

“ROLE OF E-GOVERNANCE IN ENHANCING PUBLIC SERVICE DELIVERY- A STUDY”

Sukhavani Shetty

Department of Business Administration, Mangalore University,

E-mail: shettyvani123@gmail.com

ABSTRACT

ICT (Information and Communication Technologies) is today seen as a crucial tool in all facets of government, business, and individual everyday life. E-governance refers to the utilisation of information and communication technology (ICT) in the provision of government services and information to citizens, facilitating their interaction with the government. E-governance is a pivotal force that has prompted several initiatives, facilitating transparency and improved governance by the government of Karnataka. The development of any country nowadays relies on the utilisation of information technology. The advancement of any nation can be assessed by the extent of e-governance within that country. The Government of India is initiating numerous e-governance projects at the national level. Numerous state governments have initiated the implementation of e-governance across various sectors, including public administration, public services, rural services, electronic services, e-participation, healthcare, agriculture, land management, police administration, banking, and transportation.

Karnataka has been acknowledged as the “IT hub” of the nation. The state hosts both Indian IT enterprises and international firms. The Government of Karnataka has been undergoing an IT revolution in recent years, implementing numerous e-governance systems such as computerised land records (Bhoomi), treasury operations (Khajane), Bangalore One, Nemmadi, Karnataka One, and Kaveri. This study endeavours to address and examine the Contribution of E-governance public service delivery and different initiatives in Karnataka, along with the issues encountered during and after their implementation.

Key Words: E-governance, ICT, IT revolution, Karnataka

INTRODUCTION

Citizens in India encounter significant obstacles when attempting to access government services. These challenges may stem from a lack of awareness regarding the services available to them or insufficient knowledge on how to utilize these services effectively. Additionally, factors such as illiteracy, inadequate infrastructure, and the considerable distance to government offices can further impede access, requiring individuals to travel long distances daily for service provision. In this context, e-governance emerges as a crucial mechanism for enhancing citizen access to government services, thereby improving the efficiency and transparency of governmental operations.

The onset of the 21st century has been profoundly influenced by Information Technology (IT), to the extent that it has become a common jest that all words in the dictionary may soon start with the prefix “e”. This pervasive integration of technology into daily life suggests that

even the concept of existence may be redefined as “e-existence”. Consequently, it is not surprising that discussions surrounding e-governance have gained significant traction.

E-governance and the contribution of rapidly advancing technologies have increasingly taken centre stage in the promotion of good governance. Unlike other public reforms that seek to increase internal efficiency and, therefore, focus almost strictly on increasing government’s capacity to deliver services, e-governance and the combination of data analysis and citizen input platforms has the potential to transform the very nature of the relationship between citizens and their governments. This paper intends to understand the role play of Information communication and technology in delivery of public service to the citizen, here researcher focus on government to citizen services and the current status of the e-governance in Karnataka.

Types of Interactions in e-Governance

E-Governance facilitates interaction between different stake holders in governments. These interactions may be described as follows:

G2G (Government to Government) – In this case, Information and Communications Technology (ICT) is used not only to restructure the governmental processes involved in the functioning of government entities but also to increase the flow of information and services within and between different entities. This kind of interaction is only within the sphere of government and can be both horizontal i.e., between different government agencies as well as between different functional areas within an organisation, or vertical i.e., between national, provincial and local government agencies as well as between different levels within an organisation. The primary objective is to increase efficiency, performance and output.

G2C (Government to Citizens) – In this case, an interface is created between the government and citizens which enables the citizens to benefit from efficient delivery of a large range of public services. This expands the availability and accessibility of public services on the one hand and improves the quality of services on the other. It gives citizens the choice of when to interact with the government (e.g., 24 hours of a day, 7 days of a week), from where to interact with the government (e.g., service centre, unattended kiosk or from one’s home/workplace) and how to interact with the government (e.g., through internet, fax, telephone, email, face-to-face, etc). The primary purpose is to make government, citizen-friendly.

G2B (Government to Business) – Here, e-Governance tools are used to aid the business community – providers of goods and services – to seamlessly interact with the government. The objective is to cut red tape, save time, reduce operational costs and to create a more transparent business environment when dealing with the government. The G2B initiatives can be transactional, such as in licensing, permits, procurement and revenue collection. They can also be promotional and facilitative, such as in trade, tourism and investment. These measures help to provide a congenial environment to businesses to enable them to perform more efficiently.

