



Technology, Livelihood and Gender: The Case of Common Services Centre under Digital India Programme

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Introduction

The Digital India programme was launched in 2015 to transform India into a digitally empowered society and knowledge economy³. For this transformation, it is quintessential that government services and welfare schemes are migrated to online platforms. This can improve access by the common citizen as well as bring more transparency and accountability (Setor, Senyo and Addo, 2021). However, the ability to access such facilities is also dependent on the technological prowess of citizens. In 2018, a survey by the National Sample Survey Office found that only 45% of urban people aged 15-59 years reported being able to use the internet⁴. Without adequate support for the remaining section of the population, digital transformation will result in tremendous inequalities (e.g., Tewathia, Kamath and Ilavarasan, 2020; Samuel et. al., 2020).

In this regard, in 2006, the government introduced the Common Services Centres (CSCs), which have been further highlighted under the Digital India programme. These centres are operated by government-certified village-level entrepreneurs (VLEs), and facilitate online registration for government schemes and services as well as certain private services for a fee. This presents an important entrepreneurial opportunity wherein potential micro-entrepreneurs with computer knowledge can provide an important service to their communities while also receiving an income. More importantly, it has been observed that women have been taking up CSC activities, which has allowed them to realise a number of benefits including financial, social and psychological.

Given the importance of such a programme, and its potential for effecting not only digital transformation but, concomitantly, women's empowerment, a study funded by the Azim Premji Foundation has been taken up at the Institute for Social and Economic Change (ISEC) to evaluate the performance of CSC centres at

the grassroots level. To facilitate this, a primary survey was conducted in several urban areas of Karnataka located in and around Bangalore city. The survey was conducted with a view to fulfil the following objectives.

Objectives

This study aimed to better understand the status of CSC entrepreneurs in Karnataka, their performance, and the obstacles that they may have faced in running their businesses. Correspondingly, the following objectives were envisioned for this study:

- To document the post-Covid recovery of CSCs
- To compare the skill differentials between genders in the management of their enterprises and the challenges for skill formation
- To understand the determinants of return to entrepreneurship based on time-use and skill together with other controls such as infrastructure, per-capita income of the location, as well as socio-economic background.
- Challenges faced by women entrepreneurs in carrying out business as well as the usage of income.
- To inform the policy debate about the performance and management of women-owned microenterprises and how to address some of their livelihood challenges.

In order to realise these objectives, the following methodology was adopted for the primary survey:

Methodology

The regions surrounding Bangalore were selected for the study owing to their vibrant digital landscape and fast-growing entrepreneurial spirit. Within these urban regions, the study was purposively divided between areas that were highly affected by the pandemic and the subsequent lockdowns, and others that were relatively less affected. This would provide a better comparative picture of the effect of the pandemic on these enterprises. The surveyed locations include

This Policy Brief is based on a Research Project funded by the Azim Premji Foundation. We thank the funding agency for its valuable support. We also thank ICSSR and the RBI for their support to ISEC.

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³ <https://csc.gov.in/digitalIndia>

⁴ https://www.mospi.gov.in/sites/default/files/publication_reports/Report_585_75th_round_Education_final_1507_0.pdf

Bangalore city, Bangalore rural district, Ramanagara district, and Mandya district. Correspondingly, the metropolitan zones of Bangalore and Bangalore rural were considered to be heavily affected by Covid, while the other regions experienced a lower impact. The survey was conducted between 2022 and 2023, and includes a stratified random sample of 200 CSC entrepreneurs. A structured questionnaire was developed and administered by field investigators, which ascertained information relating to the demographics of entrepreneurs, their business performance, as well as other relevant information such as business practices and challenges faced. Both men (64 CSCs) and women (136 CSCs) were included in the sample in order to allow for a comparison between their respective business performances.

