



FINAL REPORT: Moving towards gender equitable public transport operations in a post COVID-19 world

COVID-19 Response & Recovery Transport Research Fund

April 2021

HVT029.L1L101 – Sonal Shah

This research was funded by UKAID through the UK Foreign, Commonwealth & Development Office under the High-Volume Transport Applied Research Programme, managed by IMC Worldwide.

The views expressed in this report are those of the authors and do not necessarily reflect the UK government’s official policies, nor those of any individuals and organisations referred to in this report.

IMC Worldwide Ltd, the HVT Programme and the UK government shall not assume any responsibility for the results of works based on the use of this report. Users accept this publication is a guidance document only. Users accept that they need to take their own technical and legal advice before issuing Agreements, Terms and Conditions and other legally binding documentation related to implementing any recommendations.

Reference No.	HVT029.L1L101
Lead Organisation	Sonal Shah
Partner Organisation(s)/ Consultant(s)	Abhijit Lokre, Sutanu Pati, Devangi Ramakrishnan
Title	Moving towards gender equitable public transport operations in a post COVID-19 world
Type of document	Project Report
Theme	Urban transport
Sub-theme	Gender, COVID-19, public transport, paratransit
Author(s)	Sonal Shah, Rithvika Rajiv, Abhijit Lokre
Lead contact	Sonal Shah, The Urban Catalysts
Geographical Location(s)	India
Abstract	
While public transportation systems are being resumed with curtailed services, lower occupancy, disinfection of vehicles, contactless ticketing, online reservation of seats and fare increases post COVID-19 lockdown, there is limited data on the effect that these measures have had on women’s access, safety and perception of safety. This research aims to understand the impact of COVID-19 on the mobility of women with respect to bus-based transportation and provide emergency as well as long-term recommendations for gender responsive, safe and secure public bus transportation in Delhi, with relevance for other cities in India and LICs in South Asia.	
Keywords	Public transport, urban transport, paratransit, COVID-19, gender, South Asia, Delhi, India
Funding	UKAid/ FCDO
Acknowledgements	We are grateful to Jasmine Shah, Vice-chairperson of the Dialogue and Development Commission, Government of Delhi for support in the research. We appreciate the support by Jeff Turner, technical lead for this project, our project advisors, reviewers and experts from India and globally.

Cover Photo Credit: The Urban Catalysts



EXECUTIVE SUMMARY

Purpose

The pandemic and the subsequent lockdowns implemented by governments across the world had severe economic and social repercussions. World over, women are grappling with a triple burden of loss in incomes, increased care and domestic work and an escalation of domestic violence (1). COVID-19 has disproportionately affected women workers in the informal economy (2). The International Labour Organisation (3) reports that 1.3 billion people work informally in Asia and the Pacific, which constitutes 65% of the world's informal employment. 7 in 10 workers in developing Asia are in the informal economy. Over 92% and 84.5% of women in low- and lower-middle-income countries (LMICs), are in informal employment.

In South Asia, countries such as Afghanistan, Bangladesh, Pakistan, and Nepal announced lockdowns that restricted public transportation services. The nature of public transportation permitted during the lockdown differed by state and country. For example, while Kabul, Afghanistan announced a lock down, they permitted public transport vehicles carrying less than four passengers (4). In India, all modes of transport - road, rail and air were suspended except for the transportation of essential goods. Post lockdown as restrictions eased, public transport resumed with curtailed services, reduced passenger capacity to encourage physical distancing and fare increases in private buses and paratransit.

Mobility is vital for the economic recovery of resource poor women (RPW) workers, as they are dependent on public transport, paratransit, and walking. The loss in incomes due to the pandemic, need to sustain their households has compelled RPW to resume work. However, there is limited awareness of the impacts of COVID-19 on women's mobility amongst decision makers and transport policy influencers in LMICs. The impact of modified bus operations, increased fares on RPW's mobility and access are not understood. Similarly, digitalisation of public transport has not acknowledged the gender divide in the access to ICT technology.

Our research aims to fill this gap. We provide evidence and fast track knowledge uptake to understand the impacts of COVID-19 on RPW's mobility, inform policy guidance and responses on addressing gender equity in public transport. The research includes a deep dive in Delhi (India), with learnings for LMICs in South Asia.

