
# GENDER INTENTIONAL INFRASTRUCTURE

## Investigating the linkages between infrastructure and women's workforce participation in Indian cities.

Sponsored by

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*We4her Foundation (the "Foundation") is a women-led and women's rights organization that is working on gender justice and gender equality. The foundation aims at promoting an eco-system for empowerment of women in India.*

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**Jana Urban Space Foundation**

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*Janaagraha is a Bengaluru-based not-for-profit institution working to transform the quality of life in India's cities and towns. Janaagraha works with councillors and citizens to catalyse active citizenship in city neighbourhoods, and with governments to institute reforms to city-systems. Janaagraha's current portfolio of work includes engagements with the XVI Finance Commission, Ministry of Housing and Urban Affairs, NITI Aayog, Capacity Building Commission, state governments of Odisha, Assam, and Uttar Pradesh, and the 5th State Finance Commission of Karnataka.*



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*April 2025.*

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# 1.1 | EXECUTIVE SUMMARY

## Background

Women's workforce participation rates in India have been significantly low across decades. Between 2018 and 2024, the rural female labour force participation rate for people aged 15–59 increased by 22.9 percentage points, while the urban female LFPR rose by only 8.7 percentage points.

However, when it comes to identifying barriers to women's participation in the workforce, the Periodic Labour Force Survey (PLFS) deems social and cultural barriers, and caregiving responsibilities to be primary impediments.

To counter this, the union and multiple state governments have introduced an array of schemes aimed at supporting women's caregiving responsibilities, gender safety in public space. However, these have not resulted in a proportionate increase in workforce participation, especially for urban women, as evidenced by PLFS reports.

This study hypothesizes that barriers in workforce participation go beyond caregiving, domestic, and social reasons.

**The study explores the role of infrastructure, especially mobility infrastructure, in impeding or enabling women's workforce participation.**

It specifically explores aspects of mobility infrastructure under the themes of –

1. Safety and security
2. Accessibility and convenience
3. Commuter comfort
4. Time constraints
5. Hygiene and maintenance

The objective of the study is to –

- Establish if there is a relationship between availability, accessibility and quality of infrastructure related to mobility and participation of women (in lower income communities) in the workforce.
- Understand the extent to which design and implementation of public infrastructure have a role to play in women's workforce participation.

The study aims to understand the factors influencing workforce participation choices among urban women from low-income communities, with an average annual household income of less than 3,00,000 INR.

## Methodology

The study is conducted through a primary qualitative survey – Focus Group Discussions (FGD) being the main approach.

**Target Groups:** The study focuses on three categories of women:

1. Those who work where they would like to work and travel to work using public transport (including walking/cycling), plus 1 or 2 who work from home.
2. Those who work but not where they would like to work and travel to work using public transport (including walking/cycling), plus 1 or 2 who work from home.
3. Those who do not work and for whom safety and mobility issues are key reasons for not working.

**Research Method:** The research method is designed using a three-step approach:

1. **City Selection:** Four cities were selected for the study – Delhi, Bengaluru, Mumbai, and Guwahati
2. **Community Selection:** 2-3 low-income neighborhoods/communities were selected within each city, focusing on the established annual household income criteria.
3. **FGD Composition:** A pre-screening survey was conducted of 163 women from selected communities to arrive at the final FGD composition of 80 women across 4 cities, and 3 working categories. **10 FGDs were conducted across four cities, 3 each in Bengaluru and Delhi and 2 each in Mumbai and Guwahati, between 14 – 29 November 2024.**

**FGD Question Schedule**: The schedule follows a specific line of inquiry to identify:

1. Non-negotiable infrastructure elements impacting women's workforce participation choices.
2. Negotiable yet essential elements.
3. Elements that are not essential.

# Findings

## KEY REASONS FOR NOT WORKING

163 respondents participated in the pre-screener, of which 64 participants were unemployed. Reasons for not working were recorded from these 64 participants. The survey revealed that the key reason for not working was lack of transport options to reach work. Safety is also a key factor impeding women to participate in the workforce. In contrast, the widely accepted barriers to workforce participation such as domestic and caregiving responsibilities ranked low in priority.

**Lack of transport options and is a key impediment.**

**45** participants

find it hard to reach work in terms of transport/ mobility.

**23** participants

find it too long to reach work.

**Location of work is the third most popular reason for not working.**

**42** participants

find it not safe to reach work.

**Safety is also a key impediment to women's workforce participation.**

**3** participants

find it hard to work because of domestic responsibilities.

## FACTORS INFLUENCING WOMEN'S TRAVEL NEEDS AND PATTERNS.

The FGD findings capture the influence of variables such as journey duration, time, part of the journey etc. impacted their mobility needs and patterns. Findings are given below –

**100% participants**

reported that their responses do not change depending on **time of travel, but urgency increases at night.**

reported that their responses do not change depending on **trip chaining or running errands.**

reported that their responses do not change depending on which **stage of the trip** they are in.

reported that their their priorities would increase if they were **pregnant, in a wheelchair.**

**Activities women do during a journey to/ from work**

Visiting friends/ family

Dropping children to school/ coaching

Shopping groceries

Going to places of worship

**1-1.5 km**

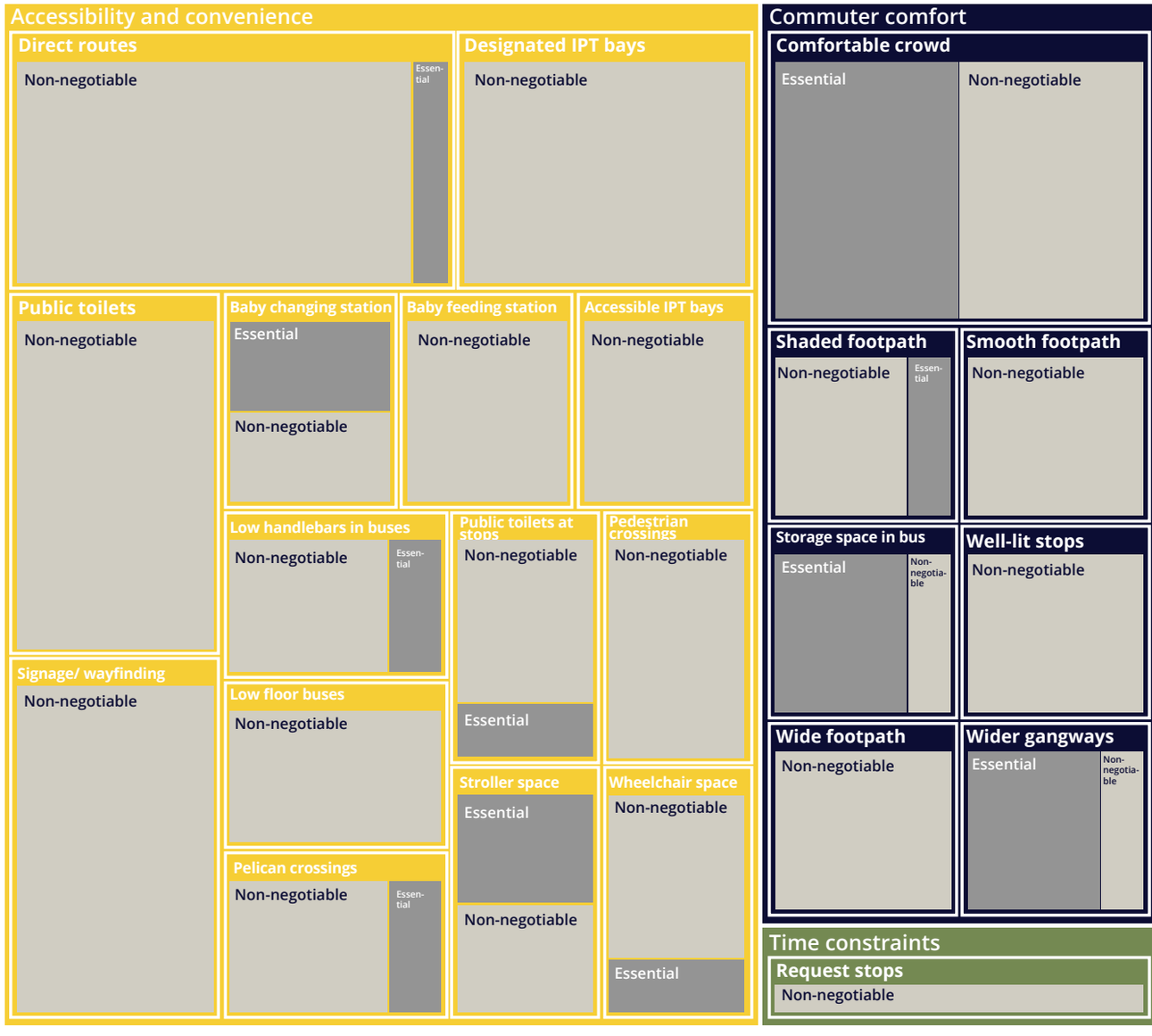
**distance women are willing to detour to run errands and chores.**

Women are willing to travel 1 km to access Anganwadis, schools, on the way to/ from work.

Women are willing to travel 1-1.5km to shop for groceries/ essentials on the way to/ from work.

## NON-NEGOTIABLE, ESSENTIAL, AND NON-ESSENTIAL INFRASTRUCTURE.

The graph below shows the frequency of demand for mobility infrastructure elements, classified according to non-negotiable, essential, and non-essential categories based on participant responses across 4 cities. The elements are further classified as per the five thematic areas.

## Key takeaways

The findings of the survey frame the way forward to crucially consider mobility infrastructure as an enabler for women's workforce participation in India. It charts the path for critical examination of labour force surveys, existing policies, schemes, and guidelines on design and implementation of mobility infrastructure and amenities.

**Takeaway1: Infrastructure has a strong role to play in women's workforce participation choices in Indian cities.**

70% of unemployed women (45 out of 64 respondents) selected lack of accessible transport options as they key reason to not participate in the workforce. 66% women (42 out of 64 respondents) cited lack of safety as the key reason to not work.

**Recommendation 1:** Include infrastructure as a key parameter in Periodic Labour Force Surveys.

**Takeaway2: Good quality, gender-intentional walking infrastructure is crucial to women's workforce participation decisions.**

While the lack of quality walking infrastructure does not directly inhibit women from workforce participation, it impacts safety and time constraints for working women, especially when accompanied by children and elderly.

**Recommendation 2:** Update national level guidelines on urban roads such as Indian Road Congress guidelines to include gender-intentional design standards for footpaths aimed at enabling women's workforce participation.

**Recommendation 3:** Mandate design, implementation, and maintenance guidelines on gender-intentional urban roads across states and cities.

**Takeaway 3: Designing for accessibility and commuter comfort is imperative to ensure women participation and remain in the workforce.**

Well designed wayfinding and signages have the potential to significantly reduce travel time. Similarly, designing for commuter comfort such as providing wider gangways in buses, lower handlebars, low-floor buses ensure women are able to travel comfortably for longer distances.

**Recommendation 4:** Comprehensive surveys to capture the anthropomorphic and comfort needs for women across different demographic and socio-economic profiles.

**Takeaway 4: Public transport connectivity is key to ensure women's workforce participation. Free bus schemes work, but first and last mile connectivity is crucial.**

Working women from all four cities have reported an average of 1 hour and 30 minutes as viable traveling time. For journeys beyond this, working women from Bengaluru consider changing jobs, even accepting lower salaries to reduce commute time.

**Recommendation 5:** Plan for comprehensive end-to-end connectivity, and amp fleet size.

**Takeaway 5: Safety is non-negotiable for all women; especially when considering participating in the workforce.**

42 out of 64 unemployed women identified safety as the key reason for not working. This research critically highlights how lack of safety can impede women in participating in the workforce. It also gives actionable inputs on design and implementation of infrastructure to ensure safety.

**Recommendation 6:** Set planning and design standards to ensure safety from the perspective of women in labourforce.

**Recommendation 7:** Ensure compliance of schemes and policies on women's safety.

Source: Unsplash

# 1

# INTRODUCTION

# 1.1 | WOMEN IN WORKFORCE

Women and girls make up nearly 50% of India's population, but contribute to only 17% of the national GDP.[1] Women's workforce participation rates in India have been significantly low across decades. Over the past five years (2018-19 to 2023-24), the rural female labour force participation rate for people aged 15–59 increased by 22.9 percentage points, while the urban female Labour Force Participation Rate (LFPR) rose by only 8.7 percentage points.[2] In 2024, the urban female LFPR was just 31.2%, compared to 81.9% for males in the same age group. In some states like Uttar Pradesh, the urban LFPR drops to a mere 13.6%.[3]

However, when it comes to identifying barriers to women's participation in the workforce, the Female Labour Utilisation Report by the Ministry of Labour and Employment, drawing on data from the Periodic Labour Force Survey (PLFS), highlights social and cultural norms and caregiving responsibilities as the primary impediments. As per the report, 44.5% of women are not in the workforce due to childcare or household responsibilities, and 3.4% due to social reasons. An additional 4% do not work because their job is not at a convenient location.[4]

To counter this, the union and multiple state governments have introduced an array of schemes aimed at supporting women's caregiving responsibilities, and increasing women's perception of safety in the public space (considered another key barrier towards women's access and workforce participation). Some of these are the Working Women Hostel Scheme, One Stop Centres, Anganwadi Services Scheme etc. However, these have not resulted in a proportionate increase in workforce participation, especially for urban women, as evidenced by PLFS reports.

**This study hypothesizes that barriers in workforce participation go beyond caregiving, domestic, and social reasons.** The study explores the role of infrastructure, especially mobility infrastructure, in impeding or enabling women's workforce participation.

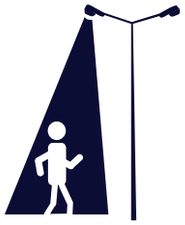
Multiple studies point out that women's travel needs and patterns vary significantly from other users. Women's travel patterns are impacted by safety, caregiving responsibilities resulting in trip chaining, and travel distances.[5] Women's experience of cities is radically different from men's due to lack of safety in public spaces. The threat or experience of sexual violence when commuting in Indian cities deters women from commuting long distances.[6] At the same time, majority of women's labour force in the country is heavily skewed towards the self-employment and casual labour and their destinations are likely to not be concentrated in the central business district but dispersed across the city.[7] This has clear implications in women's ability to pay to longer and safer transport choices and routes, potentially leaving out a significant portion of the workforce to choose between being safe and being employed.

However, there is no specific study clearly linking women's travel needs and patterns to their workforce participation decisions.

