# A Research Study On Capacity Building for E-District Project Implementation in Delhi

Dr. Harshita Bhatnagar[1], Dr. R S P Singh[2]
*Indian Institute of Technology Delhi, Indira Gandhi National Open University, New Delh, India[1,2]*

***Abstract*—: e-District Delhi is a Mission Mode Project under e-Kranti component of Digital India program. In Delhi, its implementation started in late 2015. This paper analysis the results of a survey conducted by the authors in May 2016 on the training received by the employees who deliver online Government to Citizen (G2C) services in Delhi under e-District Delhi Project. The employees were attached to District Magistrate office in each of the 6 selected districts. District Magistrate is the administrative head of a district in Delhi. The vocational skills of employees were studied in detail through the survey. The important outcome derived from results is that the training provided was inadequate for the employees. As many as 75% reported not receiving proper training and 25% received no training at all. Their vocational skills were inadequate to manage day-to-day job responsibilities in the newly adopted online workflow for providing important citizen services. This paper discusses in details the various parameters and their impact on the dependent variable (output of each employee per day) through empirical analysis and hypothesis testing. An interesting outcome of this research is that communication skills training was demanded by employees at all hierarchy levels, 41% of senior professionals also demanded more training on communication skills.**

***Index Terms*— e-District, Vocational Education, Training, Skills, Digital India, e-governance.**

## I. Introduction

Good governance has been the guiding principle for administrators in India since the beginning. The concept of e-Governance is an extension of the Good Governance principles in modern public administration theory and practice. E-governance is an ICT tool to implement good governance. In the context of India, E-Governance is based on the principle of "SMART" governance which is sometimes expressed as Simple, Moral, Accountable, Responsive, and Transparent governance. E-Governance is a tool to achieve such good or smart governance India ushered in the age of electronic governance after National e-Governance Plan (NeGP) was approved by the Government of India in 2006. Describe the 31 MMPs originally defined. Then Digital India in 2014.

e-District Mission Mode Project (MMP) is one e-governance project that offers high volume and important G2C services such as Birth Certificate, Death Certificate, Income Certificate, Caste Certificate and about 30 more services in Delhi through online mode. Applicants can apply for services through online mode without visiting any government office. For some of the services, no physical presence of applicant is needed in the DM office and only backend verifications are done by the government staff as per the standard operating procedure prescribed by the department offering each of the services. This has reduced the turn-around time for G2C services thereby saving time and money. E-District Delhi project has also brought about more transparency in government services.

The District Administration in Delhi is the de-facto enforcement department for all kinds of Government Policies and exercises supervisory powers over numerous other functionaries of the Government. e-District pilot project was implemented during 2008-2009 in 14 states across India. The aim of e-District project is to provide those frequently accessed high-volume G2C services for example, Domicile Certificate, Caste certificate, Income certificate, Birth and Death certificate. e-District MMP used backend computerization to e-enable delivery of services through Common Service Centres (CSCs) or counters at District Headquarters or from anywhere though internet. This has been done by each state by optimally leveraging the ICT infrastructure created in the form of SDC, SWAN, SSDG, CSC and the other ICT components created by the State under various initiatives and harmonize it with the e-District MMP. In 2012 the e-District project was approved by the parliament for roll-out across India. After many states implemented this project, Government of National Capital Territory of Delhi (GNCTD) decided to implement it in Delhi. Government to Citizen Services being delivered through this MMP include:

- **Certificates:** Creation and distribution of certificates for income, domicile, caste, Birth, Death
- **Licenses:** Arms Licenses, cinematography permission
- **Labour Department approvals:** Installing a lift for personal use etc.
- **Social Welfare Schemes:** Issue of old age pensions, family pensions, widow pensions
- **Filing RTI:** Online filing and receipt of information relating to the Right to Information Act.
- **Utility Payment:** Payments relating to electricity,

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F. A. Author is with the Indian Institute of Technology Delhi, New Delhi, India (e-mail: harshita.bhatnagar@iird.iitd.ac.in).