G2E (Government to Employees) – Government is by far the biggest employer and like any organisation, it has to interact with its employees on a regular basis. This interaction is a two-way process between the organisation and the employee. Use of ICT tools helps in making these interactions fast and efficient on the one hand and increase satisfaction levels of employees on the other.

LITERATURE REVIEW

E-governance, which involves the integration of information and communication technology (ICT) into government services, has played a crucial role in administrative reforms within India, promoting transparency, efficiency, and increased citizen engagement. The advancement of e-governance in India commenced in the late 20th century, marked by the launch of the National e-Governance Plan (NeGP) in 2006, which introduced Mission Mode Projects (MMPs) aimed at delivering comprehensive services to citizens (Government of India, 2006). Nevertheless, the progress of these initiatives has faced obstacles such as the digital divide, inadequate infrastructure, and resistance to transformation (Gupta & Jana, 2003). Key challenges to implementation include insufficient infrastructure, digital illiteracy, and opposition from government personnel, particularly in rural areas where issues like poor connectivity and low awareness further complicate matters (Kumar & Best, 2006). Karnataka has emerged as a frontrunner in e-governance by establishing the Centre for e-Governance (CeG) in 2006 to manage various projects (Centre for e-Governance, 2025). Significant initiatives from this state include the Bhoomi Project, which digitizes land records to enhance transparency in land ownership (Madhusudhan & Rajashekar, 2017); Kaveri, an online system for property registration that reduces processing times (Madhusudhan & Rajashekar, 2017); Sakala, established under the Karnataka Sakala Services Act (2011), which guarantees timely service delivery with compensation provisions (Karnataka Sakala Services Act, 2022); and the Nemmadi Project, which facilitates access to e-governance services for rural residents through telecentres (Project Nemmadi, 2022). These programs have not only improved service delivery but have also contributed to reducing corruption, particularly with Bhoomi enhancing transparency in land transactions (Madhusudhan & Rajashekar, 2017). Despite these advancements, persistent challenges such as data security and infrastructure upkeep necessitate ongoing monitoring and capacity building while addressing socio-cultural barriers. Overall, while significant strides have been made in e-governance both in Karnataka and across India, the experiences gained from Karnataka's initiatives provide valuable lessons for other regions aiming to establish effective e-governance frameworks.

OBJECTIVES OF THE STUDY

1. To study the contribution of E-governance in public service delivery.
2. To analyse the e-governance initiatives undertaken by the Government of Karnataka.
3. To understand the present status of e-governance in Karnataka
4. To know the impediments faced by the E-governance.

METHODOLOGY

A thorough conceptual analysis has been performed in this paper based on the secondary data obtained through research articles, publications, books and news reports.

E-Governance in India

India's journey toward e-governance commenced in the 1990s, marking a significant transition in the country's information and communication technology (ICT) sector. The Government of India launched the National e-Governance Plan (NeGP) on May 18, 2006, with the objective of enhancing IT efficiency and productivity. The plan aimed to improve the delivery of government services to both citizens and businesses by ensuring accessibility, transparency, efficiency, and affordability through a network of service delivery centres (Electronic Governance Division, 2006). Over time, e-governance has become an essential component of governance at all levels—local, regional, national, and international. The initial phase of computerization in the 1980s primarily focused on automating government operations, whereas the 1990s witnessed the expansion of these efforts into a centralized model across various administrative domains (Heeks, 2001). The early 2000s saw a significant boost in e-governance initiatives, driven by declining costs of communication and IT infrastructure alongside increasing demand for digital services. Consequently, government-led e-governance projects, in collaboration with the corporate sector, played a crucial role in fostering long-term growth in this domain (Singh, 2010).

Initiatives in Various Sectors

Agriculture: The major services of Agriculture MMP (Mission Mode Project) include Pesticide registration, Display on the Web of Seed Testing Results, Prices and arrival details, Geographical Information System (GIS) based interface for price and arrival details, District level Agro-met advisories, Information on pesticides, Information on fertilizers/seeds, etc. Some major mobile applications developed are,

- **Kisan Suvidha:** This app provides information on five critical parameters - weather, input dealers, market price, plant protection and expert advisories.
- **Pusha Krishi:** This app provides information on latest technologies to farmers.
- **Crop Insurance:** Farmer can learn of insurance premium, notified area etc. on the mobile.
- **Agri Market:** Farmer can learn of the prices of various crops in the mandis near him.
- **India Weather:** This app provides current weather and 4 days weather forecast across the country for more than 300 cities.

