SHOULD CITIZEN-ORIENTED ELECTRONIC PUBLIC SERVICES BE TAXED? PERSPECTIVES FROM THE INDIAN STATE OF ANDHRA PRADESH[1]

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Abstract

The citizen-oriented electronic services delivery project implemented by the office of ESD-Meeseva is one of the prestigious and successful e-Government initiatives in the Indian state of Andhra Pradesh. The project is implemented by the government while the operations and maintenance of the service centers in the state are outsourced to the private sector. The project is sustained by user charges which are collected by the private sector and so attract levies of service tax and goods and services tax. This study analyzes the impact of the tax on the revenue flow to the service providers and village level entrepreneurs in the project. Using data from the office of the ESD-Meeseva, the study finds that the tax squeezes the margins for the service providers and the village level entrepreneurs which affects its commercial viability, and creates deadweight loss, which adversely impacts societal welfare. While making a case for eliminating the tax levies, the study suggests alternative options for improving the efficiency of the citizen-oriented electronic services.

Keywords: Andhra Pradesh, Citizen-Oriented, Electronic Services Delivery, Goods and Services Tax

1. INTRODUCTION

In recent times, the central and the state governments in India have increasingly embraced information technology (IT) in order to revamp government and business processes so that they can deliver efficient administration and civic amenities to the citizens with transparency, speed, and agility. The state of Andhra Pradesh (AP) has been in the forefront of the move to assimilate and adopt IT in government processes.

One of the first and most ambitious electronic-Government (e-Government) citizen-oriented initiatives in AP was the "Government electronic services delivery" project, which sought to move the government's processes across all state departments online (from the receipt of a citizen's request to the delivery of the requested service to the citizen, with a robust audit trail to ensure transparency). The goal was to ensure the fast and efficient delivery of public services to every citizen in a corruption-free environment.

The bureaucracy in this Indian state, like other state governments in India and elsewhere, had a formidable reputation for extracting rents from hapless citizens for routine public services. By moving the governmental and business processes online, the electronic services delivery project sought to reduce and eliminate discretionary power and, thereby, rent-seeking opportunities for the bureaucracy. The "Government electronic services delivery" project thus

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represented a bold move by the state to combat the rent-seeking proclivities of the bureaucracy, to ensure that public services reached the underprivileged sections of the society in an efficient and transparent manner, and to thereby ensure that every citizen, rich or poor and in urban or rural communities, could benefit from the use of IT in an equitable manner (Balakrishna, 2018).

1.1 The Citizen-Oriented Electronic Services Delivery Project

The citizen-oriented electronic services delivery project was initiated as a pilot in 1998 in AP (where electricity and telephone bill payment services were offered online) and is popular because it reduces corruption, enhances transparency, and improves citizens' satisfaction levels. Today, this project incorporates the provision of 397 government-related services (including the electronic delivery of records relating to land registration, driving license applications, birth, death, and marriage registrations, and food ration card applications), which are referred to as government-to-citizen (G2C) services, and about 250 business-related services (including cell phone top-ups, movie ticket purchases, bus and train bookings, and basic banking services), which are referred to as business-to-citizen (B2C) services.

The project has won a number of notable national and international awards, including the Skoch e-Governance award 2013, the Computer Society of India Nihilent e-Governance Award 2015, the Skoch Order of Merit Award 2015, the Skoch Order of Merit Award 2016, and the Digital Trailblazers Award 2016 (Balakrishna & Venkataramanaiah, 2016).

The citizen-oriented electronic services delivery project is implemented by the Office of the Director, Electronic Services Delivery-Meeseva (ESD-Meeseva), Department of Information Technology, Electronics and Communication of the Government, through a public private partnership (PPP) model, where the operations and maintenance are outsourced to the private sector partner. The citizen-oriented electronic services, through simultaneous engagements with 37 state departments, are delivered through a network of about 6900 common service centers (CSCs) spread across the urban and rural hinterland in the thirteen districts of AP. The CSCs are managed by the private sector partner through VLEs.

The private sector partners (also referred to as the service providers in this study) levy a user charge on each electronic transaction from the availing citizens. The average revenue collection per day by ESD-Meeseva for the financial years (FYs) 2014-15, 2015-16, and 2016-17 was 64.8 million, 78.4 million rupees, and 79.5 million rupees respectively, which indicates the pervasiveness and popularity of government electronic services amongst the citizens from both AP's urban and rural areas. These services touch on every life cycle event of each citizen, so there is considerable demand for them and this has narrowed the digital divide (Balakrishna, 2018)[3].

