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Public Value Creation through Private Partnership: Lessons from Public Service Delivery in Karnataka, India

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Public Value Creation through Private Partnership: Lessons from Public Service Delivery in Karnataka, India

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Introduction

The process of globalization coupled with continuous innovatrions in information and communication technology (ICT) has led to governments across the world experiencing increasing challenges to maintain a competitive economy, achieve technology convergence and effectively deliver public services (Burd and Currie, 2004). Having realized the benefits of the use of ICT through private sector offerings, citizens are demanding similar improvement in services provided by the government as well. There is recognition that improvements in efficiency and effectiveness in public service delivery could release limited public resources that could achieve Pareto efficient allocation and maximize social welfare (Burd and Currie, 2004). These pressures coupled with rising fiscal constraints are forcing governments to seek cooperation from private players to partner in delivering public services. Public-Private Partnerships (PPPs) is one form of cooperation between the private sector and governments created to design and deliver public services operating under constraints such as weakness in enabling policy and regulatory framework or lack of capacity in public institutions (CII, 2007). Private sector investments, knowledge and experience in the use of technology and customer interface capabilities are key attributes in countries like India. Thus PPPs have the potential of creating public value[5] that neither of the two parties would be able to achieve alone (Kelly and Muers, 2003).

Recognizing the need for a systematic process to ensure delivery of intended services, the first systematic private initiative, *viz.,* Private Finance Initiative (PFI) was introduced in the UK

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[5] Defined as "value created by government through provision of services, the passing of laws and regulations and other actions"

in 1992 (House of Commons, 2001). In the last two decades, governments in many countries have successfully employed this form[6] of partnership to provide several public services such as transport, energy, water, waste management, schools and hospitals, defense establishments and telecommunications (NCPPP, 2002). For example, Singapore's e-Citizen portal is a success story of Government to Citizen (G2C) initiative under e-Governance, where people can access 1300 government services. In India, e-Seva (meaning electronic service), implemented in Andhra Pradesh provides more than one hundred services, ranging from the payment of utility bills to the registration of motor vehicles. An impact assessment study indicates that citizens reported significant improvements in services compared to the manual system of payments and resulted in reduction of travel costs and waiting times (IIMA, 2007).

India embraced Public Private Partnerships in the early 90's first with the power sector, followed by other sectors such as telecom, roads, ports and airports, with wider scope for expansion consistently foraying into other sectors such as water, sanitation, tourism and hospitality. Though the initial growth in investments in PPP was low due to the slow pace of policy reforms, in the recent years India has witnessed significant growth in sectors such as telecom and transport (Figure 1). At present, the private sector investment in PPP accounts for 1% of the GDP, which is low compared to several other developing countries (www.pppindia.com). According to the planning commission, if the Indian economy has to reach a growth rate of 8.5-9%, investments in infrastructure need to be in the range of 7-8% of GDP, and private investments would have to account for a minimum of 2% (GOI, 2007). Many State governments in India are therefore, adopting PPP path to facilitate development. Karnataka, one of the early adopters of the PPP model has more recently chosen this route to provide citizens a One-Stop-Shop for G2C and Government to Business (G2B) services. *Bangalore-one* and *Nemmadi*[7] are two major e-Governance initiatives to cater to the needs of Bangalore and rural areas of Karnataka, respectively, through which various government services are made available to citizens.

This paper examines the extent of public value delivery through citizen service centers or One-Stop-Shops in Karnataka. The main public values listed in past studies include financial

[6] Including contract and concession, build-operate and transfer (BOTs) arrangements, public-private joint ventures (United Nations, 2005).
[7] Meaning 'hassle free' in the local language Kannada.

benefits, time efficiency, and better quality services and provision of services previously unavailable. These components of public value are measured through analytical frameworks taking into account direct and indirect values delivered by different players of PPP.

Source: PPIF database - http://ppi.worldbank.org

Figure 1: Total PPP Investments in India

Bangalore-One (B1) and *Nemmadi* initiated in 2005 and 2007, respectively, were originally intended to use Information and Communication Technology (ICT) to simplify procedures, ensuring transparency and improving the quality of the government's relationship with citizens as well improving overall citizen satisfaction. While B1[8] offers several government services in the city of Bangalore, *Nemmadi*, through a network of 800 telecenters at the *Hobli* (group of villages) level, is an IT enabled rural initiative to deliver Government services at the citizen's doorstep. Through *Nemmadi* rural citizens can avail of Rural Digital Services (certificates issued by the Revenue department) as well as other services[9].

[8] The initial participating agencies Include Bangalore Water Supply and Sewage Board, Bangalore Electricity Supply Company, Bharat Sanchar Nigam Limited, Bruhat Bengaluru Mahanagara Palika, Stamps& Registration Department, Road Transport Corporation, Regional Passport Office and Commercial Tax Office.

[9] Electricity bill collection and other services such as education through *Sarva Shiksha Abhiyaan*, collection of panchayat taxes, data entry for various departments and data updation of hand held devices.

Stakeholders and Their Roles

Public-private partnerships are intended to satisfy the interests of all stakeholders. The key interests of the main stakeholders are:

1. **Government** - ensure the delivery of government services in effective and efficient manner;
2. **Private partner** - growth opportunities through expansion of the domain and profitability;
3. **Citizens** - quality delivery of public service.

The State Government

PPP helps Governments to overcome constraints such as weakness in enabling policy or regulatory framework, lack of capacity in public institutions and focus on those activities fundamental to the role of government, and enhance public value of services (Kelly and Muers, 2003). Better quality of services and provision of services previously unavailable, time efficiency and financial benefits are the major components of public value.

In the case of B1 project, the state government ensures the participation of all the relevant departments in the project, identifies and selects sites, provides working facilities such as desks, waiting area, parking facilities, provides manpower to manage respective departments, provides services through electronic service centers, accepts payments and brings in changes in operations in the respective departments such as discontinuing manual collection of bills. It also coordinates with central government departments such as the Regional Passport Office and BSNL to ensure their participation in project. It is responsible for creating an administrative setup to manage B1 centers and ensuring dispute resolution. The state also makes payments to the private players taking into account performance parameters, rewards and penalties as defined in the agreement. In turn the state expects to be able to focus on core businesses of state departments, reduce costs of providing public services, increase revenue collection, release of personnel from routine tasks such as revenue collection, as well as reduce the need to employ a large manpower.

Unlike in the case of B1, the government does not take the initiative to get various departments to participate in the *Nemmadi* project, leaving it to the private partners to sign separate agreements with individual departments. As of now the revenue department is the only

state department to participate in the *Nemmadi* project. As in the case of B1, the government specifies the facilities to be provided by the private partners and is responsible for ensuring the functioning of the services and payments to the private partner based on performance parameters.

Private partners

Private players were identified through an open tender process, based on financial credibility, technical know-how and previous experience in e-Governance initiatives. The B1 project was bagged by M/s CMS Computers and was initiated in April, 2005. The business model for B1 is a transaction based service charges payable to the private partner. The private partner is responsible for designing, developing, testing and installing the software required for the project, supply of hardware (other than computers), training operators and paying salaries to personnel, setting up a data center at Bangalore that could eventually be scaled up to other cities, and ensuring disaster recovery. The private partner also has to design and print stationery, including receipts, forms, certificates, on paper or other means as required by different applications, depending on the departments participating in the project. Private players get a slab based share in the transaction fee. The project started with 14 centers and by June 2009 it had 53 centers (23 main and 30 mini centers) with an average visit of 25,000 and revenue collection of Rs.15 million a day.

Nemmadi project was bagged by a consortium of IT firms - M/s COMAT Technologies, 3i Infotech and n-Longue technologies. The consortium entered into a Master Service Agreement (MSA) with the Government of Karnataka (GoK) in April 2007 which granted rights to the consortium to undertake and implement the project through 800 telecenters at *Hobli* (sub-tehsil) level and RDS Back Offices at *taluka* level. Developing, financing, designing, building, rolling out, commissioning, and operation and maintenance of the project are the responsibility of the private player. The project operated on the Build-Own-Operate-Transfer (BOOT) model, wherein the private player had to transfer and hand over all the Transferred Assets to GoK in five years. The consortium has so far implemented 763 telecenters and 80 RDS Back Offices. The private players expect to earn profit from the PPP through revenues generated for services rendered. A fixed transaction charge is levied for each service and the private partner is paid a part of the transaction charges.

Citizens

B1 and *Nemmadi* are expected to deliver services to the citizen anytime, anywhere with speed and certainty. Expectations from the PPP model include better delivery of government services, in terms of time and location, on demand delivery of services, efficiency and accuracy of transactions as well as reduction in transaction costs.

Partnership Framework

The framework of partnership indicating partners, investments, organizations, beneficiaries and expected outcomes is shown in Figure 2. This study focuses on the outcomes for the main stakeholders - citizens, Government and private partner. Public value is created through delivery of quality G2C services. This and other benefits such as improvement in revenue collection, reduction in cost of providing services and reduction in the manpower requirement encourages quick adoption by the Government. Private partner is attracted by the opportunity earn profit from the new business opportunity.

