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Kerala Municipal e-Governance Study

Field Report

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Executive Summary

The field report presents the findings of a field study conducted in eight Urban Local Bodies (ULBs) in Kerala by the eGov Foundation. The study aims to document and understand the baseline realities pre-implementation of the Kerala Solution for Managing Administrative Reformation and Transformation (K-SMART) in the state. The study was conducted to gain insights into the kind of change management that will be required to improve adoption and governance outcomes in the initial implementation phase of K-SMART.

The study highlights the challenges faced by the Municipal Governance system in Kerala, such as, the lack of standardisation in data entry and data storage, the maintenance and operation of multiple software, and the parallel paper trail system. These challenges will need to be addressed for the successful implementation of the K-SMART program.

Key Observations:

1. The data regarding revenue, total count, and service level agreement (SLA) compliance in the Trade License (TL), Birth and Death (B&D), and Public Grievance Redressal (PGR) modules are not readily retrievable or comprehensible. This is due to a lack of standardization in data entry, and data storage in multiple software.
2. Many employees report that maintenance and operation of multiple software is a confusing and complicated task. The parallel offline paper trail system further aggravates this complication.
3. For every application/transaction in the Municipal Office, a paper-based record is maintained in almost all ULBs. All the employees interviewed reported spending a large share of their time (40-80%) maintaining this parallel paper trail.
4. Only a few citizens are aware of the existence of SLAs, right to timely service delivery, and existing online channels of service delivery.



Recommendations

1. Standardized data entry and data storage processes can be introduced in all ULBs, to increase data reliability and reduce data retrieval costs.
2. The maintenance and operation of multiple software must be simplified, for instance, by developing a single user interface for employees. The parallel paper trail system should be eliminated.
3. Change management initiatives must be undertaken to build a culture of digital governance among employees, especially when it comes to receiving and sending documents across departments or units. The practice of sending printed copies of documents can be replaced by sending digital copies.
4. Citizen awareness campaigns must be undertaken to promote K-SMART usage and benefits. Information about services available and SLAs for a service requested can be displayed within the K-SMART citizen interface. This information, along with the guidance on how to access digital channels, can be prominently displayed in ULB offices as well.
5. As the K-SMART program is rolled out across more ULBs and covers more services/modules, baseline data should be recorded for each module, so that the impact of the program can be assessed more rigorously.



1. Introduction

The Centre for Digital Governance at the National Institute of Urban Affairs (NIUA) is spear

heading the Urban Platform for delivery of Online Governance (UPYOG), one of the flagship initiatives under the National Urban Digital Mission (NUDM). UPYOG supports states in implementing integrated e-governance and digital delivery of municipal services to citizens. That is, NIUA, through UPYOG, is enabling various state governments in the country to build a digital platform for urban governance.

The Local Self Government Department of the Kerala Government has established the Information Kerala Mission (IKM) as an autonomous body with a mandate to strengthen local self-governance through ICT applications. IKM is leveraging UPYOG, to create a digital governance solution called the Kerala Solution for Managing Administrative Reformation and Transformation (K-SMART).

As a pilot, K-SMART was proposed to go live in 8 ULBs in Kerala from March 2023, starting with three modules — Trade Licence (TL), Birth and Death (B&D), and Public Grievance Redressal (PGR). In this background, eGov has initiated a field study, aiming to empirically assess the impact of K-SMART on the urban governance system of Kerala.

As a first step of this exercise, a field study was conducted in 8 ULBs in Kerala to document and understand the baseline realities pre-implementation. This report is an outcome of this study, and aims to provide insight into what kind of change management will be required in the programme to ensure adoption and improvements in governance outcomes in the initial adoption phase of K-SMART.

We plan to conduct another set of field data collection in the ULBs covered in this study, approximately a year after K-SMART has been initiated. Ideally, this will enable us to use a 'difference-in-differences' method (comparing baseline and midline data, across ULBs covered and not yet covered by K-SMART). Analysis of this dataset will help to more rigorously assess the impact of K-SMART on the Municipal Governance in Kerala.



2. Relevance of the Study

The field study primarily aims to understand the baseline reality before the DIGIT-based system is put into action. Since we have yet to start implementing, this is the right time for understanding baseline conditions, with an emphasis on qualitative data. This is because gathering historical qualitative data is more challenging. On the other hand, once the back data integration is completed as a component of the implementation, we can easily consolidate and analyze historical quantitative data.

