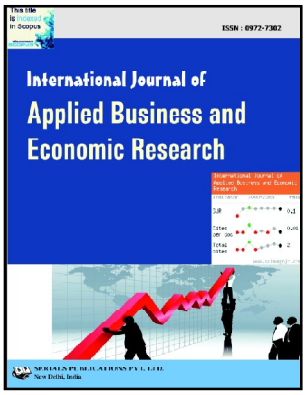

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Realizing E-government Access for Socio-economic Development in Rural Areas

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Abstract: The purpose of this article is to determine if the citizens are aware of the current e-government services, if they are able to access them and how e-governance has contributed towards socio-economic development. The adoption and implementation of e-governance initiatives has been slow and inaccessible to the majority of the people to benefit them socially and economically in Nkonkobe municipality. Most of the citizens are not even aware of e-governance services offered by the various government departments, how to access them and the benefits associated with e-governance. The governments implement fundamental changes in the whole public sector as more and more governments implement electronic government (e-government) as a means of improving services, reducing costs, increasing effectiveness, accountability, transparency and efficiency. The article used both qualitative and quantitative approaches through the use questionnaires and surveys and review of relevant literature and found that even though the general number of people with access to ICT was more than 50% there were disparities in the access and availability of e-governmental services. There is need for improvement in the e-government service delivery as most people had access to information through TVs, radios and sms, this however, does not translate the use of eservices such as making online applications, payments, submissions and other things since most people did not have access to Wi-Fi, computers and mobile gadgets that would allow them to use such services. These challenges are constraining the contributions of e-government to facilitate quality service delivery for sustainable socio-economic development and an improved service delivery system. The article concludes that e-government can be achieved through improvement in software that allow access through various types of mobile phones, increased awareness for citizens of such services, improved website designs that are user friendly, source for cheaper means of delivering e-services to allow those that cannot afford data bundles especially out of public Wi-Fi zones, improved reliability of service providers and mutual interest of both the citizens and the government.

Key words: Accessibility; Electronic-governance; Information Communication Technology; Development; Governance;

INTRODUCTION AND BACKGROUND

This study examined the factors affecting citizens within Nkonkobe Municipality's ability to access e-government services as offered by the government. E-government refers to Electronic Government and it is the process of transformation of the relationships of government with its constituents (Ijeoma and Nwaodu 2013). According to Schwane (2005) e-government is the use of information and communication technology (ICT) to augment the variety and quality of public services to people and businesses while improving on the government's efficiency, accountability and transparency. E-government works directly with the citizens and partners for transparency, efficiency, accountability and effectiveness in the delivery of non-profit making public services (Satyanarayana, 2004: 01). ICT plays a huge role in the lives of people; however Africa has been lagging behind due to economic disparities, poor human resources, poor knowledge base, unwillingness by leaders, and high rates of poverty (UN e-government e-readiness survey 2005). E-government services are the outcome of e-governance that come as automated services delivered through the ICTs particularly internet based applications which provide inexpensive access to and delivery of information and services to the public, businesses and governmental departments (DoC 2015).

Cloete (2012:128) asserts that electronic governance (e-governance) is the future of public governance globally. E-government is very important as it improves the activities of public sector organizations and their agents. (Heeks, 2008). It affords access to and improved quality of public services, especially for poor people (Gant, 2010). E-government is the use of ICTs such as the internet, wide area networks, mobile computing, wireless and new social media technologies, in order to transform relations with citizens, businesses, and other arms of government (Gant, 2010). These technologies can enhance better delivery of government services to its people, enables easier interactions between government and businesses, help interactions with partners such as donors, as well as, empower citizens through improved access to information and efficiency in government management (Heeks, 2008). Governments that do not make the transition from paper-based systems of public administration to electronic platforms of public governance may swiftly undermine their chances of developing their societies. This paper focuses on how e-governance has managed to reach the citizens within Nkonkobe municipality in Eastern Cape which has been noted as the second poorest province in South Africa by the Living Conditions Survey (LCS) (2008/2009:11). This can be supported by the implication that areas with high poverty rate lack access to most government services as their areas are economically backward and hence lacking extensive development. Bhatnagar (2004:32) mentions that citizens in developing countries are experiencing a significant improvement in service levels in e-commerce, vis-à-vis the private sector. Citizens feel that if the private sector can make systematic improvements in service delivery, the government can certainly implement the same technologies. Thus, citizens in some countries are in fact lobbying their governments to go digital. In this light, the purpose of the study was to assess the extent to which the citizens in Nkonkobe Municipality have been able to anticipate the digitally activated government services available and if they are aware of them.