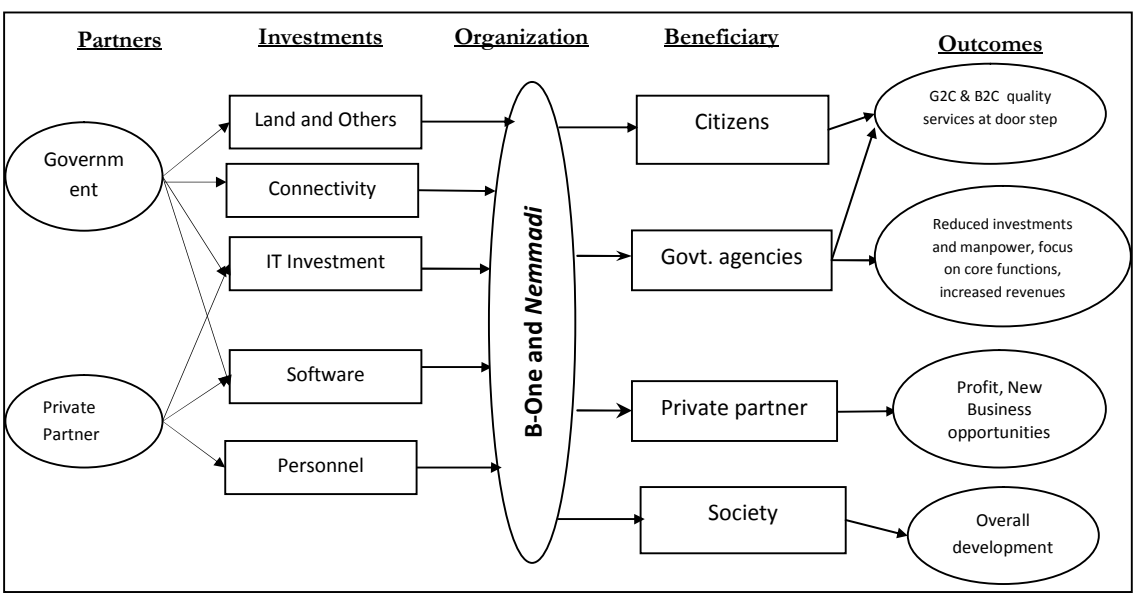
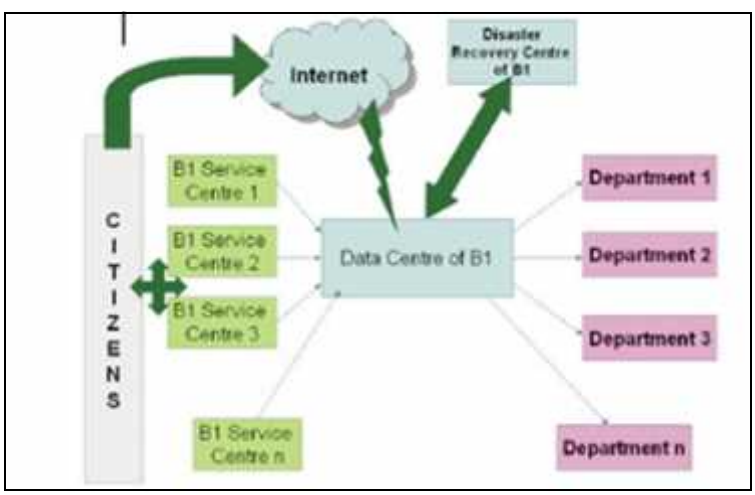


Figure 2: Public Value Creation through Private Partnership

Structure and Working: *Bangalore one* and *Nemmadi*

Bangalore One

B1 service centers are the point of contact for the citizens accessing a bouquet of G2C and B2C services. It is required that all centers have identical looks, with 3 counters for mini and 16 counters for main centers. Location of the centers is based on population in the area, availability of building and accessibility. While the private players are responsible for the functioning of all facilities and services at the centers, the government ensures the participation of the state departments besides providing the space with furniture and fixtures. Initially, the centers were set up in government-owned premises, and as the number of centers increased, buildings were rented in. The requests for G2C received at the service centers are processed at either B1 itself or the respective departments (e.g., passports) and certificates are issued to the citizens. The structure of B1 is given in Figure 3.



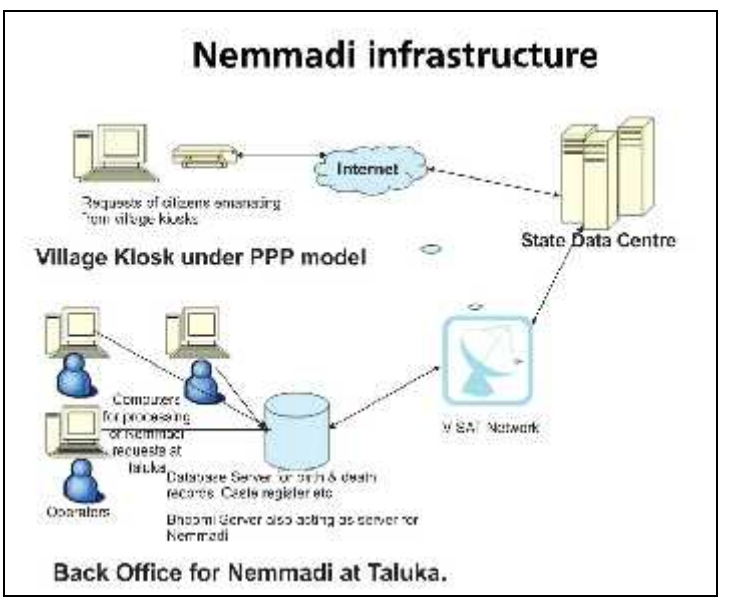
Source: Reproduced from RFPl, Bangalore One, Government of Karnataka

Figure 3: Components of Bangalore One Infrastructure

Promotion or publicity costs were to be shared between government, private player and the service owner, *i.e.,* the bank. Data security was ensured through restricted access to databases for private players.

Nemmadi

The various components of the service infrastructure of *Nemmadi* are shown in Figure 4. The village level telecenters are the channels of delivery of various G2C services to rural citizens. The requests received at the kiosks are processed at the taluka back offices, which is connected to the government offices. *Nemmadi* and *Bhoomi* projects use the same database at the taluka levels, which is updated constantly. The consolidated database of land records of the entire state is maintained at the State Data Center (SDC). Requests for the *Nemmadi* services are transferred to the taluka servers through the SDC. Subsequent to receiving the electronic request from the Telecenters through the SDC, the request is processed by appropriate authority (*Tehsildar*[10]) for verification and validation. On receiving the comments of such appropriate authority, the final certificate is generated and is digitally signed by the competent signatory, which is then downloaded at the village telecenter and issued to the applicant.



Source: Reproduced from RFPl, *Nemmadi,* Government of Karnataka

Figure 4: Components of *Nemmadi* infrastructure

[10] A tehsildar is revenue administrative officer in Pakistan and India in-charge of obtaining taxation from a tehsil, meaning tax collector. (http://en.wikipedia.org/wiki/Tehsildar) (Accessed on 7th July, 2009).

The private player was to provide a single-window system for all government services at the village level, eliminating the need for the manual system of processing at state departments. The services are provided to citizens at a uniform service charge of Rs. 15 for every transaction. At present, only the Revenue Department has partnered with *Nemmadi*, which offers Rural Digital Services (RDS) to citizens at the village level.

Conceptual Framework, Methodology and Data Collection

Bangalore-One and *Nemmadi* being innovations in public service delivery, we examined the rate of its adoption on the basis of the Diffusion of Innovation theory framework developed by Rogers (2003). The theory suggests that the rate of adoption of an innovation depends on the following attributes:

i. Relative advantage - degree to which an innovation is subjectively perceived as better;
ii. Compatibility - degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters;
iii. Simplicity and ease of use - degree to which an innovation is perceived as easy to understand and use;
iv. Trialability - degree to which an innovation may be experimented with, with lesser uncertainty ;
v. Observable results - easily observable results of an innovation enhance adoption.

We use the extent of use as a measure of overall acceptability of the initiatives and extent of public value creation. We then draw on user perspectives to examine whether citizens see the positive relative advantage or not. This also captures 'ease of use' and observable results. For this we used parameters such as time efficiency, convenience and reliability of the availed services. The trialability attribute is high in the case of these PPPs as they are used frequently by citizens, with low risk. Compatibility is assessed in terms of the quality of the service and the extent to which it is similar or better compared to the one it supersedes.