1.2 Aims of the Study

The user charge is inclusive of statutory taxes prescribed by the government. In accordance with the conditions of a legal contract, the ESD-Meeseva shares the user charges collected with the service providers in pre-fixed proportions, and the service providers' shares are inclusive of the applicable taxes. The service providers, in turn, share the received user charges with the

[3] Please see Balakrishna (2018), and Balakrishna and Venkataramanaiah (2016), for more details on ESD-Meeseva.

VLEs in fixed proportions after remitting the applicable taxes to the government. The tax incidence is thus borne by the citizen using the electronic services provided by the government.

Should citizens and service providers be taxed for using essential electronic services provided by the government? What are the implications of such taxation on the commercial viability of the citizen-oriented electronic services delivery project? How do the externalities generated through this taxation impact societal welfare? This paper aims to provide some answers to these vexing questions about electronic-Government (e-Government) policy-making. In doing so, it explores the interface of taxation issues in public finance as applied to citizen-oriented e-Government services, and herein lies its contribution to the literature about the subject.

Section 2 briefly examines the basis of taxation and the e-Government framework in relation to the existent literature. In Section 3, the tax structure and the recent national migration to the unified goods and services tax (GST), as applicable to the citizen-oriented ESD-Meeseva project, is analyzed using data from the office of ESD-Meeseva. Section 4 examines the impact of this taxation on the commercial sustainability of the ESD-Meeseva project and explores the implications of taxing citizen-oriented e-Government services. Section 5 concludes with some managerial implications for e-Government practice.

2. RELATIONSHIP WITH CURRENT LITERATURE

The evolving literature on e-Government practice focuses on several dimensions of public governance, including IT infrastructure, service delivery quality, citizens' satisfaction levels, and engagement with contemporary technologies. For example, Tan et al. (2013) highlight the importance of e-Government service quality, for which standardized service content and delivery, and a robustly designed citizen-oriented e-Government website, are essential precursors. They found that IT-mediated citizen service content and service delivery through a web interface were strong predictors for e-Government service quality.

e-Government may not make much headway without a strong IT infrastructure. This is spelled out by Asogwa (2013), who lauds the possible benefits of e-Government citizen-oriented services delivery in a developing economy like Nigeria in fueling economic growth, productivity, and competitiveness, but notes that issues with the provision of essential IT infrastructure, like a lack of internet penetration and limited bandwidth, a lack of technical staff, and frequent power outages, threaten the realization of e-Government benefits.

Reddick and Turner (2012) approach e-Government service quality from a citizen's point of view, and find that the government must provide citizens with multiple interfaces, ranging from traditional phone services to standardized web content, and ensure that they provide consistent service responses to enhance citizen's satisfaction levels in their engagement with e-Government. Similarly, Saha et al. (2010) found that responsiveness, the provision of online assistance, and respect to privacy positively impacted the quality of citizen-oriented e-services
.
While IT infrastructure and standardized content remain strong predictors of e-Government success, engagements with contemporary technologies, like social media, cloud computing, and mobile apps, could enable governments to integrate all of their public services seamlessly at the back end and provide citizens with a single-window interface. This paradigm shift in e-Government has ushered in a "second wave of digital era" in several developed economies (Dunleavy & Margetts, 2010).

There seem to be very few studies that focus on issues relating to the taxation of essential e-Government services. Taxes may provide public agencies with the much needed resources to fund e-Government projects. On the other hand, high taxes can discourage principal stakeholders from participating in e-Government projects and may foster perverse incentives, resulting in failures. As mentioned earlier, this study attempts to explore the impact of taxes on citizen-oriented e-Government in AP and may make a valuable contribution to the existing literature.

