

INTRODUCTION OF ICT TO RESHAPE PUBLIC INSTITUTIONS IN RURAL AREAS

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Abstract. With the trend in ICT and the Internet in the 21st century, government-related services and public service delivery are becoming more accessible and easier to receive virtually. But the question is - are they available generally in and around the whole appropriate nation or country? Here comes the question this paper sort to answer. The unavailability of ICT in some public institutions in rural areas is still a challenge even as information and communication technology is widely accessible in our current world. Studies prove embracing e-government by various countries is an outstanding accomplishment, but extending this success to remote and rural regions is the prospect of triumph that needs to be worked on especially in the current digital century. Considering the role digital technology is playing in human social life as an essential factor of modernization and a century development. Introducing a wide accessible ICT resources in rural areas could mean a milestone for developing states. Although we may acknowledge some challenges in the process like illiteracy, lack of proper infrastructure and insufficient professionals in the rural areas, we should as well glance at the brighter part that ICT would influence, like some basic social sectors that consist education, economy, health and employment.

Keywords: *ICT, rural areas, public institutions, service delivery, society.*

Introduction

Governments across the globe are developing e-government platforms to simplify public service delivery in various public institutions. Using ICT citizens could easier lodge requests, receive government services or interact with other inter-government agencies accordingly via the internet. It's also through such platforms different public institutions share information and communicate or send vital administrative resources to one another feasibly. Although this is a great development and milestone achieved by different democratic governments, but the current drawback in such merry success is the inability of expanding it to rural communities across the particular country. Even though rural policy development nowadays is the topic of discussion in the government of many developing countries, and their endless effort to end and efficiently support the exact needs and demands of rural societies and their population development in the new era. Rural areas especially in developing countries across Asia, Africa and South America still face challenges in receiving and enjoying public services in spheres like quality education, inadequate electricity, transport infrastructure, communication, health care services, recreational facilities etc.

Wide access to ICT resources in rural public institutions aim to avail the government services to citizens at their village access doorstep. The introduction of Information and Communications Technology has avail a faster and better communication, efficient information storage, retrieval and processing of existing data and exchange or utilization of information to its users, from individuals, groups, businesses, to organizations or other government agencies. In a modern democracy there should be equality in public service delivery between both urban and rural inhabitants. Unavailability of efficient public institutions in rural societies might be seen as a sign of unequal freedom of citizens right. In some countries citizen could access or receive government service they require only by moving to the urban cities or capital of their respective countries. Inter-governmental services sometimes take long to be delivered, due to the fact that it has to be sent to the main office in the city or urban areas and wait for it be back after it has been processed. While practically, introducing ICT resources in public institutions within rural areas could manifest hassle free government services for rural residents. ICTs could also serve as an instrument of civil awareness creation and feedback, giving rural people a voice in national socio-political life.

Furthermore, implementation of ICT in public institutions are not reached to the expected level in the various rural areas of developing countries. Such rural population that live with minimum level of ICT facilities in their state institutions especially the poorest communities. The role of information and its abundance has revolved the modern societies to informatics societies. It has also changed their industrial economies into economies that relied on information and science. The wide availability of internet and ICT resources in public institutions that operate in rural communities could be a great sign of E-government project completion among developing countries around the world.

Literature Review

Information and communication technologies (ICT) comprise of complex and heterogeneous set of goods, applications and services used to produce, distribute, process and transform information. Hence ICT could be a broaden term and its concepts are evolving. It consists of any product that will store, retrieve, manipulate, transmit, or receive information via electronic or digital form i.e. through personal computers ranging from smartphones, digital television, email, and robots.

Despite the fact that internet and ICT are applied on almost every aspect of our regular and essential activities, the rural societies and local communities around our world are still left far behind in this course. Noticing that ICT is increasing the gap of socio-economic development between the urban and rural societies, but consecutively its filling the loophole in this term. Introducing ICT and its tools to rural areas could end the digital divide created by unfair and unequal distribution of resources within rural and urban public institutions. Such digital divide creates a division and inequality around access to information and resources (Muschert and Ragnedda 2013). One of the benefits of ICT is the ability to improve the asymmetry in accessing information and so better manage the principal-agent problem (Gurubaxani and Whang 1991). Similarly, the availability of ICT in the rural communities lay the foundation of efficient public service delivery, citizen to government interaction and responsive and equal democracy.

Methodology

The paper was developed based on an extensive review of relevant theoretical literature. Data sources

gathered consist of internet resources, published academic papers, academic journals and reports. Although the study is conceptual and explorative in nature, it sought to identify the essential factors that could help to understand the importance of applying ICT resources to institutions in rural regions in developing countries.