Data Collection and Analysis

Data for this study have been collected through survey of citizens and discussions with government and private players. Citizen survey regarding awareness and opinions about Bangalore-One (B1) was conducted during June- July, 2008. A total of 200 citizens spread over four zones in Bangalore city were contacted as they were leaving the centers after availing a

service, out of which 160 responses were complete. For the study on *Nemmadi*, 300 service users from 4 villages each in two districts of Karnataka *viz.*, *Ramanagara* and *Chamarajanagara* were interviewed. Selection of villages was based on the distance of the village from the centers and on the number of transactions at the centers. A pre-tested questionnaire was administered to the respondents chosen while they were exiting the centers[11]. The questionnaire included questions on their profile, purposes of visiting the centers, opinion on quality of service delivery (pre and post project) and factors that influenced them into using the services and levels of satisfaction in using the services. Suggestions were also sought for improving delivery of service. Time taken for availing various services were also documented from computer generated reports at the centers.

Data sought from the private player include a description of the services offered at their centers, details of investments, and costs in providing the services and benefits expected and realized. The BESCOM (Bangalore Electricity Supply Company) has been selected to examine the impact of PPP on the government as it accounted for a large percentage of B1 transactions. Though the core business of BESCOM is power distribution, prior to setting up B1, a lot of attention was paid on revenue collection. The value created for the government has been estimated through the reduction in costs of providing services, increase in revenue collection and ability to allocate personnel for activities other than routine bill collection. Details regarding number of installations, meter readers and cash counters were obtained from the JP Nagar division of BESCOM. The cost of operating a cash counter was used to assess costs and benefits accrued to the government from the partnership.

Impact on the Stakeholders

The impact of these initiatives on main stakeholders, viz, citizen, private partner and Government in terms of creating public value has been assessed and reported here.

[11] Every 10th consumer leaving the B1 centers was selected for the survey.

Impact on the Citizen

Profile of the respondents of B1 centers

Citizens using services of Bangalore-One had an average of 13 years of education. Most of those who used the B1 centers were male, mainly due to the fact that paying of utility bills and visiting government offices for paperwork were tasks conventionally performed by men. A majority of the users worked in private enterprises or were owners of businesses and most used either two-wheelers or public transport to reach the centers, which were at an average distance of 2.35 km from their residences (Table 1). Most of the respondents started using the B1 services (Figure 5) since 2007.

Extent of use of B1 centers

The transaction data reveals that there is a significant growth over the years (Figure 6) indicating high attractiveness of the service. Transaction data collected from select centers (Figure 7) representing different parts of the city indicate that the volume of transactions vary considerably across centers depending on locality, household density and availability of BESCOM/BSNL/BWSSB counters. The figures indicate that while growth in the number of transactions has slowed down considerably in 2008 in each center, significant increase in the overall transaction is achieved through increase in the number of centers, possibly indicating the importance of proximity of location in terms of using the facility. The average distance travelled by the users being 2.35 km, convenience could be an important factor.

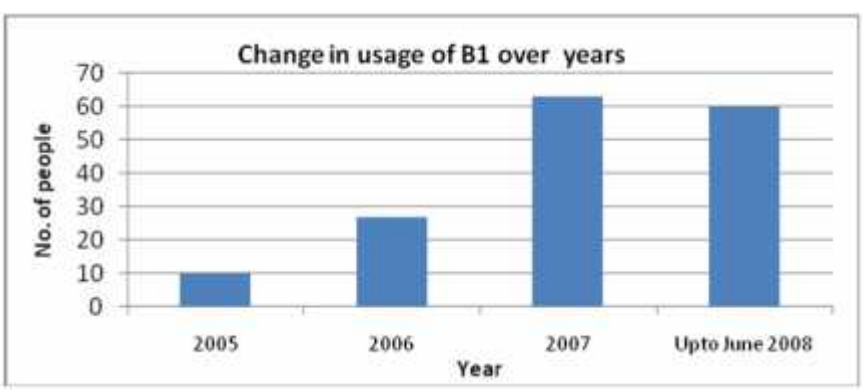


Figure 5: Trend in usage of B1 services

Table 1: Profile of B1 users

Characteristics	Values
1. Level of education (Years)	12.96
2. Respondents with >10Years of Education (%)	95.63
3. Male respondent (%)	80.63
4. Sector-wise employment (%)	
Private	42.50
Entrepreneur	20.63
Govt.	15.00
Others	21.87
5. Size of family (No.)	5.49
6. Distance to B1 centers (km)	2.35
7. Modes of transport to B1 centers (%)	
Walk	38.75
Bus	36.25
Two-wheeler	23.75
Four-wheeler	1.25

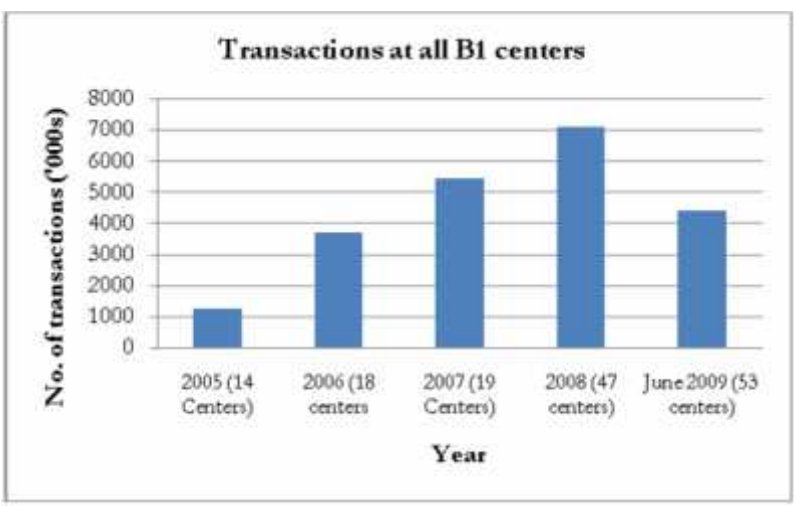


Figure 6: Increase in transactions at B1 centers

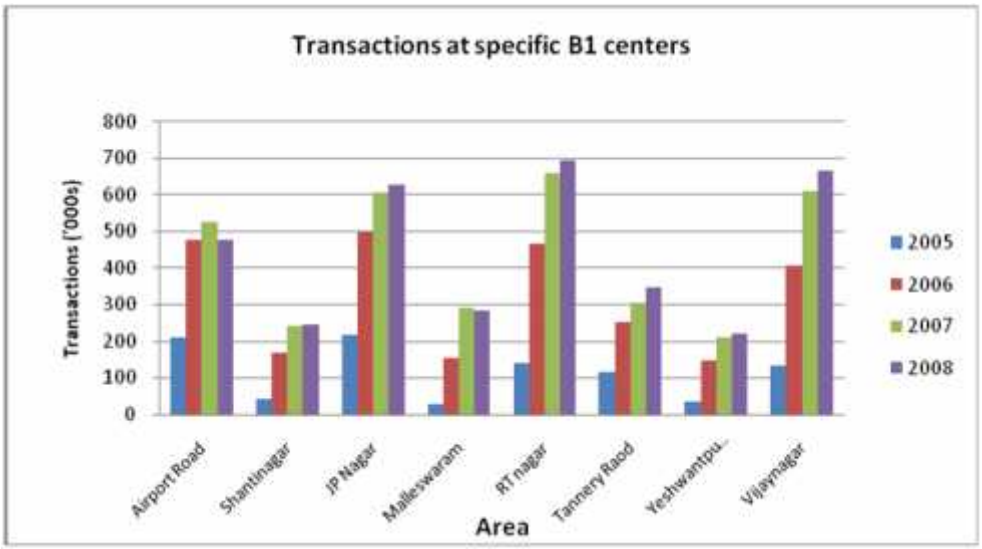


Figure 7: Transactions at sampled B1 centers

Pattern of use of B1 Centers

Time-flexibility is one of the advantages that B1 centers offered to citizens as B1 services were available after office hours. Nearly 38% of citizens reported that they used B1 centers in the evening (Figure 8). Earlier, people had to either take time off from work to avail various G2C services, which meant loss of wages or loss of working day(s).

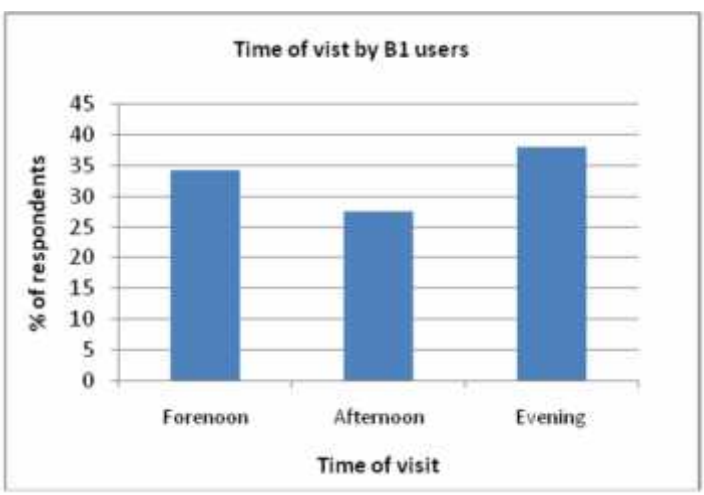


Figure 8: Visits to B1 at different times

Awareness regarding the services of B1

B1 centers offer as many as 24 services; however, only a few of these services such as payment of utility bills and passport applications were popular among consumers (Table 2). The popularity and usage of the services offered at B1 depended on the periodicity of use, with services that were required frequently such as payment of utility bills being popular among citizens. Services such as obtaining birth certificates, payment of driving license fee, which were occasional requirements, were less popular with citizens. Moreover, these services were easily available either through state departments or through agents.