**This study explores the linkages between various aspects mobility infrastructure and women's workforce participation in Indian cities, through primary surveys.**

It specifically explores aspects of mobility infrastructure under the following themes –

1 *World Bank. Women in India's Economic Growth. 2018*
2 *MoSPI. Periodic Labour Force Report. 2018-2024*
3 *MoSPI. Periodic Labour Force Report. 2023-2024*
4 *Ministry of Labour and Employment, Female Labour Utilisation Report, 2021-22*
5 *ITDP. Women and Transport in Indian Cities. 2017*
6 *World Bank. 2022*
7 *Centre for Sustainable Employment. State of Working in India. 2023*



**1**

**Safety and security**

*Ensuring women's safety through surveillance, lighting, policing, and secure infrastructure.*

**2**

**Accessibility and convenience**

*Providing accessible and convenient transport options with clear signage and seamless connections.*

**3**

**Commuter comfort**

*Enhancing comfort with shaded footpaths, continuous, levelled walking infra, well-lit stops, and basic facilities.*

**4**

**Time constraints**

*Reducing travel time with efficient routes, frequent services, and integrated transport systems.*

**5**

**Hygiene and maintenance**

*Maintaining cleanliness and hygiene with well-maintained, accessible public toilets and clean streets.*

*Figure 01. Thematic areas under mobility infrastructure explored in the study.*





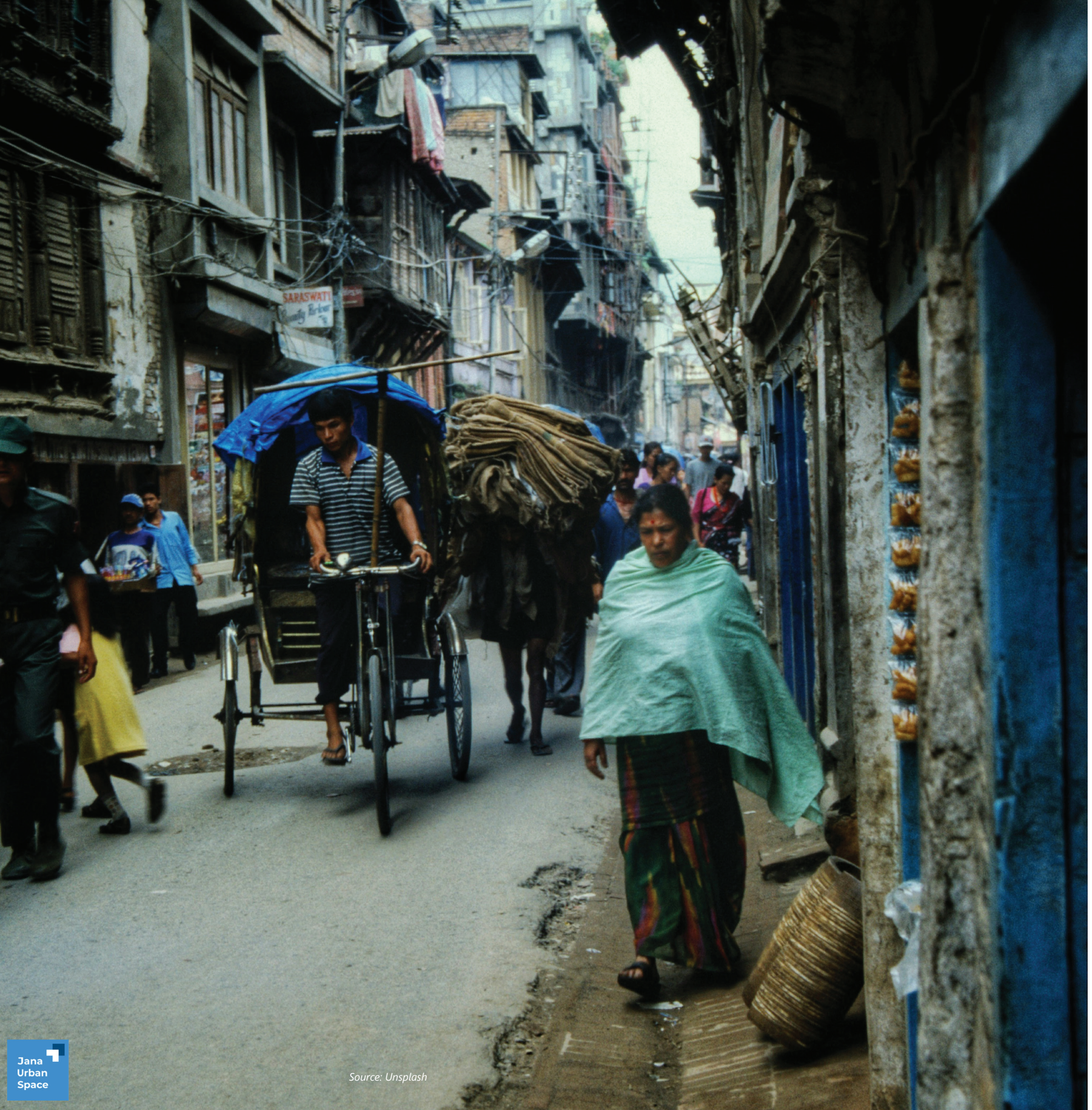
# 1.2 | OBJECTIVES, OUTPUTS AND OUTCOMES

The study examines the link between mobility infrastructure and women's workforce participation in India, focusing on the urban poor. By identifying and addressing barriers faced by this segment, the study aims to identify solutions that benefit all income groups.

The objectives, outputs, and outcomes of the study are as below –

| | |
|---|---|
| **OBJECTIVES** | 1. To establish if there is a relationship between availability, accessibility and quality of infrastructure related to mobility and participation of women (in lower income communities) in the workforce.<br>2. To understand the extent to which design and implementation of public infrastructure have a role to play in women's workforce participation.<br>3. To influence design standards, manuals, guidelines, toolkits on mobility/ public space design to be gender inclusive for workforce participation |
| **OUTPUTS** | 1. Primary survey findings on non-negotiable and negotiable infrastructure design features that influence women's workforce participation in Indian cities.<br>1. Key takeaways and recommendations enabling design and implementation of gender intentional mobility infrastructure that enables higher participation of women in the workforce. |
| **OUTCOMES** | 1. Public infrastructure is planned and designed to enable women's participation in the workforce |

*Table 01. Objectives, output, and outcome of the study*



Source: Unsplash

# 2

# LITERATURE REVIEW

# 2.1 | OVERVIEW

Women's travel patterns and mobility concerns has been a key topic of research since the last few decades. This study reviews existing literature on women's travel needs, and design recommendations for the same, to further arrive at gaps in the current ecosystem.

Two specific types of literature was surveyed –

- General guidelines of gender responsive planning and design
- Specific design standards on gender-based planning and mobility infrastructure design

## 2.1.1 Review of gender guidelines

To get a comprehensive understanding of the landscape, we review both India-specific as well as global studies on gender. Section *6.3 | | on page 90* gives the full list of documents.

*India-specific guidelines*

| | | |
|---|---|---|
| **1** | *World Bank, 2022* | Toolkit for Enabling Gender Responsive Urban Mobility and Public Spaces - Vol. 1 |
| **2** | *World Bank, 2022* | Toolkit for Enabling Gender Responsive Urban Mobility and Public Spaces - Vol. 2 |
| **3** | *Safetipin, 2022* | She Rises |
| **4** | *ITDP & Safetipin, 2018* | Women and Transport in Indian Cities |
| **5** | *Safetipin, 2016* | Safety Assessment - Delhi |

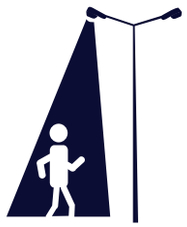
*Global guidelines*

| | | |
|---|---|---|
| **6** | *ADB, 2023* | Enhancing gender equality in infrastructure development |
| **7** | *UN-Habitat, 2022* | Her City |
| **8** | *OECD, 2021* | Selected stocktaking of good practices for inclusion of women in infrastructure |
| **9** | *UNOPS, 2020* | Infrastructure for gender equality and the empowerment of women |

*Table 02. List of gender-related guidelines reviewed*

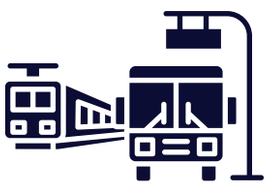
### What do they reveal?

An overview of literature and surveys globally and in India shows some clear patterns of travel of women. These patterns reinforce the themes of safety and security, accessibility and convenience, commuter comfort, and time constraints. Women tend to –



**1** ***Safety and security***

*Women pay additional travel costs for trip-chaining, safety and other reasons known as 'Pink Tax'.*



**2** ***Accessibility and convenience***

*Women use public transportation and non motorised transit as primary modes of transport.*

*Women travel during off-peak hours*

**3**

***Commuter comfort***

*Women travel with bigger luggages.*

*Women travel with dependents*

**4**

***Time constraints***

*Women travel shorter distances and are restricted to specific geographic areas*

*Figure 02. Key patterns from review of gender guidelines and toolkits*

The nature of inputs varied across case studies, indicators and recommendations.

1. Of the 5 India- specific guidelines/ toolkits/ policy briefs, 2 focus on policy-making and implementation process for gender-responsive urban mobility and public spaces. 2 focus on infrastructure design and service delivery, of which 1 document provides clear indicators and design recommendations for **gender responsive mobility infrastructure**. 1 document provides a participatory tool for assessing perception of **gender safety in public spaces**.
2. Of the 4 global guidelines, all focus on incorporating **gender inclusivity and gender-focused decision making** in the design and implementation of infrastructure.
3. Of all 9 documents reviewed, all focus on **gender inclusivity in the design and implementation of infrastructure** and meeting the current needs of women in terms of mobility and safety. No guidelines specifically focus on women's workforce participation, although 4 out of the 9 (3 from global and 1 from India-specific) explore the role of infrastructure in infrastructure in women empowerment, and employment opportunities.
4. **No document specifically focuses on the barriers posed by infrastructure in enabling workforce participation.**
5. No document provides clear instructions for design of infrastructure with a key focus on enabling workforce participation.

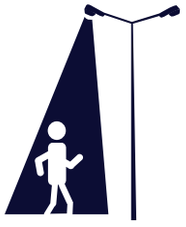
## 2.1.2 Review of design and planning standards

Based on the data procured gender inclusive design guidelines and toolkits, we chart and examine existing design recommendations and standards provided in national level guidelines such as URDPFI guidelines, National Building Code and IRC guidelines, as well as sub-national design standards and guidelines such as Tender S.U.R.E. (Specifications for Urban Roads Rejuvenation) Standards for Urban Roads, and ITDP's Complete Street Guidelines to map the critical gaps and overlaps.

| | | |
|---|---|---|
| | *National level standards* | |
| **1** | *Bureau of Indian Standards* | National Building Code |
| **2** | *Ministry of Urban Development* | Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines |
| | *State/ City level design standards and guidelines* | |
| **3** | *Jana Urban Space Foundation* | Tender S.U.R.E. (Standards for Urban Roads Execution) |
| **4** | *ITDP 2018* | Complete Streets design guidelines |

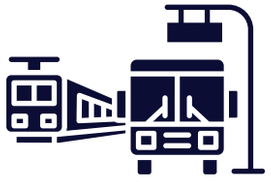
*Table 03. List of design standards and guidelines reviewed*

## What standards currently exist?



**1 Safety and security**

1. *Minimum width and frequency of pedestrian crossings*
2. *Provision and design of traffic calming measures*
3. *Maximum distance between street lights*
4. *Discourage dead and inactive zones in public spaces*



**2 Accessibility and convenience**

1. *Minimum distance between bus stops*
2. *Minimum distance between auto bays*

**3 Commuter comfort**

1. *Minimum width of footpath for pedestrian comfort*
2. *Floor heights for buses*

**4 Time constraints**

1. *Number of anganwadis serving a given population*

**5 Hygiene and maintenance**

1. *Number of public toilets in a given radius*

*Figure 03. List of existing recommendations attuned to gender inclusivity in streets and public spaces.*

### 2.1.3 Gaps in current recommendations and standards

While there are guides, there are no mandates on gender-specific planning. The gender-specific policy/ planning guides study women's travel patterns and needs. They synthesise broad frameworks that make mobility infrastructure safer and more inclusive of women. However, they do not provide design instruction that would aid women's labour force participation.

Standards and guides on general planning and design of mobility/ public infrastructure are largely gender-blind. Even where such recommendations exist—such as in the gender-sensitive planning chapter of URDPFI guidelines—they tend to be high-level recommendations that are not directly implementable.

For example, gender sensitive planning recommendations for footpaths says – "Walkable blocks should be promoted by limiting block sizes, providing direct, shortest non-motorized transport routes or pedestrian public right of ways." Here, they do not define the size of walkable blocks as distance/ time, nor does it suggest important elements like pedestrian crossings/ pelican crossing or barricades that could make these blocks more accessible for women.

Despite the available evidence, neither the guides nor the standards focus on using mobility infrastructure to support women's labour force participation, nor do they provide clear design instructions for doing so. The following research aims to gather qualitative inputs from women on the role of infrastructure in their decisions to go to work. It then validates existing literature against the feedback to recommend specific focus areas and instructions to fill key gaps.

| | Relevant standards current available | Additional details needed |
|---|---|---|
| 1 Safety and security | 1. Minimum width and frequency of pedestrian crossings<br>2. Provision and design of traffic calming measures<br>3. Maximum distance between street lights<br>4. Discourage dead and inactive zones in public spaces | 1. Lighting and visibility of stations and stops<br>2. Specifications for street lighting to avoid overly-lit spaces and glares<br>3. Land use requirements and standards for property walls to ensure eyes on the streets |
| 2 Accessibility and convenience | 1. Minimum distance between bus stops<br>2. Minimum distance between auto bays | 1. Design standards for wayfinding and signage attuned to working women<br>2. Design standards for low floor buses, access ramps, wider gangways, stroller space etc. |
| 3 Commuter comfort | 1. Minimum width of footpath for pedestrian comfort<br>2. Floor heights for buses | 1. Walking infrastructure specifications for pregnant women, women with children.<br>2. Specifications for shaded footpath, avoiding dark spots. |
| 4 Time constraints | 1. Number of anganwadis serving a given population | 1. Max. distance of childcare/ domestic need amenities from popular work routes |
| 5 Hygiene and maintenance | 1. Number of public toilets in a given radius | 1. Design standards and recommendations for design and maintaining public toilets. |

*Figure 04. Additional standards and specifications required to enable gender intention design of streets and public spaces*



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Source: Unsplash

# 3

# METHODOLOGY

## 3.1 | OVERVIEW

The study is conducted through a primary qualitative survey – Focus Group Discussions (FGD) being the main approach.

Our study focuses on urban women from low-income communities, with an average annual household income of less than 3,00,000 INR. We specifically look at women across three categories –

1. Those who work (where they would like to work) and travel to work (using public transport for some part of their journey – including walking/cycling) + 1 or 2 who work from home.
2. Those who work (but not where they would like to work) and travel to work (using public transport for some part of their journey – incl. walking/cycling) + 1 or 2 who work from home.
3. Those who do not work and for whom safety (during travel) and mobility issues/challenges are key reasons for not working.

The research method is designed using a three-step approach –

1. City selection – In order to get a pan-India representation, 4 cities were selected for the study, one from each geographic region (North/ South/ East/ West).
2. Community selection – 2-3 low income neighbourhoods/ communities were selected within each selected city to focus on the annual household income established.
3. FGD composition – Finally, based on the city and community selection, a pre-screening survey was conducted for women from selected communities to finalize the FGD composition.
4. FGD question schedule - Follows a specific line of inquiry to establish the non-negotiable, negotiable yet essential, and not essential features that impact women's workforce participation choices.

Details of each method are provided further –





## 3.2 | CITY SELECTION

1-2 major urban centres (in terms of population size) were assessed across the 18 Indian states and Union Territories, with respect to –

1. Existing urban female working population – percentage of working women within the age group of 15-59 years were assessed.
2. Availability of schemes and policies across the areas of mobility, care economy, and safety – a total of 15 schemes and policies were reviewed, as shown in *Figure 05 | on page 33*.

**Mobility-related schemes**

| Schemes | Indicator |
|---|---|
| *Public transport safety schemes – free bus/ bus marshal* | *Availability* |

**Care economy related schemes**

| Schemes | Indicator |
|---|---|
| *Swachh Bharat Mission – SLWM* | *No. of urban women per LWM operational centre* |
| | *No. of urban women per SWM operational centre* |
| *Ayushman Bharat Health and Wellness Centres* | *No. of operational centres* |
| *Sakhi Niwas – working women hostels scheme* | *No. of urban women per operational SN* |
| *One-stop centres* | *No. of urban women per operational OSC* |
| *Anganwadi service scheme* | *No. of urban women per operational ASSP* |
| *Rajiv Gandhi crèche scheme* | *No. of urban women per operational RGCSP* |
| *E-Shram (portal for unorganized workers)* | *Total women registrations in non-agricultural sectors in lakhs, CITIES* |

**Safety/ visibility-related systems**

| Schemes | Indicator |
|---|---|
| *Female police presence* | *Women police/ 10,000 women* |
| *Community policing* | *States/ cities having unique schemes for women safety* |
| *Safe city project - Nirbhaya fund* | *Availability* |
| *Crime stats* | *Crime rates against women* |
| *Women Help Line (Mission Shakti)* | *No. of complaints registered per working women* |
| *Street lighting policy (UJALA & SLNP)* | *% coverage/ unit area* |

*Figure 05. Schemes and policies on mobility, care economy, and women's safety.*

## 3.3 | COMMUNITY SELECTION

A scoring metric was developed, to rank the best performing and worst performing cities. Taking values for urban India as the baseline, a positive 1 score is given for city/state-level values that are above the baseline and negative 1 is given for values below the baseline value. The final city scores are a sum of these positive and negative scores across 16 selection parameters. City scores ranged between -6 to +6.