Methodology of research

A mixed methods approach with qualitative and quantitative data was used for this study. We conducted a review of grey and published literature on women's mobility and public transportation in the pre- and post-COVID-19 scenario in Delhi (India), Kabul (Afghanistan), Dhaka (Bangladesh), Kathmandu (Nepal) and Lahore (Pakistan). Due to the paucity of information, this was supplemented with an online round table with 18 participants from feminist networks, unions and collectives from the above-mentioned cities in South Asia.

The literature review and online round table indicated that paratransit is a dominant mode of public transport in the four South Asian cities of Kabul, Dhaka, Kathmandu, and Lahore. Buses were crowded, with poor connectivity in the periphery of cities, and sexual harassment was a major deterrent in women's use of public transport. Afghanistan, Bangladesh, India, Nepal, and Pakistan had launched women only buses, but received poor patronage.

During the lockdown and post lockdown phases, the curtailed bus services and restricted carrying capacity resulted in no assurance of seat availability, crowding and reduced physical distancing at bus stops, and inability to board. Fare hikes in private bus services and paratransit in Bangladesh, Nepal and Afghanistan created affordability concerns for RPW. Women experienced longer waiting times for buses and were compelled to use paratransit, even if it is more expensive.

These findings from the literature review and online round table were used to conduct ten key informant interviews with decision makers, transport policy influencers, academics and women's unions in India. The aim was to increase awareness of the impact of the lockdown on women, as well as obtain their perspectives on the challenges and opportunities of COVID-19 in ensuring gender equity, safety and security for RPW in public transport.

The key informant interviews encouraged us to explore RPW's dependence on paratransit due to their travel in off-peak hours of bus services, inadequate bus fleets and occupational specificity. Women suffered from a



pink tax - the additional cost incurred due to their travel during off peak hours of public transport services. The perimeter of RPW's employment opportunities was limited by their access [or lack of] to public transport, in the absence of a personal motor vehicle. Additionally, the mobility pattern of a woman working in the formal sector was different from that in the informal sector, as the latter may optimise her trip in terms of cost. These findings informed our survey design.

We conducted telephone surveys (822) and online surveys (400) to understand how RPW and other women workers travelled and the impact of COVID-19 on their employment and mobility. The telephone surveys were conducted from 23 locations across different types of settlements (urban villages, JJ clusters, informal settlements, resettlement colonies) across Delhi. Additionally, thirty face-to-face surveys were conducted with male paratransit operators to understand their operations in the pre- and post-COVID scenario. These surveys were validated with published literature sources (5). Bus counts were also conducted in 22 locations in Delhi to assess women's ridership in public transport.

We partnered with Self Employed Women's Association (SEWA), a membership-based organisation with 1.9 million members across 17 states in India, to conduct eight in-depth interviews with RPW workers. The goal was to understand their travel in buses after the introduction of the free ride scheme, experiences during the lockdown and after. SEWA also facilitated in-depth interviews with five female e-rickshaw operators (or Vahinis), who are part of their pilot to encourage women owner-operators.

The findings from the surveys were situated within Delhi's and national context to suggest recommendations. Our recommendations were refined with feedback from social policy, finance and technology experts, and public transport operators.

