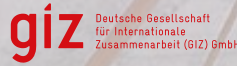
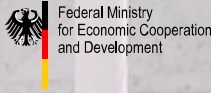


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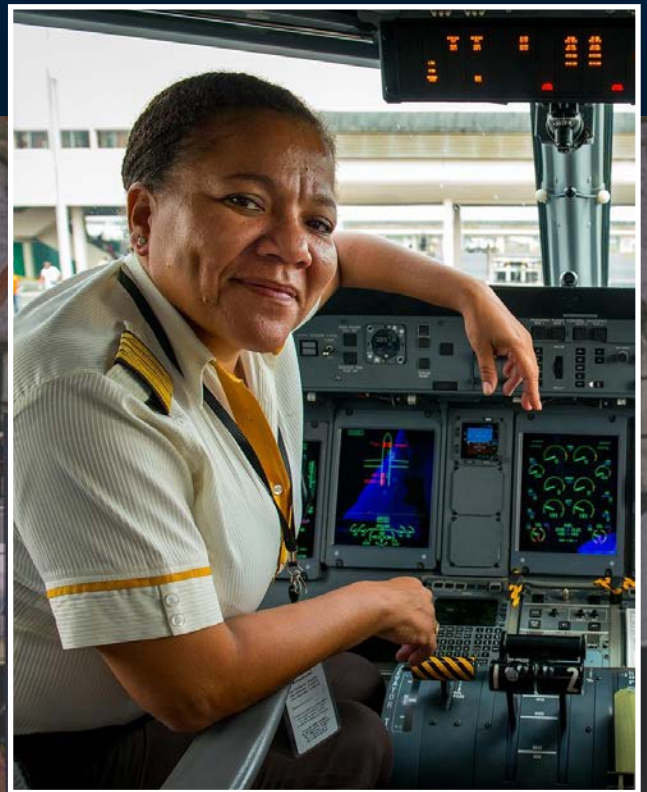
Mobility and Transport Connectivity Series

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Addressing Barriers to Women's Participation in Transport

Global, ECA, and MENA Perspectives

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Acronyms

ADB	Asian Development Bank
AKS	Amin Kawar and Sons
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
CoC	Code of Conduct
CSO	Civil society organization
ECA	Europe and Central Asia
EGUM	Expert Group on Urban Mobility
EIB	European Investment Bank
ENR	Egyptian National Railways
ETF	European Transport Workers' Federation
EU	European Union
FIA	Fédération Internationale de l'Automobile
GBVH	Gender-based Violence and Harassment
GDP	Gross Domestic Product
GEDM	Gender Equity Development Model
GEEIS	Gender Equality European International Standard
GIZ	German Agency for International Cooperation
GoJ	Government of Jordan
GRP	Gender Responsive Procurement
HR	Human Resources
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IDA	International Development Association

IFC	International Finance Corporation
ILO	International Labour Organization
ITF	International Transport Forum
KPIs	Key Performance Indicators
LGBT	Lesbian, Gay, Bisexual, and Transgender
MBTA	Massachusetts Bay Transportation Authority (MBTA)
MENA	Middle East and North Africa
MGF	Mashreq Gender Facility
MIGA	Multilateral Investment Guarantee Agency
OECD	Organisation for Economic Co-operation and Development
SSC	Social Security Corporation
STEM	Science, Technology, Engineering, and Mathematics
TUNEPS	Tunisia e-Procurement System
TVET	Technical and vocational education and training
UAE	United Arab Emirates
UITP	Union Internationale des Transports Publics
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WBG	World Bank Group
WiT	Women in Transport network
WIT	Women in Trucking Association

Executive Summary

Women are significantly underrepresented in the global transport sector workforce, accounting for approximately 12 percent of transportation and storage workers worldwide. Women's participation varies by subsector: globally, women comprise only 5 percent of workers in land transport, 10 percent in water transport, 21 percent in warehousing and transportation support activities, and 38 percent in aviation. There is also a significant variation by region: for example, women represent 21 percent of transportation and storage workers in Europe and Central Asia (ECA), but the female share of employment in the industry in the Middle East and North Africa (MENA) is substantially lower at 3 percent.

The gender gap is particularly acute in senior leadership, technical, and operational roles. Women are more likely to be employed in administrative or service-oriented activities in transport, whereas skilled technical jobs associated with higher pay—including driving roles, maintenance and repair, engineering, and pilot positions—are predominantly held by men. The proportion of women within the workforce decreases with seniority, indicating the presence of barriers to career progression. Despite growing recognition of the importance of strengthening women's participation, progress toward closing gender gaps in the sector has been slow, with overall patterns of women's participation in transport remaining static over time.

Closing the gender gap in employment in the transport sector is critical for moving toward a greener, safer, and more efficient transport sector and will bring benefits for transport companies, workers, and service users. A greater focus on women's employment can help ensure that more diverse perspectives are included in transport planning and service delivery. The lack of women at all levels of the industry, particularly in transport operations and leadership, means that companies are currently missing out on women's perspectives and insights in shaping, planning, and designing transport services that meet the needs of the widest possible cross-section of transport users.

At an organizational level, employers stand to benefit from higher levels of workforce diversity, including more dynamic team performance, more robust decision-making, and better outreach to customers and service users. A demonstrable commitment to equal opportunity can help companies secure their position as an employer of choice for women and men, thus improving recruitment and retention outcomes and tackling skills and labor shortages in the sector. Beyond the enterprise and sectoral levels, addressing gender gaps in employment is associated with higher economic output and gross domestic product (GDP) growth. Moreover, women's leadership in the transport and logistics sector has shown to advance the implementation of eco-friendly practices and environmental protection measures.

This report explores the key challenges to women's employment in the transport sector and provides recommendations for how stakeholders can tackle gender gaps and increase women's representation in the workforce, with a particular focus on skilled technical and managerial roles. It offers an assessment of the role of women in transport worldwide and provides a series of regional snapshots of women's employment in the sector.

The analysis and recommendations in this report will inform the activities of the "Women in Transport (WiT) network: Supporting Women as Leaders and as Employees" to be established by the World Bank Group (WBG) organizations (IBRD/IDA, IFC, and MIGA) and its development partners—the Asian Development Bank (ADB), the German Agency for International Cooperation (GIZ), the

European Investment Bank (EIB), and the International Transport Forum (ITF)—to promote women's employment in transport. The network will be initially launched in the ECA and MENA regions, which are the focus of the regional chapters in this report. Following the successful launch of the network for the ECA and MENA regions, the development partners intend to explore potential expansion over time, taking into account lessons learned from the network's initial period of operation.

Key challenges to women's employment in transport

Barriers to women's participation in the transport sector are present within each stage of the employment lifecycle, including in relation to women's attraction, recruitment, and retention; policies and practices in the workplace; and leadership and career progression. Regulatory restrictions can pose overarching barriers to women's employment within transport. The lack of sector-specific research to improve development and business case for increasing women's participation in the sector, or to evaluate existing interventions for their impact, can also pose challenges. This report identifies key challenges to women's employment in transport grouped into these five broad categories, which are presented in the boxes below.

I. Attraction and recruitment

- **There is a pressing need to attract more women into technical studies—including science, technology, engineering, and mathematics (STEM) disciplines—to increase the female talent pool.** Women are estimated to comprise just 35 percent of STEM graduates worldwide—a proportion that has remained static in the last 10 years. Women are also less likely to pursue technical vocational education and training (TVET) relevant to the transport sector compared to men.
- **Fewer women than men are entrepreneurs in the transport sector, as women are facing unique challenges such as accessing financing and breaking into male-dominated markets.** Supporting women in starting businesses in this sector can have a multiplier effect, as women-led companies often employ more women, creating additional job opportunities, as well as address mobility challenges for female riders.
- **Gender stereotypes that position technical sectors like transport as unsuitable for women play a significant role in discouraging young women and girls from pursuing transport-focused education and career pathways.** Misperceptions that women are not suitable for jobs in the transport sector due to requirements for high levels of physical strength may also play into these stereotypes. However, these assumptions are becoming increasingly outdated in constantly evolving technologies.
- **Many women in technical studies are not aware of the diverse and rewarding career paths available in transport and may not consider the sector as a viable career option.** Poor connections between educational institutions and employers and insufficient targeted outreach to women contribute to this lack of awareness.
- **Entrenched gender norms and conscious or unconscious bias on the part of hiring managers** can also hinder women's progress in the recruitment process, particularly concerning technical roles.

II. HR policies and practices

- **Women's personal security¹ is a particular concern in the transport sector.** Jobs can involve spending significant time in isolated or high-risk environments and require traveling to work at night or when public transportation options are limited. Concerns regarding sexual harassment in the workplace and during the commute can deter women from pursuing employment in transport, including in customer-facing roles.
- **The lack of basic infrastructure to meet the needs of female staff is a further challenge in the sector:** some women workers in public transportation, as well as maritime, rail, and logistics transport, lack access to adequate sanitation facilities, for example.
- **The transport sector poses specific challenges for women who seek to balance work responsibilities with family obligations.** Technical roles often include longer working hours, overnight shifts, and extended periods away from home. At the same time, many transport companies lack family-friendly policies such as flexible schedules, telecommuting options, on-site childcare facilities, or generous parental leave, making it challenging for women to manage both work and family responsibilities.
- **Despite efforts toward pay equity, the gender wage gap persists in transport, as in other sectors.** In part, this is because women are frequently underrepresented in skilled technical and leadership roles associated with higher pay. However, pay disparities are also reported within the same roles, with women earning less than men in occupations like driving due to women taking fewer overtime hours to attend to household or caring responsibilities.

III. Retention, career advancement, and leadership

- **Gender stereotypes that position men as better suited to leadership and decision-making pose a key challenge to women's career progression in transport,** resulting in a biased perception of women's capabilities that may limit their opportunities for advancement.
- **Prevalent social norms also mean that women are often disproportionately responsible for household and caregiving duties within the family, and familial obligations can hinder professional growth for working mothers.** For example, women in the sector may feel reluctant to seek promotions if they believe additional responsibilities at work or longer hours will adversely impact their family life. Managers may inadvertently exacerbate barriers to career progression by choosing not to promote women or assigning them less demanding roles without necessarily consulting the women involved.
- **A lack of leadership training and networking opportunities tailored to women in the transport sector further hinders progression.** Women often find themselves excluded from key networking events, mentorship, or leadership development programs that are typically more accessible to male colleagues.
- **Limited technical or operational experience also hampers career advancement into higher-paid technical roles.** Targeted training programs that support skill development for women are lacking, resulting in a skills gap that makes it difficult for them to compete for more advanced positions.

¹ For the purpose of this report, "safety" is used to describe infrastructure deficiencies in stations and trains that could lead to accidents in the station, or risky settings, such as big gaps between the train and the platform, or unsafe staircases; while "personal security" refers to vulnerability to sexual harassment, physical or verbal assault, robbery with use of force, and other crimes.

IV. Legal and policy framework

- **Regulatory frameworks restricting women's access to employment opportunities in transport pose a barrier to women's participation in 12 countries worldwide.** Legislation in 20 countries also limits women's engagement in work at night, excluding women from job opportunities that require night shifts.
- **The lack of robust legislation on equal pay can exacerbate gender inequality in transport:** legal frameworks in as many as 92 countries worldwide do not currently provide equal pay for work of equal value for women and men.
- **The absence of adequate legislation to ensure women's personal security at work, such as laws prohibiting workplace sexual harassment,** can contribute to a hostile working environment for women in the transport sector. While 151 economies have laws that specifically address sexual harassment in employment, many others still lack such protections.

V. Data collection and research

- **While gender statistics are generally limited, quality sectoral statistics are particularly scarce and patchy.** This prevents relevant stakeholders from understanding and addressing the gender gaps. In some cases, valuable sex-disaggregated data are collected but rarely analyzed and disseminated, which is a missed opportunity.
- **Although some progress in promoting women in the transport sector has been possible through a greater understanding of the barriers and enablers related to women's employment in the sector, there exists limited evidence on what works and what does not, since many of these interventions have yet to be evaluated.** This prevents individual efforts from being replicated globally into "best fit" solutions.

Recommendations

Addressing the multi-faceted challenges impeding women's education, employment, and advancement in transport calls for sustained cooperation among multiple stakeholders. To this end, the WiT network to be established by the World Bank Group and its partners is well-positioned to drive collaboration on activities to promote women's employment opportunities at all levels. The following recommendations are relevant to a broad range of WiT stakeholders committed to increasing gender diversity and inclusion in the transport sector, including policy makers, public and private sector employers, and strategic partners such as educational institutions. The below recommendations are set out in greater detail in the last chapter of this report.

Stakeholders	Recommendations	Relevant pillars
Policy makers	1. Adopt or strengthen existing policies to encourage young women and girls to access education and training needed to enter the transport sector.	Attraction and recruitment
	2. Encourage a more equitable distribution of family and care responsibilities between women and men through legal and policy reforms.	HR policies and practices
	3. Adopt targets for women's participation in technical and managerial roles in the transport sector and monitor progress.	Retention, career progression and leadership
	4. Address legislative barriers and gaps that hinder women's employment and progression in the sector and support employers to ensure compliance. Explore affirmative action policies and laws to increase women's participation in the sector (e.g., through procurement) as and when the countries' legal and social context allows.	Legal and policy framework
	5. Promote women's entrepreneurship in the transport sector.	Attraction and recruitment
Employers	6. Strengthen outreach efforts to women and girls to attract them to careers in transport.	Attraction and recruitment
	7. Strengthen recruitment processes to eliminate gender bias.	Attraction and recruitment
	8. Adopt an organizational strategy on gender equality in employment and leadership and strengthen data collection to measure progress.	HR policies and practices
	9. Strengthen availability of policies to support workers with caring responsibilities.	HR policies and practices
	10. Ensure that working environments are safe and secure and meet women's needs. (e.g., anti-harassment policies alongside adequate implementation mechanisms and training and awareness programs).	HR policies and practices
	11. Collaborate on improving women's professional development opportunities through mentorship programs and leadership training.	Retention, career progression and leadership
	12. Provide targeted technical training to enable women's progression into higher paying roles.	Retention, career progression and leadership
	13. Initiate or contribute to a policy dialogue to address legal and policy obstacles to employing and advancing women in the transport sector.	Legal and policy framework

Stakeholders	Recommendations	Relevant pillars
Educational institutions and other partners, such as, CSOs and foundations	14. Strengthen collaboration between educational providers and employers to support women's recruitment into the transport sector.	Attraction and recruitment
	15. Promote access to STEM education for young women and girls and create an educational environment that encourages take-up of technical studies.	Attraction and recruitment
	16. Collaborate with employers and policy makers to support the design and implementation of gender equality initiatives, strengthen policy frameworks, and disseminate best practice.	HR policies and practices
All WiT Stakeholders	17. Collect, analyze, and disseminate sectoral gender statistics to support evidence-based interventions; evaluate existing gender interventions to identify what works and what does not; identify and undertake new research to accelerate efforts to close gender gaps in the sector.	Data collection and research
	18. Establish best practice repository of gender responsive interventions.	Data collection and research



1

Introduction

1. Introduction

1.1 Why women's employment and leadership matters for the transport sector

Increasing women's participation in transport is critical for moving toward a greener, safer, more secure and more efficient transport sector. The sector is heavily male dominated, with women accounting for only 12 percent of the global transport workforce (ILO 2023a). Yet, closing this gender gap could bring major gains for transport companies, workers, communities, and the environment. A more gender-balanced workforce would help the industry to better understand and meet the diverse needs of service users, particularly women, who typically use public transport more than men and experience transport differently as a result of economic necessity, security concerns, caregiving roles, and different mobility patterns. And by better addressing the needs of all segments of the population, the sector can increase ridership and promote wider uptake of sustainable forms of transport, supporting the decarbonization of the sector (EIB 2022; ITF/FIA 2022).