S. B. Author is Director, School of Vocational Education and Training, Indira Gandhi National Open University, New Delhi, India (e-mail: rspsingh@ignou.ac.in).

water bills, property taxes and so on**.**

Though as a late adopter, in Dec 2015, Government of NCT Delhi implemented e-District Delhi project at all its district HQs. e-District Delhi project involved backend development to enable delivery of high volume Government to-Citizen(G2C) services in the district through online medium. Its aim was to enhance the efficiency, transparency, reliability and effectiveness of G2C services at affordable costs. This provided convenience to the citizens in Delhi by allowing them to apply for many important services from the comfort of their home using internet. e-District project resulted in efficient electronic workflow system for District Administration on one end and convenience to citizens on the other end. E-District services can be availed from home, office or District Administration offices.

The authors have selected e-District Delhi Mission Mode Project to study in detail the training provided to employees to deliver G2C services through e-District Delhi Software. How effective is the training, what are the content of training, what are the gaps and how those training can be improved to ultimately improve the citizen experience while demanding online G2C services from the Delhi Government.

## II. Review of Literature

The fact to be noted is that why some e-governance projects are successful while others are not. Some are implemented with time lines, some are delayed by few years and few others are delayed by many years. The work of previous researchers (Gupta, 2006; Bhatnagar,2004, Heeks,2002; Bagga et al, 2009) suggests that one of the important factors that is responsible for the failure in e-governance projects is inadequacy in terms of human resources. The major human resources related reasons identified for failure are: lack of planning, omnipresent corruption in governmental offices, lack of accountability, misleading policies, etc. Further, e-governance in India has been implemented more as technology enhancement tool rather than an essential tool to achieve good governance.

Skill gap in the human resources or teams deployed on e-governance projects has remained a detrimental factor in the success or failure of e-governance projects in India and elsewhere (Heeks, 2002).

The term electronic governance has been defined in different ways by different researchers and practitioners. It is important to note here that the terms "e-government" and "e-governance" are often used interchangeable by the users (Munshi, 2008; Sheridan and Riley, 2006). Broadly, both imply the use of Information and Communication Technology (ICT) tools for various government processes; either internal or external (citizen services). Whereas some researchers opine that "e-government" is a narrow term and refers to information technology usage by the government for internal processes; whereas "e-governance" is a broader term that includes processes not just internal to government but also those in which the external stakeholders also participate such as private business entities or the citizens. Examples are tax filing by business firms and electronic voting by citizens or participating in electronic referendums to decide issues of national importance. The importance of e-governance has increased even more in the recent years owing to high rate of internet penetration. As per Internet World Stats (www.internetworldstats.com), India accounts for 22.8% of internet users in Asia and the internet penetration rate of 34.1% in Dec 2017.Hence the need for "e-governance" services has also increased in Asia including India.

Very few researchers have focussed on human capital development for e-governance. Noteworthy work was done by Andersson et al (2005) and Ndou, (2003). Both of them found that **hybrid human capacities needed for electronic governance initiatives was lacking**. These were related to technological, management and financial areas. Similarly, Brown and Brudney (2004) and Heeks (2003) found that change management area was also a big challenge for successful implementation of e-governance projects. They found that since e-governance projects involve a large number of stakeholders, it brings about a lot of diversity of users in organisations. Therefore, **changing the attitude and behaviour of employees towards citizens; their own inertia to change and internal conflicts due to bureaucratic structures were found to be challenges difficult to overcome.**

## III. Problem Statement and Hypotheses

### *A. Problem Statement*

To study the vocational training given to e-District Delhi employees for delivering efficient government to citizen (G2C) services and find the skill gaps.

