoption of e-government in SMEs. A study carried out by Ocha (2011), found out that variable knowledge of benefits derived from e-commerce and infrastructure would enable businesses to actively pursue e-government.

1.2 Study specific objectives

- i. To determine the influence of internet access on e-government service utilization

- ii. To examine the influence of ICT literacy on e-government service utilization

II. LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) developed UTAUT as a comprehensive synthesis of prior technology acceptance research. UTAUT has four key constructs (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) that influence behavioral intention to use a technology and/or technology use. The theory adapts these constructs and definitions from UTAUT to the consumer technology acceptance and use context. Here, performance expectancy is defined as the degree to which using a technology will provide benefits to consumers in performing certain activities; effort expectancy is the degree of ease associated with consumers' use of technology; social influence is the extent to which consumers perceive that important others such as family and friends, believe they should use a particular technology; and facilitating conditions refer to consumers' perceptions of the resources and support available to perform a behavior (Brown and Venkatesh 2005; Venkatesh et al. 2003).

In relation to this study ICT integration in Kenyan Government's ICT centers will enhance performance efficiency, as UTAUT shows that influence in behavior toward using of technology with an aim of achieving efficiency in service delivery will encourage firms to install ICT infrastructure to help them run their activities efficiently. The performance expectancy is first priority in every firm which is dependent on firm staff effort toward achievement of goals. Integration of ICT enhances performance almost by double digit due to high speed of processing data compared to the manual data entry.

2.1.2 Diffusion of Innovation Theory

Diffusion of Innovation (DOI) Theory, developed by Rogers E.M. in 1962, is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously such as purchase or use a new product, acquire and perform a new behavior. The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible.

Adoption of a new idea, behavior, or product that is "innovation" does not happen simultaneously in a social system; rather it is a process whereby some people are more apt to adopt the innovation than others. Researchers have

found that people who adopt an innovation early have different characteristics than people who adopt an innovation later. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. There are five established adopter categories, and while the majority of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population.

In relation to the study ICT integration should be adopted in all government agencies putting into consideration different characteristic of people in the agencies. There people who are reluctant in adopting new innovation especially in the field of technology hence strategies should be put in place to convince them including quoting people other government that have integrated ICT in their system and the fruits it has yielded.

2.2 Empirical Literature Review

2.2.1 Internet Access and E-government Service utilization

According to study by Abdallah and Fan (2012) on Framework for e-government assessment in developing countries: case study from Sudan. Electronic Government, the study found that such infrastructures may include computers, internet, telecommunications tools and constant electricity that may power those channels. It is worth mentioning that infrastructural provision may be a crucial issue that can sometimes be costly to build and manage in a developing country such as Uganda where government are already overburdened with other priorities and resources are seemed to be limited. The problem could be complicated in a country like Uganda, where there is a large area yet relatively few people, delivering such technological infrastructure could cause a strain on the financial health of the country (Abdallah, & Fan, 2012).

The study found out that even though the Ugandan government is making the effort to deal with the acute technological challenges but it seems more needs to be done. For example in 2005, the Libyan Ministry of Education provided 160,000 computers to primary and secondary schools, nonetheless that was seen as a 'drop in the ocean' Sweisi & Adams, (2006). In addition individuals may find it difficult to afford such technologies due to high poverty levels.

Aikins and Krane (2010) in their study are public official's obstacles to citizen-centered e-government? An examination of municipal administrators' motivations and actions investigate why municipal officials have not fully taken advantage of the interactive features of the internet to bring citizens closer to their governments. Based on the data analysis from a survey of local government chief administrative officers in five Midwestern states (Iowa, Kansas, Minnesota, Missouri and Nebraska), the authors find evidence that city officials have not taken advantage of the internet to bring citizens closer to their governments because

these officials strongly prefer traditional citizen participation to internet based citizen participation. In addition, deployment of resources to support online participation is restrained by the low preference for internet based citizen participation.

