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Management of ICT Enabled Services in Rural Areas Provided by Government Organizations through Maha E-Seva Kendra

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Abstract

The present research paper studies the application of ICT in government offices of rural areas of Kolhapur district. The main objective of implementation of e-governance project in rural areas is to provide the government facilities and services to the rural citizens at the village level. Implementing the ICT based project in rural areas is a challenging task. The data is collected from government officials and Village Level Entrepreneurs who operate the CSCs in rural areas of Kolhapur. Different issues related to Maha e-Seva project like managerial, organizational, personnel and infrastructure are discussed in the present study. As it is the study of e-governance it assesses the management of services provided to the citizens by the government. The various strategies employed by the government in implementing e-governance project for effective management of the services and facilities in rural areas are studied.

Keywords: Common Service Centers, E-Governance, Maha e-Seva Kendra, National e-Governance Plan

Introduction

Developments in the fields of Information and Communication Technology (ICT) has been taking place at a faster rate. With the developments in ICT, it has become important to use ICT by the government to make the governance more transparent and citizen centric. The use of ICT by the government for various purposes is called as e-governance. e-governance is used to improve the efficiency and effectiveness of public administration system by combining the Information and Communication Technology with multimedia to provide the efficient services to citizens as well as business organisations at affordable cost and in less time. E-governance has made it possible to improve the interaction between government and citizens (G2C), government and business organisations (G2B), and government to government (G2G) more responsive, convenient, transparent, and economical (World Bank, 2013).

Government is trying to unite e-government with their overall economic and social development objectives. Government is taking efforts to implement e-governance in rural areas to deliver services online in spite of several infrastructural problems which will help to alleviate poverty. Further efforts are made to use ICT applications which will help to reduce poverty, empower rural people and improve government responsiveness towards poor people who do not

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have access to government services (Bhatnagar, 2009). Initially, the e-governance activity started with offering information related to different programmes and schemes by the government departments to the public through its different websites. The scope has been further extended to getting dynamic information, making utility bills payment, receiving the government services like file taxes, obtain government certificates, licenses etc. This has enabled organisational revolution, simplicity of public services, speed of delivery, and increased the citizen participation (Prabhu, 2015). E-governance can help rural citizens in many ways such as reducing the cost of agricultural inputs, getting the better price for farm produce, receiving information about the various economic activities, issuing of certificates and licenses etc. Government organisations are using ICT in rural areas for increasing efficiency and improved delivery of services.

In India the Government of India established National Informatics Centre (NIC) as an apex institution at national level for catalyzing and coordinating all e-government activities and projects in government body at the central, state and district level. Similarly state governments have established their Information Technology Departments which are basically coordinating all the activities of e-governance projects within the state (Prabhu, 2015). National e-governance plan was formulated by Government of India in May 2006. Common Service Center (CSC) is a major e-governance initiative implemented on a large scale under the National Common Minimum Programme. Through CSCs e-governance is implemented in various areas like health, education, entertainment, telemedicine as well as other private services to provide various public services to the citizens. The public services provided through these CSCs include application forms, various government certificates and payment of utility bills like telephone, electricity and water bills, mobile television recharge (National e-Governance Plan).

Maharashtra state established Directorate of Information Technology (DIT) in 1998 to promote ICT and e-governance in the state. Maharashtra Government has implemented e-governance project in the various government offices to improve the delivery of government services in transparent manner. Government has adopted Public Private Partnership Model for the implementation of these projects. Private software companies provide the ICT infrastructure and the services at the different locations to cater the citizens. Amongst the various projects Maha e-Seva project is aimed to provide the services such as various online certificates to the people residing in Maharashtra. Maha e-Seva project is implemented in urban as well as in rural areas under the Revenue Department.

Literature Review

Patil (2010) conducted a study of progress, development and strategy of government organizations regarding e-governance in Maharashtra state with the special reference to Nasik district. The major findings of the study were that majority officers, heads and section officers of the government organisations were not technically sound and infrastructure available was not sufficient to implement e-governance successfully. The number of Common Service Centres was inadequate to meet the citizen's demand; also there was a lack of coordination between SETU and other departments of government. ***Pani et al (2009)*** in their research on e-governance in Assam mentioned that the e-governance vision of Orissa was to