Kerala is a national leader in various developmental indicators such as SDG India Index (NITI Aayog, 2020), Health Index (NITI Aayog, 2021) and School Education Quality Index (NITI Aayog, 2019). Further, IKM, established in 1998, is one of the national pioneers in ICT-based governance and "is the largest and most comprehensive local body computerisation initiative in the country",¹ currently working in the 1209 local bodies of Kerala. Hence this particular study will help us understand the impact of DIGIT on service delivery in an environment with high development indicators and an existing robust digital service delivery mechanism.

Furthermore, the methods and data collection tools used in this study may be standardised and included as part of the program pre-implementation process. Such an exercise will help us understand the program's impact, with greater rigour than post-facto data collection alone would enable.

Impact data from multiple states could be used to triangulate the effect of social, political, economic, and cultural factors on the implementation of reform programs such as K-SMART. This could help develop better replicability and scale-up strategies, and define a roadmap for successfully introducing and leveraging platforms such as UPYOG under different conditions and in various sectors.

¹ Information Kerala Mission. *Vision & Mission, Information Kerala Mission*. Information Kerala Mission. Retrieved February 14, 2023, from <https://ikm.gov.in/index.php/en/mission>



3. Methodology

Two sets of Local Bodies were selected in Kerala (Table 1). The first group is where K-SMART will be piloted in the coming months. The second closely resembles the ULBs in the first set with respect to social, political, economic and geographical characteristics — but where K-SMART will not be implemented immediately. Additionally, ease of logistics was another deciding factor due to the limited resources at disposal. This resulted in the selection of ULBs in the southern part of Kerala.

ULB	Type	District	Population	Area (sqkm)	Selection Logic
Kochi	Corporation	Ernakulam	6,77,381	94.88	Pilot
Thiruvananthapuram	Corporation	Trivandrum	7,43,691	214.86	Comparator
Thodupuzha	Municipality	Idukki	52045	35.43	Pilot
Muvattupuzha	Municipality	Ernakulam	30397	13.18	Comparator
Kodungallur	Municipality	Thrissur	33,935	29.24	Pilot
Chalakyudy	Municipality	Thrissur	49,525	25.23	Comparator
Cherthala	Municipality	Alappuzha	45,827	16.18	Pilot
Pala	Municipality	Kottayam	22,640	16.06	Comparator

Table 1: List of ULBs covered in the study

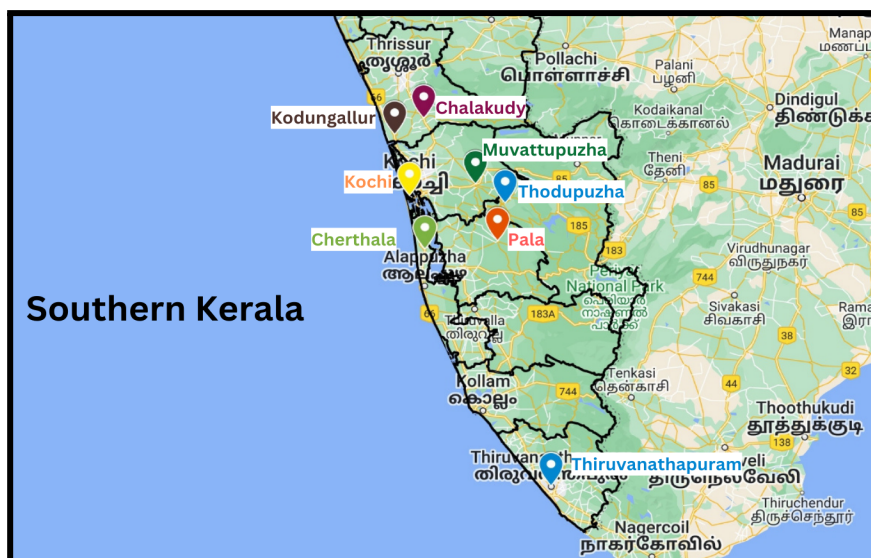


Fig 1: ULBs covered in the study



A field-based mixed method data collection was utilised, with a focus on the following parameters:

1. Ease of Working for Employees
2. Ease of Access to Citizens
3. Citizen Awareness
4. Local Body revenue
5. Service Level Agreement compliance

As the pilot implementation is planned for three modules (TL, B&D and PGR), the focus of data collection was further narrowed down to employees and citizens who are working on or using these modules only.