These findings call into question the widespread assumption that public officials enthusiastically embrace the movement towards e-democracy. However, the study did not include factors accounting for municipal officials' preference for traditional citizen participation over internet-based citizen participation. In addition, the effect of citizens' perceived risks of internet-based citizen participation and their willingness to demand adequate resource deployment on city web site design and adoption of internet based citizen participation were outside the scope of the study. Moreover, this study included only Midwestern cities with functioning web sites. As a result, the beliefs of and resource deployment by officials in other cities and in those without websites in supporting internet based citizen participation are not represented.

2.2.2 ICT literacy and e-government service utilization

According to Beynon-Davies (2015), study on constructing electronic government: the case of the UK inland revenue. The study found that lack of ICT skills is a major challenge to an e-government implementation, especially in developing countries. The e-government system can be implemented successfully if qualified personnel are available to take the role of start and develop the e-government system. In general, it is vital to focus on training and education programs for enhancement the progress of e-government projects. However, training is a fundamental prerequisite as the rate of change increases and new technologies, practices and competitive models appear. The full economic benefits of ICT depend on a process of training and learning skills, which is still at an important stage for all governments'.

The study concluded that other factors related to an organization as well affect the way technology is appreciated. Lack of human resources skills and uncertainty of the benefits of online services as well slows down E-government adoption. Both citizens and the drivers of E-government require adequate skills and competencies on usage of existing E-government services.

The study recommended that in any E-government endeavor, periodical/regular training and education need to be given the importance that they deserve; the reason been the emerging trends in the ICT sector. If people cannot use the new technologies, they cannot support and take responsibility for their quality. Because the customer requirements are more and more stringent, so skills can quickly dissatisfy the needs and expectations if they are not updated all the time. So training is quite critical, for any E-government initiative to thrive.

Bhatnagar (2012) study on 'E-Government: Lessons from Implementation in Developing Countries'. A case study of Dolha in India. The study results indicated that another aspect

frequently cited as a barrier to E-government adoption in area of training is lack of competency or shortage of relevant computer skills. In this aspect, organizations find themselves having staff with general qualifications but lack personnel with specialized skills to perform specialized ICT functions (Bhatnagar, 2012). The study concluded that this emanates from the fact that organizations have been unable to attract the relevant IT talents due to turbulent business environment out there. Competition makes IT people in the market to shun government job opportunities due to low remuneration, while those in the government service are not offered relevant and appropriate professional trainings which matches dynamic IT world. On the other hand there are cases where relevant required skills exist and still in-effective decision-making is rampant. This is caused by poor job placement whereby outstanding talents are put in wrong jobs that make them to take wrong decisions that impact negatively to e-governance. Skilled and experienced people assigned jobs that they are not competent in cause's confusion while coordinating ICT activities and thus poor performance.

The study recommended that another human capital challenge is on the user side, in most cases public employees' attitudes,

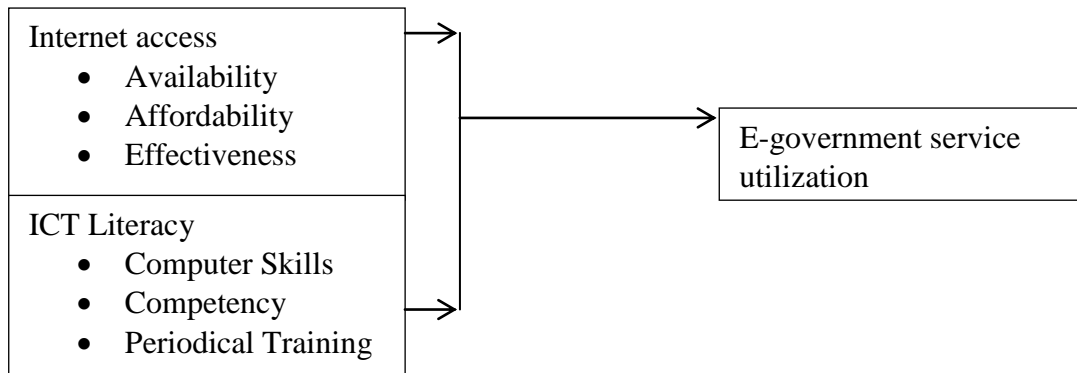
knowledge are in moderate levels; intended users of online services sometimes lack the capacity to drive E-government initiatives to greater heights by accessing online service every time a need arises. This is caused by lack of computer knowledge, and if training is to be carried out it normally takes long before its' implemented due to existing bureaucracy. Somewhere along the way their interest declines and thus apathy which in effect contributes to negative attitudes towards E-government applications. Finally leaders who are expected to champion and spearhead E-government initiatives lack interest due to poor visionary approaches to e-governance and thus fails to put E-government onto the agenda and actualize it by offering all the necessary support that is required; this makes them appear to be a serious hindrance to E-government diffusion.

