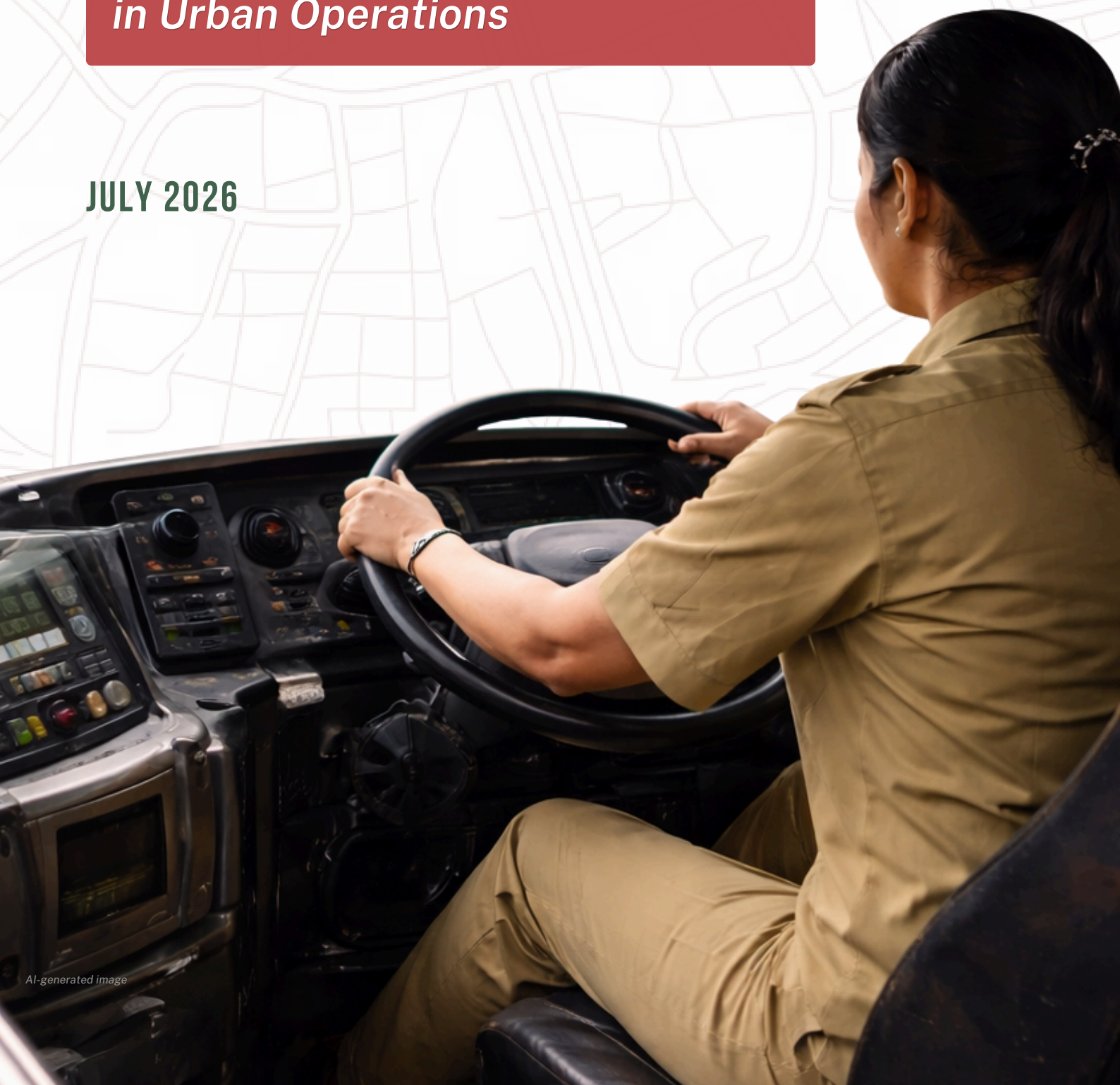


SHE DRIVES BHARAT

*Scaling Women's Employment
as e-Bus Drivers
in Urban Operations*

JULY 2026



AI-generated image

ABOUT THE PARTNERS



BOCI NAREE

BOCI NAREE (also referred to as the BOCI Nari Wing) is a landmark women-led initiative under the Bus and Car Operators Confederation of India (BOCI), aimed at strengthening the participation, leadership, and representation of women across India's passenger mobility and transport ecosystem.

BOCI is the apex, not-for-profit industry body representing India's passenger transport operators, constituted in 2016. Recognizing the acute under-representation of women in transport—particularly as entrepreneurs, drivers, and decision-makers—BOCI established BOCI NAREE as a dedicated national platform to address structural barriers and create sustained opportunities for women in mobility.

BOCI NAREE aligns with India's broader Nari Shakti vision by shifting from symbolic inclusion to action-oriented empowerment, focusing on access, safety, skill development, and leadership pathways for women within a traditionally male-dominated sector. Headed by Smt. Sartaj Lamba, a mobility entrepreneur and sector leader, BOCI NAREE operates with the active guidance and support of the BOCI leadership, including its President Shri Prasanna Patwardhan and Chairman Shri Jagdev Singh Khalsa it was started in June 2025.

BOCI NAREE represents a shift from isolated women-centric programmes to a structured, industry-led platform that combines advocacy, research, capacity building, and on-ground action. It functions simultaneously as a support network for women transport professionals, a policy voice within BOCI and before government stakeholders, and a catalyst for cultural change within transport enterprises. By strengthening women's participation across the mobility value chain, BOCI NAREE contributes to safer and more inclusive public transport systems, increased workforce participation, and the development of sustainable, people-centric mobility solutions across India.

BOCI NAREE stands as a pioneering example of women-led transformation within Indian transport, bridging industry, policy, and social change. As India advances toward inclusive growth and sustainable mobility, BOCI NAREE is poised to play a critical role in ensuring that women are not just passengers in this journey—but drivers of change themselves.

ABOUT THE PARTNERS



CENTRE FOR SUSTAINABLE AND EQUITABLE CITIES

THE URBAN CATALYSTS

C-SEC is a sister organization of The Urban Catalysts, which works towards climate resilient, gender equitable cities, transport, public spaces and jobs and businesses of the future. Over the past 7.5 years, it has worked across 10 Indian states, South and Central Asia, the Middle East, and East Africa, applying gender-responsive, data-driven, and participatory approaches to urban mobility and development.

Its portfolio spans multiple verticals, including gender mainstreaming in city planning and public spaces, safe and secure public transport, inclusive e-mobility transitions, gender sensitization programs, urban policy analysis, and leveraging technology to strengthen transport planning and operations, enabling just transitions in the jobs for the future.

TUC has led projects supported by UK FCDO, ADB, World Bank, UN Habitat, GIZ, WRI India. It has supported the preparation of gender-inclusive urban plans for Mysuru, Jaipur, Bhopal, and Visakhapatnam, created gender-inclusive indicators for Tbilisi, and designed climate-adaptive, gender-inclusive public spaces in small towns in Bangladesh. In India, its work has influenced \$9 billion in rail investments and is expected to benefit 4.5 million women and girls by 2027. It has also supported NITI Aayog in developing national advisories for a gender-responsive transition to electric mobility in India.

ACKNOWLEDGEMENT

This research is a collaborative effort between BOCI Naree and the Centre for Sustainable and Equitable Cities, with The Urban Catalysts as the knowledge partner. The research was led by Sonal Shah, founder of The Urban Catalysts, with Manisha Sharma and Soumili Roy. We are grateful to Sartaj Lamba (Founder & Head, BOCI Naree) and Dr. Surya Kiran for their overall guidance throughout the study. We thank our intern, Sumana Saneev, for her support in research.

We express sincere gratitude to BOCI Naree members: Anita Raju Latamble (Tej Travels), Asha Doss (MDM Fleets Group of Companies), Asispreet Kaur (BTL Transport Pvt. Ltd.), Jalpa Jain (Aadinath Bulk Pvt. Ltd.), Kanaka Kiran Desai (Shree Swami Samarth Tours And Travels), Neelam Misra (Dev Travel Car Rental Services), and Vidhya Sunil Dandge (Rahi Tours and Travels) for participating as key informants.

We are also grateful to the following individuals and organizations for their valuable feedback during the online stakeholder consultations: Dr. Aastha Dang (Gender Strategy Specialist, Vertelo), Annesha Goswami (Operations Manager, Nirman Bahuuddeshiya Vikas Sanstha, Pune), B. Rajeshwari (Thematic Lead – Research, Policy Analysis and Communications, Azad Foundation), Chitra A.R. (Founder & Director, Taliru Foundation), Manisha Azhakathu, Pawani Khandelwal (Founder, Aatm Nirbhar), Rana Amani (Technical Advisor- Sustainable Urban Mobility, GIZ), Ravi Manocha (Sales and Marketing Head, Volvo Buses India), Sangeetha (Association for Non-traditional Employment for Women), Sruthy Sujesh (Archana Women's Centre), Maj. Tushar Johari (Deputy General Manager, Maruti Suzuki India Limited) and Vivek Goyal (Senior Programme Manager, Women's Economic Empowerment Programme, Udaiti Foundation).



Copyright © 2026 Centre for Sustainable and Equitable Cities and BOCI Naree

Open access. Some rights reserved. This work is licensed under the Creative Commons Attribution-Noncommercial 4.0. International (CC BY-NC 4.0) license. To view the full license, visit: www.creativecommons.org/licenses/by-nc/4.0/legalcode

**Suggested
citation**

BOCI Naree, Centre for Sustainable and Equitable Cities, & The Urban Catalysts. (2026). *She Drives Bharat: Scaling women's employment as e-bus drivers in urban operations*. Delhi, India.

EXECUTIVE SUMMARY

India is working to replace 800,000 diesel buses with electric buses by 2030, including those used in public, private, and institutional fleet. At least 50,000 e-buses are expected to be on the road for urban public transport operations by then, requiring an estimated 1.15–1.25 lakh skilled e-bus drivers. However, women currently account for only 0.1% of public bus drivers. The shift in technology to electric buses, which makes driving easier in an otherwise demanding job, along with the Government of India's vision for Viksit Bharat, provides a timely opportunity to scale women's participation in intra-city urban bus operations. However, efforts to do so have been constrained in the past by a weak pipeline of licenced, employment-ready women candidates, reflected in women's 1.4% share of public service vehicle (PSV) driving licences.

Achieving 30–50% women's representation in the urban public e-bus driver workforce could create employment opportunities for an estimated 37,500–62,500 women e-bus drivers.

The scale of this demand, with a meagre retention rate of 4–5% underscores the need to identify and address the key barriers affecting women's entry into and retention in the driver workforce. The current estimated number of women commercial drivers represents a large potential workforce that can be supported through structured HPMV training and certification pathways to help meet the growing demand for e-bus drivers.

2024–25
(Estimated)

4.6–4.9 lakhs

2029–30
(Projected)

6.2–7.6 lakhs

Women commercial drivers in India

This research is situated within the current contractual framework¹ for intra-city e-bus operations, while recognizing that 93% of the country's bus fleet is operated by the private sector. The recommendations aim to create an enabling environment that increases demand and builds a reliable supply of women e-bus drivers.

[1] With e-buses operated by the private sector, through gross cost contracts (GCC).

Public procurement tenders for intra-city e-bus operations should explicitly classify bus drivers as skilled workers and include graded quotas for women to create a steady demand for women e-bus drivers. The current tendering system, which aggregates demand from different cities, creates incentives for operators to minimise controllable operating costs, particularly labour and maintenance expenditures. As a result, operators may reduce labour costs, leading to inconsistent minimum wages. Explicitly classifying bus drivers as essential skilled workers in tender documents would better reflect the technical skills and safety responsibilities required to operate high-capacity public transport vehicles. Introducing graded quotas for women e-bus drivers, along with programmes to increase the number of qualified women e-bus drivers, would give operators enough time to pilot, learn from implementation, and build a strong pipeline of qualified women e-bus drivers.

Gender lens investing (GLI) can create direct financial incentives for operators to improve gender diversity in the workforce. GLI encourages investment in companies that demonstrate a positive gender impact, including women-owned or women-led enterprises, organisations that promote gender equality in the workplace, and businesses whose products or services significantly improve the lives of women and girls. This approach helps address bias and the perceived costs of compliance that discourage private operators from investing in the recruitment and retention of women by making gender inclusion financially beneficial rather than an operational burden. The 2X Criteria and the 2X Challenge are examples of initiatives that support this approach.

Supply-side recommendations address barriers across the pipeline for women e-bus driver, from occupational aspiration and licensing through to hiring and retention, guided by an employment cycle framework.

State transport departments should revise eligibility criteria— height requirements, upper age limits, and prior HPMV driving experience- to expand the pool of eligible women drivers for public e-bus driving. India is estimated to have 4.57-4.86 lakh women commercial drivers with an LMV licence as of March 2025. This represents a significant untapped workforce that could be supported in obtaining an HPMV licence and moving into public e-bus driver roles. If 10% of this cohort were to make the transition, it could create a pipeline of at least 45,000 women e-bus drivers.

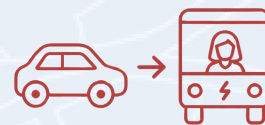
Minimum height requirements of 159–160 cm across public bus authorities exclude most Indian women, whose average height is about 152 cm. These requirements should therefore be recalibrated using state-level anthropometric data from National Family Health Survey (NFHS) to set women-specific thresholds without compromising operational safety. Upper age limits of around 35 years can disproportionately affect women seeking to re-enter the workforce after childcare

responsibilities, as NFHS-5 data show that most women complete childbearing between the ages of 20 and 30 (median age at last birth: about 28 years).

Key informant interviews indicate that the 2–3 years of prior HPMV driving experience requirement is not always strictly followed by PBAs when filling bus driver vacancies. This could be addressed with training² and competency-based tests. Newly recruited women drivers could initially be assigned to lower-traffic, less complex, or women-only routes before progressing to higher-intensity operations. This would improve road safety while reducing the risk of early dropout. In Maharashtra and Delhi, relaxing height and prior HPMV driving experience requirements, alongside targeted training interventions, has enabled more women to enter the profession. As a result, Delhi Transport Corporation reported 74 women bus drivers as of 2025.

The Ministry of Housing and Urban Affairs or State Transport Departments should introduce a Women E-Bus Driver Programme to create a structured pathway for women holding an LMV licence to become professionally trained e-bus drivers.

The cost of training and licensing a candidate as a skilled e-bus driver is estimated at INR 22,000–37,000, depending on state-specific costs. Expanding the women e-bus driver workforce is a shared responsibility between the government and the private sector. Under the She Drives Bharat skilling programme, the government could partially finance the cost of HPMV driver training and licensing costs. Private operators could become eligible for reimbursement after employing women e-bus drivers for 3 months. Skilling 45,000 women e-bus drivers would require an investment of INR 99–166.5 crores.



Even if **10%** of the latent pipeline of 4.57-4.86 lakh women commercial drivers with an LMV license transition to HPMV driving, it could create a new pool of at least

45,000
women e-bus drivers

Private operators should implement gender-responsive mobilisation strategies, referral incentives and targeted communication campaigns to attract women into bus driving roles. Conventional recruitment channels (newspaper ads, generic digital outreach) have limited effectiveness due to occupational stereotypes, limited awareness of bus driving as viable careers, and women's exclusion from informal recruitment networks. Operators can initially focus on women-headed households, who maybe more amenable to undertake non-traditional higher wage jobs. This initial pool of women e-bus drivers must be supported to serve as champions, role models and attract a larger workforce.

[2] A 21-day course includes 14-days of practicals and upto 7-days of theoretical training.

Simultaneously, operators should adopt proactive mobilisation strategies through organizations working on women's skilling and livelihoods, community institutions, women's collectives, and self-help groups. Mobilisation efforts should also engage households through clear communication that reframes bus driving as an essential profession while highlighting wages, benefits, safety, and job security to build trust. Open days at bus depots and women-focused job fairs can provide candidates and their families with direct exposure to the work environment. Operators can also offer higher referral incentives linked to the training completion, certification, and retention of women e-bus drivers—a strategy already used by some of the women fleet operators interviewed as part of their recruitment efforts.

