E- Governance in Local Governments of Kerala

Analysing Institutional Issues

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Preface

The Centre for Development Studies has been contributing significantly to the knowledge generation on decentralisation, especially in Kerala, during the last two decades. This includes inputs for the debates that led to the decentralisation of powers and provision of public finance to local governments, and the decade long effort to produce micro-level research and capacity through the Kerala Research Programme on Local Level Development (KRPLLD). These endeavours culminated in the starting of the Research Unit on Local Self-Governments (RULSG) three years ago, with a corpus funding from the Government of Kerala.

As part of RULSG's activities, we maintained an action research framework so as to be in constant touch with a few selected local governments by providing some 'technical' help for their micro-level planning, and in the process, trying to learn the actual institutional constraints they encountered.Our efforts were based on the understanding that though Kerala could overcome some of the first generation problems in decentralisation such as reluctance to devolve power and money by the centralised agencies, and the possibility of 'elite capture' of the devolved resources by the local elite, the state's decentralisation programme is currently facing serious second-generation problems of lack of efficiency and effectiveness, poor service delivery and weak governance in general. The slow pace of computerisation and tardy use of e-governance are found to be major constraints in improving service delivery and governance.

A part of our action research was directed at speeding up e-governance in two panchayats and the district panchayat in the Kasargode district of Kerala. Our help included the provision of full-time technical assistants, organising supplementary training for the employees, and also encouraging the elected representatives to take necessary steps for the completion of computerisation. In this process, we discovered several economic and institutional constraints working against the speedy implementation of e-governance in Kerala. We also found that the slow pace of e-governance was not simply an issue of technology or its mode of delivery. This encouraged us to carry out the present detailed study on the institutional issues related to implementing e-governance in the local administration of the state.

This study brings out the major constraints in the way of e-governance in Kerala. Lack of adequate training for employees is the single most important limitation, but this is not just a capacity building issue. The problem is rooted in a number institutional issues relating to the eligibility conditions for recruitment of personnel, lack of induction training, need to work out alternative training models, and most importantly, the lack of incentives and disincentives that compel the employees to acquire the required training to perform computer-aided service delivery. There seem to be larger governance issues underlying the slow pace of e-governance in Kerala. Do the majority of citizens demand an improvement in service delivery? Do the majority of elected representatives have the incentive to take urgent action in this regard? This study attempts to answer some of these questions.

I sincerely hope that the insights of this study are useful to the policy makers of Kerala, and also for those who think about improving governance in the developing world.

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EXECUTIVE SUMMARY

- This study analyses the institutional and economic constraints that influence the pace of the implementation of e-governance in the local governments of Kerala. The prime concern here is to understand and identify the demand-related aspects that affect the e-governance process. However, this study does not analyse the nature of technology, both hardware and software, used in the computerisation initiative. In other words, the study presumes that the technology delivery agency, namely the Information Kerala Mission (IKM), may have taken technological aspects and alternatives into account before proceeding with the plan for computerisation in the local governments.

- This study is based on an action research programme of the RULSG and a questionnaire-based survey conducted across the state. Action research was carried out in two panchayats (namely, Madikkai and Chemnad) and the district panchayat of Kasargode district. A systematic random process was followed to select around 110 local governments for an extensive field survey. In addition, a postal questionnaire survey was conducted for those local government units which were not selected for the detailed field study. The questionnaire was required to be filled up by the President or the Secretary of the local government body. Around one-third of the local governments responded and returned the filled-in questionnaire. Altogether, the study collected information from around 40 per cent of the local government units in Kerala.

- The survey collected information related to e-governance from the following stakeholders: all employees and all elected representatives of the sample local government units; about 15-20 citizens/customers visiting local government offices to avail of services (with precautions to avoid any systematic selection bias), and about 5-6 firms (private, public or other type) providing computer-aided service in the same locality as that of the selected local government office. The survey of the other firms helped us to study issues related to local infrastructure and widely used models of technology delivery, thus enhancing our understanding of the local e-governance problems.

- This preliminary report covers the status of e-governance in rural local governments. As of January 2009, around 93 per cent of the sample panchayats had installed at least one kind of software and it was at some level of operation. The software for the monitoring of financial expenditure of the plan allocation – *sulekha* – (the use of which was insisted upon by the state government as a condition for the devolution of the funds) had been installed in around 76 per cent of the local governments offices. Around 72.4 per cent of the local government units had networked their computers and around 54.5 per cent had obtained Internet connections. However, only 41 per cent of these local governments considered that they had a sufficient number of computers. In fact, the study found that around 25 per cent of the regular employees did not have computers on their working tables.

- In order to understand the impact of computerisation on the speed of service delivery, we studied the case of the issue of birth/death certificates. Forty-two per cent of the panchayats claimed that they issued these certificates within a day, another 37 per cent said they needed 2-3 days, while the remaining 20 per cent said they took more than 3 days to issue such certificates. The results of the statistical analysis of the survey information indicate that the use of the *sevana* registration software significantly reduces the number of days required to issue the certificates, but it could be argued that this is still much more than the ideal number of days required for performing such services. The analysis further indicates that the chances of obtaining the certificates on the same day are high if the panchayat is highly populated.

- According to the local governments, there is a significant demand for computerisation among their citizens and elected representatives. However, the indirect evidence (or their revealed preference) indicates a different position. For instance, 88 per cent of the elected representatives noted that citizens approached them for speeding up the service that the local government renders and that in most cases, they could oblige. About 71 per cent of the representatives consider it worthwhile to provide such assistance, as they believe that the public would remember the help they rendered; only less than half of the representatives think that people should approach the panchayat office directly to get things done, rather than approaching them.

- The study finds that citizens are more likely to approach younger representatives for help in obtaining speedy service from the local bodies. As far as the response to such requests is concerned, elected representatives with less than 10 years of schooling are more likely to report that they help those people who approached them, while female elected representatives are less likely to say that it is better for citizens to approach the local government office directly (rather than through them). Educated representatives are more likely to encourage people to approach the office directly. These findings indicate that the public demand for improving e-governance in local government is weak or insufficient. E-governance could actually go a long way in providing speedy service to all and do away with the dependence on elected representatives.

- The role and use of citizens' charters was studied to understand the demand for computerisation and e-governance. Specifically, we analysed whether people are willing to take the trouble of using the provisions of citizens' charters to get improved service. On this issue, the study finds that nearly 97 per cent of the panchayats in Kerala have prepared a citizens' charter but that only 47 per cent of the citizen customers have heard about such charters and only 42 per cent know that their local government has such a charter. Given this low level of awareness among citizen customers, it is no surprise to note that only 26 per cent said that they know the time limit prescribed in the citizen charter for delivery of the service for which they approached the office. However, as is evident from the survey, not all of them would be willing to complain if the time actually taken for service delivery exceeded the time limit prescribed in the charter.

- Further analysis on the citizen charter and its existence in the local government indicates that the awareness level of citizens who seek social security benefits (mainly the poor) is much lower than among other citizens. The awareness level is observed to be lower among the less educated (those with less than 10 years of schooling) compared to the people with higher education (graduates and postgraduates). In fact, the more educated are four times more likely to know about citizens' charters. Citizens from southern Kerala are more likely to be aware of the citizens' charter, whereas citizens from other parts of the state are less likely to know about them. However, the study notes that even the educational level of the citizens has little bearing on awareness about the time of service delivery as specified in the charter.

- Compared to educated persons and the self-employed, the unemployed (or job seekers) and coolies are less likely to complain if the service delivery did not meet the norm specified in the charter. Region-wise, it is found that compared to south and central Kerala, people in the northern part of the State (where 'loyal' politics of the left and the Muslim league have a strong support base) are less likely to complain about lack of good service from local government units. Thus, the picture is on the expected lines, i.e., the poor and less educated and those in localities where strong vote-bank parties dominate are less willing to complain against the local governments and seem satisfied with the paternalistic structure of service delivery.

- Given the fact that a large number of local government programmes are aimed at social security and poverty eradication and most of their beneficiaries are uneducated, the readiness to comply with the provisions of citizens' charters may be lacking. This could also be an indirect indication

of the (un)willingness on the part of the citizens in general to support the effort to improve governance through different methods, including e-governance.

- In terms of the supply-side factors of e-governance, inadequate training of employees emerges as a crucial constraint. The study finds that less than 5 per cent of the local governments have provided e-governance training to more than 75 per cent of their employees. Nearly 40 per cent of the panchayats reported that 50 per cent of the employees underwent training, and another 35 per cent of the panchayats stated that they trained only 25 per cent of their employees. The major reasons cited for low level of employee training are: a) not included in the training programmes; b) retirement of trained employees, and c) inducting new employees without training. Among the trained, those who are still not computer savvy attribute it to either inadequate training or to the lack of computers/software for them to work on immediately after training. In short, one-third of the local governments have cited lack of adequate training as the most important constraint against speedy computerisation.

- The local government bodies reported that the assistance (other than the mandatory software preparation and centralised training of the Technology Delivery Agency or TDA) that they appreciated the most was in terms of the provision of a technical assistant (TA) for on the spot help and training. Nonetheless, most of the local governments reported delay in software installation as the main shortcoming on the part of TDA. Inadequacy in training and the delay in the provision of TA services were also identified as other important shortcomings.

- Based on the analysis of firms in the same locality as the surveyed local governments, one can see that software preparation for three-fourths of the units was centralised. This ndicates the appropriateness of the centralised software preparation/procurement model of the computerisation programme adopted in the State. Given that the initial criticism of the e-governance of local governments in Kerala centred on the technology (or more specifically on the nature of the property rights of the operating system software), we analysed the extent of the use of *open software v/s proprietary software* in the firms surveyed and observed that only around 11 per cent of these firms use open software. Hence it could be argued that the use of Microsoft software for the computerisation of local governments in Kerala could be due to the appropriateness to the techno-economic factors prevailing at the time.

The study concludes that there are significant institutional issues that constrain the implementation of e-governance in the local governments of Kerala. These cannot be solved completely by technological or even supply-side measures. However, alternative technology delivery or technology management strategies could be adopted. Alternative strategies to develop and install software could be promptly put in place in all local governments and steps taken to provide training and technical assistance programmes. In-house training and provision of full time TAs should be explored as possible alternative strategies.

1. INTRODUCTION

The Research Unit on Local Self Governments (RULSG) of the Centre for Development Studies (CDS) has been interacting with a number of local governments in the district of Kasargode to understand the institutional constraints that they encounter in improving their performance. We have been carrying out action research by helping them in the process of project planning and service delivery, and also by documenting the experience. Our studies and those of others have noted that the slow pace of computerisation, despite the decade-long effort in that direction by the Information Kerala Mission (IKM) is a major constraint in improving the service delivery in the local governments of Kerala. RULSG collaborated with two panchayats of Kasargode (namely, Madikkai and Chemnad) and also the district panchayat there to see whether we could assist in speeding up the process of computerisation. Our help included the provision of two full-time technical assistants for a period of 8 months, conducting additional training programmes for the employees and the speeding up of the process of preparing electronic data banks of past records.

Our experience in Kasargode and the close interaction with some officials of IKM revealed certain institutional constraints that slow down the process of computerisation in the local governments of Kerala. These constraints are outside the realm of technology and software production, which are considered as the core activities of IKM. Unfortunately, not enough attention was paid to such institutional issues in the debates on e-governance in Kerala (whereas there were heated debates on the technology used – whether it should be free software or those with property rights). Based on this impression, we attempted this study on the institutional issues of e-governance in the local governments of Kerala. This preliminary report highlights the major results of the study conducted mainly in the rural local governments of the State. (A similar study on urban local governments is in progress.).

This report starts with a summarisation of the experience in the two selected panchayats of Kasargode district. In view of the fact that there are a number of institutional issues affecting the pace of e-governance implementation, an institutional framework influencing e-governance is detailed in the next section (the first chapter). The second chapter deals with the approach of the survey-based study. The major findings from the survey are detailed in the third chapter. The last chapter includes the summary and recommendations.

1.1. Report of the Action Research on E-Governance

The importance of computerisation and e-governance in introducing transparency and accountability in the functioning of governments, including local governments, is obvious. Information Kerala Mission (IKM), initiated nearly a decade ago, is spearheading the Kerala Government's ambitious e-governance project for local governments. However, despite the hard work that went into the project, IKM has not yet been able to fulfill its promise. Why did the project fall short of expectations? To study the various hurdles involved in implementing an e-governance project at the panchayat level, CDS (its research unit on local self governments), adopted two panchayats, namely Madikkai and Chemmanad, from Kasaragode district. As part of the action-based research, CDS tried to speed up the ongoing ICT activities by appointing a technical assistant in each of these panchayats. The initiative was pursued for nearly 10 months. This report summarises the experience and also takes into account case studies in a few other panchayats in which IMK had full-time technical assistants and reported that e-governance had progressed substantially.

During the first phase, IKM attempted to implement seven applications in all the panchayats. These are: Sulekha (plan monitoring system); Sevana (civil registration - birth/death/marriage and social security schemes); Saankhya (accounting); Soochika (file management); Sanchaya (revenue

collection); Sanchita (information repository); and Sthapana (payroll/personnel). However, at each panchayat, the degree of success varies. As can be seen from Table 1, Sulekha, Sthapana and Sevana are live in all the panchayats. Saankhya, the accounting package is implemented in Thalikkulam and Thanalur panchayats (though only partly). However, our inquiries revealed that on account of some legal issues, IKM has blocked this application in the Madikkai and Chemnad, the two panchayats adopted by CDS. It is surprising that even after a decade, such technical issues are yet to be sorted out.

Table 1: Comparison of status of computer application in four panchayats

Application	Madikai (Started in May 2008)	Chemnad (Started in May 2008)	Thanalur (Started during 2006)	Thalikkulam (Started during 2005)	Remarks
SevanaCivil Reg.	Running. Birth data from 1970-2005 ported. It is handled by the head clerk. Death, Marriage data not yet ported	Running. All old Birth, Marriage, death data not yet ported	Running. Death data from 1980-2006 ported. Old Birth & Marriage data & Death data from 1970 to 79 remains to be ported. Handled by concerned staff	Running Death, Birth & Marriage data ported. Handled by concerned staff	Service quality depends on the availability of old data
Sevana Pension	Running. Complete pension data entered & MO form is generated through the application.	Running. Complete data entered & MO form is generated through the application.	Running. Complete data entered & MO form is generated through the application	Running. Complete data entered & MO form is generated through the application	In Thalikkulam continuous MO form is not used
Sthapana	Running	Running	Running	Running.	
Soochika	Running & used for issue of some certificates. Not yet used to register all inwards	-----------	Running & used to register almost all inwards, A receipt is issued to the applicant. No certificates is issued through this module	Not used now	
Sanchitha	Running	Running	Running	Running	Rule & regulations
Sankya	Blocked	-----------	Running. Database is not yet completed. Used for property tax collection. Installed on 2006	Running, Tax is collected through this module. Installed in 2006	.
Sanchaya	Running, Now the data entry is over. Verification or correction to be done	-----------	----------	----------	This module is used only in Madikai panchayat, for property tax collection
Sulekha	Running	Running	Running	Running	
Certificate Module[1]				Running	

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[1] Just to print out the Ownership & Residential certificates Does not seem to be connected to other databases.

In Thanalur panchayat, where IKM started its pilot initiative in 2006, the Soochika application is in use to some extent. But this application is not yet deployed in Thalikkulam (where e-governance activities started in 2005 or probably even before that). For issuing some certificates (like ownership), IKM has deployed a separate application in Thalikkulam. Additional information on facilities and staff in these panchayats is provided in Table 2.

Table 2: Information on staffing pattern, system details and facilities in panchayats

Madikai	- Total staff 7, Secretary, Head Clerk, 2 Upper Division Clerks, 2 Lower Division Clerks, Peon - Total System in panchayat - 9, 1 IKM server, 1is for broadband connection (secretary),1 president,1 is data entry (this will be shifted to the counter soon) other 5 systems in different sections. - Currently no counter system.
Chemnad	- Total staff 9, Secretary, Head Clerk, 3 Upper Division Clerk, 3 Lower Division Clerk, Peon - Total System in panchayat 7, 1 IKM server, 1 for broadband connection, 1 secretary, 1 HC, 3 in each UDC sections. - Currently no counter system
Thanalur	- Total staff 13, Secretary, Junior Suprendent,5 Upper Division Clerk,4 Lower Division Clerk, 2 Peon - Total systems in panchayat 9, 1 IKM server, 1 is for broadband, 1 is for ISM (these three in server room), 2 in counter, 2 UDC, 1 LDC, 1 secretary.
Thalikkulam	- Total staff 12,Secretary, JS, 4 UDCs, 4LDCs, 2 Peons. - Total systems in panchayat 6, 1 server, 2 counter, 1 section, 2 not operational

Some of the major conclusions based on action research and case studies are as follows:

1. At present, the panchayats have to take all the steps to procure the hardware. As they do not have the necessary technical knowledge, the process gets delayed and it becomes inefficient and costly.
2. Guidelines that exist for building a computer network seem to be inadequate or are not followed.
3. Currently each software package is being installed locally. This means a technical assistant (TA) has to actually go to each panchayat and install the system. Also, if something happens to the machine in which the package is installed, the procedure has to be repeated. (The IKM could have designed a centralised system through which each panchayat could install the relevant packages in their own systems. This would have made the whole process more easily manageable. For instance, if the programme encountered a problem and is corrected, all that IKM has to do is install the new version and update the software at its central location once).
4. Most software packages need proper databases to run efficiently. If we leave everything to the panchayat, this will never take off. There is lack of a proper plan for helping panchayats to generate these databases.

