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Impact Assessment of e-District State Rollout Project in Mizoram

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Abstract

E-District project is paramount important to radically improve the way districts administration work and provides public delivery services to citizens in their locality. E-District enable the delivery of services which will result in reduction of time taken to avail the services by the citizens, increase transparency, accountability, reduce waiting time for delivery of services and easy access government services to common man with minimum procedural formalities through authorized service centers. The base line assessment was carried out by administering a structured questionnaire for e-District project. The primary purpose of the base line study is to bench mark the impact that has been achieved by computerized delivery of key services of district administration on indicators such as number of trips, waiting time for each trip, proportion of users paying bribes and elapsed time which are the key components of cost of accessing a government service for a citizen. In this study, the Cochran's formula was used to calculate the appropriate sample size of the population based on which a questionnaire was generated and a survey was conducted through online. The results show a positive view on the qualities of governance like level of corruption in the system, adherence to the time frame of the service delivery, level of accountability of government functionaries and the respondents' perception on the overall quality of governance.

Keywords*: Assessment, Service Delivery, E-District, Citizen.*

Introduction

The Government of Mizoram implemented various e-Governance projects under National e-Governance Plan (NeGP) with envision to use Information & Communication Technology to make available Government's services related to basic needs of common

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people and accessible to them near their locality throughout their lives through minimum procedural formalities thereby pursuing economic development. Among the state e-Governance projects, the researcher selected e-District project as districts is the primary delivery channels for government administration to deliver large number of services to the citizens and hence e-District can significantly improve government service delivery. Therefore, the e-District project is paramount important to radically improve the way districts administration work and provides public delivery services to citizens in their locality. E-District project enable the delivery of services which will result in reduction of time taken to avail the services by the citizens, increase transparency, accountability, reduce waiting time for delivery of services and easy access government services to common man with minimum procedural formalities through authorized service centres.

The base line assessment was carried out by administering a structured questionnaire for e-District project. The primary purpose of the base line study is to bench mark the impact that has been achieved by computerized delivery of key services of district administration on indicators such as number of trips, waiting time for each trip, proportion of users paying bribes and elapsed time which are the key components of cost of accessing a government service for a citizen.

Brief Description of e-District Project

e-District is a state mission mode project under the National e-Governance Plan. The project aims to target high volume services and undertake backend computerization to electronically enable the delivery of these services through authorised service centres such as CSCs and EFCs. The districts are the primary delivery channels for government administration to deliver large number of services to the citizens; therefore e-District can significantly improve government service delivery.

The e-District project is to radically improve the way districts work and provides services to citizens and automate the complete workflow and internal processes of district administration with the possibility of seamless integration of various departments to e-enable the delivery of services which will result in reduction of time taken to avail the services by the citizens, increase transparency in the delivery system, improve processing time of applications in district administration, easy access to government services to common man with minimum procedural formalities through authorised service centres. It has been relieved the citizens from the hardship of standing in long queues as well as uncertainly of visiting the government offices many times to get there job done. Turnaround time for most of the common services has come down to days compared to earlier manual processing time of weeks. Now on an average, service is generally delivered within one day depending upon nature of service without any inconveniences and more importantly citizen is given a firm service delivery date with provision for knowing status of their application over Internet. Such service delivery commitment and citizen interface has created a favourable impact at grass root level with growth in demand of such services (Muana L., 2016)

Solution Architecture

The system architecture is developed and deployed in three tier architecture using open source technology on a web platform with MVC architecture. This technology is highly scalable and provides optimal performance. The network architecture is designed based on Mizoram State Wide Area and State Data Centre. The system is integrated with National Service Delivery Gateway (NSDG) and State Service Delivery Gateway (SSDG) for interoperability of other state department services. It is also integrated with NDML Payment Gateway for online payment of service charge, SMS Gateway for SMS advisory, e-Taal for monitoring e-services, and e-Praman for e-authentication.

Detailed Coverage of the Target Population

The e-District project spread geographically across 8 Districts including 23 Subdivision and 26 Block Offices covering the total population of 10.11 lakhs. In order to provide e-District services to the common citizens, the Department of ICT established citizen facilitation centre in every district headquarters, Common Service Centres (CSCs) in 136 places and Rural Information Kiosks in 300 places across the state. Through these centres, the citizens can avail various Government services with minimum procedural formalities and cost.

E-District Service Categories

The e-District project covers eight categories of services with 34 sub-services. More than 2.56 lakhs Certificates/Services have already been issued. These services includes income certificate, domicile certificate, caste certificate, arm license, widow pension, disability and old age pension, RTI, public grievances, inner line permit, etc.

