

# Transparency and effective e-Governance: a case of *telecentres* in the Indian State of Karnataka

Lakshmi Shankar Iyer

*Institute of Management, Christ University, Bengaluru, India, and Bharathiar University, Coimbatore, India, and*

Subba Rao R.N.

*Department of Commerce, Sivananda Sarma Memorial Rashtreeya Vidyalaya College, Bengaluru, India*

## Abstract

**Purpose** – It is the responsibility of any government to ensure efficient, transparent and reliable services to the common man through telecentres. The purpose of this study is to take into account the influence of people and process on transparency that leads to effective e-governance.

**Design/methodology/approach** – This study involved collecting data through questionnaire method from 400 citizens who visited the telecentres. Data were analysed by conducting chi-square test and independent sample *t*-test, and it was found that there exists significant influence of location on transparency.

**Findings** – The current study reiterates the fact from literature that transparency in transactions enables effective e-governance. Beneficiaries perceive that people and processes have influence on transparency.

**Research limitations/implications** – The research adds up to the literature in establishing that there exist differentials among the rural and urban population with respect to transparency. Results could be skewed, as there could be an impact of population density across urban and rural areas.

**Practical implications** – This study brings out a framework and an action plan for the government to implement and ensure transparency in processes leading to effective e-governance.

**Social implications** – The action plan ensures transparency in service delivery leading to effective e-governance. Increased transparency empowers citizens with increased trustworthiness towards services delivered through telecentres.

**Originality/value** – This paper fulfils the need for an action plan to assure citizens to use deliveries through telecentres with better transparency. The aspect of transparency is not being studied in the present context of service delivery by the government authorities in India. Moreover, the influence of transparency on e-governance is also under-explored.

**Keywords** India, Case study, Citizen benefit certificates, Citizen services, E-governance and transparency, Telecentres

**Paper type** Research paper

## 1. Introduction

### 1.1 Scope of e-governance

In today's recessionary world climate, it is important for governments to place institutional linkages between and among the tiered government structures in a sustainable manner. Governments can harness the power of information and communication technology (ICT) to deliver social and economic services to the citizens. E-governance has provided a holistic approach to governance for sustainable development, thus ensuring efficiency, transparency, responsiveness and participation in citizen delivery services. E-governance



improves the internal workings of the public sector by reducing financing costs and transaction times to better integrate work flows and processes.

E-governance enables digital interaction between government and citizens (G2C), government and businesses (G2B) or between government agencies (G2G) themselves. National Informatics Centre (NIC), Department of Information Technology, Ministry of Communications and Information Technology and Government of India is a premier organization in the field of Information Technology. It provides state-of-the-art solutions to the information management, dissemination and decision support requirements of the government.

### 1.2 National informatics Centre

The Government of India set up NIC in 1976 to provide effective e-governance services to the citizens. After signing a memorandum of understanding (MoU) with the State of Karnataka in 1987, the NIC set up its state unit (NIC-KSU) at Bengaluru, Karnataka. As part of the MoU, *telecentres* (means to provide community access to electronic information) were set up to ensure transparency, efficiency and accountability while delivering citizen services (National Informatics Centre, 2013). Citizens were able to avail various government services through trained personnel and infrastructure in these centres.

### 1.3 Atalji JanaSnehi Kendra centres

*Telecentres* by name *Atalji JanaSnehi Kendras (AJSK)* under the revenue department of Karnataka Government were set up in the year 2012 at the *hobli* (a collection of adjoining villages administered together for tax purposes) level in the districts of Karnataka. These *Kendras* known as *NadaKacheri* centres issue 37 types of certificates through electronic mode to the citizens, thus facilitating them to acquire subsidies and other benefits from government.

The Government of India envisaged that all revenue services must be accessible to the common man at the *hobli* level through reliable and affordable means. Deputy commissioners of the districts are the overall in-charge of this project at the district level. Each *hobli* is headed by a deputy tahsildar who operates with the assistance of a revenue inspector, case worker and computer operator. *NadaKacheri* centres are set up to bring in transparency in the process of certificate acquisition by the needy. Citizens usually pay a nominal amount for acquisition of certificate according to the category of services they need to avail. To ensure prompt delivery of services within a stipulated period of time, *Sakala scheme* was introduced in the year 2012 and linked to the services provided by *NadaKacheri* centres.

### 1.4 Transparency and E-governance

In most of the countries, specific government services are offered in a self-service mode through internet portals. In economically developed countries, this becomes a single point of interaction for the citizen to receive services. In developing countries like India, most of the citizens do not have access to computers and internet. Hence, self-service with more transparency will be challenging for a large group of the Indian population. Citizens visit *citizen service centres* established at accessible and convenient locations in rural India to acquire certificates of demand issued through these centres. With telecentres located in urban and rural areas, there is a challenge of urban locales having more population density as compared to rural areas. As the demand for service delivery is more in urban areas because of population density, transparency could be compromised while delivering citizen services. This could have an impact on the effectiveness of the e-governance processes with

which government has set up the telecentres. On the other hand, in rural areas because of lack of awareness and literacy, it is possible that the citizens could not be rightly advised about the procedures defined by the government to acquire citizen benefit certificates leading to lack of transparency.

E-governance must enable greater transparency in processes with the help of ICT, resulting in an incidental resultant of reduced administrative corruption. *Telecentres* operated by department/private operators handle payment through conventional means (Bhatnagar, 2003a). With the right procedures in place, e-governance can make financial and administrative transactions transparent and traceable. It is easier to identify authorities responsible for a specific activity executed in a process. The *fear of embarrassment* seems to act as a deterrent against corrupt practices while extending services to the citizens. Information concealing may widen the power distance between government and citizens. This is more prevalent amongst poor, illiterate and ignorant citizens residing in remote areas causing an alarming situation.

The current study attempts to probe whether the *telecentres* in the state of Karnataka have brought in transparency in its service delivery through effective e-governance services. The study also compares transparency of e-governance services between Bengaluru Urban and Bengaluru Rural districts of the State of Karnataka.