5. There seems to be a lack of sufficiently qualified and trained human resources. It would be better if each panchayat has a dedicated person in charge of data entry and management of the system. Most of the staff members are not in a position to operate the system on their own.

6. Our feeling is that some of the established employees are extremely reluctant to move to a new system of workflow management because this would demand more transparency on their part. Some workers may have vested interests in maintaining the *status quo* as it is something they have got accustomed to.

7. There are a number of legal/procedural issues affecting the smooth transition to an e-governance system. For instance, in the pilot locations, parallel systems are in operation as most handwritten documents are also maintained. This unnecessary duplication is on account of the lack of clarity on the legal sanctity of documents generated through the information system.

In order to understand how far computerisation has progressed in a normal panchayat, we did a simple workflow study of a panchayats. The results are given in Table 3.

Table 3: Section-wise workload versus current state of automation

Work category	% of total work	% of automation	Automation gain (%)	Application
Accounting PR, RR,CB Audit	10	0	0	Sankhya
Civil Registration	5	75	3.75	Sevana
Establishment salary, petty payments	7	50	3.5	Sthapana
Civil works and Planning	10	20	2	Sulekha
Social Security Pensions Unemployment dole	5	83	4.15	Sevana
Buildings, Tax, Assessment KMBR	8	0	0	Sankhya/Sanchaya
License	5	0	0	Sankhya
Field work	18	0	0	
Meeting	10	0	0	
Finding out of misplaced files and records	15	0	0	
Tapal/Work relating to the President	3	0	0	
Interruption due to chaos	4	0	0	
Total	100		13.4	

From Table 3, it is clear that automation gains are visible only in 13.4 per cent of the working time in an average panchayat. In some sections like civil registration and social security pensions, the extent of automation is high (75-83 per cent). However, in activities such as accounting, civil works planning, tax assessments and licenses, the level of automation is low. This shows the existence of tremendous unutilised potential in the computerisation initiative of the panchayat system of Kerala. It must also be remembered that there is a lot of potential for automation even in activities normally classed as "fieldwork" or "meetings". For instance, if part of the "fieldwork" involves getting information from or carrying reports to other offices, then networking and automation can also facilitate these jobs. Again, preparing agenda notes manually before meetings, recording proceedings and documenting and circulating important decisions are tasks in "meetings" which are amenable to

automation. It seems that the possibilities to develop software support for panchayats for such activities have not been explored adequately.

In general, there are a number of institutional and organisational issues affecting the smooth implementation of e-governance in the local governments of Kerala.

1.2. What are the Institutional Issues? A Framework for Analysis

Governance is a public good in the sense that it is difficult to exclude somebody from using the benefits of improved governance (on the reason that he/she is not paying for it), and also because the marginal cost of providing better service to more (once the fixed investment is already made) is likely to be insignificant until a point of congestion or overcrowding. The demand for improving governance and its supply are to be played out in the public sphere through the political process. The institutional issues influencing e-governance can be understood using the structure depicted in Figure 1. Panchayat or the local government can be reckoned as a service provider. Citizens approach the panchayat as customers for services like the issue of birth/death certificates or licenses, payment of taxes, etc. A fee may have to be paid to the LSG for this service, but the nature of the transaction is very different from the nature of service provision in the market, where the customers approach the provider and make a payment to avail of service. If the quality of the service provided in the market is not adequate to meet the needs of the customer, he/she will look for alternative service providers. Thus the 'exit' route is used if the service is found to be unacceptable.

Figure 1: E-Governance Structure and Institutional Issues of LSGs in Kerala
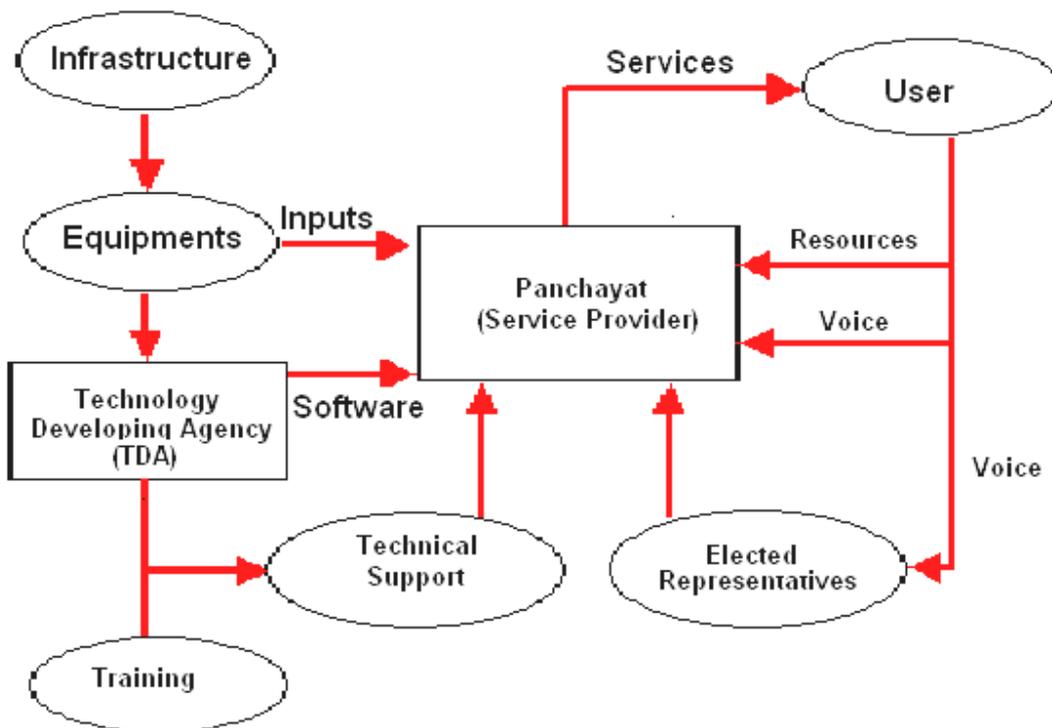
On the other hand, citizens as customers cannot normally exit[2], if the service provided by the local government is found to be unacceptable. In order to seek improvements in the quality of service provided by local government, the customers have to voice their grievances. They may direct their criticism against the local governments through other grievance airing/redress mechanisms, or express their discontent as violent outbursts or otherwise, or through individual or group protests like sit-in strikes, etc. Citizens can also exercise the 'voice option' through their elected representatives – encouraging or forcing them to interfere on their behalf. Some elected representatives may join the citizens in their protests against the unsatisfactory quality of services provided by the local governments. There can also be 'illegal payments' to the employees/elected representatives to get quality service (for example, to get the certificate issued on the same day as the application is made). Yes, there is an exit in the electoral process too, so that citizens unhappy with an elected representative or a party can vote against them in the next election. It is also possible that the elected representatives may use their collaborative or adversarial strategies within the local government office to improve the service provided to customers.

A clear framework to analyse this institutional structure helps us to understand the different routes through which citizens as customers exert pressure on local governments. As seen in Figure 1, a combination of these forces decides on the quality and efficiency of the service delivery provided by LSGs using e-governance. For example, different types of customer citizens (say, poor versus non-poor, educated versus uneducated) may have different incentives to use alternative routes to improve service delivery. People approaching local governments – say, some for getting social security benefits (over which the representatives may have a higher discretionary power) and others (say, for getting permits for house construction) may have different incentives. Because of such differences, the overall pressure to improve service delivery may virtually depend on the dominance of specific types of customers in a locality. If a customer can avail of the required service through pressure on his elected representative and if the representative gains from obliging the customer, then one should not generally expect such a citizen or representative to demand improvement in general service delivery in the panchayat (using e-governance or through other means).

The above framework also helps us to analyse some of the widely used instruments to improve service delivery in public organisations. A citizens' charter is one such instrument that has been in existence in most local governments of Kerala. However, not much is known as to whether people actually use the provisions of citizens' charters or not or as to which types of customers are more likely to use such provisions. If some do indeed use them, does this increase the pressure to improve service delivery using different means, including computerisation? All these analytical issues directly or indirectly inform us about the local 'demand' for e-governance. Even when the state government makes similar efforts to implement e-governance in local governments, the differences in local demand (influenced by the above-mentioned and other factors) may reflect in the pace of its implementation. This is mainly due to the fact that the local governments, their representatives and the administrative machinery under the pressure from representatives, have to take several steps to implement computerisation (in addition to the efforts at the state level). The variations in the performance of computerisation in different local governments of Kerala may therefore provide an appropriate context for the study of such demand factors.

As regards the supply side of the provision of e-governance, the local governments in Kerala are helped by a state level agency called the Information Kerala Mission (IKM), based on a mandate from the Government of Kerala. Hereafter, in this study the IKM is treated as the Technology Delivery Agency (TDA). The TDA is responsible for developing the software required by local governments for different activities. In addition to tasks such as installation of software, coordination, preparation and testing of data files from the records, TDA has been providing the required training for the employees of local

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[2] The idea of voting by feet, i.e. moving the residence to that local government area where the public good provision suits the preferences/choice of a resident, can be taken as an exit strategy, but this is not very common in countries like India where the choice of residence is determined more by the ownership of land/house or the location of job.

governments. It is also mandated to outline the technical specifications of the hardware required for the e-governance projects in all the local governments of Kerala. Thus we have a fixed model of provision of technology and training for the e-governance in the local governments of the state. However, in this study, we presume that the TDA has used and evaluated the technical parameters to decide the nature and quality of the software to be prepared for this purpose. Hence, this study does not attempt to evaluate the performance of technology or software developed for this purpose but focuses on certain other supply-side aspects.

There are other potential factors influencing the use of e-governance from the supply side. These include the availability of infrastructure like relatively less-interrupted power-supply in the area, or the ease of hiring a technician to repair a faulty computer or the willingness of maintenance providers to offer AMCs (Annual Maintenance Contracts) at reasonable cost, etc. It may be difficult to find persons proficient in computer operations in some areas, and even if they are employed at the state-level by the government, such persons may not stay in the localities they are transferred to (and may, in fact, try to get transferred to other places). It is also possible, that even in Kerala, where most areas are well connected in terms of power supply and telecommunications, that some locations and local governments may encounter such infrastructure-related problems.

It is equally important to note that the e-governance in local governments takes place within the broader institutional environment of such governments in Kerala. The rules and procedures, under which LSG functions, are therefore likely to influence the pace of computerisation. For example, the employees of local governments are recruited by the State Public Service Commission based on a state-level test for which computer proficiency is yet to become an entry qualification. These employees are not provided with any in-service training before their deployment. They can be transferred to anywhere within the state, and there is a tendency among many people to try and get posted in less remote and more urban areas. All this might affect employees' participation in e-governance efforts. There can also be pre-existing rules regarding the allocation of financial resources, nature of record-keeping and division of responsibilities within the local government offices, and these too may determine the ease in the implementation of e-governance.

Based on the framework, we can identify three broad sets of factors that affect the e-governance. These factors are related to (a) demand (b) supply and (c) institutional environment. One can expect variation in the demand factors among the different local governments of Kerala. Citizens (educational levels, occupational patterns), local governments (region, urban/rural, population, sources of income, ruling party) and elected representatives (gender, education, party affiliation) are likely to vary across regions, and this may lead to different demand patterns for e-governance. However, the supply side of e-governance depends on the role of TDA, computing or operational proficiency of employees and infrastructure of the locality. In this case, one should not expect much variability in the case of the role of TDA (as it is more or less fixed at the state level). Factors such as employee educational levels, age, training, control by different local governments, etc., could vary but there is little difference among local governments with regard to aspects like employee appointment and transfer as these are decided at the state level. All local governments in Kerala work within the same environment and therefore to examine the impact of all these factors (especially those which are uniform at the state-level), studying local governments alone is not sufficient. It may be also necessary to look into factors such as the computer service provided by other firms operating within different institutional environments. Given such underlying concerns, the study employs robust methodology and sampling techniques to account for most of the factors that affect e-governance in the local self-governments of Kerala.

2. APPROACH OF THE STUDY

2.1.Aim of the Study

The purpose of the study was to analyse the following:

- The economic (or demand-related) constraints that influence the pace of implementation of e-governance in the local governments of Kerala;

- The role of the institutional environment of local governments in facilitating/constraining the pace of computerisation;

- The impact of computerisation on service delivery (for e.g., in the case of issue of birth/death certificates);

- Supply side constraints in the form of employee operational proficiency and infrastructure of the locality.

2.2. Study Design

For a systematic analysis, it is necessary to understand the role of the three factors, namely, demand, supply and institutional environment, in the implementation of e-governance. We decided to carry out a questionnaire survey among local governments and relevant stakeholders. This study recognises the importance of collecting information from a scientific sample of local governments, with reasonable variability in terms of the factors to be analysed. But, as mentioned earlier, a survey among the local governments alone will not provide insights into the role of the institutional environment of local governance, as it is by and large homogenous for LSGs in Kerala. Therefore, along with the survey of local governments, we decided to survey a few local public/private firms such as banks, travel agencies, etc., that use computers for providing customer service. If such firms do not operate in the locality, this is also noted. Additionally, the survey collected information on the kind (centralised or local) of software preparation, training, hardware purchase, and maintenance used by these firms, and the infrastructure problems (such as interruptions in power supply) they encountered.

The questionnaire designed for the local government is meant to elicit the following information: nature of the local government (grade[3], population, level of own income, region, political party in power, gender of the president, etc.), status of e-governance (the extent of use/presence of software for specific activities prepared by TDA), the time taken to deliver a certificate (for which a software developed by the TDA can be used), facilities that the local government has for implementing computerisation (number of computers, printers, networking, Internet, maintenance and power back up facilities, etc.), level of training received by the employees, reasons for inadequate training, if any, and financial stumbling blocks if any, in the way of effecting computerisation, Some questions gauge the extent of pressure exerted by the elected representative or citizens for computerisation. This questionnaire also sought to gauge the perceptions of the president or the chief executive of the local governments on the reasons, if any, for the slow pace of e-governance implementation, and also on the performance of TDA.

A questionnaire was circulated among a sample of citizens who visited the local government unit for services like getting a birth certificate, paying house tax and so on. Apart from the collection of information on the socioeconomic background of the citizens and the purpose of their visit, questions

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[3] This indirectly reflects the level of urbanisation or the extent of tax income generated. If the panchayat has more tax income from the economic activities of industrial or other organisations within the region, then it is given the highest grade.

were aimed at studying their views on the adequacy/speed of the service provided by the local government. The respondents were also asked whether they used their contacts with an elected representative to speed up the service, and whether they demanded computerisation in any of the '*Grama Sabhas*' (village assemblies). Customers' knowledge of the existence of citizens' charter in the local government and their willingness to use the charter rights for correcting laxity in service delivery were also explored through this questionnaire.

A separate set of questionnaires were designed to elicit information on the elected representatives (party, gender, education, years of service, etc.); their familiarity with the e-governance; the propensity of people to contact them to speed up the service from the local government, their ability/willingness to help such customers, and their preference in terms of a paternalist approach to citizens v/s e-governance (which can speed up the service for all); their perceptions on the difficulties, if any, to invest in computerisation in their local governments. The questionnaire for employees sought data on their status (education, designation, years of service), their participation in e-governance, and the reasons, if any, for not participating effectively in e-service delivery (say, due to lack of software installation, training, etc.). Their perceptions on the need for using computers, its impact on their workload given the current regulations of local governments, were also collected.

2.3. Sampling for the Study and Method of Analysis

We decided to do a sample study in about 10 per cent of the local governments of Kerala. A systematic random sampling (SRS) technique was followed to select 100 village panchayats out of a total of 1000. We adopted a random number based selection from panchayats listed from the southernmost to the northernmost districts. Ten out of 56 municipalities were also selected through this process. In each of these selected local governments, the following questionnaires were administered (all the questionnaires are attached in this report as Appendix VI - X):

A. One questionnaire to be filled by the President or Secretary

B. One questionnaire for each employee

C. One questionnaire for each elected representative

In addition, questionnaire (D) was circulated among 12-15 citizen customers in each of these selected local governments. Depending on the average number of customers coming to the local government office in a day, a period (one day or half day or a couple of hours so as to survey around 12-15 customers) was pre-determined for each local government, and all customers who visited the office during this period were interviewed. This is done to avoid bias in selecting customers of a particular category (rich/poor, male/female, young/old). In the locality of the selected local government, around 5-6 firms (of public/private/cooperative ownership) such as banks, travel agents, etc, were also surveyed using another questionnaire (E) (all the questionnaires are attached in this report as Appendix III).

Altogether, we surveyed around 1500 elected representatives (from 110 local governments) spread across the state, around 900 employees, around 950 citizen customers, and about 300 firms (other than local governments) providing computer-related service to clients.

The questionnaire designed for the local government (questionnaire A), to be filled up by the secretary or the president, was sent by post to all the village panchayats and municipal governments of Kerala (other than those which were selected for the study). Out of these 900 local governments, nearly 315 responded by sending back the filled-in questionnaire. This makes the total sample for the study around 414 local government units (including 89 from systematically selected ones, and 324 others who replied by post). The systematic random sample and postal sample were then tested to detect any statistically significant

difference between a set of key variables. The results indicated that there was no statistical difference between the two sets of samples and hence we combined them for further analysis.