Results: availability of e-government services across rural communities

In most rural areas there tend to be lack of economic and social development and sometimes even high rate of poverty. The poverty could adequately be dealt with through the effective usage of e-governance and ICT application in social management. A better governance that utilize ICT can have a direct impact in reducing poverty and introducing the social development desired. Availability of ICT applications in public agencies could give easy access to all government services to a lay man in his locality, through regular service delivery locations. Nowadays Information and Communication Technologies (ICT) are widely used by the governments to deliver its range of services at the locations most convenient to the citizens. This proves that if such services could reach the typical rural resident it could bring a great ease for them in regards to accessing government services and acknowledge government effort in establishing citizen democracy, through the utilization of ICT in providing better and affordable connectivity and by processing request and solutions. For instance, computerization of land records could be a great development in application of ICT in rural development. Land record applied with other contemporary socio-economic initiatives and their revision and update are necessary for identifying the changes in rural social dynamics. As land record is one of important parts of rural development. Another essential tool that might impact rural resident lives is introduction of online personal identification program that could easily identify government service requestor and simplify communication and modification from his previous service requested. Furthermore, ICT can contribute in an outstanding way, by making government services more efficient and effective, as it encourages communication or information sharing among rural and remote residents to reach the central government through an easy process and by accessing institutions around their local areas.

Rural data capturing and information and communication sharing

Citizens engage with the government on various issues, at both individual and at the community level, to lodge complaints, or express their dissatisfaction, request services, and influence policy. Previously, governments at different levels made efforts to share information to engage with the citizens, but most attempts were not successful. In recent years likewise, several governments of developed countries have created websites to share a portion of the data they collect. This is a concept for a collaborative project in municipal government to develop and organize a culture of open data and open government data. Using the rural data can improve the citizen's engagement in government initiatives and simplify government projects especially those that require sample data or open data. In addition, usage of websites to receive the particular information a citizen needs can be a milestone reach for rural residents. For the citizens, not only the presence of a webpage of a particular government body or agency is needed, but also the content of the appropriate web page is of great value. Meaning that any information on a government web page should be accurate and must also cover relevant questions or problems. By this, citizens could use information profitably and save themselves time dealing with government. (Mirko Vintal 2001) found that possibilities are not provided equal for all citizens with regard to their respective place of living, because particular government agencies are differently presented on the Internet. Many municipalities (62%) while administrative districts (50%) do not even have web pages at all. ICT application could provide the government with rural resident's data through its public institutions and this is also a priceless tool that would help the government in easy citizen communication and information sharing, or government to citizen interaction. Such initiative would be used by the government to share vital and essential information to people in rural areas, while the citizens could submit their requests, or receive information they need at an instant phase.

Internet resources in state educational institutions in rural communities

ICT is an effective tool to lay outstanding change and development in traditional education system. The use of ICT in education improves the quality of teaching and learning also free the access to education. The implementation of ICT into education aims to raise the quality of teaching and learning process, and as well to justify the democratic citizen rights of rural habitants. Additionally, high restricted access to education particularly for rural

women would be reduced through the introduction of ICT, and relevant to this context will decrease the gender gap of ICT skills and knowledge. The global introduction of e-learning should be the real necessity for the implementation of ICT tools in rural public institutions. Opportunities provided by Internet-based learning resources in the developed world could undercut the achievements made by rural in their participation in education in particular with rural residents being left behind, this discourages their efforts in education area. The economical production of digital media and access to digital services, using very low marginal costs, would provide scaling up specifically in developing countries across Africa and Asia. By defining the target markets and implementation, governments can disburse IT resources in rural educational institutions at relatively low cost.

Considering the present global trend of e-contents learners are attracted to advanced learning resources like multimedia presentation and animation. The internet also introduces the trend of e-study, availing materials such as online courses and distance education i.e Moodles that gives the rural inhabitants the opportunity to learn irrespective of their geographical location.

ICT application in health care institutions in rural areas

Health care system is one of the major factors and initiative that a promising government focuses on and spends a huge part of national budget on. Although most times rural communities are usually considered late comers to receive the benefits of proper health care from the particular government. Reasons as to why we should apply ICT usage in rural health care system are; to improve or contribute to general social health status, prevent outbreak of new diseases, raise rural life expectancy and prevent sudden deaths. A research by Medline Plus shows that the healthcare needs of individuals residing in rural areas are different from those in urban areas, as rural areas often suffer from a lack of access to healthcare. Developing countries apply ICT tools to remote areas for consultation, diagnosis or treatment. ICT could also be an effective tool in establishing a medium for rural people to access health related information. Addressing critical medical needs, lack of qualified medical professionals and inefficient medical services in the rural communities is achievable through a proper implementation of ICT. The introduction of telemedicine services could enable proper access to professional doctors

via web camera irrespective of the geographical location of the patient. In addition, health care web or mobile applications can help health practitioners to maintain medical record and patient database, communicate hassle free with state/regional health centers for swift delivery of health services and resources throughout rural areas.