Issues and Challenges during Implementation

There are numerous issues and challenges for successful implementation of e-District project such as lack of ownership, lack of internet connectivity in rural areas, lack of knowledge of prioritization of services, lack of stakeholder communication, lack of business model for sustainability, inadequate training and awareness campaign (Muana L., 2012).

Literature Review

The authors have done extensive literature review with special reference to e-District state rollout project across the country. Most of thee-District portal provides citizen centric services and there are very few literatures available on this topic. So, an attempt has been made to walk through existing e-Governance literatures, to find out key factors influencing citizen's satisfaction.

Rama Rao et al. (2011) have published Book on "e-Governance Assessment Framework". The author provides a framework for assessment covering the key dimensions on which impact on citizens (users of a service) would be measured. The rational framework for assessing e-Governance projects on various dimensions is felt necessary as significant investment of resources to the tune of about Rs. 2,500 crores are going annually into implementation of e-Governance projects. Bhatnagar (2008) has published an article on

"Impact Assessment of e-Governance Projects: A Benchmark for the Future". In this article author has undertaken a nation-wide impact assessment study to build a comprehensive picture of the factors underlying effectiveness of e-Government initiatives in the country. The impact assessment study has provided a large resource base of authentic and verified data collected at the grassroots level from the target user groups. The learning from this study will help pave the path for future e-Governance initiatives and help us understand the key factors affecting the success of e-Governance. Sanyal et al. (2014) have published their article on "E-District Portal for District Administration in West Bengal, India: A survey to identify important factors towards citizen's satisfaction". The authors have extensively studied about e-District portal to manage district administration in more effective way in place of manual system in West Bengal with the others state of India. The primary objective of the study is to explore different important factors in pilot district of West Bengal those are directly involved with the common citizen's satisfaction and contributing to citizen's behavioural change towards acceptance of e-District project, which could be a lesson learn to take more corrective action to roll out e-District services in future.

Baishya et al. (2017) have published their article on "Factors Influencing E-District Adoption: An Empirical Assessment in Indian Context". This study explores the factors influencing the acceptance of e-District services by the citizens in Assam. The author uses semi-structured interviews, focus groups, and a questionnaire based survey through 166 valid data points to validate the conceptual framework. The result of this study gives implication for policy makers to create awareness among the prospective citizens about the benefits of e-District service. The government should concentrate on providing basic training and infrastructure to the citizens for successful adoption of e-District services. Rana et al. (2014) have published their article on "Examining adoption of electronic district (e-District) system in Indian context: A validation of extended technology acceptance Model". The authors explore the potential of e-District project in Bihar for integrated and seamless delivery of citizen's services by district administration through a single window. The research model was validated using a sample size of 304 citizens gathered from four districts namely Madhubani, Aurangabad, Gaya, and Nalanda where the project was in the pilot testing phase. Shadrach B. and Sharma S. (2013) have submitted a report to Ministry of Electronics & IT, Govt of India on "Impact Assessment of Indian Common Services Centres". The authors extensively study the impact of Community Services Centres (CSCs) across the country by providing government services delivery to the citizens at an affordable cost, at an easily accessible place in an integrated manner so as to reduce the gap between the citizen and the government. The services offered by the CSCs were anticipated to span across various sectors, such as telecommunications, agriculture, health, education, banking and financial services, utility payments, livelihoods and entertainment, etc.

Research Methodology

This research work is to study the impact of e-District project in Mizoram by using assessment framework of different key dimensions and indicators such as cost of availing services (no of trips, average travel cost, estimated wage loss, total time lapsed, amount paid as bribe, amount paid to agents), overall assessment (preference of manual versus

computerization, composite rating of improvement through computerization), quality of services (interaction with staff, complaint handling, privacy, accuracy), and quality governance (transparency, participation, accountability, corruption). Based on this assessment framework, a sample questionnaire was prepared for collection of information with a predefined series of questions (Bhatnagar, 2008). Whereas the sampling method is used for selecting group of population to answer the question and the collected information can be generated to represent the whole population interest. The computation of the appropriate sample size is generally considered to be one of the most important steps in statistical study. The author uses the Cochran's formula for calculating sampling size (Cochran, 1977).

For infinite population,

$$n_o = \frac{\mathrm{z}^2\, p(1-p)}{e^2}$$

Where,

n_{O} is sample size when population is infinite

z is the selected critical value of desired confidence level which is 1.96 taking confidence level of 95%.

e is the desired level of precision margin of error which is ±5% (=0.05)

p is the estimated proportion of an attribute that is present in the population which is 50% (= 0.5).