The major Web portals developed include the following:

- **Farmers' Portal:** Farmers' Portal is a one stop shop for farmers where a farmer can get information on a range of topics including seeds, fertilizer, pesticides, credit, good practices, dealer network, and availability of inputs, beneficiary list and Agro-met advisories.
- **mKisan Portal:** This is a unified platform from where officials and scientists can send targeted text and voice-based advisories to the farmers on a host of issues related to agriculture and allied sectors.
- **Crop Insurance Portal:** To provide complete information related to Crop Insurance scheme being implemented in the country.
- **Participatory Guarantee System of India (PGS) Portal:** This is a portal for encouraging participatory approach to certification of organic farming in the country.

- **e-Mandi:** The Government has launched e-Mandi portal to make procurement of agricultural products smoother and provide competitive remuneration, especially for small and marginal farmers.
- **Land Records:** Major services include real-time availability of land records, issuance of Record of Rights along with cadastral maps, issuance of certified copy of deed, issuance of non-encumbrance certificate, payment of stamp duties etc. 26 States have computerized their land records and providing computerized copies of Records of Rights on demand. These states have also placed their land records data in public domain.
- **School Education Mission Mode Project (MMP):** The MMP is focused on Primary, Secondary and Higher Secondary education. It will be a driving force for implementation of National Policy on Information & Communication Technology (ICT) in School Education.
- **National Scholarships Portal (NSP):** The portal is a one-stop solution to implement end-to-end disbursement of the scholarship to the beneficiaries. The process includes student registration, application, approval and disbursement. 76 schemes of 22 Ministries/Departments of the Government are being on-boarded on the portal.
- **Aadhaar and Direct Benefit Transfer (DBT):** 103+ crore citizens enrolled. 27+ Crore Bank Account seeded with Aadhaar No. 74 Government Schemes are on DBT, where Rs. 1.2 lakh crores transferred through DBT.
- **Central Excise and Customs:** Facilitates trade and industry by streamlining and simplifying customs and excise processes and to create a climate for voluntary compliance.
- **MCA 21:** The major services delivered under the aegis of Ministry of Corporate Affairs through MCA21 include viewing of public records, issue of certified copy of documents, change in registered office, change in director(s), annual filings, application for change of name of a company, incorporation of a company and name allocation to a new company.
- **Passport Seva:** Project focuses on reforming Passport services in India through simple, efficient and transparent processes from processing of Passport to delivery of services.
- **e-Tourist Visa:** Tourists can apply visa online, pay visa fee online and receive e-Tourist Visa online. Around 8.45 lakh e-Tourist Visas have been issued since Nov, 2015.
- **e-Courts:** The services delivered through the e-Courts MMP include Automated case filing, Automated registration of case, Automated workflow for court, Generation of automated cause list, Judicial service centres in all Courts, Automation of Case Management System, allocation of cases, etc.
- **Common Services Centres (CSC) 2.0:** The CSC aims for establishing at least one CSC in each of 2.5 lakh Gram Panchayat (GP) level under Digital India Programme to deliver various G2C, B2C and B2B services online.
- **e-District:** e-District services have been launched in 555 districts of the country, which delivers various types eGov services at districts.
- **Mobile Governance:** The Mobile Seva platform delivers Government services over mobile devices using mobile applications installed on the user's mobile handsets. About 2521 Government departments and agencies at central, state and local levels have been integrated with the Mobile Seva platform.