2.3 Conceptual framework

The conceptual framework below shows the relationship between the dependent and independent variables used in the study

Independent Variables

Dependent Variable



Source author (2020)

III. METHODOLOGY

3.1 Research Design

The study used survey study research design. The survey study enabled the researcher to collect data from the SMEs in Kibera in Nairobi in detail and interpolate the findings from the study area (Cooper & Schindler., 2003).

3.2 Target Population

The target population is the specific population about which information is desired.

The target population was 500SMEs in Kibera in Nairobi County.

Table 3.1 Target Group

Category	Number
Business Owners	500
Total	500

Source: Nairobi County SMEs report, (2020).

3.3 Sample and Sampling Technique

The small samples do not reproduce salient characteristics of the accessible population to an acceptable degree. For the purpose of getting a representative sample, the study used a percentage of 30% for a population of 100-1000. The study employed census sampling technique.

Table 3.2 Sample Size

Category	Procedure	Number
Business Owners	500*30%	150
Total	150	150

Source: Author, (2020).

3.4 Instruments

The study adopted the use of questionnaires as the main data collection instrument.

3.4.1 Questionnaire

Structured questionnaires were used to collect the required information from the study sample size. The questionnaire consisted of two sections; the first section (A) covered the demographic information of the employees; the second section (B) covered the questions based on the objectives of the study (Kreuger, 2000).

3.5 Pilot Study

The study carried out a pilot test to test the validity and reliability of the questionnaires in gathering the data required for purposes of the study. Kombo and Tromp (2009) and Kothari (2004) describe a pilot test as a replica and rehearsal of the main survey. The rule of the thumb suggests that 5% to 10% of the target sample should constitute the pilot test (Cooper and Schilder, 2011; Creswell, 2003; Gall and Borg, 2007). The pilot test sample was within the recommendation. The twenty four questionnaires was coded and input into Statistical Package for Social Sciences (SPSS) version 20 for running the Cronbach reliability test.

3.5.1 Reliability

Reliability refers to the extent to which an instrument yields similar results each time it is administered by independent persons under comparable conditions (David, 2005). The questionnaire was considered reliable if the results of the reliability test have a Cronbach Alpha correlation coefficient of 0.70, anything below was considered unreliable.

3.5.2 Validity

Validity is the ability of an instrument to measure a concept under study and to be able to measure it accurately so that any observed differences are true and not the result of random or constant errors. Face validity was ensured by: Presenting data collection tool and scrutiny of the instruments by the research supervisor. Content validity was ensured by doing a thorough literature review study on which the content of the questionnaire were based.

3.6 Data Processing and Analysis

After the completion of data collection: editing, coding, data entry, cleaning and recoding activities were done. The analysis used descriptive statistics. The data collected and analyzed was presented in form of tables, frequencies and percentages.

IV. RESEARCH FINDS AND DISCUSSION

4.1 Background Information

The study aim to establish the general information of the respondents targeted for the study. The study sought to find out the response rate, gender, education and working period.

4.1.1 Response Rate

The researchers distributed 150 questionnaires to respondents and 100 questionnaires were correctly filled and returned. This represented 67% response rate which more than accepted response rate of more than 50% for data analysis (Mugenda and Mugenda, 2003).

4.1.2 Gender of Respondents

The figure below shows the gender of the respondents.

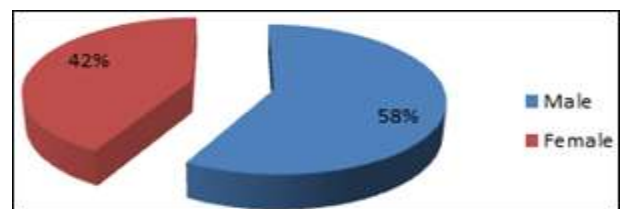


Figure 4.1: Gender of the Respondents

The study findings on gender indicated that 58% (58) were male as opposed to 42% (42) females. This implies that majority of the respondents were male and the study collected data from both genders.