A more diverse transport workforce and more gender-responsive transport planning can unlock wider economic and social development. Lack of access to transport options has been cited as a key barrier to women's labor force participation in developing countries and has been associated with a 16.5 percent decrease in the probability of women entering the workforce, which ultimately has a dampening effect on gross domestic product (GDP) (World Bank 2023). Supporting women's access to the transport sector can both increase labor force participation in the sector itself and support participation in other sectors, as more women in decision-making positions can lead to more gender-sensitive transport service provision and a diversified customer (riders) base. A McKinsey report found that in a "full potential" scenario in which women play an identical role in labor markets to that of men, as much as US\$28 trillion, or 26 percent, could be added to global annual GDP (Woetzel et al. 2015).

Currently, the lack of women at all levels—and particularly in operations—prevents decision-makers in the transport sector from connecting strongly with the needs of women as passengers. Employing more women in transport services and addressing gendered mobility barriers are therefore interlinked: including both men and women from diverse backgrounds in decision-making, design, and delivery of transport services can ultimately improve services for customers from different backgrounds. Gender-responsive services can also help transport providers improve revenue by both improving customer satisfaction and operating toward their full capacity, as removing gendered barriers can help to diversify their client base and enhance the travel options of the existing users (EIB 2020; World Bank 2023).

The transport sector needs to attract more diverse candidates to tackle labor and skills shortages, particularly in the face of evolving skills needs linked to technological change. In many regions, transport companies face challenges in recruiting enough workers, particularly drivers, and face tough competition from other sectors which may offer more favorable salaries and working conditions (see, e.g., UITP 2023). Pressure on skills and labor supply are particularly acute in regions

like Europe, where the transport sector is grappling with specific demographic pressures on the workforce associated with ageing populations (EGUM 2023). At the same time, as the transport sector undergoes rapid digital transformation, the skills needs of employers are evolving, and transport companies need to be able to appeal to a new generation of more digitally literate workers. In light of these workforce challenges, there is a pressing need for transport companies to adopt new recruitment and people management strategies to attract (and retain) a more diverse workforce, including women. More inclusive workplace policies and practices—including family-friendly working arrangements—can improve recruitment and retention outcomes (IFC 2017).

At the enterprise level, an enhanced focus on women's leadership and employment can help transport companies to grow and perform better. There is a significant body of international evidence to demonstrate that higher levels of diversity lead to better performance, particularly at the senior leadership level. For instance, companies with more diverse management have 19 percent higher revenues linked to stronger innovation (BCG 2018). More broadly, more women in the workforce can boost team productivity, as more diverse teams are more likely to avoid “group think” and integrate different perspectives into problem-solving (IFC 2017). Women are often considered better at handling client relationships, which is particularly important in public-facing roles in passenger transport. For instance, in Ireland, Dublin Bus reported receiving 38 percent fewer complaints for an average woman driver compared to an average male driver (European Commission 2018). Transport companies with higher levels of gender balance in their workforces are generally more representative of the communities that they serve and are more likely to secure the support and respect of the community and society in which they operate (IFC/CommDev 2024).

More diverse management teams can also improve the transport sector's environmental performance. The transport sector is currently the fastest growing contributor to climate emissions. A study observing 2,000 companies across various sectors found that increasing the share of female managers by just 1 percentage point decreases CO₂ emissions by 0.5 percent (ECB 2022). Environmental benefits are even greater when women are represented in leadership; a global study of the 2,300 publicly listed companies of some of the most male-dominated sectors showed that companies with greater board gender diversity were 60 percent more likely to reduce the intensity of energy consumption, 39 percent more likely to reduce greenhouse gas emissions, and 46 percent more likely to reduce water use (FP Analytics 2020). Boosting women's participation and leadership in the transport sector can challenge existing masculine norms and stereotypes, influencing decision-making. Addressing these norms, along with increasing women's presence, could help achieve climate and sustainability goals in transport policy (Kronsell et al., 2016).

In recognition of the multitude of potential gains for operators, workers, and the communities they serve, a growing number of transport companies are increasingly strengthening their commitments to gender equality. As of 2023, 37 percent of the companies in the transportation and supply chain sector surveyed globally have reportedly introduced initiatives to promote workforce diversity (World Economic Forum 2023). Meanwhile, 56 percent of logistics employers surveyed by the Women in Trucking Association (WIT) reported having a formal policy on diversity and inclusion (WIT 2023). In this context, there is a need to further examine the barriers to women's participation in the sector and to create opportunities for employers to share challenges and good practices for supporting women's employment and leadership.

1.2 Scope and objectives of this study

This report identifies the key challenges to women's employment in the transport sector and provides recommendations for how stakeholders can tackle gender gaps and increase women's representation in the transport workforce. The report particularly focuses on barriers to women's participation in mid- and high-skilled operational and technical and managerial roles in the sector. It offers an assessment of the role of women in transport worldwide and provides regional snapshots into the challenges to women's employment in Europe and Central Asia (ECA) and Middle East and North Africa (MENA).

The primary objective of this study is to enable a better understanding of the constraints and opportunities women face in accessing employment and professional development in the sector. The resulting analysis and recommendations will inform the activities of the Women in Transport (WiT) network, to be established by the World Bank Group (WBG) and its partners to promote women's employment in transport, with an initial focus on the ECA and MENA regions. The insights and recommendations presented in this report are of relevance to a broad range of WiT stakeholders committed to increasing gender diversity and inclusion in technical and managerial positions in the sector, including policy makers, public and private sector employers, and educational providers.

The rationale for creating the WiT network stems from a recognition that existing initiatives by the World Bank Group and its partners are contributing to better gender equality outcomes in the sector but are not delivering the desired scale required to create a more inclusive and diverse transport workforce. At the same time, there is growing momentum to tackle gender-based occupational segregation in the transport sector, and with emerging best practices, the time is right to scale up and institutionalize project-based and country-specific efforts in order to have wider reach and impact.

The WiT network will serve as a forum to connect transport sector employers (transport/infrastructure ministries and public and private transport service providers) and education institutions that cater to the sector, as well as individual transport professionals to promote women's employment, career advancement, and capacity building. The platform will be a space to raise awareness of the business and economic benefits of a diverse labor force in the sector; promote recruitment, based on good practice; serve as information exchange; and encourage training, mentorship, and networking opportunities for women. The network will be open to a large range of relevant stakeholders in gender and transport across both the public and private sectors, especially the WBG and its partners' transport stakeholders.

1.3 Methodology

The research for this report is based on the following elements:

- **Analysis of national and international statistical data** that shed light on women's participation in the transport workforce and in science, technology, engineering, and mathematics (STEM) education.
- **Desk review of relevant published materials** from credible sources on challenges to women's employment in technical and managerial roles in transport worldwide and in the ECA and MENA regions specifically (including from international organizations, government bodies, donors, industry associations, private companies, academic institutions, and civil society organizations).

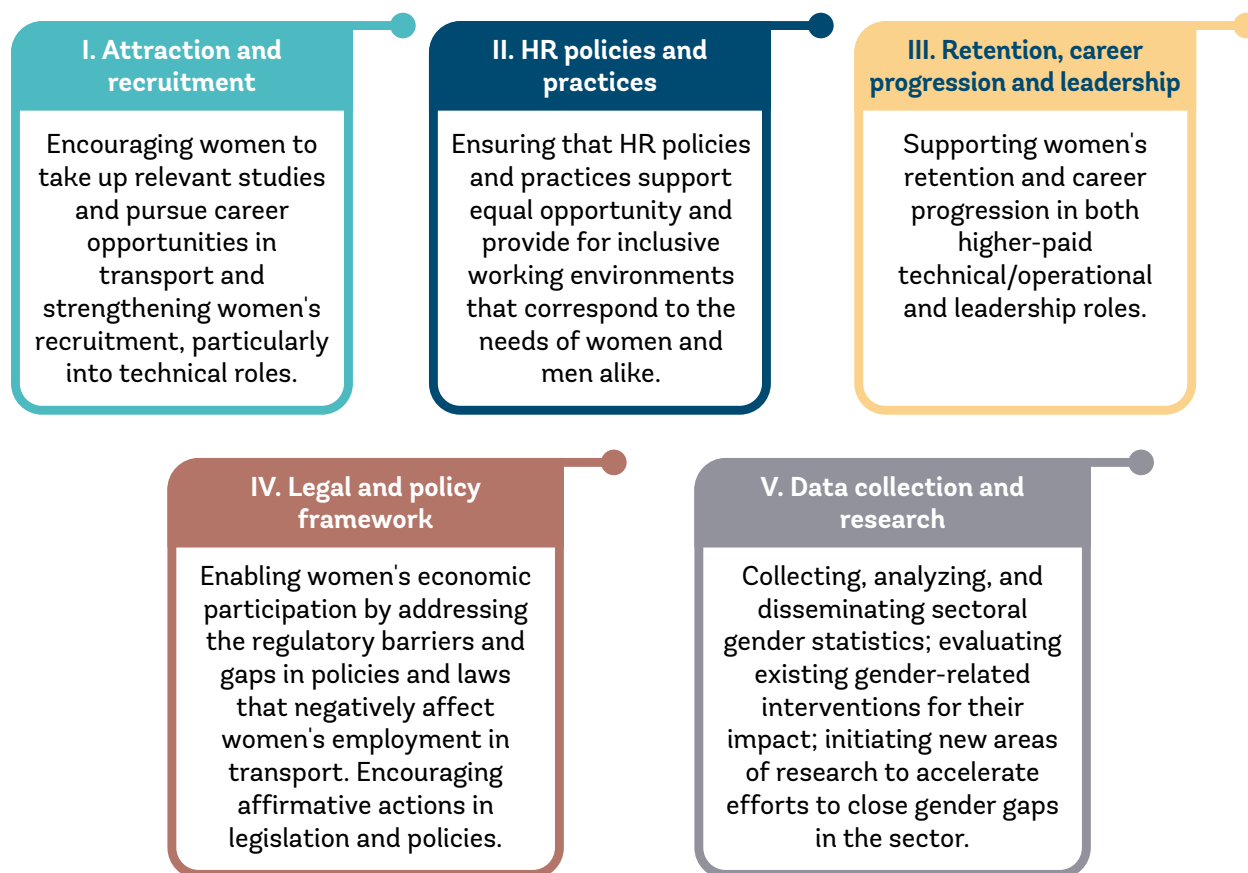
- **Desk review of project materials and reports of the World Bank and other development partners** on transport, logistics, and associated sectors in the ECA and MENA regions, and analysis of good practices to tackle gender gaps by policy makers and employers across the two regions.

The use of the binary categories of “men” and “women” in the report does not capture the full diversity of gendered experiences in employment. This should be viewed as a limitation of this report, which can hopefully be addressed as more data become available in the future.

1.4 Report structure

This report is structured around the key stages in the employment lifecycle where women are likely to encounter barriers to participation and advancement, which correspond to the proposed five pillars of the WiT Network (see Figure 1).

Figure 1. Key pillars of the WiT Network



Source: prepared by the report's authors.

The report comprises five principal sections:

- **Section 1** outlines the rationale, scope, and objectives of the study and provides an overview of the report's methodology and structure.
- **Section 2** presents the findings on women's participation in transport globally and provides an overview of key challenges to women's attraction and recruitment into the sector, employers' HR policies and practices, women's career progression, and regulatory barriers to employment.
- **Sections 3 and 4** provide an in-depth look into women's roles in the transport sectors in the ECA and MENA regions, respectively, highlighting region-specific barriers to greater female participation in technical and managerial roles alongside examples of best practice from policy makers and employers.
- **Section 5** sets out a series of practical recommendations for different WiT Network stakeholders, outlining steps policy makers, employers, and educational providers can take to tackle existing challenges to women's participation and increase gender diversity in technical and leadership roles in the transport sector.

A woman wearing a white hard hat and a high-visibility yellow vest with an "ORIENT" logo is pointing at a document held by a man in a white hard hat and high-visibility vest. They are standing on a rocky construction site next to a large body of water. In the background, there are green hills under a blue sky with scattered clouds. A yellow measuring pole is visible near the water's edge. A large tree is on the left side of the frame.

2

Women's Participation in the Global Transport Sector

2. Women's Participation in the Global Transport Sector

2.1 Overview

Women are significantly underrepresented in the transport workforce worldwide. Women comprise approximately 12 percent of the global transportation and storage workforce (ILO 2023a).² This is a persistent pattern, with minimal changes to female participation rates in the sector over time (Ng and Acker 2020). There is some variation by subsector. Women are least likely to work in land transport and water transport, where they account for 5 and 10 percent of workers, respectively. By contrast, women represent 21 percent of the global workforce within warehousing and support activities for transportation and 38 percent of workers in aviation (ILO 2023a). While gender statistics are generally limited, sectoral statistics are particularly scarce and patchy. The indicator on employment in transport and storage covers various subsectors, some of which, like postal and courier services, likely employ more women than other subsectors, such as land transport, overestimating the overall share of women employed in the transport sector; therefore, the figures provided in this report should be taken with caution.

The global transport sector has one of the lowest rates of women in senior leadership. Estimates indicate that women hold only 23 percent of senior leadership roles in transportation and supply chain companies surveyed globally (World Economic Forum 2023). The proportion of women within the workforce decreases with seniority, indicating the presence of barriers to career progression within the sector: women make up 34 percent of entry-level roles but only 17 percent of senior executive and managerial-level positions across these industries (World Economic Forum 2023). A global study commissioned by the European Investment Bank (EIB) to the International Association of Public Transport (UITP) showed that 26 percent and 25 percent of the senior and middle management of the 51 public transport operators and authorities representing an overall workforce of about 600,000 employees were women employees, respectively (EIB and UITP 2024).

Job roles are highly gendered: the proportion of women is particularly low in mid- and high-skilled technical roles and higher in administrative or service-oriented activities (SuM4All 2023; ITF 2023). Surveys of trucking companies indicate that women make up less than 6 percent of truck drivers globally and just 16 percent of bus or coach drivers in Europe (IRU 2024). The abovementioned 2024 EIB-UITP study revealed that only 9 percent of the bus drivers of the interviewed 21 bus operators were women (EIB and UITP 2024). Similarly, in rail, train conducting and technical roles such as train maintenance and repair and signaling are primarily performed by men, while women account for the majority of workers in administration and service-oriented roles such as cleaning (ITF 2023). Aviation also tends to be characterized by high occupational gender segregation, with pilots and maintenance technicians being one of the most highly male-dominated roles worldwide. For example, roughly 5 percent of airline pilots in the United States are women (FAA 2022). Women continue to

² Data on employment in the global transportation and storage sector refer to activities under "Section H: Transportation and storage" of the [United Nations' International Standard Industrial Classification of All Economic Activities \(ISIC, Rev.4\)](#). This includes employment in land transport and transport via pipelines, water transport, air transport, warehousing and support activities for transportation, and postal and courier activities. The proportion of women in the workforce is calculated based on national statistical data from 2023 or latest available year.

be underrepresented amongst leadership at airlines, making up just 4 percent of Chief Executive Officers (CEOs), 13 percent of Chief Financial Officers (CFOs) and 6 percent of Chief Operating Officers (COOs) in 2021 (IATA 2022).

2.2 Key challenges

2.2.1. Attraction and recruitment

Low levels of female enrollment in technical fields of education pose a key challenge to attracting and recruiting women into the transport sector. Data indicate that women make up just 35 percent of the science, technology, engineering, and mathematics (STEM) graduates worldwide, and this share has remained static in the last 10 years despite campaigns to encourage women to pursue STEM subjects (UNESCO 2024). Women are also less likely to pursue technical vocational education and training (TVET) relevant to the transport sector compared to men: on average, women represent just 15 percent of TVET graduates in engineering, manufacturing, and construction, and 17 percent of TVET graduates in information and communication technologies across Organisation for Economic Co-operation and Development (OECD) countries (OECD 2023a).

Gender stereotypes play a significant role in discouraging girls from pursuing transport-focused education and career pathways. Male-dominated technical sectors such as transport are frequently associated with masculine traits, and men are perceived to be better suited to jobs in the industry, particularly technical roles like driving or maintenance. Stereotypes about boys' and girls' aptitude for STEM studies and professions shape girls' educational and career aspirations from a young age and are often reinforced by family members and teachers (McNally 2020). Educational materials and curricula may also inadvertently reproduce these stereotypes, including by not equally representing women in STEM fields and technical careers (UNESCO 2024). Also, staff cohorts remain male dominated, which only contributes to the image of the transport sector as a "male occupation". The lack of female role models in academia can make it difficult for new generations of female science and engineering students to find mentors to whom they can relate. In this context, there is a clear need to promote female role models, mentors, and collaborators in transport-related sectors.