The information collected through field survey was analysed using statistical software such as SPSS and STATA. We employed simple descriptive statistics and logistic regression techniques to derive some conclusions on the role of different factors in determining the pace of e-governance. Logistic regression is a multiple regression but with an outcome variable that is a categorical dichotomous and predictor variables that are continuous or categorical. The logistic regression can help to predict as to which of two categories a person or characteristic is likely to belong. For example, using certain background information, it is possible to predict whether a person will demand faster service delivery or not. So if we picked a random person and discovered that s/he has characteristics like low education, older age and low income, we are then assessing the likelihood of this person demanding faster service delivery (e-governance). Using such characteristics we can predict the demand for e-governance among the citizens and elected representatives. Here, it is important to understand that each characteristic has a separate prediction of the event therefore in logistic regression we predict the probability of the event occurring given known values of the characteristics of the persons concerned. The log-likelihood statistics is used to test the robustness of the model. After running the logistic regression model we obtain the value of 'exp b' which is an indicator of the change in odds resulting from a unit change in the predictor characteristic.

3. MAJOR FINDINGS OF THE STUDY

3.1. General Features of the Local Governments

The field survey responses and those received by post were analysed separately to study their differences in terms of a set of key variables. It was evident that most municipalities had not posted back their filled-in questionnaire. We therefore compared only those received from the rural local governments. The results are given in Table 4. It is observed that there were more female presidents in the postal survey sample than in the field survey sample. Perhaps, it could be that more women presidents took care to respond to the postal questionnaire compared to their male counterparts. However, since 'having a women president' is not determined by the region, population, grade or other such factors[4], and since the postal and field survey samples do not vary significantly in terms of these factors, we combined these two samples for the rural local bodies and analysed them together (getting a total sample of around 413 panchayats, which comes to around 42 per cent of the total number of such local bodies within the state). Panchayats are graded and nearly 40 per cent of those in our sample are in the special grade, 39 per cent in the first grade, and the remaining in the second or other grades.

Table 4: Comparison of direct survey and postal survey

Variable	Mean (Postal Survey)	Mean (Field Survey)	P-value*
Total Number	313	80	
Population	29066	29882	0.80
Last Year Income (in Rs.)	4179715	5521247	0.14
Ruling Party	1.30	1.32	0.78
President of Political Party	2.26	2.38	0.12
Gender of President	1.39	1.25	0.02*
Panchayat Classification	1.64	1.59	0.55
Region	2.13	2.11	0.85

Variable Codes used for analysis
Region: South =1, Central = 2, and North = 3
President of Political party: CPI (M), =1, CPI = 2, Congress = 3, Other 4
Gender of President: Male = 1, Female, = 2
Panchayat Classification: Special Grade =1, 1st Grade = 2, Second Grade = 3, 4th Grade = 4
Ruling Party: LDF = 1, UDF = 2 and Others = 3
Note: if p-value is greater than 0.05 then there is no significant difference between the two samples at five percent level of confidence.

The detailed descriptive statistics on the general features of the local governments are listed in Appendix I.

The major findings on the general features of the local governments are as follows:

- A typical village panchayat in Kerala has a population of around 30 thousand.

- Presently, its average annual income would be somewhere around Rs. 40 lakhs.

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[4] The reservation seems to be the only factor deciding the presence of a woman president, as the ratio of local governments with female presidents to the total is not much higher than the legal mandate of one-third.

- Nearly seventy per cent of such panchayats are ruled by the CPM-led Left Democratic Front (LDF) and the rest mainly by the Congress-led United Democratic Front (UDF). Non-LDF, Non-UDF parties rule only less than 2 per cent of the local governments.

- Not surprisingly, (and due to the principle of reservation) around 37.5 per cent of the LSG have a woman as the president.

In order to understand whether there was any systematic bias in the way the local governments responded to the questions in the questionnaire, we employed the logistic regression on 'response' versus 'no response' (as a dependent variable) method with a few independent variables. This model would control for other important factors and highlight the role of key determining factors of 'response' versus 'no response'. The regression results indicate that compared to local governments ruled by LDF (Left Democratic Front), others are less likely to give a response to the question on whether there were any failures on the part of local governments in the implementation of computerisation. Though, we have run a logit model to know who reports that there are failures on the part of IKM, the results show that no variable seems to have significant influence. There were no other major systematic biases noted in the responses to the questionnaire.

3.2. Status of Computerisation

The study explored the use of seven pieces of software developed by the TDA that were to be installed in each local government. These softwares are: *Sevana Registration, Sevana Pension, Sanchitha, Samvedhitha, Sthapana, Suchika and Sulekha*. Each piece of software is meant for the computerisation of one particular activity of the local government. For example, *Sevana* registration software is meant for the registration of births and deaths and for the issue of birth/death certificates. Similarly, the others are used for pension records, accounting, plan monitoring, etc. The status (as of January 2009) is reported in Table 2. However the status, as evident from the field survey, is different from the status reported (as of May 2009) by the TDA. Though this discrepancy is partly due to the recent acceleration in the installation of software, it also shows that the local government officials and elected representatives are not fully aware of the software that the TDA installed in their offices. The major observations in this regard are as listed below:

- Around 93 per cent of the sample has at least one piece of software of some level of use. However, the records of TDA show this to be nearly 100 per cent, since according to it, *sulekha* is installed in all the panchayts. It is possible that officials at the LSG may not have taken cognisance of the availability of this software since they have not been using it.

- According to the field survey, the *sulekha* software, used for financial expenditure monitoring of planned projects, has been installed in 76 per cent of the panchayats. A high installation rate may be due to the state government's insistence on the matter for devolution of the funds.

- Nearly 66 per cent of the elected representatives note that their local governments provide some computerised service. However, only 22.6 per cent of the beneficiaries note that computers are being used in their local governments.

- This divergence can be due to several factors – computer deployment is yet to become visible to (or felt by) the beneficiaries; poor and less educated persons may not be aware of the use of computers; some customers may have approached the office for services like issue of building certificates, for which e-governance is yet to be implemented in most local governments, and so on.

Table 5: Installation of software in Panchayat

Software	Yes	No	Missing	Total
Any Software	382 (92.5)	26 (6.3)	5 (1.2)	413 (100)
Savanna Registration	240 (58)	166 (40)	7 (2)	413 (100)
Savanna Pension	182 (44)	224 (54)	7 (2)	413 (100)
Sanchitha	130 (31)	275 (67)	8 (2)	413 (100)
Samvedhitha	9 (2)	392 (95)	12 (3)	413 (100)
Sthapana	149 (36)	254 (62)	10 (2)	413 (100)
Suchika	11 (3)	390 (94)	12 (3)	413 (100)
Sulekha	313 (76)	91 (22)	9 (2)	413 (100)
Note: () Shows Percentage				

Status as on 28/05/09 reported by the TDA

Item	Percentage of Panchayats
Sevana (Civil Registration) Installation	95.8
Sevana (Civil Registration) Online	64.3
Sevana Pension Installation	95.3
Sevana Pension Online	30.2
Sulekha Installation	100
Sulekha Online Status	100
Sthapana Installation	96.5
Sthapana Online	63.3
Soochika Installation	0.8
Soochika Online	0.7
Sanchitha Installation	100
Samveditha Installation	100
Saankhya Online	0.4
Subhadra Online	0.1
Sakarma Online	0.1
Sachitra Cadastral Map Distribution Status	35.2

Regarding hardware, the study observes that:

- Only 41 per cent of the local governments consider that they have an adequate number of computers.

- Around one-fourth of the panchayats do not have a computer on the table of any employee.

- Of the total number of computers installed, around 67 per cent of the local governments have more than three-fourths of their computers working well.

- Around three-fourths of the panchayats have networked their computers and 55 per cent have an Internet connection, mostly broadband. According to the TDA, only 15 per cent of the panchayats do not have networking.

- Though only 19.4 per cent of the panchayats have an Annual Maintenance Contract for their computers, others have some alternative arrangement in place, either in collaboration with the TDA or other agencies.

- Only 15 per cent of local governments do not encounter serious electric power interruptions, while around 66 per cent face power cuts of up to one to two hours, and the rest for even longer periods. Almost all of them have acquired a UPS.

- The status report of the TDA shows that nearly 12 per cent of panchayats are yet to install a computer server, either because the room is not ready or for other reasons (mainly electrical-related issues).

There are two major points to be noted here.

1. Of late, the TDA has been catching up with the completion of tasks assigned to it, though there have been delays if we consider its functioning for the last ten years. However, according to the TDA, the focused attention of the LSG computerisation started only since the last three years and there were many delays caused by factors beyond its control.

2. Even when the TDA completes its task, several of the LSGs delays in taking the many steps that are mandatory on their part to complete the process of computerisation. In the absence of such steps on the part of the local government, the work done by the TDA becomes ineffective and often goes unnoticed.

3.3. Improvements in Service Delivery

3.3.1. Role of Computerisation

One of the objectives of the study was to understand whether the presence of computers and software helps to improve the speed of service delivery. In order to gain some insight into the matter, we collected information on the amount of time required to obtain a birth certificate in a particular panchayat (as indicated by its president or secretary). A logistic regression exercise was attempted to understand the impact of the *sevana* registration software on the number of days required to issue birth/death certificates. The analysis carefully controls for the role of other variables such as the number of trained employees and population (see Table 3). The major conclusions of the analysis are as follows:

- 42 per cent of these local governments issue the certificate within a day, 37 per cent take 2-3 days, and the remaining took more than 3 days.

- The time taken for a relatively simple service like the issue of certificate is much greater than what it should be, given the installation of related software.

- Table 6 shows that the use of the *Sevana* Registration program significantly influences the time taken to issue the certificate.

- The sign of the coefficient (negative) and the odds ratio (0.66) indicates that, compared to those local governments which use this software, those which do not are nearly 0.66 times less likely to issue the certificate on the same day that the applications are received.

Table 6: Computerisation of LSG and days to collect birth/death certificate

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		-0.82	0.43	0.75
Population	1-20000	-0.80*	0.01	0.45
	20001-30000	-0.44**	0.07	0.64
Trained employee	1-2	0.06	0.84	1.06
	3-4	-1.10	0.69	0.90
No of printers	1-2	0.37**	0.10	1.44
Sevana registration	Yes	-0.41**	0.07	0.66
Gender of President	Male	0.09	0.68	1.10
Region	South	0.21	0.47	1.23
	Central	0.25	0.33	1.29
-2logliklihood = 463.43; Chi-Square Value = 10.97; Prediction Accuracy = 60.6				
Dependent Variable: Days of Getting Birth/Death Certificate: 1-2 days = 1, ≥3 days = 2 Definition of selected Independent Variables Population: 1-20000 =1, 20001-30000 =2, $\geq$ 300001=3^{RC} Trained Employee: 1-2 =1, 3-4 =2, and $\geq$ 5 =3^{RC} Number of printers: 1-2 = 1, $\geq$ 3 = 2^{RC} Seven registration: Yes =1, No = 2^{RC} Gender of President: Male = 1, Female -2^{RC} Region: South =1, Central =2, North = 3^{RC} Note: RC = Reference Category; * and ** indicates significance at one and ten percent level N =355, 1-2 days =217 and ≥3 days = 138				

3.3.2. Features of LSGs with Better Service Delivery

Panchayats that show better performance in terms of computerisation have certain features in common. These features can be identified in terms of variables such as grade of the panchayat, region (i.e., North, Central and South Kerala), ruling party, gender of the president and population. The main findings on these features are as follows (see Table 6):

- The population structure of the panchayat has a significant influence on the number of days taken for obtaining the certificate. Those living in rural areas with a higher population would be more likely to get the certificate issued on the same day that it is applied for as compared to those in areas with a lower population.

- The odds ratio of population structure shows that those panchayats which have population size of 20000 and 20001-30000 are less likely to issue certificates faster as compared to those which have more than 30001 persons.

- The size of population effect on the speed of certificate issue could the result of supply-side factors. Speeding up service delivery in less populated local governments may require more trained employees and infrastructure, which may not be presently available.

- Factors like the region in which the panchayat is located and the gender of the president of the LSG do not seem to influence the speed of issuing the certificate.

3.4. Demand for Computerisation by Elected Representatives

3.4.1. What do they say?

- Around three-fourths of local governments have elected representatives demanding the use of computers. Asked whether they consider computerisation as an activity to be given high priority by the local governments, most of the presidents or the secretaries answered in the affirmative.

- Eighty-two per cent of them do not see any difficulty in spending money on computerisation, either from the tax income of the local body or the annual allocation received from the state government.

- Out of the remaining local governments which had a problem in spending funds for computerisation, it was found that more than two-thirds lacked adequate funds and others saw it as a problem of getting the necessary approvals.

- The majority of the elected representatives interviewed also noted that the local governments should and could spend money for computerisation.

- To a query on whether there were any failings on their part in implementing computerisation, only around 9 per cent of the elected representatives admitted any failure, saying that it was mainly due to the delay in arranging supporting facilities at the panchayat office.

- Nearly 30 per cent of the representatives attended the computer-related training that the TDA organised exclusively for them.

- More than ninety-six per cent of them consider that computerisation helps in improving service delivery.

3.4.2. What Does their Behaviour Reveal?

This study also assessed whether citizens approach the elected representatives to get access to better services and what the perceptions of elected representatives are on this issue. Based on a logistic regression model, we found that there are significant differences in terms of socio-economic and political backgrounds in terms of approach (see Table 7). The major highlights are as follows:

Table 7: Prevalence of approaching representatives to get faster service from LSG

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		1.27*	0.00	3.55
Education	Below SSLC	-1.05*	0.00	0.35
	Below Degree	-0.24	0.32	0.786
Occupation	Job seeker	-0.344**	0.0	0.71
	Self employee, private firm etc	-0.34***	0.08	0.71
Region	South	-0.14	0.45	0.86
	Central	0.15	0.40	1.16
Grade of Panchayat	Special	-0.01	0.90	1.00
	1st	0.02	0.93	1.02
-2logliklihood = 1100.10; Chi-Square Value = 52.58; Prediction Accuracy = 65.5				
Dependent Variable: If Beneficiaries Approach, Yes =1, No = 2 Definition of selected Independent Variables Education: Below SSLC =1, Below Degree = 2, And Degree and Above = 3^{RC} Occupation: Job Seeker = 1, Self Employee, Private Firm etc =2, and Others =3^{RC} Region: South =1, Central =2, North =3^{RC} Grade of Panchayat: Special Grade =1, 1st Grade= 2 Others =3^{RC} Note: RC = Reference Category; * and ** indicates significance at one and five percent level N= 873, Yes = 323, No 553				

- Around 88 per cent of the elected representative note that citizens in their ward approach them to speed up the service provided by the local governments and in most of the cases, they could help the citizens (in getting the service faster).

- Around 87.5 per cent of them consider that people remember the help they rendered in speeding up the service delivery process.

- Around half of them consider that it is better if citizens approach the local government office directly for the service rather than through them.

- There is a relationship between the education of the citizen-customer and the propensity to avail of the direct help from the elected representatives. The negative and significant coefficient of education indicates that person with low level of education are less likely to take such help compared to more educated persons.

- The occupation of the citizen is significant in the sense that persons seeking jobs and those who are self-employed are less likely to approach the representative for help compared to others (includes NRIs, government employees and public sector employees).

- Other variables included in the analysis (such as type of the panchayat – indicating urbanisation, region) are not important in determining whether the public approaches the elected representatives for help.

3.4.3. Characteristics of Elected Representatives and the Speed of Service Delivery

We also studied the features of the elected representatives who are approached by citizens with a demand/request for speedy service delivery. The logistic regression results on the matter are presented in Table 8:

Table 8: Features of representatives approached by beneficiaries for faster service

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		-2.12*	0.00	0.12
Gender of Representative		-0.05	0.81	0.96
Position of representative	Vice-president	0.10	0.67	1.12
	President	0.97*	0.00	2.64
Political party	CPI (M)	0.150	0.50	1.16
	Congress	-0.09	0.70	0.90
Age of representatives	≤40	-0.34	0.15	0.71
	41-50	0.32	0.16	0.72
Years as representatives	1-3	0.33	0.14	1.39
Education of representatives	Below SSLC	0.10	0.72	1.10
	Below Degree	-0.21	0.34	0.81
-2logliklihood = 898.71; Chi-Square Value = 16.33; Prediction Accuracy = 89.3				
Dependent Variable: Whether People approach Representative to get service Faster? Yes= 1, No = 2 Definition of selected Independent Variables Gender of Representative: Male = 1, Female -2[RC] Position of Representative: Vice President and Chairman =1, President = 2, Members = 3[RC] Political Party: CPI (M) =1, Congress = 2, and Others = 3[RC] Age of Representative: ≤40 =1, 41-50 =2 and ≥50 = 3[RC] Years as a Representative: 1-3 Years = 1, ≥4= 2[RC] Education of Representative: Below SSLC =1, Below Degree = 2, And Degree and Above = 3[RC] N = 1343, Yes = 1199, No = 144 Note: RC = Reference Category; * and ** indicates significance at one and five percent level				

- Compared to members, presidents are more likely to report that citizens approach them to get faster service.

- This is not unexpected since the president is seen as part of the administration, and hence more citizens are likely to use the service of members to influence administration (inclusive of the president).

- Other variables do not seem to have a significant influence in the matter.

In summary, the practice of approaching the elected representatives to get faster service from the local government office is widespread, and a substantial number of such representatives prefer such a status quo. There is a preference among a significant number of elected representatives for the continuation of a 'paternalist' provision of services from local governments. This could be a factor partly working as a disincentive for the speedy implementation of effective e-governance.