Key findings from in-depth study of RPW in Delhi

Women's workforce participation, public transport connectivity and bus services

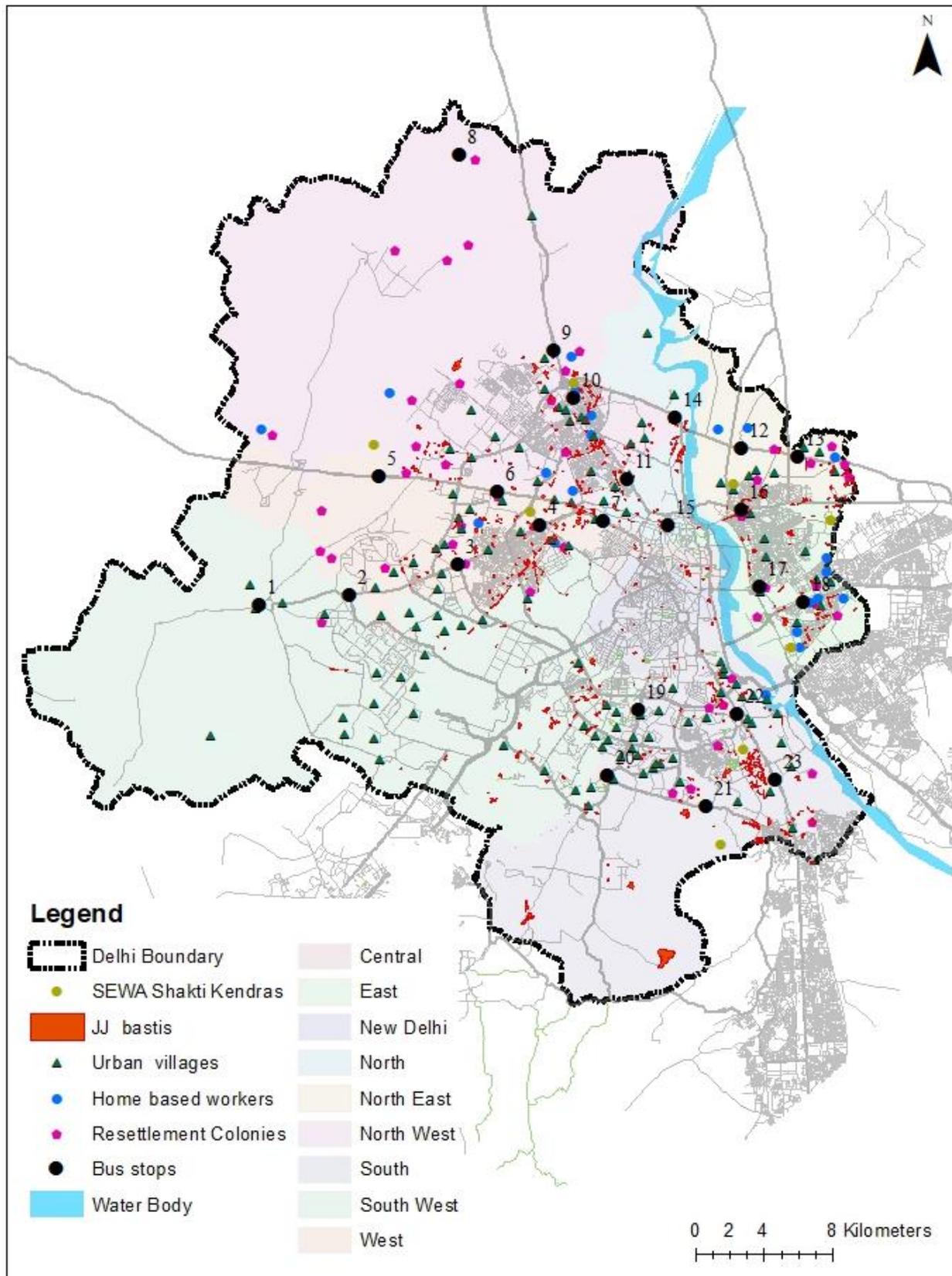
Delhi has a lower female work force participation rate (WFPR) (13.9 %) compared to the rest of urban India (16.1 %) (6). A spatial analysis of female WFPR overlapped with bus routes revealed a lower WFPR with reduction in public bus connectivity. This could suggest a relationship between the two, among other factors, indicating a further line of research inquiry. According to DTC and DIMTS, Delhi witnessed increase in female bus ridership from 21 % in 2011 to 29 % in 2019. This increased further to 37 %-40 % after the introduction of the free bus ride scheme.

Lockdown and mobility restrictions in Delhi due to the COVID-19 pandemic

Between 24th March 2020 and 31st May 2020, the Government of India declared a national lockdown, grounding all public transportation networks and restricting the outdoor movement of people. By May 17th, as restrictions eased in the third phase of lockdown, Delhi began operating buses at 50% fleet strength. By November 2020, during the fourth phase of lockdown, all buses began plying with full seating capacity.



Figure 1: Survey locations, SEWA Shakti Kendras, and locations of home-based workers



Data sources: JJ Bastis (7); Urban villages (8); Resettlement colonies (9); SEWA Shakti Kendras (10) Home based workers (11); District boundary (12); Ward boundary (13)



79% of RPW in Delhi did not work in the 68 days of the lockdown and have lost an estimated INR 754 crores in incomes

The literature review indicates that 83% of RPW workers in Delhi suffered a major loss in income (15). Domestic workers reported a decline in the number of houses they are able to work in, street vendors reported drop in earnings due to closure of markets and reduction in customers (11). Our surveys among RPW workers indicate that while 79% of them did not work during the lockdown, the daily hours they spent on household and care activities increased by 28%, from 3 to 5 hours daily. Overall, we estimated a loss of INR 754 crores during the 68 days of lockdown for RPW in Delhi.