establish a government system to achieve more transparency and accountability in public services delivery to facilitate moral progress of all citizens. The major objectives of the study were to find out how e-governance helped in achieving good governance and to analyse beneficiaries of e-governance. From the study the researcher had concluded that e-governance can be more successful if participation of beneficiaries is more in e- government. *Bhatnagar et al (2008)* in his research paper on 'Impact Assessment of e-Governance Projects: A Benchmark for the Future' mentioned on an impact measurement of three state-level e-governance projects viz. vehicle registration, property registration, and land records by considering twelve states, and three national level projects executed by the Income Tax Department, the Ministry of Corporate Affairs, and Regional Passport Offices. According to their study Land Record computerisation project have delivered the majority of the benefits to the citizens among the three projects. MCA project implemented by the Ministry of Corporate Affairs has become successful in providing the benefits to the users the most among the national projects. *Naik et al (2012)* found in their research article on 'Fostering inclusive growth through e-Governance Embedded Rural Telecenters (EGERT) in India' that because of low e-literacy, low penetration of computer and internet connectivity the telecenters are the becoming the major locations to provide e-governance services to rural people. These telecenters can collect the data and manage the data of the various government initiatives which can be utilised for decision making by the policy makers. *De (2006)* conveyed a study on evaluation of e-Government Systems: project assessment vs. Development Assessment. The study was based on ae-governance project named as Bhoomiin the Karnataka State. He focused on the different aspects of project viz. economic viability, change management, process efficiency, costs reduction of e-Governancemechanism and benefits, and aspects related to user friendliness for potential and transparent transactions. *Kumar et al (2010)* has revealed the study on information system audit and framework for e-governance applications. He has studied the present scenario of e-governance, performance of e-governance and e- procurement services of government. He concluded that the e-governance procedure and polices paid crucial role in enhancing the role of basic structural procedure compared to computer system and Andhra Pradesh is the leading state which implements e-governance services to various areas and sectors.

Literature review shows that majority of the research had been conducted in the areas like progress and development of e-governance, impact analysis on the functioning of government offices, effectiveness of e-governance, etc. It makes clear that there is a relative lack of studies with interdisciplinary approach. The present study is interdisciplinary which deals with the use of ICT, governance and social aspects of its use. Besides, whenever new innovative projects are implemented, the need is to conduct studies to assess their success or failure. The present research study focuses on the key issues of e-governance i.e. its implementation, execution, employee involvement, problems in implementation.

Objectives of the Study

- To study the use of ICT in government offices in rural areas of Kolhapur with respect to Maha e-Seva Kendra.

- To assess the facilities and services provided to the rural communities.
- To study the management of ICT enabled services and facilities offered by government organizations in rural areas.
- To study the problems and challenges in implementing e Governance in rural areas of Kolhapur.

Hypotheses

For the present study, researcher has formulated the following alternative hypotheses:

- ICT enabled services in rural areas are effectively managed at organizational (district) level.
- Service processes are effectively managed with the help of ICT enabled services in rural areas.
- Training helps to provide ICT enabled services effectively in rural areas.
- Infrastructure is developed to provide ICT enabled services effectively in rural areas.

Scope and Limitations of the Study

Present research study is focused on the Kolhapur District of Maharashtra State. There are 12 tehsils in Kolhapur district rural areas of all 12 tehsils are considered for the study. From each tehsil 5 villages are selected to collect the data. The data is collected from government officials and Village Level Entrepreneurs who operate the Maha e-Seva Kendra. The study highlights on the various issues related to implementation of e-governance in rural areas. The issues covered are services and facilities provided to rural society through the Maha e-Seva Kendras, management of ICT enabled services, effect of IT use on the functioning of the government offices at the village level. Study does not focus on the technical aspects of the e-governance like software development, its implementation and maintenance. Urban areas are excluded from the study. Collection of the data from the rural areas was a challenging task because of the transportation problems. Also it was difficult to locate the sample respondents. However an attempt has been made to collect the data as per the sample design.

Research Methodology

The present study is related to the application of e-governance in rural areas in Kolhapur District. There are 12 Tehsils in Kolhapur district; the rural areas from these tehsils are taken for the research study. For the present research study Multi-stage sampling technique is used to select sample respondents. In the first stage all 12 tehsils are selected from Kolhapur District for the present research study. The number of Maha e-Seva Kendra is different in all the Tehsils so to maintain uniformity, in the second stage five Maha e-Seva Kendras located in the villages from each tehsil has been selected randomly. For the study of management practices of e-governance project primary data is collected from Village Level Entrepreneurs (VLEs) of the selected Maha e-SevaKendras and Tehsildars / Nayab Tehsildars of tehsils. Village Level Entrepreneurs of the selected Maha e-Seva Kendra are considered for research study, the sample size of VLEs is 56. Tehsildars / Nayab Tehsildars of all the twelve tehsils are taken for the study but researcher could get the data only from 11 Tehsildars/ Nayab Tehsildars.