- **e-Hospital:** – Online Registration System (ORS): It includes online appointment and registration by new patients, viewing of lab reports, checking the status of blood availability and integration with payment gateway (PayGov). 43 hospitals have been integrated.
- **Jeevan Pramaan:** Digital Life Certificate for Pensioners scheme known as Jeevan Pramaan envisages digitizing the whole process of securing the life certificate. With this initiative, the pensioner is no more required to physically present himself or herself in front of disbursing agency or the certification authority. Jeevan Pramaan is a biometric enabled digital service for pensioners. 16.30 lakh pensioners registered for the scheme.
- **Vikaspedia:** It is a multilingual collaborative content creation platform that promotes access and sharing of e-knowledge for empowerment of underserved communities. Vikaspedia facilitates societal empowerment through provision of relevant information in various domains including Agriculture, Education, Health, Social Welfare, Energy and e-Governance in 22 scheduled languages of the country, besides English.
- **MyGov:** MyGov aims to establish a link between Government and Citizens towards meeting the goal of good governance. MyGov encourages citizens as well as people abroad to participate in various activities i.e. ‘Do’, ‘Discuss’, ‘Poll’, ‘Talk’, ‘Blog’, etc. There are multiple theme-based discussions on MyGov where a wide range of people can share their thoughts and ideas.

E-governance in Karnataka

In the month of October 2011, the then Chief Minister of Karnataka, during his regular Interactions with Citizens in his “Janatha Darshan” learnt that quite a few requests that came to him were for routine services that were bound to be given by the Government. Yet the citizens were deprived of receiving these services. Hence, he directed the Chief Secretary, Government of Karnataka (GoK) to look into these aspects and come up with a legislation that would provide and guarantee Citizens with basic services that ought to be provided within a stipulated time. The CS in turn entrusted the job to the Secretary, Department of Personnel and Administrative Reforms, GoK to formulate an Act to deliver government services in a time bound manner. After series of deliberations the draft Act was ready by December when it was unanimously passed by the Legislature. Subsequently, preparation of rules was done by January, training of staff in January and February, pilot launch happened in 4 talukas (administrative sub divisions) on 1st of March and State wide roll out on 2nd of April with 151 services. Thus, came into effect ‘The Karnataka Guarantee of Services Act 2011’. This comprises of the largest ever offered set of services to citizens under any other Act of the States of India. The Second phase began on 2nd November, 2012 wherein 114 additional services have been added taking the total to 265.

Karnataka Guarantee of Services to Citizens Act, is the largest in the Country in terms of coverage i.e., 265 services of 30 departments/institutions that touch each Citizen’s life on a daily basis. e.g.,

1. Caste Certificate (Revenue Department)
2. Income Certificate (Revenue Department)
3. Residence Certificate (Revenue Department)

4. Registration of Birth & Death (Urban Development & Revenue Department)
5. Driving Licence (Transport Department)
6. Learner's Driving Licence (Transport Department)
7. Vehicle Registration (Transport Department)
8. House Plan Sanction (Urban Local Bodies)
9. Copy of FIR (Police Department)

E-governance initiatives in Karnataka:

The following are the major e-governance projects initiated by the Karnataka government.

- ***BHOOMI Project:***

Bhoomi – a flagship project of Karnataka State Government is a Land Records management system. The project was inaugurated in the year 2000. Under this project, all the manual RTCs which prevailed at the time of data entry were digitized and made available to the citizen through Kiosk Centres. All the ownership or any other changes in the RTCs are carried out through mutation as per KLR Act using the Land Records database. Bhoomi back offices have been set up at 176 talukas, 1 additional taluk & 26 special talukas of the state. In each of these centres LR Kiosk & Application Kiosk have also been setups. The citizen / farmer can directly walk into the Application Kiosk & apply for mutation by submitting the required documents. Acknowledgement number is also issued to the citizen at this Kiosk. The applicant can know the status of his mutation by using this Acknowledgement number.

All the mutation requests are processed at Bhoomi back offices. Bio-login finger print authentication is used for all users in Bhoomi application to prevent unauthorized access to application / database. All RTCs are being digitally signed using PKI (Public Key Infrastructure) concept. Amount collected in the Kiosk centres is remitted to PD Account of Deputy Commissioners. Bhoomi is a self-sustained project. All the expenditures relating to purchase / maintenance of hardware, infrastructure, technical manpower, stationery, consumables etc are met through the user charges funds collected at Kiosk centres.

- ***KHAJANE***

'KHAJANE' is a major e-governance initiative of the Karnataka State Government. Basically, it is a government-to-government (G2G) project, except for service pensions and social security pensions, which have an interface with the citizens. This project was implemented mainly to eliminate systemic deficiencies in the manual treasury system and for the efficient management of state finances.