PROBLEM STATEMENT

The adoption and implementation of e-governance initiatives has been slow and inaccessible to the majority of the people to benefit them socially and economically in Nkonkobe municipality. Most of the citizens are not even aware of e-governance services offered by the various government departments, how to access them and the benefits associated with e-governance. Lekoko and Semali (2011:118) state that

government priorities for e-government should espouse accessibility, affordability, and appropriate citizen content. DoC (2015) assert that it is imperative for the South African government to ensure that citizens are aware of the potential of e-government and they should be trained to make use of e-government services. E-government concerns itself with the relationship and interaction between the government and its citizens, the objective of these initiatives is to ensure improved service delivery with the citizens 'satisfaction in mind (Ntiro, 2000). The implementation of egovernment helps in providing citizens' satisfaction and improves the confidence and trust between citizens and government (Heeks & Bailura, 2007; Mosse & Whitley, 2009).

The types of e-governmental services are mainly connected to interaction levels, the traditional government offers services to people, so e-government also offers e-services to its citizens. Types of these e-government services include; informational services which provide information to citizens through websites, interactive services where the needs of citizens are met through provision of documents for download, and cites where citizens submit their views (Chen, 2002). Collaborative services are those that are two way service that support more complex services that help people to make submissions and receive public information and documents. Transactional services support the online payments and transactions that citizens make with the government (Chen, 2002).

Against the background of Lekoko and Semali's observations, the study examines the awareness and availability of e-governance tools by citizens. Therefore, the aim of the study was to determine if the citizens are aware of the current e-government services, if they are able to access them and how e-governance has contributed towards socio-economic development. Nkonkobe municipality has an estimated population of 127, 115 (Statistics South Africa, 2011) and it is the Administrative area in the Amathole district of the Eastern Cape in South Africa. This implies that within this whole region it must be capable of having greater access to e-governance initiatives for the public to increase socio-economic development through increased access, transparency, effectiveness and efficiency associated with e-governance services (AGSA 2015).

The research questions this paper seeks to answer are:

- Do citizens in Nkonkobe have the access tools to e-governance services?
- Are the citizens aware of the e-government services available?
- How can e-governance services access be improved for socio-economic development?

SIGNIFICANCE OF STUDY

Increasing access to information and delivery of public services equitably is an endeavour of the South African public service. The significance of the study lies in its essence to examine the accessibility of e-governance in Nkonkobe municipality in understanding the government's efforts in increasing digital access to the public. E-government is considered a new kid on the block in the field of public administration, and an imposing challenge to both citizens and bureaucrats. Its involvement of ICT facilities in governmental activities requires new technological skills for all involved. E-government challenges the traditional way of handling issues in the private and public areas as it simplifies and facilitates customer relations, communication and service delivery. The use of ICT in government institutions especially in Africa faces challenges of

poverty, illiteracy and poor infrastructure hindering the effectiveness of e-government in service delivery and satisfaction of its citizens. This study will thus explore the ways in which the government is trying to bridge the gap of challenges and ascertain e-government in service delivery. This study also highlights on the problem areas that need to be addressed in the adoption and implementation of e-government services in remote areas in South Africa. The study also pinnacles upon the status of digital divide within remote areas in South Africa since not much research has been undertaken in South Africa because the implementation of e-governance initiatives is not user-centric. The study outlined the issues prevalent in the implementation challenges of e-governance initiatives and ultimately reveals why there have been accessibility challenges for citizens in outlying areas.

MATERIALS AND METHODS

This study incorporated both qualitative and quantitative methods by following a survey design and incorporating in-depth literature review. Balnaves and Caputi (2001:75) assert that surveys are used when one cannot observe directly what they want to study. Prior to this study the researchers could not give a clear distinction on the awareness of the citizens in accessing the available e-governance services. The study then conducted a survey in Nkonkobe Municipality with the use of questionnaires. Descriptive statistics using percentages was done with the aid of SPSS Statistics Software, since it is mainly used to summarize a data set and to numerically describe sample units, phenomena, and other variables of interest (McNabb 2008:153). Data presentation was done using statistical tables, bar graphs and pie charts. This study also conducted an in depth literature review to ensure reliability and validity, resultantly Government documents, presidential state of the nation addresses, global and nation reports on e-government, and reports on service delivery concerns were used.