The Data Collection Tools that were used were Non-Participatory Observation, Semi-Structured Interview (n=34), and Unstructured Interview (n=21). The field data collection was conducted between January 18 and February 10, 2023.



4. ULBs in Kerala: Introducing the Setting

This section aims at bringing the reader to the perspective of the researcher with respect to the realities of the field. Readers who wish to skip to the results of the study may proceed directly to the next section ([Sec. 5](#)).

There are 93 Urban Local Bodies in Kerala spread over its 14 districts. These Urban Local bodies are classified into two types — Municipal Corporations (6) and Municipalities (87). This two-tier classification is different from most other states, as the Constitution prescribes a three-tier system (Article 243Q, Constitution of India).

Much like the Urban Fabric of the city that they belong to, the municipal offices are also incrementally built, a textbook example of Southern Urbanism. These municipal offices, like all other government buildings, are at different phases of incremental development:

1. Initially, they are built, leaving a lot of open area.
2. As the city grows over time, it parallelly calls for an increase in human resources for its administration. This will, in turn, call for building newer buildings to accommodate the increasing workforce and ever-growing physical records and files. “Over time, we have constructed buildings in all directions possible,” said an employee from a Corporation Office.
3. Eventually, these new buildings will take up all the open spaces with its compound. This leads to a threshold where no more space exists for constructing a new building.
4. This threshold will force the administration to find new land and build a bigger office, and the cycle loops back to stage 1 again.

Among the ULBs visited for this study, Pala and Chalakudy are in Stage 1 (Fig 2). Thodupuzha, Muvattupuzha, Cherthala, Kodungallur and Thiruvananthapuram are in Stage 2 (Fig 3). As we speak, Thiruvananthapuram is constructing a new wing in its current corporation compound and is racing to stage 3. Kochi has crossed Stage 3 and is currently at Stage 4 as they are constructing a new Corporation Office (Fig 4).





Fig 2: (left to right) Chalakudy Municipality Office; Pala Municipality Office



Fig 3: (clockwise from top left) Thiruvananthapuram Corporation Office; Thodupuzha Municipality Office; Cherthala Municipality Office; Kodungallur Municipality Office;





Fig 4: (left to right) Kochi Corporation Office; Proposed Kochi Corporation Office, which is under construction

Once we move inside these offices, rather than their differences, we will be welcomed by a set of commonalities. All these offices have a front office/desk with an employee sitting with a computer (Fig 5). This front desk is where a citizen comes and registers their application (including complaints) which is digitally recorded into *Soochika* — a workflow application developed by IKM. Each application is given a ‘*tapal number*’ or ‘*inward number*’ (unique application number) and designated to an officer in the ULB, according to the nature of the application.

The front desk becomes a front office when the size of the ULB increases. For example, the Kochi and Thiruvananthapuram Corporations have a front office with 4+ employees rather than just one front desk.

Further, all the ULB offices have a second commonality. All of them have displayed the list of services provided, the stipulated timeline for each service,



and redressal mechanisms in case of failure of timely service delivery (Fig 6). These are commonly referred to as Service Level Agreements (SLAs). The ULBs in Kerala have developed these SLAs based on the Kerala State Right to Service Act, 2012. Nevertheless, in many ULBs, they are exhibited in places that might not catch much public attention, or are in illegible condition (Fig 7).



Fig 5: (clockwise from top left) front desks/offices in Muvattupuzha, Thodupuzha, Chalakudy, Thiruvananthapuram, Pala and Cherthala ULBs.



Once we move past the SLA boards and the front office, the inside offices are arrayed based on available space, number of employees, and department. In some smaller ULBs, the entire office will be a big hall with employees from the same department sitting close to each other. The higher-ranking employees, like the secretary, will have a separate cabin or room. From this, there are larger ULBs with different rooms for each department, and in the case of very large ULBs, each department might even have an entire floor to itself.

Almost all the offices are vibrant and populated, with much activity throughout the day, peaking around 10 to 12 in the morning. Even in such a crowd, another entity that you would find more abundant than people in these offices will be files (Fig 8). Such cramming of files is initially confusing, as Kerala Municipal Governance started adopting e-Governance for almost two decades now. If we keep that reality in mind, one will find the file-strewn municipal offices in Kerala puzzling. This divergence in expectation and reality will be explained once we start to understand the workflow in these offices. More on this in the next section.