## 2. Literature review

A detailed study was conducted on various mechanisms of e-governance and its facets with focus on people and process. The study brings out common factors to assess transparency in the global as well as the Indian context. Literature focuses on the influence of transparency on successful e-governance adoption by citizens. This led to the conceptualization of the current study on the *telecentres* of the Karnataka state in India.

### 2.1 Mechanisms of e-governance

It is advocated to increase effort towards a holistic approach to governance for development which is sustainable. This requires strategic national planning that ensures efficacy, transparency, responsiveness, participation and inclusion in the delivery of public services (United Nations, 2008). Political leaders have adopted social shaping perspective, a fancy way of saying that e-government's success depends on its ability to engage citizens as partners who shape and are shaped by their interactions with e-government (Godfrey *et al.*, 2013). In a study conducted across six national/multi-state-level agriculture-related e-governance projects in India, constructs were developed between "flexibility of processes" and "performance of e-Governance". It is found that improved flexibility in processes leads to better e-governance performance (Suri, 2014). A culture of trust and openness must be established between government and the citizens, thus eliminating distance, and other divides ensures confidence leading to effective e-governance processes (Athmay, 2015).

E-government projects which are at a budding stage find it difficult to achieve expected benefits (Pina *et al.*, 2010). Hence, local governments extend the effort to bring citizens near to them through ICT. Increased transparency and stimulated citizen involvement through civic consultation is achieved through ICT. It is observed that ICTs have been used in streamlining labour-intensive bureaucratic transactions instead of participatory efforts (Raman, 2006). Lack of supervision in remote areas, large power distance between civil servants and citizens and poor mechanisms of complaint handling has led to e-governance becoming a tool for addressing issues related to accountability, transparency and efficiency (Somuah, 2004). This leads to the research question whether location could be a criterion for improved transparency. Government could ensure efficient service delivery process through

transparency irrespective of whether the telecentres are located in urban or rural areas. It is reinstated that building trust – which involves people – between citizens and government is fundamental to good governance. E-governance helps build trust by enabling citizen engagement in the policy process, thus promoting open, accountable governance process that prevents corruption.

Usage of e-governance for public service delivery has enhanced transparency, speed and convenience to the citizens (Singh, 2012). The research paper (Suri, 2014) based on cross-case analysis addresses the lack of measures to address the gap between flexibility of processes and performance of e-governance. The study takes into account six agriculture projects and reflects that more the flexibility, the better would be the e-governance effectiveness. E-governance enables faster processing of documents and reduces waiting period in the queue. It ensures lesser number of trips to government offices, thus unnecessarily avoiding cost and wage loss to the beneficiaries. It ensures lesser corruption with more transparency and improved complaint handling (Bhatnagar, 2003b). *Telecentres* enhance accountability, transparency and responsiveness of the government to citizen's needs (Chauhan, 2013). Service delivery improvement initiatives can be implemented in corrupt departments, specifically targeting transparency and reduced corruption as objectives (Bhatnagar, 2008). In India, where there are many e-governance projects which are underway, it is evident that bureaucracy is more opaque, and very little attention is paid to improve transparency, including through e-governance processes (Singh *et al.*, 2010). The paper mentions that time, cost and red-tape procedures are major constraints in public service delivery.

To strengthen trust in e-governance, it is significant to provide high-quality public services coupled with active transparency policies. The trust contributes to the perception of the government's relatedness to its citizens. E-governance initiatives must have better focus on citizen's needs. Process designs of these initiatives must ensure that the citizens are at ease to make use of these applications. This can result in improvement of trust and promotion of transparency in services, making it more efficient in service relationships (Moreno *et al.*, 2013).

E-governance involves multiple stages or phases of development, as its use saturates different levels of the government. The fundamental aims underlying the development of e-governance are improved access, efficiency and quality of services to the citizens. However, there could be social, technological, financial and organization- related challenges during its successful implementation (Patel, 2015).

### 2.2 Facet of e-governance – transparency

The significance of transparency on the success of e-governance is reiterated by Kerala Planning Board's Deputy Chairman K M Chandrashekhar, as revealed by the media. He mentions that the enemy of e-governance is corruption. More the corruption, the lesser is the adoption of e-governance by citizens. Further, e-governance is the key to inculcate transparency, openness in the public administration of a country (Narayanaswamy, 2014). Research indicates that transparency has a major role to play in reducing uncertainties in a government. To ensure transparency in government services, public officers must be trained to respond to information requirements (Kimball, 2011). Training effort increases open government compliance and eliminates fearful responses. Training must be conducted for employees to guarantee the information that is valid with new, seamless processes and activities (Rao, 2011). A culture of trust has to be developed between citizens and government to enhance their attitude towards e-governance. A citizen/government forum has to be set up to take feedback from the citizens about the policies of the government (Athmay, 2015).

Many studies had brought forth the relationship between transparency and open governance (Harrison *et al.*, 2012). Transparency is seen as a powerful tool to transform governance. The question which arises here is whether transparency in transactions offered through telecentres will have an impact on effective e-governance. Transparency is a panacea for all kinds of issues in the public realm, such as low citizen trust, corruption, bad performance, low accountability and power abuse by public officials. Open data policies remedy these diseases by revealing the business of government to all (Godfrey *et al.*, 2013). Transparency, participation and collaboration were the three major dimensions identified by Obama's administration for successful open governance (Reddick and Ganapati, 2012).

The ICT policy framework created for the State of Punjab in India takes into account the shared vision, as well as the pain and harassments, barriers, challenges, risks and hindrances in the current ICT policies of the Government. Political will, public support and process simplification are the most essential components of the framework (Kalsi and Kiran, 2015). Transparency will not be achieved through availability or mere downloading of data sets (Harrison *et al.*, 2012). The authors claim that valid and reliable data should enable citizens to take up valuable and significant activities. More the countries are clean without corruption and publish secondary information, the better the chances of prosperity of e-government projects (Shanab, 2013). This motivates countries being forthcoming in embedding transparency in e-governance services. In the study conducted to measure the impact of corruption in India, Ethiopia and Fiji, it is found that e-governance initiatives are positively related to improved government-citizen relationships and reduced corruption (Singh *et al.*, 2010). Transparency can fight corruption through many mechanisms such as making corruptive actions more risky, providing incentives to public officials who are not corrupt, making officials more accountable and helping to maintain norms of integrity and trust (Kolstad and Wiig, 2008).