This project is the first of its kind in the country where the entire treasury activity has been computerised. This is the only project where, from the time of approval of the state budget to the point of rendering accounts to the government, the entire activity can be tracked through the system.

There are 216 treasuries functioning across the state. Of them 31 are district-level treasuries (three special district treasuries in Bangalore and one in Hubli) and 185 are sub-treasuries at

the taluk and sub-taluk levels. All the treasuries in the state are banking treasuries, where the cash transaction is handled by agency banks. The treasuries in the state disburses salaries to about 7 lakhs government and grant-in-aid employees, services 4.3 lakh pensioners and 15.7 lakh social security pensioners. From 228 departments, 21,000 drawing officers draw money for 2117 schemes from the treasuries in the state. The treasuries handle about Rs 36,000 crores of receipts and Rs 46,000 crores of payments annually. In addition to state government transactions, the treasuries also handle the *Zilla Panchayat and Taluka Panchayat* transactions, which is unique in the country.

- ***KAVERI***

KAVERI Online service is a web-based application of Department of Stamps & Registration, Government of Karnataka that provides interface to the citizen to enter details and book appointment for document registration and also provides facility to search for required Index and registered copies.

These services enable citizen to download Index (List of transactions on the searched property) and copy of the document. Citizens can also book appointment for registering documents. This will help citizen to check the present owners of the properties, helps citizen in checking the authenticity of the registered document and also helps citizens to book appointment for document registration.

- ***Land Taxes***

National Informatics Centre (NIC) has released 'Aasthi Terige' (property tax) a system to help Gram Panchayats calculate and collect property tax. However, the software is unsuitable for this project, as it is different from the system of property tax in DK district. According to the Panchayat Raj Act gram panchayats had to fix annual rental value (ARV) and 10 per cent of ARV has been calculated as property tax. According to the new guidelines property tax should be fixed based on the square feet of buildings classified in three categories-thatched, tiled and concrete houses. The property tax fixed based on the discussions in such committees was found five times more than the previous taxes. So, Gram Panchayat secretaries to put the software to use by calculating property tax based on property tax.

- ***Online Ration Card Processing System***

The main purpose of this project was to set up a database of the ration cards specially BPL cards, evolve a mechanism for identifying ineligible and unlawful ration cards, eliminate the ineligible and unlawful ration cards, which were already in existence, build a proper foundation for issuing of the ration cards as a continuous process as requests will keep coming in. It is also important to verify these requests for genuineness before issuing. Again, this cannot be done manually. To handle this system, the online system for the ration cards request has been developed and has been put on the public domain.

The citizens can apply online without visiting the food offices. The citizens are required to provide the photographs and finger print bio-metrics details through the service centres. The computer facilities and staff at the gram panchayaths are used to assist the rural citizens to apply online and provide photographs and finger print bio-metrics there itself. Information furnished in the applications are juxtaposed with the data relating to existing ration cards,

LPG connections, electricity meter number or property tax number in the rural area and the results are made available.

The system is incorporated with a number of checks and balances to validate/verify the online application data, submitted by the citizens. Based on the scrutiny and local inspection results the food inspector approves and the ration card generates. If the food inspector has any doubt about the case, he performs the field verification before issuing the ration card.

- **SAKALA**

Karnataka Sakala Services Act was passed in 2011 to provide guarantee of services to citizens in the Indian state of Karnataka with a stipulated time limiting to citizen related services. The act came to be known as Sakala Act since November 2012. Karnataka is the tenth state to incorporate an act under Right to Public Services legislation. The Sakala program is backed by a comprehensive information technology network, developed by the National Informatics Centre (NIC) to provide solutions and services and to monitor the services.

E-Governance in Public Service delivery

Karnataka State referred as one of the IT hubs since many IT companies are situated in Karnataka especially in Bangalore. When we compare e-governance initiatives of other states with Karnataka, it is evolving towards maturity; there are lot of e-governance initiatives adopted by the Government of Karnataka.