Based on the review of literature relevant to e-governance, a questionnaire was designed to collect the necessary data from respondents. Two different set of questionnaire were prepared to collect the data from VLEs and Tahsildar / Nayab Tahsildar. Nominal as well as interval scale is used depending upon the nature of questions.

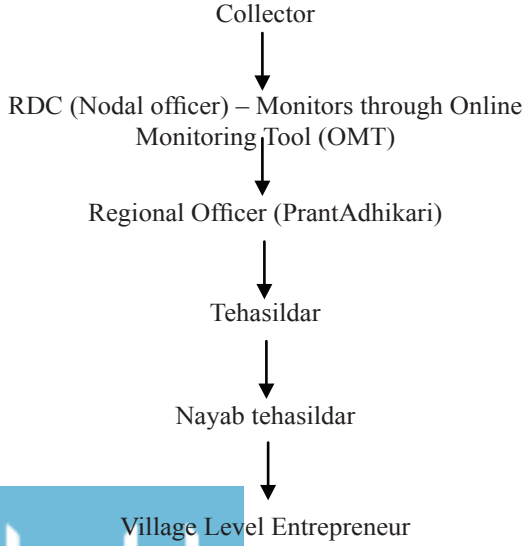
The data was collected during the period of October 2016 to February 2018.

E-Governance at Maha e-Seva Kendra

Government has established Maha e-Seva Kendra to provide the government certificates viz. income certificate, nationality and domicile certificate, birth and death certificate, 7X12 certificate, caste certificate, non-creamy layer certificate etc. The number of Maha e-Seva Kendra for each tehsil depends on the population of that particular tehsil. Aim of this project is to make all government services available to the common man in his locality, through common service delivery outlet and to ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man. In Kolhapur district Maha e-Seva project was implemented on 15th August 2008 at a village Vadange in Karveer Tehsil. There are 343 approved Maha e-Seva Kendra out of which 155 centers are functioning in Kolhapur district. This project is partnered with Maha Online Ltd. Maha Online Ltd. appoints Village Level Entrepreneurs to provide the online services. VLEs are required to invest initially to provide necessary arrangement for setting up of office, computer and internet connectivity. Maha Online Ltd. provides the training to these VLEs. The VLE provides the government services through 'Maha e-Seva Kendra' to the society.

VLEs of Maha e-Seva Kendra fill the required online form and collect the documents from the citizens. Citizens make necessary payment at e-service center. These documents are sent to Tehasildar office for verification. After assessment of documents VLEs can generate online certificate at their respective centers.

Structure for the implementation of e-governance at Maha e-Seva Kendra is as follows:



Government services are provided through Maha e-Seva Kendra. Maha e-Seva Kendras are operated by the Village Level Entrepreneurs (VLEs) independently. Investments in premises, computer / laptop, printer, internet connection are done by the VLEs. Technical support related to software is provided by the Maha Online Ltd. Maha Online appoints district coordinators to provide the technical services to VLEs. Village Level Entrepreneurs are the service providers to the citizens. They are not the employees of the government; they function as the private operators. After appointment as VLE, they register thro ugh Maha Online and their login is created on web portal. There is a prepaid system where VLEs are required to recharge through their login. After recharge they can provide the services to the citizens through their login.

Analysis and Interpretation

Primary data is analysed by using the statistical techniques and presented by using tables and graphs. The data is analysed in two sub parts – in first part data collected from officers is analysed and in the second part data of VLEs is analysed.

Cronbach's Alpha Reliability test was conducted to test the reliability of the scale.

Table-1: Reliability statistics of pilot study

Sample Population	No. of Items	Cronbach's Alpha
Officers	9	0.878
VLEs	20	0.913

It can be seen from the above table that Cronbach's Alpha for all three data set is more than 0.7 therefore the questionnaire is administered for the further research.

Present Situation of Maha e-Seva Kendra

Table-2 shows the present situation of Maha e-Seva Kendra. The data is collected from officers / Tehsildars / NayabTehsildars.