Lack of awareness about career opportunities in the transport sector is a further challenge.

Among women who are enrolled in technical education, few seek subsequent employment in transport specifically. Many are unaware of the diverse and rewarding career paths available in transport and are deterred by the widespread misconception that roles in the sector require a high degree of physical strength and involve challenging or potentially hazardous working conditions (Ng and Acker 2020; Department for Transport 2022). Poor connections between educational institutions and employers and an insufficient targeted outreach to women contribute to this lack of awareness. As a result, women may not consider transport a viable career option. Even young women who do enter the transport sector might shy away from technical roles, opting for perceived "safer" office-based administrative positions instead.

Entrenched gender norms can hinder women's progress in the recruitment process, particularly concerning technical roles within the transport sector. Hiring managers may be affected by conscious or unconscious bias in their approach to interviews and recruitment decisions, influenced by prevalent social norms and assumptions about the suitability of jobs for women (Proskuryakova

and Seitz 2023; ITF 2023; SuM4All 2023; Department for Transport, 2022). Gender norms may be expressly or inadvertently reflected in job advertisements, for instance, through the use of images of men or language that is not gender neutral. Women may be intimidated or deterred from applying for certain roles (e.g., bus driving) where the existing workforce is male dominated and perceive that it may be difficult to adapt to the prevailing culture (European Commission 2018).

2.2.2. HR policies and practices

Ensuring safe and secure working conditions is central to increasing women's participation in technical roles. Women's personal security is a particular concern in the transport industry as jobs can involve spending significant time in isolated or high-risk environments or may involve travel to work. One-fourth of female railway workers surveyed by the International Transport Workers' Federation (ITF) across 56 countries reported being aware of gender-based violence and harassment (GBVH) incidents in their workplace, and 15 percent had experienced GBVH at work themselves (ITF 2023). Of these incidents, 44 percent were perpetrated by colleagues, 35 percent by managers, and 13 percent by customers (ITF 2023). Among female railway workers surveyed by ITF, only 50 percent reported feeling safe at work, and only 21 percent stated that employer-provided sleeping facilities were safe and private (ITF 2023).

Personal security while commuting to work or in isolated roles is a further concern for women in the sector. Unsociable working hours may require staff to travel in the early morning or at night when public transport is unavailable, yet few employers view commuting as a workplace concern (ITF 2023). The personal security risk of isolated working is another concern in the sector. Yet, very few transport companies have isolated worker policies and related best practices that set out protocols for workers in the event of an incident or emergency in the field. This is particularly important for creating a safe and secure work environment for women wishing to take up some of these isolated roles (e.g., drivers, ticket office staff, and platform staff).

In many workplaces, the lack of basic infrastructure to meet the needs of female staff is a key barrier to women's employment. Many workplaces were designed without taking into account women's personal security and hygiene needs, with reports of female staff in public transportation, as well as maritime, rail, and logistics transport subsectors lacking access to adequate sanitation facilities such as clean, separate restrooms for women (Wright 2018; Women in Rail 2015; Turnbull 2013; Barrientos 2019; ITF 2023). In a global survey of female railway workers, 23 percent said that sanitary facilities in their workplace were not secure and private, 31 percent said that they did not have access to separate sanitary facilities for women and men, and 37 percent said that sanitary facilities were not appropriately equipped for women (e.g., with sanitary disposal bins) (ITF 2023). Employers should also consider the needs of women with caring responsibilities, for example, by providing hygienic lactation rooms.

The lack of gender-specific Personal Protective Equipment (PPE) is another significant health and safety challenge. "One size fits all" PPE is typically designed to fit most men, which means it often does not fit women properly. This issue goes beyond comfort; improperly fitting PPE fails to provide adequate protection against occupational hazards, increasing the risk of illnesses, injuries, and even death (ETF 2020). Some examples of ill-fitted PPE include gloves that are too big; body armor not designed to accommodate breasts; safety goggles that are too wide for women's faces; coveralls that are too long in the arms and legs for smaller bodies, and uncomfortable uniforms, for example, high heels in aviation (World Bank Group and EBRD, 2024).

The transport sector poses specific challenges for women who seek to balance work

responsibilities with family obligations. Many jobs in the industry, particularly in the road transport subsector, require long and irregular working hours, fixed shifts that are incompatible with flexible working hours, overnight shifts, and extended periods away from home (Turnbull 2013; ETF 2020). Many transport companies lack family-friendly policies such as flexible schedules, telecommuting options, on-site childcare facilities, or generous parental leave, making it challenging for women and single parents to manage both a career and a family. In Europe, for example, nearly 40 percent of female transport staff who worked part-time reported they had to reduce their working hours as a result of care responsibilities and lack of available and affordable childcare options (ETF 2020). In addition, women report that limiting maternity leave to the statutory minimum often means that women must take unpaid time off following childbirth, impacting career progression and pensions in the long run (ETF 2020). Insufficient support for working parents can also impact retention by contributing to female staff dropping out of the workforce after having children.

Despite efforts toward pay equity, the gender wage gap persists in transport (UNECE 2021).

International statistical data show that there are significant wage disparities in relation to skilled technical occupations in most countries, with gender pay gaps for science and engineering professionals exceeding 25 percent in one-fourth of countries around the world (El Achkar 2023). In the UK, for example, more than one-half of transport sector employers report gender pay gaps of 11 percent and above, higher than the national average (Women in Transport 2023). In part, this is because women in the transport sector are frequently underrepresented in technical roles associated with higher pay and better working conditions, as well as in senior leadership (e.g., ITF 2023; El Achkar 2023). There are also pay disparities within the same roles, with women earning less than men for equal work in occupations like driving (ETF 2020). In the US, for example, the gender wage gap is estimated at 17 percent among truck drivers and 11 percent among warehouse workers (Schollmeier and Scott 2023). A research study on the Massachusetts Bay Transportation Authority (MBTA) found that this pay disparity was due to women working less overtime than their male counterparts on an annual basis, in addition to taking more unpaid hours off work, a difference that can be explained by women's disproportionate care and household responsibilities (Bolotnyy and Emanuel 2019).

2.2.3. Leadership and career progression

Gender stereotypes that position men as better suited to leadership and decision-making pose a key challenge to women's career progression in the transport sector, resulting in a biased perception of women's capabilities that limits their opportunities for advancement (ETF 2020).

Prevalent social norms also mean that women are often disproportionately responsible for household and caregiving duties within the family, and familial obligations can hinder professional growth for working mothers, particularly in roles that demand extensive travel or long hours. For example, women in the sector may feel reluctant to seek promotions if they believe additional responsibilities at work or longer hours will adversely impact their family life. At the same time, managers may inadvertently exacerbate barriers to career progression by choosing not to promote women or assigning them less demanding roles (ETF 2020). The male-dominated culture of the sector also means that, where flexible working arrangements are available, women who make use of these are at a disadvantage when it comes to career progression: working part-time, for example, is typically equated with less commitment (ETF 2020).

A lack of leadership training and networking opportunities tailored to women in the transport sector may further hinder progression. Access to these resources is critical for career advancement, yet women often find themselves excluded from key networking events, mentorship, or leadership development programs that are typically more accessible to their male colleagues. Insufficient support for career development and a lack of female role models and mentors are key barriers for women in the aviation industry, including in progression to roles of pilots, air traffic controllers, and engineers (Ferla and Graham 2019).

Limited technical or operational experience also hampers women's career advancement. Many women in the transport sector face challenges in acquiring the technical skills and operational experience needed to transition into higher-paid technical roles. Men are reportedly more likely to be offered training opportunities compared to women (ETF 2020). Targeted training programs that support skill development for women are lacking, resulting in a skills gap that makes it difficult for them to compete for more advanced positions. Additionally, the sector's heavy reliance on technical expertise means that without adequate support for skills development, women are at a distinct disadvantage when it comes to progression into leadership. Against this backdrop, it is crucial to promote lifelong learning, skilling, reskilling, and upskilling for both women and men to prepare them for a rapidly changing world of work. Additionally, targeted activities should be developed and implemented to strengthen women's capacities as current and future transport professionals.

2.2.4. Legal and policy framework

Regulatory frameworks can serve as a barrier to women's participation in transport when they contain provisions that restrict women's access to employment opportunities in the sector.

According to World Bank data, women are currently explicitly prohibited from working in certain jobs in the transportation sector in 12 countries, including operating trains, driving large vehicles, and working in railway or road transportation and civil aviation (World Bank 2024a). These prohibitions are often justified on the grounds of protecting women from physically demanding or hazardous work, yet they also limit employment opportunities for women and perpetuate gender stereotypes about the sector being unsuitable for women. Additionally, legislation in 20 countries restricts women's engagement in working at night, excluding women from job opportunities that require night shifts, such as those in logistics and transport hubs that operate around the clock (World Bank 2024a). In some transport roles that involve crossing international borders, transport workers might be subject to different regulatory frameworks and legal protections as they move between locations, which may impact occupational health and safety or the personal security of certain groups of workers, such as LGBT individuals.

The lack of robust legislation on equal pay can exacerbate gender inequality in transport. In the absence of laws mandating equal pay for equal work, women are more likely to be underpaid compared to their male colleagues, even when performing the same roles. Legal frameworks in as many as 98 countries around the world do not currently provide equal pay for work of equal value for women and men (World Bank 2024a). Among countries that have adopted such legislation, few have taken active steps to encourage employers to reduce pay inequality by, for example, requiring organizations to report publicly on gender pay gaps within their operations (World Bank 2024a).

Moreover, the absence of adequate legislation to ensure women's personal security at work, such as laws preventing and addressing workplace sexual harassment, can contribute to a hostile working environment for women in the transport sector. While 151 economies have laws that specifically address sexual harassment in employment, many others still lack such protections (World Bank 2024a). Without the explicit prohibition of workplace sexual harassment and availability of criminal penalties and civil remedies within the national legal framework, women in male-dominated sectors and roles may be more vulnerable to GBVH. This can impact women's productivity and job satisfaction and also deter talented candidates from pursuing or continuing careers in sectors such as transport.

Seemingly minor and gender-neutral regulations such as driver licensing regulations could disproportionately affect women wishing to become commercial drivers. While men and women are subject to the same licensing requirements for bus driving, the absence of women bus drivers across the regions indicates that the system might be presenting particular problems for women. For example, in some countries, in order to gain a license to drive a bus, candidates are first required to gain their Category C license (for heavy goods vehicles) and then demonstrate at least a few years of driving experience in a heavy vehicle in order to apply for a Category D (bus) license. These requirements can act as a significant disincentive for women: in order to gain the necessary driving experience, drivers usually work for private truck companies, where they may be required to undertake their own maintenance and potentially undertake heavy lifting (freight). These are all physically demanding tasks that either mean women do not apply for the jobs or are not recruited for the jobs on safety grounds. Eligibility requirements for bus driver training seem to be more streamlined in the EU than in some other ECA countries outside the EU.

Lastly, having gender-neutral or gender-inclusive laws alone is often insufficient to drive change; affirmative action policies can encourage women's employment in the transport sector. One potential entry point is public procurement: transport-related public procurement—whether for roadworks or the purchase of transport fleets—represents a significant share of GDP in many countries. Contracting authorities could amend bidding documents to require bidders to commit to explicit targets for employing women and improving workplace conditions for all workers. Governments could take this further by amending procurement legislation. Notably, 57% of 28 countries surveyed globally reported having frameworks that incorporate gender considerations in procurement (OECD, 2021). These activities vary, from including equal pay for equal work principles in procurement laws to awarding additional points during tender evaluations to bidders with gender-related certifications. However, examples of how procurement policies have influenced the gender makeup of the transport sector remain limited.



3

Regional Snapshot: Europe and Central Asia

3. Regional snapshot: Europe and Central Asia

3.1 Overview

Women account for 21 percent of the transportation and storage workforce across Europe and Central Asia (ILO 2023a). Female participation is lowest in land transport (15 percent), followed by water transport (20 percent), and warehousing and support activities (26 percent). In air transport, women's share is estimated at 37 percent. Women's share of employment is typically higher in public sector companies compared to the private sector (e.g., World Bank 2019; Dornier Consulting International and SeConS Development Initiative Group 2019). While there are some country-specific variations, the overall share of women in the transport sector remains low in the region. For example, despite a general increase in women's employment rates across the European Union in recent years, the transport sector has seen only marginal progress. The percentage of women employed in the sector grew from 18.5 percent in 2010 to 22 percent in 2022 (EIGE 2023).

In an attempt to address gender gaps in the transport sector, some organizations committed to strengthening women's employment and equal opportunities for women and men in the transport sector come together under the [Women in Transport – EU Platform for change](#), launched in 2017 and coordinated by the European Commission. Some of the EU member organisations have already adopted diverse actions to tackle gender imbalance in the transport sector, including education and training, professional networking and mentoring, and awareness-raising projects.

Source: European Commission. [Women in Transport – EU Platform for change](#).

Despite slightly higher levels of women's employment compared to global data, the transport sector in Europe and Central Asia (ECA) exhibits similar patterns of occupational segregation.

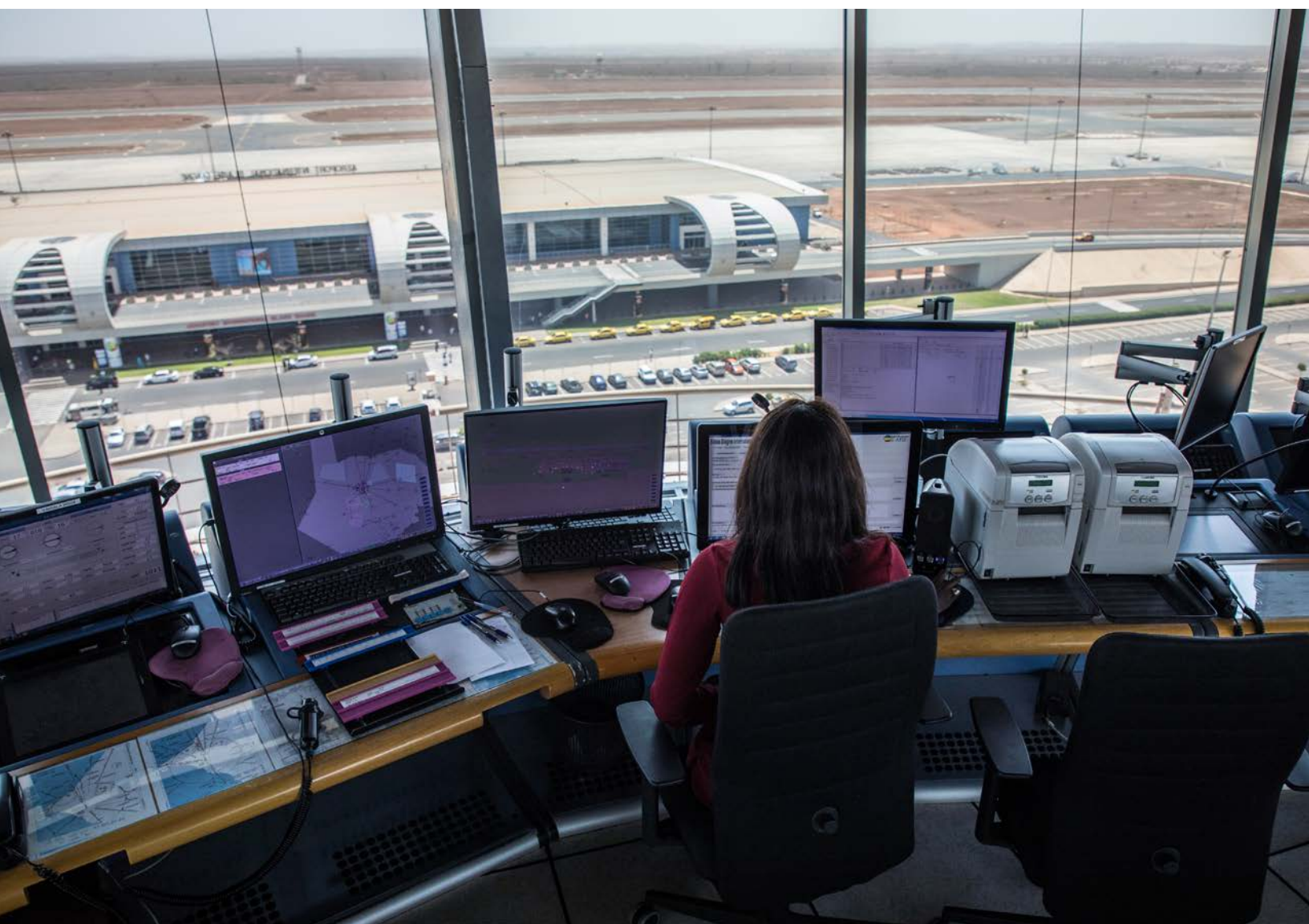
Women in the region are predominantly engaged in nontechnical and lower-paying jobs, including in administration, sales, catering, and cleaning roles, while engineering, driving, and managerial roles are dominated by men (Dominguez Gonzalez et al. 2023; World Bank 2019). Very limited publicly available company data confirm the picture: for example, in 2022, only 16 percent of the 2,165 staff of the Republika Srpska (Bosnia and Herzegovina) rail company were women, with the share of women further decreasing in operations, such as among dispatchers (4 percent) and switch operators (2 percent) (Kurshitashvili, Carvajal and Saunders, 2022). Similarly, in 2024, 17 percent and 8 percent of the employees of the Azerbaijan Railways and the International Trade and Sea Port of Baku were women, respectively (Kurshitashvili et al. 2024).