Rural economic development

As access to information is a basic necessity in economic development, and so information and communication technology could play a great role in connecting the rural inhabitants with the outside world. Rural communities and remote areas have already been lagged behind in economic development such as labour market, agricultural development, infrastructure and poor economy scale. These in return has result to low per capita, rural-urban migration, and unemployment in the rural regions. Some of the major reasons to such development gap affecting rural areas are; lack of communication, low access to customers, unavailability of business suppliers and services and insufficient infrastructures (Riggs, 2011). It has been stated that ICT in rural areas is highly relevant to improving the competitiveness of agriculture and forestry and improving the quality of life as well as diversification of the rural economy (Commission of the European Communities Secretariat, 2009a). Providing the relevant ICT tools in rural areas would stimulate the rise in creating new businesses and opportunities to manage the existing small scale enterprises. Such tools improve income generation and build line to concrete economic development. Furthermore, communication channels can unwrap a new way for reaching government economic initiatives like loans for new businesses and transaction between businesses and consumers as far as new infrastructures are concerned.

Employment and labour market

Through the branch of ICT, we can open new horizons for rural people and give a way especially for young people to participate in labour market. Relatively, such individuals may be restricted by the high search cost and reliable job hunting platform. Women could also be blocked by social constraints in the field of employment, but if a concrete ICT tool is erected in rural institutions it could pave an easy path for an effective labour market that virtually enables job advertisement, application process and candidate interview or communication with employers. Thus, ICT is an agent of employment and

generation of more direct income to the remote communities, talk more of small enterprises and private business whose potentials are higher in this sphere to the extent that they may source for labour locally, sell their products or advertise their services even thousands of miles away.

Public service delivery in rural areas through ICT

Nowadays when we talk about public service delivery we primarily refer to electronic government. Electronic government services are one of the key performers of electronic democracy. Today, there are series of electronic government services, that offer citizens a new way of accessing information, new possibilities of communication with central and local government and new forms of cooperation in their strategy or policy formation (Mirko and Mitja January 2001). It is important to understand the wide potential of deploying ICT to improve service delivery. It is equally important to understand the challenges in harnessing such potential by identifying the critical success factors for wide-scale deployment (Bhatnagar March 2014). By applying ICT in public service delivery across rural regions we could achieve gender equality and equal citizen participation in government services and public life in particular. As prescribed in this paper above, if the state could establish proper ICT tools in institution located throughout the various rural areas, it would impact large aspect of rural people's lives and bring the modern change desire in improving quality of life.

Results and discussion

Availability of ICT tools in rural schools and education centers signify the potential of achieving quality education in reference to teaching and learning process, with simplification of teaching, learning and evaluation within excellent education management. And so, improves the quality of knowledge shared at both urban and rural societies. Nevertheless, a few portion of digital development has reached some rural regions across developing countries in Asia, Africa, and South America, we can't brag on the fact that ICT is yet to reach the desired prospective level. Hence, we may say that is due to the reason that there are some potholes on the way to achieving a such milestone. The challenges being faced toward the smooth application of ICT in rural areas may include the following:

1. Connection: already most remote areas are lacking internet and power connection required. The

limited power supply is a hindrance to ICT wares since most of the tool's essential working condition is a reliable power supply, followed by internet connectivity in some cases.

2. Resources: basically, some rural communities lack the modern technology and sophisticated resources needed in this case. In some cases, there might be poor infrastructure or outdated tools due to the fact of underfunding.

3. Inadequate professionals: The unavailability of required experts that would lead the relevant project is a serious challenge against the introduction of ICT in rural societies. Unlike the urban regions where real specialists are in abundance, in most rural areas availability of experienced personnel is a real trial.

4. Skills: The reality that ICT involves skills and applicable language which at some point might be English, ought to restrict the opportunities of rural residents in terms of access to information. The broad illiteracy rate in rural areas is a true fact we can't deny as a real challenge to social development, exceptionally digital modernization.

Conclusion

Creating an information rich society is a mountainous achievement towards national development. Although ICT alone cannot solve all societal issues, but its presence in our rural communities is an objec-

tive that is inevitable. As this paper prescribed how prime introducing ICT to local areas is, we must think deeper on how to bring our imagination to reality in attaining the average digital development we require in our rural districts. Not only for social benefits, but glancing through economic perspective, governments should perceive the gain in establishing ICT in rural communities. However, governments should support ICT education in those local regions and understand that it can improve the quality of life and develop the economy by producing vast opportunities and be a means of poverty eradication. Procurement of modern infrastructures has to be equal, and extend resources distribution to locales residing in rural regions. Moreover, governments need to recognize the advantage of such technological policy not only for citizen's sake but how easy it could be for the government to reach the average rural population and communicate or share new policies. The effort government and some civil groups are making should be continued and set a target to achieve, perhaps starting late is better than staying redundant in the current poor situation. As acknowledged by a report from the (World Bank, May, 2014) ICT sustainability could be improved with greater long-term rural ICT interventions. As in creating greater use of partnerships or even shifting the obligations of telecommunications operators from infrastructure deployment to operations. In particular, libraries are logical partners for rural informatization with their community-based infrastructure.

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