4.1.2 Level of Education

The figure below shows the education levels of the respondents.

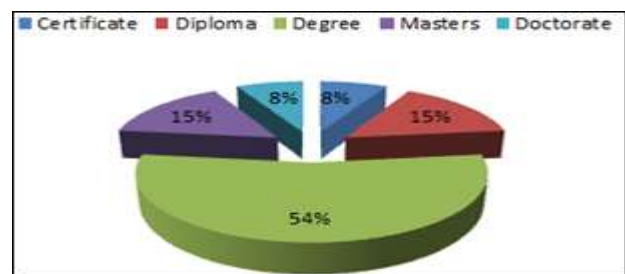


Figure 4.2: Showing the Level of Education of the Respondents

The study results on level of education revealed that the majority workers were those who had degree with 54% (54), followed master's and degree with 15% (15), 8% (8) for doctorate and diploma. This implies that majority workers had degree. This implies that the respondents were learned people and therefore gave a true and fair view of answers to the study.

4.1.3 Length in Business

The study findings indicated that 48 % (48) of the respondents had their businesses for less than five year, 38% (38) had for between 6-10 years while 14% (14) had their businesses for

more than ten years. The results indicated that almost half of the entrepreneurs have had their businesses for a period of less than 5 years meaning that the majority of businesses are still young and therefore the entrepreneurs had ran their businesses for considerably enough years to well understand factors affecting their performance hence their response was crucial to the study.

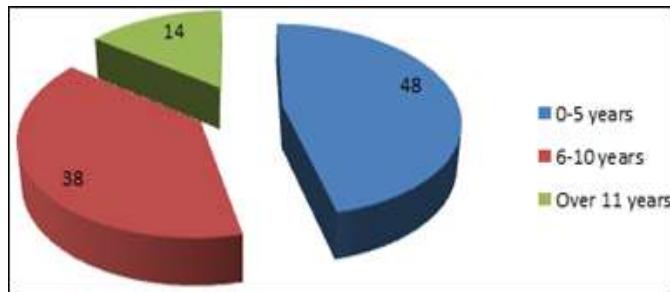


Figure 4.3: Showing the length in business

4.2 Analysis of Specific Research Question

The study sought to determine the influence of internet access and ICT literacy on e-government services utilization by SMES in Kenya. The results were as follows;

4.2.1 Internet Access and E-government Service Utilization

This study sought to establish what is the role of internet access on e-government service utilization; the study results were as follows;

Table 4.1: Internet Access and E-government Service Utilization

Statements		SD	D	N	A	SA	TOTAL	MEAN	MEAN (%)	StdDev
Availability of internet enhances e-government service utilization	F	6	8	14	40	33	100	3.86	79.6	.945
	%	6	8	14	40	33	100			
Affordability in term of prices ensures business owners are able to get the e-government services efficiently	F	21	14	10	29	27	100	3.21	66.2	.902
	%	21	13	10	29	27	100			
Internet effectiveness helps access to e-government services with ease	F	19	13	11	28	27	100	3.27	65.4	.921
	%	19	13	11	28	27	100			
Average Mean								3.45		0.923

NB:SA: Stand for Strongly Agree, A: Stand for Agree, U: Stand for Undecided, D: Stand for Disagree, SD: Stand for Strongly Disagree

The study results revealed that 79.6% (Mean=3.86, Std.Dev=0.945) of the respondents were of the view that availability of internet enhances e-government service utilization, 65.4% (Mean=3.27, Std.Dev=0.921) were of the opinion that affordability in term of prices ensures business owners are able to get the e-government services efficiently, 66.2% (Mean=3.21, Std.Dev= 0.902) of the responses were of the opinion that internet effectiveness helps access to e-government services with ease. The average mean of 3.45 and standard deviation of 0.923 indicated high relationship between internet access and e-government services utilization. Though availability of internet enhances e-government service utilization, affordability in term of prices ensures business owners are able to get the e-government services easily and internet effectiveness helps access to e-government services with ease impacted e-government service utilization.