3. ESD-MEESEVA AND TAXES

3.1 Operations and Maintenance at ESD-Meeseva

As implied in Section 1, the ESD-Meeseva Directorate selects private sector partners) to operate and maintain the CSCs through an open competitive bidding process. These service providers, in turn, recruit VLEs, who are mainly youths from local rural and semi-urban areas, through an open competition and examination-based process. The VLEs manage the CSC operations on a commission basis or through a franchisee model, and must initially invest in computers, internet connectivity, alternative power sources, scanners, printers, and biometric devices. The ESD-Meeseva Directorate provides the VLEs with buildings (by coordinating with local government bodies) and essential furniture. The top three G2C services which the citizens in the urban areas demanded and used were: (i) land registration applications and corrections; (ii) income certificate applications; and (iii) food ration card applications. Similarly, the top three B2C services used by citizens in urban areas used were: (i) electricity bill payments; (ii) vehicle tax payments; and (iii) property tax payments. The patterns of demand for G2C and B2C services for citizens in rural areas was similar, although the volumes involved were low (Balakrishna, 2018).

While ESD-Meeseva mandates that service providers must make all the G2C services as decided by the Government in the CSCs available, the service providers are given full freedom to offer a plethora of B2C services to supplement the income of the VLEs. Over the years, service providers have utilized this flexibility and have vied with each other in a positive, competitive spirit to offer a wide variety of B2C services in the CSCs. Balakrishna (2018) lists these B2C services, which include insurance premium payment, mobile phone top-up, utility payment, air, train, and bus ticket booking, movie ticket booking, fund transfer, and photocopying services.

Service providers thus link up with firms selling point-of-sale (POS) machines, and e-wallet firms like Paytm, FreeCharge, and MobiKwik which, in turn, offer attractive incentives to citizens who use their services. Thus, the CSCs foster an ecosystem that is conducive to the rapid development of businesses in the transport, leisure and tourism, entertainment, electronics and telecommunication, and financial technology spaces. Balakrishna (2018) shows that the entrepreneurial spirit and competency of service providers in AP is a significant driver of citizen-centric public services.

3.2 User Charges in ESD-Meeseva

At the time of writing this paper, the ESD-Meeseva had completed about 82.44 million G2C and B2C to citizen transactions (an indicator of the volume of electronic services). A citizen has to pay a user charge of 25 rupees per transaction for category “A” electronic services that can be delivered across the counter (such as the provision of a copy of an individual’s birth

certificate) and 35 rupees per transaction for category "B" electronic services that require departmental verification and other processes (such as the provision of land registration documents and title deeds). These monies are shared between the ESD-Meeseva Directorate, the government department concerned, the service provider, and the VLE, all of whom are legally entrenched through a set of contracts, as mentioned in Section 1.2.

The ESD-Meeseva Directorate has entered into separate contracts with five different service providers in respect of the management of the CSCs in the state. The state is divided into four zones for the purpose, and the districts within the zone have been divided into rural and urban areas. Bids were invited for each zone, and separately for the rural and urban areas, and each winning bid differed in terms of the revenue sharing arrangements between the ESD-Meeseva Directorate and the service providers.

Table 1: Sharing pattern of user charges collected by the Electronic Services Delivery (ESD-Meeseva) Directorate, Government of Andhra Pradesh

Panel A: Sharing pattern of user charges for Category "A" citizen service in rupees						
Service provider details	User charge per txn*	Inf**cost	Department share	Stationery cost	ESD-Meeseva share	Service provider share
Service-provider-rural-1 (20:80)	25	3	7	1.25	2.75	11.00
Service-provider-rural-2 (5:95)	25	3	7	1.25	0.69	13.06
Service-provider-rural-3 (15:85)	25	3	7	1.25	2.07	11.68
Service-provider-urban-1 (28.1:71.9)	25	3	7	1.25	3.87	9.98
Service-provider-urban-2 (32:68)	25	3	7	1.25	4.4	9.35
Panel B: Sharing pattern of user charges for Category "B" citizen service in rupees						
Service-provider-rural-1 (20:80)	35	5	7	1.25	4.35	17.40
Service-provider-rural-2 (5:95)	35	5	7	1.25	1.09	20.66
Service-provider-rural-3 (15:85)	35	5	7	1.25	3.27	18.48
Service-provider-urban-1 (28.1:71.9)	35	5	7	1.25	6.11	15.64
Service-provider-urban-2 (32:68)	35	5	7	1.25	6.96	14.79

Source: Office of the Director, Electronic Services Delivery, Government of Andhra Pradesh
Note: The figures in parentheses in the first column indicate the ratio in which the user charge is shared between the ESD-Meeseva Directorate and the service provider; *txn = transaction; **Inf = infrastructure