Electric bus depots must build, upgrade, and maintain gender-sensitive infrastructure, operations, and safe workplace environments. This includes clean and well-maintained gender-segregated toilets at all bus depots and terminals, as well as locker rooms and rest areas. Desk-based duties may be considered for women during menstruation or pregnancy, where appropriate. Split shifts may also be considered to support women e-bus drivers in balancing household and caregiving responsibilities, while encouraging men to share care work.

Structured post-placement support through buddy systems, along with designated focal persons, should be provided, as the risk of attrition is highest during the first 6 months after deployment. Workplace safety must institutionalise a zero-tolerance approach to sexual and workplace harassment, including functional Internal Complaints Committees (ICCs) at the zonal or regional levels, regular compliance assessments under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, and regular gender sensitization trainings across all depots.

Operators may consider implementing integrated welfare schemes, structured recognition mechanisms, to improve job satisfaction, strengthen retention, and enhance the long-term attractiveness of bus driving as a career.

Way Forward. Expanding women's participation in e-bus driving requires an ecosystem-level approach that builds enabling conditions for entry, retention, and career progression across the sector. School transport services, employee shuttle fleets, and institutional transport operations provide controlled environments with fixed routes and regular schedules making them suitable entry pathways for women drivers.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	v
List of figures	x
List of tables	x
Key terms	xi
List of abbreviations	xii
1. Introduction	1
2. Methodology	4
3. Pathways to becoming a bus driver in India	8
4. Barriers to women's participation in bus driving in India	12
4.1 Attraction	13
4.2 Training & licencing	16
4.3 Hiring	18
4.4 Retention and career progression	19
5. Recommendations	22
5.1 Creating the demand for women e-bus drivers	24
5.2 Building the women e-bus driver supply pipeline	28
6. Way forward	36
REFERENCES	37

LIST OF FIGURES

Figure 1: Women professional licence holders as of March 2022	2
Figure 2: E-Bus driver employment cycle framework for women	5
Figure 3: Methodology for research	6
Figure 4: Process and time of becoming a bus driver	9
Figure 5: Pathways to becoming a bus driver in India	10
Figure 6: Barriers to women's attraction to bus driving	13
Figure 7: Barriers to women's access to bus driving training and licensing	16
Figure 8: Barriers to women's recruitment and hiring in bus driving jobs	18
Figure 9: Barriers to women's retention and career progression in bus driving jobs	19

LIST OF TABLES

Table 1: Cost of training and licence fees to become a bus driver (including taxes)	11
---	----

KEY TERMS

Transport vehicle	A public service vehicle, a goods carriage, an educational institution bus or a private service vehicle.
Light Motor Vehicle	A transport vehicle or omnibus the gross vehicle weight of either of which or a motor car or road-roller the unladen weight of any of which does not exceed 7500 kilograms.
Heavy Passenger Motor Vehicle	Any public service vehicle, private service vehicle, educational institution bus, or omnibus, the gross vehicle weight of which exceeds 12,000 kilograms, or any motor car the unladen weight of which exceeds 12,000 kilograms.
Medium Passenger Motor Vehicle	Any public service vehicle or private service vehicle, or educational institution bus other than a motor cycle, invalid carriage (Vehicle designed for a person with disability), light motor vehicle or heavy passenger motor vehicle (unladen weight is >7,500 kg and <12,000 kg).
Public Service Vehicle	Any motor vehicle used or adapted to be used for the carriage of passengers for hire or reward, and includes a maxicab, a motorcab, contract carriage, and stage carriage.
Professional licence	A professional driving licence is issued for commercial or transport purposes. It allows a driver to operate vehicles used for hire or business, such as taxis, buses, trucks, goods carriers, and passenger transport vehicles.
Gender-lens investing	A strategy or approach to investing that considers gender-based factors across the investment process to advance gender equality and better inform investment decisions (Hand, Sunderji, Ulanow, Remsberg, & Xiao, 2024).

LIST OF ABBREVIATIONS

AC	Air-conditioned
ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
ASRTU	Association of State Road Transport Undertakings
BRTS	Bus Rapid Transit System
CRUT	Comprehensive Region Urban Transport
CSO	Civil Society Organization
DFIs	Development Finance Institutions
DTC	Delhi Transport Corporation
ESG	Environmental, Social and Governance
ESI	Employees' State Insurance
ESS	Environmental and Social Safeguards
FAME	Faster Adoption and Manufacturing of Hybrid and Electric Vehicles
GAPs	Gender Action Plans
GCC	Gross Cost Contract
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLI	Gender-lens Investing
GNCTD	Government of National Capital Territory, Delhi
HPMV	Heavy Passenger Motor Vehicle
NGO	Non-Governmental Organization
ICCs	Internal Complaints Committees
ITIs	Industrial Training Institutes
KIIs	Key Informant Interviews
KSRTC	Karnataka State Road Transport Corporation
LFPR	Labour Force Participation Rate
LMV	Light Motor Vehicle
MDBs	Multilateral Development Banks
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act

MoHUA	Ministry of Housing and Urban Affairs
MSRTC	Maharashtra State Road Transport Corporation
NBWSM	National Bus Workforce Skilling Mission
NFHS	National Family Health Survey
OEMs	Original Equipment Manufacturers
OSH Code	Occupational Safety, Health and Working Conditions Code
PBA	Public Bus Authorities
PF	Provident Fund
POSH	Sexual Harassment of Women at Workplace Prevention, Prohibition, and Redressal Act, 2013
PSV	Public Service Vehicle
SHGs	Self Help Groups
SLBs	Sustainability-linked Bonds
SLLs	Sustainability-linked Loans
TNSTC	Tamil Nadu State Transport Corporation
TSRTC	Telangana State Road Transport Corporation
TVET	Technical and Vocational Education and Training

A man in a light blue uniform stands with his arms crossed in front of a white electric bus. The bus has a blue stripe and a blue circular logo on the front. The background is a blurred city street.

1. INTRODUCTION

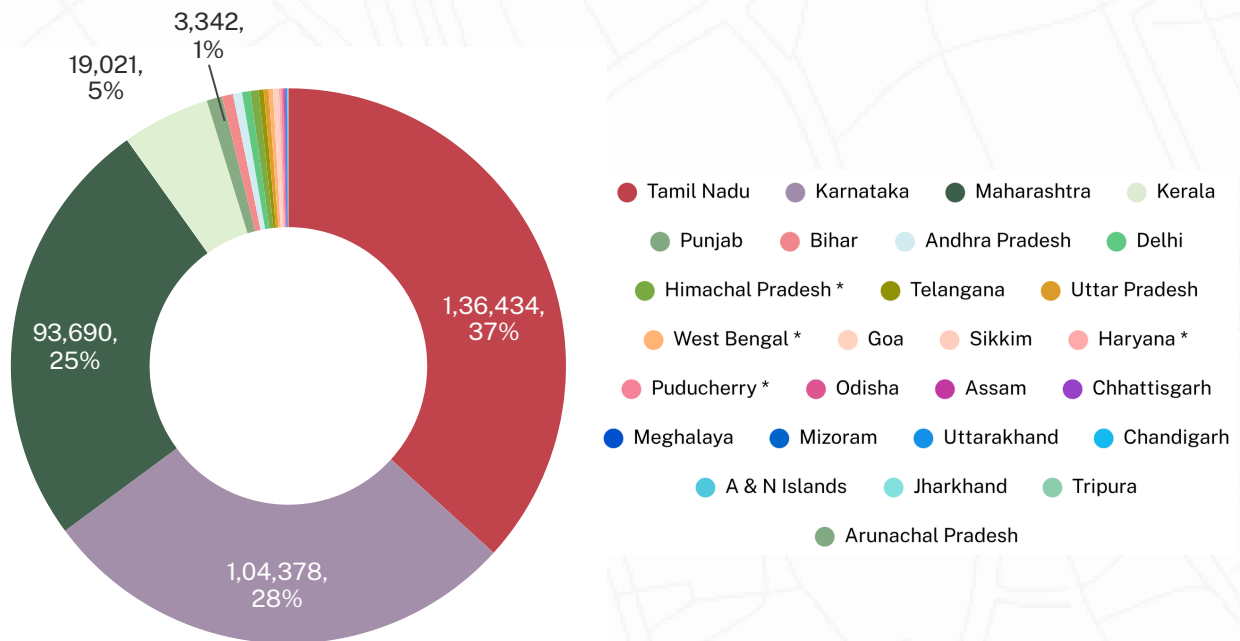
India is working to replace 800,000 diesel buses with electric buses by 2030, including those used in public, private, and institutional fleets (Bhat, et al., 2022). The planned deployment of at least 50,000 e-buses in cities under the National Electric Bus Programme is expected to create a demand for approximately 1.15–1.25³ lakh e-bus drivers for intra-city urban bus operations. As of June 2026, more than 30,000 e-buses were sanctioned under key Central Government initiatives, including FAME-I, FAME-II, PM e-Bus Sewa, and PM E-DRIVE (Ministry of Heavy Industries- PIB, 2024; Ministry of Heavy Industries- PIB, 2026).

India had approximately 3.7 lakh women drivers holding professional

driving licences in 2021–22 (MoRTH, 2022). This is estimated to have increased to 4.57–4.86 lakh in 2024–25 and is projected to reach 6.18–7.62 lakh by 2030. A professional driving licence allows individuals to drive commercial vehicles, including taxis, buses, auto-rickshaws, delivery trucks, and heavy transport vehicles. Women holding professional driving licences in 2021–22 are concentrated in a few states, with Tamil Nadu, Karnataka, Maharashtra, Kerala, and Punjab accounting for approximately 96% of all women who are professional licence holders. However, there is no data on licences disaggregated by vehicle type.

[3] Considering 2.3–2.5 drivers per bus.

Figure. 1: Women professional licence holders as of March 2022



Source: MoRTH, 2022

The expanding e-bus fleet presents an opportunity to address driver shortages by increasing women's participation in bus driving. Multiple reports from cities across India indicate a persistent shortage of bus drivers, a constraint that is expected to intensify as e-bus operations expand (Mumbai Live Team, 2026; Sinha, 2026; Kidiyoor, 2025).

The transition to electric buses is changing the nature of bus driving, as features such as automatic transmission and power steering reduce some of the operational challenges traditionally associated with driving buses (Dhole, 2022). Expanding women's participation in bus driving can help address driver shortages while supporting the Viksit Bharat objective of increasing labour force participation of women.

Existing efforts to increase women's participation as e-bus drivers have

yielded limited results. Women account for only around 0.1% of bus drivers in State Transport Undertakings (STUs), which operate nearly 1,45,000 buses (ITDP and GIZ, 2025). Moreover, the ratio of women to men holding professional driving licences in India is approximately 1:109, reflecting a substantial gender gap.

This gap persists despite the changing landscape of bus operations, with increasing contractualisation of services and greater involvement of private operators in fleet and driver management. The experience of the National Electric Bus Programme highlights this challenge. The initial tender issued by CESL in 2022 included a requirement that 25% of drivers be women (CESL, 2022). However, this provision was removed in subsequent tenders (CESL, 2025; CESL, 2026).

Achieving 30–50% women’s representation in the urban public e-bus driver workforce could create employment opportunities for an estimated 37,500–62,500 women e-bus drivers.

The estimated 4.57–4.86 lakh women commercial drivers holding Light Motor Vehicle (LMV) licences as of March 2025 represent a significant untapped labour pool that can be mobilised by supporting them to obtain Heavy Passenger Motor Vehicle (HPMV) licence and transition into public e-bus driver roles. If 10% of this cohort were to make the transition, it could create a pipeline of at least 45,000 women e-bus drivers.

However, experiences from existing programmes indicate a low retention rate of 4–5% among women entering the driver employment pipeline. This highlights the need to identify and address the key barriers affecting women’s entry into and retention in the workforce to increase women’s employment as e-bus drivers at scale.





2. METHODOLOGY

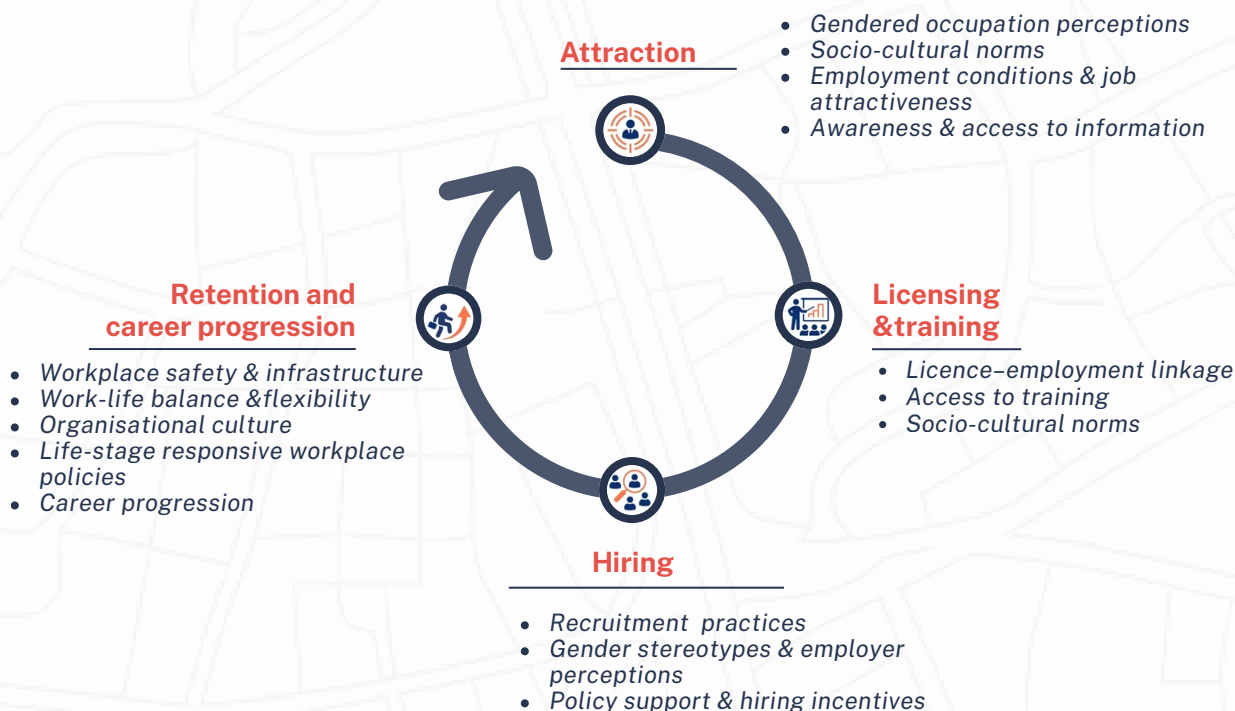
The study is grounded in a **theory of change for gender-based employment segregation**, which conceptualises women's low labour force participation as the result of interacting supply-side, demand-side, institutional, and socio-cultural constraints, rather than any single binding barrier (Carranza, Das, & Kotikula, 2023). Consistent with the wider labour economics literature, women's employment outcomes are understood to be shaped by interlinked constraints related to unpaid care responsibilities, employer hiring and workplace practices, skills acquisition pathways, and prevailing social norms. Together, these factors influence labour market entry, occupational choice, and career progression (OECD, 2025; Olivetti, Pan, & Petrongolo, 2024).

Building on this foundation, the study is guided by two research questions:

- 1 **What are the barriers that affect women's participation in the bus driver employment pipeline for intra-city public bus operations?**
- 2 **What strategies or forms of support can ensure that women are trained, placed and retained in driving roles within intra-city electric public bus operations?**

The analysis is operationalised through an employment cycle framework, which conceptualises women's participation in the intra-city electric bus driving workforce as a continuous and interconnected pathway rather than a linear process. The framework recognises the interlinkages between different stages of the employment cycle, where improvements at one stage can generate positive spillover effects across subsequent stages.