Fig 8: *The Sea of Files, snaps from ULBs in Kerala.*



5. Tracking the Paper Trail

In Kerala's Municipal offices, files are packed everywhere (Fig 8), primarily due to the practice of keeping a paper record for every online transaction. That is, **for almost every transaction/application happening online in a Kerala ULB, a parallel offline paper-based record is maintained.** For further clarity, please refer to the workflow diagram of three application processes — Trade Licence Application, Public Grievance Application and Birth/Death Registration (Fig 9, Fig 10 & Fig 11). The workflow was traced by triangulating narratives from employees from different ULBs; hence, there is scope for local variances.

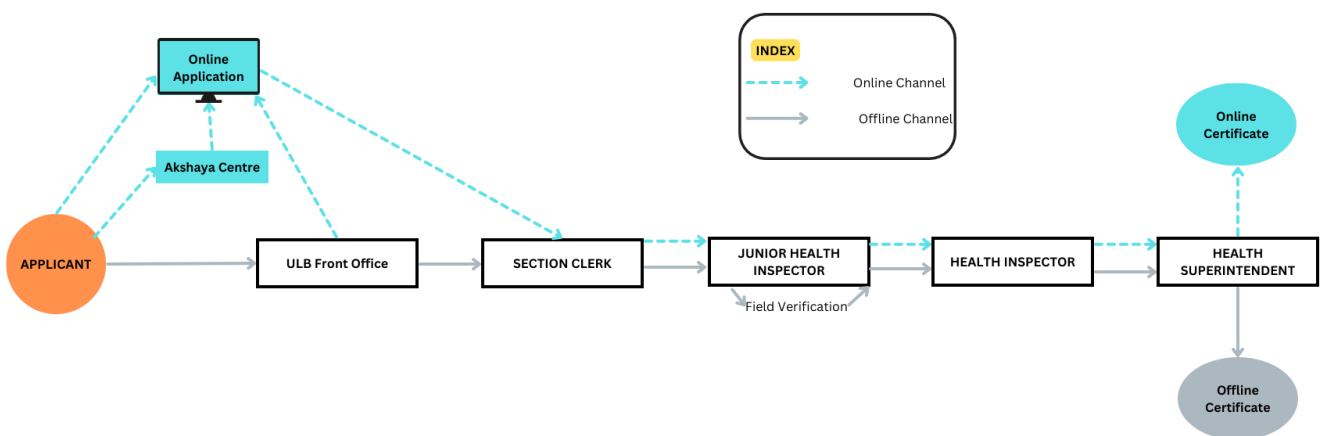