### *B. Hypotheses for Research Study*

*1)* ***Null Hypothesis 1($H_{01}$):*** *There is no significant difference between the number of applications processed per day under e-district Delhi project before and after training on software.*

*2) Alternate Hypothesis 1: There is a significant difference between the number of applications processed per day under e-district Delhi project before and after training on software.*

*3)* ***Null Hypothesis 2 ($H_{02}$):*** *There is no significant difference between the perception about ease of use of software between Permanent vs. Contractual employees for e-District Delhi project.*

*4) Alternate Hypothesis 2****:*** *There is a significant difference between the perception about ease of use of software between Permanent vs. Contractual employees for e-District Delhi project.*

*5)* ***Null Hypothesis 3($H_{03}$):*** *There is no correlation between the pre-employment IT training and the number of applications processed (output) by each employee working on e-District Delhi Project.*

*6) Alternate Hypothesis 3: There is a correlation between the pre-employment IT training and the number*

*of applications processed (output) by each employee working on e-District Delhi Project.*

## IV. Methodology

Current study focusses on the training and capacity building efforts targeted towards employees in the government departments. To achieve the objectives of research two e-governance projects in Delhi were selected – e-District Delhi and Passport Seva. This purposive selection was done as both of these projects deliver high volume of services every day in Delhi.

A primary survey was conducted among 6 out of 11 administrative districts of Government of Delhi to seek responses on training programs, methods of training, training infrastructure, issues and challenges faced by employees while receiving training to efficiently deliver online G2C services to citizens under e-district project.

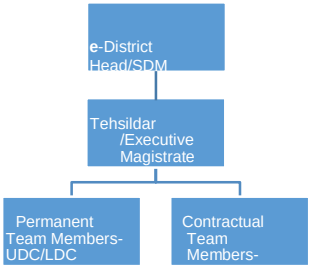


Fig. 1. Organisation Structure of e-District Delhi Teams

Primary data was collected through distribution of paper-based survey questionnaire. Maximum responses were obtained using this mode. Since survey was self-administered, the researcher gave a brief introduction about the purpose of survey before distributing the questionnaire. The survey contained close-ended questions. The respondents were selected randomly at the public-facing level with designations of Data Entry Operators (DEO), Lower Division Clerks (LDC) and Upper Division Clerks (UDC). A total of 89 valid responses were received. Data analysis was done using SPSS software. The survey Questionnaires were distributed to 120 respondents, 89 valid responses were received, which is 74.1% response rate.

## V. Results and Discussion

Six administrative districts of Delhi selected for data collection were: Central, East, West, North, South and New Delhi. The table that follows gives the number of respondents from each district. A total of 89 respondents gave valid responses. The respondents per district varied from 10 in East Delhi District to 18 in New Delhi and West Delhi District. Table 1 gives the valid number of respondents from each Delhi District.

Table I: Valid number of respondents from 6 Delhi districts

| | FREQUENCY | PERCENT | VALID PERCENT | CUMULATIVE PERCENT |
|---|---|---|---|---|
| Central Delhi | 14 | 15.7 | 15.7 | 15.7 |
| East Delhi | 10 | 11.2 | 11.2 | 27.0 |
| New Delhi | 18 | 20.2 | 20.2 | 47.2 |
| North Delhi | 16 | 18.0 | 18.0 | 65.2 |
| South Delhi | 13 | 14.6 | 14.6 | 79.8 |
| West Delhi | 18 | 20.2 | 20.2 | 100.0 |
| Total | 89 | 100.0 | 100.0 | |

e-District Mission Mode Project (e-District MMP or e-District project from here onwards) was conceptualized at the Central government level in 2008-09. It was implemented in 16 pilot districts situated in 3 Indian states from 2010 to 2011. In the year 2012, the project received the approval from Central government for its roll-out in all States and Union Territories of India. However, Government of NCT of Delhi (GNCTD) was a late adopter of this project. GNCTD started the implementation of the project in June 2015. By Dec 2015, the project was under implementation. Authors surveyed some of the earliest districts in Delhi during April 2016 and in early 2017 and made the following observations on Trainer profile for e-District Delhi project in 6 administrative districts of Delhi.