E-governance has become a transformational element in public service delivery, markedly improving efficiency, transparency, and accessibility. The use of information and communication technology (ICT) into governmental functions facilitates streamlined processes, hence enhancing the quality and promptness of services rendered to residents. This transition is notably apparent in multiple facets of public administration, as e-governance projects enhance resource management and information dissemination, ultimately resulting in superior service delivery outcomes. A principal advantage of e-governance is its capacity to improve efficiency in the delivery of public services. E-governance initiatives facilitate expedited service delivery by automating processes and minimising bureaucratic obstacles. The implementation of online platforms enables citizens to utilise services without necessitating physical trips to government offices, thereby decreasing wait times and operational expenses for both the government and the public (Syamsiar, 2023; Alahakoon & Jehan, 2020). This transition not only enhances resource allocation but also results in substantial cost reductions for government operations, as demonstrated by research suggesting that digitalisation can yield increased cost-effectiveness (Syamsiar, 2023; Alahakoon & Jehan, 2020). Furthermore, e-governance promotes transparency and accountability in public management. By digitising data and transactions, governments may establish a transparent audit trail that hinders the proliferation of corruption. This transparency is essential for fostering public trust, as citizens can more readily obtain information regarding governmental actions and service delivery processes (Sahur, 2023; Singh, 2023). The creation of digital records enhances accountability by simplifying the

monitoring of public officials' performance and ensuring their responsibility for their acts (Sahur, 2023; Mura et al., 2018). Studies indicate that e-governance can markedly diminish prospects for corruption by reducing direct encounters between citizens and bureaucrats, which frequently present avenues for bribery and misconduct (Kalesnikaite et al., 2022). Moreover, e-government improves citizen involvement and participation in governing activities. Digital platforms enable citizens to express their ideas, obtain information, and engage in decision-making processes more efficiently than past techniques permitted (Singh, 2023; Zheng, 2016). This heightened engagement not only empowers citizens but also enables governments to more effectively comprehend and address the demands and desires of their constituents (Singh, 2023; Oni et al., 2016). The capacity to interact with citizens via digital platforms has been especially vital during crises, like as the COVID-19 pandemic, where prompt information distribution and public involvement were essential for good governance (Agostino et al., 2020).

From the evidence of both theoretical and empirical study reveals that e-governance in Karnataka is inevitable and it is progressing from the beginning. From the result of survey, it shows that there is lot more development is needed and many e-governance services should be added to the present services.

There are many problems which normally e-governance is facing, overcoming these problems can make the e-governance more effective and also need to create more awareness among the people about the existing e-governance projects

Problems and challenges faced by the e-governance in Karnataka

- **Lack of training:** large numbers of officials were higher aged and had never worked with the technology; in this case training is very much required for those officials. And also, in other case since the programmes are designed by the IT professionals, they know better than any other so training for the officials from the technical expertise.
- **Lack of Planning:** The poor planning and implementation is one of the reasons for slow development of e-governance in Karnataka. Planning about technology, people, coordination of deferent department, stages of adoption process etc. should be planned effectively.
- **Hesitation of going digital:** the people usually restrict to change. Vested interests thought use of such technologies as transgression into their authority.
- **Lack of awareness:** Lack of awareness is one of the challenges faced by the Karnataka e-governance. The usually people are unaware about the services provided by the government of Karnataka.
- **Infrastructure:** Infrastructure provided by the government for effective implementation of IT enabled services is very poor and inadequate,
- **Lack of awareness about the Technology:** In Karnataka most of the higher aged people are illiterate and they were not using the technology.

CONCLUSION

Many e-governance projects in Karnataka including ICT based not only creating the e-government but also encouraging people's participation in the e-governance. But it must be citizen centric by allowing citizen in decision making process. The governance programmes are planned without the involvement of villagers, unsuccessful of development programmed is because of poor administration and ineffective development machinery at the village level. So there must be change in existing system of e-governance. The best instrument to reduce this is panchayath raj which makes more participation in the implementation of plan at the rural level. The main success factor of e-governance is stakeholder, and the other factors like ability to use, creativity in implementing, interest of learning, good infrastructure which leads to the successful-governance. In summary, e-governance is essential for augmenting public service delivery through increased efficiency, transparency, and citizen participation. The implementation of digital technologies in governmental activities enhances efficiency, decreases expenses, and promotes a more accountable and participatory governance structure. As governments increasingly adopt digital transformation, the prospects for enhanced public service delivery are projected to grow, facilitating more responsive and effective governance.

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