Women are also largely excluded from decision-making at the policy level, which further compounds gender segregation in national transport workforces. Decision-making in transport at the national level across EU Member States is predominantly led by men. In 2021, only 22 percent of government ministers (both senior and junior) responsible for transport were women, compared to 78 percent men (EIGE 2023). Additionally, women were notably underrepresented in parliamentary committees focused on transport policy and government oversight, comprising just 27 percent of committee members in 2021 (EIGE 2023).

3.1.1. Attraction and recruitment

The recruitment and attraction of women into the transport sector in Europe and Central Asia is hindered by low rates of female enrollment in STEM education. On average, women represent 33 percent of graduates from STEM programs across the ECA region (UNESCO 2020). Where gender-disaggregated data on vocational education and training are available—such as in Albania—the numbers of women in TVET relevant to the transport sector are reported to be very low (World Bank 2019).

Stereotypes around transport sector jobs being “unsuitable” for women and only providing “jobs for men” play a role in discouraging women from pursuing technical education and careers (Kurshitashvili, Carvajal, and Vukanovic 2020). Gender norms also hinder equal opportunity in recruitment, including in mid-skilled operational roles: in Uzbekistan, in order to get a callback for a job as a driver, a female candidate would have to submit 180 percent more applications than a man with identical qualifications (Muradova and Seitz 2021). A reliance on informal recruitment channels can also make finding employment more difficult for women: among private companies in Albania, for example, recruitment typically happens through informal networks that comprise only men. Moreover, insufficient collaboration between educational institutions and businesses leads to a scarcity of internships and recruitment opportunities for female students and graduates (World Bank 2019).



Internship programs targeted at women in transport in Türkiye, Armenia, Albania, Georgia, and Serbia

Several government ministries and agencies in the ECA region have introduced internship programs specifically targeted at women in order to overcome persistent barriers to attracting and recruiting women in the transport sector:

- With support from the World Bank, the Ministry of Transport and Infrastructure of **Türkiye** has introduced an internship program for women, which has accepted 70 interns since 2021. The program involves a 20-day paid internship in roles across the ministry, and provides both whole-of-department training and project experience.
- With support from the Asian Development Bank, **Georgian Railway** leveraged its internship program established in partnership with the Railway Transportation College to increase the share of women in internships across transport job categories at Georgian Railway from 11 percent in 2019 to 22 percent in 2023 (44 female interns in total since 2021).
- In **Armenia**, the Ministry of Territorial Administration and Infrastructure partnered with the National University of Architecture and Construction to develop a program in a World Bank-supported transport project offering female engineering graduates six-month paid internships in engineering, design, and road safety.
- Similar programs are underway in **Albania, Serbia, and many other countries in the ECA.**

Initial findings indicate that such initiatives are positively impacting women's capacity and interest in transport, improving their employability and access to engineering roles, and strengthening links between public bodies and universities. For example, one intern in Armenia was hired at the Ministry of Territorial Administration and Infrastructure's Budgets Department following her internship, while others participating in the scheme reported improved consultancy opportunities.

Sources: World Bank (2023); material shared by ADB.

In higher education and Technical and Vocational Education and Training (TVET) institutions that prepare graduates for the transport sector, staff cohorts remain male dominated, contributing to the industry's image as a "male occupation". The lack of female role models in academia can make it difficult for new generations of female engineers to find mentors they feel they can relate to.

Female PhD programs in the rail industry in Serbia

As part of the World Bank-supported rail project in Serbia, the government agreed to attract female scholars to these traditionally male-dominated faculties by funding three PhD programs in rail-related subjects, raising the number of female researchers in this area from zero. The PhD scholarships will be conditional to the recipients teaching/advising with the same profile in the country for a number of years. This effort will create needed academic resources in the rail industry and, at the same time, create female role models among a teacher cohort, which will challenge the notion that railway careers in academia are appropriate only for males.

Source: World Bank (2021a).

Ukraine: Empowering transport sector workers during Russia's invasion

With Russia's invasion of Ukraine leading to the conscription of men, Ukraine faces a critical shortage of long-haul bus and truck drivers, impacting essential deliveries. To address this, the Ministry of Infrastructure has prioritized training women to join the transport workforce. Collaborating with local businesses and international actors like UN Women, GIZ, and USAID, the Ministry is working to transform the sector by tailoring working environments and schedules for women, providing training for Category C/E licenses, and offering technical training on road safety and cargo securing.

Additionally, the Swedish non-profit Beredskapslyftet, through its "Reskilling Ukraine" project, is partnering with Scania Ukraine to train 350 women nationwide in driving trucks and buses and offer mentorship for employment. These initiatives not only mitigate labor shortages and promote gender equality in a labor market where 70 percent of the unemployed are women, but also ensure the stability of Ukraine's transport systems during Russia's invasion and beyond.

Source: Material shared by GIZ.

3.1.2. Company HR policies and practices

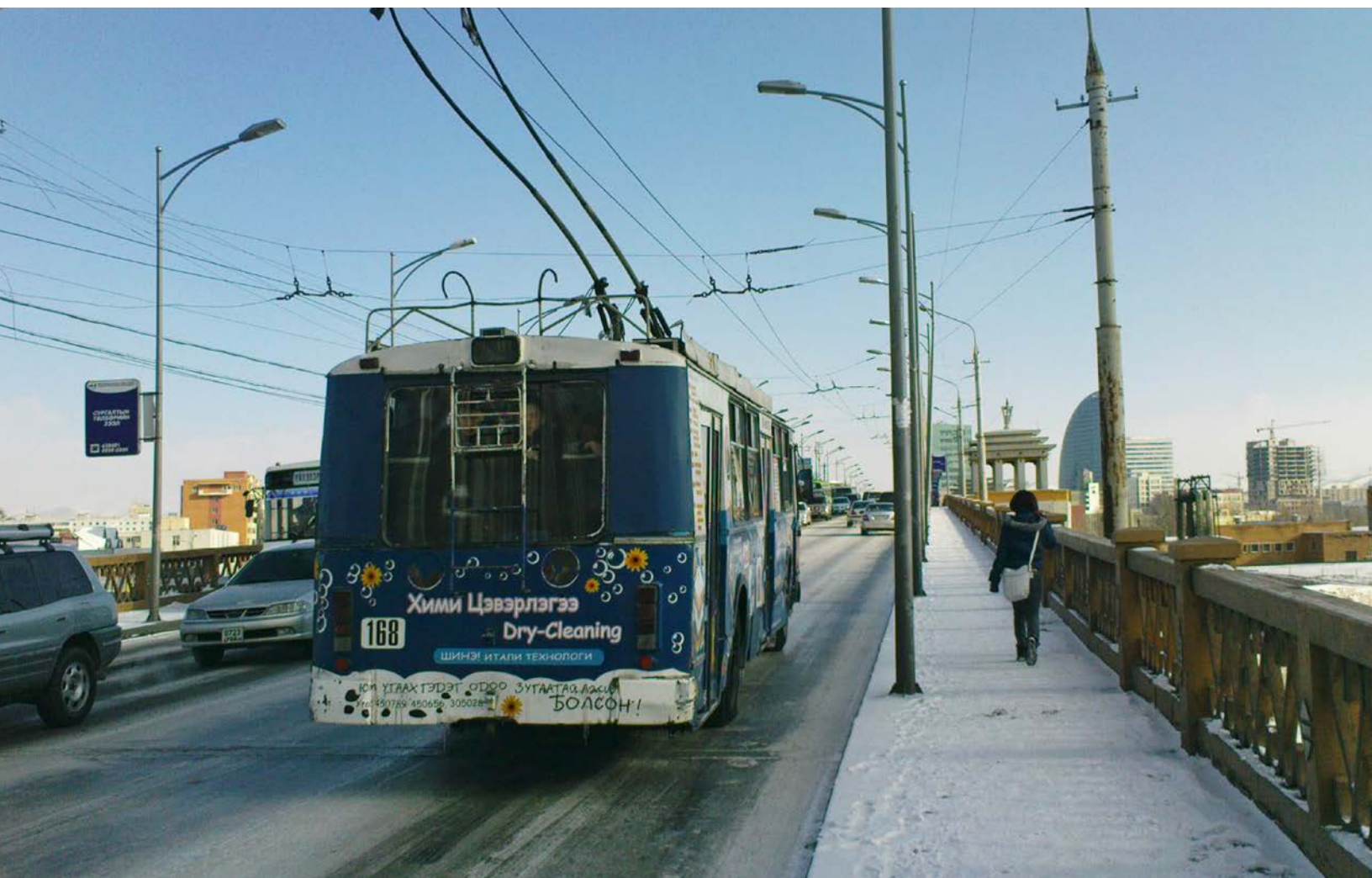
There is scope to strengthen human resources (HR) policies and practices in the transport sector in Europe and Central Asia to create more conducive conditions for women's employment—particularly concerning violence and harassment. A survey by the European Transport Workers' Federation (ETF) of 1,444 participants between 2016 and 2017 found that 26 percent of respondents believed that violence against women is "part of the job" in the transport sector. Furthermore, 25 percent believed that it is a regular occurrence, and almost 65 percent of female respondents stated that they had experienced violence while at work (ETF 2017). Similarly, among nearly 3,000 European female transport workers surveyed by the ETF, 32 percent reported being unhappy with the sanitary conditions of their workplace, and almost 50 percent felt that creating a safe and secure work environment for women was not a priority of their employer (ETF 2020). As many as 40 percent were not aware of policies or processes on GBVH in the workplace (ETF 2020).

Gender pay gaps in the sector persist across the region. One-fourth of the workers surveyed by the ETF felt that their wages were negatively impacted by their gender (ETF 2020). In Albania's road construction, rehabilitation, and maintenance sector, for example, at the time of the research in 2019, women earned 14 percent less than men (World Bank 2019). At the same time, World Bank findings indicate that—contrary to the misconception that women are not interested in employment in male-dominated sectors such as transport—women are just as willing and able to work in such industries if provided with good working conditions, such as convenient working schedules that can be combined with family obligations, social insurance, and other incentives (World Bank 2019).

Georgia: Gender action planning in the transport sector

As part of the Asian Development Bank–supported road project in Georgia, a gender diagnostic of the Road Department (RD) was conducted, including staffing patterns, HR policies on recruitment, promotion, and internships, and staff training. Based on the gender diagnostic, an action plan was drafted to improve gender mainstreaming in RD policies and programs, including promoting equal opportunities for men and women in the recruitment process, systemizing the collection of sex-disaggregated data on staffing, recruitment, promotion, training, career development, and job resignations, and orientation of new staff on the RD's sexual harassment policy.

Source: Material provided by ADB.



Addressing the complex challenge of employing and retaining women requires organizations to not only strengthen their HR policies and practices but also pursue external validation through recognized certification agencies. While such certifications serve as important markers of commitment to gender diversity, the more fundamental challenge lies in transforming deeply embedded cultural norms and institutional practices that perpetuate gender inequities in the transport sector.

Diversity, equity and inclusion (DEI) certifications: Advancing women's representation in the workplace

Organizations are increasingly leveraging diversity certifications to demonstrate their commitment to gender equality and create more inclusive workplaces for women. This is a great way of incentivizing companies who are making active efforts to bring gender diversity into their firms. By getting internationally certified - it is a great way of signaling that the employer's firm supports diversity. Leading certifications like Gender Equality European International Standard (GEEIS), GEEIS-DIVERSITY, and the EDGE Certification for DEI, have become powerful tools for companies to attract and retain female talent while fostering gender-balanced leadership.

These certifications require organizations to implement specific measures promoting women's advancement. They evaluate companies' efforts in creating equal career opportunities, ensuring fair compensation, and maintaining work-life balance initiatives. Typically, certification specifically assesses and benchmarks workplace inclusive practices against best-in-class organizations. Their comprehensive evaluation includes sensitization workshops, leadership development programs, and customized DEI solutions to enhance equity and equality in the workplace. The certification processes, with regular evaluations, are meant to ensure sustained commitment to gender equality practices.

The EDGE Certification specifically measures gender equity across multiple dimensions, including recruitment, promotion, leadership development, and pay equity. Companies that achieve these certifications often report significant increases in women's representation across all organizational levels, particularly in leadership positions.

The business impact of these certifications extends beyond workplace demographics. Certified organizations frequently experience enhanced recruitment success among female candidates who increasingly seek employers with verified commitments to gender equality. For example, companies with EDGE certification report up to 30 percent higher application rates from qualified women candidates for leadership positions.

These certifications also help organizations identify and address systemic barriers affecting women's career progression. The structured evaluation process leads to improved policies around maternal leave, flexible work arrangements, and leadership development programs specifically designed for women. As a result, certified organizations often see higher retention rates among female employees and increased representation of women in senior roles.