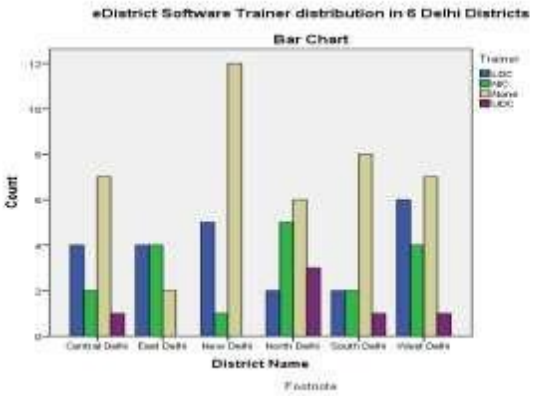


Fig. 2. Trainer profile in 6 districts of e-District Delhi project

The training or capacity building program under the e-District Delhi project has been designed to enable the officials/staff working in the district administration to cope up with necessary changes with the deployment of ICT systems in their day to day working as well as in the delivery of electronic services in time bound manner. The following modules were delivered over 2 working days.

Table II: Details of modules for e-District Delhi Training

| *S.No.* | *Training Module* |
|---|---|
| 1 | Basic Computer Training |
| 2 | E-District Application Training |
| 3 | e-District Process training |

| | |
|---|---|
| 4 | Usage of Digital Signature |
| 5 | Filling of Applications (DEO) |

From table 2, it is clear that no soft- skill training is provided to public-facing employees under e-District Delhi project.

*A. Respondents' Age Distribution*

Out of the total 89 respondents, 85% were within the age bracket of 20 to 35 year. Mean age being 27.46 years.

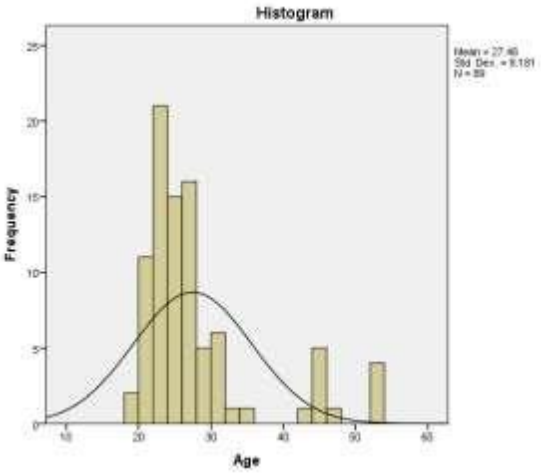


Fig 3: Frequency Distribution of Age of Respondents

*B. Gender Distribution*

A highly skewed gender ratio was observed among the respondents with 83.1% males and 16.9% female employees working under e-District Delhi project. The researcher explored the reason for extremely small percentage of female employees and through qualitative discussions with the respondents and their supervisors, came to know that fewer female applicants apply for DEO positions in District office as the work environment is not perceived to be conducive by female applicants or employees.

TABLE III: GENDER DISTRIBUTION- E-DISTRICT DELHI EMPLOYEES

| | FREQUENCY | PERCENT | VALID PERCENT | CUMULATIVE PERCENT |
|---|---|---|---|---|
| **Female** | 15 | 16.9 | 16.9 | 16.9 |
| **Male** | 74 | 83.1 | 83.1 | 100.0 |
| **Total** | 89 | 100.0 | 100.0 | |

*C. Duration of Employment (In Months)*

The duration of employment of respondents varied between 2 months to 12 months. This was because when the primary data was collected in May 2016, the e-District project launch in Delhi was less than 1 year-old. Hence most of the staff was hired on an average 5.84 months back.