Table-2: Present Situation of Maha e-Seva Kendra

Present Situation	Responses	No. of respondents	Percentage of respondents
Sufficient Number of Maha e-Seva Kendra are functioning in the area to provide government services to the citizens	Yes	11	100
Overloading of work at a specific Maha e-Seva Kendra	Yes	6	54.5
	No	5	45.5
	Total	11	100.0
Demand for government services ishigh during a particular period of the year	Yes	10	90.9
	No	1	9.1
	Total	11	100.0
Certificates are issued to citizens carrying digital signature	Yes	11	100
Financial assistance is provided from the state level for this project	Yes	8	72.7
	No	3	27.3
	Total	11	100.0

Table-2 shows that 100% respondents mentioned that there is sufficient Number of Maha e-Seva Kendra are functioning in the area to provide government services to the citizens. According to 54.5% officers there is an overloading of work at a specific Maha e-Seva Kendra because the population located in these areas is more and the demand for government services is also more so it leads to overloading of work. As per 45.5% respondents there is no overloading of work because the existing Maha e-Seva Kendra can provide the services to the citizens residing in these areas. According to 90.9% officers, demand for government services high during a particular period of the year. The demand is more during the May to August month as during these months documents are required for educational purposes. All officers agreed that certificates are issued to citizens carrying digital signature so that there will be no fraud because documents can be verified on the website of Maha Online and documents can be issued online to citizens which will save time and cost. 72.7% respondents mentioned that financial assistance is provided from state level to develop infrastructure at nodal office.

Functioning of Maha e-Seva Kendra

Table-3: Details Regarding the Functioning of Maha e-Seva Kendra.

	Parameters	No. of respondents	% of respondents
Investment made in Maha e-Seva Kendra	Rs. 50,000 to 100,000	18	32.1
	Rs. 116,000 to 120,000	3	5.4
	Rs. 121,000 to 125,000	4	7.1
	Rs. 125,000 to 130,000	2	3.6
	Rs. 131,000 to 135,000	1	1.8
	Rs. 136,000 to 140,000	2	3.6
	Rs. 146,000 to 150,000	6	10.7
	Above Rs. 200,000	20	35.7
	Total	56	100.0
Ownership of the premises of the Maha e-Seva Kendra	Owned	12	21.4
	Rented	44	78.6
	Total	56	100.0
Rent (cost) paid for premises	No response	15	26.8
	Rs. 500-1000	13	23.2
	Rs. 1100-1500	12	21.4
	Rs. 1600-2000	2	3.6
	Above Rs. 2000	14	25.0
	Total	56	100.0

Table-3 shows that 32.1% VLEs have invested Rs. 50,000 to Rs. 100,000 in setting up Maha e-Seva Kendra They have basic facilities like computer, printer and internet connection. 35.7% and 10.7% VLEs have other facilities in the Maha e-Seva Kendra like laptop, inverter, biometric machine, internet dongle, photo copy machine, lamination machine etc. therefore their investment is higher which ranges from Rs. 146,000 to Rs. 150,000 and even in some cases more than Rs. 200,000.

It can be interpreted that 21.4% respondents owned the premises of Maha e-Seva Kendra whereas 78.6% respondents are having the premises on rent. Majority of them are setting up their business first time, they don't have owned premises.

It also shows that 26.8% respondents have not responded to the question as they don't pay rent or there is no cost. 23.2% and 21.4% VLEs are paying Rs. 500 to 1000 and Rs. 1100 – 1500 rent. 25% VLEs are paying above Rs. 2000 as rent of premises which adds to their cost.

Technical Facilities Available at Maha e-Seva Kendra and Support Provided to VLEs

Table-4 shows the various technical facilities available at Maha e-Seva Kendra and support provided to VLEs by the Maha Online and District collector office –

Table-4: Facilities Available at Maha e-Seva Kendra

Facilities Available at Maha e-Seva Kendra	Responses	No. of Respondents	%
Availability of computer	Yes	56	100
Availability of printer	Yes	56	100
Availability of Laptop	Yes	34	60.7
	No	22	39.3
	Total	56	100.0
Availability of Internet	Yes	52	92.9
	No	4	7.1
	Total	56	100.0
Availability of Other Technical facilities	No Additional facility	28	50.0
	Photo copy Machine	12	21.4
	Lamination Machine	4	7.1
	Scanner	8	14.3
	POS Machine	3	5.4
	PVC printer	1	1.8
	Total	56	100.0
Alternate source of electricity supply is available if electricity supply gets interrupted	Yes	38	67.9
	No	18	32.1
	Total	56	100.0
Alternate source of internet connection available if there is any problem in internet connectivity	Yes	34	60.7
	No	22	39.3
	Total	56	100.0
Number of employees working in the maha e-Seva Kendra	1-2	46	82.1
	3-4	7	12.5
	5-6	2	3.6
	More than 6	1	1.8
	Total	56	100.0
Technical assistance provided by maha online Ltd. is sufficient	Yes	49	87.5
	No	7	12.5
	Total	56	100.0
Training received for operating the software/providing the services	Yes	53	94.6
	No	3	5.4
	Total	56	100.0
Training regarding the documentation is provided.	Yes	52	92.9
	No	4	7.1
	Total	56	100.0
Training helps to provide the services to the citizens through e-governance	Yes	53	94.6
	No	3	5.4
	Total	56	100.0