Fig 9: Workflow of a Trade Licence New Application



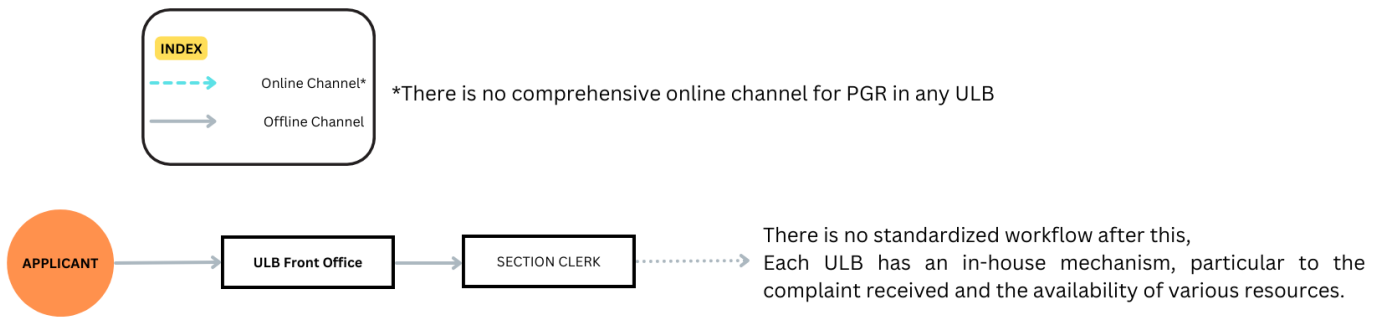


Fig 10: Workflow of Public Grievance Redressal

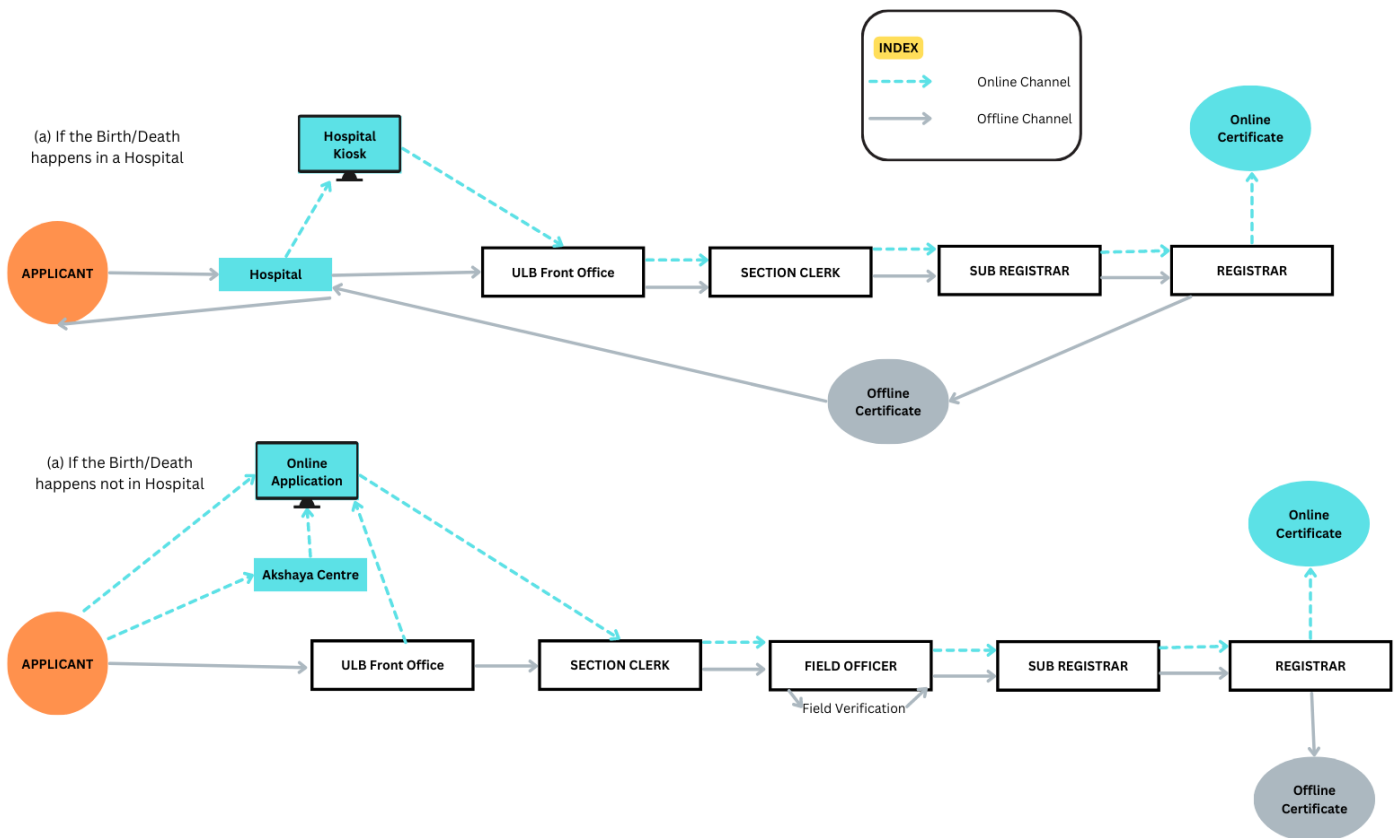


Fig 11: Workflow of Birth or Death Certificate Application



Take, for instance, a new trade license application. Despite submitting an application online, the applicant must still visit the ULB office and physically submit the form. Afterwards, both the online and offline applications move in parallel through various departments and desks until the certificate is granted. Although there are some exceptions, this workflow is largely consistent across ULBs.

There are multiple reasons for the existence of this parallel offline channel, which will be discussed in detail in later sections of this report.