Table 1 reflects this heterogeneous arrangement. For example, the revenue share of the ESD-Meeseva Directorate varies between 5 percent and 32 percent. Likewise, each VLE is entitled to a share in the range of 35 to 47 percent of the revenues, depending on the zone and whether they are operating in an urban or a rural area. For category "A" services, where the user charge is 25 rupees per electronic transaction, 3 rupees are retained by the ESD-Meeseva as contribution to infrastructure costs, 7 rupees are apportioned to the government department

which hosts the data and service, and 1.25 rupees are reimbursed to the service provider for the use of secured stationery for printing receipts. The remaining 13.75 rupees are shared between the service provider and the ESD-Meeseva Directorate in an agreed ratio. For example, the ESD-Meeseva Directorate retains 2.75 rupees and assigns 11 rupees to Service Provider 1 in the rural area (Service-provider-rural-1 in Panel A of Table 1) in the ratio of 20:80. Panel B shows the user charge sharing arrangement for category "B" services.

3.3 Taxation of User Charges

The government levies a service tax on the user fees collected by the service providers in the PPP-modeled ESD-Meeseva project. The citizen-oriented electronic services delivered by the ESD-Meeseva Directorate fall within the ambit of "Business Auxiliary Services", which are defined in section 65(19) of the Finance Act, 1994, Government of India, and include services provided by commission agents in respect of the collection of the sale price of goods and services and related services. Business Auxiliary Services attract a levy of service tax.

The service tax, which was nominal at 5 percent a decade ago, effectively increased to 15 percent as of June 2017, with the inclusion of compulsory levies of Swachh Bharat Cess (SBC) of 0.5 percent and Krishi Kalyan Cess (KKC) of 0.5 percent. When the ESD-Meeseva Directorate invited open bids for the operation and maintenance of CSCs in 2008-09, the service providers would have factored in the payment of a service tax of 5 percent, which was in force at the time, from their revenues when computing their respective bids. These contracts are still in force in the ESD-Meeseva Directorate now and are due to be overhauled.

The ESD-Meeseva Directorate insulated itself from unpredictable increases in service tax regimes by making the proportion of user charges assigned to each service provider inclusive of applicable taxes and cesses through a legally binding contract. As a result, the service providers in this project were required to remit the applicable service tax to the government from the share of the user charges received from the ESD-Meeseva Directorate. In terms of Table 1, the service providers were required to remit 15 percent of the share shown in the last column as service tax liability in 2016-17.

On the 1st of July 2017, after a decade of protracted debate and consultations with the industry, the Government of India introduced the GST. The GST was conceived as a single tax on all goods and services produced and consumed within India. It was expected to replace a slew of indirect taxes and levies, including central excise duty, service tax, additional customs duty, octroi[4], and value added tax. In real effects, the goods and services throughout the country were taxed under the following rates - 0%, 5%, 12%, 18%, and 28%. In addition, a cess[5] of 15% over and above the GST was levied on goods like luxury cars, aerated drinks, and some tobacco products. The introduction of GST resulted in increases in the costs of several commonly consumed goods and services, including food consumption in hotels, insurance, and cinema tickets, resulting in serious protests from the business community (Mittal, 2017).

With reference to the ESD-Meeseva Directorate, the introduction of GST resulted in the increase of tax liability of the service providers from 15 percent to 18 percent for the use of government electronic services. Table 2 shows the service tax liability for service providers for the financial year 2016-17.

[4] Octroi is a tax levied by some Indian states when goods are brought into a district for consumption (Stiglitz & Rosengard, 2015).
[5] A cess is a tax on tax, levied by the government for a specific purpose (Stiglitz & Rosengard, 2015).

The average monthly share of the revenues to the service providers during the financial year 2016-17 was 290.78 lakh rupees, which resulted in a monthly levy of 43.61 lakh rupees as service tax. Under GST, the expected monthly burden is expected to increase by 8.71 lakh rupees, as indicated in Table 2.