Out of the 26 cities assessed, the selected 4 cities are Bengaluru, Delhi, Mumbai, and Guwahati, as shown in *Figure 06 | on page 34*.

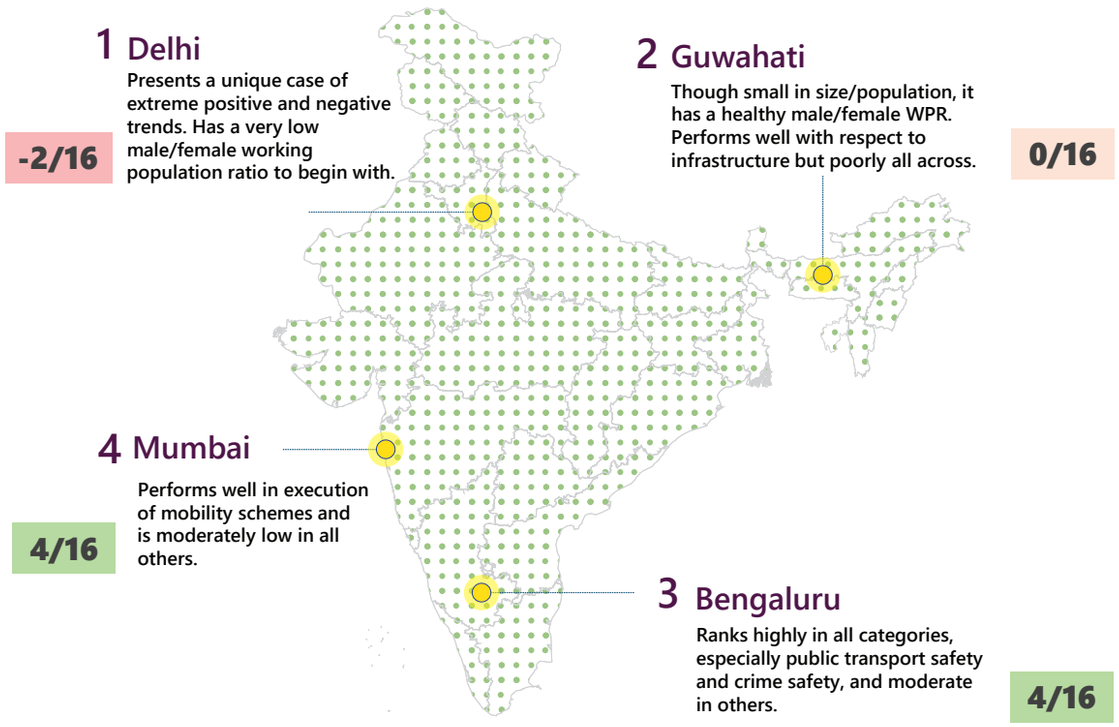



*Figure 06. List of selected cities for conducting FGDs.*

2-3 communities were selected in each city, based on the following criteria –

1. Income – based on percentage of households with less than 3,00,000 INR average annual household income and/or percentage of slum population.
2. Coverage of road network and public transport network – based on open source mapping datasets.
3. Street lighting – based on ward-level ratings and reports procured through secondary data.
4. Crime reports – based on number of non-domestic gendered-crimes reported.

Average annual household income and availability and quality of mobility infrastructure were considered as primary selection criteria; gendered crime data, where applicable, is considered as an additional criterion.

Selected communities across the 4 cities were –

| | City | Community | | |
|---|---|---|---|---|
| 1 | *Delhi* | Nazafgarh / Delhi Cantonment | Shabad Dairy, Bawana | Wazirabad, Timarpur |
| 2 | *Bengaluru* | Binnypet | Nallurahalli, Whitefield | Peenya Industrial area |
| 3 | *Mumbai* | Malad | Saki Naka | |
| 4 | *Guwahati* | Kalapahar | Bhetapara | Amingaon |

*Table 04. List of selected communities for pre-screening final FGD participants*

## 3.4 | FGD COMPOSITION

The study aimed to conduct 10 FGDs across the four cities, 3 each in Bengaluru and Delhi and 2 each in Mumbai and Guwahati. A quantitative pre-screener survey was conducted across the 10 selected neighbourhood across in 4 cities. A total of 163 women participated in the pre-screener, across the three categories identified in *Section 3.1 | on page 32*.

The final Focus Group Discussion participants were selected using the following criteria, to ensure a diverse mix of circumstances to the largest extent possible –

1. Participant distribution across the selected locations.
2. Mixed age groups.
3. Work arrangements (primarily go to work with some representation of those working from home) - for working women groups only.
4. Those who indicated mobility/safety issues in their commutes/ choices to work etc.
5. Inclusion of participants who do trip chaining in their journeys to/from work (either child/elderly care or for other reasons).
6. Women with/without children.
7. Marital status - a mix of married and unmarried women.
8. A mix of distances travelled to work - for working women groups only.
9. A mix of transport options used to travel to work - for working women groups only.
10. A mix of vehicle ownership.

A summary of the achieved sample is presented in *Table 05 | on page 37*.

| City | Dates | Locations within the city | Languages | Category 1: working where they would like to | Category 2: working but not where they like to | Category 3: not working |
|---|---|---|---|---|---|---|
| **Bengaluru** | 14, 21, 29 Nov 2024 | 1. Binnypet (old)<br>2. Nallurahalli, Whitefield (old)<br>3. Peenya Industrial area (new) | Kannada, English | 8 women | 8 women | 8 women |
| **Delhi** | 25-26th Nov 2024 | 1. Nazafgarh / Delhi Cantoment (O)<br>2. Shabad Dairy, Bawana (N)<br>3. Wazirabad, Timarpur (N) | Hindi | 8 women | 8 women | 8 women |
| **Guwahati** | 27th Nov 2024 | 1. Kala Pahar,<br>2. Bhetapara (N)<br>3. Amingaon | Assamese, Hindi | A mix of Category 1 (4 women) + Category 2 (4 women) | | 8 women |
| **Mumbai** | 24th Nov 2024 | 1. Saki Naka<br>2. Malad | Hindi | A mix of Category 1 (4 women) + Category 2 (4 women) | | 8 women |
| 10 FGDs with a total of 80 women across 4 cities, and 3 working categories between 14th - 29th November 2024 | | | | | | |

*Table 05. Summary of the achieved sample for final FGD participations based on pre-screener survey.*

# 3.5 | FGD SURVEY DESIGN

The survey question schedule follows the thematic areas identified in this study. Across thematic area, key infrastructure elements are identified that can be largely classified under four sections –

1. Walking infrastructure
2. Cycling infrastructure
3. Intermediate public transport
4. Public transport - buses, metro, trains

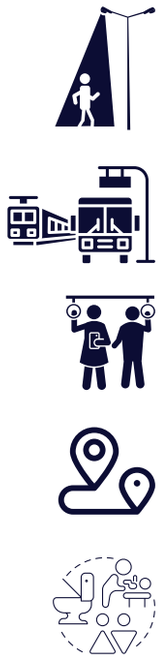
The four infrastructure groups are further classified into specific elements and scenarios that comprehensively cover all infrastructure parameters that can potentially influence women's workforce participation, as shown in *Table 06*.

The line of enquiry proposed in the survey aims to establish –

1. What is a non-negotiable feature in mobility infrastructure that is an absolutely necessity to enable women's workforce participation?
2. What is an essential feature that might not be an absolute necessity, but is considered important by a significant percentage of women in enabling workforce participation?
3. What in a non-essential feature, i.e. features identified by authors but considered not as impactful by participants in enabling or impeding workforce participation?

*Table 06 | on page 38* outlines the questionnaire design and its correlation with the thematic areas of mobility, care, and safety.

Refer *Section 6.4 | on page 96* for survey questionnaire.



| Infrastructure categories | Usage scenarios | Outcomes |
|---|---|---|
| *Safety and security*<br>*Accessibility and convenience*<br>*Commuter comfort*<br>*Time constraints*<br>*Hygiene and maintenance* | 1. Current dependency<br>2. Journey part<br>3. Journey time of day<br>4. Journey duration | 1. Overall infrastructure usage patterns for working and non-working women<br>2. Difference in experience based on time of day, journey part, or journey duration |
| Walking infrastructure<br>Cycling infrastructure<br>Intermediate public transport<br>Bus/ metro/ train | 1. Infrastructure specific –<br>i. General features<br>ii. At station/ stop<br>iii. Route<br>iv. Parking/ storage of transport item | 1. List of non-negotiable, essential, and non-essential features based on point of location of infrastructure/ usage patterns |
| | 1. Hours of service for specific infrastructure<br>2. Frequency of service for specific infrastructure<br>3. Influence of infrastructure schemes | 1. Influence of running times/ hours and frequency of service on workforce participation decisions, especially for public transport |

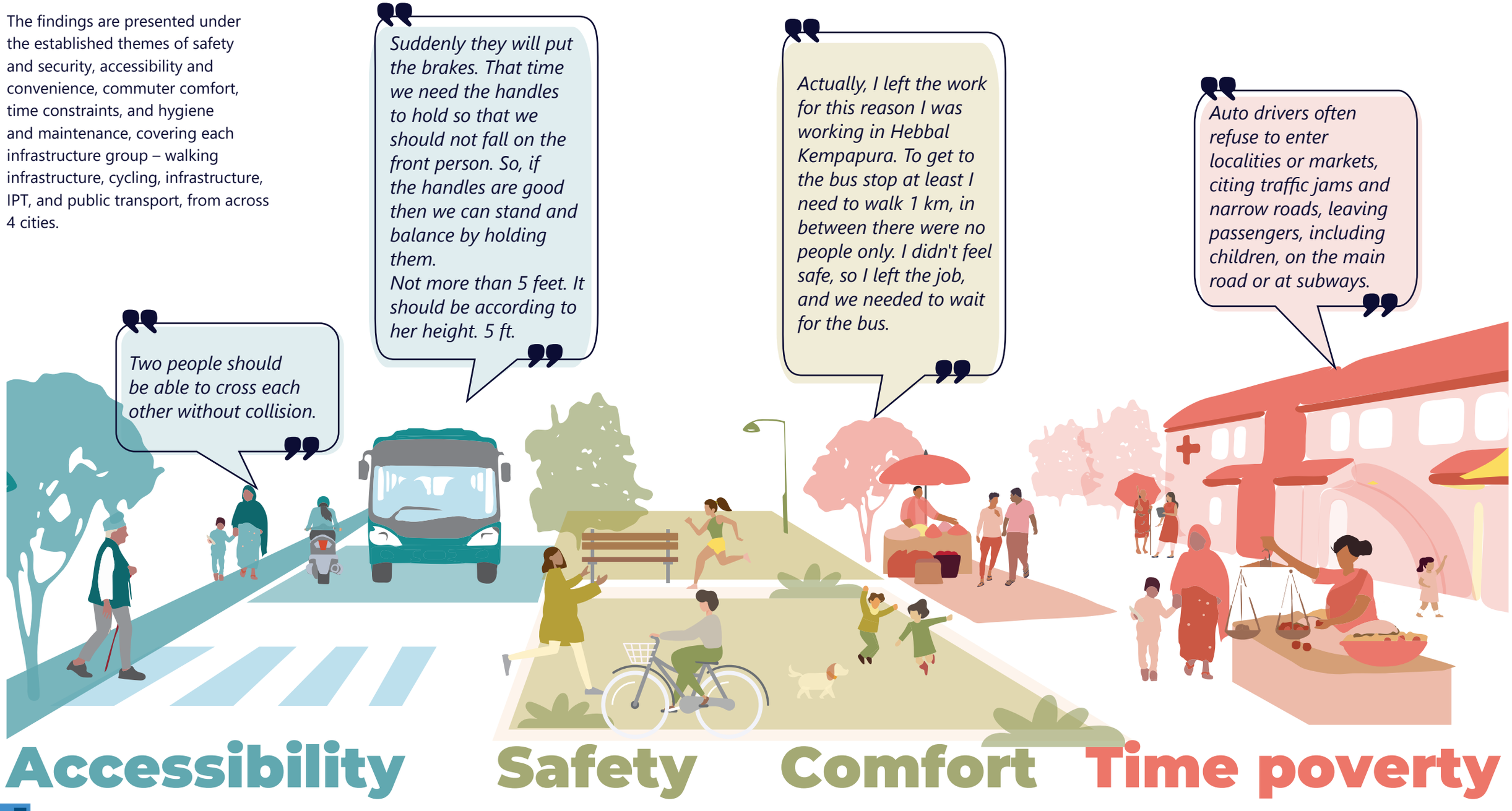
*Table 06. Framework for survey questionnaire design*


# 4

# FINDINGS

# 4.1 | OVERVIEW

The findings are presented under the established themes of safety and security, accessibility and convenience, commuter comfort, time constraints, and hygiene and maintenance, covering each infrastructure group – walking infrastructure, cycling, infrastructure, IPT, and public transport, from across 4 cities.



# 4.2 | KEY REASONS FOR NOT WORKING

The focused group discussions establish the extent to which each infrastructure group across the five themes influence urban women's decision to work.

The first line of investigation, however, explores if infrastructure has at all a role to play in impeding or enabling women's workforce participation in Indian cities. We consider the pre-screener dataset to arrive at this finding, since mobility constraints were a selection parameter for the final participants. 163 respondents participated in the pre-screener, of which 64 participants were unemployed.

Reasons for not working were recorded from these 64 participants. The survey revealed that the key reason for not working was lack of transport options to reach work. Safety is also a key factor impeding women to participate in the workforce.

In contrast, the widely accepted barriers to workforce participation such as domestic and caregiving responsibilities ranked low in priority.

**Lack of transport options and is a key impediment.**

**45** participants

find it hard to reach work in terms of transport/ mobility.

**23** participants

find it too long to reach work.

**Location of work is the third most popular reason for not working.**

**42** participants

find it not safe to reach work.

**Safety is also a key impediment to women's workforce participation.**

**3** participants

find it hard to work because of domestic responsibilities.

**3** participants

do not want to work

**3** participants

do not work because they have been rejected from similar jobs

A comprehensive list of all reasons can be found in *Section 6.5 | on page 99.*

# 4.3 | INFRASTRUCTURE PRIORITISATION FOR WORKFORCE PARTICIPATION

*Figure 07 | on page 46* highlights the frequency of demand for mobility infrastructure elements, classified according to necessity based on participant responses across 4 cities.