Figure. 2: Analytical framework adopted for the research



Note: Developed by CSEC and TUC, adapted from Turnbull (2013)

The framework analyses barriers across four stages:

1. Attraction: Examines occupational perceptions, socio-cultural norms, and information gaps that shape women's willingness to consider bus driving as a viable career.

2. Training and licensing: Examines barriers related to skills acquisition and workforce readiness, including access to training institutions, affordability of training, and licensing requirements. This stage examines whether women have equitable opportunities to acquire the

qualifications and competencies required for professional bus driving roles.

3. Hiring: Examines recruitment practices, experience requirements, labour market networks, employer perceptions, and potential biases in assessing candidate suitability.

4. Retention and career progression: Examines job quality, workplace conditions, organisational culture, and alignment with life-stage needs that influence women's continued participation.

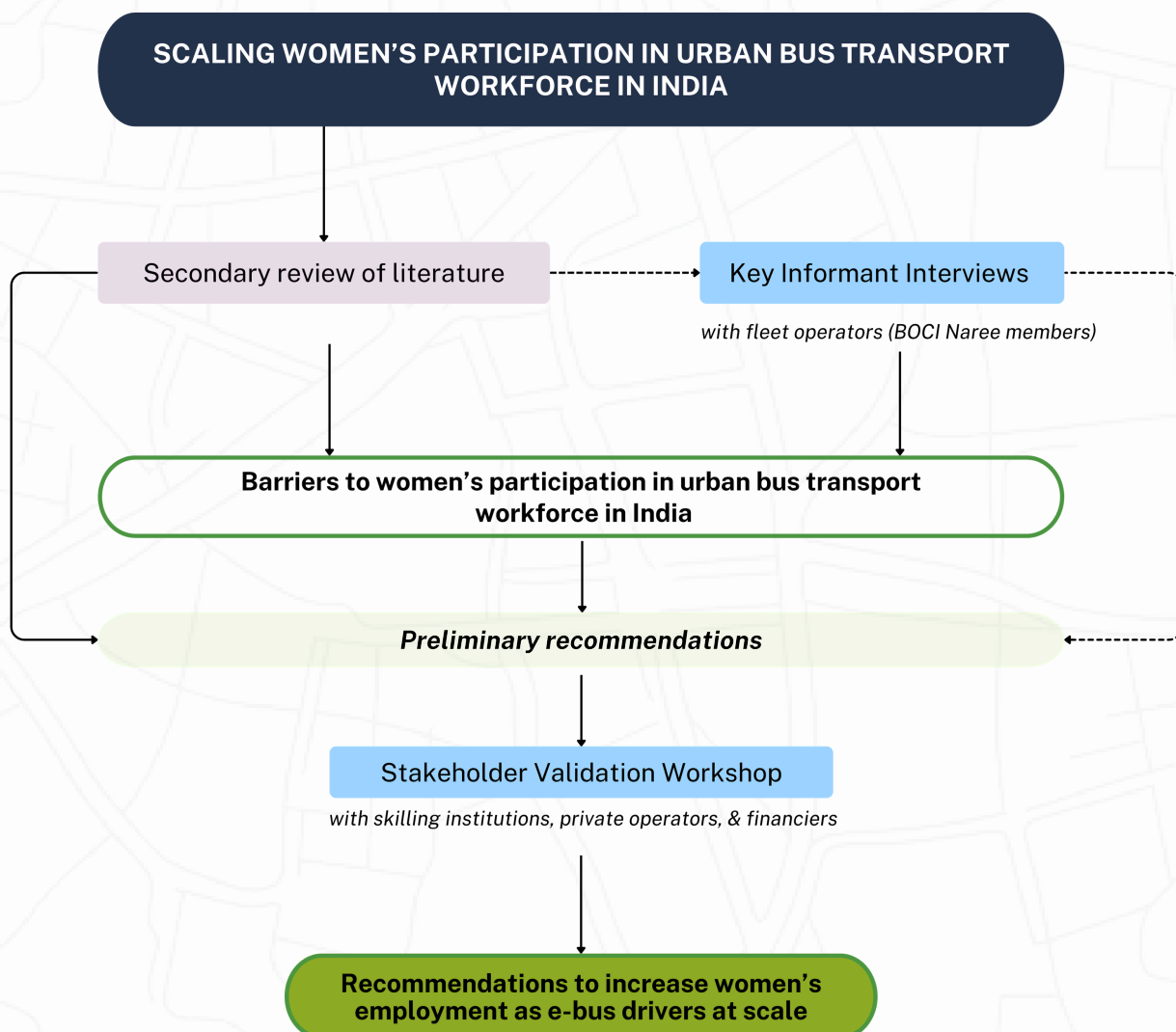
RESEARCH DESIGN AND DATA COLLECTION

The study adopts a qualitative research approach combining secondary research, primary qualitative interviews, and stakeholder validation exercises.

Secondary review. Secondary research was conducted to systematically review and synthesise existing academic and policy literature on women's participation in the urban bus transport workforce in India. A comprehensive literature search (2010–2025) was conducted across

major academic databases, including JSTOR, Economic & Political Weekly, ScienceDirect, Elsevier, Google Scholar, and Scopus. The review included peer-reviewed journal articles, working papers, policy briefs, conference proceedings, doctoral dissertations, book chapters, and grey literature, along with official publications from relevant government ministries and STUs. Search queries were developed using Boolean operators and combinations of keywords such as “women bus drivers in India,” “gender and public transport,” and “urban bus workforce,” including state-specific terms to capture

Figure. 3: Methodology for research



sub-national variation. A two-stage screening process involving title and abstract screening against predefined inclusion criteria was applied to ensure relevance, empirical or policy orientation, and contextual applicability to India, while excluding non-scholarly and unverified sources.

Key Informant Interviews (KIs). Semi-structured KIs were conducted with seven women fleet entrepreneurs in the commercial mobility sector, who are also members of BOCI Naree. The interviews were designed to understand demand-side hiring constraints, employer attitudes, and alternative occupational entry pathways for women into bus driving.

Stakeholder Validation Workshop. Stakeholder validation was conducted through two online consultations in

May 2026 with skilling institutions, private operators and financiers. The purpose was to triangulate the barriers the faced by women across the bus driver employment pipeline identified through the secondary review and KIs, and to assess the feasibility and operational relevance of the proposed recommendations against on-the-ground constraints and labour market frictions.

SCOPE AND LIMITATIONS

This study focuses on intra-city public bus operations in India in the context of the shift towards electric mobility. It is limited to this segment and does not cover school transport, employee transport, or other private shuttle services.





3.

PATHWAYS

TO BECOMING A BUS DRIVER IN INDIA

The road transport sector in India is governed by the Motor Vehicles (Amendment) Act, 2019 and the Central Motor Vehicles (Second Amendment) Rules, 2026. States implement their corresponding regulations through their Transport Departments and regional transport office responsible for issuing driving licences based on prescribed criteria. This chapter outlines the pathway to becoming a public bus driver by focusing on the process, timelines, eligibility requirements, and associated costs involved. Three states- Delhi, Maharashtra, and Karnataka have been selected for analysis to understand these state-level variations.

In India, buses are classified as

[4] In Delhi and Karnataka, applicants are required to hold a valid LMV licence for at least one year, whereas Maharashtra requires a minimum holding period of two years before applying for an HPMV licence.

transport vehicles. Vehicles with a gross vehicle weight or unladen weight exceeding 12,000 kg are classified as HPMVs. To drive a bus in India, an individual must hold an HPMV licence and a valid Public Service Vehicle (PSV) badge. To be eligible for an HPMV licence, applicants are generally required to have held a valid LMV licence for at least one year (subject to state-specific regulations), and be at least 20 years of age. The process of obtaining an HPMV licence and a PSV badge varies across states and is outlined here.

The HPMV driving license process begins with applying for a HPMV learner's licence. Then, applicants must complete a mandatory waiting period of 30 days before appearing for

the driving test. During this period, they are required to undergo the mandatory driver training, comprising 38 hours of instruction delivered over six weeks, including 16 hours of theoretical instruction and 22 hours of practical driving training. The learner's licence remains valid for up to six months, during which the applicant must complete the required training and apply for the driving test. Upon successfully completion of the training and passing the driving test, they are issued a permanent HPMV licence. After obtaining the HPMV licence, the applicants must apply for a PSV badge issued by the Regional Transport Office (RTO) to become eligible to operate a transport vehicle (Figure 4).

TWO POSSIBLE PATHWAYS

Women can enter the bus driving profession through two pathways. The first pathway is for individuals who do not yet hold an LMV licence. They must first obtain an LMV licence and complete the required holding period before becoming eligible to apply for a HPMV licence. The second pathway is for individuals who already hold a LMV licence and have completed the prescribed holding period, allowing them to progress directly to an HPMV licence.

The first pathway to obtain a license to drive buses/HPMV's typically takes around 15–20 months, including 1–1.5 months to obtain an LMV licence, the mandatory LMV licence holding period of at least 12 months, around 1–1.5 months to obtain HPMV license and an

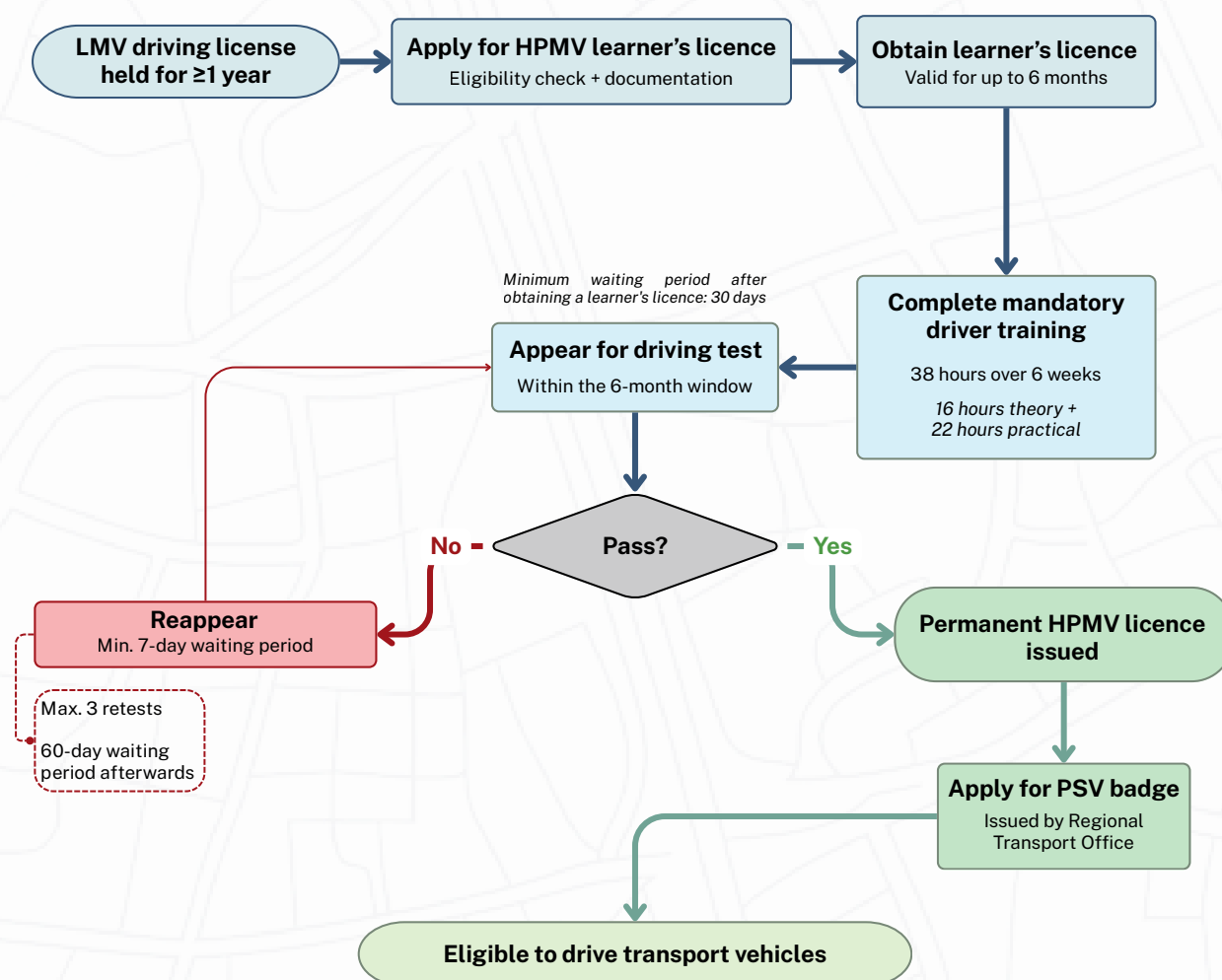
additional week to obtain a PSV badge. The estimated cost for this pathway ranges from ₹13,000–₹22,000, excluding the cost of LMV training, and increases to ₹22,000–₹37,000 if LMV training is included (Table 1).

The second pathway applies to individuals who already hold a valid LMV licence and have completed the required holding period, allowing them to progress directly to an HPMV licence. This pathway takes approximately 1–1.5 months, covering HPMV training, testing, and PSV badge issuance. The estimated cost ranges from ₹12,000–₹21,000, depending on the state-specific training and licensing costs (Table 1).

After obtaining the license, the experience needed to qualify for recruitment as a public bus driver is determined either by the relevant state cadre rules or by the STU themselves. These requirements vary across states. For example, in Karnataka, STUs follow



Figure. 4: Process and time to obtain the HPMV license



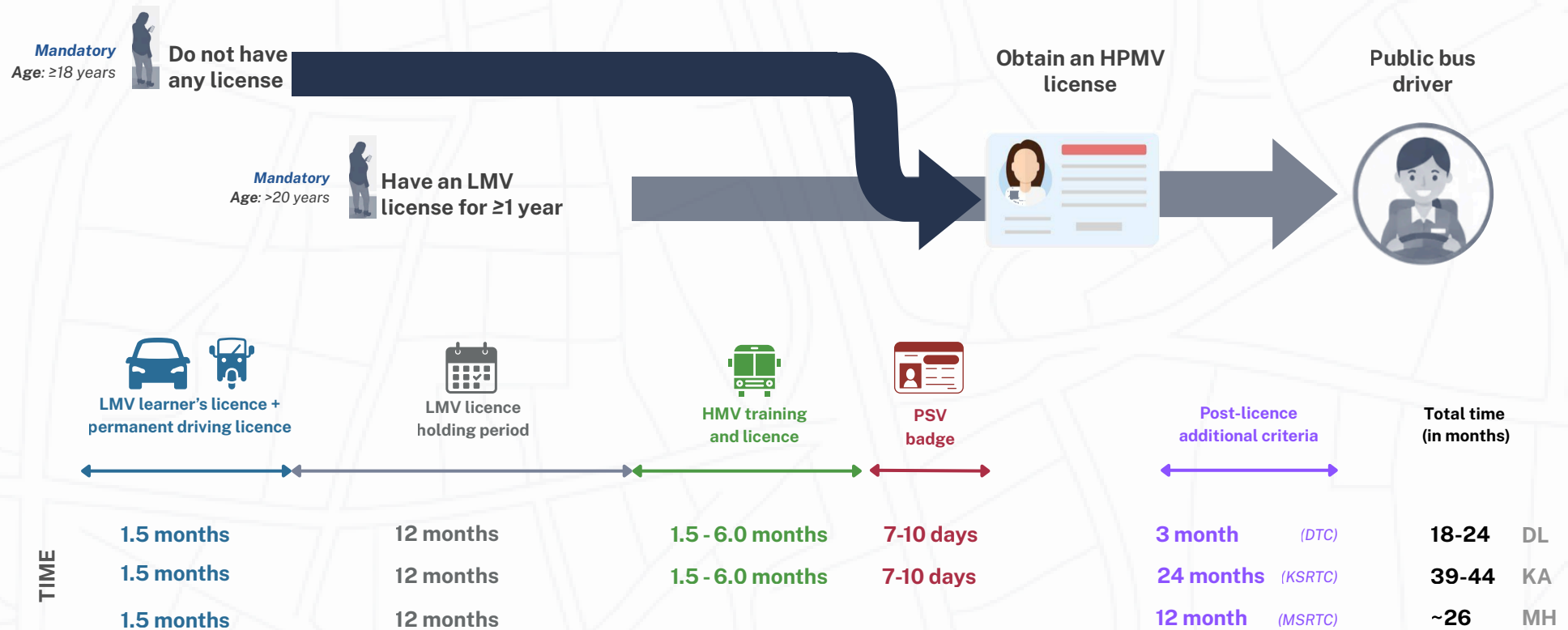
Note. As per the Motor Vehicles Act, 1988 (MoRTH, Government of India, 1988) and Central Motor Vehicle Rules (CMVR) (MoRTH, 2023).

the Karnataka State Road Transport Corporation (Cadre and Recruitment) Regulations, 1982, which require applicants to have held a heavy vehicle (transport) driving licence for at least two years (KSRTC, 2023). In contrast, the Delhi Transport Corporation (DTC) has reduced the pre-recruitment HPMV driving experience requirement for women from three years to one month (DTC, 2022). Similarly, the Maharashtra State Road Transport Corporation (MSRTC) allows women who have either held an LMV licence for at least one year or have a fresh

heavy vehicle driving licence to apply for recruitment (MSRTC, 2019). Selected candidates are then provided with a one-year training programme, which includes obtaining an HPMV driving licence.