Table 2: Monthly service tax liability borne by the service providers during FY 2016-17, and the expected additional burden due to the introduction of the Goods and Services Tax (GST) (all amounts shown in lakh rupees)

Service provider (SP) details	SP mean share per month	Monthly service tax at 15 percent	Monthly GST at 18 percent*	Expected burden due to GST
Service-provider-rural-1 (20:80)	143.22	21.48	25.77	4.29
Service-provider-rural-2 (5:95)	14.6	2.19	2.63	0.44
Service-provider-rural-3 (15:85)	74.6	11.19	13.42	2.23
Service-provider-urban-1 (28.1:71.9)	22.54	3.38	4.06	0.67
Service-provider-urban-2 (32:68)	35.82	5.37	6.45	1.08
Total	290.78	43.61	52.33	8.71

Source: Office of the Director, Electronic Services Delivery, Government of Andhra Pradesh
Note: * GST = Goods and service tax was levied from 1st July 2017 by the Government

Table 3 provides a hypothetical walkthrough of the mechanics of the sharing of the user charges between the ESD-Meeseva Directorate and a service provider in the ratio 10:90, and between a VLE and a service provider in the ratio 90:10 under (i) the hitherto existing service tax, where the tax rate was 15 percent, and (ii) the GST, where the tax rate is 18 percent. The user charges collected from the citizens were net of infrastructure costs, departmental shares, and stationery costs (see Table 1), but inclusive of applicable taxes. The amount available for distribution between the ESD-Meeseva Directorate and the service provider is assumed to be 1,00,000 rupees. While highlighting the mechanics of sharing of the user charges between the principal stakeholders, Table 3 also pinpoints how increasing taxes, in general, can squeeze the profit margins of service providers and VLEs.

Table 4 shows the average monthly earnings of the VLE for the financial years 2011-12 to 2016-17 (and from 1-4-2017 to 31-8-2017), and indicates a measurable contribution of the ESD-Meeseva initiative to the state's gross domestic product (GDP). The ESD-Meeseva project has created a class of grass root entrepreneurs (the VLEs), and invested them with social status and earning potential. Each VLE, on average, earned 8457 rupees per month in the financial year 2016-17. The ESD-Meeseva project employed 5091 VLEs in 2016-17, which implies that the VLEs in the state earned 430.54 lakh rupees, on average, every month. Documentary evidence and the author's enquiries reveal that, on average, the VLEs spend 90 percent of their income on food, clothing, and other basic necessities. This consumption of goods and services by VLEs contributes to the GDP.

Table 3: Mechanics of sharing user charges of Rs. 1,00,000 between ESD-Meeseva Directorate, a service provider, and VLE under sales tax of 15 percent and Goods and Services Tax (GST) of 18 percent

Sl	Transaction instance	Under service tax at 15 percent (Rs.)	Under GST at 18 percent (Rs.)	Remarks
1.	User charges inclusive of applicable taxes available for sharing between ESD-Meeseva and service provider = Rupees (Rs.) 1,00,000	-	-	User charges includes applicable tax and cesses
2.	Share of ESD-Meeseva = Rs. 10000	-	-	10% of 1,00,000
3.	Share of service provider = Rs. 90000	-	-	90% of 1,00,000
4.	Tax remitted by the service provider to Government	11739	13729	(90000*15)/115 as service provider's share includes service tax
5.	Available user charges with service provider after tax remittance	78261	76271	90,000 - 11739
6.	Share of VLE	70435	68644	90% of 78261
7.	Share of service provider	7826	7627	10% of 78261

Source: Office of the Director, Electronic Services Delivery, Government of Andhra Pradesh

The mean monthly income of the VLEs for the 2017-2018 financial year was 23.3 percent lower (falling from 8457 to 6486 rupees), which could be attributed to the higher incidence of taxation under the GST. Thus, the increased taxation of electronic public services delivery could adversely impact the state GDP by reducing VLEs' private consumption. One limitation in arriving at this conclusion is that the GST had only recently been introduced (less than a year before), which may mean that deeper analysis of its impact on the efficiency of the electronic services provided and the associated revenue flows cannot take place.

4. TAXES AND COMMERCIAL SUSTAINABILITY OF ESD-MEESEVA

The message from Tables 2, 3, and 4 is loud and clear: the levy of service tax and thereafter, the GST, on the sale of government electronic services squeezed the margins of the service providers, who passed this pressure on to the VLEs in the form of reduced shares of user charges. The reduction of the VLEs' mean monthly income in the first and second quarters of the 2017-2018 financial year, perhaps due to the higher incidence of taxation under the GST, does not bode well for the future prospects of the citizen-oriented electronic services delivery project. The service providers and VLEs may find that it is commercially unviable for them to participate and this resonates with their fervent appeals to the government for relief from the GST.