6. Analysis

As mentioned in the Methodology section, the study primarily focuses on understanding the qualitative baseline. This qualitative emphasis evolved during the initial days of the fieldwork. Originally, while proposing this study, the aim was to collect qualitative and quantitative data. Later, it was understood from the initial two ULBs that quantitative data retrieval from the existing database in Kerala is an arduous process. So this is the first observation: **(1) The data regarding the revenue, total count and Service Level Agreement (SLA) compliance in TL, B&D and PGR modules are not readily retrievable and comprehensible due to a lack in standardised data entry and data storage in multiple software.**

A standardised data entry process reduces the data retrieval cost and increases data reliability. This could be understood by the example from one ULB, where they are entering PGR-related data in Soochika in a standard manner (Fig 12). This practice was not followed in any other ULB from the sample. While the data retrieval for PGR took an hour on average in other ULBs, it took less than 5 minutes in this particular ULB. Further, the front desk employee in this ULB was confident about the integrity and comprehensiveness of PGR data, while this was not the case in other ULBs.

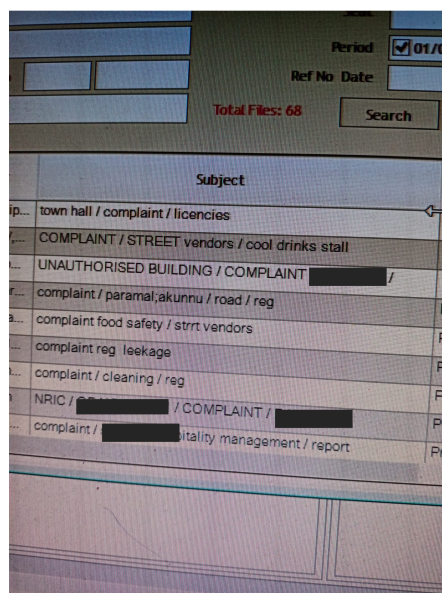


Fig 12: A Case of Standardised Data Entry into Soochika.



The Municipal Governance system in Kerala is supported by various software such as ILGMS, Sanchayana, Saangya and Soochika for different functions such as online service delivery, revenue and license, accounting and finance, and workflow management, respectively. **(2) Many employees report the maintenance and operation of multiple software as a confusing and complicated task.**

An employee said, "I have written all my user names and passwords in this diary. I cannot remember this much information; at least I am no longer as young as you."

The parallel offline paper trail system further aggravates this complication. As mentioned before, **(3) for every application/transaction in the Municipal Office, a paper-based record is maintained in all ULBs** [except in two departments from two ULBs]. The magnitude of this could be explained through the case of PGR workflow in a particular ULB (Fig 13). In this ULB, five different channels exist for a citizen to register a complaint, four of which are online. But the complaints received online are also printed into a physical paper and further processed offline. **(4) All the employees interviewed (n=34) reported spending 40 to 80% of their time maintaining this parallel paper trail.**

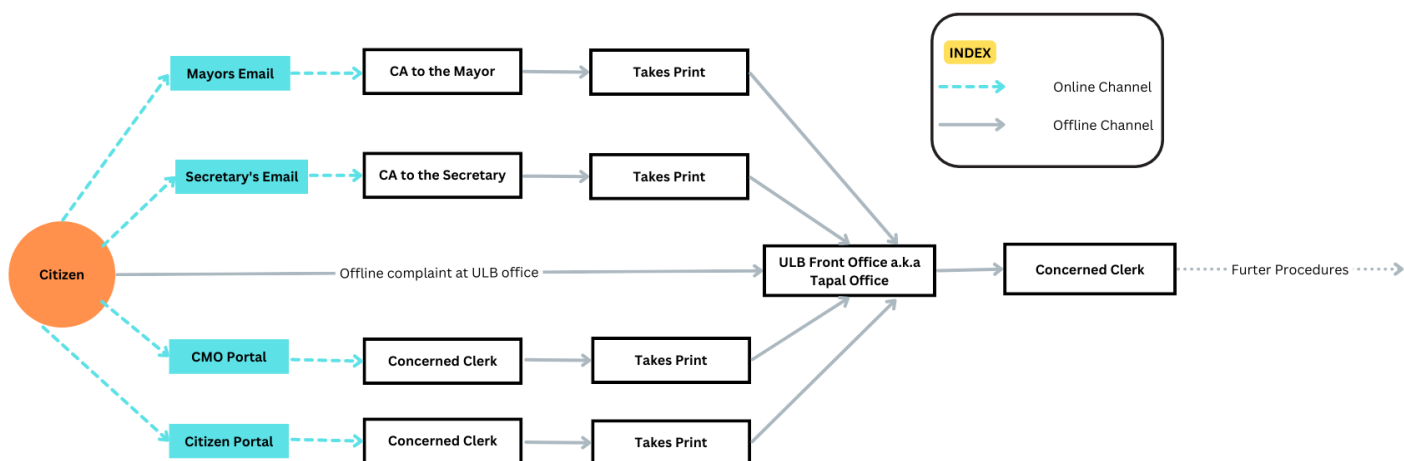


Fig 13: Public Grievance Redressal channels and workflow in a ULB in Kerala



The following excerpt from the interview with a clerk from the Birth and Death section could further substantiate this situation.