Transparency is a measure that contributes to the better administration of public work and open governance where information is shared with the public (Shanab, 2013). The article mentions that better transparency leads to less corruption and more accountability. Open e-governance concept is not a fad; but a necessity to meet citizens' demands for more openness, transparency and accountability (Reddick and Ganapati, 2012). Research questions that could be used for the assessment of e-governance projects are accountability, nature and scope of public services, fairness and equity, capabilities of the public sector and transparency (Codagnone and Wimmer, 2004). To support improvement of public policy on e-government in Brazil, there has been a significant change in government strategies in the period 2011-2013, thus promoting greater interaction between government and society. This had led to public transparency while encouraging use of open data by states and municipalities and easy access to data. Innovative strategies through modernization of government structuring systems which facilitates interoperability and openness of its data seem to be the way ahead for successful e-governance implementation (Musafir and de Freitas, 2015). An increased use of computers and Web-based services improves the awareness levels of citizens about their rights and powers. This helps to reduce the discretionary powers of government officials and curtail corruption (Khosla, 2016).

Literature studies have indicated the fact that transparency in transactions and successful adoption of e-governance services by the citizens mutually strengthen each other. They do not exist as separate entities. It is important to analyse whether transparency leads to effective e-governance while delivering services through

telecentres. Transparency ensures that citizens build a trust towards government services. Transparency is achieved through the presence of trained authorities with required skill sets. Government officials must be corruption-free and accountable with respect to the transactions they carry out while delivering citizen services. The present study attempts to explore the significance of transparency in delivering citizen services through *NadaKacheri* centres of the state of Karnataka on *effective e-governance* adoption by the citizens.

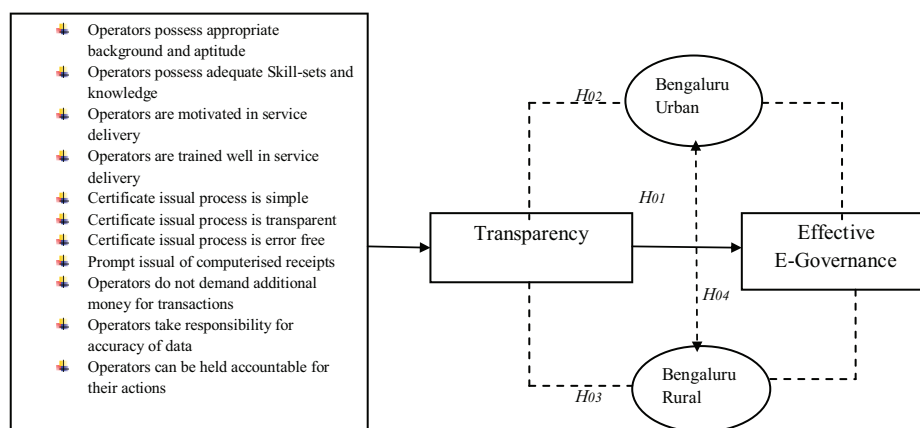
The study explores the perception of citizens on factors leading to transparency which has an influence on effective e-governance. The conceptual framework in [Figure 1](#) also compares the same amongst *NadaKacheri* centres of Bengaluru Urban and Bengaluru Rural districts of the state of Karnataka, India.

### 3. Research design

The current study is an attempt to empirically verify the linkages of transparency towards effective e-governance. The study was conducted at the selected *telecentres* by name *NadaKacheri* centres set up at the *hobli* level in the state of Karnataka, India.

Primarily, the government's ICT infrastructure aims to solve the social and economical problems of a citizen. The term democracy presupposes three essential elements: transparency, accountability and equality. Here, transparency denotes free access to governmental and economic activities ([Schenkelaars and Ahmad, 2004](#)). Citizens of a country must have access to public information in a transparent manner. *NadaKacheri* centres of Karnataka issue certificates to the citizens which enable them to avail government subsidy and other benefits. Citizens are charged a nominal amount by the government to acquire certificates ensuring on-time delivery. As delivery of certificates and payment is through conventional mode, there are opportunities for middlemen/operators to demand *undue* additional money in the transaction process. The current study makes an attempt to explore whether the Government of Karnataka is successful enough to ensure transparency in their services delivered through *NadaKacheri* centres set up at the *hobli* level leading to *effective e-governance*.

Major objectives of the study are formulated by taking into account the factors of transparency and effective e-governance.



**Figure 1.** Conceptual framework on transparency and effective e-Governance

The study attempts to ascertain the factors of transparency amongst the modalities of e-governance services delivered through *NadaKacheri centres* of the Southern state of Karnataka, India. The study also attempts to understand the influence of transparency in *effectualizing e-governance* services delivered through *NadaKacheri centres*. The study modelizes the *effectualization of e-governance* through operational transparency in the *centres* in general and, in specific, to the geographical strata between Bengaluru Urban and Bengaluru Rural districts.

The research question for this study is to understand and assess whether e-governance services of the state of Karnataka delivered through *NadaKacheri centres* have been successful in achieving operational transparency. The study also attempts to explore whether differentials exist in transparency while delivering citizen services to urban and rural districts. Taking the major focus of the study and the respective objectives into account, following hypotheses have been formulated.

- H1. Transparency in transactions offered through *NadaKacheri centres* of Karnataka, India, has no association with efficient e-governance services.
- H2. There exists no significant positive impact of transparency in transactions on e-governance services delivered through *NadaKacheri centres* in the Bengaluru Urban district of Karnataka, India.
- H3. There exists no significant positive impact of transparency in transactions on e-governance services delivered through *NadaKacheri centres* in the Bengaluru Rural district of Karnataka, India.
- H4. There exists no location differential on transparency of transactions delivered through *NadaKacheri centres* of Karnataka, India, between Bengaluru Urban and Bengaluru Rural districts.