Facilities Available at Maha e-Seva Kendra	Responses	No. of Respondents	%
Any difficulties in operating maha e-seva Kendra	Yes	26	46.4
	No	30	53.6
	Total	56	100.0
There is a co-ordination between maha online Ltd. & district administration	Yes	51	91.1
	No	5	8.9
	Total	56	100.0
e-governance help you to provide better services to the citizens	Yes	54	96.4
	No	2	3.6
	Total	56	100.0

Table-4 shows that in all Maha e-Seva Kendras computers and printers are available. In 60.7% Maha e-Seva Kendras along with computers laptops are also available where the population is more to provide the services at faster rate. In 92.9% Maha e-Seva Kendra broad band internet connection is available whereas in 8.1% Kendra broad band internet connection is not available as these are located in remote areas. They use internet dongle, smart phone for internet connection. 50% Maha e-Seva Kendra does not have other technical facilities. 21.4% and 14.3% Maha e-Seva Kendra have photo copy machine and scanner to provide the other services to citizens. According to 67.9% respondents' alternate source of electricity supply is available if electricity supply gets interrupted. Back up facility like inverter, generator is available. 39.3% respondents mentioned that alternate source of internet connection is not available in case of problems related to internet connectivity. This creates the problem in providing the services and certificates to the citizens in time. According to 60.7% respondents, alternate source of internet used by them is smart phone, internet dongle. 82.1% respondents said that the number of employees working in Maha e-Seva Kendra is 1 to 2. As the services are provided through online platform, 1 to 2 employees can provide the services to the citizens. 87.5% respondents mentioned that technical assistance related to hardware, software is provided by Maha Online Ltd. 94.6% and 92.9% respondents mentioned that training has been given to them for operating the software and providing the services regarding the documentation respectively for the effective delivery of the services. According to 94.6% respondents, training helps to provide the services to the citizens through e-governance platform. 46.4% respondents face difficulties like delay in getting certificates from Tehsil office, non-availability of the required documents, local level politics etc. in operating the Maha e-Seva Kendra. According to 91.1% respondents there is a co-ordination between Maha Online Ltd. & District Administration. The coordinators have been appointed by the Maha Online Ltd. who are working as the liaison officer between Maha e-Seva Kendra / Maha Online Ltd. and District Administration. 96.4% VLEs mentioned that e-governance helps them to provide better services to the citizens.

Other Services Provided by Maha e-Seva Kendra

Table-5 shows the other services provided by Maha e-Seva Kendra and training provided to VLE.

Table-5: Other Services Provided by Maha e-Seva Kendra and Training Provided to VLE-

Facilities	Responses	No. of Respondents	Percentage
Electricity bill payment	Yes	53	94.6
	No	3	5.4
	Total	56	100.0
Mobile/TV recharge	Yes	40	71.4
	No	16	28.6
	Total	56	100.0
Payment of Insurance Premium	Yes	15	26.8
	No	41	73.2
	Total	56	100.0
Exam Form Filling through online mode	Yes	31	55.4
	No	25	44.6
	Total	56	100.0

Table-5 shows that apart from the government services, other services are provided to the citizens. 94.6% Maha e-Seva Kendra accepts the electricity bill payments from citizens. 71.4% Maha e-Seva Kendra provide all types of mobile/ DTH/Data card recharge facility. 26.8% Maha e-Seva Kendra provide the payment facility of life insurance premium, At 55.4% Maha e-Seva Kendra filling of online exam application form is also available. Other services include online application for PAN Card, Ration Card, Issue of Bond, and Affidavit.

Issues Related to Service Delivery, Infrastructure and Technical Facilities

Table-6 shows the various issues related to Service Delivery, Infrastructure and Technical Facilities available at Maha e-Seva Kendra.