The finding revealed that majority of the respondent were of the view that availability of internet enhances e-government service utilization, this implies that the easiness of internet access enables business owners to save cost that were previously incurred as a result of long travelling to seek government services. Study results concur with Bhatnagar (2012) study that internet access affects service delivery, that Having the education, freedom and desire to access information is critical to e-government efficacy. Presumably, the higher the level of human development, the more likely business owners will be inclined to accept and use e-government services.

4.2.2 ICT literacy and e-government service utilization

This study sought to establish how ICT literacy influences e-government service utilization. The study results were as follows;

Table 4.2: ICT literacy and e-government service utilization

Statements		SD	D	N	A	SA	TOTAL	MEAN	MEAN (%)	Std.Dev
Business owners equipped with relevant computer skills enable e-government service utilization	F	35	8	10	34	14	100	2.85	57	1.02
	%	35	8	10	34	14	100			
ICT competency enables ease use of e-government platforms	F	13	5	9	42	28	100	3.44	68.8	.904
	%	13	5	9	42	28	100			
Business owners periodical training in government workshop on changes in e-government platform helps them to cope with any ICT changes	F	37	10	12	29	14	100	2.73	54.6	.996
	%	37	10	12	29	14	100			
Average mean								3.08		0.973

NB: SA: Stand for Strongly Agree, A: Stand for Agree, U: Stand for Undecided, D: Stand for Disagree, SD: Stand for Strongly Disagree

The study results revealed that 57% (Mean=2.85, Std.Dev=1.02) of the respondents were of the view that business owners equipped with relevant computer skills enable e-government service utilization, 68.8% (Mean=3.44, Std.Dev=0.904) were of the opinion that ICT competency enables ease use of e-government platforms, 54.6% (Mean=2.73, Std.Dev=0.996) of the responses were of the opinion that business owners periodical training in government workshop on changes in e-government platform helps them to cope. The average mean of 3.08 and standard deviation of 0.973 indicated high significant relation between ICT literacy and e-government service utilization.

The results of the study indicated that majority of the respondents were of the opinion that ICT competency enables ease use of e-government platforms. This implies that business owner's knowledge of computer enables them to navigate easily and be able to understand the requirement of the services they seek. According to a study by Gauld *et al.*, (2010) on how ICT literacy impact on e-government service utilization agreed with my findings that the e-government system can be implemented successfully if qualified personnel are available to take the role of start and develop the e-government system. In general, it is vital to focus on training and education programs for enhancement the progress of e-government projects.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

The study results revealed that 79.6% (mean=3.86) of the respondents were of the view that availability of internet enhances e-government service delivery even in the remote areas, 65.4% (mean=3.27) were of the opinion that affordability in term of prices ensures citizen are able to get the e-government services efficiently, 66.2% (mean=3.31) of the responses were of the opinion that internet effectiveness helps access to e-government services with ease. The study results revealed that 57% (mean=2.85) of the respondents were of the view that business owners equipped with relevant computer skills enable e-government service delivery, 68.8% (mean=3.44) were of the opinion that IT competency enables

ease use of e-government platforms, 54.6% (mean=2.73) of the responses were of the opinion that business owners periodical training in government workshop on changes in e-government platform helps them to cope with any ICT changes.

5.2 Conclusion

E-government is a strategy whose importance is of great magnitude to spur businesses. It eases the transfer of information between different groups in the information value chain and avails needed information in a timely manner. Internet infrastructure offers a range of technologies that acts as a channel through which information is relayed. The channel consists of hardware and software plus the connectivity that joins them. E-government services are rendered online and therefore for effective functioning of these services and a reliable internet infrastructure is required. The effective use of the E-government service is as good as the competence of people using the platforms. Therefore is great need to empower the user's in-order to achieve the intended objective of E-government services.

5.3 Recommendations

Government should establish reliable (available and accessible) Internet facilities in the country so as to enhance easy adoption of E-government. Users should have access to Internet connectivity at affordable rates and this can be achieved by government levying some costs to allow providers lower their prices.

The study recommended that In order to implement an effective and efficient e-government, the business owners must be equipped with ICT literacy in term of skills and the right attitudes across government agents.

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