*Figure 07. Weighted necessity of infrastructure elements in enabling women's workforce participation, classified as per thematic areas.*

## 4.3.1 Footpath infrastructure

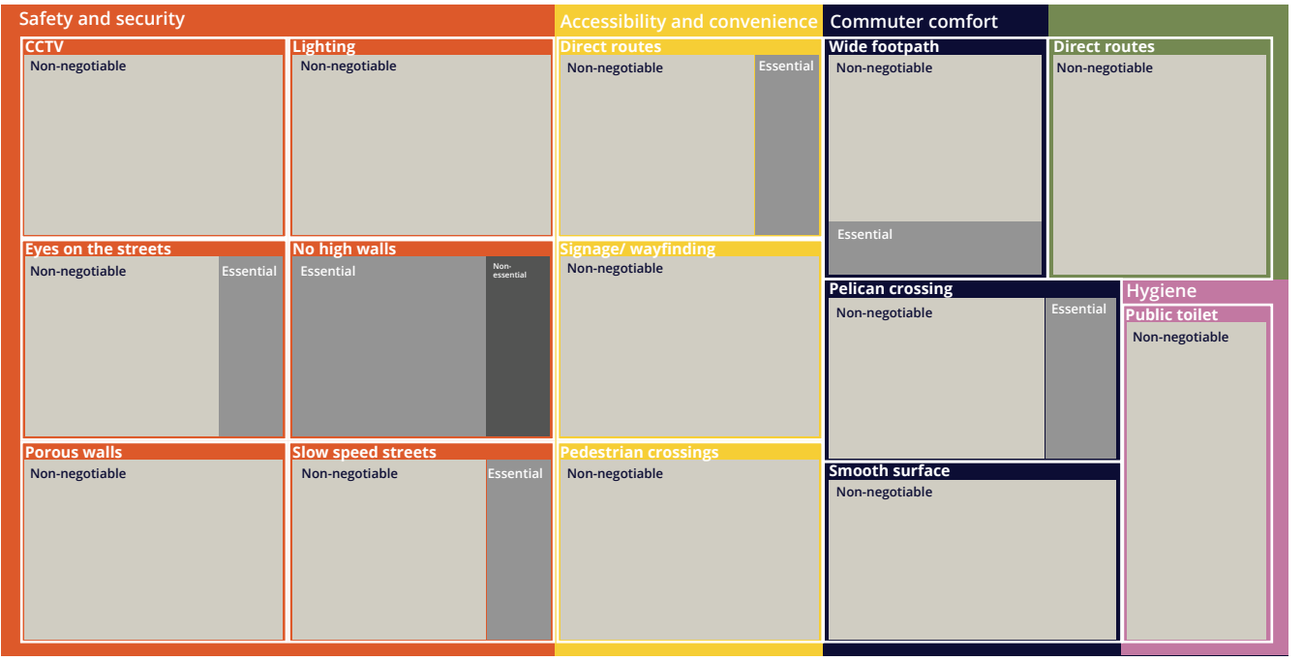



*Figure 08. List of non-negotiable, essential, and non-essential elements under footpath infrastructure.*

Most participants reported that the existing footpath quality is very poor, with broken surfaces, lack of proper barricades, and no dividers between the footpath and the road. In many areas, footpaths are occupied by street vendors or shop owners, and sometimes even used by two-wheelers. These conditions significantly impact women's mobility, causing delays and making them feel unsafe due to risks of accidents and crime.

Details of non-negotiable footpath infrastructure as prioritised are further given –

### Width of path should be suitable for 2 people

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Footpaths at least 1.5-2 meters wide for multiple pedestrians. |
| 2 | *Bengaluru* | Minimum width of 1.5 to 2 meters to allow 2-3 people to walk side by side without collisions. |
| 3 | *Mumbai* | Minimum width of 1.5 to 2 meters, with wider paths (2.5-3 meters) in busy areas, especially near schools, markets, and transport hubs. |
| 4 | *Guwahati* | Footpaths wide enough for 3-4 people to walk side by side comfortably |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Suggested a minimum width of 2 meters and barricades between roads and footpaths for safety. |
| *Non-working women* | Preferred footpaths allowing 3-4 people, clean and well-maintained. |

### Signage/ Wayfinding

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Signs at intervals of 200-500 meters providing directions and public transport information. Bright, well-lit boards with large, readable fonts in Hindi and English. |
| 2 | *Bengaluru* | Well-placed and visible signage every 500 meters, indicating routes, landmarks, and nearby facilities. Directions in both Hindi and English to cater to diverse users. |
| 3 | *Mumbai* | Easy-to-read signs at regular intervals, especially in high-traffic areas (e.g., metro stations, bus terminals, shopping complexes). Dual-language signage in local languages and English for diverse users. |
| 4 | *Guwahati* | Signs in Assamese, Hindi, and English to assist diverse commuters. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Signage should be placed at eye level for easy visibility and include clear, legible symbols. These signs help plan travel, save time, and avoid routes under maintenance. |
| *Non-working women* | Suggested adding symbols alongside written information for better understanding. |

## Shaded footpath

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Shaded rest areas every 500 meters for protection from extreme weather. |
| 2 | *Bengaluru* | Shaded rest spots every 500 meters, with small seating areas for 10-15 people. |
| 3 | *Mumbai* | Tree canopies or shade structures at intervals (200-300 meters) with seating and shelter every 500 meters |
| 4 | *Guwahati* | Trees planted regularly, with benches or shaded areas every 2-3 km for longer commutes. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Shaded spots at key points (e.g., start/end of roads) or every ½-1 km in busy areas. |
| *Non-working women* | Suggested shaded footpaths with seating arrangements along frequently used routes. |

## Smooth walking surface

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Footpaths free of potholes, cracks, and uneven surfaces. |
| 2 | *Bengaluru* | Durable materials like stone or tiles to absorb water and reduce slipperiness. |
| 3 | *Mumbai* | Smooth, non-slip surfaces maintained regularly to prevent hazards. |
| 4 | *Guwahati* | Footpaths free of potholes, mud, and swampy areas for safe year-round use. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working and non working women* | Emphasized non-slip, pothole-free footpaths to prevent injuries and the need for timely maintenance. |

## CCTV

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Cameras placed at intervals of 200-500 meters, covering all blind spots, with high-quality 360-degree rotation and audio-video recording capabilities. |
| 2 | *Bengaluru* | Functional cameras installed on footpaths to deter harassment or crime. |
| 3 | *Mumbai* | Well-lit streets complemented by active and functional CCTV cameras. |
| 4 | *Guwahati* | Functional, actively monitored cameras in buses, at bus stops, and on footpaths, including 360-degree cameras at entry and exit points, to deter harassment and ensure accountability. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | CCTV cameras installed at 200–500-meter intervals on footpaths were identified as a non-negotiable feature. |
| *Non-working women* | CCTV cameras in residential areas, near markets, and public spaces are crucial to ensure personal security. |

## Street lights

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Bright, white LED lights installed every 200-500 meters to eliminate dark patches and ensure clear visibility at night. |
| 2 | *Bengaluru* | Properly spaced and functional streetlights, especially for early mornings and evenings, with adequate lighting every 100 meters (or as feasible) to ensure visibility and safety. |
| 3 | *Mumbai* | Bright, white LED streetlights installed at regular intervals (every 200-500 meters), ensuring visibility, particularly during nighttime or early morning commutes. |
| 4 | *Guwahati* | Strategically placed lights every 200 meters on footpaths, IPT stops, and bus stations, with a preference for warm yellow or white LED lights for better visibility. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Well-lit streets and footpaths, especially during early morning or late evening hours. |
| *Non-working women* | Adequate street lighting and functional CCTVs near residential areas and markets were highlighted as priorities. |

## Public toilet accessible during walking

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Access to clean, hygienic, and well-maintained public toilets equipped with essential amenities like hand wash, tissues, and water is critical. Separate facilities for men and women should be ensured, with attention to female-specific sanitation needs such as pad disposal. Public toilets should be available every 1-1.5 km, with at least three units to reduce waiting times. Even paid facilities must maintain high cleanliness standards to meet the needs of all users. |
| 2 | *Bengaluru* | Public toilets every 1.5 km, equipped with good lighting, water, washbasins, napkins, and female security. |
| 3 | *Mumbai* | Public toilets every 1-2 km with additional features like sanitary pad dispensers. |
| 4 | *Guwahati* | Public toilets every 1 km along footpaths to address hygiene needs. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working and non-working women* | Highlighted public toilets as a crucial feature, with proper facilities and maintenance. |

## Pelican crossings at regular intervals

Most participants identified pelican crossings as a non-negotiable feature. Regularly maintained pelican crossings help women navigate busy streets safely. Cities like Bangalore, Mumbai, Guwahati, and Delhi reported:

- Clearly visible and durable zebra crossings placed at regular intervals (ideally every 500 meters to 1 km) for pedestrian safety.
- Regular maintenance using durable paint for longevity.
- Pedestrian-controlled crossings to ensure safe passage.
- In areas with high traffic, pedestrian bridges or tunnels should be available to avoid unsafe road crossings.

## Additional recommendations from women

**Routes through busier areas (eyes on the street)**: Women prefer footpaths with a moderate number of people to feel safe, especially at night. Working women suggested having 10-12 people on footpaths in low-traffic areas, while others emphasized security guards in isolated locations like Delhi.

**Routes through roads with lower speed of traffic:** Participants preferred roads where traffic speeds do not exceed 30 km/h for safety.

**Bright, white LED lights should be installed at regular intervals** (every 200-500 meters) to ensure visibility, particularly during night-time or early morning commutes.

**Direct routes available/limited diversions:** Participants preferred direct routes with limited diversion considering this helps them reach work location on time.

**Height of footpaths**

- Mumbai: Slight elevation (10-15 cm) to prevent vehicle intrusion.
- Guwahati: Gradual slopes for accessibility by elderly individuals, pregnant women, and those with strollers.
- Bangalore: Proper height with barriers to prevent two-wheelers from using footpaths.

## 4.3.2 IPT infrastructure

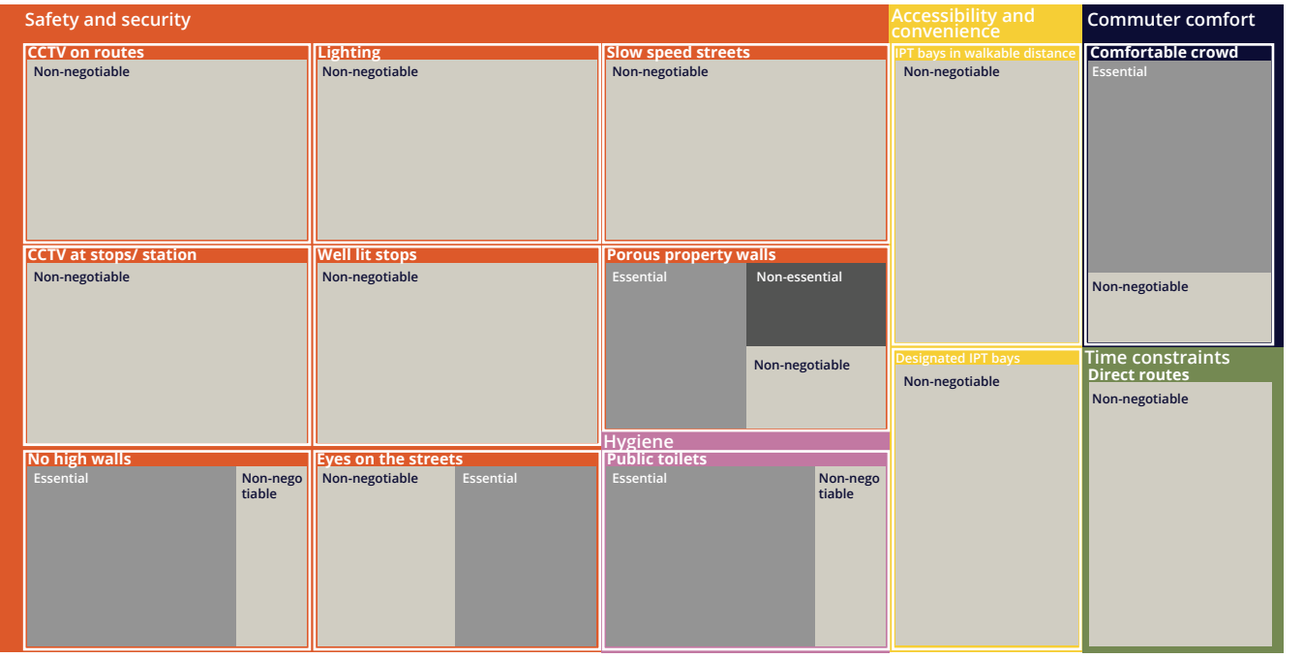



*Figure 09. List of non-negotiable, essential, and non-essential elements under IPT infrastructure.*

Most participants reported having good access to IPT services near their homes. However, in Guwahati, due to hilly terrain, women often need to walk 10-15 minutes to access IPT. Women in Delhi and Guwahati predominantly depend on e-rickshaws for their commutes. Women in Mumbai and Delhi suggested that IPT services should be available within 200-500 meters of key locations like metro stations, bus terminals, and residential areas.

Details of non-negotiable IPT infrastructure as prioritised are further given –

### Designated IPT bays

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | IPT stands should be within 200-500 meters of residential areas. |
| 2 | *Bengaluru* | Designated IPT stands should be within 200 meters of residential areas. |
| 3 | *Mumbai* | IPT services should be available within 200-500 meters of key locations like metro stations, bus terminals, and residential areas. |
| 4 | *Guwahati* | IPT stands should be placed in easily accessible, well-trafficked areas, such as near bus stops, metro stations, or residential neighborhoods. |
| | **Prioritization as per working profile** | |
| | *Working women* | Bengaluru women rarely use IPT to commute to work, considering it affordable only in emergencies. They find hiring IPT over-budgeted. Women in Mumbai, Delhi, and Guwahati frequently use IPTs, such as e-bikes, e-rickshaws, shared autos, and app-based vehicles. Accessibility is easier in Delhi and Mumbai compared to Guwahati. |
| | *Non-working women* | Most non-working women use IPT rarely, primarily for errands or dropping children off. Women in Guwahati noted a lack of accessibility and often walk over 15 minutes to reach IPT services. They recommended placing IPT bays closer to main roads to reduce travel time and encourage work participation. |

### Signage/ wayfinding

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Dedicated zones for IPT should be clearly marked and conveniently located near key destinations, with boards displaying routes, fare charts, and helpline numbers. |
| 2 | *Bengaluru* | Clearly marked and organized IPT stands are critical to prevent crowding, confusion, and disorganized pick-ups. Women prefer IPT drivers to display verified credentials, such as visible IDs and contact information, to enhance safety. |
| 3 | *Mumbai* | Clear and well-marked auto stands with organized queuing systems to prevent chaos are preferred. |
| 4 | *Guwahati* | Stands must be clearly marked with visible signs and symbols to guide passengers, especially those unfamiliar with the area. |
| | **Prioritization as per working profile** | |
| | *Working and non-working women* | Both groups emphasized that well-marked zones or stands with convenient placement near key destinations are vital for saving time and improving accessibility. |

## Comfortable crowd near IPT bays

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | IPT stands should accommodate 10-15 people to avoid overcrowding |
| 2 | *Bengaluru* | Women prefer IPT stands with a moderate crowd—enough to feel safe but not overcrowded. |
| 3 | *Mumbai* | Women prefer moderately crowded IPT stands. |
| 4 | *Guwahati* | IPT stands should accommodate 10-12 people to maintain safety and comfort. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | This group prefers a moderate crowd for safety while avoiding excessive waiting times. |
| *Non-working women* | They emphasize an "ideal crowd" to prevent theft and ensure safety. |

## Routes through busier areas/ eyes on the street

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Adequate capacity to prevent overcrowding, accommodating at least 10-15 people per stand. |
| 2 | *Bengaluru* | Women prefer IPT stands with moderate crowd density — enough to feel safe but not overcrowded |
| 3 | *Mumbai* | Women prefer IPT stands with very less crowd density |
| 4 | *Guwahati* | Adequate capacity to prevent overcrowding, accommodating at least 10-12 people per stand |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Working women proposed that moderate crowd density — enough to feel safe but not overcrowded during the night. |
| *Non-working women* | Non-Working women feels that very less crowded crowd density will help with regard to safety during all time of day. |

## Parking/ storage facility near bays

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Parking should be near metro stations or commercial areas. Women are willing to pay ₹20-30 per day and appreciate options for pre-booking and digital payments. |
| 2 | *Bengaluru* | Public parking should be located in busy areas, such as markets or commercial spaces. Users are willing to pay ₹10-20 per hour. Spaces should be spacious, well-maintained, and secured with guards. |
| 3 | *Mumbai* | Parking facilities should be linked to apps like Chalo for convenience. |
| 4 | *Guwahati* | Reserved spaces for women, elderly passengers, and differently-abled individuals are recommended for safety and comfort. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working women* | Public parking is deemed useful for personal vehicles during short commutes and is considered safer. |
| *Non-working women* | Parking is less necessary as they rely on IPT or buses for the whole journey |

## Additional recommendations from women

**Public toilets near IPT bays**: Women prefer IPT stops to be integrated with public toilets good lighting, water connection, wash basin, napkins, sanitary pad well cleaned and maintained with female security.