Population

The survey was carried out in Nkonkobe Municipality whose population is an average 127,115 (Statistics South Africa, 2011).

Sampling

Since it was difficult for the researcher to access all the 27 places within Nkonkobe samples were obtained from 3 places namely Alice, Fort Beaufort and Hogs-back to come up with a stratified sample. The main advantage of a stratified sample was that it guaranteed that each of the different strata would be well represented in the sample (Gravetter, Orzano, 2010:148).The sample consisted of 50 students, employed, self-employed and unemployed people to increase validity and reliability of the samples. Simple random sampling was then employed in distributing the questionnaires in ensuring that each citizen in the population had an equal and independent chance of selection.

RESULTS AND FINDINGS

To show the rate of access of e-governance, categories of e-governance components were established to show which areas have much access and which have less access. This was presented through pie charts and bar graphs.

Profile of Sampled Informants

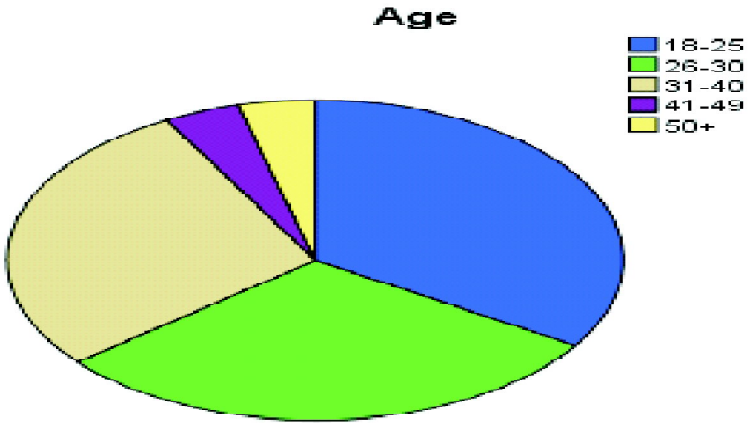
Sex

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Male	24	48.0	48.0	48.0
	Female	26	52.0	52.0	100.0
	Total	50	100.0	100.0	

The table shows that the participants were more females than males, however with a slight difference of percentage. This is graphically illustrated by the pie chart below.

Age

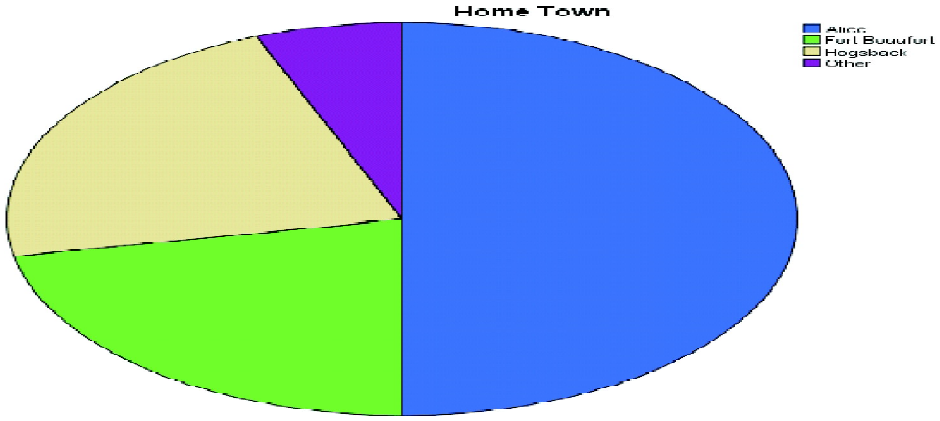
		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	18-25	17	34.0	34.0	34.0
	26-30	15	30.0	30.0	64.0
	31-40	14	28.0	28.0	92.0
	41-49	2	4.0	4.0	96.0
	50+	2	4.0	4.0	100.0
	Total	50	100.0	100.0	



The above pie-chart shows the age group of the respondents who participated in the survey as shown in the graphical presentation. It can be depicted that the age 18-25 comprised of the most participants followed by the age group 26-30, 31-40, and 41-49 in that order. From this pattern we learn that the age group 18-25 years was the most accessible and easily available to participate in the survey. The other age groups as the age increased participated less. This is because some were not willing to participate in the survey while some were either busy or did not return the questionnaires.