As a result, the total time required to become eligible for recruitment as a public bus driver increases to approximately 18-44 months, depending on the state and the applicable recruitment requirements.

Figure. 5: Pathways to becoming a public bus driver for women in India

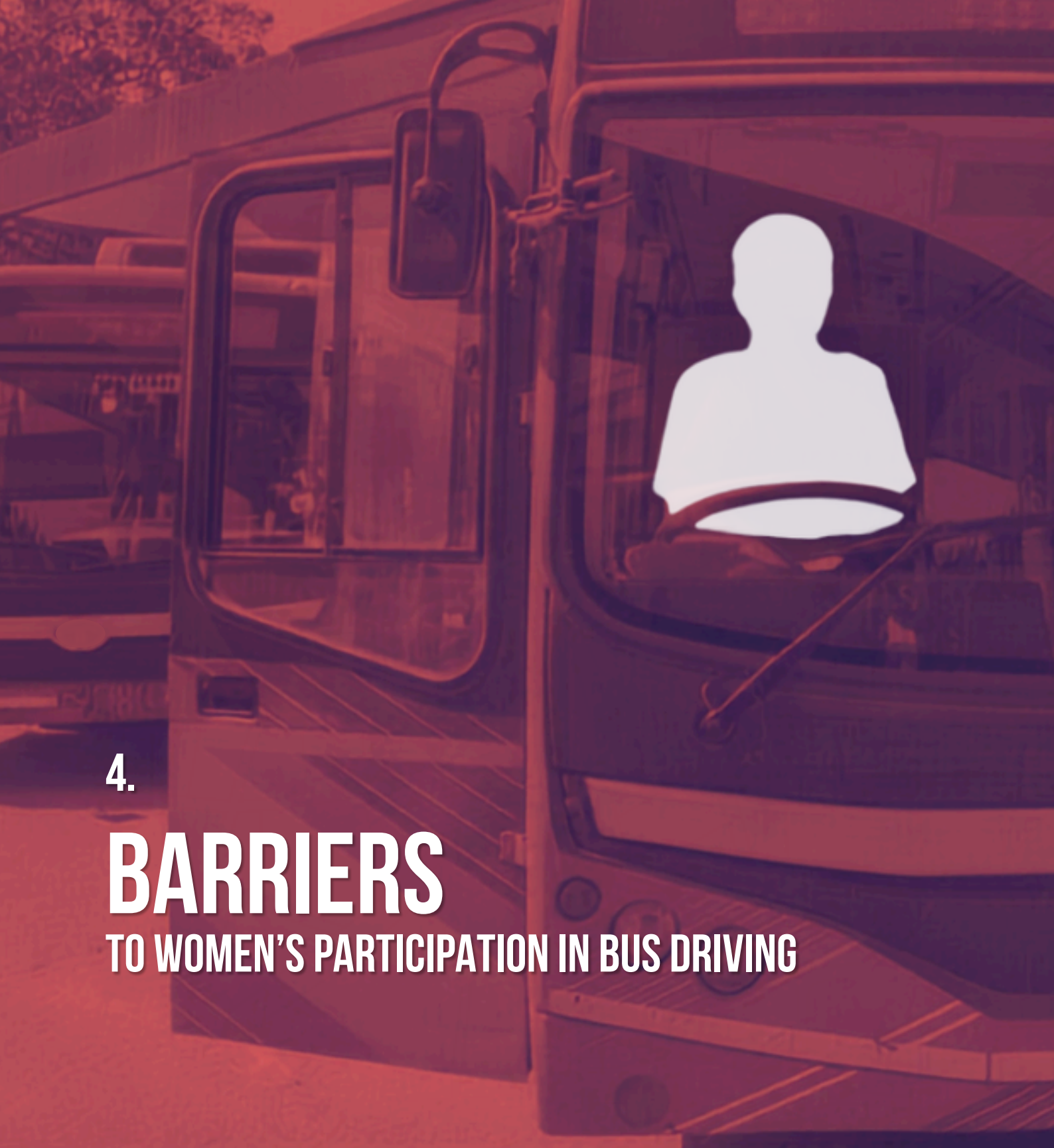


Note. LMV license holding period for Delhi and Karnataka are as per the Motor Vehicles Act, 1988 (MoRTH, Government of India, 1988). Time required for obtaining LMV and HPMV licenses is as per the Central Motor Vehicle Rules (CMVR) (MoRTH, 2023). DTC, KSRTC, and MSRTC are the state-level transport authorities, hence the total time has been calculated based on their requirements. MSRTC has an experience requirement of 1 year for male applicants which is waived for female applicants. Instead, the training is provided to LMV license holders (≥ 1 year) or fresh HMV license holders, creating two possible pathways. For the latter, it is important to note that in Maharashtra, the LMV license holding period is typically 24 months, as governed by the Maharashtra Motor Vehicle Rules, 1989 (Government of Maharashtra, 1989).

Table. 1: Cost of training and licence fees to become a bus driver (including taxes)

Licence stages		Delhi	Maharashtra	Karnataka
LMV Licence	Learner's Licence (LL) Cost	Rs. 500	Rs. 201	Rs. 500
	Training cost (optional)	Rs. 8,260	Rs. 8,260	Rs 8,260 (NR) Rs. 15,340 (R)
		Private: Rs. 11,800		
	Permanent Driving Licence (DL) cost	Rs. 400	Rs. 716	Rs. 200
	Total LMV cost without training (A)	Rs. 900	Rs. 917	Rs. 700
	Total LMV cost with training (A')	Rs. 9,160–12,700	Rs. 9,177–12,717	Rs. 8,960–Rs. 16,040
HPMV Licence	HPMV LL cost	Rs. 450	Rs.151	Rs. 450
	Licence cost (Additional vehicle class/category)	Rs. 1150	Rs. 1016	Rs. 500
	Training cost (Mandato y)	Rs. 10,620– Rs. 12,980	Rs. 17,700	Rs. 12,980 (NR) Rs. 19,706 (R)
	Total HPMV cost (B)	Rs. 12,220 - Rs.14,580	Rs. 18,867	Rs. 13,930- Rs.20,656
	PSV badge (C)	Rs. 200	Rs. 766	Rs. 50
	Total Cost (A+B+C) without LMV training	Rs. 13,320-15,680	Rs. 20,550	Rs. 14,680- 21,406
	Total cost (A'+B) With LMV training	Rs. 21,580–27,480	Rs. 28,810–32,350	Rs. 22,940–36,746

Note. Delhi LMV licence fees were calculated using learner and permanent licence fees (Transport Department, GNCTD, n.d.; Transport Department, GNCTD, n.d.). Delhi HPMV licence fees were calculated using learner licence fees and fees for addition of another vehicle class (Transport Department, GNCTD, n.d.; Transport Department, GNCTD, n.d.). Maharashtra licence and PSV badge fees were obtained from licence fees as per Government of Maharashtra (Motor Vehicles Department, Maharashtra, n.d.). Karnataka licence and PSV badge fees were obtained from fees related to driving licence services (ebiz Karnataka, n.d.). LMV training fees are based on fees reported by Govt. Approved Motor Driving Training School (GAMDTS) (Ashok Leyland Driving Training Institute, n.d.) and Learner Detailed Track Course by Maruti Suzuki (Maruti Suzuki Driving School, n.d.). HPMV training fee ranges were compiled from state-specific training institutes and programs (Ashok Leyland Driving Training Institute, n.d.; IDTR Railmagra, n.d.; IDTR Pune; Government of Madhya Pradesh, n.d.; DHNS, 2024).



4.

BARRIERS

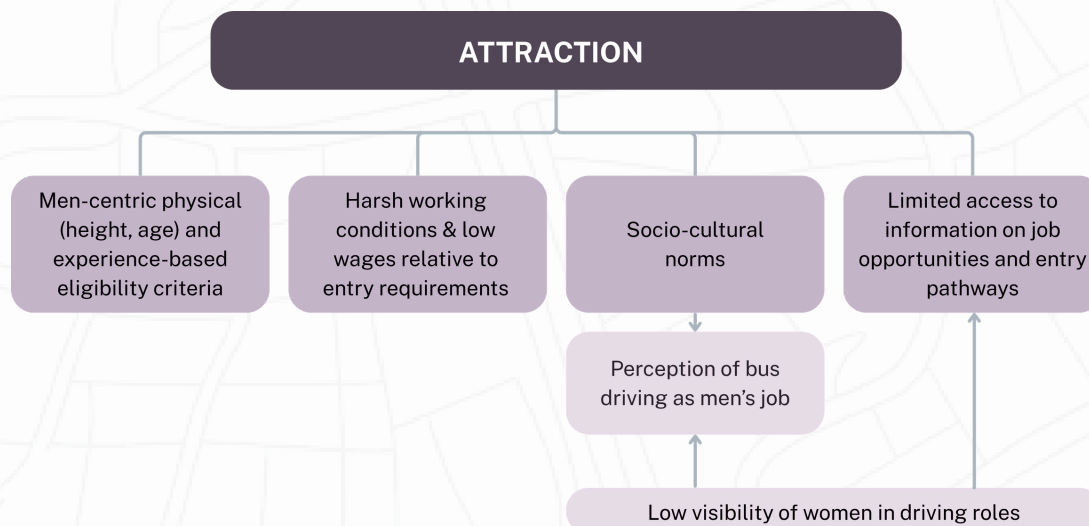
TO WOMEN'S PARTICIPATION IN BUS DRIVING

This chapter presents findings from a secondary review of the existing literature and maps the barriers that shape women's participation across the bus driver employment pipeline in India — from occupational choices and access to the required qualifications to entry into recruitment systems, retention, and career advancement.

5.1 ATTRACTION

This section examines why bus driving is often not considered as a viable occupation by women and how gendered occupational perceptions, socio-cultural norms, employment conditions and job attractiveness, and awareness and access to information shape their initial occupational choices.

Figure. 6: Barriers to women's attraction to bus driving



Eligibility criteria set by State Transport Departments act as a pre-entry barrier in the bus driver labour market, limiting women's access at the consideration stage.

Although these criteria are gender-neutral on paper, physical standards, age limits, and experience requirements create structural constraints that affect who can realistically enter the occupation.

Physical eligibility, particularly minimum height requirements of 159–160 cm in most PBAs, restrict women's entry into bus driving. Given that the average height of adult women in India is around 152 cm (Gupta, Gupta, & Dhar, 2022), these thresholds exclude a large share of women from the applicant pool. The relaxation of height

requirements to 153 cm for women in selected states, such as Delhi (in 2022) and Maharashtra (in 2020), along with other interventions, has led to an increase in the number of applicants (Gupta, Gupta, & Dhar, 2022).

Upper age limits of around 35 years, set up by multiple PBAs (AP Govt Jobs, 2026; Chandigarh Administration, 2023), can disproportionately affect women seeking to re-enter the workforce after childcare responsibilities, as NFHS-5 data show that most women complete childbearing between the ages of 20

and 30 (median age at last birth: about 28 years).

PBAs typically require applicants to have 2–3 years of HPMV driving experience before recruitment (HSSC, 2017; North Bengal State Transport Corporation, 2017). This requirement excludes many women, as they have had fewer opportunities to obtain HPMV licences and gain the required driving experience, making them ineligible despite capable of performing the role. There is also resistance among PBAs to relaxing these criteria, with some viewing prior experience as an important safeguard for road safety. However, the experience of Delhi under Mission Parivartan has demonstrated that structured, pre-deployment training

for women candidates—including HPMV-licence preparation and supervised bus-driving practice—can effectively address concerns related to road safety. Furthermore, interviews with PBAs that have already inducted women drivers indicate that women drivers tend to be more cautious, have lower accident and violation rates, and are often perceived as contributing positively to road and passenger safety outcomes.

KIs indicate that private operators also consider 3–5 years of HPMV driving experience when hiring bus drivers. In the absence of clearly defined entry pathways into the profession, this requirement becomes an entry barrier for women and reinforces the existing male dominance in the workforce.



Harsh working conditions, lower wage-to-entry cost ratio, and contractual employment has reduced the occupational attractiveness of bus driving, including for women.

Monthly earnings for bus drivers vary across cities and operators, broadly ranging from ₹18,000 to ₹35,000 (The New Indian Express, 2024; Kamgar Ekta Committee, 2025). While state-level wage regulations in Delhi, Karnataka, and Maharashtra generally recognise drivers as “skilled” workers, in practice (Government of Karnataka, 2026; Maharashtra Code on Wages Rules, 2025; GNCTD, 2021), evidence indicates that bus drivers hired by private operators are frequently paid below the applicable statutory minimum wages (Aamchi Mumbai

Aamchi BEST, 2024; TNN, 2024). Entry into the occupation requires at least a secondary education and an HPMV licence, which involves considerable time and upfront costs for training, medical certification, and licence fees (see Table 1). Compared with alternative driving occupations such as auto-rickshaw driving (₹15,000–₹35,000 with an LMV licence) and cab driving on aggregator platforms (approximately ₹20,000–₹25,000) (Vasihnavi V.M., 2019), bus driving offers a lower wage-to-entry-cost ratio despite requiring higher levels of

certification and longer training periods. This reduces its relative attractiveness compared with LMV-based driving occupations.

With the growing adoption of contractual operating models among public bus authorities, bus driving roles

are increasingly perceived as temporary jobs. Drivers' wages are often linked to the number of excluded from key employment protections such as Provident Fund (PF), Employees' State Insurance (ESI), and assured job security (Raveendran & Vanek, 2020).