For finite population,

$$n = \frac{n_o}{1 + \frac{(n_o - 1)}{N}}$$

n is sample size when population is finite

N is Actual population size of Mizoram = 10, 97, 206

The authors calculated the sample size of this study is 384 samples but the larger the sample size, the greater the accuracy. It was included 16 authorised service centres comprising of 8 district facilitation centres and 8 common service centres and hence the total sample size become 400 samples. Based on the sample size, a questionnaire was generated and a survey was conducted through online.

Limitation of the Study

The study has certain limitations which are basically applicable to any time bound empirical sample study. Some of the limitation are – (a) sample size that was considered for analysis of research work are relatively small, (b) Due to wide spread of COVID-19 pandemic across the state, it is very difficult to interact with the citizen especially rural in areas which hamper the accuracy of the primary data as many people do not understand fully about the sample questionnaires, (c) Only 4 Authorized service centers have been selected from every district for the purpose of this study which limits the accuracy.

Analysis of Findings from the Project

The primary data was collected from 400 respondents through structured questionnaire and personal interviewed through mobile phone. It was analyzed using different statistical tools and techniques. The results of individual responses are studied according to dimension-wise impact. The dimension-wise impact in this project is an aggregate picture of the impact on each of the following dimensions for e-District project on the basis of the variation in impact across all districts.

Table 1: Impact on key dimensions over all districts with an average data

SN	Dimension-wise	Pre eDistrict	Post eDistrict	Change
1.	Number of trips	4.55	2.31	(2.23)
2.	Average Travel Cost (Rs)	79.93	26.18	(53.75)
3.	Average Waiting time (minutes)	35.67	13.6	(22.07)
4.	Estimated Wage Loss (Rs)	123.3	28.95	(94.34)
5.	Total elapse time in availing service (Days)	6.75	2.66	(4.087)

Source: Field Survey

Number of Trips

Table 1 indicates that in manual process, the average number of trips required to avail the service is 4.55 whereas the average number of trips has been cut down by 2.31 after computerization of district administration. The average cost of each trip is about Rs. 21.00. This cost can be further reduce if CSCs are established near the locality of the citizen.

Waiting Time

The average waiting time across the eight districts was 35.67 minutes in the manual process of delivery. After implementation of e-District, the waiting time has been cut down to 13.6 minutes. The average reduction in waiting time is 22.07 minutes as shown in Table 1. The transition of manual to computerized significantly reduces the time spent on the service, as this factor contributes to total expenses.

Elapsed Time

The elapsed time is the time taken for transaction of the document from application to the final delivery of documents. These gains come from reducing the number of steps involved due to Government Process Re-engineering (GPR) and making each step more efficient. After implementation of e-District, the elapsed time has been cut down by an average of 4.083 days as shown in Table 1 above. The average elapsed time taken to avail the service in computerized process is about 2.66 days, it is situated within optimal range (1-3 days). Computerization has significantly reduced the elapsed time from an average of 6.75 days to 2.66 days.

Direct Cost Saving to Citizens

Table 2: Direct Cost Savings to Citizens

Districts	Computerized	Manual	Savings
Aizawl	145.6	547.8	402.2
Lunglei	133.1	505.7	372.6
Saiha	125.46	517.1	391.64
Champhai	105.75	631	525.25
Kolasib	86.5	350.8	264.3
Serchhip	56.24	469.3	413.06
Lawngtlai	76.35	489.65	413.3
Mamit	42.82	387.05	344.23

Source: Field Survey

The components of total savings are: Travel cost per trip multiplied by number of trips plus wage loss plus proportion paying bribe multiplied by average bribe amount. The response rate for wage loss for manual and computerized delivery may not be comparable because of the time gap between availing services in the two modes by a user. It is also inherently difficult to estimate wage loss for short periods of absence from work. Therefore, the wage loss could be notional in some respondents.

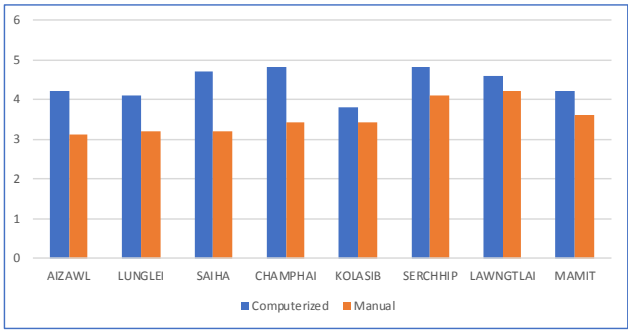
From Table 2, all the districts reported positive savings by using computerized system. The reason for this saving comes from the reduction in the number of trips under computerized. Additionally, the wage loss for computerized reduced significantly due to the presence of authorized service centers on convenient locations.

Perception of Quality of Service

The quality of service plays an enormous role in improving the government efficiency and increasing citizens' satisfaction. In this study, the quality of service was assessed along attributes such as responsiveness of staff, convenience of location of office and work timings, and facilities at the service centre. The following table and graph shows the degree of dimension to which the citizen gets benefit out of the services.