Table 2: Awareness and utilization of B1

(% of respondents, n=160)

Services	Awareness	Utilization	Utilization to Awareness ratio
Periodicity: Monthly			
BESCOM	99.5	97.5	98.0
BWSSB	99.0	94.5	95.5
BSNL	97.5	77.5	79.5
Payment of Pvt. Mobile phone bills	81.0	40.0	49.4
BMTC Bus Pass	45.5	5.0	11.0
Periodicity: Annual			
RTO (License renewal)	25.0	7.0	28.0
BBMP (Tax payment)	43.0	12.5	29.1
Periodicity: Occasional			
Stamp papers	31.5	14.0	44.4
Issue of Birth Certificates	38.5	2.0	5.2
Passport (application & enquiry)	29.0	29.0	100.0
Driving License	41.5	2.0	4.8
Applications for new telephone connections	23.5	1.5	6.4
Internet services	18.5	0	0.0

Impact of B1 centers in improving delivery of services

The perceived time efficiency, convenience and reliability are important factors that determine the diffusion of this initiative. This study examines citizen perception on these parameters prior to and post-B1.

Time efficiency

Time efficiency is one of the measures of value of a service. In this study, it was measured as the percentage of people reporting different slabs of time taken for availing G2C services at B1 counters when compared to department counters. The overall perception of people is that B1 certainly provided them with time efficiency as most of the services were obtained with a shorter time period (Table 3) now compared to pre-B1 period.

Table 3: Time efficiency in using B1 services

(% of respondents, n=160)

Time required to	**Duration**	**Post- B1**	**Pre-B1**
Pay utility bills	Within 15 minutes	87.50*	6.88
	15-30 minutes	11.25*	38.75
	30-60 minutes	0.63*	46.25
	Half day	0.63*	8.13
Avail information and enquires	Immediate	70.00*	6.25
	Within 15 minutes	21.25	17.50
	More than a day	0.00*	15.00
	15-30 minutes	6.88	14.38
	30-60 minutes	0.00*	44.38
	not availed	1.88	2.50
Avail various certificates (Birth, death, property tax, land possession certificates)	Not Availed	62.50*	16.88
	Within a day	24.38*	1.25
	Within 2-3 days	11.88	12.50
	Within a week	1.25*	69.38
Renew documents (Passport, Driving license)	Not availed	47.50	43.13
	Within a day	35.63*	6.88
	Within 2-3 days	14.38*	26.88
	Within a week	2.50*	23.13

* Proportions are significantly different at 5% level of significance

Time taken for payment of utility bills took less than 15 minutes for 88 % of the respondents, compared to the 15-60 minutes needed at the department counters (Figure 9). Citizens also reported significant reductions in time required to avail various government certificates as well as seeking information. Information sought by citizens was provided

immediately at B1 centers compared to the long time taken by individual department counters. Similarly, consumers reported significant reduction in waiting times for various services from the earlier one week period to one day at B1. This was corroborated by the computerized reports of waiting and transaction times taken recorded at different B1 centers (Table 4). The average waiting time during peak day peak time is only 6.5 minutes and transaction time is one and half minutes. Delays, if any, in providing services at B1 centers was mainly due to minor technical problems like load shedding and printer problems and not due to long queues or timely non-availability of staff.

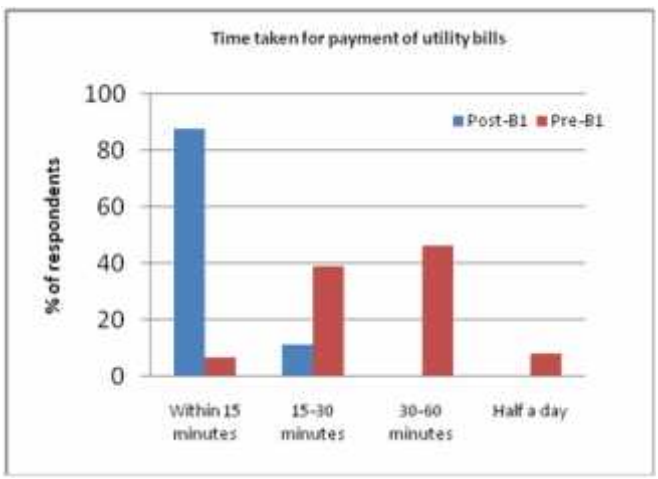


Figure 9: Perceived changes in time taken at Bangalore-One

Table 4: Computerized report of average waiting and transaction times at B1 counters

(hr:min:sec)

Waiting - Peak-Day Peak-Time	Waiting - Peak-Day Non-Peak-Time	Waiting - Non-Peak-Day Peak-Time	Waiting - Non-Peak-Day Non-Peak-Time	Transaction - Peak-Day Peak-Time	Transaction - Peak-Day Non-Peak-Time
00:06:34	00:05:42	00:05:43	00:06:06	00:01:25	00:01:29

Convenience

The physical aspects of B1 such as location of centers, operating hours and modes of payment offered considerable flexibility to people. Nearly all respondents (actual users of B1)

indicated that the location of the B1 centers were convenient to them (Table 5). Costs of visits to avail the services had reduced for most people, with 35 % of them incurring no costs at all, and 55 % of them having to spend less than Rs. 25 a month to avail services (Figure 11). The location of B1 centers also reduced consumers' dependence on vehicles, with 39 % of them reporting that the centers were at walkable distances. B1 centers also offered flexibility in terms of operating hours, with all respondents finding that the centers offered non-stop services. This enabled people to make payments, enquiries even after working hours, a facility that was not available prior to B1. Through quick delivery system process (Figure 12) for all G2C services, B1 centers have created a considerable convenience to the citizens of Bangalore.

Table 5: Convenience and Cost-effectiveness of B1 centers

(% of respondents, n=160)

Characteristics	Category	Post – B1	Pre-B1
Location of the centre	Convenient	98.75*	30.63
	Not convenient	1.25*	69.38
Cost to visit center/avail services (Rs.)	No cost	35.00*	15.63
	10-25	55.00	51.88
	25-50	8.75*	31.88
	Above 100	1.25	0.63
Operating Hours	24X7 (Main centers)	100*	0
	Limited hours	0*	100
Mode of Transport	Walk	38.75*	16.25
	BMTC	36.25	47.50
	Two wheeler	23.75	34.38
	Four wheeler	1.25	1.88
Service Delivery process	Very Fast	64.38*	0.63
	Fast	33.13*	16.25
	Moderate	2.50*	32.50
	Slow	0.00*	21.88
	Very Slow	0.00*	28.75