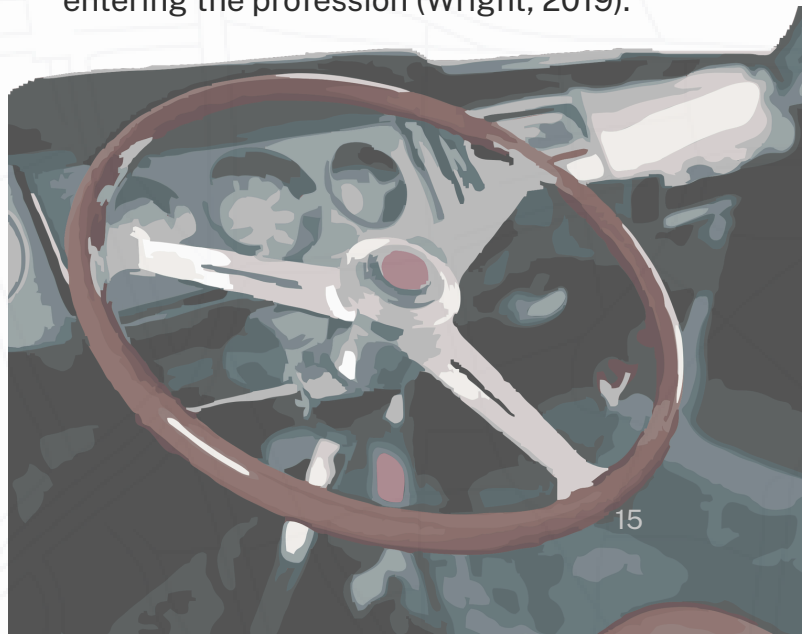


Socio-cultural norms and patriarchal household structures discourage women from considering bus driving as a viable occupation.

Bus driving is widely perceived as a masculine occupation requiring physical strength and technical competence (Wright, 2019). This perception is reinforced by patriarchal expectations that women should prioritise unpaid domestic and caregiving responsibilities. During KILs, private fleet operators reported observing reluctance among women to enter driving roles because of household resistance and caregiving responsibilities.

These constraints are further reinforced by limited aspiration and information pathways. Bus driving is also commonly framed and advertised as a man's job (ILO, 2013; Kurshitashvili, et al., 2025), limiting women's exposure to the occupation and leading many women not to see it as a suitable career (Gaucher & Justin Friesen, 2011). The lack of visible women drivers further reduces the perceived feasibility of entry, weakens occupational aspirations, and reinforces gender stereotypes

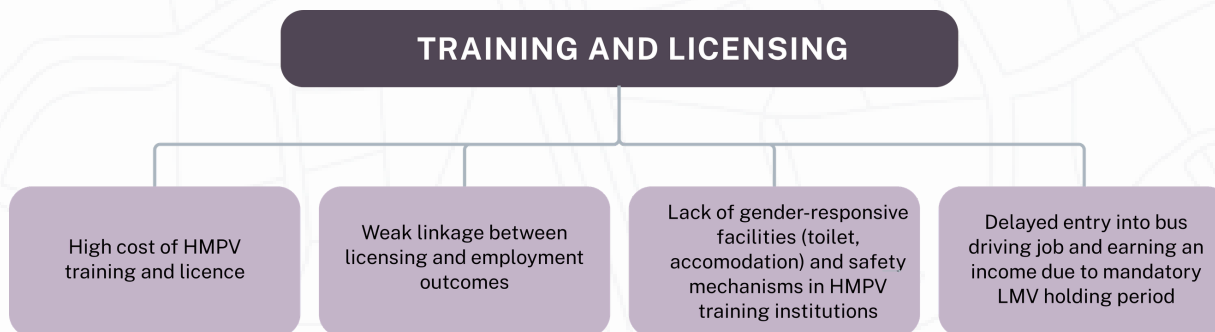
associated with the occupation (Sanchez de Miguel, Lizaso, Larranaga, & Arrospide, 2015). Private operators rely predominantly on informal referral networks for recruitment, which structurally exclude women from information about job opportunities, training pathways, and employer expectations, because these networks are largely male-dominated (based on KILs). International evidence further demonstrates that when women do enter male-dominated transport sectors in small numbers, tokenistic representation increases peer scrutiny and reduces retention, discouraging subsequent cohorts of women from entering the profession (Wright, 2019).



5.2 TRAINING AND LICENSING

This section examines the factors influencing women's progression through the training and licensing stage of the employment pipeline. It assesses access to training and licensing, linkages between skill development and employment opportunities, and the role of socio-cultural norms in shaping women's ability to acquire the skills required for professional driving roles.

Figure. 7: Barriers to women's access to bus driving training and licensing



The mandatory one-year LMV license holding period before applying for an HPMV licence (or longer, depending on state regulations) creates a delay in the pathway to becoming a bus driver and earning an income.

This delay is particularly significant for women from lower-income groups, as the pathway from obtaining an LMV licence to becoming a bus driver can extend to approximately 18–24 months, depending on state-specific requirements. The prolonged transition period, combined with household financial constraints, limited support for career transitions, and competing caregiving responsibilities, creates potential points of attrition within the driver employment pipeline.

During stakeholder consultations, skilling institutes highlighted that some women applicants, despite holding an LMV licence for the required one-year period, have limited or no practical driving experience. To address this gap, skilling institutes often provide short-term LMV refresher training to build driving confidence and on-road-driving skills before progressing candidates to HPMV training.





The ₹12,000–₹21,000 cost of HPMV training and licencing acts as a binding financial constraint for women from lower-income groups

who bear the full upfront cost without a guaranteed employment outcome (Rajiv & Raina, n.d.; Gupta, Gupta, & Dhar, 2022).

This is further compounded by the location of training institutes, which are largely situated in peri-urban areas and often require long-distance travel or on-site accommodation, adding to the time, cost, and safety burdens faced by women trainees (Reddy, 2024; Alam, 2025; TNN, 2025).

This is primarily due to a weak linkage between training completion and actual employment, as obtaining an HPMV licence does not necessarily translate into a comparable likelihood of securing employment. As a result, the financial investment in certification does not reliably convert into employment or earnings, creating

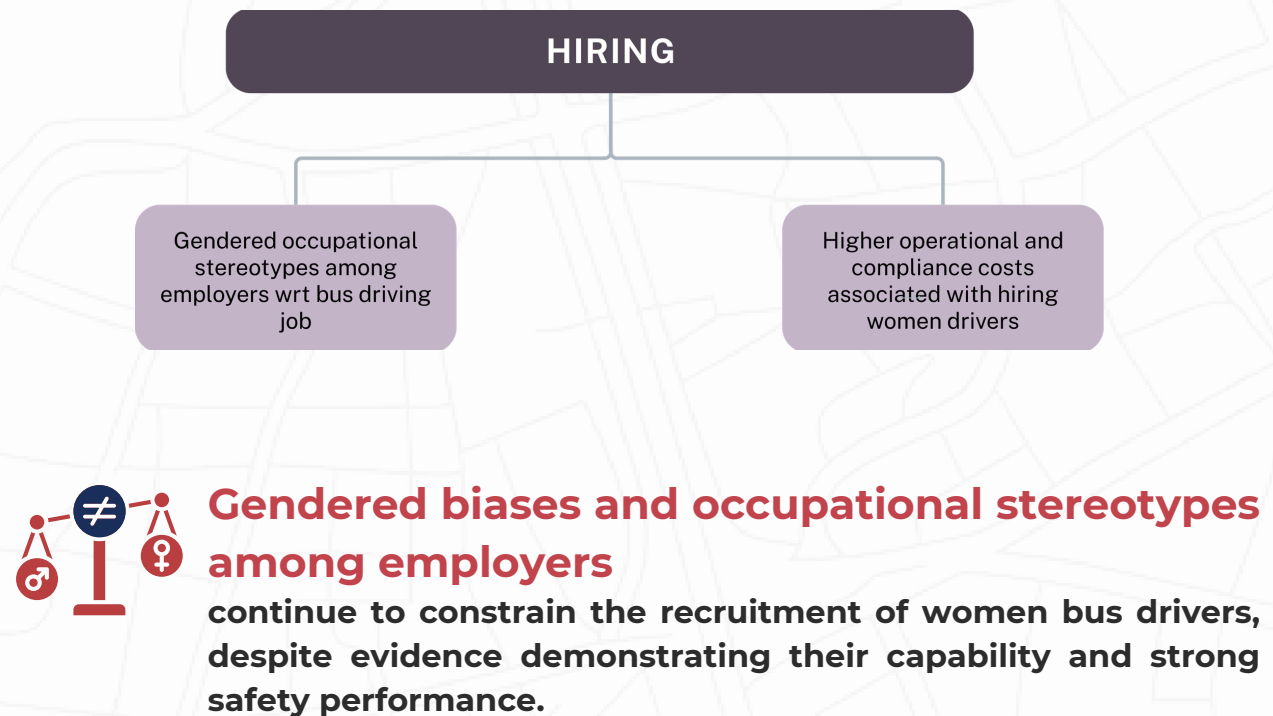
what can be understood as a human capital realisation gap. This gap is particularly pronounced for women, who face additional recruitment barriers, including experience requirements, informal referral-based hiring, and employer bias. It disproportionately affects first-generation women entrants who lack occupational networks, commercial driving experience, or industry contacts that many male applicants possess. Evidence from Delhi's Mission Parivartan demonstrates that this gap can be addressed by combining HPMV training, supervised driving practice, and direct recruitment linkages.



5.3 HIRING

Beyond meeting formal eligibility criteria, securing employment as a bus driver presents a distinct set of structural barriers for women. This section examines the factors that influence women's entry into the bus driver workforce.

Figure. 8: Barriers to women's recruitment and hiring in bus driving jobs



These assumptions are typically based on perceived household and caregiving responsibilities, mobility constraints, safety concerns, and expectations that women prefer flexible or part-time employment arrangements rather than full-time driving roles (Ghosh, 2025). Employers also perceive women as less capable of handling heavy vehicles and managing complex road and traffic conditions. These perceptions are rooted in the traditionally male-dominated transport sector and are not specific to e-bus operations. However, KIs with PBAs that already employ women drivers indicate that women drivers tend to

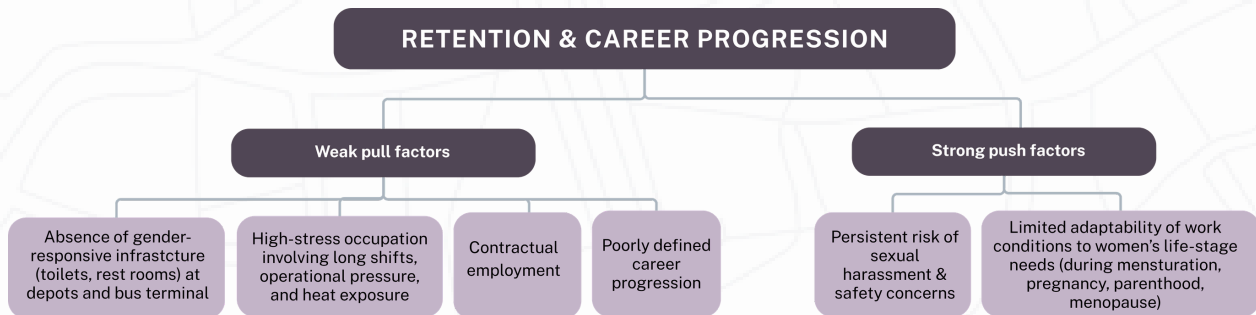
drive more cautiously and have fewer accidents and traffic violations than men.

Beyond assumptions about capability, employers also often perceive the recruiting women drivers as involving higher operational and compliance costs, including investments in gender-sensitive infrastructure, scheduling adjustments, and workplace safety and grievance mechanisms, relative to the perceived benefits or productivity gains from hiring women.

5.3 RETENTION AND CAREER PROGRESSION

This section examines the factors that influence women's continued participation in bus driving roles after securing employment. It assesses job quality, workplace conditions, organisational culture, and the extent to which employment arrangements align with women's life-stage needs, including responsibilities related to caregiving and household responsibilities.

Figure. 9: Barriers to women's retention and career progression in bus driving jobs



Absence of clean, well-maintained gender-responsive toilets with menstrual hygiene facilities at bus depots and terminals

imposes direct health costs on women drivers resulting in absenteeism and disruptions to operational continuity (Rani, 2025; Amodu, Sarfo, & Ansah, 2024).

Limited access to clean and accessible toilets can lead to urinary tract infections, dehydration, and psychological stress among women drivers (Puentes, et al., 2023). Evidence from Indian workplaces further shows that among women workers with inadequate or no toilet facilities, 87% reported experiencing genitourinary problems periodically (Venugopal, et al., 2016). Where facilities exist, inadequate maintenance further reduces their usability for women (Gupta S. , 2025).



Motionographer // Shutterstock (2024)



Bus driving is a high-stress occupation involving long shifts, operational pressure, and heat exposure.

These conditions create physical and psychological strain, with women facing additional challenges due to work-family conflicts and caregiving responsibilities.

Evidence from different cities indicate high prevalence of moderate-to-severe occupational stress among drivers, driven by long duty hours, traffic congestion, and time pressure to meet assigned kilometre targets, with associated health outcomes including hypertension, sleep disorders, and reduced cognitive functioning (Rajan, TS, & Chandrappa, 2024; P, M V M, P, V V, & M, 2024). Urban bus operations expose drivers to significant occupational heat stress due to frequent door opening, prolonged driving hours, and direct exposure to the sun. Research shows that exposure to temperatures of 32-40 °C increases

physiological strain, reduces alertness and reaction time, and lowers safe driving duration from 80 minutes at 32°C to 53 minutes at 40°C (Sun & Dong, 2022; Liebers, 2017).

Women face higher occupational stress due to work-family conflict arising from long working hours and unpaid caregiving responsibilities, which drive emotional exhaustion and reduce job satisfaction and retention (Chen & Hsu, 2020). These challenges are further compounded by the absence of life-stage support during menstruation, pregnancy, and menopause (Punj & Jalan, 2025).



Women bus drivers face a high risk of sexual harassment, verbal abuse, and hostile workplace interactions from co-workers, and supervisory staff.

These incidents are often normalised and underreported due to fear of stigma, retaliation, and burdensome reporting procedures. (ITDP and GIZ, 2025; Rani, 2025; Wright, Women, Work and Transport, 2022).

Field narratives show that women often experience sexualised comments, rumours, and objectifying behaviour from male co-workers,

which contributes to a hostile work environment (Rani, 2025). For instance, women reported that even routine interactions were misinterpreted,

leading to rumours about inappropriate relationships. As a result, many deliberately avoided common spaces and spent time alone before shifts—to minimise exposure and scrutiny. At the same time, overt harassment is often met with coping strategies rather than formal reporting. Women describe adopting silence, avoidance, or deliberate ignorance to manage sexually explicit remarks and hostile interactions, as speaking up is perceived as increasing the risk of escalation, retaliation, or even formal conflict involving authorities. Qualitative evidence further indicates that fear of stigma, retaliation, and procedural burden discourages women from reporting sexual harassment, even where formal legal provisions exist.

Studies of bus depots indicate limited

awareness among women workers regarding sexual harassment reporting mechanisms, grievance procedures, and the functioning of Internal Complaints Committees (ICCs). Information related to Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act) compliance and complaint procedures is often poorly displayed or inadequately communicated within workplaces (Gupta, Gupta, & Dhar, 2022; Rani, 2025; Smythe, 2025). As a result, even where grievance systems formally exist, women workers frequently remain unclear about complaint procedures, responsible authorities, or the institutional support available in cases of workplace harassment. This weakens confidence in organisational protection systems and contributes to poor retention.



Career progression pathways for bus drivers are poorly defined

Under direct recruitment by PBAs, such as TSRTC and TNSTC, permanent drivers can progress through a seniority-cum-performance system—from base driving grade to Senior Driver, Assistant Traffic Inspectors and in limited cases managerial roles—subject to departmental promotion examinations, clean service records, and eligibility criteria (Adda247, 2025; Yadav, 2025). However, in practice, this pathway is accessible to very few because the number of senior positions is limited.

The shift towards contractualisation has further narrowed these already limited opportunities, as fixed-term drivers are hired based on operational need rather than length of service, with no assured progression in grade or responsibility (Philip, 2025). This often leads to occupational stagnation.



5.

RECOMMENDATIONS

Evidence drawn from the secondary review, stakeholder consultations with civil society organisations, and KIs indicates that women's entry into and progression within bus driving does not follow a strictly linear trajectory. Rather, they operate as an interconnected funnel, where structural barriers at each stage compound exclusion across the system and where targeted interventions at any stage can generate positive effects across the employment cycle.

