

Implementation of E-office: A Pragmatic Study on Employees Attitude in R&D Institutions of Power Sector in India

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Abstract

Eoffice is a technology that has emerged in India as open source software, and the National Informatics Centre (NIC) provides a comprehensive variety of Information and Communication Technologies (ICT) to make Eoffice practice and implementation more convenient for everyone. Because it serves as the backbone of the networking infrastructure, it has given outstanding services to all significant government organisations across India. To examine the relationships between various aspects of technology, their integration, and the provision of services to society, electronic office modules (EOMs) can be utilized in research contexts. The study is exploratory in nature and uses a structured questionnaire. Keeping in view the small population at 10% margin of error and 95% confidence level a sample size of [n=67] users of Eoffice application were determined using the Cochran formula. The questionnaires were distributed through online medium. Descriptive statistics are used to summarize the data collected using the SPSS Software. As part of an effort to better understand employee attitude toward Eoffice implementation, it has been found that employees are generally supportive of the initiative. It is possible that this attitude has played a key role in the success of the Eoffice implementation at Central Power Research Institute (CPRI). According to the confirmatory factor analysis, Eoffice adoption is influenced by both positive and negative attitudes. However, the positivity serves as a catalyst for embracing Eoffice and bringing together manufacturers, academics, and government research institutes on a single platform to accomplish this goal.

Keywords: Attitude, Eoffice, e-Governance, ICT

1.0 Introduction

The implementation of Egovernment programs has spread across the country for more than ten years. While some states were very successful and in other states, others did not achieve the desired results or did not stand the test of time, and some were not tried at all. The country's e-governance strategy was shaped by lessons

learned from several programs that both succeeded and failed to achieve their goals. There was broad consensus that a comprehensive plan was needed for the country-wide e-governance initiative. This became increasingly clear as EGovernment was implemented across all the various arms of the National eGovernance Plan (NeGP). The vision of NeGP is to "make available to the public in the region all government services through common points

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of service, ensure the reliability, efficiency and transparency of such services at affordable prices, and meeting the basic needs of the common man". The benefit of using this strategy is that it saves money on infrastructure, improves interoperability, allows for the creation of a unified vision for governance among citizens and significant cost reduction. This led the government to develop the National eGovernance Plan (NeGP), which would be applied throughout the country¹.

In total, NeGP has 27 Mission Mode Projects (MMPs), of which nine are in the Centre, eleven are in the States and seven are fully integrated. NeGP has assigned Mission Mode Projects (MMPs) to Ministries and Departments, which are divided into three categories. Line ministries and departments are responsible for the implementation of the MMPs given to them by the NeGP. Mission mode initiatives are designed to be owned and operated by the central government, state governments and integrated projects, among others. Employees from each department work together within a set time frame to complete the paperwork required for a given project, either alone or with the help of a consultant. Implementation of National MMP is the responsibility of state governments in situations where central assistance is also required. National MMPs are implemented according to the general direction of the relevant ministries².

With the advent of Information and Communications Technology (ICT), the Indian government has recognized the need to modernize the Central Government Offices and streamline their operations. It has been decided to implement the Eoffice Mission Mode Project by the DAR&PG (Department of Administrative Reforms and Public Grievances) in order to increase the efficiency of government operations and service delivery mechanisms in the country. Among the objectives of this product are workflow and rule-based file routing, rapid search, and retrieval of files, digital signatures for authentication, forms and reporting components, and overall system usability.

The vision of Eoffice is to make communication and interaction between & within governments more efficient and transparent than before. The purpose of Eoffice is to facilitate, accelerate, simplify and facilitate the use of public authority, making it even easier for the public. Because Eoffice is based on an open architecture, it can also be used as an open source framework and standard

reusable product in government agencies at the central, state and regional levels and across the private sector. The product acts as a central hub for several separate systems and functions³.

The following are some of the benefits of using Eoffice:

- It will be much easier for everyone to track the status of files and always be aware of their location.
- It is now easy to determine who is responsible for the quality and timeliness of choices because of the higher degree of accountability.
- Make certain that your data is protected and secure.
- Make it feasible for innovative methods of doing things to be developed and implemented at the federal level.
- Employee productivity can be increased by removing unproductive tasks and responsibilities from the workday schedule.
- The work culture and ethics of the central government need to be improved significantly.