3.5. Demand for Computerisation by Citizens

3.5.1. Are Citizens Satisfied with the Services Provided by the LSGs?

In general, the average educational level of a representative sample of citizens coming to the local governments is lower than that of the elected representatives. (The sample shows nearly 36 per cent with below 10 years of schooling and only 13.6 per cent having degree or above – compared to 17 per cent of elected representatives with below 10 years of schooling and 20 per cent with a degree or above). This may be due to the emphasis on poverty eradication and welfare programmes implemented through local governments. This is also evident from the fact that nearly 61 per cent of the customers consider their occupation as 'unemployed' or 'coolies'. Nearly one-fourth of the citizen-customers surveyed came to the panchayat for social security or poverty eradication assistance. This could have an impact on the demand for improving service delivery. Nonetheless, some of the perceptions regarding the speed of service delivery could be elicited through the survey. The detailed descriptive statistics regarding the general features of the citizens and their perceptions regarding e-governance are listed in the Tables presented in Appendix II. The major findings of the analysis are listed as follows:

- Local governments report that 72.61 per cent of the customers demand speedy issue of certificates.

- Around 62 per cent of the customers used their contacts with the elected representatives to get the certificate faster.

- The customers reportedly want computers to be used for speeding up service delivery.

- Nearly 37 per cent of the customers report that they have gone through elected representative for getting speedy service for which they visited the local government office on the day of survey.

- For most of them (around 71 per cent) the service provided by the local government is free of charge.

- Half of them report that they are satisfied with the service provided by the panchayat. Among those who are satisfied, 73 per cent consider that they get the service fast enough, and another 8 per cent concede that they are willing to wait.

Table 9: Response of beneficiaries on the service provided by the panchayat

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		-0.45	0.12	0.63
Purpose of coming panchayat	Home Related	0.10	0.59	1.10
	Others	-0.41	0.02**	0.66
Occupation	Job Seeker	-0.13	0.44	0.87
	Coolie	-0.01	0.95	0.98
Education	Below SSLC	0.40	0.10***	1.50
	Below Degree	0.36	0.11	1.44
Region	South	-0.24	0.21	0.78
	Central	-0.03	0.84	0.96
Gender of president	Male	-0.12	0.45	0.88
Help from representative	Yes	0.77	0.00*	2.15
-2logliklihood = 1095.14; Chi-Square Value = 50.74; Prediction Accuracy = 60.5				
Dependent Variable: Are you satisfied with the service provided by the panchayat, Yes =1, No =2 Definition of selected Independent Variables Purpose of Coming Panchayat: Home Related =1, Others = 2, Social Security Related = 3Rc Occupation: Job Seeker = 1Rc Education: Below SSLC =1, Below Degree = 2, And Degree and Above = 3RC Region: South =1, Central =2, North =3Rc Gender of President: Male =1, Female= 2Rc Help from Representative: Yes =1, No, =2Rc Political Party: CPI (M) =1, Congress = 2, and Others = 3Rc Note: RC = Reference Category; * and ** indicates significance at one and five percent level N = 832, Yes = 454, No = 378				

Now we turn to analyse the distinct features of those customers who are satisfied with the service provided by the local government. This analysis performed with the help of the logistic regression and the detailed results are reported in Table 9. The major findings from this analysis are:

- Compared to those coming for social security support (mainly the poor), others are less likely to report that service provided by local government is satisfactory.

- Such dissatisfaction seems to be more prominent among those coming for house construction related services (permit, tax, numbering).

- As expected, those who seek the help of elected representatives are somewhat dissatisfied with the service provided by the local governments directly (without the intervention of representatives). This is evident from that the fact that compared to those who seek such help, others are more than twice as likely to express satisfaction. This is evident that the fact that compared to those who does not seek such help, others are more than twice as likely to express satisfaction.

- Only 23 per cent of the customers see their local governments using computers for service delivery.

- Around 62 per cent understand that computerisation would speeden the service delivery; whereas one-fourth of the consumers express their ignorance on this issue.

- Only one-fourth of the citizen customers have reported that they have raised the issue of computerisation in the *grama sabhas.*

All these may be indicate that a substantial section of citizens approaching local governments may prefer the 'paternalistic' service delivery mediated by the elected representatives, rather than a process that speedens service for everyone (and that discriminates none) through e-governance.

3.5.2. What does the use (non-use) of Citizens' Charters Reveal?

Nearly 94 per cent of the local governments in Kerala have prepared a citizen charter (mainly due to the advocacy by the state government). It lists out the services provided by the local government and the expected time taken to deliver each service. If there is excessive delay in the delivery of a particular service, this could be taken up by the citizen/customer for correction by the local government. However, based on the analysis (see logistic regression results reported in Table 10) the study notes that:

- Only 47 per cent of the citizen customers have heard about 'citizens charters' and only 42.5 per cent know that such a charter exists in their local government.

- Compared to those who come for receiving social security benefits (mainly the poor), home-related work has a significantly less likelihood of the correct information on the existence of the citizen charter.

- Compared to the self-employed and others, the citizens who are `job seekers' are more likely to know about the existence of citizen charters in the local government.

- Expectedly, compared to those with higher education (post graduation and other), those who have less than 10 years of schooling are 6 (and who are graduates are 2) times more likely to know about citizens' charters.

- Compared to those in north Kerala, people in central Kerala are less likely to be aware of the charters

- The probability of awareness increases if the president of the panchayat happens to be a male.

- Among those who know about the existence of this charter, only 27 per cent have said that they know the time prescribed in the citizen charter for the service for which they have come to the office.

- Not all of them would be willing to complain, if the service delivery exceeds the time mentioned in the charter.

Table 10: Awareness regarding citizens' charters among citizens

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		-1.13*	0.00	0.322
Purpose of coming panchayat	Home Related	-0.34***	0.08	0.711
	Tax Related and Others	-0.25	0.18	0.78
Occupation	Job Seeker	0.72*	0.00	2.16
	Coolie	0.06	0.77	1.06
Education	Below SSLC	1.17*	0.00	6.01
	Below Degree	0.72*	0.00	2.06
Region	South	-0.61	0.00	0.54
	Central	-0.01*	0.93	0.98
Gender of president	Male	0.51*	0.00	1.67
Help from representative	Yes	-0.06	0.66	0.93
-2logliklihood = 1086.58; Chi-Square Value = 118.92; Prediction Accuracy = 65.6				
Dependent Variable: Are you satisfied with the service provided by the panchayat, Yes =1, No =2 Definition of selected Independent Variables Purpose of Coming Panchayat: Home Related =1, Others = 2, Social Security Related =3Rc Occupation: Job Seeker=1, Collies =2 and Self Employee = 3Rc Education: Below SSLC =1, Below Degree = 2, And Degree and Above = 3RC Region: South =1, Central =2, North =3Rc Gender of President: Male =1, Female= 2Rc Help from Representative: Yes =1, No, =2Rc Political Party: CPI (M) =1, Congress = 2, and Others = 3Rc Note: RC = Reference Category; * and ** indicates significance at one and five percent level N = 872, Yes = 409, No = 463				

The type of customers who are aware of the time required to deliver the service (for which they have come to the panchayat) specified in the citizens' charter was also analysed using logistic regression. In this case, only two variables stand out significantly – the region and the citizens' education level. It is observed that compared to those with less than 12 years of schooling, people with an educational level of a degree or higher are more likely to be aware of the time specified for service delivery. Compared to those in south Kerala, those in north Kerala are less likely to be aware about this.

Table 11: Willingness to complain by the customers using citizens' charter

Logistic Regression Estimates and Odds Ratios				
Variables		**Coefficient**	**P- Value**	**Odds Ratio**
Intercept		-2.56**	0.02	0.07
Purpose of coming panchayat	Home Related	0.39	0.60	1.49
	Tax Related and others	0.36	0.57	1.43
Occupation	Job Seeker	-0.50	0.39	0.60
	Coolie,	-0.40	0.55	0.66
Education	Below SSLC	1.17	0.15	3.23
	Below Degree	0.09	0.87	1.10
Region	South	-1.12**	0.05	0.28
	Central	-0.74	0.23	0.47
Gender of president	Male	1.96*	0.01	7.13
Help from representative	Yes	0.63	0.17	1.88
-2logliklihood = 117.94 Chi-Square Value = 20.37; Prediction Accuracy = 77.00				
Dependent Variable: Citizen Complained about the Citizen Charter , Yes =1, No =2 Definition of selected Independent Variables Purpose of Coming Panchayat: Home Related =1, Social Security Related = 2, Others = 3Rc Occupation: Job Seeker = 1Rc Education: Below SSLC =1, Below Degree = 2, And Degree and Above = 3RC Region: South =1, Central =2, North =3Rc Gender of President: Male =1, Female= 2Rc Help from Representative: Yes =1, No, =2Rc Political Party: CPI (M) =1, Congress = 2, and Others = 3Rc Note: RC = Reference Category; * and ** indicates significance at one and five percent level N = 126, Yes = 96, No = 30				

Among those who are knowledgeable about the rights in the charter, who are the people willing to complain if the service does not meet the standard (in terms of time of delivery) specified in the charter? The significant insights from regression (Table-11) show that people are much more willing to complain if the president of the panchayat is a male. Thus the picture is on unexpected lines: less educated people and those in localities where strong vote bank parties dominate are more willing to complain against the local governments. If the president of the panchayat is a man, there is a higher likelihood of questioning the hitches in service delivery. Surprisingly compared to those in north Kerala, those in south kerala are less likely to be complaining.

3.6. Employees Training and e-governance

3.6.1. Employees Training: A Crucial Supply Constraint

- The information collected through the field survey revealed that only one-fourth of the employees received computer training in around 35 per cent of local governments.

- Further, 39.5 per cent of local government report that half of their employees have got computer training, whereas only 4.4 per cent of local governments report that more than three-fourths of their employees received the training.

- Around one-fourth of the local governments which have reported inadequate training noted that all their employees have not been included in centralised training carried out by the TDA.

- Around 10.50 per cent of them note that the retirement of older staff members, and appointment of new ones (without adequate training) are the main reasons for having employees who are not trained to use the computers.

- The major reason behind the current non-use of computers is cited to be inadequacy in training and non-availability of computer/software in the office after the training.

- Around 33.4 per cent of local governments identified the lack of adequate training of the employees as the most important constraint affecting the pace of computerisation, while delays in software installation and lack of funds are cited by 15.7 per cent and 14.3 per cent respectively.

- Logistic regression could not see any variable as having a significant influence on the level of training, implying that lack of adequate computer-related training ails all types of local governments.

3.6.2. Employees Training: An Institutional Issue

The fact that the majority of the employees have not been trained or that they were not included in the training programmes, is not a merely a capacity building issue. A large number of employees retire from the local governments of Kerala every year. Recruitment is conducted to fill the vacancies arising out of retirement. However, the newly recruited employees need not be computer-proficient. They may not have even the aptitude to acquire computer skills. There is no training before deploying new employees. Thus, new recruits enter the job without any computer skills.

There is no compulsion (or penalty system) if these people do not acquire computer skills within a reasonable period of time. There are limits on the extent to which the supervisors or the elected representatives can insist on employees acquiring and effectively using their computer skills. Given the fact only a section of employees are trained, and they can get transfers to other local governments, there is no assurance that a trained employee would be working in a local government office for a reasonable period of time.

Given the current set up, the local governments are under-staffed (the position after a full computerisation of their activities is yet to be assessed.) It is well known that functions and resources have been transferred to local governments, but the transfer of an adequate number of employees is yet to take place. The plan to transfer state government employees to work in local governments, has encountered many hurdles. As a result, local governments are not in a position to send their employees for training to outstation centres and demand that they are provided in-house training. However, the TDA complains that the employees who are busy with their normal duties, will not give their full attention if in-house trainings are organised. If technical assistants are deputed, then the tendency would be to depend on them heavily – a disincentive for the employees to acquire even minimum skills.

3.7. Role of TDA

3.7.1. Perception of Local Governments

Apart from the role of the TDA in software preparation, centralised training, etc., its most appreciated help is the provision of a Technical Assistant for some period. More than one-third of the local governments identified this as the most important assistance that the TDA could provide. In fact, they expect a TA to help with problems in software/hardware. Delay in software installation (or availability) was the main shortcoming on the part of the TDA, according to around 15.7 per cent of local governments. Inadequacy in training and delay in the provision of the TA's services are other important stumbling blocks that local governments face.

3.7.2. Is the Model of Technology Delivery Appropriate?

Learning from other Firms

Along with the survey of local governments, we also studied a set of public/private firms providing computer-aided service in the same locality (as the office of the surveyed local government). This sample includes nearly 287 such firms of which 49 per cent are private companies, 21 per cent in the central public sector, and 16 per cent in the state public sector, and the remaining14 per cent are cooperatives. Further, 36.6 per cent of these companies are banks, 5.2 per cent travel agencies, and the rest in other activities. Most of these firms had begun their computerisation programme after 2001, with just 15 per cent having started it before the year 2000. The average number of customers of these firms varies significantly. Nearly fifty per cent have less than 50 customers a day, 30 per cent have more than 100 customers a day, and the rest, somewhere between these proportions. Thus, they are comparable with local governments in this matter. The major findings are as follows:

- It was revealed that only the banks (or nearly one-third of these firms) have a network connection with the head office. The propensity to have an Internet connection is more likely to be determined by the ownership pattern. Public sector organisations are more likely to be networked since it is their branches that operate in the surveyed localities. Private firms do not generally need to have such connections. Most firms face electricity interruptions in their locality, and that has not deterred them from computerisation which is carried out with the help of a UPS and other facilities.

- Forty four per cent of the firms approach private agencies for repair of computers and one-fifth have an annual maintenance contract. Only 16.7 per cent of these firms look to their head office for help in this matter. This also points to the possibilities for decentralised management of computer maintenance. One-fourth of the firms face the problem of lack of computer mechanics in the vicinity. Around 36 per cent have difficulties in getting spare parts locally. Only 37 per cent of firms report that computer-proficient persons are available locally for employment (in they decide to go in for local recruitment). The tendency to recruit local persons is greater among private and cooperative firms which do so anyway. Thus all these constraints of location (lack of local mechanics, spare part shops, and computer-proficient persons) could increase the cost of operation in those places compared to locations where these are easily available.

- It is striking to note that software preparation for 75 per cent of these firms was centralised, in the sense that the surveyed firm, say a bank, received software through the centralised effort of its state-level or national-level headquarters. This indicates the need for a centralised software generation model – the one used for local government computerisation in Kerala. Purchase of

hardware including computers was also centralised in 54 per cent of these firms – indicating that centralisation in hardware procurement, though not as crucial as that of software, was the dominant model. Here too, we observed differences between the various categories of firms, with more cooperative and private firms going in for local purchase. This too indicates that a centralised procurement of hardware is not inappropriate for local governments. Employee training programmes were also conducted centrally in nearly half of the firms. Barring private firms among which only one-third went in for centralised training, near half or the majority of all other types of firms used this option. Thus the appropriateness of a centralised training model for local governance cannot be underestimated.

- Given that the initial criticism of the e-governance of local governments in Kerala centred on the technology (or more specifically the property rights nature of the operating system software), we analysed the extent of the use of open software v/s proprietary software in the firms surveyed. Only around 11 per cent of these firms use open software. This could be a policy-driven outcome as the '*akshaya*' centres promoted by the IT mission of Kerala are also part of the sample.

- Though the focus of our analysis is on institutional constraints, some observations on the existing e-governance package in relation to what is actually possible, are summarised in the following Box

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In our understanding, three distinct aspects have to be considered in analyzing any e-governance project:
  a.   E-Services: efficient service to a large number of people;
  b.   E-administration: lay a key role in the decision-making process at any chosen level (here, the panchayat) and
  c.   E-public: ts potential in facilitating interaction with other organisations in the society.

a. E-services

The purpose of e-governance initiative is to bring government closer to people and make its functioning more transparent. For instance, issue of different types of certificates (birth/death/marriage), renewal of licenses, local revenue collection etc., are some of the services rendered at the panchayat level. When we move to an e-governance system, the panchayat information system should be able to deliver all these services to people at the level of each individual's household. An efficient delivery system is one in which the service can be accessed by a citizen from anywhere at anytime. For instance, it should be possible for a person to pay the tax to the panchayat her home through Internet or through the panchayat network. Likewise, a fully automated environment should allow a user to file an online certificate request or complaint (e-filing). It should also be possible for her to monitor the status of her application or complaint sitting at home or from a neighbourhood kiosk. A proper computing infrastructure is necessary to implement such projects.

b. E-administration

Another important aspect of e-governance is it potential in facilitating the administrative decision-making process. In a panchayat, the officer-in-charge should know the section-wise distribution of files being processed, status of each, etc. The tasks done by each of the staff members should be made available to the panchayat head and at higher levels. Computerisation should make this information available at the users' finger tips. This will only happen if all the inwards are registered through applications and a complete processing is attempted. One application that can be used for this purpose is the file tracking software, Soochika. The use of this should be mandatory in all the panchayats and they should re-design their system so that information gets automatically stored in a central database. In addition, once this data is in a

central location, performance of each of the panchayats can be easily compared. This way, the management levels higher than the panchayats (block, district and state levels) will get a reasonably good picture of the various activities in a panchayat. The feeling of being monitored by the people as well as the higher management levels will force the staff of panchayats to be more accountable and prompt in service delivery. An interesting outcome could be that this will also make the staff take file noting seriously. When an officer at the panchayat level makes a note on a file, it means that action has been taken on that file. Hence, any laxity on the part of the officials to make file notes could be centrally monitored with file-tracking software.

c. E-public

Any e-governance system is incomplete without adequate provision for generation of reports and periodic work audits. A panchayat, particularly in the decentralisation context of Kerala, is expected to send a various reports to other government and semi-government institutions like Revenue Department, Housing Board, National Literacy Mission, Kudumbasree, DPC, Planning ffice, Treasury, BDO etc. Careful study of workload of the panchayat staff reveals that a considerable amount of time is spent generating such reports manually. A suitably developed panchayat information system should have the capability necessary to facilitate automated generation of reports. It should also provide the interface enables members from other institutions to obtain reports relevant to their requirements. In addition to saving time for the panchayat staff, it would also provide easier ways to cross-check the veracity of the information being provided by them. Significant progress has been made by other states/Government agencies in this regard. For instance, as part of the National Rural Employment Guarantee Act, implemented all over India by the panchayats, the Ministry of Rural Development, Government of India has created and maintains an elaborate database/Management Information System (http://nrega.nic.in/), linking all panchayats throughout the entire length and breadth of the country. We are unable to comprehend why Kerala, otherwise a leader in many creative initiatives, is lagging behind in these aspects.