The scope of the study lies in the various telecentres of the southern state of Karnataka. The state has a population of 61.1 million as of 2011 census with 30 districts and 777 *hoblis* covering 191,791 km. It comprises a mix of urban and rural districts. The districts of Bengaluru Urban and Bengaluru Rural were chosen for the present study, as they represent opposite extremes of population density (Table I).

A purposive sample of six *hoblis* was chosen from selected districts of Karnataka, India, for the study. The choice of *hoblis* was judgmentally done based on the ones being farthest and nearest to the taluk headquarters to bring in variation in the sample. Citizens who visited *NadaKacheri centres* located in the *hoblis* and volunteered to be part of this study were administered a survey instrument. A pilot study was conducted in two *hoblis* to validate the instrument. It was modified after seeking opinion from experts from e-governance domain. A judgmental sample of 400 was chosen for the study. The structured instrument included 11 items related to transparency while citizens acquired certificates through *NadaKacheri centres*. As the data are qualitative, a five-point Likert scale was used to measure the items and later quantified.

**Table I.**  
Population  
distribution

| District        | No. of hoblis | Population density |
|-----------------|---------------|--------------------|
| Bengaluru Urban | 27            | 4378               |
| Bengaluru Rural | 17            | 441                |

Responses from citizens are categorized along the lines of gender, age group, education level and income. Citizens visited *NadaKacheri* centres to acquire certificates under the following categories pension, employment, social (caste), land related, marriage, residence and family. With the support of literature in Section 2, items included under transparency were with regard to people and process of delivery of services to citizens. *Effective e-governance* services were measured by capturing user perception on useful assistance delivered through *NadaKacheri* centres, approach towards rural citizens through e-governance, comfort level and satisfaction level of rural citizens while availing services through *NadaKacheri* centres.

#### 4. Analysis of data

A detailed statistical and inferential analysis is ascertained, and the hypotheses formulated in the research design are statistically tested. Out of the 400 samples taken, the responses considered for this study are 350 with a rejection rate of 16.25 per cent.

##### 4.1 Profile of the respondents

Demographic data of the respondents are classified based on gender, age, education level and annual income. It is found that gender differential does not exist among the respondents of this study. Most of the respondents were students and cultivators. Distribution of respondents across the Bengaluru Urban District was 54.3 per cent and Bengaluru Rural District was 45.7 per cent. Most of the respondents belong to age group between 40 and 50, followed by the range from 20 to 30.

##### 4.2 Descriptive analysis

There seems to exist certain gender differential in the perception about the knowledge of operators at *NadaKacheri* centres. As e-governance projects mature, gender differentials disappear (Table II). This is one of the major objectives of e-governance (Iyer and Rao, 2017). Respondents indicated that the operators have appropriate background and aptitude to issue required certificates. It is perceived that the operators are well-motivated and well-trained. Acquisition of certificates from *NadaKacheri* centres is effortless without any process constraints. However, about 54-59 per cent of the respondents surveyed were not demanded *undue* additional money (Singh *et al.*, 2010) by the operators to acquire their certificates (Figure 2).

Government of Karnataka provides training to the operators at various *NadaKacheri* centres on the process of issuance of certificates and computer operations. It can be observed from Table III that in both the Bengaluru Urban District and Bengaluru Rural District across *hoblis*, respondents perceive that the operators are motivated to provide services, and they possess required skill sets and knowledge. It is observed that 30 per cent of the respondents seem to differ in their perception about process transparency between Bengaluru Urban District and Bengaluru Rural District. Rural respondents are

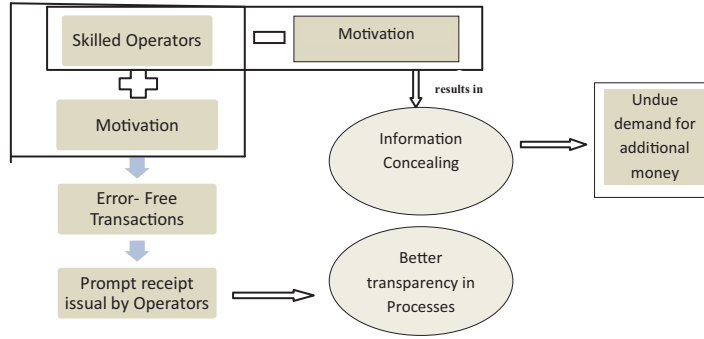
| Gender | Knowledgeable operators (%) | Well-trained operators (%) | Transparency in process (%) | Prompt issuance of certificates (%) | Additional money not demanded (%) |
|--------|-----------------------------|----------------------------|-----------------------------|-------------------------------------|-----------------------------------|
| Male   | 82.2                        | 79.4                       | 58.3                        | 63.4                                | 58.9                              |
| Female | 69.4                        | 70.0                       | 61.8                        | 62.4                                | 54.1                              |

Note:  $n = 350$

**Table II.**  
Gender versus variables leading to transparency



**Figure 2.**  
Rationale to achieve transparency



**Table III.**  
District versus variables leading to transparency

| District – Bengaluru | Skill sets of operators (%) | Motivation of operators (%) | Transparent Process (%) | Prompt issuance of receipts (%) | Additional money not demanded (%) | Error free transaction (%) |
|----------------------|-----------------------------|-----------------------------|-------------------------|---------------------------------|-----------------------------------|----------------------------|
| Urban                | 98.8                        | 89.5                        | 46.3                    | 86.3                            | 50.5                              | 51.6                       |
| Rural                | 82.6                        | 88.1                        | 76.3                    | 35.0                            | 63.8                              | 67.4                       |

**Note:** n = 350

more pleased with the transparency in the processes. Receipts of transactions are issued to urban respondents promptly unlike rural respondents. It is observed that 13 per cent of the respondents seem to differ in their perception with respect to the fact that the operators demand *undue* additional money from the respondents for certificate issuance. A majority of the transactions seem to be error free in rural areas as compared to the urban districts.