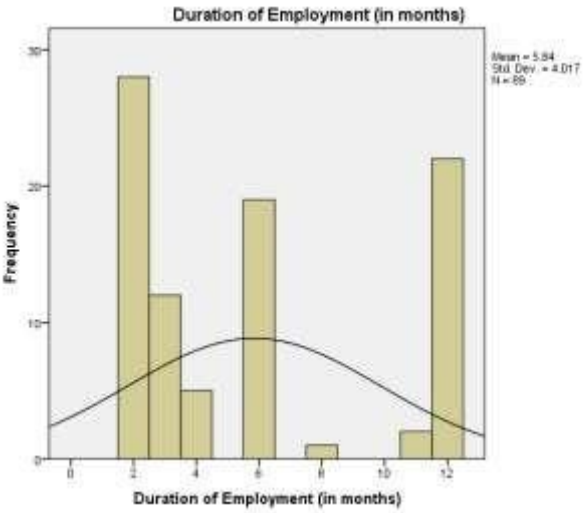


Fig 4: Respondents vs. Employment Duration frequency chart

*D. Designation of Respondents*

The respondents held one of the three designations: DEO, LDC or UDC. Maximum (85.4%) held DEO designation. This also implies that as many as 85.4% were on a contractual employment.

TABLE IV: DESIGNATIONS OF RESPONDENTS

| | FREQUENCY | PERCENT | VALID PERCENT | CUMULATIVE PERCENT |
|---|---|---|---|---|
| DEO | 76 | 85.4 | 85.4 | 85.4 |
| LDC | 8 | 9.0 | 9.0 | 94.4 |
| UDC | 5 | 5.6 | 5.6 | 100.0 |
| Total | 89 | 100.0 | 100.0 | |

## VI. RESULTS OF HYPOTHESIS TESTING

*A. **Hypothesis 1** ($H_{01}$): The tables that follow provide the mean value of number of applications processed per day by each employee to be 9.04 and 12.76 before and after training.*

TABLE V: MEAN VALUES BEFORE AND AFTER TRAINING

| e-District Training | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| 0 (No Training) | 23 | 9.04 | 1.331 | 0.277 |
| 1 (After Training) | 66 | 12.76 | 3.028 | 0.373 |

The T-test results for testing the significant difference between the means before and after training of are as stated in the Table 6.

TABLE VI: T- TEST FOR COMPARING MEANS BEFORE AND AFTER TRAINING

| | t value | df | | Sig.(2-tailed) | Mean Difference | Std. Error Difference |
|---|---|---|---|---|---|---|
| Equal variances assumed | 5.677 | 87 | | .000 | -3.714 | 0.654 |

T-value is 5.677, which is significant 0.000 level. This means that **there is a significant difference between the number of applications processed per day under e-district Delhi project before and after training on software**. Hence Null Hypothesis 1 (**$H_{01}$**) is rejected and Alternate Hypothesis 1 is accepted. Training has a positive impact on the increase in efficiency of employees.

*B.* ***Hypothesis 2 ($H_{02}$):*** *states that there is no significant difference between the perception about ease of use of software between Permanent vs. Contractual employees for e-District Delhi project. Using simple percentage wise response, following results were obtained:*

TABLE VII: *PERCENTAGE VALUES FOR EASE OF USE OF E-DISTRICT SOFTWARE FOR PERMANENT AND CONTRACTUAL EMPLOYEES*

| Count (Percentage) | | | | | |
|---|---|---|---|---|---|
| | | e-District Software easy to use | | | Total |
| | | Easy | | Difficult | |
| Employment Status | Permanent | 49(100%) | 19(38.8%) | 15(30.6%) | 49(100%) |
| | Contractual | 40(100%) | 13(32.5%) | 10(25%) | 40(100%) |
| | Total | 89(100%) | 32(36%) | 25(28%) | 89(100%) |

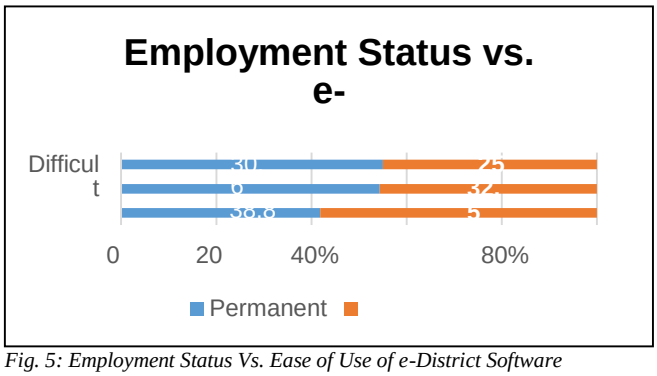


*Fig. 5: Employment Status Vs. Ease of Use of e-District Software*

We reject the null hypothesis $H2_0$ and go with alternate hypothesis $H2_1$. This means that the type of employment (regular or contractual) has a direct bearing on the way employees interpret the ease of using e-District software. From the above table it is clear that **more contractual employees find it to be easy to use than the permanent employees.**

