RESEARCH REPORT

'JUST CITIES' AND WOMEN PUBLIC TRANSPORT WORKERS IN LATIN AMERICA

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ITF

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CONTENTS

ACRONYMS AND ABBREVIATIONS

ADM	Algorithmic decision making
AI	Artificial Intelligence
ATM	Alianza de Tranviarios de México
EEA	European Economic Area
GBOS	Gender based occupational segregation
GPS	Global Positioning System
BRT	Bus Rapid Transit
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
ILO	International Labour Organization
IMF	International Monetary Fund
IoT	Internet of Things
ITS	Intelligent Transport Systems
LAC	Latin America and the Caribbean
MaaS	Mobility as a Service
PPE	Personal protective equipment
SNTSTC	Sindicato Nacional de Trabajadores del Sistema de Transporte Colectivo (Mexico)
SNTT	Sindicato Nacional de Trabajadores de Rama, Servicios de la Indutría del Transporte y Logística de Colombia

EXECUTIVE SUMMARY

This report explores the current and future challenges for women working in public transport in cities in Latin America and the Caribbean (LAC). Based on secondary research and interviews with trade union representatives, the report develops a scenario of a just and feminist city and identifies priority areas where trade unions can advocate for socially just and feminist change in the public transport sector.

SCENARIOS OF FUTURE CITIES

Thinking about the future of cities and mobility, a multitude of visions emerge characterised by buzzwords such as smart, sustainable and resilient. The term **'smart cities'** refers to a variety of smart technologies and processes deployed in a city, or a variety of actors at governmental, business or civil society level taking the initiative to make a city smarter. Between top-down and bottom-up smart city management lies the vision of a smart city as a local innovation platform through which the city becomes an intersection of private interests, the public sector and citizens coming together to create value, collaborate and innovate. Smart city visions are sometimes criticised for the risk of exacerbating urban inequalities, widening the digital divide and overshadowing citizens' freedom and privacy and workers' rights. A smart 'sustainable' city uses advanced ICT to contribute to the goals of sustainable development. While sustainable development focuses on mitigation of environmental damage, the concept of resilience is about adaptation and incremental change. A resilient city, therefore, is able to withstand or adapt to hazards and crises, be they environmental, political or social.

In order to design a scenario for a just and feminist city for women transport workers, we draw upon a variety of existing justice concepts to understand how resources, opportunities, responsibilities and benefits are shared or distributed within society. A feminist approach to the city recognises that the built urban environment supports patriarchal social structures that define gender roles and determine what activities are carried out, by whom, where and when. Based on an intersectional approach that recognises discrimination based on gender, race, ethnicity, age or ability, the feminist city offers a perspective for creating just urban visions based on incremental change and different futures shaped by place, history and context. In conjunction with the visions of trade union representatives in the participating cities in the project, we can define ten key points that make up a just city of the future for women transport workers.

Just cities must:

1. PROVIDE A BETTER QUALITY OF LIFE

Enable citizens to have equal access to urban services, infrastructure and resources, to use urban spaces and participate in urban life. This includes, but is not limited to, access to public spaces as well as public services for care, health and education, employment opportunities, and the freedom and ability to move freely in the city.

2. BE SMART

Planning processes take a bottom-up, user-centred approach, involving trade unions in consultations, negotiations and decision-making on new technologies and involve co-creation that also addresses challenges faced by smart technologies. Smart technologies must be deployed to make women's lives and work easier, and in a way that creates decent and secure job opportunities for women. The identification and removal of barriers in the recruitment and retention of women including challenging occupational segregation and exclusion, and the provision of digital access and education, is central.

3. BE RESILIENT

Resilience to climate hazards and recovery from crises is supported by positive adjustments towards sustainability and transport policies that support operators and workers in rapid change and adaptability.

4. BE SUSTAINABLE

Promote climate policies which improve and expand public transport, including public transport powered by clean energy and technologies.

5. BE INCLUSIVE

Marginalised population groups are visible and part of urban life and work. To achieve this, policymaking as well as financing starts from the embodied experiences and an intersectional approach that acknowledges the particularities of individual experiences by passengers as much as workers and is responsive to a diversity of needs and inequalities emerging from gender, age, race, ethnicity or ability.

6. BE CREATIVE

Facilitate the creation of alternative urban futures and spaces with the active involvement and participation of transport workers, unions and marginalised groups in the transformation of our cities.

7. BE SAFE

Ensure marginalised population groups, including women, can live and work safely, and that public transport is a space free of violence, harassment or abuse.