Travel patterns of women indicate that they make negligible or few non-work trips currently

The per capita trip rate (PCTR) of RPW in December 2020 was 1.9, with 99% of trips for work purposes. Similarly, 97% of all trips undertaken by online survey respondents were also work related. This indicates that working women in Delhi were not travelling for leisure or other purposes in the current pandemic.

Travel patterns of resource poor women differ from women of other income groups, highlighting the need for differentiated strategies to achieve equity in gender responsive public transport

Bus travel accounts for 81% of trips made by RPW. The peak travel time for RPW is between 11am-12pm in the morning and 2-3pm in the afternoon, accounting for 11.8% and 11.6% of their daily trips, respectively. This differs for online survey respondents (OSR), whose peak travel hours are between 9-10 am and 5-6 pm. Paratransit accounts for 57% of trips by RPW during these peak hours. This could imply either poor bus frequency during off-peak hours, or that the destinations to which RPW travel are not served by buses. Paratransit is the next preferred mode for 86% of RPW, with over two-thirds preferring shared Intermediate public transport (IPT)/ e-rickshaws/ Gramin Sewas.

RPW's concerns regarding bus-based travel (in December 2020) persisted from a pre-COVID-19 scenario (November 2019). Their three major concerns currently were that buses did not halt for them (21%), no enforcement of reserved seats for women (17%) and poor frequency of services (16% currently). While there was an increase in women's bus ridership, RPW also stated that buses did not stop for them after the free ride scheme. The biggest difference was that 7% of RPW expressed crowding in buses as a concern compared to 21% pre-COVID-19.

Conversely, the major concerns for the online survey respondents in the December 2020 were lack of information on the real time arrival of buses (21%), poor frequency of services (20%) and long queues at bus stops and inability to board the bus (18%). This was also consistent with their concerns regarding bus-based travel pre-COVID-19.

The surveys suggest that safety concerns, related to physical distancing and sexual harassment were not as significant as those mentioned above.

COVID-19 technology responses in public transport leave resource poor women behind

The Delhi government has initiated multiple applications like One Delhi and Chartr to provide real time information on buses and enable contactless ticketing. However, only 10% of RPW have access to a personal or shared smartphone. Around three-fourths of RPW use phones to make and receive calls and/or send SMS. Only five percent use phones to browse the internet, while nine percent access social media/ WhatsApp. Further, only 2% of them know how to make digital payments, in contrast to 58% of online survey respondents. This indicates a substantial impediment in improving RPW's access to public transport in a post-COVID-19 world, where real time information (RTI) and contactless ticketing are being initiated to maintain physical distancing.

Fall in number of passengers result in severe economic loss for IPT service providers

Male paratransit operators witnessed a reduction in passengers in the current pandemic. We estimated a loss of INR 1,741 crores in revenue for 200,000 registered vehicles in the nine months from 24th March 2020-24th December 2020. Their operating expenses in December 2020 ranged from 28 to 56% of their gross revenue, which was higher than their pre-COVID-19 reported operational expenses (24 to 51% of their gross revenue).

Female e-rickshaw owner-operators (Vahinis) earn less than their male counterparts due to a safety, household and care tax



The surveyed Vahinis began operations during the pandemic with support from SEWA and SMV Green Solutions. We observed that their routes were 46% shorter, worked at least 2.5 hours lesser in a day due to household and care work, had 27% fewer passengers and earned 28% lesser than male paratransit operators. The reduced operating hours and passengers can be attributed to a safety, household, and care tax, which must be addressed through policy interventions.

Recommendations for gender equitable transport in Delhi

The recommendations include cross-cutting themes, followed by a focus on bus-based public transport and paratransit.

Partner with women's unions and membership-based organisations (MBOs)

MBOs, unions and civil society organisations have played a critical role in advocating for affordable housing, basic services and safer public spaces for resource poor women. Transport departments must create and maintain a database of these organisations and collaborate with them when devising transport policies. Simultaneously, these groups can also become effective channels to disseminate information across a wider network of women and facilitate effective implementation of public transport schemes and initiatives.

Improve digital literacy of resource poor women

A Training of Trainers (ToT) model can be adopted where transport think tanks can partner with membership-based organisations to train community mobilisers and volunteers on using the Chartr application, navigating Google Maps, making digital payments amongst others. These mobilisers and volunteers can teach resource poor women and girls (with access to a smartphone) in their communities.