* indicates proportions are significantly different at 5% level of significance

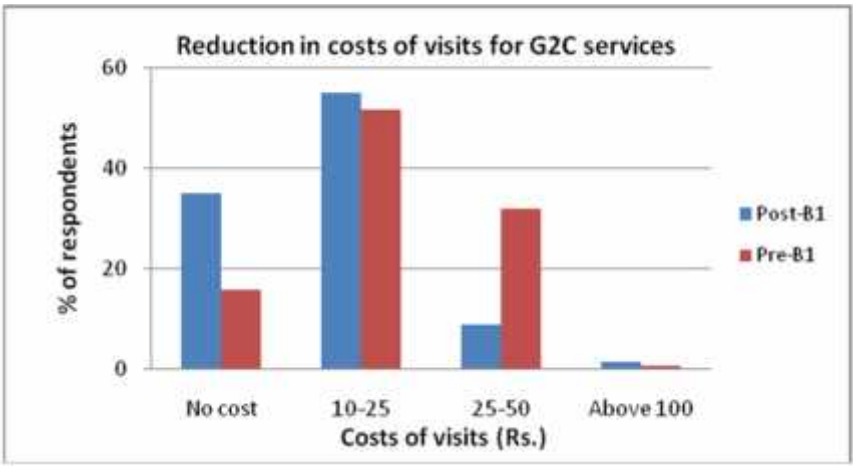


Figure 11: Cost Savings to citizens due to Bangalore-One

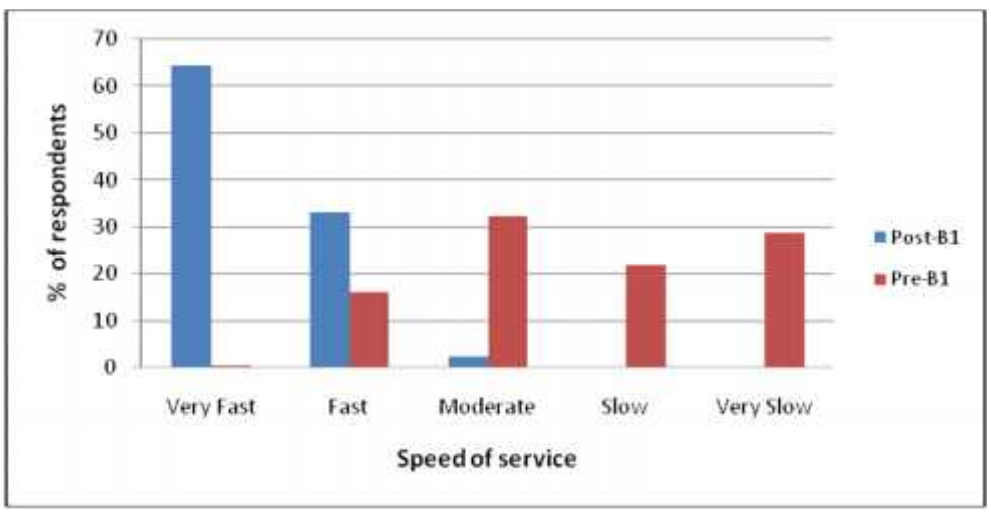


Figure 12: Perception of citizens about speed of service delivery at Bangalore-One

Reliability

Reliability is one of the critical service quality factors, wherein the service related problems are solved to user's satisfaction, error-free records and safety in transaction is maintained. B1 centers has been able to ensure reliability of service as can be gauged by the level of accuracy in documents, solving problems to customer satisfaction and quick delivery process. B1 centers also helped consumers through easy availability of information about various governments departments under one roof (Table 6). Earlier, citizens had to visit several government offices, all of which were located at different places, even to seek information about

different government services. Reduction in corruption was found to be another important consequence of this PPP initiative. Table 7 indicates that 97.5 percent did not have to pay any extra charges for availing the services.

Table 7: Reliability in service delivery in the post-B1 scenario

(% of respondents, n=160)

Service factor	Category	Post – B1	Pre-B1
Availability of Information	Easily available	88.75*	16.25
	Not So Easily available	9.38*	52.50
	Difficult to get	1.88*	31.25
Service problem not solved to Customers Satisfaction	No	93.75*	76.25
	Yes	6.25*	23.75
Errors in the documents	No	71.88*	30.63
	Some times	28.13*	65.63
	Always*	0.00*	3.75
Hidden Cost(Cost paid other than Govt. fee)	No	97.50*	85.00
	Yes	2.50*	15.00

* indicates proportions are significantly different at 5% level of significance

Service Quality perceptions of citizens

The analysis of the citizen satisfaction about B1 reveals that citizens were highly satisfied with one-stop-shop facilities as well as quality and speed of service (Figure 13). The high levels of satisfaction can be attributed to the fact that B1 centers offered high quality service to citizens who were hitherto used to spending several hours, making multiple visits for completion of the same task and at various government offices to obtain similar services. In contrast, B1 offered multiple counters for payment of utility bills, and separate counters for specific government departments such as RTO, passport, and BBMP, which significantly reduced citizens' waiting time as well as errors in transactions. Citizens were also satisfied with staff responsiveness to queries and the competence of staff in performing their duties efficiently and accurately, and easy availability of information. The provision of facilities such as drinking water, cleanliness of the waiting area and parking facilities at B1 centers also appealed to citizens.

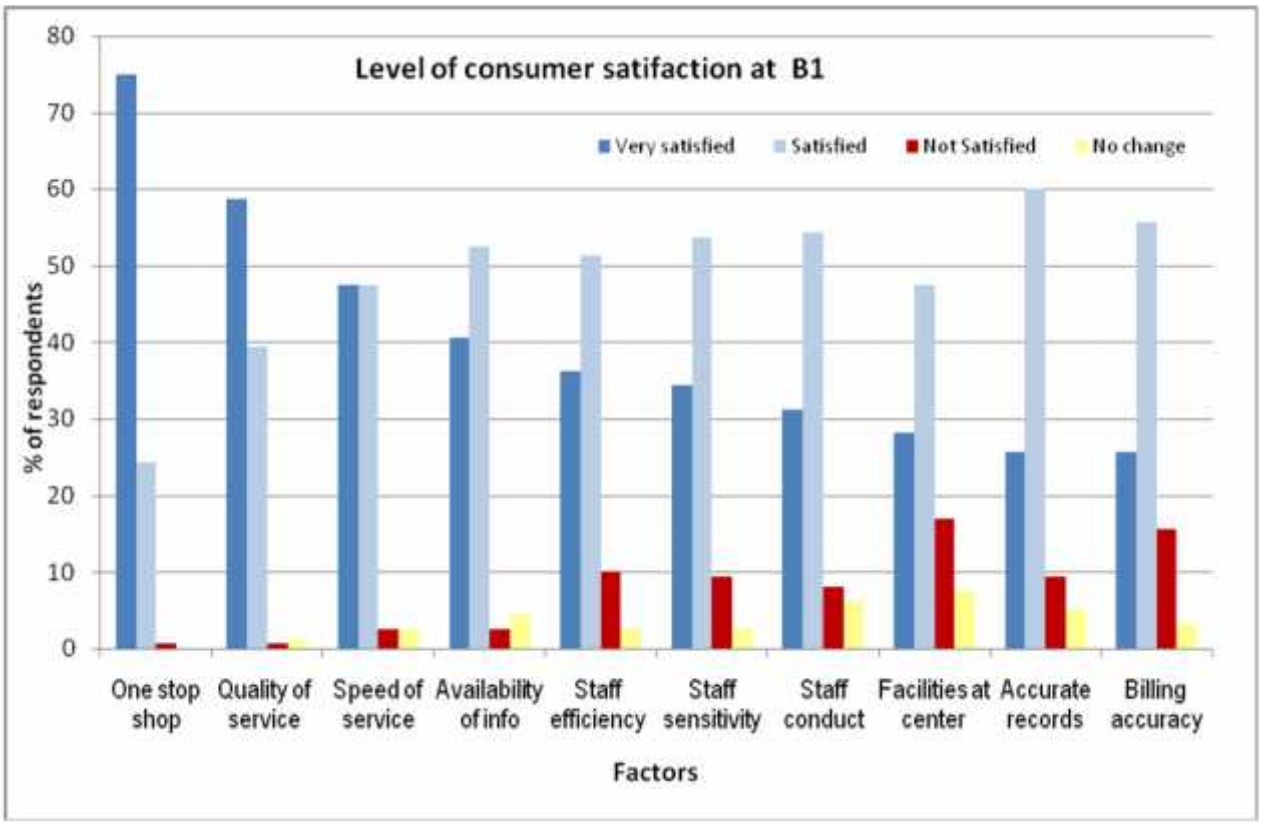


Figure 13: Citizen satisfaction regarding Bangalore One

Citizens ranking of factors that encouraged them to visit of B1 centers indicate that the one-stop-shop facility of B1 centers was the most important aspect, followed by round-the-clock availability of services, speed and accuracy of service (Figure 14). Savings in transport and ambience of B1 centers were comparatively of lesser consequence to people.

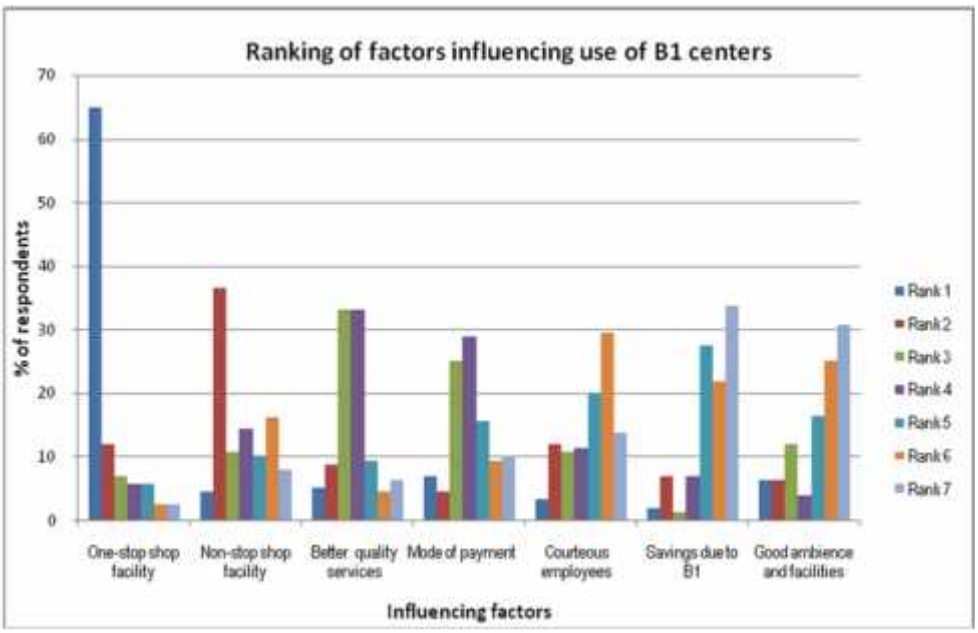


Figure 14: Importance of factors influencing use of B1 centers

Figure 15 reveals that in the G2C services utility bill payments contributed the most to the transactions at Bangalore One centers. Most of the other services were less popular with citizens. Payment of mobile bills was the most utilized B2C services at B1.