Table-6: Issues Related to Service Delivery, Infrastructure and Technical Facilities

Statement Related Service Delivery, Infrastructure and Technical Facilities	Mean Value
This venture has provided you an opportunity in establishing yourself as an entrepreneur in a profitable manner	4.0000
e-Governance has increased the speed of delivery of services	4.3571
e-Governance has increased the ease of access to services	4.3393
It has increased fast document handling	4.3929
It has reduced paper work	4.0714
Transparency has been increased	4.3750
It has helped to increase revenue	4.2679
E-governance has increased quality of services	4.5179
Sufficient hardware and equipment are available	4.3750
Sufficient space is available at center	4.2321
There is continuous electricity Supply	4.2143
High speed internet facility is available	4.0000
The application software used is user friendly	3.6964
The application software is flexible to add new functionalities	4.1786
The application software is error free	4.2679
All civic services are integrated & embedded	3.4464
Online application and back office application are integrated	3.8750
High speed data transfer facilities are available	4.2143
It combines data from multiple source and gathers that information to achieve inference	4.0714

Statement Related Service Delivery, Infrastructure and Technical Facilities	Mean Value
If there are any problems related to operation of software technical assistance is provided immediately	4.0000
Government officials supports in the provision of e-facilities	3.9464

Table-6 shows that mean value of the majority statements is more than 4.0 which means that Village Level Entrepreneurs have positively agreed regarding the various aspects of Service Delivery, Infrastructure and Technical Facilities.

Hypothesis Testing

For the present study 4 hypotheses are formulated. Hypotheses are tested by using techniques like Z- test, One sample T Test.

Alternate Hypothesis H1: ICT enabled services in rural areas are effectively managed at organizational (district) level

To test this hypothesis the data is collected from officers (Tehsildars / Nayab Tehsildars) by formulating 8 statements related to the status of e- governance implementation at district headquarter i.e. collector office. The hypothesis is tested with Z test.

H1: $p > 0.6$

H0: $p < 0.6$

Table-7 shows the Z value regarding the management of ICT enabled services at organizational level.

Table-7: Z Value Regarding the Management of ICT Enabled Services at Organizational Level

Sr. No.	Parameters	Z Value H1: p>0.6
1.	e-governance has increased clarity in decision making process at local level	2.1
2.	Required support is provided from district level authorities	2.1
3.	The responsibilities regarding e-governance are properly allocated at different level.	1.66
4.	Guidelines are provided to VLEs regarding functioning of center	1.66
5.	Guidelines are provided to the other clerical staff with respect to the e-governance	1.18
6.	Assessment of quality standards of e-governance is done at regular intervals	1.66
7.	There is a co-ordination among the local, state and central e-governance initiatives	1.66

Source: Compiled by researcher

The hypotheses is tested at 5% level of significance. The critical value of Z 0.05 = 1.64.

To test the hypothesis 'ICT enabled services in rural areas are effectively managed at organizational (district) level', 7 sub hypotheses are formulated which are related to the implementation of e-governance at district level. Z test is applied for these 7 sub-hypotheses. Z value of 6 sub-hypotheses are above 1.64 therefore hypotheses is accepted. So it can be concluded that the hypothesis 'ICT enabled services in rural areas are effectively managed at organizational (district) level.' is accepted.

Alternate Hypothesis H 2: Service processes are effectively managed with the help of ICT enabled services in rural areas.

The hypothesis is tested by using One Sample t Test. The data is collected from officers using five point likertscale. 7 statements are formulated to collect the data related to service process from officers (Tehsildars / Nayab Tehsildars)

Table-8 shows One-Sample Statistics –

Table-8: One-Sample Statistics

Sr. No.	Parameters	N	Mean	Std. Deviation	Std. Error Mean
1	E-governance has increased the speed of delivery of services	11	4.5455	0.52223	0.15746
2	E-governance has increased the ease of access to services	11	4.4545	0.68755	0.20730
3	It has increased fast document handling	11	4.3636	0.92442	0.27872
4	It has reduced paper work	11	3.6364	1.36182	0.41060
5	Transparency has been increased	11	4.5455	0.52223	0.15746
6	E-governance has increased accountability.	11	4.6364	0.50452	0.15212
7	E-governance has eliminated agents.	11	4.2727	1.00905	0.30424

Source: Compiled by researcher

Table-8 shows that mean value of the statement related to increased speed of service delivery, ease of access, fast document handling, increased transparency, accountability, and elimination of agents is above 4 which denote that the respondents agreed that e-governance leads to manage service processes efficiently. Mean value of the statement 'e-governance has reduced paper work' to 3.6364 which shows that respondents are neither agree nor disagree with the statement.

Table-9 shows One Sample Test.