RECOMMENDATIONS

CREATING THE DEMAND FOR WOMEN E-BUS DRIVERS

1

Public procurement tenders for intra-city electric bus operations should explicitly classify bus drivers as skilled workers and incorporate graded quotas for women e-bus drivers.

2

Gender lens investing (GLI) can create direct financial incentives for operators to improve workforce gender outcomes

BUILDING THE WOMEN E-BUS DRIVER SUPPLY PIPELINE

3

State transport departments should revise eligibility criteria to expand the pool of eligible women drivers for public e-bus driving

4

MoHUA/state governments should introduce a **Women E-Bus Driver Programme** to create a structured pathway for women holding LMV licences to become professionally trained e-bus drivers

5

Private operators should implement gender-responsive mobilisation strategies, referral incentives and targeted communication campaigns to attract women into bus driving roles

6

Electric bus depots must build, upgrade, and maintain gender-sensitive infrastructure, and operational practices to create safe workplace environments.

7

Private operators must provide maternity support and may explore flexible duty allocation and care support to address the different life-stage needs of women.

6.1 CREATING THE DEMAND FOR WOMEN E-BUS DRIVERS

This section sets out recommendations for government and financing institutions, which are uniquely positioned to leverage capital allocation and contractual frameworks to embed binding gender inclusion requirements in procurement. The recommendations aim to create demand for women e-bus drivers and encourage action across the ecosystem. This will help translate supply-side interventions and training efforts into actual employment opportunities for women.

1

Public procurement tenders for intra-city electric bus operations should explicitly classify bus drivers as skilled workers and incorporate graded quotas for women e-bus drivers



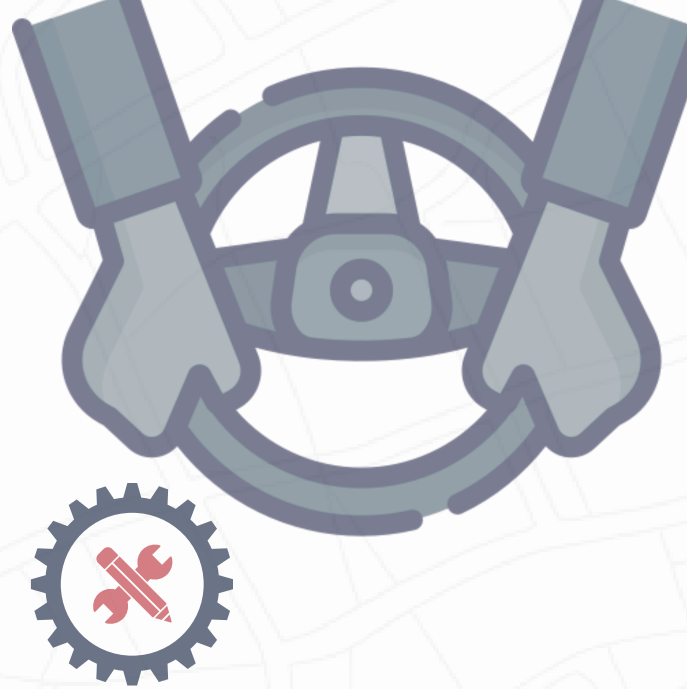
Tender conditions under Gross Cost Contract (GCC) operations can be an effective lever to ensure that drivers receive minimum wages applicable to skilled workers and to generate the demand for women e-bus drivers, given their direct influence on operator behaviour through contractual design and enforcement mechanisms.

Under GCC arrangements, competitive tendering creates incentives for operators to minimise controllable operating costs, particularly labour and maintenance expenditures, which constitute a significant share of operating costs (Jansen & Grasdahl, 2021; Kapoor & Krishnapriya, 2019). While current bus operation tenders mandate compliance with applicable labour laws, including adherence to minimum wages notified by the

concerned State or Union Territory Labour Department (CESL, 2026), they do not explicitly specify the occupational classification of bus drivers. This can result in variations in how bus drivers are classified across operators, leading to inconsistencies in the minimum wages paid to them. Therefore, bus drivers should be explicitly classified as **skilled workers** in tender documents to reflect the technical competencies and safety responsibilities required to operate high-capacity public transport vehicles.

Public procurement can also be leveraged to create structured demand for women e-bus drivers. Tender conditions should incorporate graded quotas for women's participation in the driver workforce. This would provide

operators with sufficient time to build a pipeline of qualified women drivers. Targets should be determined through multi-stakeholder consultations involving PBAs, private operators, and NGOs engaged in mobilizing and training women to obtain LMV and HPMV licences.



As per the Occupational Safety, Health and Working Conditions (OSH) Code, 2020 the following provisions apply to motor transport workers (Ministry of Law and Justice, 2020).

(a) Working hours: Standard working hours are 8 hours per day and 6 days per week. For motor transport workers, duty hours include running time, the time spent in subsidiary work⁵, and period of mere attendance⁶. Weekly rest may be adjusted for operational continuity, provided no worker is scheduled beyond 10 consecutive days without a full rest day, with compensatory weekly offs granted within the same or next two months.

(b) Overtime: Overtime is payable at twice the ordinary wage rate (daily or weekly basis, whichever is more favourable to the worker) and is permitted only with worker consent. State/UT Shops and Establishments Acts define cap on overtime hours. *Delhi* caps overtime at 54 hours per week and 150 hours per year (GNCTD, 1954); *Karnataka* limits total working hours to 10 hours per day (including overtime) with a maximum of 50 overtime hours over three consecutive months; (Government of Karnataka, 1962) and *Maharashtra* caps working hours at 9 hours per day with overtime limited to 125 hours over a three-month period (Government of Maharashtra, 2017)

(c) Leave: Workers are entitled to 1 day of leave per 20 days worked (approximately 15 days annually after 180 days of service), along with state-specific casual/sick leave provisions ranging from 8 to 12 days per year.

[5] Subsidiary work is any non-driving work related to a vehicle, its passengers, or its load performed outside of driving time, including administrative (handling cash, paperwork, tickets, and logbooks), vehicle care (taking over, parking, cleaning, or repairing the vehicle), transit (travelling between the sign-on point and the vehicle), and loading and unloading of the transport vehicle.

[6] Period of mere attendance means the period during which a person remains at his post solely in order to reply to possible calls or to resume action at the time fixed in the duty schedule.

Gender lens investing (GLI) can create direct financial incentives for operators to improve workforce gender outcomes.



Capital markets can be strategically leveraged to bridge the gender gap in the bus driver workforce by embedding measurable gender inclusion outcomes into financing structures— aligning private capital flows with social inclusion objectives. The 2X Criteria provides an example of a framework that applies a gender lens to investments. They direct concessional finance, guarantees, blended finance, and equity investments towards measurable outcomes in women’s employment, leadership, entrepreneurship, and workplace inclusion.

This can be achieved through several financial instruments, including:

- **Sustainability-linked loans (SLLs)** can link the cost of capital directly to verified gender performance indicators, such as the proportion of women drivers, trainees enrolled in licensing programmes, and retention rates within operational fleets. These instruments use performance-based pricing mechanisms, including coupon step-downs or margin adjustments,

where the interest rate decreases if predefined targets are achieved and verified through independent third-party assurance. This creates a direct financial incentive for operators to improve gender outcomes within their workforce.

Most SLLs in the transport sector currently focus on environmental KPIs, such as CO₂ reduction, energy efficiency, and EV adoption, as seen in financing models used by the Volvo Group (Volvo Group, 2020; Volvo, 2024) and DHL (DHL Group, 2025).

- **Concessional capital covenants** are legally binding conditions attached to financing structures provided by multilateral development banks (MDBs), development finance institutions (DFIs), or public financial institutions. These institutions provide below-market-cost capital—such as low-interest debt, guarantees, or first-loss equity—subject to borrowers complying with defined social, environmental, and governance (ESG) obligations.

These covenants are typically operationalised through Gender Action Plans (GAPs), Environmental and Social Safeguards (ESS), and results-based disbursement frameworks linked to targets such as women's recruitment, training completion, retention, and safe workplace conditions.

ADB- and AIIB-supported electric bus projects in India are examples of blended finance structures involving State Transport Agencies and OEMs such as JBM Auto in Haryana and Odisha, covering approximately 650 e-buses (ADB, n.d.; ADB, n.d.). ADB links tranche disbursement to the achievement of agreed project milestones, including GAP outputs. One of these outputs is the completion of driver training and the acquisition of driving licences by women.



6.2 BUILDING THE WOMEN E-BUS DRIVER SUPPLY PIPELINE

This section sets out recommendations to strengthen the supply pipeline of women e-bus drivers across the employment cycle. Guided by the Employment Cycle Framework, the recommendations address barriers across the stages of attraction, training and licensing, hiring, and retention. The objective is to increase the number of women entering the pipeline, improve progression across successive stages, and expand the pool of qualified women available for employment as e-bus drivers.

3

State transport departments should revise eligibility criteria — height thresholds, upper age limits, and prior HPMV experience requirements — to expand the pool of eligible women drivers for public e-bus driving



State Transport Departments set the eligibility criteria for bus drivers, including minimum height, prior HPMV driving experience, and upper age limits, which are often adopted by private operators.

Minimum height requirements should be revised to introduce women-specific thresholds calibrated to the average height of women at the state-level, using anthropometric data available from the National Family Health Survey (NFHS) (Ministry of Health and Family Welfare, n.d.). This would account for regional variations in anthropometric characteristics while reducing the unnecessary exclusion of otherwise eligible women candidates without compromising operational requirements.

Upper age limits, commonly set at around 35 years, should be revised or removed, as they exclude many women seeking to enter or re-enter the workforce after childbearing and caregiving responsibilities. According to NFHS-5, childbearing and primary caregiving responsibilities in India are concentrated between the ages of 20 and 30, with the median age at last birth being approximately 28 years (S, 2024). Given the time required for childcare and household responsibilities, many women are able to pursue stable employment only in their mid to late thirties. An upper age limit of 35 years therefore excludes a significant pool of women seeking labour market entry or re-entry at a stage when caregiving responsibilities begin to decline and their availability

for employment increases.

Similarly, the requirement of 2–3 years of prior HPMV driving experience should be revised, as it significantly restricts the pool of eligible women candidates due to their historically limited participation in commercial driving and the resulting lack of opportunities to gain the required experience. This reinforces a self-perpetuating cycle of exclusion in which a lack of experience limits access to employment, while the absence of employment prevents the acquisition of experience. Evidence from operational practice suggests that PBAs often informally relax experience requirements for male candidates holding a valid HPMV licence in response to persistent driver shortages.

Examples of such interventions can be seen in Maharashtra, Delhi, and Odisha. In Maharashtra, the Maharashtra State Road Transport Corporation (MSRTC) revised its recruitment criteria in 2019 after observing low participation of women applicants despite a 30% reservation. The revised criteria reduced the minimum height requirement from 156 cm to 153 cm and replaced the requirement of three years of HPMV driving experience with one year of LMV driving experience. Following these revisions, 163 women began HPMV training with MSRTC in 2020 (Gupta, Gupta, & Dhar, 2022). As of February 2024, MSRTC had 122 women bus drivers (TOI, 2024)⁷.

In February 2022, the Government of

the National Capital Territory of Delhi (GNCTD) relaxed eligibility criteria for women bus drivers by reducing the minimum height requirement from 159 cm to 153 cm and lowering the prior HPMV experience requirement from three years to one month. The Transport Department also launched Mission Parivartan in April 2022 to support women in obtaining HPMV licence and entering into bus driving roles. The programme provided classroom training, practical driving instruction, and vehicle familiarisation at the Burari training centre. As of August 2025, there were 74 women bus drivers across all DTC depots (DTC, 2025).

In Odisha, Comprehensive Region Urban Transport (CRUT) (previously Capital Region Urban Transport), a special purpose vehicle established in 2018 to provide bus services across nine cities, including Bhubaneswar, implemented a 14-day Women E-Bus Driver Skill Development Programme in February 2026 (R. Amani, personal communication, May 20, 2026). A cohort of 20 women e-auto drivers ("Mo E-Rickshaws" or "AMA E-Ride") who already held a valid HPMV licence received initial training at CRUT's Bhubaneswar facilities before being sent to Pune for advanced training with experienced instructors. CRUT covered travel and accommodation costs for the training programme and provided regular stipends to compensate for the loss of income during the training period. After completing the training and operational assessment, all 20 women underwent an additional 15-day local

[7] Our key informant interviews indicate that the women drivers have since opted for desk duties.

driving practice and route familiarisation programme. They were subsequently inducted into AMA Bus operations as a dedicated women's crew. Women viewed the transition from e-auto driver to bus driver as a career advancement.



4

MoHUA/state governments should introduce a Women E-Bus Driver Programme to create a structured pathway for women holding LMV licence to become professionally trained e-bus drivers.



India is estimated to have 4.57–4.86 lakh women commercial drivers holding an LMV licence as of March 2025. This represents a significant untapped labour pool that could be mobilised to obtain an HPMV licence and transition into public e-bus driving roles. Assuming 10% of this cohort were to make the transition, it could create a pipeline of at least 45,000 women e-bus drivers.

The cost of training and licensing a candidate as a skilled e-bus driver is estimated at INR 22,000–37,000, subject to state-specific cost variations. Expanding the women e-bus driver workforce is a shared responsibility of the government and the private sector. Under the She Drives Bharat skilling programme, government could partially finance the cost of HPMV training and licensing costs. Private operators could become

eligible for reimbursement after employing women e-bus drivers for three months. Skilling 45,000 women e-bus drivers would require a direct investment of approximately INR 99–166 crores.

A small and affordable registration fee may be considered for candidates to pay as a commitment mechanism to improve enrolment seriousness and reduce programme drop-out rates in fully subsidised training and licensing programmes. Evidence from the Azad Foundation and vocational education programmes shows that fully subsidised training schemes often experience high attrition and low completion rates (Gupta V. , 2019; Sen & Menon, 2023). India's Craftsmen Training Scheme addresses this through a refundable ₹250 caution deposit, reflecting the principle that even a small financial stake can



improve trainee accountability and completion (MSDE, n.d.). Behavioural economics research on “commitment devices” similarly finds that nominal commitment mechanisms can improve attendance and completion rates, particularly among participants at risk of dropping out (Savani, 2019).

5

Private operators should implement gender-responsive mobilisation strategies, referral incentives, and targeted communication campaigns to attract women into bus driving roles.



Conventional recruitment channels such as newspaper advertisements and generic digital outreach have had limited effectiveness in attracting women, largely due to occupational stereotypes, limited awareness of bus driving as a viable career option, and exclusion from informal recruitment networks. Private operators therefore need to adopt proactive, targeted mobilisation strategies to attract women to bus driving roles. This should include mobilisation through community-based institutions, women’s collectives, self-help groups, and government livelihood and skilling programmes to identify and mobilise potential candidates. Mobilisation efforts should adopt a family-centred approach by engaging household decision-makers alongside candidates, supported by clear communication on

wages, benefits, workplace safety, and job security to build trust and reduce perceived risk. Fresh Bus partnered with the Society for Elimination of Rural Poverty (SERP) in Telangana to leverage Self-Help Group networks to mobilise women LMV drivers for bus driving opportunities and has onboarded 21 women drivers into a 6–9-month paid apprenticeship programme (BW Online Bureau, 2026).

Open days at bus depots can be organised to provide first-hand exposure to operations. These sessions should enable prospective candidates to observe the depot environment, interact with women drivers and trainers, and understand shift patterns, and safety protocols, thereby correcting misconceptions about the suitability of the role and working

conditions. Outreach can also be extended to schools, Industrial Training Institutes (ITIs), polytechnics, Technical and Vocational Education and Training (TVET) institutions, and women-focused job fairs to strengthen the early-stage talent pipeline.

Targeted awareness campaigns should be implemented to reshape the public perceptions of bus driving as a male-dominated, physically demanding, and socially undesirable occupation. This requires sustained communication campaigns that reposition bus driving as a skilled, stable, and professionally rewarding career. Messaging should clearly emphasise earning potential, statutory employment benefits, workplace safety, and the sector's broader social contribution.