Key Findings

The primary indicator of business performance is profits, and in order to understand the development of this sector, the region and gender-wise business profits have been computed and adjusted for inflation (to 2011-12 price levels). This data can be seen in Figure 1 below:

While it is clear that Covid had a significant impact on the performance of businesses in both metropolitan and non-metropolitan zones, women-run businesses were marginally less affected compared to those run by men. This is an interesting result as the pre-Covid performance was nearly identical between genders. More importantly, it can be seen that women were more successful in harnessing the opportunities that Covid presented and were able to earn more than men by 2023. Furthermore, while in the pre-pandemic era, CSCs in non-metropolitan locations earned significantly less than those in metropolitan ones, the gap was closed by 2023, with non-metropolitan CSCs even earning more than their metropolitan counterparts. This perhaps points to the increasing interest in availing digitised facilities even in non-metropolitan regions owing to the effects of the pandemic. There is also another reason for this. The customers of the metropolitan regions became more capable of handling some of the digital services by themselves

due to handling various online activities from home during the covid period. This may have reduced the demand for services through CSCs by certain sections of the customers of metro regions.

In order to gain a more statistically robust estimate of the difference between incomes earned by men and women CSC entrepreneurs, a propensity score matching exercise was carried out. The reported monthly income in 2023 was used for comparison. The respondents were matched based on their age, religion, caste, location, and education. The results of this exercise are presented in the table below:

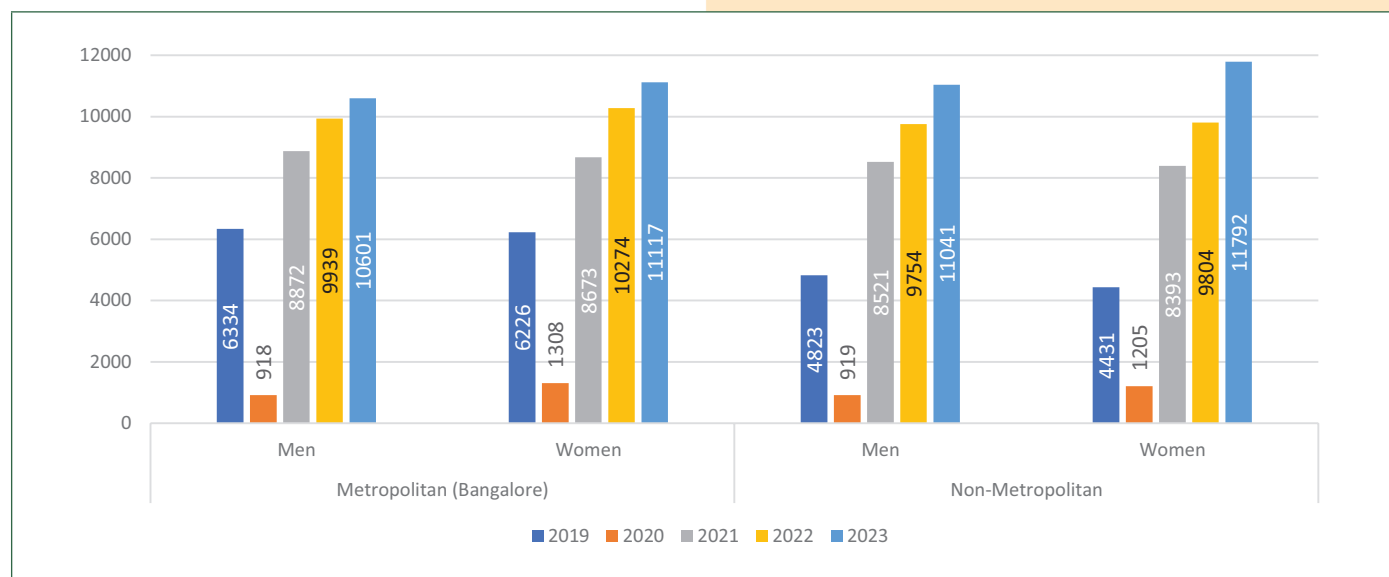
Table 1: Propensity Score Matching – Men vs Women’s Incomes in 2023

Dependent Variable: Monthly Income in 2023	Difference	AI Robust Standard Error	z-statistics	P (z > Z)
Average Treatment Effect	Rs 1,583	694.01	2.28	0.023
Average Treatment Effect on the Treated	Rs 1,788	874.93	2.04	0.041

Source: Analysis of Field Survey Data; Based on 200 Observations

From the propensity score matching exercise, it is evident that women earn significantly more than their similar-matched male counterparts. In fact, when focusing only on women (the average treatment effect on the treated), this difference amounts to approximately Rs 1,788 a month. More interesting is the fact that such a difference could not be observed in the incomes for prior years (2019-2022), which further strengthens the observation that as the pandemic recedes, women have demonstrated significantly greater aptitude in leveraging business opportunities and expanding their income.