We maintain a birth registry in this ULB, even though we have digital records of the same. So if a citizen applies for a name correction in their birth certificate, supported by the required documentation, we must correct both online and offline databases. The name correction in the online database is easy; just a few clicks and it's done, it hardly takes a minute. The correction in the offline register is a longer process. Once I verify the records, I write a letter to the registrar, mentioning the application for name correction and recommending it. The registrar checks this, approves this and sends it back to me. Now I will take the record, correct the name there and attach this letter. This will take at least a couple of hours of my time.

The reason behind this paper trail scenario can be primarily traced to the following three factors (Fig 14):

1. Employees lack trust in digital systems. As noted by different employees, they are scared to just maintain the computer system. "What will happen if something happens to the computer?" asked an employee. This indicates the lack of employee training and awareness regarding digital systems. This can be addressed through training and top-down communication.
2. The citizens lack trust in digital systems and certificates. Many citizens are unaware that digital and physical certificates are equal in value. This could be understood from a case narrated by an employee regarding a ULB in which they worked before. In this particular ULB, even though the employees were issuing digital Trade Licences only, the business owners were unsatisfied. They wanted physical certificates, so they lobbied with the trade unions and approached the councillors. Through the elected executive, these ward councillors directed the ULB employees to give physical certificates when demanded.
3. Lack of acceptance for digital certificates in the politico-economic ecosystem. Digital certificates, especially birth certificates, are yet to be



entirely accepted in the current judicial system. This is well narrated by an employee;

Say, in a POCSO (Protection Of Children from Sexual Offences) case, the judge must verify the victim's minor status. For this, they will summon the Municipal Registrar, who goes to court with the physical birth register of the ULB. Here, the judge won't accept a digital certificate as they can't verify the same. There are multiple cases like this where a digital certificate is not accepted, even by the government itself.

Further, institutions like international banks usually do not accept digital certificates, due to their lack of capabilities in verifying the same. At most, only other Kerala state government entities accept digital certificates.

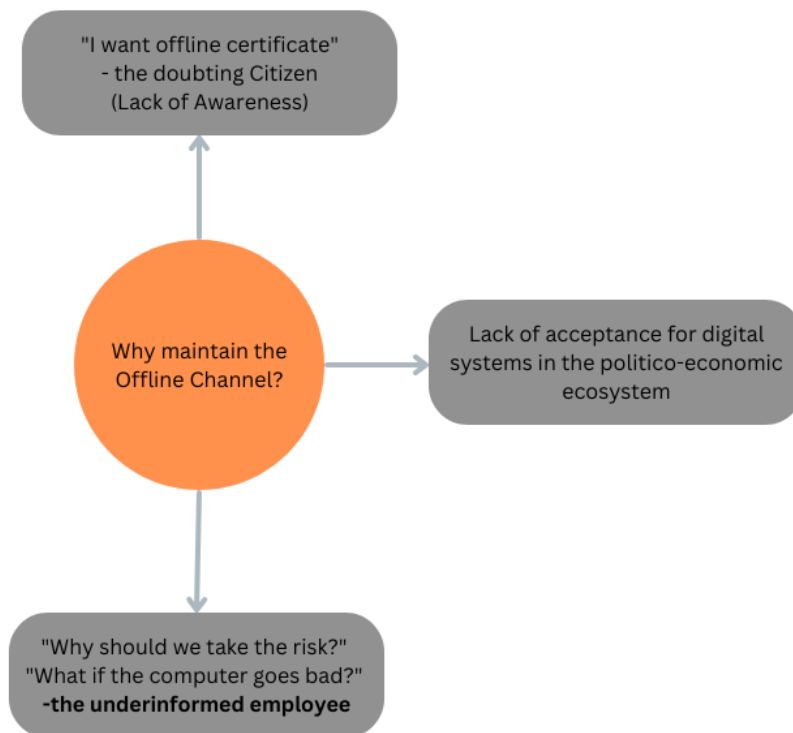


Fig 14: Factors for the paper trail scenario in Kerala ULBs

Another observation that was made was regarding SLA compliance. As mentioned before, all the ULBs have displayed their SLAs in some part of their office. This does not guarantee the timely delivery of services; as a matter of fact,



no ULBs except one had data regarding SLA compliance. Except in this one ULB, **we do not have a retrievable digital record to help us calculate the SLA compliance rate.**