8. BE EQUAL

Provide dignified, equal and inclusive opportunities for women workers. Through social dialogue, negotiation and consultation between employers and workers, women's voices are heard, and women's rights are respected. Women are therefore found in all professional and political positions and are involved in shaping public transport policy.

9. BE CARING

Provide and facilitate networks of care and support in the workplace and beyond.

10. ENCOURAGE ACTIVISM

Provide diverse channels of civic engagement and encourage activism as a fundamental part of societal change.

CURRENT ISSUES AND DRIVERS OF CHANGE

In recent decades, there have been significant improvements in LAC on issues such as women's labour force participation and gender-based violence. However, women transport workers still face high levels of violence and harassment, are discriminated against due to stereotypical gender roles and lack basic facilities and support networks. In addition, smart city technologies deployed globally to improve services, sustainability and safety offer new opportunities for workers (e.g. creating space for more intellectually stimulating work, supporting staff safety, making drivers' jobs more accessible), but also new challenges. Women transport workers are particularly vulnerable to the risk of automation, changes in job experience and quality, and access to jobs through the adoption of AI in recruitment processes. To address the increasing urbanisation and economic growth of cities in LAC in recent decades, many local authorities are creating sustainable city visions. These include the expansion of transport networks with new lines or new modes, deploying clean energy technologies in the transport sector and strengthening public transport through integrated networks. Combined with new approaches to transit-oriented development (TOD) that aim to coordinate transport investments with land development, these developments could potentially provide transport workers with additional job opportunities, improved working and living spaces in peri-urban areas and increased participation in urban development processes. In addition, women workers play an important role in shaping sustainable cities of the future by supporting modal shifts, reducing emissions, creating networks for exchange and support, and finding solutions for balancing care and work responsibilities.

MEASURES TO PROMOTE SOCIALLY JUST AND FEMINIST CHANGE

To support transport unions, operators as well as local governments to advocate for socially just and feminist change, we propose the following measures:

01. **Educate and train resilient women workers:** promoting women's resilience and addressing their systemic exclusion from decent and secure jobs requires education and training opportunities for women to enter the labour market—both in operational occupations and in urban or transport planning and STEM occupations—as well as opportunities to train and upgrade skills to adapt the current workforce to technological change, e.g. automation, and secure stable employment in the future.

02. **Co-create and negotiate automation strategies and transport policies:** automation strategies as well as smart and sustainable development goals should be co-created and negotiated by companies, public sector organisations, trade unions and workers.

03. **Create networks of support and safe spaces for women workers:** work environments should be free from violence and harassment and provide workers with access to safe spaces and sanitary facilities. In addition, training and networking activities for women workers provide opportunities to create networks of support and exchange and to strengthen the position of women workers in defending their rights. Trade unions should advocate for and support efforts to incorporate gender as well as safety audits into the planning and management of public transport. These audits provide a tool to measure the extent to which the organisation and the environment are meeting women's needs, to identify priorities for improvement and to measure progress towards gender objectives.

04. **Support flexible but reliable working arrangements:** in order to facilitate the participation of women in political and professional positions and decision-making processes, working conditions and contracts must be adapted to their needs, i.e. prevailing gender-specific division of labour and expectations for the performance of care work must be recognised, without compromising on reliability, duration or pay in employment contracts. Unions should advocate for decent work and labour rights (i.e. minimum wages, working hours and facilities) and flexible working arrangements for women workers to support care work, as well as parental rights, thereby recognising the responsibilities of both men and women in child rearing.

05. **Strengthen union activism through cross-sectoral collaboration and political allies:** to promote socially just and feminist change, it is essential to increase the proportion of women in decision-making positions across the transport sector and in policy, and to introduce new ways of thinking and problem solving. Unions should continue to find allies in decision-making positions and in policy, and create cross-sectoral cooperation with non-union platform workers, workers from other unions or sectors, and community organisations or NGOs as a fruitful way to advance and link workers' rights and union activism.

06. **Support alternative and diversified financing of public transport:** diversifying investment opportunities to support reliable and safe employment conditions for women workers can be achieved by incorporating gender equality clauses into existing funding agreements or creating alternative financing options in which workers gain ownership over smart city technologies.

07. **Inform and educate passengers:** measures to support safe and just working environments for women include information and education campaigns, through which passengers are informed about expected, respectful behaviour as well as their role in the public sphere.