We also learnt that a considerable amount of money (around Rs 10,000,00/-) has already been spent in each of the panchayats for computerisation. Almost 50 per cent of this   spent on procuring software licenses (complete software – server/desktop OS, database server etc., from Microsoft). It is difficult to sustain such dependence on software companies. Given that the situation has changed remarkably, building/deploying applications based on open-source/free software systems does not seem to be a difficult proposition.

4: MAJOR CONCLUSIONS AND POLICY RECOMMENDATIONS

- This report covers the status of e-governance in rural local governments. The status quo (as of January 2009) is that around 93 percent of the sample of panchayats has at least one software installed and in some level of operation. The one for the financial expenditure monitoring of the plan allocation – *sulekha* – which was somewhat insisted by the state government for the devolution of the funds, has been installed in three-fourth of the local governments.

- Only 41 percent of these local governments consider them to have enough computers. Around one-fourth has no computer on the table of any regular employee. Around three-fourth have networked their computers and half of them have internet connections.

- In order to understand the impact of computerisation on service delivery, the case of the issuance of birth/death certificates was taken up for analysis, 42 percent of them claim to be issue this certificate with a day. About 37 percent takes 2-3 days and more number of days is taken by the remaining panchayats.

- Logistic regression indicates that presence of *sevana* registration software (after controlling for other relevant variables) significantly reduces the number of days required to issue the certificate. However, the number of days taken is beyond what is necessary ideally with the use of software. Further analysis indicates that higher the population would mean more likely to get the certificate on the same day. This may be a reflection of the constraints in terms of number of trained employees, infrastructure, etc.

- According to local governments, there is demand for computerisation among their citizens and elected representatives. However, indirect evidence (or their revealed preference) may indicate a different position. Eighty eight percent of representatives note that citizens approach them for speeding up the service from their local governments, and in most cases they could help them. Seventy one percent say that people remember such help provided by the elected representatives. Hence only around half of the representatives think that people should approach panchayat office directly rather than approaching them.

- Citizens are more likely to approach younger representatives for such help. Representatives with higher education (post graduation and above) are more likely to report that they help those people who approached them. Female elected representatives are less likely to say that citizens' approaching local government office directly (rather than through them). Educated representatives are more likely to say so. This may be an indirect indication of the not so strong demand for improving e-governance in local governments, which could help providing speedy service to everybody without taking the personal help of the representatives.

- Regarding the demand for computerisation and e-governance, we consider the use of citizens' charters. Are people willing to take the trouble to get improved service using the provisions of citizens' charters? Nearly 97 percent of the panchayats in Kerala have prepared a citizen charter. Only 49 percent of the citizen customers have heard about such charters and only 43 percent know that such a charter exist in their local government. Not surprisingly, only 26.46 percent have said that they know the time prescribed in the citizen charter for the service for which they have come to the office. Not all of them would be willing to complain, as evident from the survey, if the service delivery exceeded the time mentioned in the charter.

- The regression results indicate that compared to self employed and others, the citizens belonging to job seeker occupational categories are more likely to know the existence of citizen charter in their local government. Expectedly, compared to those with higher education (post graduation and others), those who are less than 10 years of schooling and graduates are 6 and 2 times more likely to know about citizens' charters. Compared to those in north Kerala, people central Kerala are less likely to be aware. However, even education does not influence significantly the knowledge of the time of service delivery specified in the charter. The overall picture is on unexpected lines: poor and less educated people and those in localities where strong vote-bank parties dominate are more willing to complain against the local governments,

- Considering the supply side factors of e-governance, employees' training seems to be a crucial constraint. Only less than 5 percent of the local governments reports that more than three-fourth of all employees have been trained. Nearly 40 percent have only half of the employees, and another 35 percent have only one-fourth of them, with training. Not included in the training programs, retirement of trained employees, inducting new employees without training are the major reasons reported.

- Among those employees who are trained but cannot use computers currently attribute it to inadequate training, or the lack of computers/software for them to work immediately after the training.

- When asked about the most important constraint against faster computerisation, one-third of the local governments have cited lack of adequate training.

- Regarding the role of Technology Delivery Agency, its most appreciated help (other than the mandated ones like software preparation and centralised training) is the provision of a technical assistant (TA) for on-the spot help and training.

- Delay in software installation was the main reported shortcoming on the part of TDA, according to most local governments. Inadequacy in training and the delay in the provision of TA services are the next important short comings reported. However, the accounts of TDA show that they have caught up with the installation of software in most local governments. Though one sees delay, if we take the functioning of TDA during the last ten years, according to TDA, focussed attention on panchayat computerisation has been there only during the last three years, and there were many procedural delays caused by factors beyond their control. This too reflects that lack of willingness to overcome such constraints at the level of the state government. The fact that there were delays, indicate certain laxity on the part of state government, or lack of adequate pressure from the local governments, or a general lack of strong interest in pushing computerisation.

- A critique of the computerisation process in the local governments of Kerala, could be that those who have started or designed such a process, have not given due attention to the institutional factors that may decelerate the process. Though a system study was carried out, it was more or a less a documentation of the rule-based procedures to be used in local governments. The actual procedures used, or the interests of different stake holders in following such rule-based procedure, or the likely constraints that may arise in the process of computerisation, seem to have been missed in such a system study. This shows that a system study in an e-governance program requires an understanding of the institutional factors. This is unlike the preparation of software for a business process, where it is expected to be used by those whose private gains are aligned with the expected improvement through the adoption of e-governance.

- Based on the analysis of firms in the same locality of surveyed local governments, one can see that software preparation for three-fourths of them was centralised – indicating the appropriateness of the centralised software preparation/procurement model of the computerisation programme adopted here.

- Given that the initial criticism of the e-governance of local governments in Kerala centred on the technology (or more specifically the property right nature of the operating system software), we analysed the extent of the use of open software verses proprietary software in the firms surveyed. Only around 11 percent of these firms use open software. Thus the use of Microsoft software for the computerisation of local governments in Kerala could be due to the appropriateness to the then prevailing techno-economic factors.

- Based on the analysis, we can infer that there are significant institutional issues that constrain the implementation of e-governance in local governments of Kerala. These cannot be solved completely by technological or even supply-side measures. However, there can be alternative technology delivery or technology management strategies. There can be alternative strategies to develop and install software in all local governments quickly and also to provide training and technical assistance programmes. In-house training and provision of full time TA should be explored as possible alternative strategies.

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Appendix 1: Descriptive Statistics: LSG Questionnaire

Table A.1. Number of Population in Panchayat

Population Size	≥ 20000	20001 to 30000	≥ 30001	Missing	Total
Frequency	71 (17.2)	168 (40.7)	135 (37.0)	21 (5.1)	413 (100)

Table A.2. Last Years Income of Panchayat

Income	≥ 2000000	2000001-4000000	≥ 4000001	Missing	Total
Frequency	113 (27.4)	101 (24.57)	127 (30.8)	72 (17.4)	413 (100)

Table A.3. Ruling Party of Panchayat

Ruling Party	LDF	UDF	Others	Missing	Total
Frequency	282 (68.3)	119 (28.8)	7 (1.7)	5 (1.2)	413 (100)

Table A.4. Political Party of Panchayat President

Political Party	CPI (M)	CPI	Congress	Others	Missing	Total
Frequency	258 (62.5)	10 (2.4)	58 (14.0)	69 (16.7)	18 (4.4)	413 (100)

Table A.5. Gender of President of Panchayat

Gender	Male	Female	Missing	Total
Frequency	215 (60.8)	155 (37.5)	7 (1.7)	413 (100)

Table A.6. Grade of the Panchayat

Grade	Special Grade	1st Grade	2nd Grade	4th Grade	Missing	Total
Frequency	166 (40.2)	158 (39.2)	60 (14.5)	7(1.7)	18 (4.4)	413 (100)

Table A.7. Whether Panchayat has Citizen Charter

Having Documents	Yes	No	Missing	Total
Frequency	390 (94.4)	10 (2.4)	13 (3.1)	413 (100)

Table A.8. Number of Days for Getting Certificate

No of days	0-1	2-3	4-5	≥ 6	Total
Frequency	174 (42.1)	153 (37.0)	40 (9.7)	46 (11.1)	413 (100)

Table A.9. Whether Getting Certificate as Per Demand

Getting Certificate	Yes	No	Missing	Total
Frequency	320 (77.5)	80 (19.4)	13 (3.1)	413 (100)

Table A.10. Do People Pressurize though Representative to get Birth Certificate?

Pressurized	Yes	No	Missing	Total
Frequency	218 (68.0)	116 (28.1)	16 (3.9)	413 (100)

Table A.11. Is Panchayat fully Computerized?

Response	Yes	No	Missing	Total
Frequency	169 (40.9)	233 (56.4)	11 (2.7)	413 (100)

Table A.12. Number of Computers that Exist in Panchayat

Computers	1-2	3-4	5-6	≥ 7	Missing	Total
Frequency	57 (13.8)	148 (35.8)	148 (35.8)	45 (10.9)	15 (3.6)	413 (100)

Table A.13. Number of Computers Working Well in Panchayat

Numbers	1-2	3-4	5-6	≥ 7	Missing	Total
Frequency	111 (26.9)	154 (37.3)	94 (22.8)	35 (8.5)	19 (4.3)	413 (100)

Table A.14. Ratio of Computers Working Well to Total Computers (Percentage)						
Percentage	1-25	26-50	51-75	≥76	Missing	Total
Frequency	19 (4.6)	42 (10.2)	50 (12.1)	275 (66.6)	27 (6.5)	413 (100)

Table A.15. Number of Hours with No Power in the Office						
Hours	0 Hour	1-2 Hours	3-4 Hours	≥5	Missing	Total
Frequency	60 (14.5)	272 (65.9)	52 (12.6)	6 (1.5)	23 (5.6)	413 (100)

Table A.16. Does Panchayat have UPS Facility?				
Response	Yes	No	Missing	Total
Frequency	337 (81.6)	63 (15.3)	13 (3.1)	413 (100)

Table A.17. Number of Employees having Computer in their Table				
Members	1-2	3-4	≥5	Missing	Total
Frequency	107 (25.9)	138 (33.4)	68 (16.5)	100 (24.2)	413 (100)

Table A.18. Does More than One Computer have a Connection to Internet?			
Response	Yes	No	Missing	Total
Frequency	299 (72.4)	100 (24.2)	14 (3.4)	314 (100)

Table A.19. Type of Agency which has done Network Process in Panchayat								
Agency	IKM	Keltron	BSNL	HCL	WIPRO	PCS	Others	No Network	Total
Frequency	147 (35.6)	43 (10.4)	6 (1.5)	32 (7.7)	28 (6.8)	17 (4.1)	18 (4.3)	122 (29.6)	413 (100)

Table A.20. Does Panchayat have Internet Connection?			
Response	Yes	No	Missing	Total
Frequency	225 (54.5)	173 (41.9)	15 (3.6)	413 (100)

Table A.21. Type of Internet Connection			
Type of Internet Connection	Dial Up	Broad-Brand	Missing	Total
Frequency	42 (10.2)	179 (43.3)	192 (46.2)	413 (100)

Table A.22. Numbers of Printers in Panchayat			
Number of Printers	1-2	≥3	Missing	Total
Frequency	221 (53.5)	176 (42.6)	16 (3.9)	413 (100)

Table A.23. Methods of Repairing the System								
Methods	IKM	Keltron	Wipro	Technician	Supplied Agency	Guarantee Period	Others	Missing	Total
Frequency	114 (27.6)	43 (10.4)	14 (3.4)	63 (15.3)	48 (11.6)	57 (13.8)	29 (7)	45 (10.9)	413 (100)

Table A.24. Does Panchayat Take AMC for Repairing the System?			
Response	Yes	No	Missing	Total
Frequency	80 (19.4)	314 (76.0)	19 (4.6)	413 (100)

Table A.25. Reason for Not Taking AMC						
Reasons	Guarantee Period	Installation is on	No Need	Wants to take AMC	Others	Missing	Total
Frequency	118 (28.6)	29 (7.0)	11 (2.7)	8 (1.9)	41 (9.93)	206 (49.8)	413 (100)

Table A.26. Number of Employees in Panchayat					
Number of Employees	1-10	11-15	≥ 16	Missing	Total
Frequency	179 (43.3)	153 (37.0)	66 (16.0)	15 (3.6)	413 (100)

Table A.27. Number of Trained Employees in Panchayat						
Number of Employees	1-2	3-4	5-6	≥ 7	Missing	Total
Frequency	107 (25.9)	156 (37.8)	86 (20.8)	47 (11.4)	17 (4.1)	413 (100)

Table A. 28. Percentage of Employee got Trained						
Percentage	1-25	25.01-50	50.01-75	≥ 75.01	Missing	Total
Frequency	146 (35.4)	163 (39.5)	63 (15.3)	18 (4.4)	23 (5.60	413 (100)

Table A.29. Number of Trained Employees Willing to run Computer						
Number of Employees	1-2	2-4	4-6	≥ 7	No Response	Total
Frequency	132 (32.0)	136 (32.9)	73 (17.7)	36 (8.7)	36 (8.7)	413 (100)

Table A.30. Reasons for Trained Employees not Willing to run Computer							
Reasons	Willing	Work load	No good Training	No software and Computer	Others	Total	Missing
Frequency	56 (30.94)	16 (8.84)	47(25.97)	43 (23.76)	19 (10.50)	181 (100)	232

Table A.31. Does Computer Speed up the Service?				
Response	Yes	No	Missing	Total
Frequency	289 (70.0)	113 (27.4)	11 (2.7)	413 (100)

Table A.32. Did Representative Demand Computerization?				
Responses	Yes	No	Missing	Total
Frequency	309 (74.8)	96 (23.2)	8 (1.9)	413 (100)

Table A.33. Does Local Government give Importance to Computerization?				
Responses	Yes	No	Missing	Total
Frequency	394 (65.4)	7 (1.7)	12 (2.9)	413 (100)

Table A.34. Does Panchayat Face any Difficulty in Spending Money?				
Response	Yes	No	Missing	Total
Frequency	59 (14.3)	337 (81.6)	17 (4.1)	413 (100)

Table A.35. First Important Difficulty in Spending Money						
Reason	Lack of Fund	Didn't get approval for Project	No order to spend plan fund	Others	Total	Missing
Frequency	39 (66.10)	10 (16.95)	3 (5.08)	7 (1.86)	59 (100)	354

Table A.36. Second Important Difficulty in Spending Money				
Reasons	No Order to Spend Plan fund	Others	Total	Missing
Frequency	5 (55.56)	4 (44.44)	9 (100)	404

Table A.37. Most Important Failure of IKM with Regard to Computerization							
Response	No Mistake	Computer Mistake	Software	Training	IKM	Others	Total	Missing
Frequency	25 (10.19)	13 (5.28)	94 (38.21)	66 (26.83)	15 (6.10)	33 (13.41)	167 (100)	167

Table A.38. Second Most Important Failure of IKM with Regard to Computerization							
Response	No Mistake	Computer Mistake	Software	Training	IKM	Others	Total	Missing
Frequency	3 (2.26)	7 (2.26)	57 (42.86)	27 (20.30)	21 (15.79)	18 (13.53)	133 (100)	280

Table A.39. Local Government Fails to Computerize			
Response	Yes	No	Missing	Total
Frequency	39 (9.4)	356 (86.2)	18 (4.4)	413 (100)

Table A.40. Most Important Reason for Not Progressing with Computerization								
Problems	Training	Computer	Software	Lack of fund	IKM	Employee problem and Others	Missing	Total
Frequency	138 (33.4)	20 (4.8)	65 (15.7)	59 (14.3)	26 (6.3)	39 (9.4)	66 (17.9)	413 (100)

Table A.41. Second Most Important Reason for Not Progressing with Computerization								
Problems	Training	Computer	Software	Lack of fund	IKM	Others	Missing	Total
Frequency	52 (12.59)	34 (8.23)	83 (20.10)	47 (11.38)	16 (3.87)	51 (12.35)	130 (31.48)	413 (100)

Table A.42. Third Most Important Reason for Not Progressing with Computerization								
Problems	Training	Computer	Software	Lack of fund	IKM	Others	Missing	Total
Frequency	18 (4.36)	18 (4.36)	37 (8.96)	22 (5.33)	8 (1.94)	24 (5.81)	286 (69.25)	413 (100)

Table A.43. Most Important help provided by IKM for Computerization								
Nature of helps	TA Visit	Emergency Service	Software installation	Training	Project Preparing	Others	Missing	Total
Frequency	126 (30.51)	37 (8.96)	30 (7.26)	12 (2.91)	15 (3.63)	37 (8.96)	156 (37.77)	413 (100)

Table A.44. Second Most Important help provided by IKM for Computerization					
Nature of helps	Emergency Service	Software Installation	Training to Employee	Others	Missing	Total
Frequency	16 (3.87)	9 (2.18)	14 (3.39)	12 (2.91)	362 (87.65)	413 (100)

Appendix 2: Descriptive Statistics: Citizen Questionnaire

Table A.45. Educational Qualifications

Type of Education	Representative	Beneficiaries	Employees
Below SSLC	244 (16.9)	334 (35.8)	21 (2.4)
Below Degree	881 (60.8)	465 (49.8)	267 (30.31)
Degree and Above	289 (20.0))	127 (13.6)	577 (65.5)
Missing	34 (2.3)	6 (0.6)	16 (1.8)
Total	1448 (100)	932 (100)	881 (100)

Table A.46. Occupation of Beneficiary

Occupation Type	Job Seeker	Collies	Self Employee	Others	Missing	Total
Frequency	332 (35.6)	247 (26.5)	184 (19.7)	157 (38.01)	12 (1.3)	932 (100)

Table A.47. Purpose of the Beneficiary for Coming to Panchayat

Purposes	Home and ownership	Tax related	Social Security	Certificate	Others	Missing	Total
Frequency	302 (32.4)	98 (10.5)	242 (26.0)	185 (19.8)	103 (11.1)	2 (0.2)	932 (100

Table A.48. Did Beneficiary Take Help from the Representative ?