The Ministry of Mines, along with its Attached / Subordinate offices, CPSEs, and autonomous bodies, has welcomed the commendable initiative of the National E-governance Plan (NeGP) programs from the Government of India, envisioning a Digital India. In the course of the "Special Campaign 3.0," which sought to improve scrap disposal, record management, and the disposal of references received from MP, PMO, IMC, State Government, and public grievances. During "Special Campaign 3.0," the Ministry of Mines took up the task of converting the physical files into electronic files. About 11033 scanned files have been uploaded as e-files to E-office thus far, reaching the goal completion rate of 100%¹³.

2.0 Review of Literature

Perceptions of Technological Development despite the fact that technology is ubiquitous and essential, predictably, most research on public attitudes toward technology has focused on computers and Information Technology (IT), rather than technology in general. Technology as a whole is difficult to understand these days for many people who see information technology as an instrument or a set of tools that can be used to their advantage. Personal benefit and social benefit are

more intertwined than previously thought. Research on technological views during the past few years have been undertaken, and the following is a brief summary of such research. Research on general technology by Goldman et al. indicated a lack of studies on people's attitudes on technological progress. Research participants were asked to rate their opinions on a range of measures, including: "I would rather read popular mechanics than life." In addition, they examined the relationship between broad technological views and traditional college degrees⁴. For example, 'global mechanisms', 'mechanical curiosity', 'favorable craftsmanship', 'alienation', and 'spiritual benefits of technology' are all expressions of attitudes towards technology, including 'global mechanisms' (both positive and negative). A scale that evaluates various aspects. Global attitudes towards technology), "mechanical curiosity" (mechanical competence and interest in machines), and "favorable manual labor" (deus ex machina). According to the study, the main difference between science majors and non-scientific majors is their curiosity about machines and their love of handicrafts. They concluded that "favorable attitudes toward tools" were the primary determinant of technology use. According to Ray *et al.*⁵, after a review of an earlier computer-related research by Lee⁶, and they extended this result to all sorts of technological equipment. More recent research on technology attitudes has led to the creation of a set of metrics that may be used to identify a person's or company's degree of "technical readiness."⁷ four sets of a scale are included in the suite: optimism (a favorable view of technology), innovativeness (the tendency to be a technological pioneer), discomfort (a feeling of helplessness before technology), and insecurity (a feeling of being frightened by technology) (distrust of technology). Forrester Research's largest survey on technology adoption to date drew more than 250,000 answers from North American consumers, with over 250,000 responses. They found that three things were critical in their investigation: attitude, income, and motivation. In their research, they found that people's opinions regarding digital technologies like mobile phone, computers, and digital television had a major influence on their uptake. A consumer's attitude toward technology is more crucial than demographic factors like ethnicity and gender when it comes to determining whether or not they would embrace the internet, according to the authors of a

new study. According to Modahl⁸ technological progress has a polarizing effect on society. A person's attitude toward technology is influenced by his or her own personal preferences. Technology optimists are excited about technology, whereas technology pessimists are apprehensive about it. They conclude that over half of all Americans are pessimists about the future of technology.

Disaster preparedness has proven to be one of the most challenging aspects of Egovernment implementation, and the use of Information and Communication Technology (ICT) to improve service delivery has become an important part of service delivery in recent years. Egypt's readiness and concern for e-governance and barriers to e-governance implementation are examined⁹. As a rapidly developing country, Egypt places a high priority on improving Egovernment services, with a focus on areas such as public access, investment, and business. Egypt's information technology sector has been bolstered by a number of mechanisms for the Information Society, including e-Business preparedness, e-Health readiness, e-Learning readiness, Egovernment readiness, and e-Culture ready. This centre was designed to help the Egyptian information technology sector as a whole. It also developed integrated programmes including Enterprise Resource Planning, Governmental Services Development, Institutional Development, and National Databases to ensure that information is up-to-date and available at the proper time of need. Three kinds of hurdles that Egovernment services confront are identified: legal and regulatory, technological, and organizational. The writers provide light on these issues. They also offer advice on how to deal with issues on cultural, social, economic, and bureaucratic difficulties towards transforming Egypt into a united strategic future. An examination into Airlangga University's Eoffice deployment was carried out by Mannan and colleagues¹⁰, opined that many businesses were finding it difficult in retrieving a large number of data as this was a major hurdle and needed substantial amount of time.