There is a high growth in the use of B1 service centers over the years indicating their ability to provide high public value to the citizens. Convenience in location, one-stop-shop facility, round the clock services, efficient and high quality of service and easy availability of information have created significant value to the citizens. The centers can be made more popular by creating awareness about the center and their services, and opening more centers in convenient locations.

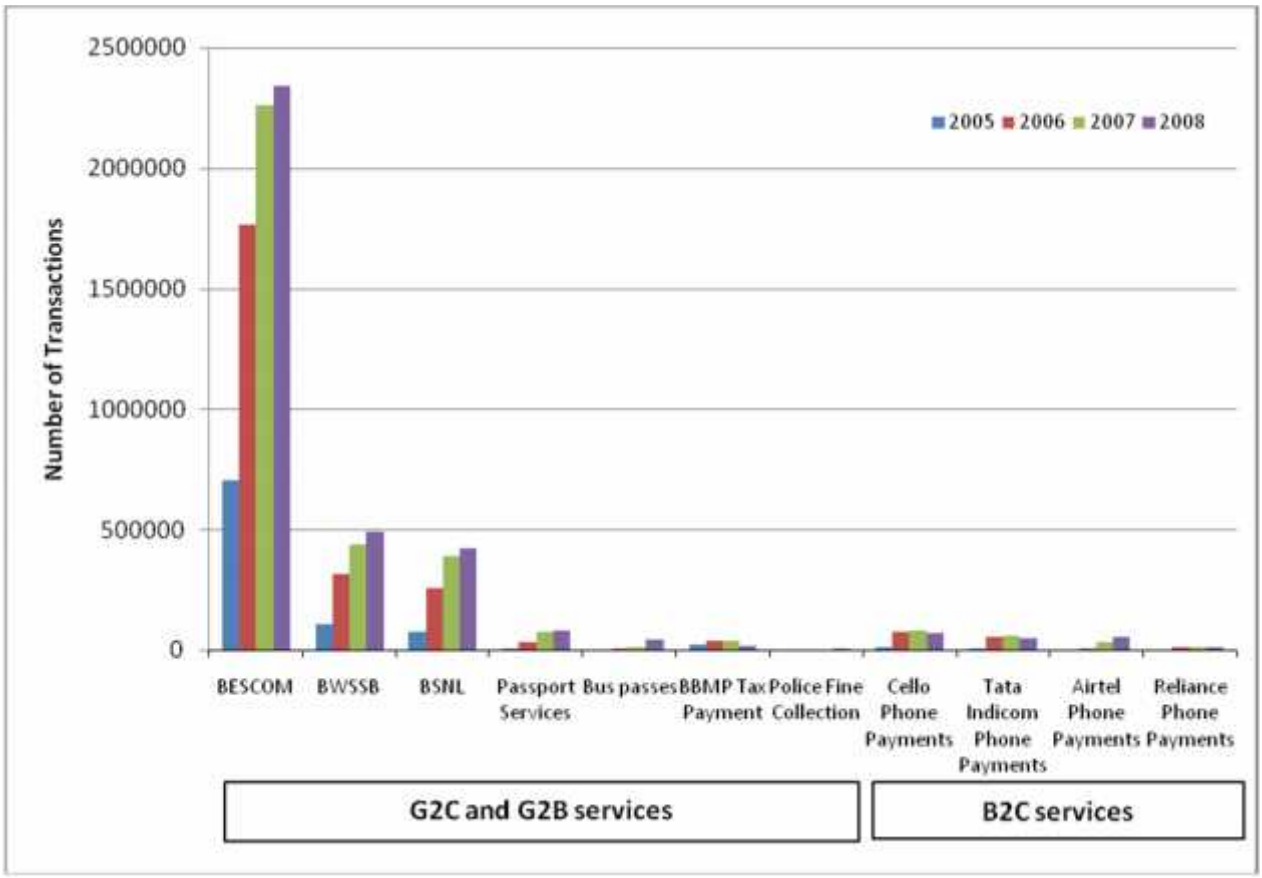


Figure 15: Use of various G2C, G2B and B2C services at B1

Profile of the respondents of Nemmadi centers

Table 8 reveals that all categories of respondents irrespective of education level and land holding status used the *Nemmadi* services in both the sampled districts. As in the case of B1, mostly men used the *Nemmadi* services, as these chores were generally considered the responsibilities of men. The average distance of the *Nemmadi* centers for respondents were 6.6 km in Ramanagara district and nearly 10 km in Chamarajanagara district.

Purpose of use of Nemmadi centers

Although *Nemmadi* centers provided nearly 42 services, they were used mainly for obtaining certificates such as RTC, land holding certificates, as well as caste and income certificates (Table 9). Awareness and utilization of *Nemmadi* for several services

such as birth and death certificates, widow and old age pensions, and others was low among respondents.

Table 8: Profile of *Nemmadi* users

Characteristics	District	
	Ramanagara (n=149)	***Chamarajanagara*** (n=151)
1. Level of Education		
a. Not gone to school	51.01	57.89
b. Primary	12.75	3.95
c. High School/SSLC	17.45	17.11
d. Intermediate (Class 12)	12.75	17.11
e. Degree	6.04	3.95
2. Size of Land holding (%)		
a. Landless laborers	22.7	17.3
b. Marginal farmers	17.3	12.0
c. Small farmers	12.0	17.3
d. Medium	9.3	8.0
e. Large farmers	38.7	45.3
3. Male respondents (%)	74.7	60
4. Family Size (Nos)	5.6	5.7
5. Distance to *Nemmadi* center (km)	6.6	9.9

Table 9: Awareness of availability and utilization of Nemmadi services

(% of respondents)

Services offered at *Nemmadi* centers	***Ramanagara*** (n=149)		***Chamarajanagara*** (n=151)	
	Awareness	Utilization	Awareness	Utilization
RTC	76.51	66.44	66.89	54.3
Land holding certificate	76.51	19.46	37.75	5.96
Caste and Income certificate	84.56	56.38	71.52	55.63
Birth and Death Certificate	0.00	0.00	0.66	0
Widow and oldage pension	0.67	0.00	13.91	12.58
Living certificate	7.38	8.72	0.66	0.00
Avail Application Forms	0.67	2.01	0.00	0.00

Impact of *Nemmadi centers* on delivery of services

Time efficiencies in using Nemmadi centers

While *Nemmadi* centers' working hours are the same as that of Government office hours, Table 10 reveals that service provisioning through these centers have significantly reduced the time taken to obtain RTC, mainly because these RTC services were computerized in the year 2000 itself under the *Bhoomi*[12] project and the computerized data is readily available. In services where signatures of taluka level officers are required there has been an increase in the number of days required for obtaining these RDS services through *Nemmadi*, in both the districts. *Nemmadi* has also not been able to make inroads into getting people to use it for payment of utility bills.

Table 10: Time-efficiency gains in the post-*Nemmadi* scenario

(% of respondents)

Items	Category	***Ramanagara*** (n=149)		***Chamarajanagara*** (n=151)	
		Post –*Nemmadi*	**Pre-*Nemmadi***	**Post -*Nemmadi***	**Pre-*Nemmadi***
RTC	Immediate	44.30*	13.42	50.99*	21.85
	Within 15 minutes	20.13*	11.41	1.99	4.64
	15-30 minutes	3.36*	11.41	1.99	4.64
	30-60 minutes	0.00*	21.48	1.32	25.17
	More than a day	0.00	0.00	0.00	5.96
	Not Availed	32.21	32.89	43.71	43.71
Land Holding Certificate	Within 3 days	0.00	0.67	0.00	0.00
	4 to 7 days	2.01*	12.75	0.66*	6.62
	8-11days	16.78*	4.03	5.30	1.32
	More than 11 days	0.00	1.31	9.27	7.28
	Not availed	81.21	81.21	84.77	84.77
Income and caste certificate	Within 3 days	0.00*	12.75	3.31*	15.23
	4 to 7 days	10.74*	40.27	5.30*	33.77
	8-11days	54.36*	9.40	28.48*	1.99
	More than 11 days	1.34	4.03	24.50*	7.28
	Not Availed	33.56	33.56	38.41	41.72
Pay utility bills	Within 15 minutes	0.00	0.00	0.00*	18.54
	15-30 minutes	0.00	24.83	0.00*	27.15
	30-60 minutes	0.00	34.23	0.00*	33.77
	Half day	1.34	3.36	0.66	3.31
	Not availed	98.66*	37.58	99.34*	17.22

* indicates proportions are significantly different at 5% level of significance

[12] The *Bhoomi* (meaning land) project of online delivery of land records in Karnataka

Reliability in using Nemmadi centers

Citizens are satisfied with the reliability of services offered at *Nemmadi* centers, with the reductions in service problems as well as errors in documents. The availability of staff at the centers improved the speed of delivery process in the post-*Nemmadi* scenario, unlike in the pre-*Nemmadi* days, where citizens had to wait for the visit of the village accountant to initiate the process of obtaining certificates. The need to pay transaction charges to obtain certificates has been obviated with the introduction of the e-Governance initiative (Table 11).