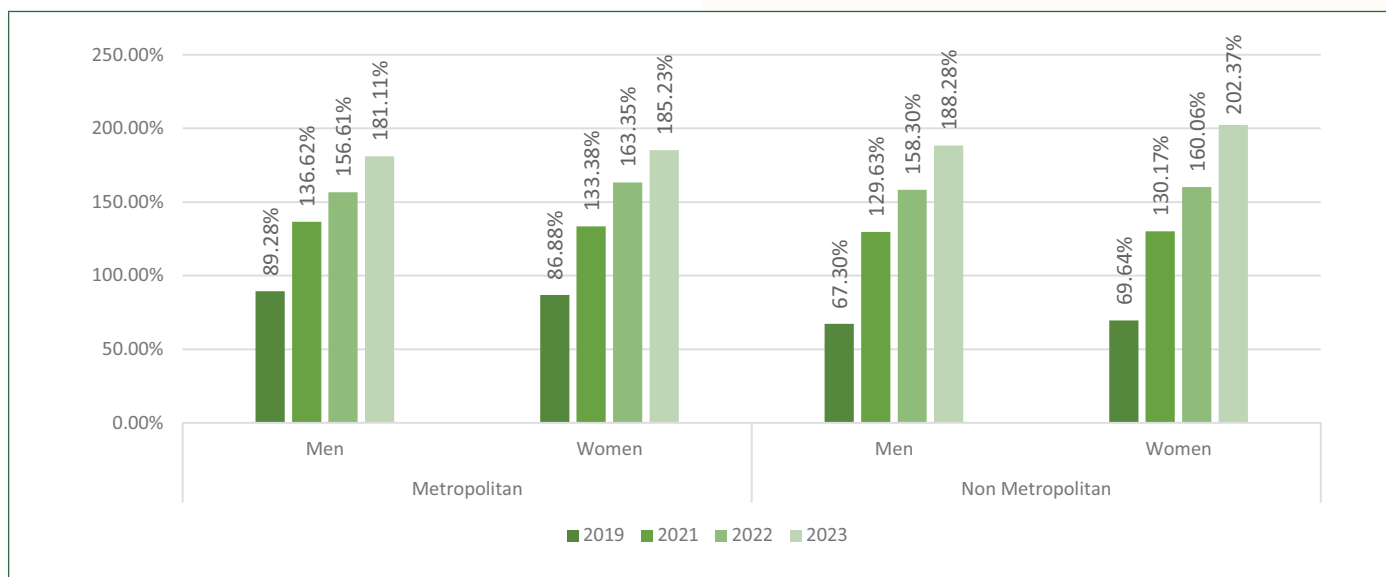
Figure 1: Monthly Profits from CSC Business (at 2011-12 constant prices)



Source: Analysis of Field Survey; CPI figures from RBI

Note: Includes only businesses that had already started in each year

Figure 2: Yearly Return on Investment for CSC Businesses



Source: Analysis of Field Survey Data

In order to open and operate these businesses, entrepreneurs have to make investments in a laptop, a mobile phone, a photocopier, a printer, and a biometric reader, which normally costs (as per our survey-based estimate) around Rs 1.2 lakh altogether. Some businesses also need to make re-investments in equipment after starting the business. In this context, the question of return to investment becomes important. This would give us a better idea of the value of the business. Figure 2 shows the yearly rates of return on investment, disaggregated by location and gender. Investment figures have been inflated up to the year under consideration (i.e., up to 2019 for the ROI computation in 2019). The year 2020 has been omitted due to severe capacity underutilisation during this period.

Interestingly, it can be seen that even though CSCs in metropolitan areas had a greater return on investment, over time, it is the non-metropolitan zones in which CSCs generated the greatest returns on investment. Moreover, as with the profit figures, women demonstrate greater ability to generate profits with a given investment than their male counterparts.

Aside from technological capital, CSCs also rely on human capital for operation. While many CSCs are run solely by the entrepreneurs, some rely on help from their family members. However, in the case of women CSC entrepreneurs, this has often been observed owing to the lack of ability to utilise computers and the internet effectively; while for men, such a phenomenon is not seen. Among the respondents, 20% of men and 40% of women reported taking help from their spouses. In order to understand whether help from families increases the income earned, another propensity score matching exercise was conducted, separately for men and women, using appropriate matching parameters. However, there were no significant differences in income resulting from family help for entrepreneurs of either gender.