**Well-lit/good lighting - of bays/stops:** All groups and cities proposed that well-lit IPT bays are essential for safety, especially during early mornings and late evenings. Bright white LED lights should be installed to prevent harassment and ensure visibility..

**Integrate with major public transport:**

- Delhi: IPT services should integrate seamlessly with metro and bus systems.
- Mumbai: Integration with public transport is critical to ensure smooth transitions between modes..
- Bengaluru: IPT should connect with metro and bus stations to streamline transfers and reduce waiting times.

## 4.3.3 Public transport infrastructure

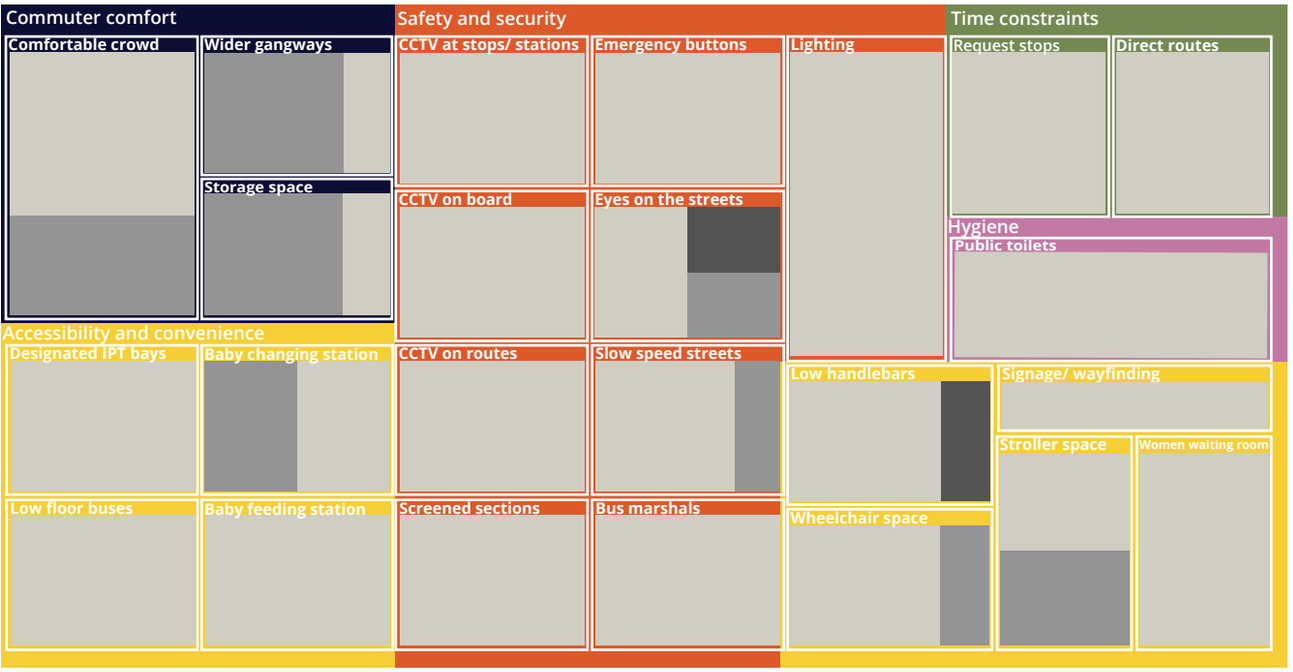



*Figure 10. List of non-negotiable, essential, and non-essential elements under public transport.*

Most participants reported that they have access to public transport near their home or workplace. Bus stops were found to be more accessible compared to metro stations. Delhi and Mumbai participants mentioned traveling more than 200–500 meters to reach a bus or metro stop. Guwahati women reported inadequate access to bus stops due to a lack of facilities.

Details of non-negotiable public transport infrastructure as prioritised are further given –

### Low handlebars

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | The handles on buses should be reachable, ideally at shoulder height for women around 5 feet tall. The number of bars should be increased. |
| 2 | *Bengaluru* | The handles on buses should be within reach, and the number of bars should be increased by within the rage of half feet for standing passengers |
| 3 | *Mumbai* | Handles should be arranged in a zigzag pattern—some lower, some at medium height—with additional standing hand bars for better accessibility. |
| 4 | *Guwahati* | The handles on buses should be within reach, ideally at shoulder height for women around 5 feet tall, with an increase in the number of bars. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working and non-working women* | Both groups emphasized the importance of easily reachable handles for stability during travel. |

### Signage/ wayfinding

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Participants noted that some new electric buses already have these features, and they should be introduced in all buses. |
| 2 | *Bengaluru* | Women suggested announcements of bus stop names to aid all passengers, including the visually impaired |
| 4 | *Guwahati* | Clear signage at bus stops displaying route numbers, arrival times, and destinations in local and English languages is essential. |

### Low floor buses or access ramps

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi, Mumbai, Guwahati* | Recommendations were made for ease of access, including ramps or lifts for wheelchairs. |
| 2 | *Bengaluru* | Participants emphasized the need for low-floor buses or ramps for elderly women, women with children, or those with disabilities. |

**Prioritization as per working profile**

| | |
|---|---|
| *Working and non-working women* | Both groups suggested ramps with a width of less than ½ foot (similar to new electric buses) and a seamless connection between the footpath and bus floor for prams or wheelchairs. |

## Emergency button

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Bengaluru* | Emergency buttons or panic alerts inside buses should be easily accessible, located near windows, and every two seats. |
| 2 | *Delhi and Mumbai* | Emergency buttons should be located near women's seats for convenience. |
| 3 | *Guwahati* | Emergency alert systems should allow passengers to notify authorities or drivers during distress situations. |
| | **Prioritization as per working profile** | |
| | *Working and non-working women* | Both groups emphasized the importance of emergency buttons near women's seats at an easily accessible height. |

## Bus marshals

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Female bus marshals were recommended for night shifts. |
| 2 | *Bengaluru* | Women suggested having bus marshals, particularly at night, who have undergone safety training. |
| 3 | *Mumbai* | Designated female security marshals on buses were suggested to address safety concerns. |
| 4 | *Guwahati* | The presence of bus marshals (male or female) was recommended to oversee passenger safety and intervene if necessary. |
| | **Prioritization as per working profile** | |
| | *Working and non-working women* | Both groups emphasized the importance of bus marshals for ensuring safe journeys. |

## Additional recommendations from women

**Space for Strollers Onboard**: Across all cities and groups, women suggested adequate storage or designated space on buses to carry personal belongings, groceries, or work-related materials without hindrance.

**Screened sections :** Most women suggested that while separate compartments aren't necessary, segregation within buses (e.g., reserving the front section for women) would enhance safety. Guwahati participants preferred segregated compartments for added safety.

**Designated stops for IPT with clear signage/ wayfinding :** Across all cities, women highlighted the importance of designated IPT stops with clear signage. Participants in Delhi, Mumbai, and Guwahati noted that clear wayfinding at stops would help reduce travel time and improve planning.

**Baby feeding room:**

- Baby feeding rooms were considered essential by all groups.
- Features should include space for 3–4 women with children, clean and well-lit interiors, lockable doors, female security, drinking water, washbasins, and paid pampers. These rooms could double as baby-changing areas.

**Separate waiting room for women:**

- Mumbai and Delhi participants suggested separate waiting rooms with female security guards and seating for 3–4 people.
- Working women prioritized this feature for night-time safety, while non-working women considered it moderately important.

**Direct routes available/limited diversions/additional stops:** Participants across all cities suggested integrating transport systems to provide direct bus routes that connect seamlessly with metro or train stations, reducing travel complexity.

**CCTV:** Women across all cities recommended installing at least two CCTV cameras inside buses and IPTs, with high-resolution 360-degree cameras at stops for comprehensive monitoring.

**Crowd that is not too dense but not isolated either:** Participants across all cities emphasized the importance of maintaining an acceptable and manageable crowd level inside buses, metros, and at stops. Working women in Delhi and Bangalore noted a significant increase in crowd density following the introduction of the free bus scheme. This has, at times, resulted in buses bypassing designated stops due to overcrowding. Participants suggested increasing the frequency of buses to better distribute the passenger load and ensure smoother operations. Additionally, implementing a queue system at boarding points was recommended to enhance orderliness and improve the overall commuting experience.

## Public toilet and hygiene facilities

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Public toilets should be located every 1–1.5 kilometers along major pedestrian routes and public transport hubs. They should have proper maintenance, a clean water supply, tissue dispensers, and waste disposal bins. Facilities must include separate male and female sections with adequate lighting, security personnel, sanitary pad dispensers, diaper-changing stations, and both Indian and Western-style toilets to cater to diverse needs. |
| 2 | *Bengaluru* | Public toilets should be located within 1–2 kilometers or near bus stops. They must be properly maintained with a clean water supply, washbasins, and waste disposal bins. Separate male and female sections with adequate lighting and the presence of CCTV outside the toilets are essential, along with a female guard for security. |
| 3 | *Mumbai* | Public toilets should be available at regular intervals (every 1–1.5 kilometers) along high-traffic areas such as commercial centers, transport hubs, and major pedestrian routes. Separate toilets for men and women should ensure privacy and cleanliness. Additional features include sanitary napkin dispensers, disposal bins, wheelchair accessibility, ramps, and support structures for differently-abled individuals. Toilets must be well-maintained with functional locks, hygienic interiors, tissue paper, soap dispensers, and hand sanitizers. Portable or mobile toilets should be available in high-traffic areas during peak times or events. |
| 4 | *Guwahati* | Public toilets should be located at regular intervals, ideally every 1 kilometer, along high-traffic routes such as bus stations, transport hubs, and markets. Toilets must be accessible near bus stops and IPT stations to meet the needs of commuters. They should be cleaned and maintained daily, ensuring hygiene through waste management and sanitation. Gender-specific toilets should provide privacy and safety, with female caretakers managing women-dedicated facilities. Facilities must include running water, soap, hand sanitizers, mugs, buckets, and tissue paper. |
| | **Prioritization as per working profile** | |
| | *Working and non-working women* | Both groups agreed that public toilets are a highly important, non-negotiable feature that must be available across all modes of travel, meeting the above-mentioned quality standards. |

## 4.4 | VARIABLES IMPACTING MOBILITY NEEDS AND PATTERNS

In addition to capturing the infrastructure needs of women influencing their workforce participation decisions, a line of inquiry was also established to capture if other variables such as journey duration, time, part of the journey etc. impacted their mobility needs and patterns. Findings are given below –

**100%**
**participants**

**reported that their responses do not change depending on time of travel, but urgency increases at night.**

**reported that their responses do not change depending on trip chaining or running errands.**

**reported that their responses do not change depending on which stage of the trip they are in.**

**reported that their priorities would increase if they were pregnant, in a wheelchair.**

### Activities women do during a journey to/ from work

**Visiting friends/ family**

**Dropping children to school/ coaching**

**Shopping groceries**

**Going to places of worship**

**1-1.5 km**

**distance women are willing to detour to run errands and chores.**

**Women are willing to travel 1 km to access Anganwadis, schools, on the way to/ from work.**

**Women are willing to travel 1-1.5km to shop for groceries/ essentials on the way to/ from work.**

### Maximum duration of travel preferred

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Working women reported a maximum travel time of 1 hour and 30 minutes, occasionally switching modes to reduce commute time. Non-working women reported a maximum of 1 hour. |
| 2 | *Bengaluru* | Working women mentioned a maximum travel time of 2 hours and 30 minutes. If travel exceeds this duration, they may switch modes (e.g., from bus to auto or metro) or even change jobs, accepting lower salaries to reduce commute times. Non-working women reported a maximum travel time of 2 hours using multiple travel options. |
| 3 | *Mumbai* | Working women reported a maximum of 1 hour and 30 minutes, citing frustration and its negative impact on work-life balance. Non-working women reported a maximum of 1 hour. |
| 4 | *Guwahati* | Working women reported traveling for more than 3 hours by changing modes, often leaving 10–30 minutes earlier to reach their destination. |

### Impact of absence on non-negotiables on overall trip and route choice

| | City | Infrastructure requirements |
|---|---|---|
| 1 | *Delhi* | Working women said they would not take a longer trip and instead opt for shortcuts, online cabs/autos, or even consider changing job locations. Non-working women mentioned they are willing to take longer trips to ensure safety. |
| 2 | *Bengaluru* | Working women mentioned tolerating the lack of key features during the day but would take a longer trip at night. Non-working women indicated that they could tolerate a longer trip for one day but not daily; they would prefer personal vehicles or autos. |
| 3 | *Mumbai* | Working women reported tolerating the lack of key features but would only accept a maximum deviation of 500 meters. Non-working women avoid longer trips entirely and may refuse to go to work. |
| 4 | *Guwahati* | Working women reported tolerating the lack of features because they need to reach work, but non-working women refuse longer trips. |


*Source: Unsplash*

# 5

# KEY TAKEAWAYS

Takeaway 1.

# Infrastructure has a strong role to play in women's workforce participation choices in Indian cities.

One of the key findings of the study contradict the Female Labour Utilization reports that 44.5% of women are not in the workforce due to childcare or household responsibilities. The findings from this study shows that caregiving and domestic responsibilities are among the lowest barriers.

**70% of unemployed women** (45 out of 64 respondents) selected **lack of accessible transport options** as they key reason to not participate in the workforce. **66% women** (42 out of 64 respondents) cited **lack of safety** as the key reason to not work.

These numbers highlight that infrastructure, particularly mobility infrastructure, is a key enabler for women's workforce participation in Indian cities.

## Recommendation 1: Include infrastructure as a key parameter in Periodic Labour Force Surveys

The study reiterates the necessity of including infrastructure as a key parameter when reviewing women's labourforce and workforce participation factors.

While this study was qualitative in nature, covering 10 focus group discussions across 4 cities, with a total of 80 participants, the findings from this study highlight the necessity of a survey of larger scale – made possible through PLFS.

Takeaway 2.

# Good quality, gender-intentional walking infrastructure is crucial to women's workforce participation decisions.

*"We have to take the kids along with us we have to choose the footpath. We have to take the main road there is no safety. If the footpath is not good then we have to take the main road. It will be a safety issue. We will be late. We will have to carry our children and go. We will be scared. Two wheelers would come on footpath. That is why we are scared."*

*- Working women, Bengaluru.*

The study has highlighted a clear linkage between good quality walking infrastructure and women's workforce participation constraints. While the lack of quality walking infrastructure does not directly inhibit women from workforce participation, it impacts safety and time constraints for working women, especially when accompanied by children and elderly. Most women highlighted smooth, continuous footpaths, wide enough for two people to walk alongside, as a non-negotiable feature in enabling workforce participation. Two most prominent concerns are –

**Safety concerns:** Poor footpath conditions, such as broken surfaces and lack of proper lighting, make women feel unsafe. **This fear of accidents and crime can deter them from traveling to work,** especially if they have to walk as part of their commute.

**Accessibility issues: Inadequate footpaths can cause delays and make it difficult for women to reach public transport or their workplaces.** This inconvenience can discourage them from seeking or maintaining employment.

## Recommendation 2: Update national level guidelines on urban roads such as Indian Road Congress guidelines to include gender-intentional design standards for footpaths aimed at enabling women's workforce participation.

Guidelines on design and implementation of urban roads, such as Indian Road Congress guidelines, should incorporate gender intentional design standards that not just focus on gender inclusivity and safety, but actively enable women's workforce participation.

## Recommendation 3: Mandate design, implementation, and maintenance guidelines on gender-intentional urban roads across states and cities.