Faculty of Vocational Studies at Indonesia's Airlangga University in Jakarta deals with a problem remarkably similar to the one described above. They've been having problems getting papers back and keeping them safe. As a solution, the University developed the Electronic Document Management System (EDMS), commonly known as Eoffice, which makes it simpler to digitize

paper documents. Auditing, security, classification and indexing are just a few of the features that make up an Enterprise Document Management System (EDMS). The authors used the statistical application SPSS and a quantitative descriptive approach to gather information on how employees use Eoffice. In the case of Sindhudurg District in Maharashtra's Gram Panchayat administration, Singh¹¹ claimed that the Sindhudurg District's key objective was to give residents with more dependable and speedier service in an open and transparent way. Business Process Re-engineering (BPR) was used in combination with the National Informatics Centre through its (ICT) Information and Communications Technology Network (NICNET) to implement Eoffice. For example, electronic files (eFile), Knowledge Management Systems (KMS), tours (etour) and leave (eleave) were all integrated in the Eoffice system as components of the electronic office system. An uphill battle confronted the Administration to ensure smooth communication and integration, the project was finished in one and a half years, on budget and on time. Eoffice deployment enables for speedier case adjudication, continual monitoring of pending cases,

particular filing and receipting, as well as a single directory of workers. The author has noticed an increase in the District's usage of Eoffice and believes that the District has solidified its position as a leader in administrative efficiency. As a result of this, a paperless office is now achievable.

In this study, which is based on an analysis of reports that are available in the public domain and collection of primary data from employees, we discuss the attitude of employees towards Eoffice and impact towards the usage of Eoffice relating to different modules offered by Eoffice to businesses, citizens, and government.

3.0 Objectives of the Study

- To study the attitude of the employees towards the implementation of Eoffice.
- To analyze the impact of Positive and Negative Attitude on Acceptance of Eoffice.

4.0 Research Methodology

Table 1. Research methodology

Research Type	Exploratory research
Data collection tools	Questionnaire Questions related to Attitude towards implementation of new technology which was adopted from Rodway, 2022 ¹² , (LIKERT Scale-5 Points where 1 Strong Disagreement and 5 Strong Agreement). The scale validity and reliability is checked and the CA 0.871, CR 0.982, AVE 0.611 which are within the criteria of CA and CR= >0.800 and AVE>0.500 and CR>AVE
Data collection Techniques	Interviews (Where ever possible) and Google forms
Sampling: Population	As per the official records of Central Power Research Institute (CPRI) there are 523 permanent employees working across various units Out of 523 employees, presently 237 employees (USERS) have been provided with Eoffice Modules, which includes both Technical and Non-technical staff.
Determination of sample size	For the Known Population Cochran Formula has been used 95% confidence level & 10% margin of error, sample size of 65 respondents is chosen for study & 70 questionnaires were distributed
Sampling Frame	237 employees (USERS) have been provided with Eoffice Modules which includes both Technical and Non-technical staff.
Sampling Technique	Convenient sampling

Table 1 Continued

Sample	70 Questionnaires were distributed and the study selected 67 valid responses.
Pilot Study	The questionnaire was pre tested with 5 employees and slight changes were made to the questionnaire
Plan of Analysis	Descriptive statistics SPSS Ver 25 Confirmatory factor analysis- Amos Ver 22
Hypothesis	H1 There is a significant impact of both Positive and Negative attitude on Acceptance of Eoffice

5.0 Results and Discussion

5.1 Demographic Profile of the Employees

23(34.3%) employees are in Technical field and 44(65.7%) are in Non-technical field. 42(65.7%) are Male and

25(37.3%) are Female; this could be because there is predominance of Male in the Government Workforce. Minimum qualification for Government Jobs in CPRI is Graduation and 20(29.9%) were graduates, 36(53.7%) were Post Graduates. 11(16.4%) have completed their

Table 2. Demographic profile of the employees

Designation		
Particulars	Frequency	Percent
Technical	23	34.3
Non-Technical	44	65.7
Total	67	100.0
Gender		
Particulars	Frequency	Percent
Male	42	62.7
Female	25	37.3
Total	67	100.0
Educational Qualification		
Particulars	Frequency	Percent
UG	20	29.9
PG	36	53.7
Ph.D	11	16.4
Total	67	100.0
Service (No. of years)		
Particulars	Frequency	Percent
1to 5	29	43.3
6 to 10	18	26.9
11to 20	9	13.4
> 30	11	16.4
Total	67	100.0

Doctorate degree. 29(43.3%) have a service of 1 to 5 years, 18(26.9%) worked for the Organization from 6 to 10 years. 9(13.45%) respondents had 11 to 20 years of experience and 16.4% above 30 years of experience in serving CPRI.