3.1.3. Leadership and career progression

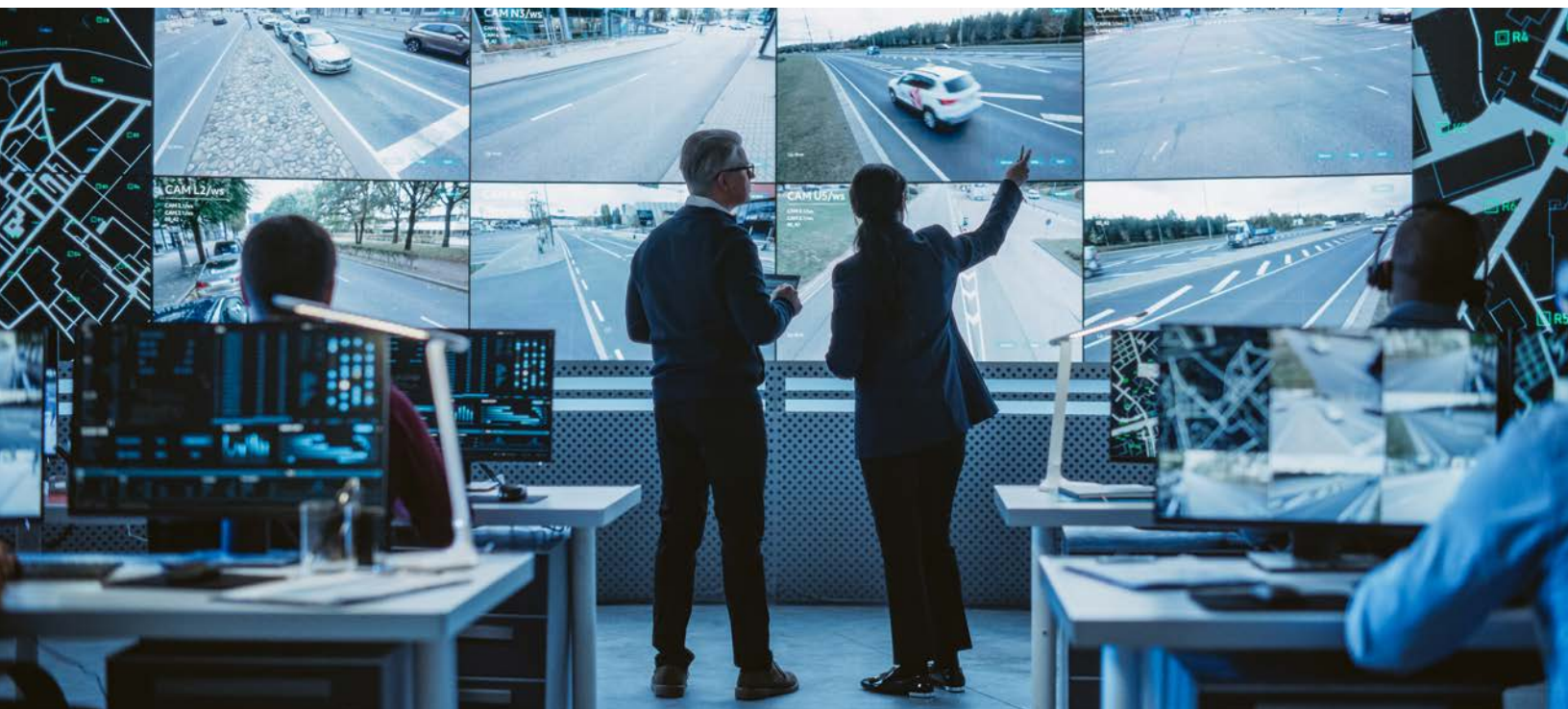
Women are underrepresented in leadership and higher-paid technical roles across the transport sector in Europe and Central Asia. According to a 2019 study, in Serbia, for example, men held 72 percent of management roles in transport and accounted for 66 percent of engineers and technicians (Dornier Consulting International and SeConS Development Initiative Group 2019).

Gender norms and biases hinder women's progression in the workplace. Among European female transport workers surveyed by the European Transport Workers' Federation, 35 percent reported being unhappy with managers' and supervisors' treatment of women employees, citing discrimination in relation to promotions and career progression opportunities. Twenty-five percent of respondents reported that being a woman has hindered their opportunities to advance throughout their career (ETF 2020). Prescriptive gender norms that position women primarily as caregivers and men as breadwinners are also a challenge in Central Asia: over 65 percent of respondents surveyed by the World Bank in the region held the view that women should prioritize caregiving and home responsibilities over work outside of the home, and between 20 and 50 percent believed that married women should earn less than their husbands (Proskuryakova and Seitz 2023). These attitudes result in women being overlooked for promotion and pay raises, hindering progression in the sector.

Azerbaijan: Women's professional networks and technical skills training for women

To support professional development among its female employees, Azerbaijan's national railway company, Azerbaijan Railways, has established a women's network to foster peer support and provide valuable career guidance to female professionals within the organization. In addition, the company has introduced targeted skills training to enable women's recruitment and progression into the roles of locomotive drivers.

Source: Kurshitashvili and Solotaroff (2024).



3.1.4. Legal and policy framework

Legal frameworks in the Europe and Central Asia region compare favorably to other regions when it comes to gender equality in employment, although legal barriers remain a challenge to women's employment in some countries (World Bank 2024a). Although numerous countries, including Kazakhstan and Azerbaijan, have lifted the legal restrictions on women's employment in transport sector jobs, employers in some states are still prohibited from hiring women for certain roles. For example, legislative restrictions continue limiting employment opportunities for women in the Kyrgyz Republic and Tajikistan. There is also scope to strengthen legislation on workplace sexual harassment and equal pay in numerous countries in the ECA region. In addition, although all but three states in Eastern Europe and Central Asia have introduced provisions for paternity leave, its duration often does not exceed seven days. Paternity leave is also unpaid in one-half of the countries where it is available, and take-up is typically low (UNFPA 2023).

Azerbaijan: Removal of regulatory restrictions on women's employment in the transport sector

In 2022, the Government of Azerbaijan repealed the existing prohibition on women's employment in 674 jobs across multiple economic sectors, working with the World Bank to show that these roles, such as driving a large bus, working as a train engineer, or laying asphalt, posed no specific threat to women's health.

Sources: World Bank (2023). Kurshitashvili et al. (2024).



4

Regional Snapshot: Middle East and North Africa

4. Regional snapshot: Middle East and North Africa

4.1 Overview

Women are significantly underrepresented in transport across the Middle East and North Africa (MENA), representing only 3 percent of the sector's workforce in the region (ILO 2023a). Even when taking into account low overall levels of female labor force participation in MENA,³ women's employment share in transport is still exceedingly low. The latest available data indicate that women account for only 1 percent of land transport workers, 5 percent in water transport, 9 percent in warehousing and support activities, and 26 percent in air transport across MENA (ILO 2023a). Women in the region are more likely to be employed in the public rather than the private sector (World Bank 2020a).

4.2 Key challenges

4.2.1. Attraction and Recruitment

Levels of women's participation in science, technology, engineering, and mathematics (STEM) education are relatively high in the Middle East and North Africa region, yet women's recruitment in the transport sector remains a challenge. Women are reported to outnumber men among university students in many MENA countries, and women's average share of STEM graduates across the MENA region stands at 44 percent, significantly exceeding global levels (UNESCO 2024; UNESCO 2020; Belhaj, Um, and Alam 2023; Moghadam 2023). In fact, women account for nearly 50 percent of university STEM graduates in Egypt (Enterprise 2021) and represent a majority of STEM graduates in Tunisia and the Syrian Arab Republic (UNESCO 2024). Despite high levels of educational attainment, however, women in the MENA region face greater challenges in securing employment in technical roles than men, particularly in the private sector (Enterprise 2021; BelhajUm and Alam 2023; Moghadam 2023). Discriminatory practices are reported across the region, with women often the last to be hired and the first to be dismissed (Gronemeyer 2023; World Bank 2020a). More broadly, gender stereotypes that position the transport sector as a "male occupation" deter women from pursuing careers in the industry (World Bank 2020a).

To address this disconnect between educational achievement and professional opportunity, several organizations across the MENA region have pioneered innovative approaches to workplace gender inclusion. These initiatives focus on dismantling structural barriers, challenging cultural stereotypes, and creating supportive professional environments that enable women to thrive in traditionally male-dominated sectors.

³ As of 2023, the proportion of the female population ages 15 and older that is economically active in MENA is estimated at 19 percent (ILO 2023b).

Advancing Women in the workplace—Lessons learned from the Mashreq Region

The Mashreq Gender Facility (MGF) works across Iraq, Jordan, and Lebanon to address constraints to women's economic opportunities. Here are key lessons from case studies on attracting, retaining, and promoting women in private sector workplaces in the Mashreq region:

Lesson 1: Embedding Gender Diversity into Organizational Structure: Companies may involve transforming core business processes to naturally promote gender equality as part of their fundamental operating model. Nafith Logistics demonstrated this through their Gender Equity Development Model (GEDM), which mainstreamed diversity across all organizational levels. This systematic approach led to 79 percent of employees perceiving equal career advancement opportunities.

Lesson 2: Performance Management and Accountability Systems: Clear metrics and fair evaluation systems are crucial for advancing gender diversity. Amin Khawar & Sons implemented an output-based performance system using Key Performance Indicators (KPIs) rather than hours worked, while Ashur International Bank tracked business metrics linked to women in leadership positions. These measures helped reduce staff turnover from 14 percent to 2 percent at Ashur Bank.

Lesson 3: Comprehensive Training and Sensitization: Building organizational capability requires educating all employees about gender diversity and challenging unconscious biases. Estarta Solutions and Umniah implemented training programs targeting both male and female employees, with a special focus on HR teams and managers. At Estarta, this resulted in women holding 52 percent of middle management positions in a traditionally male-dominated sector.

Lesson 4: External Communication and Community Engagement: Companies may actively work with local communities to overcome cultural barriers that limit women's participation in the workforce. For example, Nafith Logistics created an "Organizational Ambassadors" where employees engaged directly with community members to challenge misconceptions about women in the workplace. Such community outreach efforts proved successful: Zain Iraq saw a 60 percent increase in female hires annually, while Nafith Logistics reported that their workforce attendance rates improved by more than 50 percent after implementing these community engagement initiatives.

Lesson 5: Female Employee Advocacy as a Catalyst for Cultural Transformation: Women's voices and leadership are crucial in driving change. Umniah exemplifies this by leveraging its female workforce as brand ambassadors who highlight comprehensive benefits packages, including secure transportation and flexible working arrangements. This approach has established Umniah as an employer of choice for women in the male-dominated information and communication technology (ICT) sector.

These lessons show that organizations can create sustainable change in workplace gender diversity while improving business performance through clear communication, accountability measures, and comprehensive training.

Nafith, Iraq: Recruiting women into nontraditional occupations in logistics

To increase women's recruitment into traditionally male-dominated roles, logistics company Nafith has introduced several policies and tools aimed at minimizing gender bias during the hiring processes and tackling negative perceptions of the sector among women and their families.

- The company's Gender Diverse Recruitment Policy provides for female supervisors on the company's recruitment and nomination committees and requires all HR team members to undergo training on conscious and unconscious bias. Nafith also adjusted job descriptions to eliminate gender bias.
- All female job candidates are allowed to bring a family member to their interview and during orientation so relatives can confirm that the company provides a safe working environment.
- To combat social stigma against women's employment in male-dominated sectors, Nafith launched a community awareness initiative featuring Organizational Ambassadors who share their experiences to encourage women to join the logistics sector.
- The company's Family Friendly Engagements policy covers transportation costs for a family member in case some women would like to be accompanied to work on public transport.

Nafith's comprehensive efforts resulted in an 18 percent increase in female representation in its operations department in Iraq.

Source: IFC and World Bank (2022).

4.2.2. Company HR policies and practices

Sexual harassment in workplaces and public spaces are some of the key barriers to women's employment in MENA region (Moghadam 2023, World Bank 2020a). Workplace sexual harassment could be a particular concern in heavily male-dominated industries such as transport, with women likely being particularly concerned about taking up customer facing roles, for example, drivers, dispatchers, and field engineers. At the same time, lack of women in the transport sector further exacerbates riders' perceptions of transport safety and actual incidence of sexual harassment. In a study undertaken in Jordan, surveyed women suggested hiring women in bus driver and conductor roles as one of the solutions to address transport safety (Friedrich Ebert Stiftung and SADAQA 2019). Notably, the 2023 World Bank study showed that the accessibility, safety, and availability of public transportation in the three capital cities of Egypt, Jordan, and Lebanon play a critical role in improving women's access to employment opportunities, which can boost women's employment, along with other complementary actions (Alam, Bagnoli and Kerzhner 2023).

Jordan—Care program Reaya for women empowerment

The Social Security Corporation (SSC) in Jordan has pioneered a groundbreaking approach to childcare support through its Reaya program, which demonstrates exemplary public-private collaboration in addressing workforce challenges. At its core, the program implements a sophisticated dual-support mechanism: providing targeted childcare subsidies to formally employed mothers who have contributed to SSC for at least six months, specifically for children ages zero to four years, while simultaneously extending operational support grants to SSC-registered nurseries. This comprehensive strategy not only addresses the immediate financial constraints faced by working mothers but also strengthens the foundational infrastructure of childcare services. By simultaneously supporting both service users and providers, the Reaya program creates a sustainable ecosystem that enhances maternal workforce participation, improves job retention rates, and ensures consistent access to quality childcare facilities—ultimately setting a compelling precedent for how social security institutions can effectively support working parents while fostering economic growth.

Source: World Bank, 2024c.



Amin Kawar and Sons (AKS), Jordan—Reaping the benefits of family-friendly policies

Amin Kawar and Sons (AKS), a Jordanian shipping and international transportation company, demonstrates exemplary practices in promoting gender diversity within the traditionally male-dominated transport sector. While women represent merely 3.7 percent of Jordan's transportation and storage sector workforce, AKS has achieved remarkable female representation with women constituting 33 percent of its workforce and holding 50 percent of senior management positions.

AKS's success stems from its comprehensive suite of family-friendly policies. The company pioneered flexible work arrangements, allowing employees to customize their eight-hour workday with start times between 7:30 and 8:30 AM, with additional flexibility based on individual circumstances and managerial approval. The company's progressive remote work policy, implemented well before COVID-19, enables employees to maintain work-life balance, as evidenced by a female department manager who has been working remotely since 2005. Employees are also entitled to nine hours of monthly personal leave, allocatable in three-hour increments, supplementing their standard annual leave of 14–24 days.

The company's commitment to supporting working parents is particularly noteworthy. AKS provides comprehensive childcare support through discounted fees (10–35 percent) at three partnering facilities within 4 kilometers of its headquarters for children ages 18 months to six years. The company proactively addresses parental needs through initiatives such as “Parents to be” training, offering guidance on work-life balance management. In terms of parental leave, AKS preceded national legislation by introducing paternity leave in 2014, actively encouraging male employees to utilize this benefit. While adhering to statutory maternity and nursing leave requirements, the company demonstrates flexibility in accommodating additional parental leave requests based on individual circumstances.

These family-oriented policies have yielded significant business benefits. The company has achieved remarkable workforce stability, with only one female employee departing due to family responsibilities in the past four years. This enhanced retention generates substantial cost savings, considering employee replacement costs typically range from 30 percent to 190 percent of annual wages. Furthermore, AKS reports improved productivity metrics, maintaining an 86 percent employee satisfaction rate and enhanced team dynamics, demonstrating that family-friendly policies serve both social and business imperatives in the transport sector.

Source: World Bank (2021c).

Although data are limited, women are likely to be paid less than men, including in the transport sector. The regional gender pay gap was estimated at 14 percent in 2015 (UN Women 2016), with more recent estimates suggesting it ranges between 13 and 28 percent in Egypt, Jordan and Tunisia (OECD 2020). The gender pay gap in MENA is believed to be particularly wide in the private sector (World Bank 2020a).

Egyptian National Railways: Employer-supported childcare facility

A lack of access to quality childcare is a major barrier to women's economic participation in Egypt. Women spend twice as much time on domestic and care work as men, highlighting the critical role of childcare in increasing women's entry to the labor market.

In recognition of the importance of childcare in attracting and retaining women in its workforce, Egyptian National Railways (ENR) is set to reinstate its childcare facility in Cairo, which was closed due to COVID-19. The company is aiming to increase the proportion of women in its workforce: ENR is one of Egypt's largest transport employers, yet only 3 percent of its 45,000 employees are women.

The Egyptian Labor Code mandates that employers provide nurseries if they employ 100 or more women. By reinstating its childcare facility, ENR not only complies with this requirement but also sets a positive example for other employers in the industry.

Source: World Bank (2024b).

4.2.3. Leadership and career progression

There is evidence that women in the transport sector in the MENA region have fewer opportunities to advance in their careers compared to men (Gronemeyer 2023). In a 2024 study of over 300 companies in the region, women held only 12.0 percent of board seats and accounted for just 4.0 percent of board chairs and 2.4 percent of CEOs (Deloitte 2024). There are few national regulations or sector standards aiming to increase women's participation in leadership: among MENA countries, quotas for women's participation on corporate boards have only been introduced in the United Arab Emirates (UAE) and Morocco (Deloitte 2024; Elbahrawy, Pacheco, and Omar 2021). Barriers to women's career progression include gender bias, which results in women being overlooked for promotion, and discriminatory practices (Gronemeyer 2023; Enterprise 2021; PWC 2024). In addition, societal expectations contribute to women in the MENA region being disproportionately responsible for domestic and care work, significantly limiting the time women can spend in paid employment and on career development, particularly in technical and managerial roles (OECD 2020).