Response	Yes	No	Missing	Total
Frequency	340 (36.5)	581 (62.3)	11 (1.2)	932 (100)

Table A.49. Does Beneficiary Have to Pay Something Officially to get Service?

Response	Yes	No	Missing	Total
Frequency	257 (27.6)	664 (71.2)	11 (1.2)	932 (100)

Table A.50. Amount of Payment by Beneficiary to get Service from Panchayat

Amount (Rs.)	1-25	26-50	Above 50	Total	Missing
Frequency	137 (66.50)	16 (7.77)	53 (25.73)	206 (100)	726 (100)

Table A.51. Is Beneficiary Satisfied with Service Provide by Panchayat?

Response	Yes	No	No Response	Total
Frequency	478 (51.3)	408 (43.8)	46 (4.9)	932 (100)

Table A.52. Reason for Satisfaction with Service

Reasons	Gets Fast	Willing to Wait	Delay Occurred in Govt.	This time Needed for his Work	Total	Missing
Frequency	273 (72.61)	30 (7.98)	4 (1.06)	69 (18.35)	376 (100)	556

Table A.53. Reasons for Beneficiary Not Being Satisfied with Service

Reasons	Frequency
Busy, Can't Spare a long time in Panchayat	44 (12.79)
Alone, so Needed it Speedily	9 (2.62)
It Must have been get Fastly	179 (52.03)
Get Speedy for Other Procedure	51 (14.83)
Intension Doesn't Satisfy so did not Satisfy	12 (3.49)
Poor attention of Staff	20 (5.81)

Computerization and Training must be needed	12 (3.49)
Money Loss and Time Loss	17 (4.94)
Total	344 (100)
Missing	588

Table A.54. Does Panchayat use a Computer to Provide Service?

Response	Yes	No	Does not know	No Response	Total
Frequency	211 (22.6)	638 (68.5)	10 (1.1)	73 (7.8)	932 (100.00)

Table A.55. Does use of Computer Speed up the Service to Beneficiaries?

Response	Yes	No	Does not Know	Missing	Total
Frequency	572 (61.4)	83 (8.9)	229 (24.6)	48 (5.2)	932 (100)

Table A.56. Had you Demanded through Gramshabha for use of Computer in the Panchayat ?

Response	Yes	No	Does not Know	Total	Missing
Frequency	214 (23.52)	695 (76.37)	1 (0.11)	910 (100)	22

Table A.57. Reason for Not use of Computer in Panchayat

Reasons	Frequency
Reduce Employment	29 (10.47)
Computer problem	52 (18.77)
No Training	88 (31.77)
Financial Crisis	24 (8.66)
No Software	15 (5.42)
Operation not complete	40 (14.44)
No Service Provided by Panchayat	19 (6.86)
Others	10 (3.61)
Total	277 (100)
Missing	655

Table A.58. Is Beneficiary Aware of Citizen's Charter in General?

Response	Yes	No	Does not Know	Missing	Total
Frequency	436 (46.8)	482 (51.7)	3 (0.3)	11 (1.2)	932 (100)

Table A.59. Beneficiaries Response on Use of Citizen's Charter in this Local Government

Response	Yes	No	Total	Missing
Frequency	396 (42.49)	33 (3.54)	503 (53.97)	932 (100)

Table A.60. Did Beneficiaries Know Time Required for Getting Service as per Citizen's Charter?

Response	Yes	No	Total	Missing
Frequency	113 (26.46)	270 (63.23)	427 (100)	546

Table A.61. Will Beneficiary Complain if there is a Delay in Service?

Response	Yes	No	Total	No Response
Frequency	103 (75.74)	33 (24.26)	136 (100)	796

Table A.62. Reasons for Not Complaining by Beneficiaries if Delay Occurs

Response	Not Known about Complain	Total	Missing
Frequency	1	1	931

Appendix 3: Descriptive Statistics: Employee Questionnaire

Table A.63. Employees' Post at the Panchayat

Post Name	Secretary	Superintendent	Lower Grade Post	Chairman and UDC	Supervisor related	Technical Staff	Missing	Total
Frequency	**54 (6.13)**	**41 (4.65)**	**387 (43.81)**	**355 (39.95)**	**28 (3.18)**	**17 (1.93)**	**3 (0.34)**	**881 (100)**

Table A.64. Year of Joining the Post in Panchayat Office

Year	1975-80	1980-85	1986-90	1991-95	1996-00	2001-05	≥2006	Missing	Total
Frequency	**17 (1.9)**	**66 (7.5)**	**116 (13.2)**	**58 (6.6)**	**156 (17.6)**	**253 (28.7)**	**192 (21.8)**	**23 (2.6)**	**881 (100)**

Table A.65. Is a Computer Provided on the Employees Table?

Response	Yes	No	No Response	Total
Frequency	194 (22.0)	680 (77.2)	7 (0.8)	881 (100)

Table A.66. Does Employee Use Computer for Office Work?

Response	Yes	No	Missing	Total
Frequency	396 (44.9)	477 (54.1)	8 (0.9)	881 (100)

Table A.67. Needed Software Not Available

Response	Yes	No	Missing	Total
Frequency	4 (0.5)	148 (16.8)	729 (82.7)	881 (100)

Table A.68. Response of Employee on Reason for Unavailability of Software

Reason	No computer	All Software are not Installed	Bad Infrastructure	Others	Total	Missing
Frequency	45 (34.88)	32 (24.81)	26 (20.16)	26 (20.16)	129 (100)	752

Table A.69. Responses of Employee on Whether the Employee is Trained or Not

Response	Yes	No	Missing	Total
Frequency	41 (4.6)	216 (24.5)	624 (70.8)	811 (100)

Table A.70. Reasons for Not Training all Employees

Reason	Did not Call for training	New Employee	Didn't go for Training	Not complete training	Total	Missing
Frequency	136 (70.47)	13 (6.74)	12 (6.22)	32 (6.58)	193 (100)	688

Table A.71. Does Trained Employee use the Computer?

Response	Yes	No	Total	Missing
Frequency	22 (25)	66 (75)	88 (100)	793

Table A.72. Reason for Trained Employee Not Being Able to use Computer

Reason	No Computer	Training is not Sufficiently	After Training not Handling the computer	Others	Total
Frequency	30 (34.48)	18 (20.69)	19 (21.84)	20 (22.99)	87 (100)

Table A.73. Is Employee Unable to use Computer at All?

Response	Yes	No	Missing	Total
Frequency	10 (1.1)	23 (3.1)	844 (95.8)	881 (100)

Table A.74. Reason for Not Being Able to use Computer at All						
Reason	Heavy Work	Training is not Sufficient	No computer Education	Others	Total	Missing
Frequency	7 (21.21)	14 (42.42)	8 (24.24)	4 (12.12)	33 (100)	848

Table A.75. Other Reasons for Not Being Able to use Computer at All					
Reason	Training Period is too Short	Didn't get Training for Operating the computer	Use of computer registered can keep	Others	Total
Frequency	4 (30.77)	3 (23.08)	2 (15.38)	4 (30.77)	13 (100)

Table A.76. Does Computer Improve Panchayat Work?					
Response	Yes	No	Don't Know	Missing	Total
Frequency	831 (94.3)	10 (1.1)	19 (2.2)	21 (2.4)	881 (100)

Table A.77. Reason for Not Improving Work				
Reasons	it is practically Applicable	There is no use of computer	No response	Total
Frequency	1 (0.1)	7 (0.8)	873 (99.1)	881 (100)

Table A.78. Does Computer Increase Work Load in Office?				
Response	Yes	No	Missing	Total
Frequency	60 (6.8)	802 (91.0)	19 (2.2)	881 (100)

Table A.79. Reasons for Increase in the Work Load by using Computer in Panchayat				
Ways	Workload increase if both computer and keeping registrar	Lack of employees	Other	Total
Frequency	43 (79.63)	4 (7.41)	7 (12.96)	54 (100)

Table A.80. Do Existing Rules Stand in the Way of using Computer?				
Response	Yes	No	No Response	Total
Frequency	41 (4.7)	813 (92.3)	27 (3.0)	881 (100)

Table A.81. Ways Computer Creates Problem?				
Ways	All records are kept in register	Lack of employees	Others	Total
Frequency	19 (57.58)	4 (12.12)	10 (30.30)	33 (100)

Appendix 4: Descriptive Statistics: Representative Questionnaire

Table A.82. Gender of Representative				
Gender	Male	Female	No Response	Total
Frequency	900 (62.2)	546 (37.7)	2 (0.1)	1448 (100)

Table A.83. Position of Representative in Panchayat				
Position	Chairman and Vice President	President	Members	Missing	Total
Frequency	264 (18.23)	74 (5.11)	1098 (75.83)	12 (0.83)	1448 (100)

Table A.84. Political Party of Representative					
Political Party	CPI(M)	CPI	Congress	Muslim League	Others	No Response	Total
Frequency	656 (45.3)	89 (6.1)	341 (23.5)	179 (12.5)	159 (10.98)	24 (1.7)	1448 (100)

Table A.85. In which Year Were You Selected as a Member for the First Time ?								
Year	1960-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	$\geq$ 2006	No Response	Total
Frequency	22 (1.5)	1 (0.1)	44 (3.0)	119 (8.2)	178 (12.3)	1033 (71.3)	39 (2.7)	12 (0.8)	1448 (100)

Table A.86. Total Number of Years as Selected Representative				
Years	0-5	6-10 years	≥ 11	Missing	Total
Frequency	1082 (74.7)	259 (17.9)	106 (7.3)	1 (0.1)	1448 (100)

Table A.87. Age of Representative						
Years	10-30	31-40	41-50	51-60	$\geq$70 Years	No Response	Total
Frequency	97 (6.7)	446 (30)	478 (33.0)	277 (19.1)	124 (8.6)	26 (1.8)	1448 (100)

Table A.88. Does the Representative Participate in Computerization Training?				
Response	Yes	No	No response	Total
Frequency	427 (29.5)	1014 (70.0)	7 (0.5)	1448 (100)

Table A.89. Is Computer Used in your Panchayat for Providing Service?				
Response	Yes	No	No response	Total
Frequency	952 (65.7)	490 (33.8)	6 (0.4)	1448 (100)

Table A.90. Reason for Panchayat Not Providing Service through Computer	
Reasons	Frequency
Lack of employees	53 (13.28)
Did not Install Savanna Software	43 (10.78)
No Computer	13 (3.26)
Training not given to all employees and needed software not installed	76 (19.05)
Computerization Process not Completed	100 (25.06)
Mistake of IKM	13 (3.26)
Old Data not Entered in to the computer	18 (4.51)
No computing Infrastructure Facilities for Comp Operation	29 (7.27)
Did not Complete the soft ware installation process	25 (6.27)
Lack of Funds	11 (2.76)
Others	18 (4.51)
Total	399 (100)
No Response	1049

Table A.91. Is it Better to Provide Service through Computer?

Response	Yes	No	No response	Total
Frequency	1402 (96.8)	30 (2.1)	16 (1.1)	1448 (100)

Table A.91. Do People of your Ward Approach you to get Service Fast?

Response	Yes	No	No response	Total
Frequency	1270 (87.7)	10.3)	29 (2.0)	1448 (100)

Table A.92. Are you able to Help in Providing the Service Faster when Approached ?

Response	Yes	No	No response	Total
Frequency	1268 (87.5)	113 (7.8)	68 (4.7)	1448 (100)

Table A.93. Response of Representative on whether People are Grateful to Him?

Response	Yes	No	No response	Total
Frequency	1031 (71.2)	359 (24.8)	58 (4)	1448 (100)

Table A.94. Do you think Service Provided by Panchayat is Better if People did not Approach the Representative Directly?

Response	Yes	No	No response	Total
Frequency	716 (49.4)	692 (47.8)	40 (2.8)	1448 (100)

Table A.95. Has any Proposal been made by Grama Sabha for Computerization

Response	Yes	No	No response	Total
Frequency	768 (53.0)	648 (44.8)	32 (2.2)	1448 (100)

Table A.96. Has any Proposal for Computerization from the Administration been Made

Response	Yes	No	No response	Total
Frequency	1057 (73)	354 (24.4)	37 (2.6)	1448 (100)

Table A.97. Do you Think Setting Aside Money for Computerization is Important?

Response	Yes	No	No response	Total
Frequency	1371 (94.7)	61 (4.2)	16 (1.1)	1448 (100)

Table A.98. Reasons for Difficulty in Setting Aside Money for Computerization

Rea sons	No money for Plan Expenditure	Lack of fund	Obstruction in other Development	Others	Total	Missing
Frequency	3 (1.33)	206 (91.56)	9 (4.00)	7 (3.11)	225 (100)	1223

Table A.99. Does Representative Give more Priority on Computerization Rather than other Activities?

Response	Yes	No	No response	Total
Frequency	1185 (81.8)	139 (9.6)	124 (8.6)	1148 (100)

Appendix 5: Descriptive Statistics: Questionnaire on other firms

Table A.100. Ownership of Firm

Ownership	Government	Central Govt	Private	Co-Operative	Missing	Total
Frequency	45 (15.7)	59 (20.6)	141 (49.1)	41 (14.3)	1 (0.3)	287 (100)

Table A.101. Main Activities of the Firm

Activities	Banking	Travel Agency	Others	Missing	Total
Frequency	105 (36.6)	15 (5.2)	166 (57.9)	1 (0.3)	287 (100)

Table A.102. Year of Computerization in Firm

Year	1980-1990	1991-2000	≥ 2001	Missing	Total
Frequency	4 (1.4)	38 (13.2)	233 (81.2)	12 (4.2)	287 (100)

Table A.103. Number of Clients Visiting the Firm in a Day

Numbers	1-10	11-30	31-50	51-100	≥ 101	Missing	Total
Frequency	47 (19.4)	62 (21.6)	31 (10.8)	48 (16.7)	88 (30.7)	11 (3.8)	287 (100)

Table A.104. Type of Services Provided by Firm through using Computer

Type of Service	Frequency
Education of various computer courses	10 (3.5)
Banking Services	99 (34.5)
All office work are done by computer	11 (3.8)
Building plan, Estimation etc	7 (2.4)
DTP, Internet, Training	18 (6.3)
Education	18 (6.3)
Photography	8 (2.8)
Office work	9 (6.6)
Internet, Computer course, telephone bill, current bill	24 (8.4)
Travel agency work	15 (52)
Billing, Accounting work	19 (6.6)
Printing DTP	11 (3.8)
Others	35 (12.19)
Missing	3 (1.0)
Total	287 (100)

Table A.105. Is There Computer Network Connecting with the Head Office?

Response	Yes	No	Missing	Total
Frequency	100 (34.8)	184 (64.1)	3 (1.0)	287 (100)

Table A.106. Is There Disruption of Electricity in your Firm?

Response	Yes	No	Missing	Total
Frequency	251 (87.5)	35 (12.2)	1 (0.3)	287 (100)

Table A.107. Duration of Electricity Problem in Firm (Hours)

Hour	One	Two	Three	Four	Missing	Total
Frequency	164 (19.2)	49 (57.1)	13 (17.1)	6 (4.5)	55 (19.2)	287 (100)

Table A.108. Are There Other Facilities to Activate Computers when there is no Electricity in Firm?

Response	Yes	No	Missing	Total
	234 (81.5)	50 (17.4)	3 (1.0)	287 (100)

Table A.109. The Process of Repairing Computer in Firm

Process	Through private agency	Taken AMC	Through Department	Self Repairing	Others	Missing	Total
	127 (44.3)	48 (16.7)	63 (22.0)	27 (9.4)	11 (3.8)	11 (3.8)	287 (100)

Table A.110. Is Local Help Available for Mechanical Failures ?