Table-9: One Sample Test

Sr. No.	Parameters	Test Value = 4					
		T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
1	E-governance has increased the speed of delivery of services	3.464	10	0.006	0.54545	0.1946	0.8963
2	E-governance has increased the ease of access to services	2.193	10	0.053	0.45455	-0.0074	0.9164
3	It has increased fast document handling	1.305	10	0.221	0.36364	-0.2574	0.9847
4	It has reduced paper work	-0.886	10	0.397	-0.36364	-1.2785	0.5512
5	Transparency has been increased	3.464	10	0.006	0.54545	0.1946	0.8963
6	E-governance has increased accountability	4.183	10	0.002	0.63636	0.2974	0.9753
7	E-governance has eliminated agents	0.896	10	0.391	0.27273	-0.4052	0.9506

Source: Compiled by researcher

Table-9 shows that p value of statements increased speed of service delivery, increased transparency, and increased accountability is less than 0.05. Whereas p value of the statements increased ease of access, fast document handling, reduced paper work, and eliminated agents is more than 0.05. This shows that there is improvement in the service processes in few aspects. Therefore hypothesis 'Service processes are effectively managed with the help of ICT enabled services in rural areas' but it is rejected.

Alternate Hypothesis H3:Training Helps to Provide ICT Enabled Services Effectively in Rural Areas.

To test this hypothesis the data is collected from Village Level Entrepreneurs (VLEs) by formulating 3 statements related to the training provided to VLEs for the implementation of e-governance in rural areas. The hypothesis is tested with Z test.

H1: $p > 0.6$

H0: $p < 0.6$

Table-10 shows the Z value regarding the training provided to VLEs.

Table-10: Z Value Regarding the Training Provided to VLEs.

Sr. No.	Parameters	Z Value H1: p>0.6
1.	Received training for operating the software/providing the services	4.3
2.	Training regarding the documentation is provided	4.1
3.	Training helps to provide the services to the citizens through e-governance	4.3

Source: Compiled by researcher

The hypotheses is tested at 5% level of significance. The critical value of Z 0.05 = 1.64.

To test the hypothesis 'training helps to provide ICT enabled services effectively in rural areas', 3 sub hypotheses are formulated which are related to the training provided to VLEs regarding the implementation of e-governance in rural areas. Z test is applied for these 3 sub-hypotheses. Z value of all sub-hypotheses is above 1.64 therefore hypotheses is accepted. So it can be concluded that the hypothesis 'training helps to provide ICT enabled services effectively accepted in rural areas.'

Alternate Hypothesis H4: Infrastructure is Developed to Provide ICT Enabled Services Effectively in Rural Areas

The hypothesis is tested by using One Sample T Test. The data is collected from Village Level Entrepreneurs (VLEs) using five point likert scale. 12 statements are formulated to collect the data related to infrastructure development in rural areas from VLEs.

Table-11 shows One-Sample Statistics -

Table-11: One Sample Statistics

Sr. No.	Parameters	N	Mean	Std. Deviation	Std. Error Mean
1	Sufficient hardware equipment are available	56	4.3750	0.72770	0.09724
2	Sufficient space is available at centre	56	4.2321	0.91435	0.12219
3	There is continuous electricity supply	56	4.2143	0.98561	0.13171
4	High speed internet facility is available	56	4.0000	1.17551	0.15708
5	The application software used is user friendly	56	3.6964	1.40026	0.18712
6	The application software is flexible to add new functionalities	56	4.1786	1.02881	0.13748
7	The application software is error free	56	4.2679	0.90435	0.12085
8	All civic services are integrated & embedded	56	3.4464	1.38721	0.18537
9	Online application and back office application are integrated	56	3.8750	1.45305	0.19417
10	High speed data transfer facilities are available	56	4.2143	1.00389	0.13415
11	It combines data from multiple source and gathers that information to achieve inference	56	4.0714	0.96967	0.12958
12	If there are any problems related to operation of software technical assistance is provided immediately	56	4.0000	1.20605	0.16116

Source: Compiled by researcher

Table-11 shows that mean value of the statements regarding availability of internet facility, space in the centre, high speed internet, supply of electricity, application software, high speed data software is above 4 which means that VLEs agreed that development of infrastructure leads to provide services efficiently. But the standard deviation for all the statements is high. From this it can be interpreted that few VLEs had given positive response regarding the infrastructural developments. Further the t-value is calculated to test the hypothesis.

Table-12 shows One-Sample Test.