The transport sector is undergoing a profound technological transformation that is revolutionizing its operational landscape. This evolution has spawned innovative opportunities across multiple domains: from intelligent transportation systems and sophisticated data analytics to advanced predictive modeling, automated warehousing solutions, and cutting-edge drone operations. As the industry accelerates its digital journey—particularly evident in the modernization of trucking and rail systems—a critical shortage of skilled professionals in core engineering positions has emerged. The sector now demands an increasingly complex skill set, with STEM expertise becoming fundamental as automation reshapes traditional workflows.

Estarta Solutions, Jordan—Supporting women in nontraditional roles

The case study of Estarta Solutions, a leading network engineering and ICT company in Jordan, provides valuable insights into promoting women's participation in nontraditional roles, particularly in STEM fields. The company has successfully increased its female workforce from 34 percent to 44 percent in just six years, significantly outperforming the sector average of 33 percent.

Estarta's approach addresses key barriers to women's participation in technical fields through targeted initiatives. Their "Incubator" outreach program partners with universities to raise awareness about career opportunities in network engineering, challenging stereotypes about suitable jobs for women. The company also runs orientation days for girls ages 14 to 16, introducing them to engineering tasks and female role models.

To support career advancement, Estarta offers leadership training and mentorship programs. In 2019, women comprised 15 of 17 participants in their career advancement program, with six subsequently taking up managerial positions. The company also supports women in pursuing international certifications and training opportunities.

Estarta has established comprehensive family-friendly policies that exemplify progressive workplace practices in Jordan. The company's maternity benefits exceed statutory requirements, providing 90 days of fully paid leave—20 days beyond the legal mandate. Estarta introduced a three-day paternity leave policy. Estarta also provides a monthly childcare allowance of 100 JOD (US\$141) per child until the age of four. These family-oriented policies have yielded measurable business benefits, as evidenced by women's average tenure at Estarta exceeding that of their male counterparts by two years, translating into substantial cost savings through reduced turnover and enhanced retention rates.

To spark girls' enthusiasm for a career in ICT and encourage them to study the necessary STEM subjects, Estarta runs orientation days, which introduce girls ages 14 to 16 to the daily tasks of an engineer through interactive exercises, live demonstrations and Q&A sessions with female role models. This initiative was initially established in 2014 in partnership with Cisco under the name "Greenlight for Girls." and in 2019 was re-launched as "ProGirls."

The case study demonstrates that supporting women in nontraditional roles can yield substantial business benefits. Estarta's approach has improved recruitment, strengthened leadership teams, reduced staff turnover, and enhanced team cohesion and innovation. The company's success in integrating women into its workforce has positioned it as a preferred supplier for its main client, Cisco Systems. By sharing its experiences and lessons learned, Estarta provides a valuable model for other companies seeking to increase women's participation in technical fields, particularly in contexts where women are traditionally underrepresented in STEM and TVET sectors.

4.2.4. Legal and policy framework

Regulatory barriers significantly impact women's employment in the transport sector across the MENA region. Several MENA countries have recently adopted legislation to protect women from violence, including Kuwait and Lebanon, which have enacted laws protecting women from sexual harassment in employment, alongside criminal penalties. However, poor enforcement undermines the effectiveness of gender-based violence and harassment (GBVH) laws across the region (Moghadam 2023). In Lebanon, women's employment opportunities in transport are restricted by legislation that prohibits women from working in several occupations, including as drivers of large-machined engine vehicles (World Bank 2024a). There is also a scope to strengthen gender equality laws across MENA: a significant number of countries in the region (including Egypt, Iran, Kuwait, and Lebanon) have not introduced legislation mandating equal remuneration for work of equal value, for example (World Bank 2024a). In addition, only five MENA countries—Algeria, Iran, Jordan, Morocco, and Tunisia—currently provide for paid maternity leave through the social security or social insurance system. Even within these countries, disparities exist; for example, Tunisia provides for longer maternity leave in the public sector than in the private sector (Moghadam 2023).

Personal status laws in the MENA region, often based on religious interpretations, pose significant challenges to women's participation in the transport sector despite some encouraging signs of progress emerging across the region. These laws frequently limit women's freedom of movement, autonomy, and economic opportunities. In Saudi Arabia, despite recent reforms allowing women to drive and travel without male guardian permission, the guardianship system still restricts many aspects of women's lives. Qatar's strict guardianship framework treats women as legal minors throughout their lives, requiring male permission for basic activities like work, study, or driving. In Yemen, particularly in Houthi-controlled areas, harsh restrictions require women to have a male escort for travel and employment.

United Arab Emirates: Legal reforms for gender inclusion

In 2019–2020, the United Arab Emirates (UAE) introduced a historic package of legal reforms to strengthen women's economic participation in line with its national policy commitment to gender balance. The reforms signified a major milestone for the MENA region, introducing for the first time paid parental leave for male and female employees in the private sector, enabling women to choose where to live and to travel outside the home and internationally in the same way as men, introducing the principle of equal pay for work of equal value, and lifting the obedience provision in the UAE's Personal Status Law. Following the reforms introduced in 2020, the UAE became the top-performing economy in the MENA region, as measured by the World Bank's Women, Business and the Law Report. The UAE reform experience shows that strong progress can be made toward gender equality within a short period of time when strong leadership commitment is present.

Jordan: Reforms for gender inclusive public transport

In late 2018, the Government of Jordan (GoJ), in collaboration with the World Bank, implemented a comprehensive Code of Conduct (CoC) to govern the behavior of passengers, drivers, and operators within the public transport sector. This pioneering practice explicitly prioritizes gender equality by establishing rigorous standards that require operators to “foster an inclusive environment for women passengers and employees” while ensuring all employment practices adhere to principles of “merit-based competition, equal opportunity, and non-discrimination.”

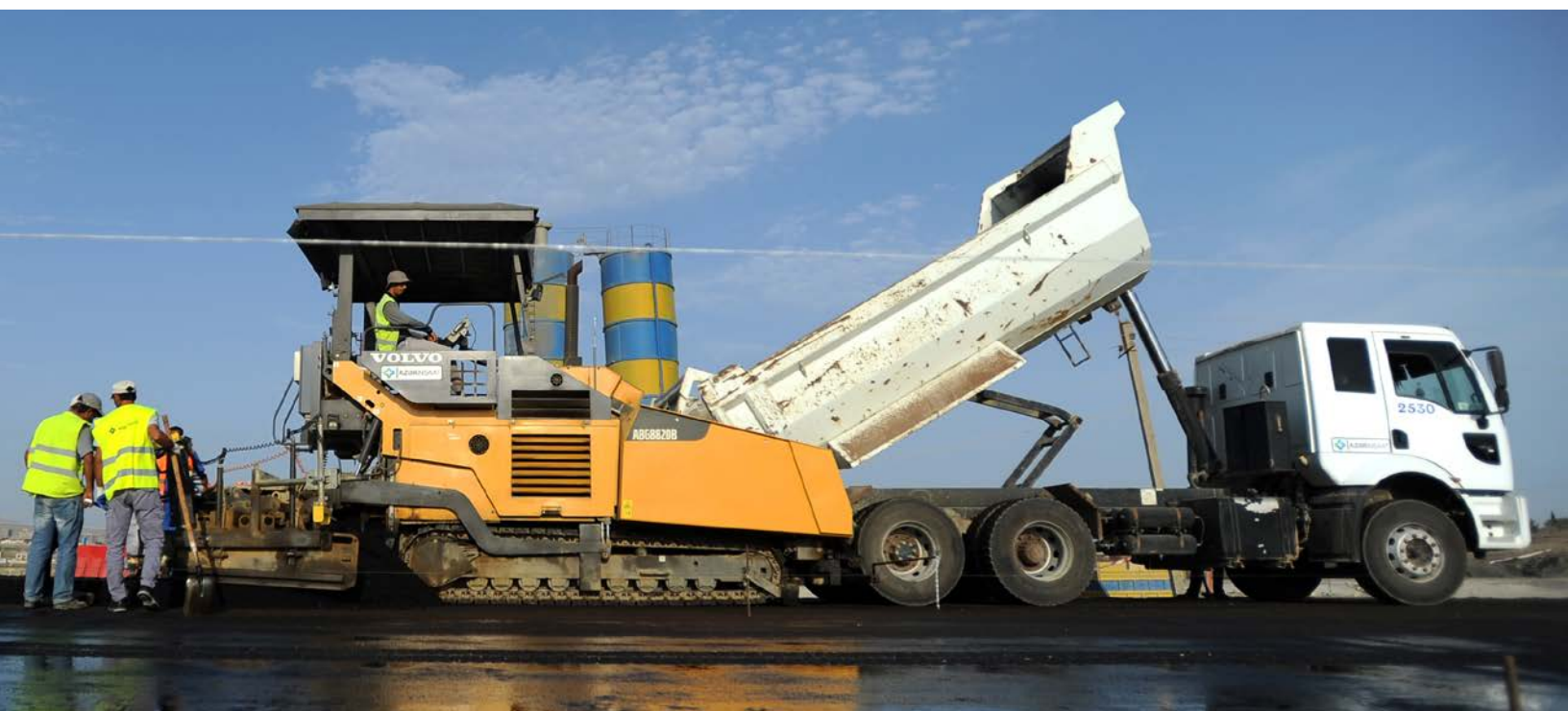
The code institutes concrete measures, including the provision of gender-segregated restroom facilities and mandatory training programs that educate all personnel about their professional responsibilities and ethical obligations. This model demonstrates how governments can establish effective frameworks that simultaneously enhance safety standards and promote increased female participation in the transport sector.

Critical components for successful implementation include:

- Establishing transparent grievance mechanisms
- Designating dedicated focal points within relevant authorities to oversee compliance
- Implementing systematic monitoring through well-defined key performance indicators

This comprehensive approach serves as a blueprint for developing public transport systems that genuinely prioritize inclusivity and safety for women in their dual roles as both users and workforce participants.

Source: World Bank (2020b).



Gender responsive procurement: Empowering women through public spending

Gender responsive procurement (GRP) is a strategic approach where organizations and governments deliberately select goods and services considering their impact on gender equality and women's empowerment. This includes prioritizing women-owned businesses and enterprises that demonstrate strong gender-responsive practices. Gender quotas in procurement set specific targets for contract allocation to women-owned businesses, creating guaranteed market opportunities for women entrepreneurs.

Tunisia's pioneering implementation of GRP through its electronic procurement system Tunisia e-Procurement System (TUNEPS) showcases a transformative approach to inclusive public procurement. Launched in 2013, this initiative evolved through strategic partnerships with international agencies, culminating in nationwide mandatory e-procurement implementation by 2019. A methodical review conducted in 2020 prioritized enhancing system accessibility for vulnerable groups, with particular emphasis on women-owned enterprises. This assessment catalyzed stronger collaborations with business associations to strengthen training programs and led to the development of robust indicators for tracking and identifying women-owned suppliers within the procurement ecosystem.

The impact of this initiative has resonated across multiple stakeholder groups, creating a ripple effect of positive outcomes. Women-owned businesses have secured unprecedented access to consistent government contracts, enabling them to establish credible performance records and drive operational growth. Organizations embracing supplier diversity through women-owned businesses have discovered innovative solutions while advancing their social impact objectives. Perhaps most significantly, the benefits extend deep into local communities, as women entrepreneurs consistently demonstrate higher rates of reinvestment in family education and health care, fostering sustainable social and economic development.

Source: UN Women (2023).



5

Recommendations

5. Recommendations

There is an urgent need to address the gender imbalance in the transport workforce. Women remain underrepresented across all subsectors of the transport industry across the world, and this pattern has not changed over time. There are several persistent barriers that continue to impede higher levels of female participation in the sector, including gender norms that discourage women from taking up technical studies and careers, a lack of employer policies to support their ongoing participation and career progression, and regulatory restrictions, as well as lack of sufficient evidence of what works and what does not in order to scale up existing interventions. Concerted action is needed to tackle these challenges and increase women's employment and leadership in the transport sector, particularly in technical and operational roles.

Across the world, the transport sector is currently missing out on the benefits associated with higher levels of gender diversity. At the sector level, a greater focus on gender could help to tackle skills and labor shortages and deliver more dynamic and innovative performance across the industry, as well as supporting the development of more inclusive and gender-sensitive transport infrastructure and services (World Bank 2020a). At the same time, an established body of international research shows that greater gender diversity delivers substantial gains at the enterprise level, including better team performance, more robust decision-making and better outreach to customers and consumers (Rock and Grant 2016; Hunt, Layton, and Prince 2018; Hoogendorn, Oosterbeek, and van Praag 2013; Díaz-García, Gonzalez-Moreno, and Saez-Martinez 2014). Beyond the sector, tackling gender gaps can yield substantial benefits to individual companies and national economies alike (Wodon et al., 2020). In the MENA region, for example, World Bank estimates indicate that eradicating gender disparities in labor force participation and productivity could boost economic output by 50 percent (Belhaj, Um, and Alam 2023).

Addressing the multifaceted challenges impeding women's education, employment, and advancement in transport calls for sustained cooperation among multiple stakeholders. To this end, the Women in Transport (WiT) network, to be established by the World Bank Group and its partners, is well-positioned to drive collaboration on activities to promote women's employment at all levels. The key objectives of the WiT network include supporting women's workforce participation in transport, promoting normative change for women and girls in STEM education, and scaling up and institutionalizing relevant project-based and country-specific efforts. The network will serve as a forum to connect female transport professionals, educational institutions, and employers and aims to encourage networking, recruitment, information exchange, training, and mentorship opportunities for women.

This section sets out a series of practical recommendations for how WiT stakeholders can increase women's employment in the transport sector, particularly by tackling existing barriers to their participation in technical and managerial roles. The recommendations are aimed at a variety of WiT stakeholders, including policy makers, employers, and strategic partners such as educational institutions.

5.1 Recommendations for policy makers

Recommendation 1: Adopt or strengthen existing policies to encourage young women and girls to access the education and training needed to enter the transport sector.

Policy makers can drive significant change by collaborating with educational institutions and employers to boost female participation in STEM education in higher education and technical and vocational education and training (TVET) institutions. There is considerable scope to strengthen a policy focus on women's engagement in TVET worldwide: although 68 percent of countries globally have adopted policies to grow participation in STEM education overall, only one-half of these specifically support girls and women (UNESCO 2024). To encourage women's participation in TVET, policy makers can consider introducing quotas and targets for women's enrolment in STEM fields or forming partnerships with educational institutions and businesses to provide financial support, such as jointly funded scholarships, to incentivize women to pursue STEM subjects.



In addition, government-led public awareness campaigns implemented together with employers and educational institutions can inspire young women and girls to consider careers in transport, challenging gender stereotypes associated with technical roles and addressing the widespread lack of awareness about job opportunities within the sector.

Recommendation 2: Encourage a more equitable distribution of family and care responsibilities between women and men through legal and policy reforms.

Policy makers have a pivotal role in fostering increased female representation within the transport sector. By implementing policies and regulations that support working parents and promote a more equitable distribution of family and caregiving responsibilities, they can create an environment that encourages women to pursue careers in this sector.



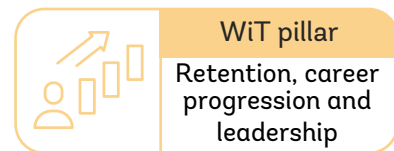
Legislation and policies that support the care responsibilities of mothers and fathers alike can support higher levels of women's employment. In particular, legislation that provides for both paternity and maternity leave can help promote a more equal distribution of care responsibilities in the home, in addition to increasing the likelihood of mothers returning to the job market after maternity leave. The introduction of paid maternity leave, including for employees in the private sector, would be particularly significant in countries in MENA where it is not currently available. Policy makers could explore the introduction of paid paternity leave, if not already in place, or an extension of paternity leave beyond the standard of seven days in countries where it is already a legal requirement. This should be rolled out alongside awareness-raising campaigns to challenge entrenched gender stereotypes and encourage more men to take on family responsibilities.