*"When footpath quality is bad, you are irritated that you don't reach office freshly and you already are exhausted by it and then you get stuck with lot of works so because of pressure you get frustrated and irritated.*

*Even family life gets affected like you just get home and sleep. Cannot even talk with family members as you get irritated by the whole day. Buses comes late as well."*

*- Working women, Delhi.*

While it is imperative to update national guidelines on urban roads to include gender-intentional design standards enabling workforce participation, in order to ensure that these guidelines are implemented on ground, it is imperative to notify and mandate the guidelines across states and cities.

Most women have highlighted the need for continuous, even, and shaded footpaths, with proper segregation between carriageways and footpath. Design solves for all of these issues, but maintenance is imperative to ensure quality is maintained. It is thus imperative to institutionalize maintenance guidelines that outline the type of infrastructure elements, along with type and frequency of maintenance service required.

Takeaway 3.

## Designing for accessibility and commuter comfort is imperative to ensure women participation and remain in the workforce.

*"Many times this signage are so confusing that we find difficulty in understanding it. And sometimes this problem comes in Google map as well because it leads to wrong ways. And if we have reached to a wrong way then its starts to re-routing us so that also confuses us."*

*- Non working women, Delhi*

The provision of mobility infrastructure is crucial, but just as crucial is ensuring the infrastructure responds to the needs of women in the labourforce.

Women rely heavily on information wayfinding and signages, especially when trip chaining or travelling with children. **Well designed wayfinding and signages have the potential to significantly reduce travel time.**

Similarly, designing for commuter comfort such as providing wider gangways in buses, lower handlebars, low-floor buses, spaces for storage and strollers, ensure w**omen are able to travel comfortably for longer distances.**

*"Suddenly they will put the brakes. That time we need the handles to hold so that we should not fall on the front person. So, if the handles are good then we can stand and balance by holding them."*

*-Not-working women, Bangalore*

*"In buses, there should be designated space for strollers, as seen in BRTS buses in Gujarat, and it would be beneficial for Mumbai as well. Additionally, facilities like a first aid box and TV, which are available in Gujarat buses, should be implemented in Mumbai buses. There should also be space to store personal items like tiffin boxes, laptop bags, and purses, especially when coming from shopping. Overhead storage, similar to what's found in chair car trains, would help keep the space clear for sitting. Furthermore, the seating arrangement, where women occupy the front and men the back, is a practical system found in the South and should be considered for Mumbai buses as well."*

*– Non-working women, Mumbai*

## Recommendation 4: Comprehensive surveys to capture the anthropomorphic and comfort needs for women across different demographic and socio-economic profiles.

This study provides a baseline for the type of comfort and accessibility needs for working and non-working women. Further surveys that comprehensively capture the diverse needs of women in the labourforce across demographic and socio-economic groups is needed.

Such a database is crucial to arrive upon key design standards and specifications, that can be further mandated through urban roads design guidelines.

Takeaway 4.

# Public transport connectivity is key to ensure women's workforce participation. Free bus schemes work, but first and last mile connectivity is crucial.

*"[Free bus scheme] will definitely encourage us to work because then we will be able to save more as well. And I feel it should be free for women and it is a very good initiative, and also in these buses no one will board other than women so this will be hassle free for us."*

*- Working women, Delhi.*

This study identifies inability to reach work due to lack of available transport options as one the key reasons to not work.

**Working women from all four cities have reported an average of 1 hour and 30 minutes as viable traveling time**. For journeys beyond this, working women from Bengaluru consider changing jobs, even accepting lower salaries to reduce commute time.

However, all women has reinforced the necessity of end-to-end good quality transport connectivity – ensuring **long distance bus and metro connectivity, and first and last mile connectivity through IPT and walking infrastructure.**

## Recommendation 5: Plan for comprehensive end-to-end connectivity, and amp fleet size.

*"Yes the crowd has increased. The condition of free buses is very bad and they tend to bend from one side. Earlier females were not travelling that much but now they are travelling because they are getting free bus. And also for small distances as well that into take bus and otherwise they used to walk and go there."*

*- Non working women, Delhi*

Findings from this survey highlights the need to think of first and last mile connectivity in conjunction to free bus schemes, and increasing the coverage of bus and metro rails to encompass larger areas – especially for urban poor women in Indian cities.

There is thus a strong need to rethink mobility plans and schemes in relation to needs to women in labourforce, and incorporate feedback from on-ground realities.

Takeaway 5.

# Safety is non-negotiable for all women; especially when considering participating in the workforce.

*"I feel definitely these improvements should be done so that the ladies can go out and work and can live independently. And we are housewife but we also feel like working but looking at safety features we don't feel like working but if we get all these features then definitely we can think of it."*

*- Non working women Delhi*

*"I am not going to work because it's far and when I am returning it will be very crowded and there will be no transportation and safety. I personally experienced if before marriage, I got down and I was going to my home. There will be a walk path for 10 minutes, then someone will follow us. All those things will count, in the bus there may be safety but when I get down and until I reach my home, I need to look after my safety. Sometimes it may be 8 or 9 pm."*

*-Non-working women, Bengaluru.*

42 out of 64 unemployed women identified safety as the key reason for not working.

Safety has been a key topic of research for gender inclusive streets and public spaces. However, this research critically highlights how lack of safety can impede women in participating in the workforce. It also gives actionable inputs on design and implementation of infrastructure to ensure safety, particularly –

- **Surveillance methods such as CCTV and active policing** throughout public spaces and mobility infrastructure to ensure 100% visibility at all times.
- Adequate lighting not just at footpaths, but at bus stops, stations, auto bays – crucially **eliminating black spots.**
- **Comfortable levels of crowd** in footpaths, stops/ stations, buses, trains, enough to ensure visibility deterring crime but not feel overcrowded. Working women suggested having 10-12 people on footpaths in low-traffic areas, while others emphasized security guards in isolated locations like Delhi. Participants emphasized that overcrowding can also lead to unsafe environments.
- Most participants emphasized that **high walls should be avoided,** as they create a sense of isolation and hinder their ability to seek help in emergencies. Women prefer walls that allow visibility to feel safer and stay aware of their surroundings.

Women opt to take longer routes and detours at night to ensure safety. The lack of safe routes also lead them to opt for private transport modes where women have more control.

## Recommendation 6: Set planning and design standards to ensure safety from the perspective of women in labourforce.

*"Actually, I left the work for this reason I was working in Hebbal Kempapura. To get to the bus stop at least I need to walk 1 km, in between there were no people only. I didn't feel safe, so I left the job, and we needed to wait for the bus."*

*-Non-working women, Bengaluru.*

Land-use has a crucial role to play when designing for safety. Ensuring active nodes around streets, especially for first and last mile connections is crucial. There is thus an urgent need to think of planning specifications to ensure safety in streets and public spaces.

There also no design standards and specifications for high property walls abutting streets. This research highlights the need to set standards for the same, to enable high perceptions of safety for women.

## Recommendation 7: Ensure compliance of schemes and policies on women's safety.

*"Because earlier Marshall were available in every bus but currently they are not there and earlier ladies Marshall were also there. So we used to feel secure but now we feel uncomfortable as well. and also if someone is pushing us so they take care of us so they are very important."*

*- Non Working women Delhi*

This research identifies a significant number of schemes and policies aimed at surveillance and policing ensure women's safety such as bus marshals, one stop centres. However, most participants showed either a lack of knowledge of such schemes, or cited lack of implementation on ground.

Schemes and policies need to incorporate feedback from women in labourforce, and ensure effective implementation on ground. There is also a high scope of cross-learning between states and cities on efficacy of schemes and policies.

*"I believe there should be a marshal on the bus due to safety concerns. In a recent incident, a man was attacked by a group of people, and the driver and conductor did nothing to intervene. A marshal would have had the authority to handle the situation. Additionally, during a night ride, two men were staring at me, and despite the conductor noticing, he did nothing to address the issue. Sometimes, conductors are dismissive of passengers' safety. While a marshal might take up space, the current staff, especially the conductor, should be properly trained and given the authority to ensure passenger safety"*

*- Working women, Mumbai.*

Source: Unsplash

*Source: Unsplash*

Jana Urban Space

6

# ANNEXURES

# 6.1 | CITY SELECTION

| Parameters -> | States -> | All India -Urban | Delhi NCT | Maharashtra | | Tamil Nadu | | Gujarat | | Kerala | | Rajasthan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Major growth centres -> | | Delhi | Mumbai | Pune | Coimbatore | Chennai | Ahmedabad | Surat | Kochi | Thiruvananthapuram | Jaipur |
| | Urban female working population 2022 (15-59 yrs)" | 26 | 16.3 | 28.8 | | 29.9 | | 29.9 | | 33.6i | | 22.8 |
| Parameter for city selection \| | | | | | | | | | | | | |
| Mobility-related schemes | Public transport safety schemes | | Bus marshal | | | Free bus for women | | | | | | |
| Care economy related schemes | Sakhi niwas - no of urban women per operational SN | 127 | 64 | 70 | | 201 | | 185 | | 21 | | 162 |
| | One-Stop Centre Scheme - no of urban women per operational OSC | 76 | 99 | 145 | | 106 | | 74 | | 202 | | 74 |
| | Anganwadi services scheme - no of urban women per operational ASSP | 0.04 | 5.45 | 0.05 | | 0.07 | | 0.05 | | 0.09 | | 0.04 |
| | Rajiv Gandhi creche scheme - no of urban women per operational RGCSP | 2.46 | 3.18 | 2.56 | | 3.15 | | 2.16 | | 3.22 | | 3.37 |

| Haryana | | Karnataka | | Uttar Pradesh | | West Bengal | Goa | Madhya Pradesh | | Punjab | Chhattisgarh | Odisha | Telangana | Assam | Meghalaya |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Faridabad | Gurgaon | Hubbali Dharwad | Bengaluru | Kanpur | Lucknow | Kolkata | Goa | Indore | Bhopal | Amritsar | Raipur | Bhubaneshwar | Hyderabad | Guwahati | Shillong |
| 20.6 | | 32.4 | | 13.6 | | 29.2 | 38.7 | 22.1 | | 26.6 | 32.9 | 28.6 | 27.8 | 28.4 | 35.9 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Pink Auto Rickshaw Service | | | |
| 224 | 45 | 593 | | N/A | | N/A | | 1400 | | N/A | 196 | 109 | 207 | N/A | N/A |
| 71 | 93 | 63 | | 177 | | 151 | | 54 | | 90 | 44 | 44 | 56 | 34 | 61 |
| 0.06 | 0.04 | 0.03 | | 0.03 | | 0.24 | | 0.03 | | 0.07 | 0.02 | 0.02 | 0.05 | 0.02 | 0.11 |
| 2.67 | 2.58 | 2.81 | | 3.22 | | 8.16 | | 1.22 | | 6.16 | 0.99 | 1.85 | N/A | 1.83 | 4.04 |

| Parameters -> | States -> | All India -Urban | Delhi NCT | Mahar-ashtra | | Tamil Nadu | | Gujarat | | Kerala | | Rajasthan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Major growth centres -> | | Delhi | Mumbai | Pune | Coim-batore | Chennai | Ah-medabad | Surat | Kochi | Thiruvanan-thapuram | Jaipur |
| | Urban female working population 2022 (15-59 yrs)" | 31.2 | 21.3 | 32.7 | | 33.6 | | 33.5 | | 43.4 | | 33.5 |
| Care econo-my related schemes | E-Shram - total women registrations in non-agri-cultural sec-tors in lakhs, STATES | 40 | 29.9 | 66.3 | | 33.9 | | 49.1 | | 44 | | 58.7 |
| | WASH - Swa-chh Bharat Mission Urban - no of urban women per LWM operational centre | 188.3 | 21.8 | 11.8 | | 19.1 | | 14.2 | | 38.2 | | 10 |
| | Solid waste manage-ments - Swa-chh Bharat Mission Urban - no of urban women per SWM operational centres | 9 | 35 | 8 | | 237 | | 8 | | 18 | | 19 |

| Haryana | | Karnataka | | Uttar Pradesh | | West Bengal | Goa | Madhya Pradesh | | Punjab | Chhattis-garh | Odisha | Telangana | Assam | Meghalaya |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Faridabad | Gurgaon | Hubbali Dharwad | Bengaluru | Kanpur | Lucknow | Kolkata | Goa | Indore | Bhopal | Amritsar | Raipur | Bhubane-shwar | Hyderabad | Guwahati | Shillong |
| 23.8 | | 33.5 | | 18.8 | | 36.8 | 37.7 | 31 | | 27.6 | 36.8 | 33.4 | 35.3 | 34.8 | 50.9 |
| 37.1 | | 39.8 | | 430.4 | | 131.6 | 0.6 | 71.9 | | 42.6 | 24.8 | 39.9 | 17 | 33 | 1.2 |
| 10.3 | | 17.8 | | 17.8 | | 487 | 43.1 | 42.9 | | 11.6 | 5.7 | 10.2 | 11.3 | 163.1 | 666 |
| 10 | | 9 | | 4 | | 557 | 7 | 329 | | 6 | 3 | 3 | 6 | 71 | 333 |

| Parameters -> | States -> | All India -Urban | Delhi NCT | Mahar-ashtra | | Tamil Nadu | | Gujarat | | Kerala | | Rajasthan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Major growth centres -> | | Delhi | Mumbai | Pune | Coim-batore | Chennai | Ah-medabad | Surat | Kochi | Thiruvanan-thapuram | Jaipur |
| | Urban female working population 2022 (15-59 yrs)" | 31.2 | 21.3 | 32.7 | | 33.6 | | 33.5 | | 43.4 | | 33.5 |
| Safety/ visi-bility-related systems | Healthcare services - first/ last mile access to healthcare services for women - Ayushman Bharat Health and Well-ness Centres (% against target) | 66 | 0 | 104 | | 70 | | 89 | | 61 | | 21 |
| | Streelitghting policy (UJALA and SLNP) | | | | | | | | | | | |
| | Female police presence (women police/ 10,000 women) | 4.50 | 12.03 | 5.32 | | 6.59 | | 4.36 | | 2.41 | | 2.64 |
| | Communi-ty policing - unique schemes for women safety | | Parivartan | | | Samvedana Centres | | | | Kudum-bashree | | |