Home Town

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Alice	25	50.0	50.0	50.0
	Fort Beaufort	11	22.0	22.0	72.0
	Hogsback	11	22.0	22.0	94.0
	Other	3	6.0	6.0	100.0
	Total	50	100.0	100.0	



The pie chart shows the home town or location of the respondents and a graphical presentation of the population distribution. Majority of the sample was obtained around the area of Alice while the others from Fort Beaufort. A few respondents were from the areas of Hogsback.

Factors Affecting Citizen's Ability to Access the Services

Access Tools/ Device Ownership Frequencies

		Responses		
		N	*Percent*	*Percent of Cases*
Access Tools/ Device Ownership Results	Telephone	9	7.2%	18.0%
	Cell phone	49	39.2%	98.0%
	Laptop/ PC	20	16.0%	40.0%
	Tablet PC/ I-pad	9	7.2%	18.0%
	Electricity	38	30.4%	76.0%
Total		125	100.0%	250.0%

Telephone

18% of the population has a telephone or landline while 82% do not have. This is a strong barrier to access internet as telephone lines can be used as a medium for internet through the ASDL technology which is cheaper and faster.

Cell phone ownership

At least 98% of the population own Cell phones while only 2% indicate that they do not have. This means that if the government would like to reach a greater audience going via the cell phone platform is the most appropriate. Services may be developed to run on mobile platforms such as SMS or USSD based application services as most of the cell phones may not be able to access internet, but at least they can support SMS services.

Computers / Laptops owners

Laptop ownership within Nkonkobe has mostly been boosted amongst students in the university institutions while the general population still do not own laptops. Laptops or computers offer wide ability to access internet with lesser restrictions as compared to phones which may need to have special features to process information on web-sites such as java scripts. In as much as 40.8% of the population may have laptops, without internet, access to e-government is still a restriction for them. Ability to access internet is triggered by the high costs of internet services from the mobile operators while there is also unavailability of reliable internet access such as Broad Band. However due to the high cost of the devices, only 18% of the population sample own these devices while 82% do not have.

Electricity Access

Electricity enables devices that access internet or used to access any of the e-government services to power up. Without electricity within the communities, these devices will be pointless to own. The findings confirm that 76% have access to electricity and only 24% have no access to electricity. So electricity as a barrier to the accessibility of electronic information contributes less in this case. The findings indicate that there is less ownership of mobile telephone lines, Computers and Laptops. The two access tools enable one to have access to cheaper faster internet and wide range of access respectively. Lacking of these tools means that access to e-government services is constrained as mobile phones are not reliable. Electricity is available in the greater part of the geographical area hence there is less chances of lack of electricity being a factor affecting citizen's ability to access e-government services.Medium of Communication/ Network Channel Frequencies

		Responses		
		N	*Percent*	*Percent of Cases*
Medium of Communication/ Network Channel[a]	3G	25	12.2%	50.0%
	TV	43	21.0%	86.0%
	Radio	38	18.5%	76.0%
	SMS	43	21.0%	86.0%
	Wi-Fi	10	4.9%	20.0%
	Phone Call	46	22.4%	92.0%
Total		205	100.0%	410.0%

NETWORK CHANNELS

It is important to note that inasmuch as people or citizens may own the devices that are able to access internet, without the appropriate internet carrier they are basically doomed. For optimum internet speed, a standard of connectivity used worldwide and accessed by most devices today is 3G followed by Edge which is slower. Access to 3G however is restricted because the devices that have inbuilt 3G are quite expensive. This may be the reason why the findings note that 50% is able to access 3G despite the ownership of 98% for phones. This implies that a greater number of the cell phones have either access to edge internet or have no capabilities of going on the internet at all, which is a barrier.

Radios and TVs

Radios are not really of much use when it comes to the ability to access e-government, but however when it comes to raising awareness of e-government services, they play a significant role. The same applies to televisions because advertising of e-government services may also be done through TV channels to raise awareness and thus 76% have Radios while 87% have TVs.

SMS

86% of the population all have SMS services enabled on their phones. SMS are important for delivering reports from e-government services, for example the Department of Home Affairs has an active SMS system whereby you can receive notifications on the progress of your submission or enquiry.

Wi-Fi

Wi-Fi is the major connectivity of internet in Metropolitan Cities like Cape Town, Pretoria and Johannesburg. Wi-Fi coverage has been increased of late in these cities and many people can access internet seamlessly despite their locations. This means no need for extra hardware as compared to that required by telephone lines or modems for connectivity in remote areas. In Nkonkobe Municipality however there is absolutely no public Wi-Fi connectivity in the area similar to those found in Metros, consequently access remains a major burden.