Addressing existing gaps in infrastructure and services catering to working parents, such as affordable and high-quality childcare facilities, is equally important. Policy makers may, for example, consider implementing childcare subsidies, widening childcare services' availability, or extending childcare services' operating hours to accommodate parents engaged in shift work.

Other caring responsibilities, such as elder care, should also be considered. For example, in national labor legislation, policy makers might support higher wages for professional caregivers, support subsidies for elder care, or push to include paid leave for elder care.

Recommendation 3: Adopt targets for women's representation in technical and managerial roles in the transport sector and monitor progress.

To bolster women's career progression and access to skilled technical roles in transport, policy makers can consider adopting national targets for women's participation in technical and managerial roles within the industry. Although many countries have adopted goals to increase women's participation in leadership or public sector employment, few have incorporated gender equality objectives into national transport sector policies or adopted targets relating specifically to women's employment in the industry. Setting measurable goals, however, can help establish a clear roadmap for strengthening gender diversity in roles where women are underrepresented and provide a structured framework for increasing women's participation in the sector overall. Mandating that employers report on the proportion of women and men within their workforce and the implementation of gender equality policies and procedures also helps foster transparency and accountability and enables policy makers to track progress toward gender diversity in the sector.



Alongside setting targets, policy makers should implement supportive measures to facilitate their achievement. This could involve providing incentives for companies that meet or exceed the established targets, such as financial incentives or recognition and awards programs.

Recommendation 4: Address legislative barriers and gaps that hinder women's employment and progression in the sector and support employers to ensure compliance.

In many countries, regulatory barriers and gaps continue to impede women's employment in transport roles, including jobs involving operating trains, driving large vehicles, and working in railway or road transportation and civil aviation. In contexts where national legislation restricts women's access to certain jobs or restrict work at certain times, policy makers should collaborate with employers to evaluate occupational requirements and working conditions and identify avenues to remove wholesale restrictions on women's employment. Rather than solely based on gender, any limitations on specific occupations must be grounded in thorough risk assessments.



Policy makers should also prioritize the enactment and enforcement of legislation aimed at combating gender-based violence and harassment (GBVH) in the workplace to create safer and more supportive environments for women in male-dominated fields like transport, including in customer-facing roles. In contexts where awareness of GBVH is particularly low, policy makers could support compliance with these requirements by issuing employer guidelines on actions employers can take to prevent, identify, and combat instances of GBVH within their operations.

To address regulatory gaps about equal pay, policy makers should ensure that national legislation prohibits pay discrimination and provides for equal pay for work of equal value for women and

men. Research shows that countries where such legislation is in place, demonstrate higher levels of women's employment in the transport sector on average compared to states without laws regulating equal pay, non-discrimination in hiring, and access to employment after maternity leave, suggesting that such protections help retain female workers (Ng and Acker 2020). Requiring employers to report publicly on gender pay gaps within their operations can help ensure compliance with these provisions.

Policy makers should also consider affirmative action policies to encourage women's employment in the transport sector through transport-related public procurement—whether for roadworks or the purchase of transport fleets. Contracting authorities could amend bidding documents to require bidders to commit to explicit targets for employing women and improving workplace conditions for all workers. These activities vary, from including equal pay for equal work principles in procurement laws to awarding additional points during tender evaluations to bidders with gender-related certifications.

Recommendation 5: Promote women's entrepreneurship in the transport sector

To foster innovation, create employment, and drive economic growth in the logistics, trade, and urban mobility, it is essential to support women's entrepreneurship in the transport sector. Supporting women in starting entrepreneurial ventures within the transport sector has a proven multiplying effect. Women-led transport businesses have been often known to employ a higher proportion of women, thus creating more employment opportunities for female workers in the market. This not only helps address the gender gap in employment but also has a broader social impact by addressing the mobility challenges faced by women riders, who tend to feel safer and more comfortable using services run by women. Empowering women to establish businesses in this sector enhances both economic inclusion and the safety and accessibility of transport services for women.



Governments may consider offering a range of support schemes to ease access to finance, such as targeted soft loans for women entrepreneurs in electric mobility, urban mobility, transport, trade, and logistics sectors. Considering challenges with market access, policy makers may consider incentivizing women entrepreneurs' participation in domestic and international networks. Over and above this, governments may also consider introducing relevant short- and long-term upskilling, mentoring, and sponsorship programs from women entrepreneurs, so that they can keep up with the latest technology advancements in the sector.

Women-led businesses are likely to encounter unique challenges in accessing financing and navigating schemes, even when they are available. Government agencies may prioritize a gender-responsive evaluation of existing financing programs and commission a comprehensive market analysis to assess their suitability for women in the transport sector. This evaluation may include a thorough review of eligibility criteria, application processes, and terms of various schemes offered by government agencies and financial institutions, with a focus on inclusivity and accessibility for women entrepreneurs. Engaging directly with women working in the sector will provide valuable insights into the effectiveness of these schemes and highlight areas for improvement.

Governments may also include specific targets for women-owned business participation in public transport contracts, supported by robust monitoring mechanisms to track compliance and impact. Additionally, establishing support systems to help women-owned businesses meet procurement requirements ensures the sustainability and effectiveness of these quota systems, ultimately contributing to a more inclusive and diverse transport sector.

5.2 Recommendations for employers

Recommendation 6: Strengthen outreach efforts to women and girls to attract them to careers in transport.

Employers can do more to attract women into the sector by promoting a positive image of women's employment prospects and raising awareness about the diverse career opportunities within the sector. This is particularly important to combat persistent stereotypes about transport jobs being unsuitable for girls and women. Employers may consider collaborating with educational institutions to offer scholarships, internships, and apprenticeship programs specifically targeted at women, with a particular focus on technical education and training. Partnerships with universities or vocational education institutions can also help publicize opportunities for women in the sector (for instance, through career fairs or networking events), creating pathways for female graduates to enter the industry.



Meanwhile, outreach programs aimed at primary and secondary schools can play a significant role in shifting perceptions and encouraging young girls to consider careers in transport. These early education outreach programs often encompass exposure to industry role models, particularly successful women in various transport roles, hands-on activities that demonstrate the practical applications of transport-related skills, and encouragement and support for pursuing STEM subjects. By engaging girls at an early age, these interventions aim to cultivate interest in transport careers and strengthen the pipeline of female talent entering the sector.

Industry-specific programs have also demonstrated effectiveness in targeted outreach. Exemplary initiatives like Estarta Solutions' "ProGirls" program in Jordan (mentioned above) offer orientation days for girls ages 14–16, featuring interactive exercises that simulate real-world transport challenges, live demonstrations of cutting-edge transport technologies, and Q&A sessions with female engineers, providing direct access to professional insights and guidance. Such early exposure aims to ignite enthusiasm for technical careers and reinforce the potential for women to excel in the transport sector.

Recommendation 7: Strengthen recruitment processes to eliminate gender bias.

To support the recruitment of women into technical and operational roles, employers must ensure that their recruitment processes actively promote equal opportunities and challenge stereotypes about the sector. This can involve carefully reviewing all external communications related to recruitment, such as job advertisements and career pages on company websites, to ensure they demonstrate the company's commitment to



equal opportunity. These materials should also highlight female role models and avoid inadvertently discouraging women from applying, for example, by avoiding gendered language or exclusively featuring images of men. Since concerns regarding poor working conditions are a significant barrier to women's employment in the sector, particularly in technical roles, employers may wish to reflect additional information on working conditions and inclusive work environments in job descriptions and other recruitment materials, highlighting any changes resulting from modernization. In some contexts, providing candidates' family members with an opportunity to visit the workplace and assess working conditions first-hand can support women's recruitment.

Recommendation 8: Adopt an organizational strategy on gender equality in employment and leadership and strengthen data collection frameworks to measure progress.

Increasing women's participation in transport requires employers to recognize gender equality as a strategic business issue by developing comprehensive organizational gender strategies and action plans. Organizational commitment is essential for company efforts to be effective and often hinges on leadership buy-in, with senior management actively supporting and championing gender equality initiatives. Employers should conduct a comprehensive gender audit (including an assessment of human resources [HR] policies) to establish key gaps and areas for improvement and to inform the development of their gender equality strategy.



Gender equality strategies should outline clear, actionable goals to increase women's participation within the workforce and set out specific, measurable goals, for instance, targets relating to female representation in technical roles. Action items should be accompanied by regular monitoring and reporting to ensure accountability and enable employers to measure progress. Achievement of actions can also be included in senior leaders' key performance indicators at performance evaluations. Employers should allocate a budget for the implementation, monitoring, and evaluation of the strategy on an ongoing basis, as well as clear lines of responsibility for implementing the strategy.

Gender strategies should be accompanied by robust data collection frameworks enabling companies to monitor progress and the business benefits of new initiatives on women's employment and leadership. A combination of sex-disaggregated workforce data and qualitative data (e.g., staff perceptions surveys or outcomes of employee consultations) can provide a picture of the roles that women are currently occupying in the organization, the extent to which their needs are currently being met, and the kinds of initiatives that might support higher levels of diversity. Gender-disaggregated workforce data should include job positions, seniority levels, recruitment, promotion, resignation rates, and retention rates after maternity leave.

Furthermore, organizations can enhance their commitment to gender diversity by pursuing relevant certifications through recognized agencies. These certifications serve as an external validation of their efforts and signal to potential employees and stakeholders their status as an equal opportunity employer dedicated to fostering workplace diversity. The WiT network can serve as a platform for companies to communicate their commitment and progress toward gender equality goals and enable employers to share data, best practices, business benefits, and lessons learned.

Recommendation 9: Strengthen the availability of policies to support working parents.

A greater availability of policies that support working parents could significantly impact women's workforce participation in the transport sector, as women tend to bear the primary responsibility for care and household duties. To make it easier for women to enter and remain in technical roles, employers could consider implementing flexible working arrangements, such as flexible hours, remote working options, and part-time positions. Partnering with reputable local childcare services can expand and enhance the accessibility of childcare options available to employees, particularly where such services are costly. Additionally, the establishment of on-site childcare facilities can make it easier for women to pursue and progress in technical roles within the transport sector. Return-to-work programs that support women re-entering the workplace after maternity leave can also help retain women in technical roles. As women often perform family and household duties, efforts to improve a work-life balance and implement family-friendly work arrangements should support both male and female employees, including promoting the use of paternity leave by men.



Recommendation 10: Ensure that working environments are safe and secure and meet women's needs.

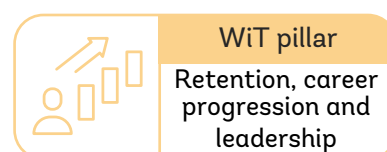
Employers wishing to increase women's participation in technical roles within the transport sector must ensure safe working environments. Addressing GBVH in the workplace is a key step: companies should implement comprehensive policies that clearly define and prohibit GBVH, establish reporting mechanisms, and ensure swift and effective responses to complaints. Companies should also assess the personal security of the working environment through regular surveys or other forms of feedback with female employees and install security measures such as panic buttons if deemed appropriate. Regular training sessions should be conducted to raise employee awareness and foster a culture of respect and safety. Personal security during travel to and from work is particularly important for women's participation in the transport sector, where working hours often require staff to commute at night or when public transportation options are limited. Providing secure transportation options or safe commuting routes can play an important role in reducing staff risks during work-related travel.



In addition, employers should ensure that female staff in technical roles have access to adequate facilities that cater to the basic needs of female employees, such as separate and additional bathrooms, changing rooms, and sleeping facilities, as well as breastfeeding rooms. Employers should also ensure that equipment is appropriately sized or designed to meet women's needs to provide protection from injury.

Recommendation 11: Collaborate on improving women's professional development opportunities through mentorship programs and leadership training.

Enhancing women's professional development opportunities can help increase women's participation in leadership roles within the transport sector. Mentorship programs are particularly effective in supporting women's career progression and can be implemented



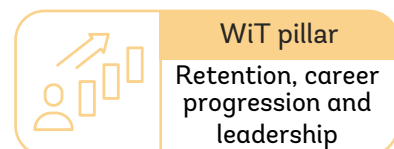
within companies and across the sector through the WiT network. By pairing female employees with experienced mentors, companies can provide guidance, encouragement, and valuable industry insights that help women navigate their career paths. Mentoring programs can also serve as a platform for discussing challenges, setting goals, and building networks, which are essential for career advancement, especially in technical fields.

Tailored leadership training and coaching can further support women's career progression in the sector. Such programs can include workshops, seminars, and one-on-one coaching sessions focused on developing key leadership skills, such as strategic thinking, decision-making, and effective communication. Collaborative efforts to improve professional development opportunities enhance individual career trajectories for talented female staff and strengthen the overall talent pool within the sector.

To complement these women-focused initiatives, it is imperative to foster men champions within the workforce. Creating programs where male employees are trained and encouraged to actively support gender inclusion could significantly enhance the cultural shift needed for a more inclusive working environment, especially in male-dominated sectors like transport. These programs should aim to raise awareness about gender biases, provide tools for male colleagues to become effective allies, and promote inclusive behaviors in day-to-day operations. By engaging men as active participants in gender equality efforts, organizations can create a more supportive ecosystem for women's professional growth and leadership development.

Recommendation 12: Provide targeted technical training to enable women's progression into higher paying roles.

Employer-supported comprehensive technical training programs can play a significant role in enabling women's progression into higher-skilled technical roles within the transport sector. These programs should be designed to equip women with the advanced skills and knowledge necessary to progress into higher-paying, specialized positions, and may be implemented in partnership with educational providers. Providing access to certifications and continuous learning opportunities also ensures that women remain competitive and capable of advancing within the industry. Companies can create additional pathways for transition from entry-level to higher-skilled technical roles by establishing clear career progression frameworks that outline the skills and experiences required for advancement and ensuring that progression opportunities are equally accessible to female staff. These progression programs might also include rotation systems throughout company departments to ensure that female staff receive training in more than one area and avoid a concentration of women in certain areas of the business.



Recommendation 13: Initiate or engage in policy dialogue to support women's employment and advancement in the transport sector.

Employers can support collaborative initiatives to address barriers to women's participation in the transport sector by initiating and participating in policy dialogue with policy makers and other stakeholders. In contexts where regulatory restrictions prohibit



women's employment in particular roles, for example, transport service operators are well placed to support a review of job requirements and working conditions to assess whether such restrictions can be lifted. Companies can further support policy dialogue by advocating for wider adoption of policies that support women's employment in the sector. This could include lobbying for funding for childcare subsidies, and promoting flexible working hours, maternity and paternity leave, and safe working environments. By working with government agencies, industry associations, and trade unions, companies can help develop regulations and guidelines that support women's employment and advancement in transport roles.

5.3 Recommendations for education institutions and CSOs

Recommendation 14: Strengthen collaboration between educational providers and employers to support women's recruitment into the transport sector.

Educational providers can play a key role in attracting women to the transport sector by collaborating with employers and policy makers to ensure that women who graduate from technical studies progress to pursue careers in transport.



Joint outreach and awareness-raising initiatives could involve co-hosting career fairs, workshops, and networking events specifically targeted at young women, highlighting the diverse and rewarding career paths available in the sector, including in technical roles. Additionally, educational institutions can work with employers to create internship programs tailored for women. These internships would provide valuable hands-on experience and mentorship opportunities, showcasing the dynamic nature of the industry and dispelling any misconceptions. Partnering with employers can also enhance educational providers' insight into the industry's current and future skill requirements, enabling them to develop programs and courses that equip graduates with the technical skill sets required and increasing the likelihood of finding employment. Collaboration on recruitment efforts can be highly effective. By sharing resources and establishing a talent pool specifically focused on qualified women, educational providers can connect them directly with potential employers seeking to strengthen women's representation within their workforce.

Recommendation 15: Promote access to STEM education for young women and girls and create an educational environment that encourages take-up of technical studies.

Educational providers have an important role in increasing women's access to education and training needed to enter the transport sector. Offering scholarships and financial aid to women pursuing STEM subjects, in collaboration with policy makers and employers, can help reduce financial barriers and encourage women to study technical fields.