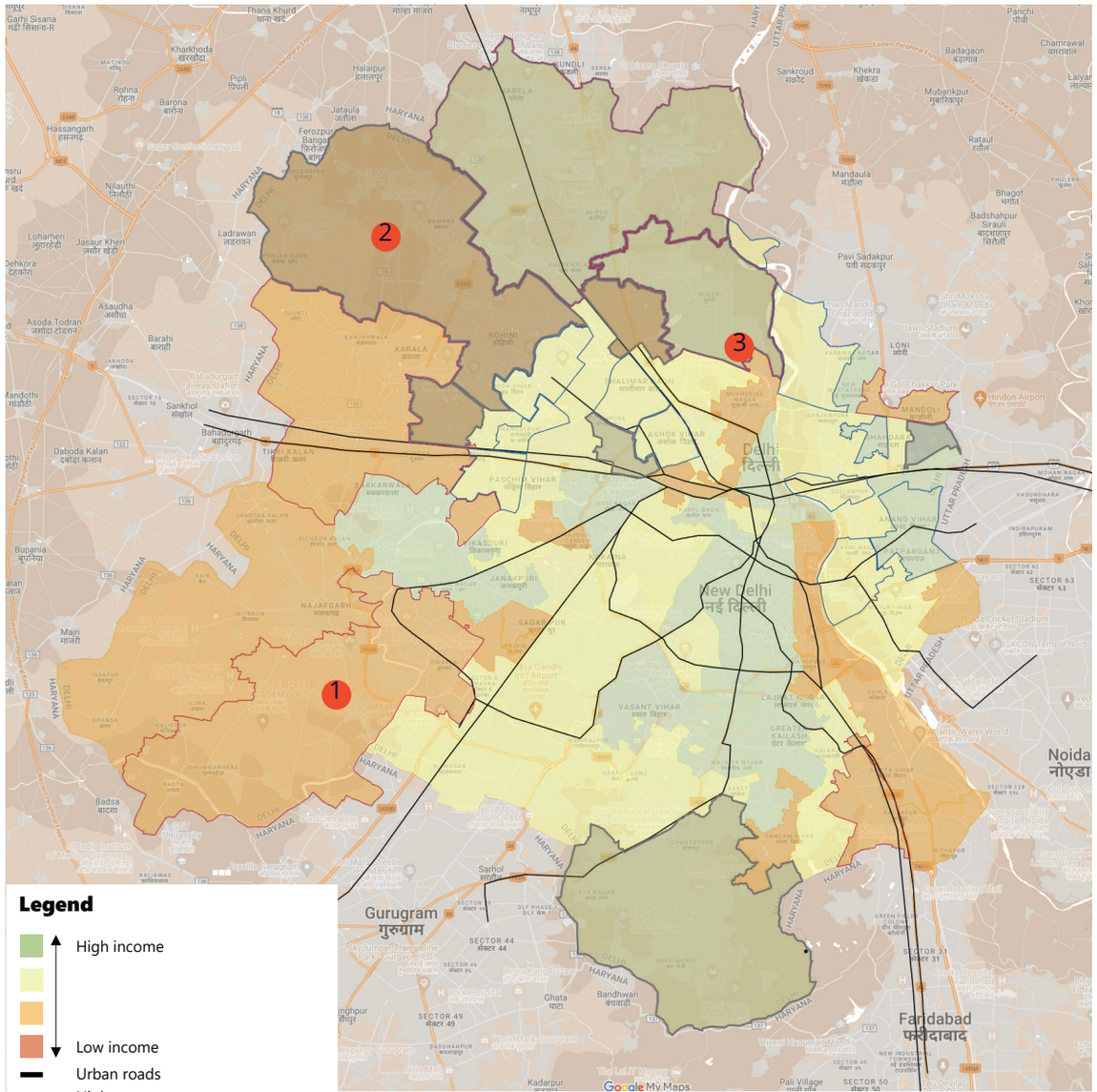
| Haryana | | Karnataka | | Uttar Pradesh | | West Bengal | Goa | Madhya Pradesh | | Punjab | Chhattis-garh | Odisha | Telangana | Assam | Meghalaya |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Faridabad | Gurgaon | Hubbali Dharwad | Bengaluru | Kanpur | Lucknow | Kolkata | Goa | Indore | Bhopal | Amritsar | Raipur | Bhubane-shwar | Hyderabad | Guwahati | Shillong |
| 23.8 | | 33.5 | | 18.8 | | 36.8 | 37.7 | 31 | | 27.6 | 36.8 | 33.4 | 35.3 | 34.8 | 50.9 |
| 45 | | 80 | | 56 | | 64 | 67 | 75 | | 120 | 80 | 33 | 70 | 64 | 81 |
| | | | | | | | | | | | | | | | |
| 3.89 | | 2.73 | | 2.96 | | 1.98 | 10.81 | 1.79 | | 5.61 | 3.28 | 2.66 | 2.83 | 2.8 | 4.92 |
| | | | | | | | | | | | Chuppi Todd, Police didi | | | | |

| Parameters -> | States -> | All India -Urban | Delhi NCT | Maharashtra | | Tamil Nadu | | Gujarat | | Kerala | | Rajasthan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Major growth centres -> | | Delhi | Mumbai | Pune | Coimbatore | Chennai | Ahmedabad | Surat | Kochi | Thiruvananthapuram | Jaipur |
| | Urban female working population 2022 (15-59 yrs)" | 31.2 | 21.3 | 32.7 | | 33.6 | | 33.5 | | 43.4 | | 33.5 |
| Safety/ visibility-related systems | Safe city project - Nirbhaya fund | | | | | | | | | | | |
| | Crime stats - crime rates against women | 66.4 | 144.4 | 75.1 | | 24 | | 22.9 | | 82 | | 115.1 |
| | Women Help Line (Mission Shakti) - no of complaints registered per working women 2022-23 | 61 | 259 | 25 | | 16 | | 9 | | 5 | | 41 |
| CITY SCORES (15 parameters + UFWPR) | | [range -16 to +16] | -2 | 6 | 4 | 2 | 3 | 8 | 6 | 1 | 2 | 1 |
| Score level (median score is 2) | | | LOW | HIGH | | | HIGH | | | MID | | |
| SELECTED CITIES (Mix of cities that are not doing well + doing well) | | | **Delhi** | **Mumbai** | | | | | | | | |

| Haryana | | Karnataka | | Uttar Pradesh | | West Bengal | Goa | Madhya Pradesh | | Punjab | Chhattisgarh | Odisha | Telangana | Assam | Meghalaya |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Faridabad | Gurgaon | Hubbali Dharwad | Bengaluru | Kanpur | Lucknow | Kolkata | Goa | Indore | Bhopal | Amritsar | Raipur | Bhubaneshwar | Hyderabad | Guwahati | Shillong |
| 23.8 | | 33.5 | | 18.8 | | 36.8 | 37.7 | 31 | | 27.6 | 36.8 | 33.4 | 35.3 | 34.8 | 50.9 |
| | | | | | | | | | | | | | | | |
| 118.7 | | 53.6 | | 58.6 | | 71.8 | 35.1 | 78.8 | | 38.4 | 58.2 | 103.3 | 117 | 81.2 | 41.6 |
| 82 | | 19 | | 360 | | 16 | 5 | 42 | | 24 | 14 | 12 | 13 | 11 | 0 |
| -7 | -6 | 4 | 5 | 2 | 4 | -3 | 1 | 4 | 3 | 6 | 7 | 5 | 2 | 0 | 0 |
| | HIGH | HIGH | | HIGH | LOW | | | | | | HIGH | | | | |
| | | **Bengaluru** | | | | | | | | | | | | **Guwahati** | |