Further, among the citizens who were interviewed (n=21), **(5) only a few citizens are aware of the existence of SLAs and their right to timely delivery of services.** This is also the case regarding citizens' awareness of digital service delivery mechanisms. **(6) Only 4 of the citizens interviewed (n=21) confirmed that they are aware of existing online channels.** Only one ULB has put up a poster regarding their online service delivery mechanisms. (There is a sampling bias here, as the citizens who were interviewed are those who came to the ULB office. Citizens who are aware of online channels are less likely to come to the ULB office for services, and vice versa.)

7. Recommendations

In light of the observations and analysis of the study, this section proposes a set of recommendations aimed at addressing the following key questions:

1. How can we ensure the integrity and validity of data in the system?
2. How can we improve the efficiency of the workflow?
3. How can we establish trust in digital systems among employees and citizens?

The study revealed that the existing system has sub-optimal data integrity and validity, due to non-standardized data entry and scattered data storage across multiple software. To address this, data entry should be standardized to the maximum possible extent, with a clear list of options provided. Additionally, ad-hoc data entry can be periodically reviewed, and clear instructions given on how to incorporate it into the standardised list.

With respect to workflow efficiency, parallel offline record-keeping is the critical problem. It gives rise to consistency issues (if there is a discrepancy between the physical and digital records, which one will prevail?) To resolve this issue, attention should be given to understanding why employees maintain parallel



records, and the underlying reasons should be addressed. Furthermore, a clear end date for the use of offline records should be established, and communicated through an official order to all relevant stakeholders, especially to the frontline employees.

The study also revealed a lack of trust in digital systems among both employees and citizens. The employee facet could be solved to a great extent through official communication and training. To build trust among citizens, Information, Education and Communication (IEC) campaigns should be launched to increase awareness and acceptance of digital systems.

The acceptance of digital certificates by various agencies, such as the judiciary and banking sectors, should be facilitated. For this, these offices should be equipped to verify the credibility of digital certificates. Ideally, they could run IEC campaigns to showcase the acceptability of digital certificates as well.



ANNEX 1: Suggestions from Employees for an Effective eGovernance System

1. The citizen's mobile number should be recorded with each application and intimated with a message at each step of the process. This will assure them of service provision and would dissuade them to visit the ULB often.
2. Business owners should be given timely intimation over the phone about renewing their trade licence.
(Author's note: If the records are digitised, these reminder calls can be automated, so no human resources will be needed for this task.)
3. The online platform should be able to display the historical data associated with each record. An employee gave an example: *"In case of name correction, if the name has already been corrected, we can see that in the birth register book. Now, if this person comes for name correction in another certificate, we do not need further verifications; rather, just look in the register, as all these verifications were done before correcting the name in the birth register. Such a system should be there in the online platform too."*
4. There should be an option to give remarks in each transaction.
5. There should be an option to correct records if clerical mistakes happen.
6. Option to delete duplicate applications from the employee side.
(Author's note: in a digital platform, correction / deletion / updating can follow a 'maker-checker' model, where an employee can propose the change, and it will only reflect in the records after the relevant authority has reviewed and approved it.)



About Us

eGovernments Foundation (eGov) is a not-for-profit organisation catalysing urban transformation by creating a national open digital Infrastructure and an ecosystem around it. eGov's mission is to catalyse achievement of the Sustainable Development Goals (SDGs) by leveraging open-source software and ecosystems, across 30 lower-middle-income countries (LMICs) by 2030.

eGov's urban mission has been working for nearly two decades with city and state governments in India. eGov's Digital Infrastructure for Governance, Impact & Transformation (DIGIT) platform – certified as a Digital Public Good – has been implemented across 1000+ ULBs to enable municipal revenue collection, streamline ULB operations, and deliver timely and efficient local services to the citizens.

eGov is a national platform partner to NIUA, and the UPYOG platform is powered by DIGIT.

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About the author

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