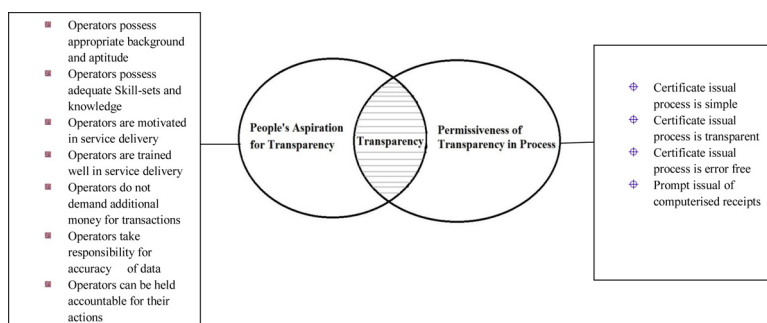
*4.3 “Factors of transparency” and its impact on effectualizing e-governance operations*

Factors of transparency were measured with respect to people and process. It is appropriate to have operators with required skill sets and aptitude towards the process of issuance of certificates. To deliver e-governance services to citizens efficiently, operators are advised to undergo training. This would motivate them to issue certificates promptly to the citizens and curtail them from demanding *undue* additional money to complete the transactions. When the processes involved in the issuance of certificates become simple, there is a possibility that the operators will be held responsible and accountable for the accuracy of the data in the certificates.

The number of variables in the research is 11, with an acceptable sample size of 350. The number of samples satisfies the requirement to conduct factor analysis. The required sample size is 110 that is ten times the number of variables. This principle is followed to avoid overfitting of the data. After executing factor analysis, as mentioned in Figure 3, Kaiser-Meyer-Olkin (KMO) battery value was found to be 0.746, indicating that all the identified components measure transparency (Table IV and V).

Rotated component matrix indicates that the respondents are happy with the operators in the items linked with training, motivation and background. Factor analysis was able to explain 73.87 per cent of variation in the parameters while measuring

transparency. Dimensional reduction of these values reveals that though the centres may be helpful in delivery of services, their processes are not adequately transparent. Citizens continue using the services of these centres, as there is no other alternative for them to acquire certificates.



**Figure 3.**  
Factors of transparency – people and process

| Factors                       | Component |       |       |       |
|-------------------------------|-----------|-------|-------|-------|
|                               | 1         | 2     | 3     | 4     |
| Background of personnel       | 0.870     | 0.141 |       |       |
| Skill sets of personnel       | 0.370     |       | 0.762 |       |
| Motivation of personnel       |           | 0.183 | 0.825 |       |
| Training to personnel         | 0.838     |       | 0.274 |       |
| Transparent process           |           | 0.758 | 0.228 | 0.125 |
| Simple process                |           | 0.121 |       | 0.927 |
| Receipts issued promptly      | 0.833     |       |       |       |
| Additional money not taken    | 0.595     | 0.435 | 0.158 | 0.342 |
| Personnel take responsibility | 0.582     | 0.613 |       |       |
| Personnel held accountable    | 0.499     | 0.570 | 0.260 |       |
| Error free transactions       | 0.104     | 0.807 |       |       |

**Notes:** n = 350 Rotation method: Varimax; Extraction method: *Principal components*

**Table IV.**  
Exploratory factor analysis – rotated component matrix for assuming componential transparency

| Components              | Discussions  |
|-------------------------|--|
| Quality of operators    | Issuance of certificates is done promptly when trained operators man the operations. Citizens opine that the operators are responsible towards their duties. To curtail <i>undue</i> demand for additional money, incentives can be provided to honest personnel if required |
| Process transparency    | Citizens perceive the operators to be accountable and responsible when the transactions are error free and when the operators do not demand <i>undue</i> additional money during transactions  |
| Knowledgeable operators | Citizens perceive the operators to be knowledgeable when they possess developmental skill sets acquired by training modalities because of required motivational intervention   |
| Ease of process         | Citizens perceive the process to be simple when there is an increase in the comfort level of citizens leading to positive impression about citizen services  |

**Table V.**  
Discussions on factor analysis

4.4 Comparison of impact of transparency on effective e-governance amongst Bengaluru Urban District and Bengaluru Rural District

Equal variances assumption test was adopted, as the standard deviations for the two groups are similar (Table VI). The results indicate that there seems to be a presence of perceptual difference amongst Bengaluru Urban and Rural respondents ( $t = -7.113, p = 0.000$ ). It is observed that Bengaluru Rural (3.99) has a higher mean score than Bengaluru Urban (3.07). Higher standard deviation indicates that there exist differentials between rural and urban beneficiaries. Furthermore, Levene’s statistic is found to have  $F$  value of 14.505.

4.5 Hypotheses testing

All the calculated chi-square values were found to be more than the table value (Table VII).

5. Research discussions

The research framework created for the impact of transparency on effective e-governance services delivered through *NadaKacheri* centres of Karnataka is validated from the perspectives of people and process. The current study reveals facts which might act as a deterrent for the Government of Karnataka to achieve its goal of providing transparent services to the citizens (Figure 4).

5.1 Empirical insights

It can be observed from the descriptive information that the operators at the *NadaKacheri* centres exhibit multi skill sets, reflect self-motivation and adequate background knowledge to execute tasks through *telecentres*. The active presence of intermediaries at the *NadaKacheri* centres is reflected in a relatively low mean score. While issuing certificates, some of the operators at the centres hesitate to take responsibility to correct the errors, thus reflecting a low mean score for accountability. The process to correct the errors in the certificates compels the citizens to make multiple trips to the centres, resulting in unnecessary cost, waste of time and unproductive effort.

The study reveals that the respondents are generally pleased with the operators and processes at *NadaKacheri* centres. E-governance services delivered through these centres are perceived to be highly helpful and comfortable for beneficiaries. *Telecentres* seem to be the best mode for citizen delivery services. It is possible for few of the personnel at the centres to demand *undue* additional money to expedite the process of service delivery to the citizens. Probably the citizens feel that in spite of the efficient service delivery, service relationships are not transparent. As the transparency intensifies during the certificate acquisition process, the efficiency of e-governance is enhanced.