The demographic profile of the employees indicates that the CPRI workforce who involve in use of Eoffice are in Non-technical fields and well Qualified to understand the working of the Eoffice which is an advantage for the interpretations of the study.

5.2 Attitude of Employees towards Eoffice Implementation

The attitude of the employees towards Eoffice implementation could be both Positive and Negative. The results of the descriptive statistics show that for all positive attitude statements the mean scores are above 3.50 indicating agreement to the statements. The Employees are extremely interested to work with

Table 3. Attitude of employees towards Eoffice implementation

Statement	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic
I am interested in using Eoffice in my day to day office work	4.22	0.670	-0.605	0.673
There are many beneficial applications of Eoffice	4.09	0.690	-0.688	1.216
Eoffice is exciting	3.85	0.821	-0.729	1.259
Eoffice would be better than an employee in many routine jobs	3.72	0.884	-0.758	0.592
I am impressed by what Eoffice can do	3.73	0.809	-0.529	0.960
Eoffice can have a positive impact on employees work output	3.85	0.892	-0.886	1.549
For routine transactions, I would prefer Eoffice than co-ordinate with colleagues	3.58	1.047	-0.633	0.019
The training availed by me helps me to use Eoffice comfortably	3.49	0.943	-0.368	0.138
I feel I should possess a thorough knowledge of Eoffice manuals to get well versed with Eoffice usage	3.61	0.778	-1.183	1.448
I feel that apart from me, my fellow colleagues also need to be well versed in Eoffice modules	3.81	0.609	-0.710	1.372
I think Eoffice is difficult	2.33	0.960	0.985	1.138
I am uncertain about the future use of Eoffice	2.79	1.038	0.184	-0.305
Eoffice will be more prominent than the employees	3.27	1.009	-0.296	-0.010
I think Eoffice make many errors	2.45	0.989	0.440	-0.075
I am afraid the importance of Eoffice will be more than me	2.31	0.891	0.257	-0.593
Lack of assistance from my fellow colleagues discourages me to use Eoffice effectively	2.60	1.115	0.525	-0.285
Valid N (listwise)				

Eoffice and are aware of the beneficial application in Eoffice with mean score of 4.22 and 4.09 respectively. For all negative statements related to Eoffice the means scores are below 3.00 indicating disagreement from the employees. The overall mean analysis shows that employees are overwhelmed with the Eoffice application, agree for positive attitudes, and deny all the negative attitudes related to Eoffice implementation. The standard deviation for Positive attitude statements is below 1.000 indicating least variation in responses from its mean and in case of negative attitude the standard deviation in above 1.000, which shows there is large variation in opinion of the employees. The Skewness and Kurtosis are with the acceptable criteria as seen in Hair *et al*, 2007. For Positive attitude statements the Skewness is negative indicating the responses are inclined towards the right (Agreement) and for Negative attitude statements the skewness is positive and inclined towards the left (Disagreement). The kurtosis is within the limit of -3.00 and +3.00 indicating Normal distribution of the data.

Testing of Hypothesis

H1- There is a significant impact of both Positive attitude and Negative attitude impact on Acceptance of Eoffice

Model Fit

The model fit estimates for the model Positive attitude and Negative attitude impact on Acceptance of Eoffice show that the Chi-square / df (χ^2 / df) is within the

acceptable range of 3 (2.955). The Goodness of Fit (0.871) are higher than the attributes proposed of 0.800. In the boundary estimation, RMR is 0.071, which is supposed to be below 0.10. The model is an over- recognized model and has nearly appropriate measures of fit. In addition, the descriptive statistics measure Kurtosis proves that the data is normally distributed and well suited for SEM analysis.

5.3 Structural Relationship between Variables Unstandardized, Standardized and P values

The Table 4 and Figure 1 demonstrate the effects of Positive attitude and Negative attitude on Acceptance of Eoffice. The first column displays the unstandardized regression estimates, which represent the respondent's different mean values. The second column displays the standardized regression estimates, which represent the difference in the Standard deviation values of the respondents. The result of this formula reflects the amount of change in the dependent variable owing to the independent variable.