Table 11: Reliability in service delivery in the post-*Nemmadi* scenario

Reliability Factors	**Category**	***Ramanagara*** (n=149)		***Chamarajanagara*** (n=151)	
		Post – *Nemmadi*	**Pre-*Nemmadi***	**Post – *Nemmadi***	**Pre-*Nemmadi***
Service problem	No	53.69*	5.37	11.92*	0.66
	Yes	46.31*	94.63	88.08*	99.34
Errors in documents	No	95.30*	41.61	97.35*	48.34
	So	4.70*	58.39	2.65*	51.66
Speed of service delivery process	Very Fast	82.55*	5.37	11.92*	3.97
	Fast	12.75*	81.88	61.59	70.86
	Moderate	4.70*	12.75	6.62	11.26
	Slow	0.00	0.00	5.30	1.99
	Very Slow	0.00	0.00	14.57	11.26
Payment of hidden charges	Yes	0*	100	0*	100

* indicates proportions are significantly different at 5% level of significance

User fees for Nemmadi Transactions

Nemmadi works on the model of user-fee sharing. The study reveals that for citizens there has been a reduction in cost to obtain the certificates in the post-*Nemmadi* scenario (Table 12).

Table 12: User cost to obtain RD services

(Rupees)

Certificates	*Ramanagara*		*Chamarajanagara*	
	Post – *Nemmadi*	**Pre- *Nemmadi***	**Post - *Nemmadi***	**Pre- *Nemmadi***
RTC	12.01*	21.44	8.25*	11.06
Land	3.15*	6.41	1.62**	2.85
Income and	11.31*	20.34	8.28*	13.28

* indicates t-tests are significant at 1% level of significance
** indicates t-tests are significant at 5% level of significance

Factors influencing usage of Nemmadi centers

Motivations for most citizens to use *Nemmadi* centers include lower cost and better time efficiency through reduction in number of visits and time taken to obtain the certificates (which meant loss of wages or income) as well as simplicity of procedure. The other reasons that encouraged people to use the centers were speed of service and accuracy of documents. People were relieved about the avoidance of middlemen and the reduction in the need to pay bribes for obtaining government services (Figures 16 and 17).

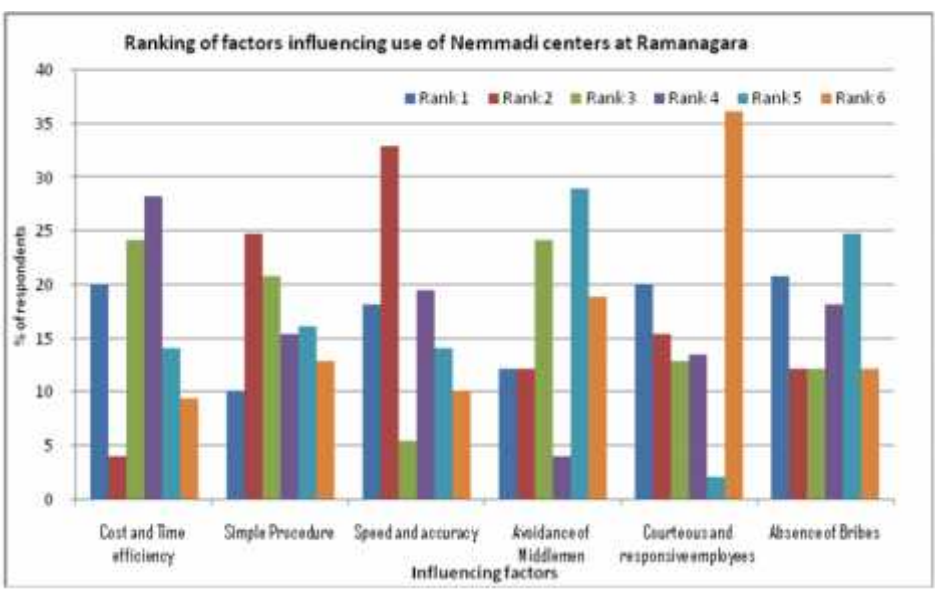


Figure 16: Ranking of factors influencing the use of *Nemmadi* centers at *Ramanagara*

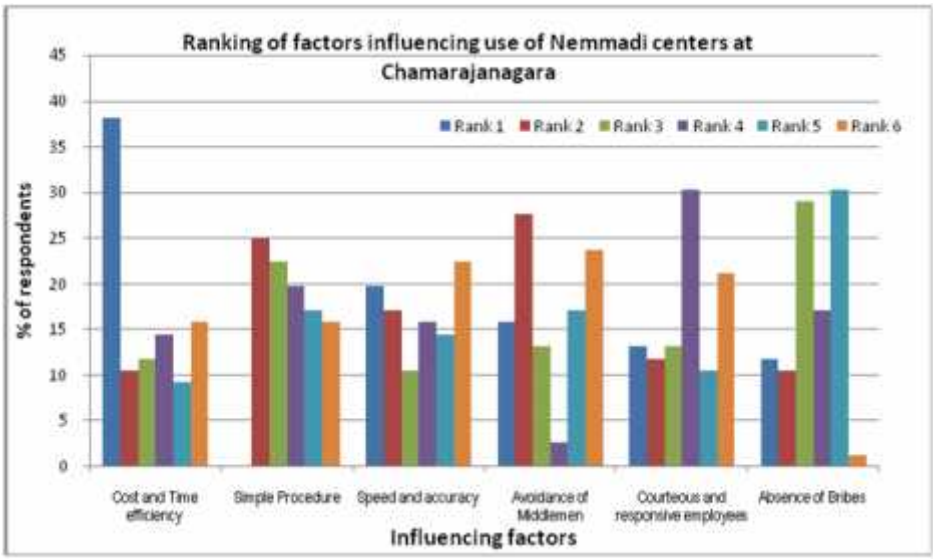


Figure 17: Ranking of factors influencing the use of *Nemmadi* centers at *Chamarajanagara*

The data reveals that citizens are highly satisfied with the new delivery process, speed and responsiveness of staff, while accuracy of services and records as well as facilities at the centers were satisfactory in both the districts (Table 13).

Table 13: Level of citizens' satisfaction of various attributes of services at *Nemmadi* centers

(% of respondents)

Attributes	*Ramanagara* (n=149)			*Chamarajanagara* (n=151)			
	Very satisfied	Satisfied	Not Satisfied	Very satisfied	Satisfied	Not Satisfied	No change
Delivery Process and Quality of service	77.18	22.82	0.00	29.8	39.07	21.19	9.93
Speed of the service	75.17	23.49	1.34	19.21	45.7	24.5	10.6
Responsiveness and empathy of staff	53.69	43.62	2.68	15.89	46.36	33.11	4.64
Staff efficiency in handling problems	40.94	55.7	3.36	58.28	29.14	12.58	0.00
Accuracy in billing and quality of the stationery used	38.26	60.4	1.34	25.83	59.6	14.57	0.00
Record maintenance accuracy	38.93	57.72	3.36	28.48	54.97	16.56	0.00
Ambience and facilities	32.21	60.4	7.38	18.54	59.6	21.85	0.00

The findings about B1 and *Nemmadi* centers indicates the innovation of delivery of public service through the PPP model has been easily adopted by citizens due to its relative advantage over the existing facility, compatibility, ease of use, and reduced uncertainty. This is also evidence from Figure 18 that the growth in number of transactions has been high in the last three years.