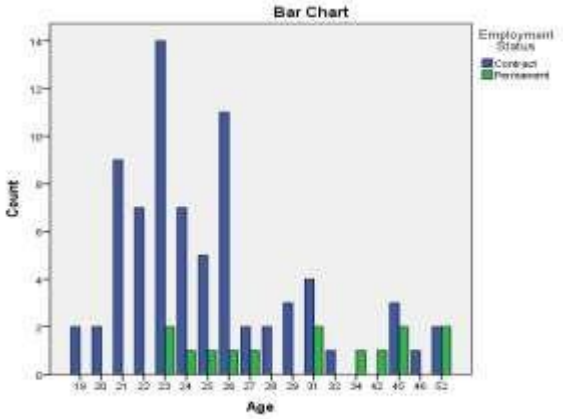


Fig. 6: Age vs. Employment Status

One of the reasons is the age factor. Researchers have recorded the age and found that most of the permanent employees are in the higher age group of 40-50 years and they find the software usage difficult as compared to contractual employees who are in the lower age group of 20-30 years.

***C.*** *Hypothesis 3: The Pearson correlation coefficient (r) for Pre-employment IT training and no. of applications processed in e-District System. per day (r= 0.519), is a positive value. Hence H03 is rejected. Hence those employees who have received pre-employment IT training have a higher efficiency than those who have not received any pre-employment IT training. This is independent of the hands-on (vocational) Software training provided under the e-District Delhi project. This means* ***the higher the duration of the pre-employment IT training the higher is number of applications processed by the employee in e-District system.***

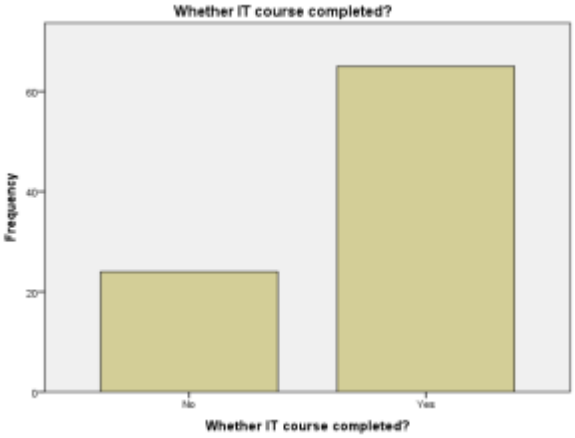


*Fig. 7: Pre-employment IT course completed: e-District Delhi project*

**73% of respondents had completed an IT or computer course before joining e-District project.** This proves that the youth today is good in basic IT skills by undergoing some form of IT training at a young age before their initial employment.

## VII. Conclusion

From the discussions and the results of hypothesis testing described in the previous paragraphs, it can be concluded that the training provided under e-District Delhi project was not of appropriate quality. Some clear gaps identified through primary survey were – 25% employees did not receive any formal training on e-District Software, no training on soft skills was included in the e-District Training, no evaluation of training was conducted by the training providers either through written test or evaluation of practical knowledge. Hence there is a scope to improve e-District Delhi training module by following measures: making the training compulsory, include more hands-on training, and increase the duration from 1 week to 2 weeks, including soft-skills training such as communication skills and queue management skills and finally including a scientifically designed evaluation method at the end of training and awarding a certificate to successful trainees and feedback to all trainees. Those trainees who are unable to score a minimum threshold score in final evaluation should be made to undergo revised training till they are skilled enough to deliver efficient G2C services through e-District Delhi portal.

Note: It is Requested to use color printing for Fig.2, Fig.5, and Fig 6.

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