Citizen Computer Literacy: Percentage of those who have used computers

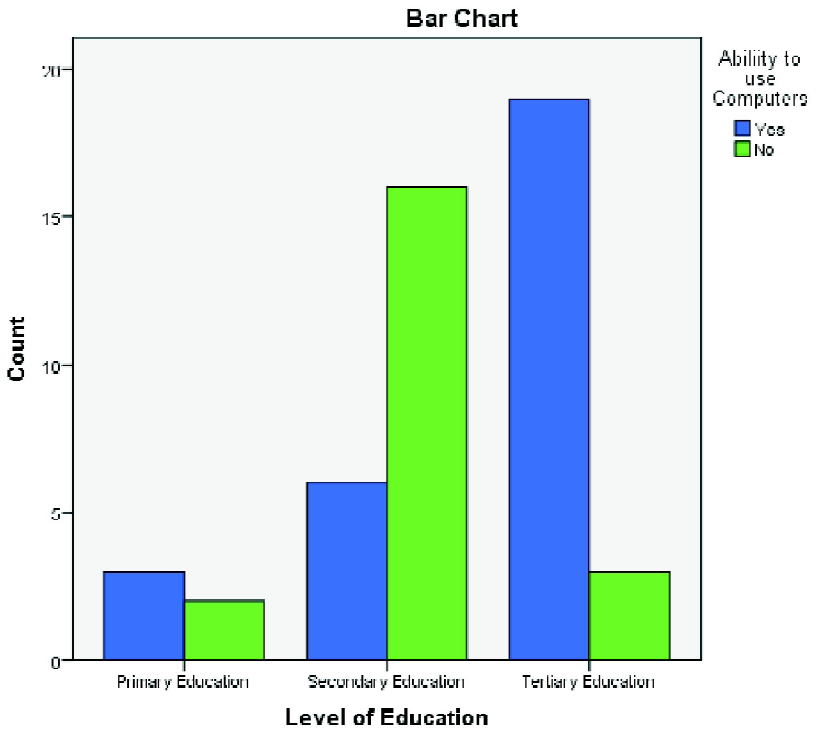
According to the findings, 60% of the sample has used computers while 40% have not used computers.

Ability to use computers

58% of the sample responded yes to the ability to use computers, while 42% responded not able to use computers.

Internet Services Usage Results: Percentage of citizens who are aware of government websites

40.8% of the sample is aware of government websites while 59.2 are not aware.



Ability to use computers scored a lower percentage amongst the groups that attended up to primary level while increases are noted in the secondary and tertiary level. Reasons are that at tertiary level computers are relied upon for studies hence people get more skills in the process than those without access to computers. The same situation is also reflected on the inclusion of the occupation employed group that also enjoys ability to use computers. The findings point to the evident difficulties that arise when it comes to accessibility of e-government services for rural based citizens. Some of the reasons point to lack of awareness of the services available, lack of the tools to access the services such as devices with appropriate internet technologies such as internet browsing capabilities. Lack of enabling infrastructure which enables access to e-governance services in the rural areas is also a challenge in locations like Hogsback and other mountainous areas. Some citizens are not even able to use the services because of lack of skills and better yet the devices that access internet are relatively expensive, which explains why population that is unemployed would show less percentage of computer/ laptop ownership. On the other hand most services do not give much value to the citizens since they are still in elementary stages as compared to services available in the metropolitan areas. The study discovered that basic services like electronic payments for municipal accounts and vehicle licence renewal are not even available in Nkonkobe municipality. This simply implies that, Eastern Cape is not yet fully integrated into the e-government services development while in Cape Town and Gauteng such basic services are fully functional.

RECOMMENDATIONS

Increasing Accessibility: Service Access points

Results show that there is low access tools ownership and to address this issue, community centres could be powered by enabling ICT infrastructure such as computers, printers and internet. This will enable

citizens to access internet within their home areas at a lesser cost. Computer equipment may be put in public service areas such as post offices or police stations. CPSI suggests what they classified as MODEL 2 whereby the use of extensive telecommunications and ICT networks of agencies such as Uthingo, the Post Office and Post Bank, which have a wide reach throughout South Africa at local levels within short distances from homes and workplaces to deliver basic e-services to citizens. Government could plug in a Gateway Service Point device into the Uthingo network to deliver small transactions services in the "first phase of e-government" (CPSI, 2003:48). The typical places for access are referred to as Centre Services" (Gateway Service Centre) (CPSI, 2003:48)

Mediums of Instruction and Language

Some of the information systems being developed have no instruction handbooks that can aid people on how to effectively use them. Digital facilities implemented should have simple to follow lists of services which are available and accessible in all South African languages to avoid creating language barriers. While conducting the study, the authors discovered that some of the elderly population do not understand the medium of instruction and they constantly have to ask for help to use digital tools. Therefore there is need for the government to address language as a barrier to effective information access.