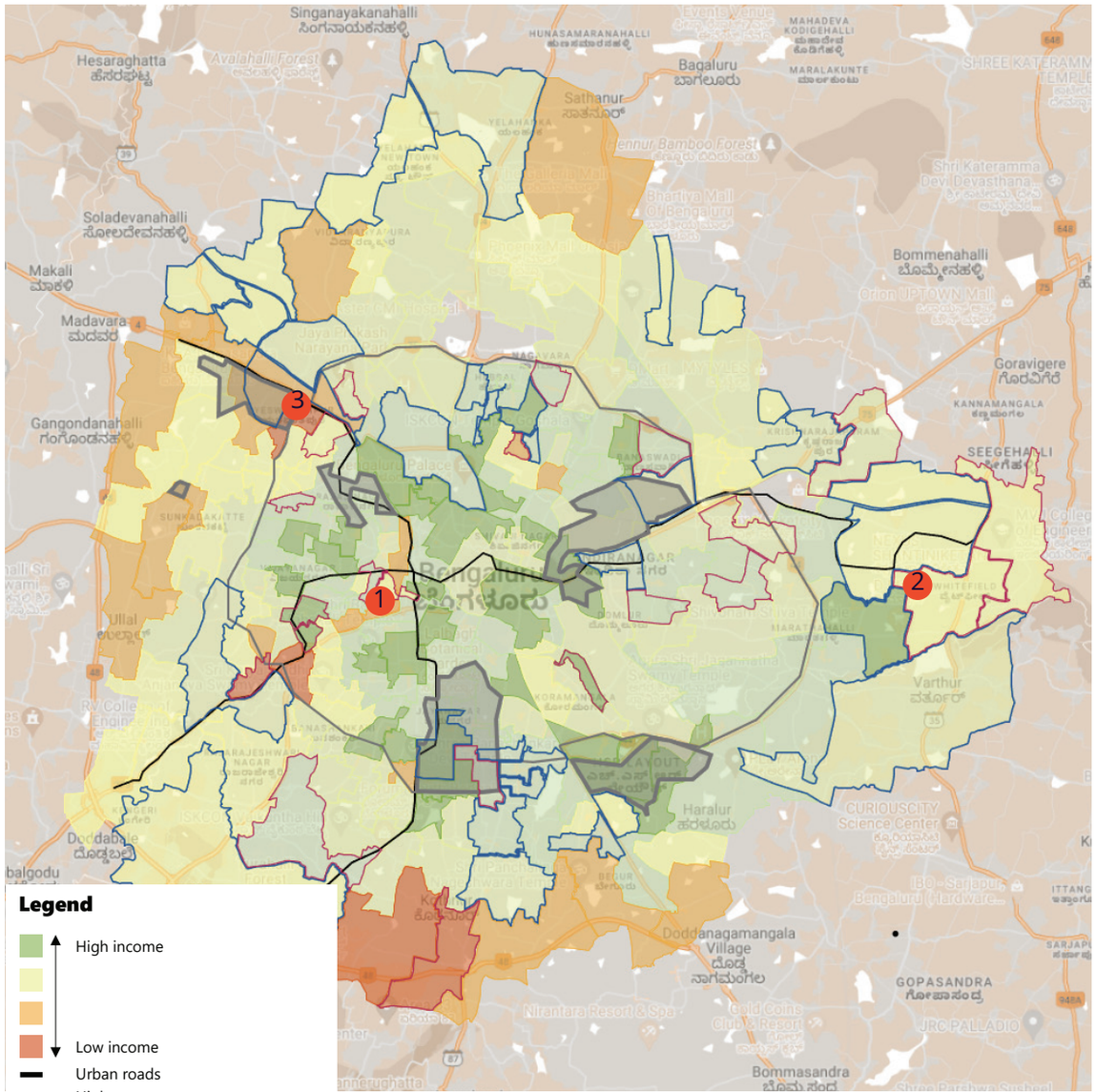
# 6.2 | COMMUNITY SELECTION

## 6.2.1 Delhi



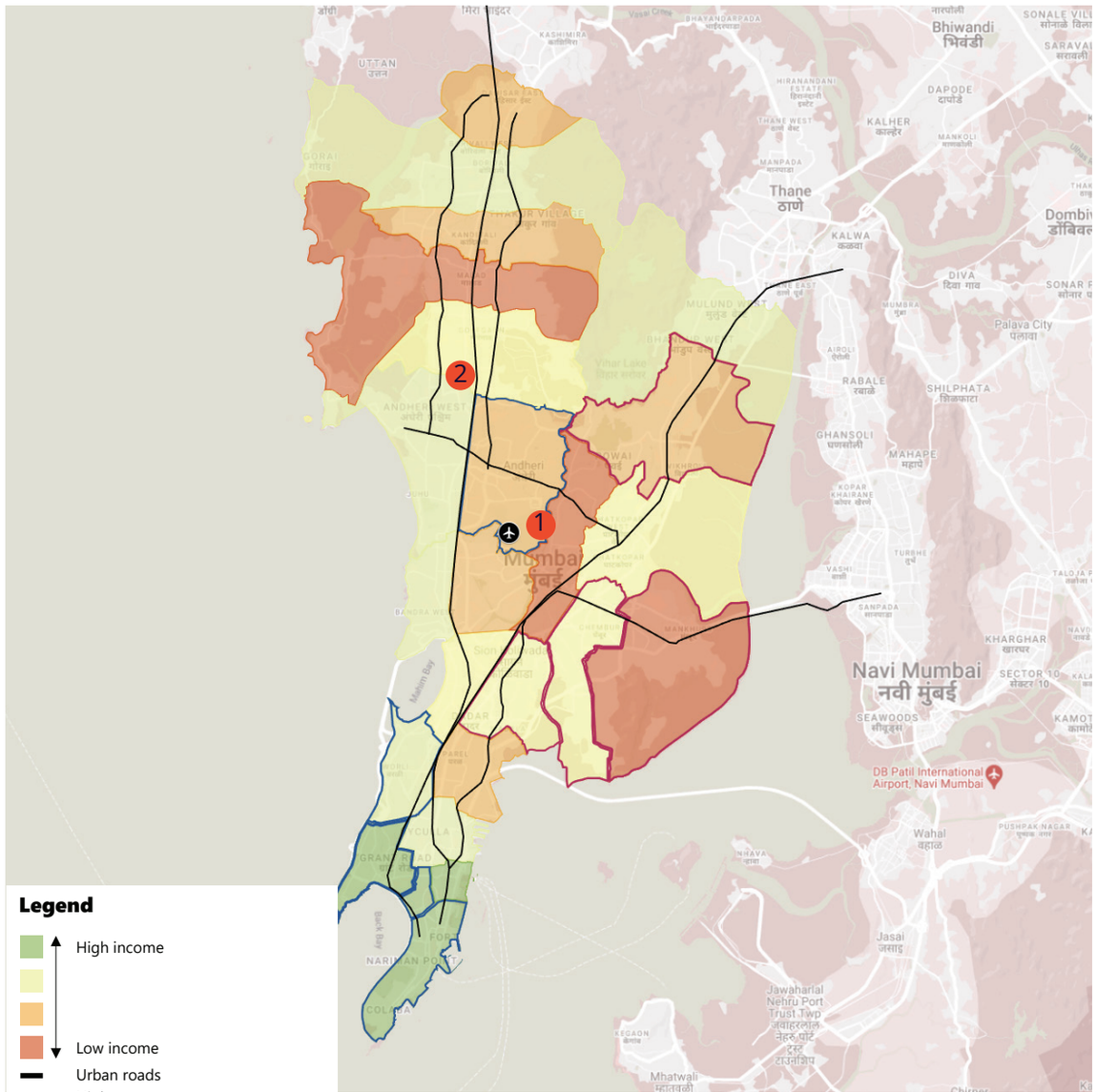

1. Nazafgarh (O)
2. Shabad Dairy, Bawana (N)
3. Wazirabad, Timarpur (N)

## 6.2.2 Bengaluru



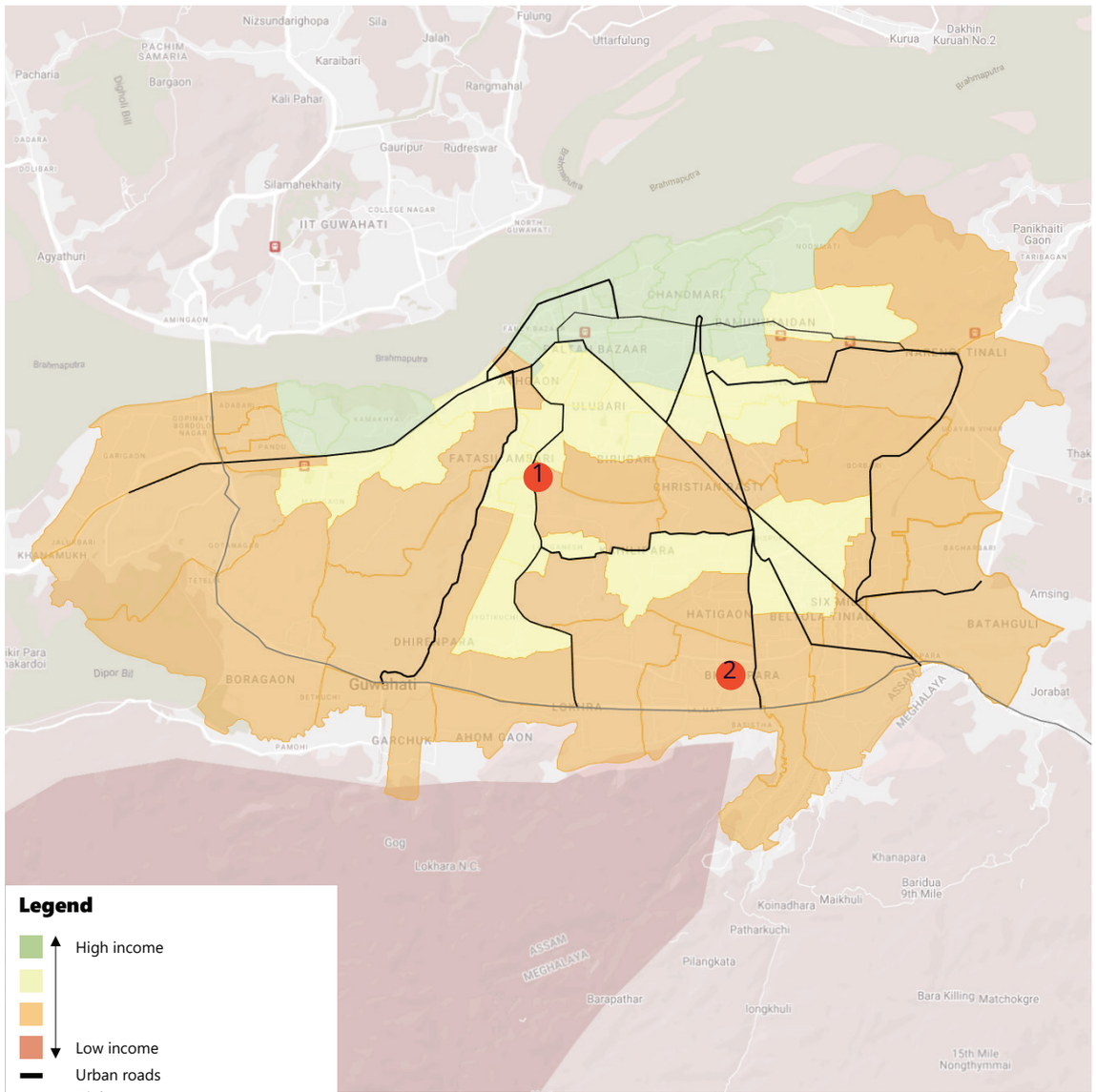

1. Binnypet (old)
2. Nallurahalli, Whitefield (old)
3. Peenya Industrial area (new)

## 6.2.3 Mumbai




1. Saki Naka (O)
2. Malad (N)

## 6.2.4 Guwahati




1. Kala Pahar (O)
2. Bhetapara (N)

## 6.3 | LITERATURE REVIEW

| | Guidelines | Agency, Year | Objectives | Indicators/ recommendations |
|---|---|---|---|---|
| | *India-specific* | | | |
| 1 | Toolkit for Enabling Gender Responsive Urban Mobility and Public Spaces | World Bank, 2022 | Create a framework to assess gaps in policies and systems in gender aggregated data. | Mobility patterns b/w men & women & barriers across transport journey, safety perception, gaps in implementation of principles of inclusive design. |
| 2 | Women and Transport in Indian Cities | ITDP, 2018 | Create a Gender Mobility Plan (GMP) to assess gender responsive transport indicators, and benchmarks at the city level that fall within the framework of CMP. | CMP indicators, street network, safety perception, pedestrian infrastructure, cycling network, design of bus network & transit stations, etc. |
| 3 | She Rises & Safety Audit | Safetipin, 2023 | Identifies the elements of cities that can improve the domestic/ care-related burden on women, (preventing workforce participation) | Public spaces –lighting, pavements, eyes of street, toilets; Services- housing schemes, hostels; public transport – NMT network, lighting toilets etc. |
| | *Global* | | | |
| 1 | Infrastructure for gender equality and the empowerment of women | UNOPS, 2020 | Looks at gaps in infrastructure systems that affect working/ studying women. | Energy, transport, water, solid waste heath, education – infrastructure & implementation barriers |
| 2 | Selected stocktaking of good practices for inclusion of women in infrastructure | OECD, 2021 | Explores policy challenges in mainstreaming gender into infrastructure and proposes a framework for incorporating gender considerations at each stage of the public investment process. | Case-studies from different countries analysis impact w.r.t scale and timelines of projects |
| 3 | Enhancing gender equality in infrastructure development – ADB | ABD, 2023 | Identifying infrastructure-related monitoring indicators and tools in achieving gender equality (in alignment with G20 principles). | Affordability, convenience and security indicators in different sectors – transport, water & hygiene, energy, land rights etc. |
| | Her City | UN-Habitat, 2022 | Provides a toolbox for mainstreaming youth, gender and socioeconomic perspectives through participatory planning. | Supporting urban development from a girl's perspective, Guiding urban actors to implement projects trough a step-by-step methodology, Providing an open and digitally accessible platform for all, Facilitating an ongoing dialogue between professionals and citizens. |

| Sl. no | Element/ category | General design guidelines | |
|---|---|---|---|
| | | National guides - URDPFI + NBC + IRC | Tender SURE |
| | *Walking infrastructure* | | |
| 1 | General | 1. (Gender sensitive planning GSP recommendation) As per IRC Guidelines 103-2012, a level of service B or C is recommended. All footpaths should include and specify a dead zone, an uninterrupted walking zone and a multi-utility zone for street furniture etc.<br>2. (GSP recommendation) Women are disproportionately affected by poor quality pedestrian infrastructure and increased walking distances. Walkable blocks should be promoted by limiting block sizes, providing direct, shortest non-motorized transport routes or pedestrian public right of ways. | Mobility patterns b/w men & women & barriers across transport journey, safety perception, gaps in implementation of principles of inclusive design. |
| 2 | Footpath | 1. Min. width = 1.8m.<br>2. Width ranges from 1.8m to 4.0m depending on pedestrian traffic, uni/bi directional movement and adjacent land-use. For commercial/ mix-use areas , min. width = 2.5m.<br>3. Manholes, trees, benches, utility boxes and other potential obstructions should be placed outside the path of travel along a continuous line. | 1. Min. width = 1.5m, max. width = 3m.<br>2. Height above carriageway = 150mm - 250mm, kerb ramp slope 1:10.<br>3. MUZ - min. width = 0.4m.<br>4. Bollards to stop two wheelers, dist. between bollards = 1.2m to 1.5m. |

| | *Public transport infrastructure* | | |
|---|---|---|---|
| 1 | General | 1. (GSP recommendation) Prioritizing safe access to transit, rethinking transit fare structures to minimize cost for multi-stop journeys and in off-peak hours, introducing flexible services – such as halting buses in-between stops to drop women closer to their destination in the night, women-only buses/ trains/ coaches or reserved seats for women in buses, ensuring sufficient toilet seats for women at stations and terminals, ensuring bus shelters and train stations have safety and comfort features (lighting, benches, emergency call options) etc. | |
| | Bus stops | 1. Neighbourhood bus stops at every 400 m radius.<br>2. IPT stops at every 400 m radius. | 1. Min. width of platform = 1.2m, minimum width of footpath along bus stop = 1.0m.<br>2. Feeder bus stops at every 500m (sub arterial roads), 300m to 400m (collector and local roads).<br>3. Clearance lengths - 35m (nearside), 42m (farside), 25m (mid block) |
| | *IPT infrastructure* | | |
| | | 1. Min floor height = 400 mm.<br>2. For mini BRT buses, floor height ranges from 400mm to 900mm. Low floor area shall not be less than 50% of the total saloon area and not be ramped (sloped). | |

| | | | |
|---|---|---|---|
| | *Safety* | | |
| | Street lighting | 1. (GSP recommendation) Streets, including carriageway and pavements should be consistently and continuously lit. | 1. Single-sided lighting (local/ sub local roads), height (H) = width of carriageway, dist. = 3.5-4 H.<br>2. Staggered lighting, H = width of carriageway, dist. = 3-3.5 H.<br>3. Opposite lighting (collector/ sub arterial roads), H = 0.5 width of carriageway, dist. = 3-4 H. |
| | Eyes on the streets | 1. (GSP recommendation) Single land use zones should be discouraged, as they tend to be "dead" or inactive as with business districts in the night or residential areas. Mixed land uses should be encouraged which will generate street activity throughout the day and also reduce walking distances.<br>2. The height of compound walls can restrict street visibility. Therefore porous or semi-porous compound walls are recommended to allow street visibility. | |
| | CCTV/ active surveillance | | |
| | Public toilets | 1. (GSP recommendation) Within 15 mins walking distance with special emphasis on areas with high volumes of people i.e. railway stations, markets, bus terminals, public buildings, public open spaces etc. Public toilets should ensure sufficient seats for women, space for childcare and include toilet seats for dependents. | 1. One toilet block per km. |

| | | | |
|---|---|---|---|
| | *Care-economy* | | |
| | General | 1. (GSP recommendation) Due to women's higher domestic and caretaking needs, amenities like day care centres, pre-primary and primary schools, primary health facilities, local markets are recommended to be provided within 5-15 minutes walking distance (300-800m). | |
| | Schools | 1. Primary schools, min. area = 0.4 ha (0.2 for play areas), population served per unit =5000. | |
| | Markets | 1. Local wholesale market - land area = 10.0ha, population served per unit = 10 lakh.<br>2. Weekly market - land area = 0.4 ha, population served per unit = 50,000 to 1 lakh. | |
| | Anganwadis/ Creches/ Day care centres | 1. Pre-primary schools, min. area = 0.08 ha., requires to be located near a park, population served per unit =2500.<br>3. Nursing home/ child welfare/ maternity centre, min. area = 0.2ha, min. no of beds = 25, population served per unit = upto 1,00,000.<br>4. Anganwadi, min. area = 200-300 sqm, population served per unit = 5000. | |

# 6.4 | SURVEY QUESTIONNAIRE

INTRODUCTION

Hello, and thank you all for joining us today. We're here to talk about how you travel around the city and how that affects your perceptions of safety and whether or not you choose to work. We want to hear about the different ways you get around, like buses, autos, or walking, as well as the things that affect your travel—like the location of bus stops, lighting on your route, and features like request stops or bus marshals. We'll also discuss how combining multiple trips, like dropping off or picking up kids from school, running errands, or buying groceries on the way to or from work, plays a role in this.

We want everyone to feel comfortable speaking freely. Your responses will be anonymized, and only the collective feedback will be reported. We also ask that everyone be mindful of others, giving everyone a chance to speak and respecting each other's opinions. Your experiences and thoughts are really important to us, so please feel free to share openly.

WALKING/FOOTPATHS

1. Let's first consider walking and the footpaths you use. How are the footpaths in around your home/work/where you travel?
2. Does this have a bearing on the journeys you make, in particular on your WFP? If yes, in what way (adding/reducing time for example)? If no, why not?
3. Let's think about some of the key features of footpaths. We have given a list of features. Can you indicate how important each of these are to you as general features of a footpath (colours - v. important, a little important, not really important).
4. Thinking about the same features, can you indicate how important each of these are for your (feelings of) safety? Colours: Non-negotiable (without this, I won't use this footpath), important but not a show-stopper, Not important/I'm indifferent to this.
5. Thinking about the same features, can you indicate how important each of these are for your decision about going to work? Colours: Non-negotiable (without this/with this, I won't use footpath to go to work/won't go to work), I would do without this for a bit but not long/not for considerable part of my journey, Important but not a show-stopper, Not important/I'm indifferent to this.
6. Are there any other features which are important to you which we have not mentioned? + grade them accordingly.
7. Do any of your responses change depending on the time of day you travel?
8. Do any of your responses change depending on if you're trip chaining/running errands?
9. Do any of your responses change basis if you're in the beginning/middle/end of your trip? 1st mile/last mile, main part, deviation, connection?
10. Do any of your responses change if you were pregnant/in wheelchair (do you think)?
11. Is there a cut off point of journey time post which you will not travel to work? Either overall or on any part of the journey? If yes, what is it? Does it impact the decisions you make about transport options/work options?
12. Picking up on the 'non-negotiables' for WFP - what are the quality of the features of this which need to be in place for this to meet your minimum bar [insert all the non-negotiables in a list and tackle 1 by 1] - see list below
13. Picking up on the level under non-negotiable, how long would you put up with a lack each feature (list each feature and ask accordingly). E.g. if eyes on street is here - how long would they walk (e.g. minutes/length of road) with fewer eyes on street before the choose not to use that route?
14. Again, on the non-negotiables, for WFP, would you circumvent these features and make a longer trip to avoid them? How much of a deviation would you take (in terms of time) What is the tipping point for which you would use private transport/not go to work as the divertion is too much?

CYCLING

1. Repeat as per walking.

IPT

1. Repeat as per walking.
2. Exchange Q 1 for: How are the IPT options around your home/are there any?

Additionally:

3. How far are you willing to walk/cycle to IPT before you opt for private motorised transport/ don't make the journey?

BUS/ METRO/ STATION

1. As per IPT but additional Q is more phrased as: 1. How far are you willing to walk/cycle/use IPT to the bus/metro/station before you opt for private transport/don't make the journey?

ADDITIONAL QUESTIONS

1. What activities do you/are you likely to do during a journey to/from work?
2. How far are you willing to travel to do this (out of the way of your core trip)? Time or Km - do they think like this?
3. How far are you willing to travel to access schools to/from work.
4. To what extent does the location of your child(ren's) school impact the decision for WFP?
5. How far are you willing to travel to access anganwadis to/from work. - Can we check impact of Anganwadi services/ Rajiv Gandhi creche scheme here? Impact on making it easier to go to work?
6. To what extent does the location of the anganwadi impact the decision for WFP?
7. How far are you willing to travel to access markets/spaces for groceries/essentials to/from work?
8. How important is a footpath infra around these connections to aid change overs? Is it non-negotiable? And cycle lanes? What else would aid connectedness; helps, show-stoppers/starters etc. Anything different from what we've discussed?





# 6.5 | KEY REASONS FOR NOT WORKING

| Reasons for not working | Bangalore | | Delhi | | Guwahati | | Mumbai | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | 13 | % | N | % | N | % |
| I don't want to work | 0 | 0% | 0 | 0% | 0 | 0% | 3 | 19% | 3 | 5% |
| I am not qualified enough | 0 | 0% | 1 | 6% | 10 | 63% | 3 | 19% | 14 | 22% |
| I have been rejected from such jobs/not successful in applications | 0 | 0% | 0 | 0% | 0 | 0% | 3 | 19% | 3 | 5% |
| I can only work part time - job is full time | 0 | 0% | 0 | 0% | 1 | 6% | 7 | 44% | 8 | 13% |
| It is too far away/takes too long to reach there | 3 | 19% | 6 | 38% | 7 | 44% | 7 | 44% | 23 | 36% |
| Job timings don't match my availability | 3 | 19% | 0 | 0% | 9 | 56% | 8 | 50% | 20 | 31% |
| Job timings are at night & therefore unsafe | 15 | 94% | 0 | 0% | 2 | 13% | 6 | 38% | 23 | 36% |
| It is hard to reach there in terms of transport/mobility | 16 | 100% | 10 | 63% | 14 | 88% | 5 | 31% | 45 | 70% |
| It is not safe to reach there | 16 | 100% | 16 | 100% | 5 | 31% | 5 | 31% | 42 | 66% |
| I have childcare duties at home | 4 | 25% | 0 | 0% | 3 | 19% | 11 | 69% | 18 | 28% |
| I have elder care duties at home | 1 | 6% | 0 | 0% | 1 | 6% | 7 | 44% | 9 | 14% |
| I have childcare drop off/ pick up duties (& this is too time consuming/too far from work/hard to reach on the way) | 0 | 0% | 0 | 0% | 0 | 0% | 12 | 75% | 12 | 19% |
| I have elder care drop off/ pick up duties (& this is too time consuming/too far from work/hard to reach on the way) | 0 | 0% | 0 | 0% | 0 | 0% | 7 | 44% | 7 | 11% |
| I have home-care duties | 0 | 0% | 0 | 0% | 0 | 0% | 3 | 19% | 3 | 5% |
| I have duties outside the home like groceries/errands (& this is too time consuming/too far from work/hard to reach on the way) | 0 | 0% | 0 | 0% | 0 | 0% | 7 | 44% | 7 | 11% |
| My family won't let me | 0 | 0% | 0 | 0% | 0 | 0% | 4 | 25% | 4 | 6% |

## LIST OF FIGURES



## LIST OF TABLES



## DATA SOURCES

| | |
|---|---|
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