Response	Yes	No	Missing	Total
Frequency	181 (63.1)	74 (25.8)	32 (11.1)	287 (11.1)

Table A.111. Availability of Computer Parts Locally

Response	Yes	No	Missing	Total
Frequency	156 (54.4)	103 (35.9)	28 (9.8)	287 (100)

Table A.112. Availability of Employees to Work with Computer

Response	Yes	No	Missing	Total
Frequency	107 (37.3)	175 (61.0)	5 (1.7)	287 (100)

Table A.113. Availability of Trained Persons Locally

Response	Yes	No	Missing	Total
Frequency	102 (35.5)	5 (1.7)	180 (62.7)	287 (100)

Table A.114. Willingness of Outside Employee to Work in Firm

Response	Yes	No	Not Applicable	Missing	Total
Frequency	47 (16.4)	31 (10.8)	182 (63.4)	27 (9.4)	287 (100)

Table A.115. Nature of Software used in Firm

Response	Centralized	Local	Missing	Total
Frequency	215 (74.9)	64 (22.3)	8 (2.8)	287 (100)

Table A.116. Nature of Computer used in Firm

Response	Centralized	Local	Missing	Total
Frequency	156 (54.4)	124 (43.2)	7 (2.4)	287 (100)

Table A.117. Nature of Training Given to Employees

Response	Centralized	Local	Missing	Total
Frequency	142 (49.5)	135 (47.0)	10 (3.5)	287 (100)

Table A.118. Nature of Technology Installed in Firm

Technology	Microsoft	Open software	Microsoft & Open software	Linux	Others	Missing	Total
Frequency	227 (79.1)	31 (10.8)	8 (2.8)	4 (1.4)	10 (3.5)	7 (2.4)	287 (100)

Table A.119. Availability of Filed Level Support for Handling the Technological Problem

Response	Yes	No	Missing	Total
Frequency	228 (79.4)	48 (16.7)	11 (3.8)	287 (100)

Appendix 6: Service Providers Questionnaire

സെൻറർ ഫോർ ഡെവലപ്മെൻറ് സ്റ്റഡീസ്

തിരുവനന്തപുരം–695011

തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെക്കുറിച്ചുള്ള പഠനം

മുനിസിപ്പാലിറ്റി/ പഞ്ചായത്തുകൾക്കുള്ള ചോദ്യാവലി

(ശരിയായ ഉത്തരമെഴുതുകയോ, ശരിയുത്തരത്തിൽ ✔ അടയാളം രേഖപ്പെടുത്തുകയോ ചെയ്യുക)

1. പഞ്ചായത്തിൻറ/ മുനിസിപ്പാലിറ്റിയുടെ പേര്   :
2. പഞ്ചായത്ത് സാമ്പിൾ നമ്പർ   :
3. ജില്ല   :
4. ഏകദേശ ജനസംഖ്യ   :
5. കഴിഞ്ഞവർഷത്തെ മൊത്തം തനതുവരുമാനം   :
6. കഴിഞ്ഞവർഷത്തെ പ്ലാൻ വിഹിതം   :
7. ഭരണമുന്നണി   :   LDF/UDF/OTHER
8. പ്രസിഡൻറിൻറ രാഷ്ട്രീയപാർട്ടി   :
9. പ്രസിഡൻറ്   :   പുരുഷൻ / സ്ത്രീ
10. പഞ്ചായത്തിൻറ ക്ലാസ്സിഫിക്കേഷൻ   :   Special Grade/1 Grade/ 2 Grade
11. നിങ്ങളുടെ പഞ്ചായത്തിൽ "പൗരാവകാശ രേഖ" നിലവിലുണ്ടോ?   :   ഉണ്ട്/ഇല്ല
12. നിങ്ങളുടെ സ്ഥാപനത്തിൽ താഴെ പറയുന്ന Computer Software ഉപയോഗപ്പെടുത്തുന്നുണ്ടോ?
    ഉണ്ടെങ്കിൽ ✔ അടയാളപ്പെടുത്തുക.

	ഉണ്ട്	ഇല്ല
13 സേവന (സിവിൽ രജിസ്ട്രേഷൻ)		
14. സേവന (പെൻഷൻ)		
15. സഞ്ചിത		
16. സംവേദിത		
17. സ്ഥാപന		
18. സൂചിക		
19. സുലേഖ		

20. ജനനസർട്ടിഫിക്കറ്റിനു വേണ്ടി അപേക്ഷ നൽകുന്നയാളിന് അതു നൽകാൻ ശരാശരി എത്ര സമയം (ദിവസം) എടുക്കും?   :

21. ഇത് വേഗത്തിൽ കിട്ടണമെന്ന് പൗരന്മാർ ആവശ്യപ്പെടാറുണ്ടോ?   :   ഉണ്ട്/ഇല്ല

22. വേഗം സർട്ടിഫിക്കറ്റ് കിട്ടണമെന്ന് താൽപ്പര്യമുള്ള വ്യക്തികൾ ജനപ്രതിനിധികൾ വഴി ഓഫീസിൽ സമ്മർദ്ദം ചെലുത്താറുണ്ടോ?   :   ഉണ്ട്/ഇല്ല

23. നിങ്ങളുടെ സ്ഥാപനത്തിൽ പൂർണ്ണതോതിൽ കമ്പ്യൂട്ടർവൽക്കരണം നടപ്പാക്കാനാവശ്യമായിട്ടുള്ള കമ്പ്യൂട്ടറുകൾ വാങ്ങിയിട്ടുണ്ടോ?   :   ഉണ്ട്/ഇല്ല

24. എത്ര കമ്പ്യൂട്ടറുകൾ വാങ്ങിയിട്ടുണ്ട്?   :

25. എത്ര കമ്പ്യൂട്ടറുകൾ ഇപ്പോൾ പ്രവർത്തിക്കുന്നുണ്ട്?   :

26. നിങ്ങളുടെ ഓഫീസിൽ ഒരു ദിവസം ശരാശരി എത്ര സമയം വൈദ്യുതി ഇല്ലാതിരിക്കും?   :

27. മുഴുവൻസമയം കമ്പ്യൂട്ടറുകൾക്ക് വൈദ്യുതി കിട്ടുന്നതിനുള്ള UPS സംവിധാനം ഉണ്ടോ?   : ഉണ്ട്/ഇല്ല

28. നിങ്ങളുടെ പഞ്ചായത്തിലെ എത്ര ജീവനക്കാരുടെ മേശയിൽ കമ്പ്യൂട്ടറുകൾ സ്ഥാപിച്ചിട്ടുണ്ട്?

29. നിങ്ങളുടെ പഞ്ചായത്തിൽ ഒന്നിൽ കൂടുതൽ കമ്പ്യൂട്ടറുകൾ ഉണ്ടെങ്കിൽ അവ പരസ്പരം കണക്ട് (Network) ചെയ്തിട്ടുണ്ടോ? ഉണ്ട്/ഇല്ല

30. Network ചെയ്തിട്ടുണ്ടെങ്കിൽ, ഏത് ഏജൻസിയുടെ സഹായത്തോടെയാണ് ഇത് ചെയ്തത്?

31. പഞ്ചായത്തിൽ ഇൻർനെറ്റ് കണക്ഷൻ ഉണ്ടോ?
ഉണ്ട്/ഇല്ല

32. ഉണ്ടെങ്കിൽ ഏതു ടൈപ്പ്?
ഡയൽ-അപ്പ് കണക്ഷൻ/ ബ്രോഡ് ബാൻഡ് കണക്ഷൻ

33. പഞ്ചായത്തിൽ എത്ര പ്രിൻററുകൾ ഉണ്ട്?

34. കമ്പ്യൂട്ടറുകൾ കേടുവന്നാൽ അത് പരിഹരിക്കുന്നതിന് ഇപ്പോഴുള്ള മാർഗ്ഗമെന്താണ്?

35. ഇതു വഴി കമ്പ്യൂട്ടറുകൾ എളുപ്പം കേടുപാടുകൾ തീർക്കുന്നതിന് കഴിയാറുണ്ടോ?
ഉണ്ട്/ഇല്ല

36. കമ്പ്യൂട്ടറുകൾക്ക് അറ്റകുറ്റപ്പണി നടത്തുന്നതിനുള്ള Annual Maintenance Contract(AMC) എടുത്തിട്ടുണ്ടോ? ഉണ്ട്/ഇല്ല

37. AMC എടുത്തിട്ടില്ലെങ്കിൽ, അതെന്തു കൊണ്ടാണ്?

നിങ്ങളുടെ സ്ഥാപനത്തിലെ ജീവനക്കാരെക്കുറിച്ച് താഴെ സൂചിപ്പിക്കുന്ന വിവരങ്ങൾ നൽകുക.

38.. ആകെ ജീവനക്കാരുടെ എണ്ണം   :

39. കമ്പ്യൂട്ടർ ഉപയോഗപ്പെടുത്താൻ പരിശീലനം ലഭിച്ചവരുടെ എണ്ണം :

40. പരിശീലനം ലഭിച്ചവരിൽ ഇപ്പോൾ എത്ര പേർ കമ്പ്യൂട്ടർ പ്രവർത്തിപ്പിക്കാൻ തയ്യാറാണ് :

പരിശീലനം എല്ലാ ജീവനക്കാർക്കും ലഭിച്ചിട്ടില്ലെങ്കിൽ അതെന്തു കൊണ്ടാണ്?

41.

42.

പരിശീലനം ലഭിച്ചവർ കമ്പ്യൂട്ടർ പ്രവർത്തിപ്പിക്കാൻ സജ്ജരല്ലെങ്കിൽ അതെന്തു കൊണ്ടാണ്?

43.

44.

45.. താങ്കളുടെ സ്ഥാപനം നൽകുന്ന സേവനങ്ങൾ കമ്പ്യൂട്ടറുകൾ ഉപയോഗപ്പെടുത്തി വേഗത്തിൽ നൽകണമെന്ന് ജനങ്ങൾ ആവശ്യപ്പെടുന്നുണ്ടോ?   ഉണ്ട്/ഇല്ല

46.. ജനപ്രതിനിധികൾ കമ്പ്യൂട്ടർവൽക്കരണം ത്വരിതപ്പെടുത്തണമെന്ന് ആവശ്യമുയർത്താറുണ്ടോ? ഉണ്ട്/ഇല്ല

47.. നിങ്ങളുടെ ആത്മാർത്ഥമായ അഭിപ്രായത്തിൽ, കമ്പ്യൂട്ടർവൽക്കരണം താങ്കളുടെ പ്രാദേശികഭരണകൂടം മുൻഗണന നൽകി നടപ്പിലാക്കേണ്ട ഒരു നടപടിയാണെന്ന് കരുതുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

48. കമ്പ്യൂട്ടർവൽക്കരണത്തിന് ആവശ്യമായ പണം തനതുവരുമാനത്തിൽ നിന്നോ, പ്ലാൻ വിഹിതത്തിൽ നിന്നോ ചെലവഴിക്കുന്നതിന് തടസ്സങ്ങളുണ്ടോ?   ഉണ്ട്/ഇല്ല

പണം ചെലവഴിക്കുന്നതിന് തടസ്സങ്ങളുണ്ടെങ്കിൽ അവ എന്തൊക്കെയാണ്?

49.

50.

51.

കമ്പ്യൂട്ടർവൽക്കരണം വേണ്ടത്ര മുന്നോട്ടുപോകാതിരിക്കുന്നതിന് താങ്കളുടെ അഭിപ്രായത്തിൽ പ്രധാനപ്പെട്ട മൂന്ന് കാരണങ്ങൾ ഏതൊക്കെയാണ്?

52.

53.

54.

.

55. കമ്പ്യൂട്ടർവൽക്കരണം നടപ്പാക്കുന്നതിൽ പഞ്ചായത്തിൻെറ/മുനിസിപ്പാലിറ്റിയുടെ ഭാഗത്തു നിന്നു
     വീഴ്ചകളുണ്ടായിട്ടുണ്ടോ?   ഉണ്ട്/ഇല്ല

വീഴ്ചകളുണ്ടായിട്ടുണ്ടെങ്കിൽ, ഏറ്റവും പ്രധാനപ്പെട്ട രണ്ടെണ്ണം ചൂണ്ടിക്കാണിക്കുക

56.

57.

നിങ്ങളുടെ സ്ഥാപനത്തിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെ സഹായിക്കുന്നതിൽ, സോഫ്റ്റ് വെയറുകളും
പരിശീലനവും നൽകുന്നതിലുപരി, Information Kerala Mission (IKM) ഏതു തരത്തിലാണ്
സഹായിച്ചിട്ടുള്ളത്?

58.

59..

നിങ്ങളുടെ സ്ഥാപനത്തിലെ കമ്പ്യൂട്ടർവൽക്കരണം ത്വരിതഗതിയിലാക്കുന്നതിൽ IKM ന്റെ ഭാഗത്തുനിന്നും വീഴ്ചകളുണ്ടായിട്ടുണ്ടെങ്കിൽ, അവയിൽ ഏറ്റവും പ്രധാനപ്പെട്ട മൂന്നുകാര്യങ്ങൾ ചൂണ്ടിക്കാണിക്കുക.

60.

61.

62.

പേര് :

ഒപ്പ് :

Appendix 7: Beneficiaries Questionnaire

സെന്റർ ഫോർ ഡെവലപ്മെന്റ് സ്റ്റഡീസ്
തിരുവനന്തപുരം–695011

തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെക്കുറിച്ചുള്ള പഠനം

ഗുണഭോക്താക്കൾക്കുള്ള ചോദ്യാവലി

(ശരിയായ ഉത്തരമെഴുതുകയോ, ശരിയുത്തരത്തിൽ k അടയാളം രേഖപ്പെടുത്തുകയോ ചെയ്യുക)

ഇൻറർവ്യൂ നടത്തിയ തീയതി :

1 .പഞ്ചായത്തിന്റെ പേര്   :
2. പഞ്ചായത്ത് സാമ്പിൾ നമ്പർ   :
3. User Sample No.   :
4. താങ്കളുടെ പേര്   :
5 .ഏറ്റവും ഉയർന്ന വിദ്യാഭ്യാസ യോഗ്യത :
6. തൊഴിൽ   :
7 എന്ത് ആവശ്യത്തിനായിട്ടാണ് താങ്കൾ ഇന്ന് പഞ്ചായത്ത് ആഫീസിൽ എത്തിയത്?

8. ഇക്കാര്യത്തിനായ്, ഏതെങ്കിലും ജനപ്രതിനിധിയുടെ സഹായം തേടിയിരുന്നോ?

ഉവ്വ്/ഇല്ല

9. താങ്കൾ ഉദ്ദേശിക്കുന്ന സേവനം കിട്ടാൻ എത്ര സമയമെടുക്കും എന്നാണ് അറിയാൻ   കഴിഞ്ഞത്?

10. ഈ സേവനം ലഭിക്കാനായി ഔദ്യോഗികമായ എന്തെങ്കിലും ഫീസ് അടയ്ക്കേണ്ടതുണ്ടോ? ഉണ്ട്/ഇല്ല

11.   ഫീസുണ്ടെങ്കിൽ എത്ര രൂപ?
12. ഇത്ര സമയത്തിനുള്ളിൽ സേവനം കിട്ടിയാൽ മതിയോ? :   മതി/പോരാ

13. മതി എന്നാണുത്തരമെങ്കിൽ, കാരണമെഴുതുക

14.. പോരാ എന്നാണുത്തരമെങ്കിൽ, കാരണമെഴുതുക

15. ഈ സേവനം നൽകുന്നതിന് പഞ്ചായത്ത്/ മുനിസിപ്പാലിറ്റി കമ്പ്യൂട്ടർ ഉപയോഗപ്പെടുത്തുന്നുണ്ടോ?

ഉണ്ട്/ ഇല്ല

16. കമ്പ്യൂട്ടറുകൾ ഉപയോഗപ്പെടുത്തിയിരുന്നെങ്കിൽ കുറച്ചുകൂടി വേഗത്തിൽ സേവനം കിട്ടുമായിരുന്നു എന്ന് താങ്കൾ കരുതുന്നുണ്ടോ?   :   ഉണ്ട്/ഇല്ല/അറിയില്ല

17. പഞ്ചായത്തുകൾ/ മുനിസിപ്പാലിറ്റികൾ കമ്പ്യൂട്ടറുകൾ ഉപയോഗപ്പെടുത്തണമെന്ന ആവശ്യം താങ്കൾ ഗ്രാമസഭയിലോ, മറ്റുവേദികളിലോ, ജനപ്രതിനിധിയോടോ ഉന്നയിച്ചിട്ടുണ്ടോ? : ഉണ്ട്/ഇല്ല

    കമ്പ്യൂട്ടർ ഉപയോഗപ്പെടുത്തുന്നില്ലെങ്കിൽ, അതെന്തുകൊണ്ടാണ് എന്നാണ് താങ്കൾ കരുതുന്നത്

18.

19.

20.