Mobile Phones

CPSI (2003:48) states that there are more than 48 million cell phone subscribers in South Africa. The study further reveals that most people have cell phones despite the differences in handset capabilities and thus everyone is capable of accessing some of the e-government services through their ordinary handsets cheaply. Most of the applications developed for e-government services can be ported for accessibility to ordinary GSM cell phone including those without internet access. For instance, services that require enquiry of application statuses or other documents may be successfully ported on the platform. Such technology is known as Unstructured Supplementary Service Data (USSD) similar to those used by mobile networks to purchase data bundles, call backs and mobile money services. This type of connectivity does not require internet connection or access hence it is cheaper and always accessible. Most services accessed through this technology are actually not paid for. Therefore accessibility may be enhanced to a greater extent using USSD technology.

Applications Flexibility

From a socio-economic development perspective, services should be developed on platforms which consider devices which people can have access to. The study revealed that in as much as one can have a phone that has access to internet, some website services such as the Department of Home Affairs enquiry, applications are not accessible on a phone with a general web browser that has no JavaScript capabilities but has access to internet. This results in most people not being able to access web content as their devices are technologically excluded in development. Therefore there should be at least more than one way to access these services. For instance besides only basing internet web based enquiry applications they can also develop SMS based services or USSD codes which are available on all GSM phones for accessibility at a cheaper cost.

Increasing Awareness of the Services Available

The departments that develop or improve the e-government services must increase awareness through either TV networks or other forms of advertising to ensure cost effectiveness rather than implementing services for citizens who are not aware of the services. Advertising is achievable in remote areas since the majority of the population has access to radios or Television sets. Alternative access services should also be advertised on the departmental website where services are accessed physically. This will promote awareness for the public to be more alert on the services available and on how to use them.

Website design

The government should give special attention to the website design. The website design plays a huge role in e-government. Customers of the government form their first impressions on the institutions. If citizens are satisfied with a well-designed and user friendly website it enables the successful implementation of e-government. It would guarantee that the citizens will use the e-government services. The website is mainly useful for retrieval of information, downloading of forms, registrations etc. The website should be more visually appealing, have an organised user interface, should always be updated and serviced regularly, it must be available at all times. Therefore a well-planned, high standard website will be an added advantage in the implementation and use of e-government services. If possible the service providers should invest in a website that has different language options to enable everyone to use their e- government services.

Reliability

Reliability is an indispensable quality of e-government in provision of e- government services to the citizens. The government and other responsible authorities must be reliable and consistent in the delivery of promised services to people. They should include all information such as how long it would take for service deliveries to enable people to plan ahead. The e- government services should also enable the citizens to complete their entire transactions online and avoid completion of e-government services physically. This should include online payments in easily available means such as, using wallet programmes on mobile cell phones which may be easily accessible to all citizens.

Motivation

The major challenge of e-government is because the services rendered are not for profit making, it is unlike the business and customer service delivery. The citizens are not customers of the government and therefore do not choose services or products for purchase and cannot switch to other competing companies in cases where services are not satisfactory. The successes and failures of e-government cannot be measured in losses and profits since citizens do not buy services form the government. This makes it difficult to motivate for quality e-government services and good communication and feedback from citizens. It thus calls for mutual interest of the service providers and the citizens, for the providers to give quality e-government services and citizens to provide feedback and interact.

CONCLUSION

This study concludes that inasmuch as citizens within Nkonkobe municipality, Eastern Cape have less access to e-government services, there has not been much services developed compared to those in

metropolitan cities like Cape Town or Gauteng. The research findings further point out that accessibility to e-government is still a hampering factor in Nkonkobe Municipality because the society is not e-ready due to digital divide. Dedicated attention has to be fostered towards the development of information service centres and deployment of appropriate infrastructure to increase access to digital information. Government has to ensure that the development of e-service applications is user-centric and users must therefore be consulted on which services to prioritise. Acknowledgement of latest developed services must also be done frequently. Increased access to e-government services will definitely foster good governance and create a good relationship between citizens and the government as there will be more transparency and accountability including efficiency of service delivery.

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