The results of SEM Analysis illustrates (Relationship between variables unstandardized estimates)

- When Positive attitude goes up by 1, the Acceptance of Eoffice goes up by 16 times and this relationship is statistically significant at $p < 0.05$
- When Negative Attitude goes up by 1, the Acceptance of Eoffice goes down (Negative

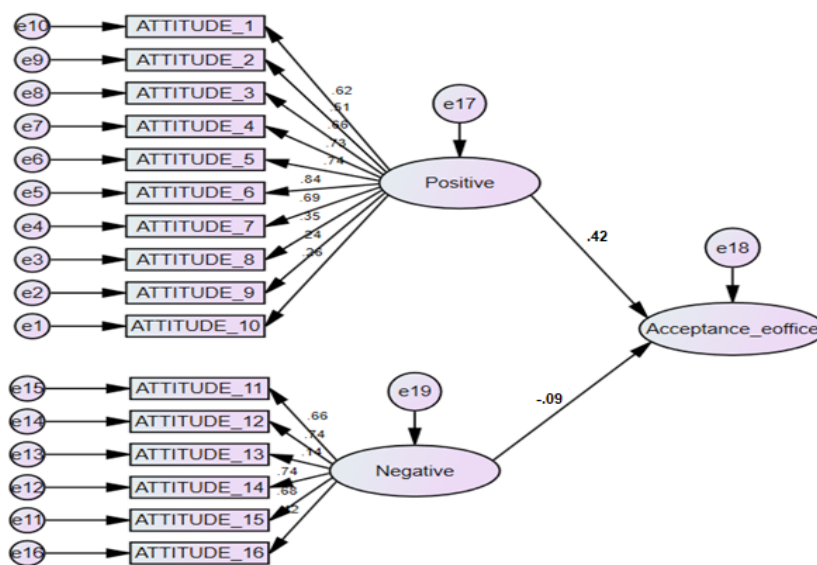


Figure 1. Pictorial representation - Attitude on Acceptance of Eoffice.

Table 4. Structural relationship between Variables Unstandardized, Standardised and P values

		Unstandardized	Standardized	P value
Acceptance Eoffice	Positive	0.165	0.421	0.000
Acceptance Eoffice	Negative	0.113	0.093	0.000

estimate) by 11 times and this relationship is statistically significant at $p < 0.05$

- (Ranking of the factors based on Standardized estimates)
- The factor with highest standardized estimate is Positive attitude with beta value 0.42, which is the most significant factor for Acceptance of Eoffice

The confirmatory factor analysis shows that both Positive and Negative attitude impact the acceptance of Eoffice. However, most significantly, the Positive attitude acts a catalyst of Acceptance of Eoffice.

6.0 Conclusion

The National Informatics Centre (NIC) provides a comprehensive variety of Information and Communication Technologies (ICT) to make Eoffice practice and implementation more accessible to all residents of India. In India, all major governmental organisations rely on this technology to function properly. Employees at CPRI have a positive attitude towards Eoffice deployment, according to research conducted as part of an effort to gain a better knowledge of their perspectives on Eoffice implementation. According to the results of the Confirmatory Factor Analysis, both positive and negative views toward Eoffice might have an impact on their adoption. Positive thinking, on the other hand, serves as a stimulant for the use of Eoffice in the workplace. In order to mitigate the negative effects of a skeptical attitude toward technology adoption, the government should enhance the frequency of Eoffice training sessions and public awareness initiatives. Efficiencies of organisations and zeal of academics must be strengthened via the use of electronic offices to achieve this goal.

7.0 Future Research

Eoffice governance practices and concepts. Research into

the creation of Eoffice modules for Project Management, Customer Relationship Management, and Financial Accounting operations, on the other hand, may be prioritized in the near future. Among the potential future study subjects are capacity-building initiatives, infrastructure development, process reengineering, and domain development, to name just a few. This study focuses on the adoption of electronic offices and the education of employees in terms of the processes and concepts that underpin electronic office governance. Because of this focus, appropriate statistical approaches can be used in future research to examine the impact of Eoffice modules on a variety of fronts. Additionally, the findings of this study provide insight into how employees might be better prepared to adopt. The Ministry of Mines is currently testing Eoffice modules of Telephone Reimbursement and LTC claims.

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