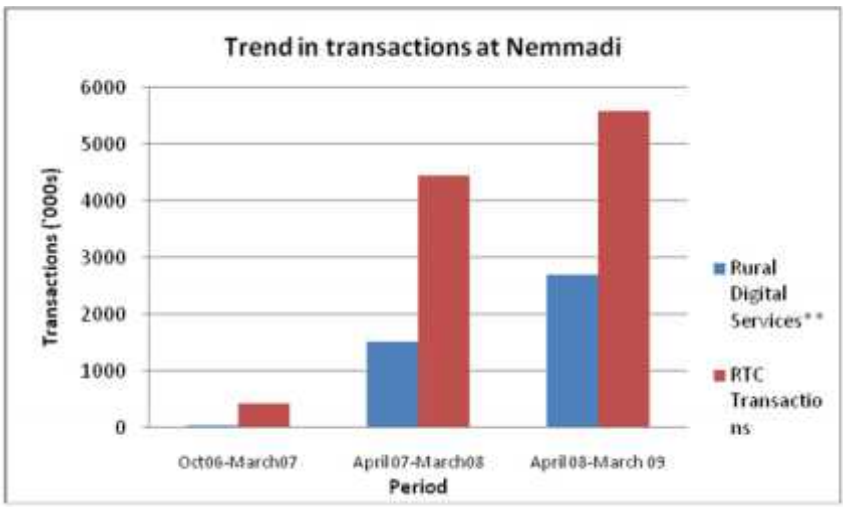


Figure 18: Trend in transactions at *Nemmadi* centers

Private partner

The impact of the e-Governance initiative on the private partner in *Nemmadi* PPP has been discussed in this section. The details of costs and benefits were not available from the B1 partner and hence it has not been discussed in detail. However, a rough estimate of costs and revenue indicates that the costs are fully recovered in B1 centers.

Private player of Nemmadi

The private partners receive 33% of the revenues generated through providing e-Governance services. The consortium expected an annual growth of 20% over 2-3 years, with the possibility of providing additional services through the involvement of other departments.

Costs and returns to private partner

The consortium had invested approximately Rs. 400 million for all the *taluka* back offices and kiosks. The recurring costs amounted to Rs. 490 million for the period from October 2006 to May 2009. However, their revenue realization was only Rs. 227.2 million, indicating that the consortium was unable to cover the cost over the operation of *Nemmadi* centers.

Investment required for one back office is Rs 0.312 million and for a kiosk Rs 0.16 million, entailing a total investments of about Rs 9.1 million for 29 back offices and Rs 5.1 million for kiosks for the private partner. From Table 14 it is evident that *Bhoomi* and RDS services were the only sources of revenue for the back offices. The Table also reveals that the private partner has incurred monthly losses of about Rs 16000 per back office and about Rs 9000 per kiosk leading to a loss of Rs 0.288 million per month on its operation.

Table 14: Details of revenues and expenses at the *Nemmadi* Back office and kiosks

(Rs/Month)

	Back Office	**Kiosk**
Sources of revenues	**Amount**	**Amount**
Bhoomi	9,411	294
RDS (41 Services)	18,000	563
Utility Payments	-	1235
SSA Education	-	587
Food Coupons Issue	-	315
Total Revenue	**27,411**	**2,994**
Items of expenditure		
Personnel Expenditure	13,380	3,357
Operating Expenditure	9,426	1,742
Administration Expenditure	7,160	1,884
Marketing & Business Development Expenditure	1,200	500
Kiosk Individual Expenditure	31,166	7,483
Corporate Expenses of vendor	3,117	748
Interest	2,604	1,335
Depreciation	6,375	2,968
Total Expenses	**43,262**	**12,535**
Revenue Gap	**(-15,851)**	**(-9,541)**

Parallel operation of government departments for the same services and non-participation of other government departments are considered to be the main reasons for the losses. To overcome this problem, the private partners have suggested a subsidy mechanism to the government for each of the kiosks and back offices, and in return would provide free information and grievance management services.

Challenges for the private partner in the working of the PPP

Like all other innovations, these initiatives too had several teething problems such as low publicity, low public confidence, stability, data transfer, and maintenance of central database. Over the years, the private players have been able to learn from their experience and improve their services. The existence of parallel government centers for the services provided by B1 and *Nemmadi* is one of the biggest challenges to the PPP. Measures such as increasing the number of counters and creating awareness of centers and services are important in enhancing the use of B1.

Nemmadi project faced several challenges such as delays in establishment and commencement of RDS Back offices operations due to non-availability space, technical challenges and issues in change management on the part of the government. These delays led to considerable financial losses to the private partner as well as loss of credibility. Unresolved technical issues continue to add to the losses. Creating computerized databases along the lines of *bhoomi* can enormously facilitate their operations. Inclusion of the services of the other departments will not only improve the financial viability but also help create a one-stop-shop facility to citizen. Based on the BOOT model, it is unlikely that the consortium will be able to recoup their investments within the timeframe of transferring resources to the government.

Some of the suggestions for improving the revenue flow, particularly for the *Nemmadi* project are:

a. Ensuring participation of various other government departments;
b. Rationalizing parallel operation by the government departments;
c. Creating digital databases for various services like in the case of land records;
d. Providing wide publicity about the centers;

e. Training and orientation of government officials regarding *Nemmadi* to ensure their participation;

f. Modification of revenue sharing policy as well as period for transfer of project, in view of non-participation of departments such as education, health, and agriculture;

g. Inclusion of several B2C services such as insurance, banking, vocational training, IT training as well as linking *Nemmadi* centers to KVK (*Krishi Vigyan Kendra*-agriculture knowledge centers).

The government player

BESCOM bill payment has been the most used service in B1. The study of JP Nagar division of BESCOM, where B1 was operating since 2005, reveals that despite the increase in the number of meter installations, there has been no increase in the number of department cash counters and meter readers (Table 15), leading to considerable financial benefits for BESCOM. By 2007, B1 was collecting approximately 7.5% of the revenue of BESCOM.

Table 15: Growth in Electricity installations in JP Nagar, BESCOM Branch

Year	No. of Meter Readers	No. of Installations	No. of Cash Counters
2001	6	27886	3
2002	6	31715	5
2003	12	38526	5
2004	12	45684	5
2005	13	52774	5
2006	13	60288	5
2007	13	69439	5
2008(up to June)	13	78041	5

To arrive at the value of the PPP for government, we examined costs of operating a cash counter (Table 16), which shows that a single B1 center saved approximately Rs 0.25 million[13] of government expenses each year. In JP Nagar division alone, assuming two more centers were needed, this would have a led to savings of approximately Rs 0.5 million every year. Also, the manpower released from routine tasks of bill collection was utilized in disconnection drives (for defaults in payments), detection of illegal connections and higher fault attendance.

[13] This figure would be higher if the other costs such as pensions, medical reimbursements etc incurred for permanent staff were taken into account.

Table 16: Estimated cost of operation of a BESCOM cash counter

Items of costs	Amount (Rs/month)
Building rent	3500
Salaries	15000
Maintenance /other expenses	2000
Total (per month)	20,500
Estimated total cost (Rs/Year)	246,000

Other perceived benefits to the public partner from the eGovernance are:

a. With better and faster delivery of services to citizens, the image about government offices have undergone a transformation.
b. Improvements in back-end integration of departments, costs savings to the government in processing and delivery of services.
c. Reduction in costs of facility management, depreciation and reduction in need for consultants.
d. Lower defaults in bill payments and tax collections.
e. *Nemmadi* Centers have created public value through the creation of a citizen database, consisting of information on 5.5 million citizens, free of cost.
f. Process and policy changes in the government, where for the first time in India, a private player has been given the responsibility of processing and delivering passports.
g. Increase in traffic fine collections, as hitherto people who feared visiting courts or police stations did so at the convenience of B1.
h. Reduction in travel and thereby traffic congestion and pollution due to availability of services close to residences and workplaces.

Conclusions

In the wake of increasing challenges to deliver quality public services in developing counties like India, public private partnerships seems to address some of the major problems governments are facing such as investment needs and trained manpower capacity constraints. These services are now increasingly being used by the citizens. In the two case studies analyzed, the urban PPP model seems to create considerable value to citizens in terms of improvement in time efficiency, convenience, reliability and saving costs in addition to making information easily available. However, differences in institutional arrangements for implementation seem to

have considerable impact on the performance of these initiatives. In the case of B1, clarity in the role of partners, government taking major role in coordinating with various government agencies, providing back end support coupled with private partners' initiative to keep the B1 centers open for longer hours have helped iron out problems in implementation as well as attract citizens to avail services. However, in the case of *Nemmadi*, the contract signed puts considerable burden on the private partner to make the government department use their services, which has not been easy for the private partner to convince. The current timing of operation and location also does not give any advantage of the *Nemmadi* centers over the existing services. While citizens are happy with the public value creation with time and cost savings in availing services and improvement in the reliability of services, further improvements to enhance this public value are needed in terms of providing additional services, reducing time taken for service delivery through creating digital databases and creating awareness of these services. These changes would help in increasing the number of transactions, improve public value creation and in turn would help improve financial viability for private partner. The share of revenue for private partner also requires a re-examination to make it viable in the case of *Nemmadi*. As observed in the case of B1, *Nemmadi* also has an enormous potential to create large public value if these centers are made to provide all G2C services in an integrated manner to the citizens.

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