Earlier studies had indicated that corruption decelerates transparency. Most of the Bengaluru Urban respondents had admitted that they paid *undue* additional money to avail e-governance services. This seems to indicate that population density and its influence is very much observable in case of corruption. The rise in population density may increase the

|                        | District        | $N$ | Mean | SD    |
|------------------------|-----------------|-----|------|-------|
| Impact of transparency | Bengaluru Urban | 190 | 3.07 | 1.180 |
|                        | Bengaluru Rural | 160 | 3.99 | 1.218 |

Note:  $n = 350$

Table VI.  
Independent sample  
test results


| Null hypotheses   | Test                    | F value                    | Significance | Results/comments  |
|---|-------------------------|----------------------------|--------------|---|
| H1. There exists <i>no significant association</i> of transparency in transactions offered through <i>NadaKacheri centres</i> of Karnataka with effective e-governance services                       | Chi-square              | 280.825                    | 0.000        | <i>Not accepted.</i> There exists <i>significant association</i> of transparency in transactions offered through <i>NadaKacheri centres</i> of Karnataka with effective e-governance services                           |
| H2. There exists no significant positive influence of transparency in transactions on e-governance services delivered through <i>NadaKacheri centres</i> in the Bengaluru Urban District of Karnataka | Chi-square              | 20.015                     | 0.003        | <i>Not accepted.</i> There exists a significant positive influence of transparency in transactions on e-governance services delivered through <i>NadaKacheri centres</i> in the Bengaluru Urban District of Karnataka   |
| H3. There exists no significant positive influence of transparency in transactions on e-governance services delivered through <i>NadaKacheri centres</i> in the Bengaluru Rural District of Karnataka | Chi-square              | 260.810                    | 0.000        | <i>Not accepted.</i> There exists a significant positive influence of transparency in transactions on e-governance services delivered through <i>NadaKacheri centres</i> in the Bengaluru Rural District of Karnataka   |
| H4. There exists no significant location differential on transparency of transactions delivered through <i>NadaKacheri centres</i> of Karnataka between Bengaluru Urban and Bengaluru Rural Districts | Independent sample test | Levene's statistic 158.108 | 0.000        | <i>Not accepted.</i> There exists a significant positive location differential of e-Governance services delivered through <i>NadaKacheri centres</i> of Karnataka between Bengaluru Urban and Bengaluru Rural Districts |

Table VII.  
Hypotheses testing

demand for services and may eventually lead to slow-paced delivery of the same, thereby resulting in lesser transparency. Citizens might be forced to wait in the queue for a longer period in the *telecentres* to acquire certificates. Because of the waiting period, some of the beneficiaries may lose an earning opportunity leading to loss of wage. Lesser population density and lesser demand for e-governance services in the *NadaKacheri centres* of rural areas seem to result in less corruption, and it could be observed by explicit absence of intermediaries.

The level of education among citizens can be a deciding factor, and it is well revealed in issuance of receipts amongst urban and rural areas. The educated urban citizen has got the knowledge and authority to demand computer generated receipt in the event of its non-issuance. It is perceived by the beneficiaries that the personnel at *NadaKacheri centres* are well-trained with high level of motivation. However, old age, helplessness and desolation (especially women) compels some of the citizens to approach intermediaries. Citizens are in the mood to take shortcuts catering to the needs of *undue* demand of money in rural areas, thereby ignoring

**Figure 4.**  
Managerial  
implications of  
effective  
e-Governance  
through the  
framework

|  |  |
|--|--|
| <p>People</p>  | <ul style="list-style-type: none"> <li>✦ Respondents opine that some of the operators in Bengaluru Urban district demand <i>undue</i> additional money for quick delivery of services to the citizens. Government authorities may explore increasing the compensation by including incentivisation to ensure efficiency, thereby reducing the possibilities of corruption that may occur in the system.</li> <li>✦ Some of the operators at the <i>NadaKacheri</i> centres hesitate to take responsibility in case of error in the certificates. Operators could be provided with authority to sort out the issues in the certificates which would exhibit more responsibility in service delivery.</li> </ul> |
| <p>Process</p>  | <ul style="list-style-type: none"> <li>✦ Transparency is tampered with because some of the operators demand <i>undue</i> additional money. Government authorities must compensate the operators well to ensure there is no corruption in the system.</li> <li>✦ Due to very high demand for certificates in the telecentres, receipts may not be issued in a <i>timely</i> manner in the Urban areas. Introduction of additional counters will be appreciable ensuring further benefits to the users. This initiative would be a welcomeable approach by the beneficiaries.</li> </ul>   |

the issuance of receipts reducing transparency. To curtail the menace of unnecessarily approaching intermediaries, the Government of Karnataka must take necessary measures to iron out these practices. To provide speedier citizen services, the government must ensure the presence of uninterrupted network services in rural parts of Karnataka.

*5.2 Suggestions – actionable framework*

An actionable framework is achieved and formulated based on the combination of components of exploratory factor analysis from the perspectives of knowledge level of personnel, transparency in transactions, motivation of personnel and simplification of processes. This framework will be of immense help for framing policies for government officials for bringing out policy notes (Table VIII).

It is the responsibility of the government to ensure efficient, transparent and reliable services at affordable costs to the common man through *telecentres*. Transparency in governance is the need of the hour as envisaged by various media. The current study reiterates the fact that transparency in transactions leads and enables effective e-governance. To attain this objective by reinvigorating its position, the Government of India as part of its Digital India programme can ensure wider usage of gadgets using popularised notions of computer literacy. According to the resultants of this study, corruption still prevails even with the establishment of visionary *telecentres*. *Citizen services delivery* can be inclusive of automated kiosks, and the same can reduce unnecessary human intervention. Multi-lingual provision, including local language can give further momentum through better service delivery through automated kiosks. To achieve this, the government may take steps to bridge the digital divide, thereby strengthening its policies to ensure an error-free and transparent citizen delivery services.