Finally, private operators should establish an internal referral mechanism to enable existing employees to recommend potential

women candidates. The incentive structure should be milestone-based, with payouts linked to key progression points such as successful training completion, certification, deployment into service, and retention milestones (e.g., 3–6 months of continuous employment). Kils highlighted examples such as Tej Travels, a school transport enterprise operating in Pune, Maharashtra, which uses a formal buddy system to encourage existing drivers to refer new candidates. Cash incentives are provided after the referred driver completes six months with the company, creating a retention-linked referral mechanism. VIA Metropolitan Transit, San Antonio, Texas, USA, provides another example through a structured employee referral programme that offers up to US\$1,000 for successful hires (VIA Metropolitan Transit, n.d.), with payouts linked to training completion (US\$300), probation (US\$300), and salary progression (US\$400).



Electric bus depots must build, upgrade, and maintain gender-sensitive infrastructure, and operational practices to create safe workplace environments.



This includes clean, well-maintained, and gender-segregated toilet facilities at all bus depots and terminals to ensure safe and dignified working conditions for women drivers. The lack of adequate sanitation facilities contributes to stress, absenteeism, dehydration, and urinary tract infections among women workers (Deshpande, 2017; Shah, Viswanath, Vyas, & Gadepalli, 2017; Parasa, 2021). During the individual interview with Rana Amani (personal communication, May 20, 2026), it was informed that CRUT facilitated access to toilets in government buildings along operational routes for auto-rickshaw drivers.

Private operators should consider assigning newly recruited women drivers to lower-traffic routes, shorter circuits, feeder services, or women-operated routes before progressing to high-intensity operations, thereby enabling gradual skill development. The Uttar Pradesh State Road Transport Corporation launched **Mission Mahila Sarathi** in 2023 under the state's Mission Shakti Abhiyan, introducing buses operated exclusively

by women drivers and conductors. Similarly, DTC initiated the deployment of women drivers on shorter routes under **Mission Parivartan**. Atal Indore City Transport Services Limited and Surat City Bus services also introduced women drivers through women-only BRTS operations (Singhai & Singhai, 2021; India Today Trending Desk, 2025).

Private operators should also provide at least six months of post-placement support for women bus drivers at depots. This can be delivered through a buddy system (linked to the referral programme), designated focal persons, and counselling support. Such support can help women transition into regular operations and balance work with household and caregiving responsibilities, as attrition risks are highest during the first 3–6 months after deployment (Lind & Huting, 2018; Shaver, 2026).

A grievance redressal mechanism should be established to address complaints of sexual harassment, discrimination, and inappropriate workplace behaviour, ensuring timely

resolution and confidentiality in line with the POSH Act, 2013. This should be operationalised through mandatory and functional ICCs across all depots and operational units, along with regular POSH awareness training

supported by periodic audits to ensure compliance. Statutory provisions under the Act should be prominently displayed in local languages across all operational sites to improve visibility and awareness.

7

Private operators must provide maternity support and may explore flexible duty allocation and care support to address the different life-stage needs of women.



Operators must ensure full compliance with paid maternity benefits under the Maternity Benefit (Amendment) Act, 2017, and also consider extending paternity leave to men to promote shared caregiving responsibilities and reduce the disproportionate care burdens on women. Tata Hitachi provides an on-site crèche facility and reimburses up to ₹ 8,000 per child per month for employees who opt for off-site crèche facilities (CII, 2024).

In parallel, operators should integrate childcare and eldercare support into workforce design through, partnerships with local childcare providers, or shift-aligned childcare subsidies. However, the effectiveness of such measures is constrained by systemic gaps in India's care infrastructure. Existing Anganwadis and crèches are often under-

resourced, lacking essential facilities such as safe sanitation, potable water, adequate space, electricity, kitchen facilities, and structurally safe buildings, with many operating from rented or dilapidated premises (Bora, 2025; Dwary, 2025; Smile Foundation, 2025; Kesharwani, 2025). Eldercare services remain an underdeveloped component of India's care economy, warranting systematic assessment and targeted investment.

Operators should introduce flexible duty policies — including split shifts, shorter duty cycles, flexible rostering, and temporary redeployment to lower-intensity routes or desk-based duties — to support women drivers during menstruation and pregnancy, without loss of pay, dignity, or career continuity. Public transport operators such as Transdev Australia uses split

shifts, in which working hours are divided between peak periods with a break in between (Transport Workers' Union of Australia v Jarman Ace Pty Ltd T/A Ace Buses, 2014).





6.

WAY FORWARD

Expanding women's participation in e-bus driving in India presents a significant and realisable opportunity — one that calls for an ecosystem-level approach to build enabling conditions for entry, retention, and progression across the sector. Women as drivers in e-bus urban operations can be

explored in school transport services, employee shuttle fleets, and institutional transport operations. These segments offer relatively controlled operating environments with fixed routes and regular schedules, making them suitable initial entry pathways for women bus drivers.

REFERENCES

- Aamchi Mumbai Aamchi BEST. (2024). Privatization of BEST: An Unqualified Fiasco. Retrieved from <https://images-citizenmatters.sgp1.digitaloceanspaces.com/wp-content/uploads-new/2025/02/BEST-wet-lease-fiasco-english-booklet.pdf>
- ADB. (n.d.). Gender Assessment and Action Plan: Annex 8 to JBM Haryana Electric Bus Financing Project (RRP IND 58098-001). Retrieved from <https://www.adb.org/sites/default/files/project-documents/58098/58098-001-gap-en.pdf>
- ADB. (n.d.). Gender Assessment and Action Plan: Annex 8 to JBM Odisha Electric Bus Financing Project (FAST IND 58099). Retrieved from <https://www.adb.org/sites/default/files/project-documents/58099/58099-001-gap-en.pdf>
- Adda247. (2025, September 18). TSRTC Salary and Job Profile 2025 For Driver & Shramiks Posts. Retrieved from Adda247: <https://www.adda247.com/exams/telangana/tsrtc-salary/>
- Alam, S. (2025). Noida gets second drive test centre, but 30km away. Retrieved from Times of India: <https://timesofindia.indiatimes.com/city/noida/noida-gets-second-drive-test-centre-but-30km-away/articleshow/122788733.cms>
- Amodu, M., Sarfo, J. O., & Ansah, E. W. (2024). Working conditions of commercial drivers: a scoping review of psychosocial work factors, health outcomes, and interventions. BMC Public Health. doi:10.1186/s12889-024-20465-1
- AP Govt Jobs. (2026). APSRTC Recruitment 2026 – 1500 Driver Posts. Retrieved from <https://ap.indgovtjobs.net/apsrtc-recruitment-2026-1500-driver-posts/>
- Ashok Leyland Driving Training Institute. (n.d.). Government Approces Motor Driving Training School (GAMDTs). Retrieved from <http://sdti.in/>
- Bhat, R. K., Mulukutla, P., Bachu, P., Dubedi, A., Pai, M., Varma, D. P., . . . Sinh, A. (2022). Open e-bus blueprint. Retrieved from https://wri-india.org/sites/default/files/Open%20E-bus%20blueprint_working%20paper_web.pdf
- Bora, T. (2025, May 30). Anganwadi Services in India: A Cornerstone of Child and Maternal Welfare. Retrieved from IMPRI: <https://www.impriindia.com/insights/aaganwadi-services/>
- BW Online Bureau. (2026, January 13). Fresh Bus Onboards 21 Women Drivers. Retrieved from BW People: <https://www.bwpeople.in/article/fresh-bus-onboards-21-women-drivers-587094>
- Carranza, E., Das, S., & Kotikula, a. A. (2023). Gender-based Employment Segregation: Understanding Causes and Policy Interventions. Retrieved from <https://documents1.worldbank.org/curated/en/483621554129720460/pdf/Gender-Based-Employment-Segregation-Understanding-Causes-and-Policy-Interventions.pdf>
- CESL. (2022). Tender: Request for Proposal Selection of bus operator for Procurement, Operation and Maintenance of 5,690 Electric Buses and development of allied electric and civil infrastructure on Gross Cost Contracting (GCC) under National E-Bus Program (NEBP)-Phase. Retrieved from https://www.convergence.co.in/public/upload/tender_pdf/htg8giyhekqtrd63s4.pdf
- CESL. (2025, October 21). RfP: Selection of Bus Operator for Procurement, Supply, Operation and Maintenance of 10,900 Electric Buses and Development of Allied Electric and Civil Infrastructure on Gross Cost Contracting (GCC) under PM E-DRIVE Scheme. Retrieved from https://convergence.co.in/public/upload/tender_pdf/1ja5sufuckskiwzom7.pdf
- CESL. (2026). Selection of Bus Operator for Procurement, Supply, Operation and Maintenance of 3,604 Electric Buses and Development of Allied Electric and Civil Infrastructure on Gross Cost Contracting (GCC) under PM-eBus Sewa (Tender 3) . Convergence Energy Services Limited. Retrieved from https://www.convergence.co.in/public/upload/tender_pdf/x845qy239kcl5sk8ld.pdf
- Chandigarh Administration. (2023). Recuritment ofor the posts of heavy bus drivers (Group- C). Retrieved from <https://dailyjobalert.in/wp-content/uploads/2023/03/CTU-Driver-Recruitment-Notification-2023.pdf>

Chen, C.-F., & Hsu, Y.-C. (2020). Taking a Closer Look at Bus Driver Emotional Exhaustion and Well-Being: Evidence from Taiwanese Urban Bus Drivers. *Safety and Health at Work*. doi:<https://doi.org/10.1016/j.shaw.2020.06.002>

CII. (2024). A Handbook on Good Practices from Construction Industry. Confederation of Indian Industry. Retrieved from <https://womenleadershipcenter.in/img/publications/reports/good-practices-compendium-3.pdf>

Deshpande, A. (2017, September 1). Lack of toilets pose an ordeal for women bus conductors of TSRTC. Retrieved from The New Indian Express: <https://www.newindianexpress.com/cities/hyderabad/2017/Sep/01/lack-of-toilets-pose-an-ordeal-for-women-bus-conductors-of-tsrtc-1650957.html>

DHL Group. (2025). Sustainability-linked Finance Framework. Retrieved from https://group.dhl.com/content/dam/deutschepostdhl/en/investors/creditor-relations/slf-framework/DHL-Group-Sustainability-Linked-Finance-Framework_May-2025.pdf

DHNS. (2024, October 2). BMTC launches driver training course for general public in Bengaluru. Retrieved from Deccan Herald: <https://www.deccanherald.com/india/karnataka/bengaluru/bmtc-launches-driver-training-course-for-general-public-3216020>

Dhole, A. (2022, August 29). How electric buses are improving bus operations in India. Retrieved from ICCT: <https://theicct.org/electric-buses-improving-operations-aug22/>

DTC. (2022). Advertisement for inviting application from willing female candidates for engagement of bus drivers on short-term contract in DTC. Retrieved from https://dtc.delhi.gov.in/sites/default/files/DTC/circulars-orders/advertisement_for_inviting_application_from_willing_female_candidates_for_engagement_of_bus_drivers_on_short-term_contract_in_dtc_0_1.pdf

DTC. (2025, August 8). Other Links. Retrieved from Delhi Transport Corporation: <https://dtc.delhi.gov.in/dtc/other-links>

Dwary, A. (2025, January 17). Infrastructure Crisis Exposes Grim Reality of Anganwadi Centres In Madhya Pradesh. Retrieved from NDTV: <https://www.ndtv.com/india-news/infrastructure-crisis-exposes-grim-reality-of-anganwadis-in-madhya-pradesh-7495630>
ebiz Karnataka. (n.d.). ebiz Karnataka. Retrieved from https://ebiz.karnataka.gov.in/ebiz/pdf/Levies/Transport_Levies%20&%20Taxes.pdf

Gaucher, D., & Justin Friesen, A. C. (2011). Evidence that gendered wording in job advertisements exists and sustains gender inequality. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/21381851/>

GNCTD. (1954). The Delhi Shops and Establishments Act, 1954. Government of National Capital Territory (NCT) Delhi. Retrieved from <https://www.indiacode.nic.in/bitstream/123456789/13587/1/delhishopsnestablishmentsact.pdf>

GNCTD. (2021). Code on Wages (Delhi) Rules 2021 (Draft Rules). Retrieved from <http://it.delhigovt.nic.in/writereaddata/egaz20216339.pdf>

Government of Karnataka. (1962). Karnataka Shops and Commercial Establishments Act, 1961. Retrieved from https://www.indiacode.nic.in/bitstream/123456789/7609/1/8_of_1962_%28e%29.pdf

Government of Karnataka. (2026). Karnataka Gazette Extraordinary, No. 3892, Notification No. KAE 411 LMW 2023, dated 22 May 2026: Revision of Minimum Wages under the Code on Wages, 2019. Retrieved from https://karmikaspandana.karnataka.gov.in/uploads/media_to_upload1780292271.pdf
Government of Madhya Pradesh. (n.d.). Ashok Leyland And Institute Of Driving Training Center. Retrieved from District Chhindwara: <https://chhindwara.nic.in/en/ashok-leyland-and-institute-of-driving-training-center/>

Government of Maharashtra. (1989). The Maharashtra Motor Vehicles Rules, 1989. Retrieved from <https://cdnbbsr.s3waas.gov.in/s3d827f12e35eae370ba9c65b7f6026695/uploads/2023/08/2023080180.pdf>

Government of Maharashtra. (2017). Maharashtra Shops and Establishments (Regulation of Employment and Condition of Service) Act, 2017. Retrieved from https://www.indiacode.nic.in/bitstream/123456789/19710/1/shops_and_establishments.pdf

Gupta, A., Gupta, D., & Dhar, S. (2022). Claiming Spaces for Women in Public transport. New Delhi. Retrieved from Azad Foundation: <https://www.azadfoundation.com/wp-content/uploads/2024/07/Claiming-Spaces-for-Women-in-Public-Transport-Advocacy-Brief-March-2022.pdf>

Gupta, S. (2025, April 14). No toilets, water or rest: A day in the life of Delhi's bus drivers. Retrieved from The Patriot: <https://thepatriot.in/reports/no-toilets-water-or-rest-a-day-in-the-life-of-delhis-bus-drivers-68538>

Gupta, V. (2019, December 11). The blindspots in India's skilling programme. Retrieved from IDR: <https://idronline.org/the-blindspots-in-indias-skilling-programme/>

Gupta, V., BR, V., Kuttapa, D., Saraswat, J., Sharma, A., & Katiyar, T. (2025). The EV Opportunity: Unlocking GenderInclusivity in India's Mobility Sector. Vasudha Foundation. Retrieved from <https://vasudha-foundation.org/wp-content/uploads/The-EV-Opportunity-Unlocking-Gender-Inclusivity-in-Indias-Mobility-Sector.pdf#:~:text=However%2C%20the%20historically%20male%2Ddominated%20transport%20and%20automobile,making%20it%20suitable%20for%20a%20ge>

Hand, D., Sunderji, S., Ulanow, M., Remsberg, R., & Xiao, K. (2024, October 8). In Focus: Gender and Impact Investing in 2024. Retrieved from Global Impact Investing Network (GIIN): <https://thegiin.org/publication/research/in-focus-gender-and-impact-investing-in-2024/>

HSSC. (2017). Haryana Staff Selection Commission. Retrieved from https://haryanajobs.org/wp-content/uploads/2020/05/2017-HSSC-Advt-4_2017-Driver-Conductor.pdf

IDTR Pune. (n.d.). T&C for Individuals. Retrieved from <https://idtrpune.org/pdf/T&C%20for%20Individuals.pdf>

IDTR Railmagra. (n.d.). Fee Structure. Retrieved from <https://idtrailmagra.com/courses/fee-structure/>

ILO. (2013). Women in Transport Sector.