Educational institutions may also consider initiatives to attract and retain female faculty members who can act as role models and provide guidance to young women and girls interested in studying STEM subjects and pursuing careers in transport. This can include offering competitive salaries and benefits and creating a supportive work environment that promotes a work-life balance. Additionally,

unconscious bias training for faculty and staff can help foster an educational environment free from prejudice, where female students are actively encouraged to pursue technical careers.

The transport sector is currently experiencing a significant technological transformation, creating new opportunities in areas such as intelligent transportation systems, data analytics, predictive modeling, automated warehousing, and drone operations. Research indicates a pressing shortage of skilled professionals in core engineering positions, particularly as the industry, especially in trucking and rail, becomes increasingly digitalized. The evolving nature of transport jobs increasingly demands STEM expertise, with automation becoming integral to operations. This technological shift requires professionals with robust STEM foundations who can effectively manage advanced systems while optimizing operational efficiency and enhancing customer experience.

However, the sector faces a critical challenge stemming from its lack of diversity and persistent gender imbalance. The traditional approach of recruiting from conventional talent pools limits the industry's ability to benefit from diverse perspectives and expertise. With STEM occupations growing at a significantly faster rate than non-STEM fields, encouraging women's participation becomes increasingly crucial for the sector's future success.

To effectively address these challenges and meet evolving transportation needs, promoting women's access to STEM education has become essential. This strategic approach not only helps bridge the current skills gap but also ensures the development of a more diverse and innovative workforce capable of driving technological advancement and addressing complex transportation challenges.

Providing women access to lifelong learning opportunities, no matter what stage they are in their career, is essential to equip women with the technical knowledge and skills to facilitate their entry or re-entry into the workforce. These learning opportunities should account for women's caring responsibilities.

Recommendation 16: Collaborate with employers and policy makers to support the design and implementation of gender equality initiatives, strengthen policy frameworks, and disseminate best practice.

Civil society organizations (CSOs) and industry initiatives can be powerful allies in promoting women's employment within the transport sector, particularly in contexts where employers have limited organizational awareness on how to support gender equality within their operations.



For example, CSOs and other organizations dedicated to advancing women's employment can leverage their expertise to disseminate guidance on best practices to employers through workshops and training programs. These programs can equip employers with practical guidance on implementing initiatives like developing an organizational strategy on gender equality, unconscious bias training for recruitment teams, developing inclusive workplace cultures, or offering flexible work arrangements to cater to the needs of working parents. More broadly, CSOs and industry associations can advocate for regulatory changes and industry standards that promote gender equality. Industry initiatives can complement the efforts of CSOs by encouraging employers and policy makers to share best practices and success stories related to gender diversity, including through the WiT network.

5.4 Recommendations for all stakeholders

Recommendation 17: Collect quality sectoral statistics to understand the scale of the challenge and to design evidence-based interventions; evaluate existing gender initiatives to understand what works and what does not and identify and lead new areas of research to advance women in the sector.

The progress in promoting women in the transport sector is slow but is happening through a greater understanding of the barriers and enablers related to women's employment in the sector, informed by new data and new perspectives, and best practices are now emerging. Yet, the progress is limited by the lack of quality sectoral statistics, which prevents stakeholders from understanding and addressing gender gaps in the sector. In some cases, valuable data are collected but rarely analyzed and disseminated. Also, there exists limited evidence on what works and what does not, since many of the gender interventions have yet to be evaluated. Importantly, with few exceptions, robust data demonstrating the business case for recruiting and retaining women in the sector, including addressing gender-based violence and harassment (GBVH), are lacking. This gap prevents individual efforts from being replicated globally into "best fit" solutions. By supporting the evaluation of existing efforts to understand what works and what does not, and identifying and leading new areas of research, WiT members will pave the way for more effective and targeted initiatives.



Comprehensive sectoral statistics play a vital role in identifying gender-specific barriers within the transport sector. Two key categories of gender-disaggregated data have been identified for systematic study:

1. **Women's Representation in Transport Sector:** Tracking women's participation across the industry through employment statistics across all levels, entrepreneurship participation rates, distribution across job roles and positions, types and scale of women-led businesses, revenue generation and business performance metrics, career advancement patterns.
2. **Impact Assessment and Beneficiary Analysis:** Measuring the effectiveness of gender-specific interventions through comprehensive safety audits, number of beneficiaries reached, impact evaluation of specific programs, long-term outcomes tracking, cost-benefit analysis of interventions, business and economic case for including and retaining women in the sector, and behavioral change indicators.

The data sets on beneficiaries can be collected by surveys and community-based organizations.

Recommendation 18: Establish best practice repository of gender responsive interventions.

The establishment of a centralized repository of best practices would serve as a catalyst for accelerating the adoption of successful gender inclusion strategies throughout the sector. This knowledge-sharing platform would provide organizations with access to detailed case studies of successful interventions, enabling them to learn from implementation challenges and solutions. Organizations can adapt these proven strategies to their local contexts while benefiting from documented measurable outcomes and impact metrics of various initiatives.



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Annex

The tables provided in this Annex present available statistical data, identified in the course of research for this report, on women's share of employment in the transport sector and women's participation in technical education worldwide and in the ECA and MENA regions.

Table 1. Share of women in the transportation and storage globally, 2023 or latest available year⁴

Sector	% women
Transportation and storage	12.3%

Source: ILO (2023a).

Table 2. Share of women in subsectors of the transportation and storage sector globally, 2023 or latest available year⁵

Subsector	% women
Land transport and transport via pipelines	5%
Water transport	10%
Air transport	38%
Warehousing and support activities for transportation	21%

Source: ILO (2023b).

Table 3. Share of women in the transportation and storage sector in MENA, 2023 or latest available year

Sector	% women
Transportation and storage	3%

Source: ILO (2023a).

⁴ Data on employment in the transportation and storage sector refer to activities under "Section H: Transportation and storage" of the [United Nations' International Standard Industrial Classification of All Economic Activities \(ISIC, Rev.4\)](#). This includes employment in land transport and transport via pipelines, water transport, air transport, warehousing and support activities for transportation, and postal and courier activities. The proportion of women in the workforce is calculated based on national statistical data from 2023 or latest available year.

⁵ Data on employment in subsectors of the transportation and storage sector refer to activities under Divisions 49-52 within "Section H: Transportation and storage" of ISIC (Rev.4), encompassing employment in land transport and transport via pipelines, water transport, air transport, and warehousing and support activities for transportation. It does not include postal and courier activities. The proportion of women in the workforce is calculated based on national statistical data from 2023 or latest available year.

Table 4. Share of women in subsectors of the transportation and storage sector in MENA, 2023 or latest available year

Subsector	% women
Land transport and transport via pipelines	1%
Water transport	5%
Air transport	26%
Warehousing and support activities for transportation	9%

Source: ILO (2023b).

Table 5. Share of women in subsectors of the transportation and storage sector in MENA, by country, 2023 or latest available year

Country	Year	% women in land transport and transport via pipelines	% women in water transport	% women in air transport	% women in warehousing and support activities for transportation
Egypt	2022	0%	10%	24%	5%
Iraq	2021	0%		0%	14%
Iran	2022	1%	3%	29%	8%
Israel	2022	10%	37%	37%	31%
Jordan	2021	1%	0%	20%	8%
Lebanon	2019	1%	17%	22%	21%
West Bank and Gaza	2022	0%		0%	0%
Sudan	2022	1%	0%		0%
Tunisia	2023	1%	18%	21%	15%
United Arab Emirates	2023	6%	4%	28%	19%

Source: ILO (2023b).

Table 6. Share of women in the transportation and storage sector in ECA, 2023 or latest available year

Sector	% women
Transportation and storage	21%

Source: ILO (2023a).

Table 7. Share of women in subsectors of the transportation and storage sector in ECA, 2023 or latest available year

Subsector	% women
Land transport and transport via pipelines	15%
Water transport	20%
Air transport	37%
Warehousing and support activities for transportation	26%

Source: ILO (2023b).

Table 8. Share of women in subsectors of the transportation and storage sector in ECA, by country, 2023 or latest available year

Country	Year	% women in land transport and transport via pipelines	% women in water transport	% women in air transport	% women in warehousing and support activities for transportation
Albania	2019	3%	10%	31%	13%
Armenia	2021	8%		32%	
Austria	2023	18%	70%	52%	25%
Belarus	2022	16%	0%	24%	30%
Belgium	2022	13%		29%	29%
Bosnia and Herzegovina	2023	6%	0%	36%	12%
Bulgaria	2022	13%	5%		35%
Croatia	2022	11%	9%	18%	26%
Czechia	2022	16%	10%	14%	28%
Denmark	2022	14%	34%	36%	26%
Estonia	2022	11%	38%		28%
Finland	2022	13%	38%	74%	21%
France	2022	19%	32%	36%	29%
Georgia	2020	5%	3%		40%
Germany	2022	21%	33%	45%	22%
Greece	2022	9%	22%	33%	18%
Hungary	2022	17%		44%	30%
Iceland	2022	14%	19%	38%	28%
Ireland	2022	12%			23%
Italy	2022	13%	16%	34%	25%
Kosovo	2022	4%		33%	17%
Kyrgyzstan	2021	2%		75%	11%
Latvia	2022	18%	4%		37%

Country	Year	% women in land transport and transport via pipelines	% women in water transport	% women in air transport	% women in warehousing and support activities for transportation
Lithuania	2022	20%	8%		36%
Luxembourg	2022	17%		20%	25%
Malta	2022	16%	23%	46%	17%
Netherlands	2022	17%	22%	39%	22%
North Macedonia	2022	7%			21%
Norway	2022	12%	16%		28%
Poland	2022	15%	12%		32%
Portugal	2022	14%	26%	48%	26%
Romania	2022	10%	3%		30%
Serbia	2019	13%	17%	48%	28%
Slovak Republic	2022	16%	17%	44%	48%
Slovenia	2022	14%			24%
Spain	2022	14%	35%	40%	28%
Sweden	2022	17%	38%		30%
Switzerland	2022	18%	53%	46%	33%
Ukraine	2021	19%	12%	31%	26%
United Kingdom	2019	12%	20%	42%	24%

Source: ILO (2023b).

Table 9. Average share of women among STEM graduates globally and in MENA and ECA, 2020 or latest available year

Region	% women
Global average	34%
MENA average	44%
ECA average	33%

Source: UNESCO (2020).

Table 10. Share of women among STEM graduates in MENA, by country, 2020 or latest available year

Country	Year	% women
Algeria	2018	58%
Bahrain	2018	41%
Egypt	2016	37%
Iran	2017	31%
Malta	2017	28%
Morocco	2017	45%
Oman	2018	56%
Qatar	2018	48%
Saudi Arabia	2018	37%
Syrian Arab Republic	2016	50%
Tunisia	2018	55%
United Arab Emirates	2017	42%
West Bank and Gaza	2018	44%

Source: UNESCO (2020).

Table 11. Share of women among STEM graduates in ECA, by country, 2020 or latest available year

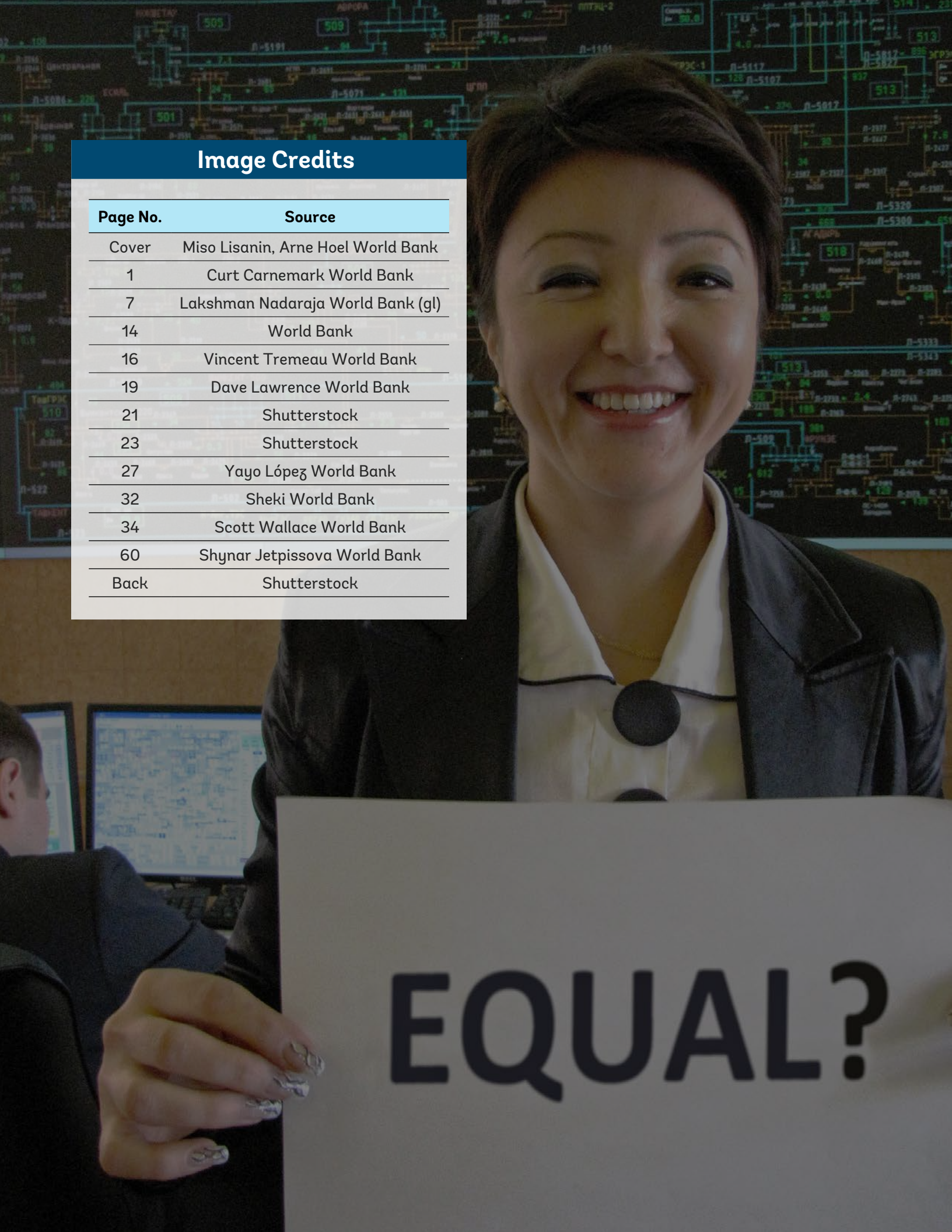
Country	Year	% women
Albania	2018	47%
Andorra	2018	0%
Armenia	2018	40%
Austria	2016	26%
Azerbaijan	2018	35%
Belarus	2018	27%
Belgium	2017	26%
Bosnia and Herzegovina	2018	45%
Bulgaria	2017	37%
Croatia	2017	39%
Cyprus	2017	38%
Czechia	2017	36%
Denmark	2017	34%
Estonia	2017	38%
Finland	2017	27%
France	2016	32%

Country	Year	% women
Georgia	2019	39%
Germany	2017	28%
Greece	2017	40%
Hungary	2017	32%
Ireland	2016	29%
Italy	2016	40%
Kazakhstan	2019	32%
Kyrgyz Republic	2018	31%
Latvia	2017	31%
Lithuania	2017	30%
Luxembourg	2016	28%
Moldova	2018	31%
Monaco	2018	0%
Netherlands	2017	29%
North Macedonia	2017	47%
Norway	2017	29%
Poland	2017	43%
Portugal	2017	38%
Romania	2016	41%
San Marino	2018	36%
Serbia	2018	43%
Slovak Republic	2017	35%
Slovenia	2017	33%
Spain	2017	30%
Sweden	2017	36%
Switzerland	2017	22%
Türkiye	2014	35%
Ukraine	2018	29%
United Kingdom	2016	38%
Uzbekistan	2018	25%

Source: UNESCO (2020).

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