**Table VIII.**  
Actionable framework for effective e-governance

|                              |   |
|------------------------------|---|
| Knowledge level of personnel | Well-trained personnel with knowledgeable skill sets at the <i>telecentres</i> are highly self-motivated to deliver <i>timely and adequate</i> citizen services<br>Error free certificates are issued when the personnel feel they are highly accountable and responsible<br><i>Timely</i> issuance of certificates and receipts by the operators will curtail multiple trips by the beneficiaries to the <i>telecentres</i><br>With knowledge and accountability, there would be lesser scope of <i>undue</i> demand for unaccounted money from the citizens |
| Transparency in transactions | Prompt transactions may happen when the personnel at the <i>telecentres</i> do not demand <i>unaccounted</i> money from the citizens thereby ensuring transparency.<br>Personnel may also feel that they are responsible and more accountable   |
| Motivation of personnel      | When the personnel at the <i>telecentres</i> are provided training and they possess the required skill sets and competency to deliver services to the citizens, they become highly motivated ensuring and enhancing process transparency  |
| Simplification of processes  | When the process of acquiring certificates through <i>telecentres</i> becomes easier, the citizen will be in a position to adapt to the same thereby having less dependency on intermediaries. Better transparency prevails when the personnel become restricted from compelling <i>undue</i> payment of money from the beneficiaries   |

### 5.3 Limitations and constraints of the study

The data collection was conducted in selected districts of the State of Karnataka which were identified based upon population density as a supplementary criterion. The results of the study indicate that amongst urban and rural districts, geographical location also has an effect on the dimension of transparency. And the same is reflecting in the resultants, indicating that urban districts seem to be less-transparent than rural districts. It could be skewed as the impact of population density could have affected the results of the study. The choice of districts could have been based on affordability levels. Citizens with more monthly income and money power might get their work done quickly by paying *unaccounted* money to the intermediaries, thus corrupting the system.

Seasonal influence might have affected the data and cannot be ignored, as it would be a research constraint. Predominantly, respondents who approach *telecentres* for caste and income certificates in urban areas happen to be student group. Beneficiaries from rural areas belong to the community of farmers or cultivators. Though this caters to the generic need of users, it may act as a constraint but necessarily skewed approach. Profile does matter, as the study results may change based upon the respondent's profile. Sufficient precautionary steps were taken to mitigate the *undue* influence of a specific profile of respondents – still it can be referred as a constraint.

Statistical testing has resulted in rejecting the null hypotheses, thereby extending the possibility of exploring the causal effect and prioritizing the actionable frames even for the executive user (Table IX).

### 5.4 Future scope of research

The resultants of the current study are contributory to the e-governance literature with citizens perceiving that transparency has an effect on e-governance services delivered through *NadaKacheri* centres of the state of Karnataka. The framework focuses on the aspects of people and process towards transparency for effective e-governance strategies. Similar studies could be conducted and the framework tested for the adoption of technology by the citizens in a similar study environment. Extension can be done by including more

**Table IX.**  
Operating words

|                                |  |
|--------------------------------|--|
| <i>Taluk</i>                   | An administrative center that exercises power over villages and towns in its jurisdiction. There are 220 taluks in Karnataka state   |
| <i>Hobli</i>                   | A collection of adjoining villages administered together for tax purposes. It is a sub division of taluk. There are 777 hoblis in Karnataka state  |
| <i>Telecenters</i>             | Common service centres established by the Government of Karnataka in an attempt to bridge digital divide   |
| <i>Nemmadi Centers</i>         | A <i>telecenter</i> unit typically set up by the Government of Karnataka at the hobli level  |
| <i>Atalji JanaSnehi Kendra</i> | Restructured and upgraded version of <i>Nemmadi centers</i> set up since 2012 in the name of former Prime Minister of India Atal Bihari Vajpayee on his birthday                             |
| <i>NadaKacheri</i>             | Another name for <i>Atalji JanaSnehi Kendra</i> in local language  |
| <i>Tahsildar</i>               | A revenue officer heading a taluk office managing land, tax and revenue matters  |
| <i>Sakala scheme</i>           | Launched under Karnataka Sakala Services Act in the year 2011, this scheme encourages public authorities to deliver citizen-related services within a stipulated time or period as scheduled |

number of *NadaKacheri* centres in Karnataka, and attempts to replicate the same model in other states of India.

## 6. Conclusion

The Government of Karnataka provides periodic training to its personnel who operate at the *NadaKacheri* centres. However, to identify potential candidates with good skill sets, an effective screening process is required as part of the selection. Processes involved in acquisition of certificates must be simplified to minimize *unaccounted* money demanded by the personnel. Error free transactions leading to prompt issuance of certificates could be made possible by process simplification. Taking into account the seasonality of the requirement of caste and income certificates, number of personnel could be deployed to manage the demand. Automated kiosks could be set up and incubated on an experimental basis in the existing *NadaKacheri* centres.

It is recommended that the Government of Karnataka may set up an interactive helpline in various languages (Kannada, English and Hindi) to enable beneficiaries to register complaints against corruptive practices in *telecentres*. A centralized Web portal could facilitate drawing feedback from the beneficiaries for the betterment of services. This portal can monitor the number of certificates issued under various categories in a centralized manner. Monitoring of complaints and services would facilitate government authorities to help deliver better services to the beneficiaries with a real-time reality check about *NadaKacheri* centres. To mitigate the effect of negative psychological feeling of being monitored, it is essential to empower citizens with increased trustworthiness leading to *effective e-governance*. This action plan will ensure transparency in delivery of services at *NadaKacheri* centres leading to *effective e-governance*.