Create a dedicated team for women's safety in the command-and-control centre (CCC)

The Transport Department is in the process of inaugurating a command-and-control centre (CCC) for women's safety. It will address all complaints related to SOS buttons in buses and monitor CCTV footage in buses and at bus stops. The CCC can integrate multiple channels (helplines, websites, SOS alerts) for registering and responding to women's complaints, such as buses not halting at scheduled stops, enforcement of seat reservation, sexual harassment in buses, bus stops and in paratransit (17).

Provide a multimodal mobility subsidy for resource poor women

Resource poor women lose a considerable amount of their daily income as they are engaged in household and care activities. COVID-19 has amplified their economic loss and research suggests that women are disproportionately affected during economic crises. Resource poor women have consistently highlighted the issue of poor frequency of bus services and seat availability. While the Delhi Transport Department is in the process of augmenting its bus fleet, we propose a multi mobility subsidy for resource poor women workers in the interim to enable their mobility through multiple modes. A monthly cash transfer of INR 600 is recommended based on their travel for work trips. The resource poor women beneficiaries can be identified based on multiple proxy databases, starting with Pradhan Mantri Jan-Dhan Yojana¹ (PMJDY) bank account holders, registered construction workers, street vendors and eventually expand to all women with ration cards.

Improve reliability and seat availability in buses

A free SMS based real time information (RTI) system for buses must be created, which can co-exist with the proposed passenger information boards at bus stops and the Chartr application. Such a system will allow 90% of resource poor women (without access to smart phones) to receive information on the estimated arrival time of buses.

The Transport Department should consider implementing a policy for women-only-doors, such that women can board from the front doors and access reserved seats. Additionally, it can increase awareness on the presence of bus marshals.

Increase adoption of electric vehicles amongst resource poor women

¹ PMJDY was launched by the Government of India under the national mission for financial inclusion to ensure universal access to banking facilities



Women-operated e-rickshaws can be encouraged as a gender and climate sensitive mode of paratransit to improve the reach and connectivity of public transport, create employment for resource poor women, and support the Delhi government in achieving its goals of the Electric Vehicle (EV) policy.

We collaborated with SEWA and SMV Green Solutions to propose financial and procedural reforms to Delhi’s EV Policy (2020) to increase adoption of e-rickshaws amongst resource poor women. We recommend that the Delhi Government implement a pilot project in partnership with MBOs and their financial institutions to mobilise resource poor women. The pilot project can include financial incentives such as providing an upfront subsidy and increasing the amount to INR 50,000². This will reduce equated monthly instalments (EMIs) by 53%, with estimated savings of around INR 130,000 over a 34-month loan period for each Vahini. Additionally, we recommend the following actions by different agencies:

- The Transport Department can introduce targeted skilling opportunities for resource poor women, waive license fees and subsidise charging fees for Vahinis at public parking lots. The license process for women drivers can be eased through a single window system at the Regional Transport Office;
- The Delhi Metro-rail Corporation can reserve spaces for Vahinis in well-lit and visible locations at metro-rail stations, and mandate that first and last mile connectivity paratransit fleets include a share of women-operated vehicles;
- Traffic Police must reconsider e-rickshaw restrictions on major roads in Delhi;
- The Delhi Development Authority must plan, develop creches/ Integrated Child Development Service centres within the framework of the multi-purpose centres recommended by the Main Bhi Dilli Campaign, for the Master Plan of Delhi 2041;
- Finally, MBOs can initiate partnerships with schools and aggregators such as SmartE to augment ridership.

Learnings for cities in South Asia

These recommendations, while framed within the context of Delhi are relevant for the urban local bodies and the provincial/ state-level transport departments in LMICs in South Asia. These include:

- Partnerships between women’s membership-based organisations, unions and transport authorities;
- Provision of a mobility subsidy as direct cash transfers to resource poor women;
- A dedicated team to address sexual harassment complaints across different modes of transport in relevant urban local bodies;
- Encourage women paratransit owner-operators through financial and procedural reforms and safety mechanisms;
- Frame equitable mobility as a constitutional right;

Capacity building of women’s departments, membership-based organisations and unions, urban development and transport authorities and increasing number of gender experts.

Conclusion

Gender inequities in public transport became more acute with the advent of the pandemic. However, it also represents a unique opportunity to build back better. In the context of the pandemic, we need to acknowledge the most vulnerable voices, work from a ground up and top-down approach to create a more inclusive, and green recovery model for urban transport.

² The additional amount could be provided by the Women and Child Development Department.

Sonal Shah

The Urban Catalysts

Mumbai 400056

Tel: +91 9820280709

Email: sonal.urbancatalyst@gmail.com

Web: <https://www.theurbancatalysts.org/>