India Today Trending Desk. (2025, November 22). Video: Women take the wheel as Surat's first pink bus rolls out. Retrieved from India Today: <https://www.indiatoday.in/trending-news/story/women-take-the-wheel-as-surat-first-pink-bus-rolls-out-viral-video-2824408-2025-11-22>

ITDP and GIZ. (2025). Gender Inclusivity in India's Public Transport. Retrieved from <https://itdp.in/wp-content/uploads/2025/11/GIPT.pdf>

Jansen, H., & Grasdal, A. (2021). The Hidden Costs of Competitive Tendering-Labor and Health Effects on Norwegian Bus Drivers. Retrieved from https://ekstern.filer.uib.no/svf/2021/Competitive_Tendering_WP_June2021.pdf

Kamgar Ekta Committee. (2025). Condemn the Maharashtra State Road Transport Corporation's decision to recruit workers on contract basis! Retrieved from <https://aifap.org.in/15248/>

Kapoor, R., & Krishnapriya, P. P. (2019). Explaining the contractualisation of India's workforce. Retrieved from https://icrier.org/pdf/Working_Paper_369.pdf

Kesharwani, M. (2025, October 31). Poor Infrastructure, No Hygiene: Indore's Anganwadis Crave Attention. Retrieved from The Free Press Journal: <https://www.freepressjournal.in/indore/poor-infrastructure-no-hygiene-indores-anganwadis-crave-attention>

Kidiyoor, S. (2025, March 3). Driver shortage sees only 20 of 170 new electric buses hit the road in Bengaluru. Retrieved from Times of India: <https://timesofindia.indiatimes.com/city/bengaluru/driver-shortage-sees-only-20-of-170-new-electric-buses-hit-the-road-in-bengaluru/articleshow/118690484.cms>

KSRTC. (2023, January 1). Karnataka State Road Transport Corporation (Cadre and Recruitment) Regulations, 1982. Retrieved from <https://ksrtc.karnataka.gov.in/storage/pdf-files/RTI/123.pdf>

Kurshitashvili, N., Berkeley, A. M., Baskin, A., Niethammer, C., Charamnac, C., Illgen, I., . . . Nikore, M. (2025). Addressing Barriers to Women's Participation in Transport. Retrieved from <https://www.eib.org/files/publications/general/reports/addressing-barriers-womens-participation-in-transport.pdf>

Liebers, M. (2017). Using Air Walls for the Reduction of Open-Door Heat Losses in Buses. SAE International Journal of Commercial Vehicles. doi:10.4271/2017-01-9179

Lind, E., & Huting, J. (2018). Predicting Bus Operator Retention Based on Employee Characteristics and Work History. Transportation Research Record: Journal of the Transportation Research Board, 2672(8). doi:<https://doi.org/10.1177/0361198118794286>

(n.d.). Maharashtra Code on Wages Rules, 2025. Retrieved from https://upload.indiacode.nic.in/showfile?actid=AC_MH_166_1466_00045_00045_1755493418369&type=rule&filename=code_on_wages_rules_2025_english.pdf

Maruti Suzuki Driving School. (n.d.). Learner Detailed Track Course. Retrieved from <https://www.marutisuzukidrivingschool.com/courses/learner-detailed-track-course/learner-dt-course>

Ministry of Health and Family Welfare . (n.d.). National Family Health Survey (NFHS-5)- 2019-21. Retrieved from National Family Health Survey: <https://www.nfhsiips.in/nfhsuser/nfhs5.php>

Ministry of Heavy Industries- PIB. (2024, August 09). Production of e-buses. Retrieved from <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2043645®=3&lang=2>

Ministry of Heavy Industries- PIB. (2026, March 17). FAME-II AND PM E-DRIVE SCHEMES. Retrieved from <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2241269®=3&lang=2>

Ministry of Law and Justice. (2020). Occupational Safety, Health and Working Conditions Code, 2020. Legislation. Retrieved from <https://dgfasli.gov.in/public/Admin/Cms/AllPdf/650059fbb8f1a9.98699174.pdf>

MoRTH. (2022). Road Transport Yearbook (2020-21 & 2021-22). Ministry of Road Transport & Highways. Retrieved from https://morth.gov.in/backend/documents/uploaded/RTH-Road-Transport-Year-Book-2020-21%20_%202021-22.pdf

MoRTH. (2023). Central Motor Vehicle Rules [GSR 590(E), dt. 2-6-1989] [As amended by CMV (Fourth Amdt.) Rules, 2023 vide GSR 337(E), dt. 28-4-2023, w.e.f. 1-5-2023]. Retrieved from <https://ebook.commerciallawpublishers.com/fa/cmvr/mobile/index.html>

MoRTH. (2025). Revised scheme guidelines for setting up of Institute of Driving Training & Research (IDTRs), Regional Driving Training Centres (RDTCs) and Driving Training Centres(DTCs) including cluster approach during 15th Finance Commission Cycle. Retrieved from <https://morth.gov.in/backend/documents/uploaded/Revised-scheme-guidelines-for-setting-up-merged.pdf>

MoRTH, Government of India. (1988). The Motor Vehicles Act (As amended by Motor Vehicles (Amendment) Act, 2019). Retrieved from <https://ebook.commerciallawpublishers.com/fa/mva/>

Motor Vehicles Department, Maharashtra. (n.d.). Fee as per section 32 of the Central Motor Vehicles Rules, 1989. Retrieved from <https://transport.maharashtra.gov.in/1176/License-Fees>

MSDE. (n.d.). Craftsmen Training Scheme (CTS). Retrieved from National Skill Training Institute (W) Trichy: <https://nstiwttrichy.dgt.gov.in/en/cts>

MSRTC. (2019). Advertisement No. 01/2019 – Direct Recruitment for Driver-cum-Conductor (Deadline extended up to 15.02.2019). Retrieved from <https://msrtc.maharashtra.gov.in/pdf/Recruiting/02-Drivercumconductor-08022019.pdf>

Mumbai Live Team. (2026, April). Severe Staff Shortage Hits Mumbai BEST, Services Affected. Retrieved from Mumbai Live: https://www.mumbailive.com/en/transport/severe-staff-shortage-hits-mumbai-best-services-affected-92424?utm_campaign=daily&utm_medium=whatsapp-m&utm_source=social

North Bengal State Transport Corporation. (2017, October). North Bengal State Transport Corporation. Retrieved from <https://transport.wb.gov.in/wp-content/uploads/2017/10/4575-WT-NIT.pdf>

OECD. (2025). Gender Equality in a Changing World: Taking Stock and Moving Forward. Gender Equality at Wor. Retrieved from https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/05/gender-equality-in-a-changing-world_5a0af5ef/e808086f-en.pdf

Olivetti, C., Pan, J., & Petrongolo, B. (2024). The Evolution of Gender in the Labor Market. Olivetti, Claudia and Pan, Jessica and Petrongolo, Barbara, The Evolution of Gender in the Labor Market. IZA Discussion Paper No. 17559, Available at SSRN: <https://ssrn.com/abstract=5069987>. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5069987

P, B., M V M, P., P, K., V V, A., & M, L. (2024). Stress and Sleep Deprivation Experienced by Bus Drivers of Government Bus Depots in an Urban Area of Chengalpattu District in South India. *Cureus*. doi:10.7759/cureus.67689

Parasa, R. (2021, July 14). No toilet facilities, long work hours: The plight of Telangana's women bus conductors. Retrieved from The News Minute: <https://www.thenewsminute.com/telangana/no-toilet-facilities-long-work-hours-plight-telanganas-women-bus-conductors-152316>

Philip, C. (2025, December 2). How e-buses, GCC model & digital technology are reshaping state transport undertakings. Retrieved from DownToEarth: <https://www.downtoearth.org.in/governance/how-e-buses-gcc-model-digital-technology-are-reshaping-state-transport-undertakings>

Puentes, R., Plotch, P., Eby, B., Lewis, P., Holdzkom, K., Wang, X., . . . Melissa, H. (2023). Bus Operator Safety, Health, and Working Conditions. In E. a. National Academies of Sciences, Bus Operator Workforce Management: Practitioner's Guide. The National Academies Press. Retrieved from <https://www.nationalacademies.org/read/26842/chapter/9#64>

Punj, N., & Jalan, S. (2025). Work-Life Balance and Women in the Transport Sector: The Indian Context. In *Women in Logistics, Transport and Commodity Sector*. Springer. Retrieved from https://link.springer.com/chapter/10.1007/978-981-96-2276-4_6#citeas

Rajan, V., TS, P., & Chandrappa, M. (2024). Occupational Stress and Its Effect on Health Status Among Karnataka State Road Transport Corporation (KSRTC) Bus Drivers: A Cross-Sectional Study. *Cureus*. doi:10.7759/cureus.70336

Rajiv, R., & Raina, S. (n.d.). Driving Change: Empowering Women in the Urban Transport Workforce. Retrieved from NDC Transport Initiative for Asia: <https://www.ndctransportinitiativeforasia.org/news/driving-change-women-empowerment-transport-workforce>

Rani, A. (2025). Gendered Workspaces: Challenges of Women Bus Drivers in Delhi. *Urban India*, 112-125. Retrieved from https://niua.in/sites/default/files/2026-03/2025-S2_Gendered%20Workspaces%20Challenges.pdf

Raveendran, G., & Vanek, J. (2020). Informal Workers in India: A Statistical Profile. WIEGO. Retrieved from https://www.wiego.org/wp-content/uploads/2020/10/WIEGO_Statistical_Brief_N24_India.pdf

Reddy, Y. M. (2024). Training to put her in driver's seat. Retrieved from Bangalore Mirror: <https://bangaloremirror.indiatimes.com/bangalore/others/training-to-put-her-in-drivers-seat/articleshow/108503237.cms>

S, R. (2024, April 26). Mother's age at childbirth. Retrieved from Data for India: <https://www.dataforindia.com/mother-age-childbirth/>

Sanchez de Miguel, M., Lizaso, I., Larranaga, M., & Arrospide, J. J. (2015). Women bus drivers and organizational change. *Journal of Organizational Change Management*, 117-133. doi:<https://doi.org/10.1108/JOCM-07-2013-0120>

Savani, M. M. (2019). Can commitment contracts boost participation in public health programmes? *Journal of Behavioral and Experimental Economics*. doi:10.1016/j.socec.2019.101457

Sen, R., & Menon, K. (2023). Impact Assessment of Azad Foundation Programs 2008-2022. Retrieved from <https://www.azadfoundation.com/wp-content/uploads/2024/07/Azad-Impact-Assessment-Report.pdf>

Shah, S., Viswanath, K., Vyas, S., & Gadepalli, S. (2017). Women and Transport in Indian Cities. New Delhi: ITDP India.

Shaver, L. (2026, March 10). Shaver: How to retain newly hired drivers and reduce early-tenure turnover. Retrieved from FleetOwner: <https://www.fleetowner.com/perspectives/ideaxchange/blog/55362911/how-to-retain-newly-hired-drivers-and-reduce-early-tenure-turnover>

Singhai, A., & Singhai, K. (2021). Gender, Inclusive Transport and Sustainable Development Goals: A Legal Perspective to Transport Policies. Transport and Communications Bulletin for Asia and the Pacific.

Sinha, S. (2026, March 2027). Delhi DTC bus fleet hits 13-year low, ridership still below pre-Covid levels. Retrieved from Hindustan Times: <https://www.hindustantimes.com/cities/delhi-news/delhi-dtc-bus-fleet-hits-13-year-low-ridership-still-below-pre-covid-levels-101774567121346.html>

Smile Foundation. (2025, July 26). Anganwadi Infrastructure Deserves a Second Look. Retrieved from Smile Foundation: <https://www.smilefoundationindia.org/blog/anganwadi-infrastructure-in-india/>

Smythe, P. (2025, July 9). Almost Half of Female Transport Workers Suffer Sexual Assault at Work. Retrieved from Novara Media: <https://novaramedia.com/2025/07/09/almost-half-of-female-transport-workers-suffer-sexual-assault-at-work/>

Sun, X., & Dong, J. (2022). Stress Response and Safe Driving Time of Bus Drivers in Hot Weather. Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC9367783/>

Telangana State Level Police Recruitment Board. (2025, September 17). Notification: Telangana State Level Police Recruitment Board. Retrieved from https://www.tgprb.in/DRVR_PDF/Driver_Shramik_Notification_2025_dtd_17-09-2025.pdf

The New Indian Express. (2024, November 12). The New Indian Express. Retrieved from Bengaluru development master plan to be ready by mid-2026: <https://www.newindianexpress.com/states/karnataka/2024/Apr/24/bengaluru-development-master-plan-to-be-ready-by-mid-2026>

TNN. (2024, May 15). E-bus drivers demand better pay, refuse to ply for 4 hours. Retrieved from The Times of India: <https://timesofindia.indiatimes.com/city/bengaluru/e-bus-drivers-demand-better-pay-refuse-to-ply-for-4-hours/articleshow/110128824.cms>

TNN. (2025). Llyods Metals and Energy Ltd.onboards 19 Konsari women after driver training. Retrieved from Times of India: <https://timesofindia.indiatimes.com/city/nagpur/lloyds-metals-and-energy-ltd-onboards-19-konsari-women-after-driving-training/articleshow/123873240.cms>

TOI. (2024, February). 122 women drivers with MSRTC; 46 more to join soon. Retrieved from The Times of India: <https://timesofindia.indiatimes.com/city/pune/122-women-drivers-with-msrtc-46-more-to-join-soon/articleshow/107789161.cms>

Transport Department, GNCTD. (n.d.). Addition of another class of Motor Vehicles. Retrieved from GNCTD: <https://transport.delhi.gov.in/transport/addition-another-class-motor-vehicles>

Transport Department, GNCTD. (n.d.). Learner Licence. Retrieved from GNCTD: <https://transport.delhi.gov.in/transport/learner-licence-0>

Transport Department, GNCTD. (n.d.). Permanent Driving Licence. Retrieved from GNCTD: <https://transport.delhi.gov.in/transport/permanent-driving-licence>

Transport Workers' Union of Australia v Jarman Ace Pty Ltd T/A Ace Buses, FWCFB 7097 (Fair Work Commission 2014). Retrieved from <https://www.fwc.gov.au/documents/decisionssigned/html/2014fwcfb7097.htm>

Turnbull, P. P. (2013). Promoting the employment women in the transport sector –obstacles and policy options. International Labour Organization.

Vaishnavi V.M., D. (2019, May 7). The economics of being a cab driver in Bengaluru. Retrieved from Citizen Matters: <https://citizenmatters.in/economics-of-being-cab-driver-in-bengaluru/>

Venugopal, V., Rekha, S., Manikandan, K., Latha, P. K., Vennila, V., Ganesan, N., . . . Chinnadurai, S. J. (2016). Heat stress and inadequate sanitary facilities at workplaces – an occupational health concern for women? *Global Health Action*. doi:<https://doi.org/10.3402/gha.v9.31945>

VIA Metropolitan Transit. (n.d.). Employee Referral Program. Retrieved from VIA Metropolitan Transit: <https://www.viainfo.net/referral/>

Volvo. (2024, December 10). Volvo Cars signs two sustainability-linked revolving credit facilities in the total of EUR 2 billion. Retrieved from Volvo Cars: <https://www.volvocars.com/intl/media/press-releases/B987746FFDD02C6C/>

Volvo Group. (2020). Volvo Group Green Finance Framework 2020: Focus on Clean Transportation. Retrieved from Volvo Group: <https://www.volvogroup.com/content/dam/volvo-group/markets/master/investors/debt-information/green-financing/volvo-green-finance-framework.pdf>

Wright, T. (2019). The gendered impacts of technological change for public transport workers in the Global South. *Research in Transportation Business & Management*. doi:<https://doi.org/10.1016/j.rtbm.2019.100384>

Wright, T. (2022). *Women, Work and Transport*. Emerald Publishing Limited.

Yadav, M. (2025, April 2). TNSTC Driver Salary 2025, Perks And Allowances, Job Profile. Retrieved from Adda247: <https://www.adda247.com/exams/tn/tnstc-driver-salary/>