## References

- Athmay, A.A.A.R.A. (2015), "Demographic factors as determinants of e-Governance adoption", *Transforming Government: People, Process and Policy*, Vol. 9 No. 2, pp. 159-180.
- Bhatnagar, S. (2003a), *Public Service Delivery: Does E-Government Help? Annual Bank Conference on Development Economics 2003, The World Bank, South Asia Component, Bangalore*.
- Bhatnagar, S. (2003b), *Transparency and Corruption: Does E-Government Help? OPEN SESAME: looking for the Right to Information in the Commonwealth*, Commonwealth Human Rights Initiative.

- Bhatnagar, S. (2008), *Building Trust through E-Government: Leadership and Managerial Issues*, available at: <http://unpan1.un.org>; <http://unpan1.un.org/intradoc/groups/public/documents/unpan/unpan025871.pdf> (accessed 2 September 2014).
- Chauhan, K. (2013), "E-Governance through Panchayati Raj Institutions in Karnataka: Issues and challenges", *Journal of Politics & Governance*, Vol. 2 Nos 1/2, pp. 372-376.
- Codagnone, C. and Wimmer, M.A. (2004), *Roadmapping e-Government Research Visions and Measures towards Innovative Governments in 2020*, EC Funded Project eGov2020, available at: [www.egovrd2020.org/](http://www.egovrd2020.org/)
- Godfrey, C.J. Bernal, C. Knepper, H.J. and Spence, D. (2013), *Openness and Transparency: Is E-Government Learning to Listen?*, available at: <http://patimes.org/openness-transparency-e-government-learning-listen/> (accessed 20 September 2015).
- Harrison, T., Guerrero, S., Burke, B., Cook, M., Cresswell, A., Helbig, N., Jana, H. and Pardo, T. (2012), "Open government and e-Government: democratic challenges from a public value perspective", *Information Polity*, Vol. 17 No. 2, pp. 83-97.
- Iyer, L.S. and Rao, S.R.N. (2017), "E-Governance diffusion in the telecenters of Karnataka: a gender analysis", *International Journal of Business Information Systems*, Vol. 24 No. 4, pp. 452-468.
- Kalsi, N.S. and Kiran, R. (2015), "A strategic framework for good governance through e-governance optimization", *Program: electronic Library and Information Systems*, Vol. 49 No. 2, pp. 170-2014.
- Kimball, M. (2011), "Mandated state-level open government training programs", *Government Information Quarterly*, Vol. 28 No. 4, pp. 474-483.
- Khosla, C. (2016), "E-Governance in India: initiatives and issues", *Journal of Governance & Public Policy*, Vol. 6 No. 1, pp. 48-58.
- Kolstad, I. and Wiig, A. (2008), "Is transparency the key to reducing corruption in resource-rich countries?", *World Development*, Vol. 37 No. 3, pp. 521-532.
- Moreno, R.R., Molina, C.M., Figueroa, J.C. and Moreno, M.R. (2013), "Gender and E-government adoption in Spain", *International Journal of Electronic Government Research*, Vol. 9 No. 3, pp. 23-42, doi: doi: 10.4018/jegr.2013070102.
- Musafir, V.E.N. and de Freitas, C.S. (2015), *Brazilian e-Government Strategies*, Academic Conferences, Portsmouth, pp. 187-195.
- Narayanaswamy, V. (2014), E-Governance Key to Transparency. (E. N. Service, Interviewer).
- National Informatics Centre (2013), available at: [www.kar.nic.in](http://www.kar.nic.in) (accessed 22 October 2015), from [www.kar.nic.in/Introduction.asp](http://www.kar.nic.in/Introduction.asp)
- Patel, R. (2015), "Descriptive and analytical research on e-Governance with reference to Gujarat", *Global Journal of Research in Management*, Vol. 5 No. 1, pp. 29-53.
- Pina, V., Torres, L. and Royo, S. (2010), "Is E-Government leading to more accountable and transparent local governments? An overall view", *Financial Accountability & Management*, Vol. 26 No. 1, pp. 3-20.
- Raman, V.V. (2006), *Information Technology and Participatory Democracy: A Case Study of Bangalore City*, UMI, Ann Arbor.
- Rao, V.R. (2011), "Collaborative government to employee (G2E): issues and challenges to e-government", *Journal of E-Governance*, Vol. 1, pp. 214-229.
- Reddick, C. and Ganapati, S. (2012), "Open e-Government in US state governments: survey evidence from chief information officers", *Government Information Quarterly*, Vol. 29 No. 2, pp. 115-122.
- Schenkelaars, M.F. and Ahmad, I. (2004), *RAB/01/006: Transparency and Accountability in the Public Sector*, available at: [www.africafoicentre.org](http://www.africafoicentre.org); [www.africafoicentre.org/index.php/resources/resources/40-atigood-governance/file](http://www.africafoicentre.org/index.php/resources/resources/40-atigood-governance/file) (accessed 8 April 2016).
- Shanab, E.A. (2013), *The Relationship between Transparency and E-government: An Empirical Support*, Jordan, pp. 84-91, available at: [sub.emis.de](http://sub.emis.de) (accessed 20 August 2015).



- Singh, K. (2012), "E-Governance initiatives in India: a case study of Union Territory", *Gyan Jyoti E-Journal*, Vol. 1 No. 2, pp. 1-16.
- Singh, G., Pathak, R. and Naz, R. (2010), "E-governance for improved public sector service delivery in India, Ethiopia and Fiji", *International Journal of Public Sector Management*, Vol. 23 No. 3, pp. 254-274.
- Somuah, S. (2004), available at: [unpan1.unpan.org](http://unpan1.unpan.org); <http://unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN019792.pdf>
- Suri, P.K. (2014), "Flexibility of processes and e-Governance performance", *Transforming Government: People, Process and Policy*, Vol. 8 No. 2, pp. 230-250.
- United Nations (2008), *United Nations E-Government Survey 2012: E-Government for the People*, The Department of Economic and Social Affairs, Division of Public Administration and Development Management, New York, NY.

**Corresponding author**

Lakshmi Shankar Iyer can be contacted at: [lakshmi.iyer@christuniversity.in](mailto:lakshmi.iyer@christuniversity.in)

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgrouppublishing.com/licensing/reprints.htm](http://www.emeraldgrouppublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.