Table-12: One-Sample Test

Sr. No.	Parameters	Test Value = 4					
		T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
1	Sufficient hardware equipment are available	3.856	55	0.000	0.37500	0.1801	0.5699
2	Sufficient space is available at centre	1.900	55	0.063	0.23214	-0.0127	0.4770
3	There is continuous electricity supply	1.627	55	0.109	0.21429	-0.0497	0.4782
4	High speed internet facility is available	0.000	55	1.000	0.00000	-0.3148	0.3148
5	The application software used is user friendly	-1.622	55	0.110	-0.30357	-0.6786	0.0714
6	The application software is flexible to add new functionalities	1.299	55	0.199	0.17857	-0.0969	0.4541
7	The application software is error free	2.216	55	0.031	0.26786	0.0257	0.5100
8	All civic services are integrated & embedded	-2.986	55	0.004	-0.55357	-0.9251	-0.1821
9	Online application and back office application are integrated	-0.644	55	0.522	-0.12500	-0.5141	0.2641

Sr. No.	Parameters	Test Value = 4					
		T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
10	High speed data transfer facilities are available	1.597	55	0.116	0.21429	-0.0546	0.4831
11	It combines data from multiple source and gathers that information to achieve inference	0.551	55	0.584	0.07143	-0.1883	0.3311
12	If there are any problems related to operation of software technical assistance is provided immediately	0.000	55	1.000	0.00000	-0.3230	0.3230

Source: Compiled by researcher

Table-12 shows that p value of statements - availability of hardware equipment, error free application software, integrated and embedded civic services, is less than 0.05. Whereas p value of the statements - availability of space at Maha e-Seva Kendra, continuous electric supply, high speed internet facility, user friendly and flexibility to add new functions in application software, integration of online application and back office application, high speed data transfer facilities, combines data from multiple source and gathers that information to achieve inference, providing software assistance is more than 0.05. This shows that there is perfection in few of the infrastructural issues. There is a need to develop and strengthen infrastructural facilities viz. physical infrastructure, internet connectivity, electricity supply, and user friendly software. Therefore hypothesis 'Infrastructure is developed to provide ICT enabled services effectively is rejected in rural areas'.

Conclusion

Implementation of e-governance in India faces a major challenge of digital divide. Digital divide means the lack of availability and access of ICT facilities viz. internet connectivity and computers to rural and poor people. Use of ICT by government offices in rural areas lead to improving the lives of the rural people. The major thrust of the study is to assess the use of ICT by the government offices to provide citizen centric services to the citizens in rural areas. The study reveals that e- governance has provided self-employment opportunity to the rural youths. VLEs provide the other services like electricity bill payment, mobile recharge, various exam application forms filling through online mode etc. which adds to their income and also benefits to the rural citizens. From the study it can be concluded that e-governance has been effectively implemented in the rural areas of Kolhapur. Though through CSCs government is able to create the employment opportunity, there is a need to increase the commission or payment of the VLEs which will help them to operate CSCs viably. There is a need to develop a continuous electricity supply in rural areas. For high speed internet there is a need to develop optical fibre network in rural areas which will increase the internet speed and thus improves efficiency of service delivery by reducing the time required for online transactions. Audit of CSCs should be done at regular intervals to assess their efficiency. Audit should be done considering various aspects like number of government certificates issued, to be taken for service delivery, accuracy, maintenance of hardware and

software, number of pending cases, citizen feedback etc. Audit will ensure the consistency in service delivery process at all CSCs. It will also throw light on the performances of the CSCs and government control on the CSCs.

References

Bhatnagar, S. (2009). *Unlocking E-Government Potential: Concepts, Cases and Practical Insights,* New Delhi: Sage Publications India Pvt. Ltd.

Bhatnagar, S. et al. (2008). Impact Assessment of E-Governance Projects: A Benchmark for the Future, *Vikalpa*, 33 (4), pp: 69-72.

De, R. (2006). *Evaluation of E-Government Systems: Project Assessment Vs. Development Assessment*. [Available at: citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.100.5375&rep=rep1&type=pdf]

Kumar, S., Umashankar, C., Rani, J. & Ramana V. (2010). *e-Governance Applications for Citizens Issues and Framework. International Journal on Computer Science and Engineering*. [Available at: www.enggjournals.com/ijcse/doc/ijcse10-02-07-103]

Naik, G., Joshi, S. & Basavraj, K. (2012). *Fostering Inclusive Growth through e- Governance Embedded Rural Telecenters (EGERT) in India, Government Information Quarterly*, 29, pp: S82-S89.

National e-Governance Plan. [Available at: http://india.gov.in/e-governance/national-e-governance-plan].

Pani, N. & Mishra, S. S. (2009). *E-Governance,* Mumbai: Himalaya Publishing House.

Patil, R. (2010). Study of Progress, *Development and Strategy of Government Organizations regarding e-Governance in Maharashtra State with the special reference to Nasik District*. [Available at: http://hdl.hasndle.net/10603/2019]

Prabhu, C. S. R. (2015). *E-Governance: Concepts and Case Studies*, New Delhi: PHI Learning Pvt. Ltd.

World Bank (2013). *Definition of e-government*. [Available at: http://web.worldbank.org/].

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