Evidence shows that the digitalization of citizen-centric public services in AP and other Indian states has benefited the citizen, fostered local entrepreneurship, and narrowed the digital divide (Balakrishna, 2018; Balakrishna & Venkataramanaiah, 2016). However, levying a tax on these

services seems to adversely affect the commercial viability and self-sustenance of the electronic services delivery PPP project, as revealed in this study. The government may have to do away with the GST on citizen-centric electronic services delivery to reverse the precariously reducing monthly income streams of the VLEs and service providers, and reduce the tax burden. Such a policy would serve the larger purpose of boosting the entrepreneurial abilities of the service providers and VLEs in the ESD-Meeseva ecosystem. As mentioned earlier, the entrepreneurial abilities of the service providers, as manifested in the healthy proliferation of B2C services, is a strong driver and attracts citizens to the CSC. Thus, the continued imposition of the GST on the service providers in the citizen-centric electronic services delivery ecosystem could choke their income streams, stifle entrepreneurship and, ultimately, result in the failure of the project.

Table 4: Average monthly earnings of VLEs in Andhra Pradesh State for the FYs 2011-12 to 2016-17

Financial Year	Average monthly income from G2C services (Rs.)	Average monthly income from B2C services (Rs.)	Mean monthly income from G2C and B2C services (Rs.)	Number of VLEs	Income contribution to State GDP (Rs. lakhs, monthly)
2011-12	2562	1061	3623	1834	66.4
2012-13	2371	3578	5949	2844	169.2
2013-14	4144	2991	7135	4852	346.2
2014-15	5324	3138	8462	4565	386.3
2015-16	5102	2970	8072	4460	360
2016-17	5061	3396	8457	5091	430.54
4-2017 to 8-2017	3964	2522	6486	5705	370

Source: Office of the Director, Electronic Services Delivery, Government of Andhra Pradesh

An alternative option for the government would be to take over the citizen-oriented electronic services delivery as owners and operate it without the participation of the private sector. The CSCs would be managed by salaried government staff. However, this may result in inefficient and low-quality service delivery. Furthermore, removing the incentives for the private sector to engage in best practices may also lead to inefficiencies. Several Indian states have experimented with some form of government-owned, citizen-oriented, online services delivery projects. However, these projects failed, and the states involved switched to the hugely successful PPP model, as presently practiced at the ESD-Meeseva Directorate.

These considerations naturally lead one to question why governments tax citizens in the first place. Governments levy taxes to raise revenue, which is used for governance, building social and physical infrastructure (roads, sanitation, judiciary, and health care, sometimes referred to

as merit goods), servicing debts and interest payments, and providing public utilities (like energy and water). Taxation effectively changes the prices of products and goods, and influences demand for them. Governments also levy taxes to redistribute income and wealth amongst citizens. In order to do this, governments levy different types of taxes (e.g., direct taxes on income that are progressive in nature; indirect taxes on consumption, like GST on a variety of goods and services; and non-distortionary taxes, like the head tax, which must be paid irrespective of income status). Most taxes, like income tax and GST, are distortionary and hence inefficient (Stiglitz & Rosengard, 2015).

Taxation is also used to correct negative externalities (as in the case of taxing a cotton mill for polluting the atmosphere) and to provide public goods (such as national defense and lighthouses, which are non-rivalrous in terms of consumption and non-excludable through the pricing mechanism). Sometimes, the government seeks to influence macroeconomic performance by taxing certain sectors excessively (for example, levying a high tax on higher education may fuel unemployment) or providing tax exemption to certain sectors for attracting investments (Burgess & Stern, 1993; Parkin, 2011).

With reference to the citizen-oriented electronic services delivery, the philosophical basis for initially imposing a service tax and now imposing a GST at 18 percent appears quixotic, especially when the same public services are not taxed when provided manually by the same government departments.

The imposition of the GST creates a deadweight loss in the societal welfare (Stiglitz & Rosengard, 2015). Citizens who are unable to pay the relatively high charges for using electronic government services are unable to enjoy the benefits of e-Government. Similarly, the VLEs and service providers lose revenue due to squeezed margins on their operational revenues, as discussed in Section 3.3. In addition, the government may not be able to employ the collected GST revenues on specific IT projects due to hypothecation. Hypothecation militates against the fungible nature of money. Furthermore, the complex nature of the service tax and, subsequently, the GST levy on electronic transactions, as discussed in Section 3, creates opportunities for tax evasion and avoidance, as is evident from a plethora of tax litigation cases at the ESD-Meeseva Directorate involving revenues of about 380 million rupees. The lost revenue and the legal compliance costs create perverse incentives, which represent yet another source of deadweight loss.