While only some CSC entrepreneurs rely on their families for help to operate the business, all use social media platforms as sources of information to educate themselves on how to better run their

enterprises. WhatsApp, the most common and used ubiquitously, was followed by Facebook, and some entrepreneurs actively searched for tutorial videos through YouTube. Recently, some entrepreneurs even reported searching for information through Google on their own initiative.

When asked about the issues faced during the business operation, entrepreneurs highlighted a number of challenges they face. Almost all entrepreneurs indicated that the time delay and server issues of the online portal through which registrations for services is conducted creates hassles in servicing customers, and often results in them losing clients. Availability of credit was also reported to be a significant bottleneck, with 86% of entrepreneurs indicating that this was a problem. Aside from this, the training programme conducted for CSC entrepreneurs (which was reported to be a single session that lasts between half an hour and one hour) was also felt to be inadequate, with 78% of entrepreneurs reporting the need for better training.

Observing that CSC businesses generate satisfactory income and return on investment, especially for women, they are an important avenue not only for small enterprise development but also for women's empowerment in the country. In order to bolster such a valuable programme, a number of policy suggestions can be formed that aim at improving not only CSCs but small enterprises in India.

Policy Suggestions

- A common complaint by many entrepreneurs is the unreliability of the server that enables registration for various schemes. Improving the server infrastructure can help CSC entrepreneurs retain clients better, save time and generate more trust in the system. This will both increase their income as well as improve the adoption of digital technologies for government services by the common citizen.
- Many respondents indicated that they learn the essentials of how to conduct a business through online resources such

as WhatsApp and Facebook groups, YouTube videos, and by searching on Google. This can be further bolstered by the government setting up a dedicated resource that would not only provide information about various schemes under CSCs but also disseminate other vital business lessons such as ways to attract customers, maintaining customer satisfaction, bookkeeping, usage of the internet for business and advertising, and opportunities for other symbiotic businesses that can be run in tandem with the CSC.

- Aside from government registrations, surveyed CSCs offered a number of other services such as filing income tax returns, subscriptions to insurance schemes, preparing rental agreements, and even registration for online courses. However, very few CSCs reported providing services as a banking agent, indicating that this business model is either hitherto relatively unknown or unprofitable. However, such banking agent services can be a significant paving stone in improving financial inclusion as they bring facilities such as withdrawals and deposits much closer to citizens. In this regard, the government could encourage banks to expand their banking agent networks through CSCs.
- Several CSC owners reported that they have been losing business to Gram One centres in Karnataka, which now have exclusive rights to provide registration for state government welfare schemes and services. This may in turn reduce the business of CSCs and make them unviable, resulting in a loss of livelihood for a large number of entrepreneurs. There are, however, a number of activities both public and especially private that need online registration. It is necessary to provide these micro-entrepreneurs knowledge of online services for the private sector such as vehicle booking, private insurance and so on. Currently, CSC VLEs learn about these opportunities through WhatsApp groups etc. But that benefits only a few who are more capable. It is necessary to disseminate such information on a regular basis so that women entrepreneurs with relatively lower capability can also benefit and capacity building takes place.

- Currently, the training programme for new VLEs focuses solely on the provision of services by Common Services Centres, and is often a single session. However, a lack of digital literacy has been found among CSCs (Sharma et. al., 2021). Including a longer and more rigorous component of operating computers, printers, and other equipment essential for CSC business in the training programme can help entrepreneurs gain significantly more self-sufficiency. This will help women entrepreneurs to become self-sufficient and independent. While all respondents indicated that they had at least some basic knowledge of how to use a computer, only some said that they were proficient. This could be especially helpful to many women entrepreneurs who currently rely on their husbands or other male relatives to operate the business owing to a lack of adequate knowledge. An added focus on alternate business models (such as business to customer and business to business) which allows CSCs to facilitate the purchase of goods online for customers, or run e-stores for larger retail chains such as Croma, could help further bolster CSC incomes and sustainability. Such programmes currently exist but at a limited scale and they need to be scaled up so that more micro-entrepreneurs can benefit.

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