21. പൗരാവകാശരേഖ എന്നതിനെക്കുറിച്ച് കേട്ടിട്ടുണ്ടോ? :   ഉണ്ട്/ഇല്ല

22.. കേട്ടിട്ടുണ്ടെങ്കിൽ, അത്തരമൊരു "പൗരാവകാശരേഖ" താങ്കളുടെ പഞ്ചായത്തിൽ/ മുനിസിപ്പാലിറ്റി യിൽ നിലവിലുണ്ടോ? : ഉണ്ട്/ഇല്ല

23. നിലവിലുണ്ടെങ്കിൽ, പൗരാവകാശരേഖ പ്രകാരം താങ്കൾ ഇപ്പോൾ വന്നിട്ടുള്ള കാര്യത്തിന് പഞ്ചായത്ത്/ മുനിസിപ്പാലിറ്റി എത്ര സമയത്തിനകം സേവനം നൽകണമെന്ന് അറിയാമോ? അറിയാം/ അറിയില്ല

24.   അറിയാമെങ്കിൽ, ഇക്കാര്യത്തിലുള്ള വീഴ്ച പരിഹരിക്കുന്നതിനായി പരാതി നൽകുമോ?
    ഉണ്ട്/ ഇല്ല

25. ഇല്ല എന്നാണുത്തരമെങ്കിൽ, കാരണമെന്ത്?

പേര് :

ഒപ്പ് :

സെൻറർ ഫോർ ഡെവലപ്മെൻറ് സ്റ്റഡീസ്
തിരുവനന്തപുരം–695011

തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെക്കുറിച്ചുള്ള പഠനം

ജീവനക്കാർക്കുള്ള ചോദ്യാവലി

(ശരിയായ ഉത്തരമെഴുതുകയോ, ശരിയുത്തരത്തിൽ ✔ അടയാളം രേഖപ്പെടുത്തുകയോ ചെയ്യുക)

1. പഞ്ചായത്ത്/ മുനിസിപ്പാലിറ്റി :
2. പഞ്ചായത്ത് സാമ്പിൾ നമ്പർ:
3. Employee Sample No.   :
4. താങ്കളുടെ പേര്   :
5. ഓഫീസിലെ പദവി   :

6. ഏറ്റവും കൂടിയ വിദ്യാഭ്യാസയോഗ്യത   :

7. ഏതു വർഷമാണ് സർവ്വീസിൽ ചേർന്നത്

8. താങ്കളുടെ ഓഫീസ് മേശ മേൽ കമ്പ്യൂട്ടർ ഉണ്ടോ? :   ഉണ്ട്/ഇല്ല

9. താങ്കളുടെ ഓഫീസ് പ്രവർത്തനത്തിന് കമ്പ്യൂട്ടർ ഉപയോഗിക്കുന്നുണ്ടോ?   ഉണ്ട്/ഇല്ല

ഇല്ല എന്നാണുത്തരമെങ്കിൽ, എന്താണ് കാരണം (താഴെ പറയുന്നവയിൽ നിന്നും ഉത്തരം മാർക്ക് ചെയ്യുക, ഏതൊക്കെയാണോ തെരഞ്ഞെടുക്കുന്നത് അവയ്ക്കുള്ള കാരണവുമെഴുതുക)

10   സോഫ്റ്റ്വെയർ സജ്ജമായിട്ടില്ല.
11. കാരണം

12. എനിയ്ക്ക് പരിശീലനം കിട്ടിയിട്ടില്ല

13. കാരണം

14. എനിയ്ക്ക് പരിശീലനം കിട്ടിയിട്ടുണ്ടെങ്കിലും ഇപ്പോൾ ഉപയോഗിക്കാൻ കഴിയുന്നില്ല

15. കാരണം

16. എനിയ്ക്ക് കമ്പ്യൂട്ടർ പ്രവർത്തിപ്പിക്കാൻ കഴിയില്ല

17. കാരണം

18. മറ്റേതെങ്കിലും സാഹചര്യങ്ങൾ

19. താങ്കളുടെ പ്രവർത്തനം കൂടുതൽ ഫലപ്രദമാക്കി, പഞ്ചായത്തിൻെറ പ്രവർത്തനം മെച്ചപ്പെടുത്തു ന്നതിന് (ജനങ്ങൾക്കു സേവനം വേഗത്തിൽ കിട്ടുന്നതിന്) കമ്പ്യൂട്ടർ ഉപയോഗിക്കേണ്ടത് ആവശ്യ മാണെന്നു തോന്നുന്നുണ്ടോ?   :   ഉണ്ട്/ ഇല്ല/ അറിയില്ല

20. മേൽ ചോദ്യത്തിന് ഇല്ല എന്നാണുത്തരമെങ്കിൽ കാരണമെഴുതുക

21. കമ്പ്യൂട്ടർ ഉൾപ്പെടുത്തി ജോലി ചെയ്യുമ്പോൾ താങ്കളുടെ ജോലിഭാരം വർദ്ധിക്കുമെന്നു കരുതുന്നുണ്ടോ? ഉണ്ട്/ ഇല്ല

22. മേൽചോദ്യത്തിന് ഉണ്ട്, എന്നാണുത്തരമെങ്കിൽ കാരണമെഴുതുക

23. താങ്കളുടെ ജോലി ചെയ്യുന്നതിന് ഇന്നു നിലവിലുള്ള ചട്ടങ്ങൾ (rules), കമ്പ്യൂട്ടർ ഉപയോഗ പ്പെടുത്തി ചെയ്യുന്നതിന് തടസ്സങ്ങളുണ്ടാക്കുമെന്ന് കരുതുന്നുണ്ടോ?   :   ഉണ്ട്/ഇല്ല

24. മേൽചോദ്യത്തിന് ഉണ്ട് എന്നാണുത്തരമെങ്കിൽ കാരണമെഴുതുക

പേര് :

ഒപ്പ് :

Appendix 9: Representatives Questionnaire

സെന്റർ ഫോർ ഡെവലപ്മെൻറ് സ്റ്റഡീസ്
തിരുവനന്തപുരം–695011
തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെക്കുറിച്ചുള്ള പഠനം

ജനപ്രതിനിധികൾക്കുള്ള ചോദ്യാവലി

(ശരിയായ ഉത്തരമെഴുതുകയോ, ശരിയുത്തരത്തിൽ ✔ അടയാളം രേഖപ്പെടുത്തുകയോ ചെയ്യുക)

1. പഞ്ചായത്ത്/ മുനിസിപ്പാലിറ്റി   :
2. പഞ്ചായത്ത് സാമ്പിൾ നമ്പർ   :
3. Elected Representative Sample No.   :
4. താങ്കളുടെ പേര്   :
5. ഏറ്റവും ഉയർന്ന വിദ്യാഭ്യാസ യോഗ്യത   :
6. വഹിക്കുന്ന സ്ഥാനം   :   :
7. രാഷ്ട്രീയ പാർട്ടി   :
8. ഏതു വർഷമാണ് ആദ്യമായി ജനപ്രതിനിധിയാകുന്നത് :

9. ആകെ എത്രവർഷം ജനപ്രതിനിധിയായിരുന്നിട്ടുണ്ട്   :

10. പ്രായം   :

11. താങ്കൾ ജനപ്രതിനിധികൾക്കായി നടത്തിയിട്ടുള്ള കമ്പ്യൂട്ടർവൽക്കരണ പരിശീലനത്തിൽ പങ്കെടുത്തിട്ടുണ്ടോ?   ഉണ്ട്/ഇല്ല

12. താങ്കളുടെ പഞ്ചായത്തിൽ കമ്പ്യൂട്ടർ ഉപയോഗപ്പെടുത്തി ജനനസട്ടിഫിക്കറ്റ് ഉൾപ്പടെയുള്ള സേവനങ്ങൾ ജനങ്ങൾക്ക് നൽകുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

    ഇല്ല എന്നാണുത്തരമെങ്കിൽ, അതിനു താങ്കൾക്കറിയാവുന്ന പ്രധാനപ്പെട്ട രണ്ടു കാരണങ്ങളെന്തെല്ലാമാണ്?

13

14.

15. പഞ്ചായത്ത് നൽകുന്ന സേവനങ്ങൾ കൂടുതൽ വേഗത്തിൽ ജനങ്ങൾക്ക് നൽകാൻ കമ്പ്യൂട്ടറുകൾ ഉപയോഗപ്പെടുത്തുന്നത് സഹായിക്കുമെന്ന് താങ്കൾ ആത്മാർത്ഥമായി കരുതുന്നുണ്ടോ? ഉണ്ട്/ ഇല്ല

16. ഇപ്പോൾ ജനനസർട്ടിഫിക്കറ്റ് പോലുള്ള സേവനങ്ങൾ പഞ്ചായത്തിൽനിന്നും വേഗത്തിൽ നടത്തിക്കിട്ടുന്നതിന് താങ്കളുടെ വാർഡിലെ വോട്ടർമാർ താങ്കളെ സമീപിക്കാറുണ്ടോ? ഉണ്ട്/ഇല്ല

17. ഇങ്ങനെ സമീപിക്കാറുണ്ടെങ്കിൽ, അക്കാര്യത്തിൽ പഞ്ചായത്ത് ഓഫീസിൽ ഇടപെട്ട് ഇവർക്ക് വേഗത്തിൽ സേവനം ലഭ്യമാക്കാൻ താങ്കൾക്ക് കഴിയാറുണ്ടോ? ഉണ്ട്/ ഇല്ല

18. ഇങ്ങനെ സഹായം ചെയ്തുകൊടുത്താൽ അത് വോട്ടർമാർ കൃതജ്ഞതാപൂർവ്വം ഓർക്കുമെന്ന് താങ്കൾ കരുതുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

19. പഞ്ചായത്ത് ഓഫീസിൽ നിന്നും എന്തെങ്കിലും കാര്യം നടപ്പാക്കിക്കിട്ടാൻ, താങ്കളുടെ വാർഡിലെ ആളുകൾ താങ്കളെ സമീപിക്കാതെ പഞ്ചായത്ത് ഓഫീസിൽ നേരിട്ട് പോകുന്നതാണ് നല്ലതെന്ന് കരുതുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

20. പഞ്ചായത്തിലെ കമ്പ്യൂട്ടർവൽക്കരണം ത്വരിതപ്പെടുത്തണമെന്ന ആവശ്യം താങ്കളുടെ വാർഡിലെ ഗ്രാമസഭകളിലെപ്പോഴെങ്കിലും ഉയർന്നിട്ടുണ്ടോ? ഉണ്ട്/ഇല്ല

21. പഞ്ചായത്തിലെ കമ്പ്യൂട്ടർവൽക്കരണം ത്വരിതപ്പെടുത്തണമെന്ന്, താങ്കൾ ഭരണസമിതിയിൽ എപ്പൊഴെങ്കിലും ആവശ്യമുയർത്തിയിട്ടുണ്ടോ? ഉണ്ട്/ഇല്ല

22. കമ്പ്യൂട്ടർവൽക്കരണത്തിനുള്ള പണം നീക്കിവയ്ക്കുന്നത് വളരെ പ്രധാനമാണെന്ന് താങ്കൾ കരുതുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

23. ഇക്കാര്യത്തിനായി നിങ്ങളുടെ പഞ്ചായത്തിൽ ആവശ്യത്തിന് പണം നീക്കിവയ്ക്കാൻ കഴിയുമെന്ന് താങ്കൾ കരുതുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

പണം നീക്കിവയ്ക്കാൻ ബുദ്ധിമുട്ടുകളുണ്ടെങ്കിൽ, കാരണങ്ങളേവ?

24.

..

25.

26. പഞ്ചായത്തിലെ മറ്റു ആവശ്യങ്ങളുമായി തട്ടിച്ചുനോക്കുമ്പോൾ കമ്പ്യൂട്ടർവൽക്കരണത്തിന് താങ്കൾ മുൻഗണന നൽകുമോ? ഉണ്ട്/ഇല്ല

പേര് :

ഒപ്പ് :

Appendix 10: Other computerized firms Questionnaire

സെൻറർ ഫോർ ഡെവലപ്മെൻറ് സ്റ്റഡീസ്
തിരുവനന്തപുരം–695011

തദ്ദേശസ്വയംഭരണ സ്ഥാപനങ്ങളിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തെക്കുറിച്ചുള്ള പഠനം

ആ പ്രദേശത്ത് കമ്പ്യൂട്ടർവൽക്കരിക്കപ്പെട്ട മറ്റു സ്ഥാപനങ്ങൾക്കുള്ള ചോദ്യാവലി

(ശരിയായ ഉത്തരമെഴുതുകയോ, ശരിയുത്തരത്തിൽ ✔ അടയാളം രേഖപ്പെടുത്തുകയോ ചെയ്യുക)

1. പഞ്ചായത്ത്   :

2. പഞ്ചായത്ത് സാമ്പിൾ നമ്പർ   :

3. Other Firm Sample No.   :

4. സ്ഥാപനത്തിൻെറ പേര്   :

5. ഉടമസ്ഥത   : സർക്കാർ/പൊതുമേഖല/സ്വകാര്യം

6. സ്ഥാപനത്തിൻെറ പ്രധാനപ്രവർത്തനം   : ബാങ്ക്/ ട്രാവൽ ഏജൻസി/ ഫാക്ടറി / മറ്റുള്ളവ

7. ഏതുവർഷമാണ് കമ്പ്യൂട്ടർവൽക്കരിച്ചത് :

8. ഒരു ദിവസം സ്ഥാപനത്തിലെത്തുന്ന ഉപഭോക്താക്കളുടെ ശരാശരി എണ്ണം   :

9. ഏതു സേവനം നൽകുന്നതിനാണ് കമ്പ്യൂട്ടർ ഉപയോഗപ്പെടുത്തുന്നത്?

10. നിങ്ങളുടെ സ്ഥാപനത്തിൻെറ മുകൾത്തട്ടിലുള്ള ഓഫീസുകളുമായി കമ്പ്യൂട്ടർ വഴി Network ചെയ്തിട്ടുണ്ടോ? ഉണ്ട്/ഇല്ല

11. വൈദ്യുതി തടസ്സമുണ്ടാകാറുണ്ടോ? ഉണ്ട്/ഇല്ല

12. തടസ്സമുണ്ടെങ്കിൽ, ഒരു ദിവസം ശരാശരി എത്ര സമയം തടസ്സമുണ്ടാകും?

13. വൈദ്യുതി ഇല്ലാത്തസമയത്ത് കമ്പ്യൂട്ടർ പ്രവർത്തിപ്പിക്കാൻ സംവിധാനമുണ്ടോ? ഉണ്ട്/ഇല്ല

14. കമ്പ്യൂട്ടർ സംവിധാനത്തിന് തകരാറുണ്ടായാൽ എങ്ങനെയാണ് പരിഹരിക്കുന്നത്?

15. പ്രാദേശികമായി, തകരാറ് പരിഹരിക്കാൻ ആളിനെ കിട്ടുമോ?

16. കമ്പ്യൂട്ടറിൻെറ തകരാറായ ഭാഗങ്ങൾ മാറ്റിസ്ഥാപിക്കണമെങ്കിൽ പ്രാദേശികമായി വാങ്ങാൻ കിട്ടുമോ?

17. കമ്പ്യൂട്ടർ പ്രവർത്തിപ്പിക്കുന്നതിന് പ്രാദേശികമായി ആളുകളെ ജോലിക്കെടുക്കാറുണ്ടോ? ഉണ്ട്/ഇല്ല

18. ഉണ്ട് എന്നാണുത്തരമെങ്കിൽ, പരിശീലനം ലഭിച്ചിട്ടുള്ളവർ പ്രാദേശികമായി ലഭ്യമാണോ? അതെ/അല്ല

19. ദൂരെയുള്ളവരെയാണ് നിയമിക്കുന്നതെങ്കിൽ, അവർ ഇവിടെ വന്ന് ജോലി ചെയ്യാൻ തയ്യാറാകുന്നുണ്ടോ?
    ഉണ്ട്/ഇല്ല/ ബാധകമല്ല

20. നിങ്ങളുടെ സ്ഥാപനത്തിൽ ഉപയോഗിക്കുന്ന Software കേന്ദ്രീകൃതമായി വാങ്ങിയതാണോ അതോ
    പ്രാദേശികമായി രൂപപ്പെടുത്തിയതാണോ?
    കേന്ദ്രീകൃതം/പ്രാദേശികം

21. നിങ്ങളുടെ സ്ഥാപനത്തിൽ സ്ഥാപിച്ചിട്ടുള്ള കമ്പ്യൂട്ടറുകൾ കേന്ദ്രീകൃതസംവിധാനത്തിലൂടെ
    വാങ്ങിയതാണോ അതോ പ്രാദേശികമായി വാങ്ങിയതാണോ?
    കേന്ദ്രീകൃതം/ പ്രാദേശികം

22. ഇതു പ്രവർത്തിപ്പിക്കുന്നവർക്കുള്ള പരിശീലനം കേന്ദ്രീകൃതമായി നടത്തിയതാണോ അതോ
    പ്രാദേശികമായി ചെയ്തതാണോ?
    കേന്ദ്രീകൃതം/ പ്രാദേശികം

23. സ്ഥാപനത്തിലെ കമ്പ്യൂട്ടർവൽക്കരണത്തിന് ഏതു തരത്തിലുള്ള ടെക്നോളജി (Microsoft/ Open
    Software) ആണ് ഉപയോഗിച്ചിട്ടുള്ളത്?

24. ഇത്തരം ടെക്നോളജി കൈകാര്യം ചെയ്യാൻ കഴിവുള്ള Field level support ലഭ്യമാകുന്നുണ്ടോ? ഉണ്ട്/ഇല്ല

25. മറ്റു പ്രധാന വിവരങ്ങൾ

പേര് :

ഒപ്പ് :