Table 3: Perception of quality of service

DISTRICTS	Manual	Computerized
Aizawl	3.1	4.2
Lunglei	3.2	4.1
Saiha	3.2	4.7
Champhai	3.4	4.8
Kolasib	3.4	3.8
Serchhip	4.1	4.8
Lawngtlai	4.2	4.6
Mamit	3.6	4.2



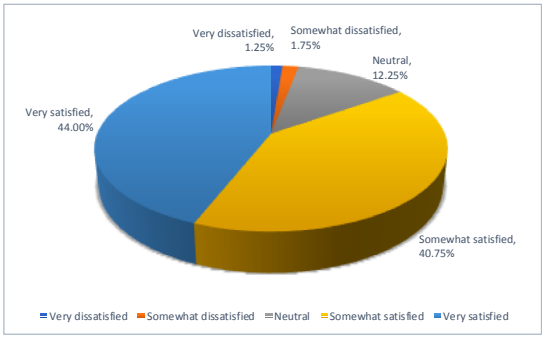
Source: Field Survey

Perception of quality service is an overall comparison of the different factors of service based on a five-point scale. In the table 3, the overall perception of service quality has improved with computerization by about one point on a five-point scale. The service quality averaging 3.52 on manual to 4.4 on computerized indicates a significant improvement in the quality of service.

Satisfaction of Overall Quality Service

Table 4: Satisfaction of overall quality of service

	Frequency	Percent	Cumulative Percent
Very dissatisfied	5	1.25	1.25
Somewhat dissatisfied	7	1.75	3
Neutral	49	12.25	15.25
Somewhat satisfied	163	40.75	56
Very satisfied	176	44	100
	400	100	



Source: Field Survey

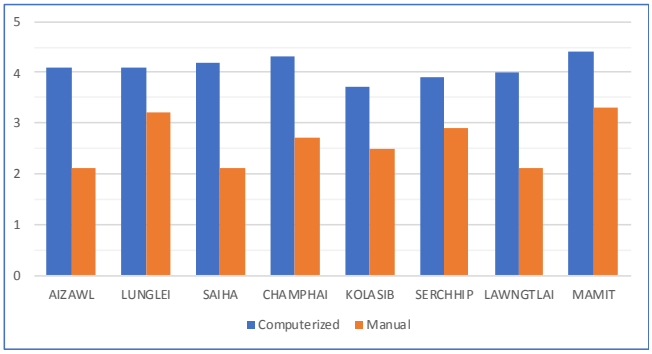
In the Table 4, 84.75% of the respondents are satisfied in the overall quality of service, 12.25% are neutral and 3% are not satisfied with the overall service quality. This concluded that the quality of service is good enough from the perception of the citizens.

Perception of Quality Governance

Quality of governance was assessed on attributes such as transparency, reduced corruption, and fairness of treatment, quality of feedback and level of accountability. In this study, the following tables and graphs illustrated the impact of the e-Governance with special reference to e-District.

Table 5: Perception of quality governance

District	Manual	Computerized
Aizawl	2.1	4.1
Lunglei	3.2	4.1
Saiha	2.1	4.2
Champhai	2.7	4.3
Kolasib	2.5	3.7
Serchhip	2.9	3.9
Lawngtlai	2.1	4
Mamit	3.3	4.4



Source: Field Survey

Perception of quality of governance shows the all-round improvement of the combined factors in quality of governance. In the above table 5, it is seen that the

respondents' perception on the quality of governance improved significantly by an average of 1.47.

Conclusion

The factors contributing to the cost of availing the service has reduced significantly by using computerization. The number of trips has been cut down by 2 on average. Considering at least one trip to the service centre is necessary, the result draws near the ideal condition. The cost of each trip averages about Rs.26 with a saving of Rs. 53 on each trip compared to Rs79.93 on manual system. The total elapsed time for getting the service from the date of application to receiving the document has also decreased. However, the optimal time of receiving the services particularly on certificates is approximately 1-3 days. The results show that the time elapsed is on the upper end of the optimal date. Reduction in time elapsed is important from the point of view of the clients. The perception of quality of service and governance has also shown improvement from "satisfactory" to "good" or from "good" to "very good". An important component of service quality is the error rate which can be measured directly. There was a reduction in error rate from 2 percent to 1 percent. Different factors of quality of governance were also measured. The results show a positive view on the qualities of governance like level of corruption in the system, adherence to the time frame of the service delivery, level of accountability of government functionaries and the respondents' perception on the overall quality of governance. Further studies may be needed to establish the relationship between perception on level of governance and bribery paid.

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