5. CONCLUSIONS AND MANGERIAL IMPLICATIONS

From a commercial sustainability perspective, this study shows that there is a good case for rescinding the taxes on the provision of citizen-oriented electronic services implemented by the ESD-Meeseva Directorate. The deadweight losses to society attributable to this tax imposition merit serious attention.

Removing the tax on the provision of electronic services may enable service providers and VLEs to generate higher income streams, which would positively contribute to the state GDP through the higher consumption of goods and services. In addition, higher revenue streams may reduce instances of corruption, as the most common form of complaint seems to be overcharging by the VLEs.

If taxation is inevitable, the tax revenues could be utilized for capacity-building activities to sharpen the soft skills of the VLEs, who are the face of the ESD-Meeseva project, as this may

improve citizen satisfaction levels. About 10 percent of the VLEs in AP are women. which implies that there is a crying need to address issues relating to gender inclusivity in the ESD-Meeseva project. It has been observed that CSCs managed by women tend to deliver services of higher quality, and receive minimal complaints about overcharging and other forms of deviant staff behavior. The satisfaction levels of the citizens visiting these centers also appear to be higher than those of citizens visiting CSCs managed by men. It may be worthwhile to consider the provision of subsidies to CSCs managed by women in order to attract more female VLEs.

Tax revenues may also be utilized to improve the quality of service delivery by strengthening the IT infrastructure in the VLE-managed CSCs. Commercial sustainability considerations and the desire to maximize profits may not incentivize VLEs to consistently upgrade the IT infrastructure in the CSCs. For example, about 25 percent of VLEs avoid using licensed antivirus software in the CSCs in order to reduce costs. The VLEs are more inclined to use open-source versions of online document management tools as these are available free of charge. From the information available from the office records of the ESD-Meeseva Directorate, the majority of the VLEs currently employ Windows 7, two gigabyte (GB) random access memory (RAM), Pentium 4-based operating systems with 14-inch monitors in the CSCs for dispensing citizen-centric public services, which were in vogue fifteen years ago. Similarly, many of the VLEs still use dot matrix printers, which can only print on one side of a page, to produce receipts and other documents. Employing such low speed and moderately outdated IT equipment in CSCs may result in slower delivery of public services and increased waiting times for the public, especially during peak office hours. As suggested earlier, tax revenues could be utilized to purchase more contemporary and efficient IT equipment for the CSCs (for example: Windows 10, 4GB RAM, i5-based operating systems with 17-inch monitors; printers and scanners that can print on both sides of the paper; modems that support high speed internet; switches that support 8 or 16 ports instead of the present 4 ports; and high definition cameras), which may improve the delivery and quality of citizen-centric public services.

In addition, the government could invest tax revenues in software development so that citizens can access citizen-oriented public services via tablets and smartphones. The government could also procure self-service kiosks and appropriate software for use in them. This could mean that they could do away with the VLEs altogether and usher in a new business model.

Since the incidence of tax on the provision of citizen-oriented electronic services is borne by the citizen, the government could, as a social measure, offset this tax burden by reducing the user charges collected by the service providers and the ESD-Meeseva Directorate.

In view of the high visibility enjoyed by the ESD-Meeseva Directorate (as a result of the Directorate winning several national awards and honors, and making presentations at prestigious industry and academic conferences), several states in India have emulated the best practices that have evolved there in recent times, with varying success rates. The lessons from this study may be of relevance to these states.

Citizen-oriented electronic transactions could be taxed in other developed and developing economies too, although the service or the unified GST in these countries relatively low. For instance, the GST rates in Australia, Canada, and Singapore are 10 percent, 5 percent, and 7 percent respectively. Low rates of GST may reduce perverse incentives as compliance rates are higher, but many of the deadweight losses discussed here may not disappear altogether. Here

too, there appears to be a case for removing the tax on governmental citizen-oriented electronic transactions.

As mentioned earlier in this study, GST was recently introduced by the Government of India to rationalize the existing tax structure on a variety of goods and services. However, the taxation of citizen-oriented electronic services deserves closer analysis as it may adversely impact the commercial sustainability of the service providers. Future research could focus on the full impact of the GST on the quality and efficiency of citizen-oriented electronic services, and its implications for public policy.

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