08. **Imagine and rethink the social contract and role of technology:** rethinking the future of smart and sustainable cities from an intersectional perspective means rethinking the relationship between humans and machines, as well as the social contract that divides rights and responsibilities between workers, states and cities, and the division of gender roles in society at large. The goal of a just city is to find new ways to integrate technological innovations into everyday tasks to support women workers and advance gender equality.

INTRODUCTION

The future promises an increase and multiplication of the challenges that cities already confront today, such as population growth, **urbanisation**, urban sprawl, traffic congestion, pollution and climate change. While public transport will play a fundamental role in creating more sustainable and just urban futures, the public transport sector[1] has faced its own challenges in recent decades. With the increasing diffusion of information and communication technologies (ICT), the introduction of so-called **smart city** technologies, sustainable urban visions and integrated transport networks, power relations have shifted and affected working conditions, leading to many jobs becoming simultaneously more flexible and increasingly precarious, as in the **gig economy**. While cities in Latin America and the Caribbean (LAC) are undergoing comparable technological and social developments, they continue to struggle with poor quality public transport, high levels of informality, and challenges to urban mobility and life, such as governance, financing and funding, safety, accessibility and social equity (Vassallo & Bueno, 2019).

On top of existing concerns, the outbreak of the COVID-19 pandemic has left the sector with declining passenger numbers and ticket revenues, new hygiene and inspection regulations, and a tarnished public image. While this posed financial and organisational strains on transport companies and authorities, transport workers suffered from health risks, job losses and wage cuts. In response, unions across LAC have launched campaigns to recognise public transport workers as **key workers** who keep the city moving by connecting citizens to social services, employment and urban infrastructure. In addition, the pandemic has exacerbated existing social and economic inequalities, disproportionately affecting women and marginalised communities (Kohlrausch & Zucco, 2020).

Such issues pose a particular threat to women workers in a male-dominated transport sector. In LAC, the share of women transport workers is around 11%, compared to almost 19% in the EEA and Turkey, and over 23% in North America (Ng & Acker, 2020). Due to **gender-based occupational segregation** (GBOS), women traditionally end up in jobs with lower job security and lower salaries, and have less access to information on workers' rights, paid leave or permanent contracts (ILO, 2020). They are overrepresented in customer-service occupations and in precarious, informal and

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1.   This includes the railway industry, urban public transport and the maritime sector.

atypical employment, while they are underrepresented in technical or operational occupations, in transport-related STEM[2] jobs or in urban and transport planning. As a result, women are less likely than men to participate in decision-making processes, are more likely to lose their jobs due to **automation**, and are exposed to a lack of sanitation and basic infrastructure as well as to violence and harassment by colleagues and third parties[3] more often (Wright, 2018; Turnbull, 2013; Ng & Acker, 2020; Ostry et al., 2018).

In the few political, academic or sectoral debates that exist, the underrepresentation of women in the transport sector is mostly attributed to poor working conditions, stereotypical gender roles or a lack of role models, visibility and access to education and training in the relevant disciplines, with only a few countries having active legal restrictions that limit women's participation in the transport sector (Kurshitashvili, 2018). This narrative of underrepresentation is reinforced by a lack of data and disaggregated indicators, which makes it difficult to assess or monitor gender equality in the sector or evaluate relevant policies, and can be attributed to the lack of public attention to gender equality and relevant policies in the region (Turnbull, 2013). Nevertheless, there is a trend towards greater recognition and consideration of the importance of gender equality, with the introduction of gender equality officers and gender mainstreaming approaches to transport and urban planning in local, regional or state authorities. Gender mainstreaming offers a valuable tool for improving existing inequalities but is often applied in a technocratic way with little systemic compass and a single-issue, state-centred strategy that may reinforce gendered norms about paid and unpaid work (Hiramatsu, 2021; Daly, 2005; Kern 2020). Gender equality policies are often introduced with the aim of creating a more inclusive and equal working environment that ideally contributes to the broader goals of productivity, increased prosperity or economic growth (Ostry et al., 2018).

The ambiguity of gender policies in transport is illustrated by two examples in Mexico City. First, with the Taxi Rosa (Pink Taxi) programme, the municipality aimed to promote women as drivers but ultimately male drivers also received concessions for pink vehicles. And second, the gender-segregated metro cars introduced under the Viajemos Seguras (Women Drive Safely) programme have slightly reduced sexual violence against women but increased non-sexual violence against men – and they have not provided a solution for addressing underlying societal gender and sexuality-based violence (Aguilar et al., 2021).

Building on an ITF report *The Impact of the Future of Work for Women in Public Transport* (Wright, 2018), the following report explores future challenges and trends in public transport, focusing on Latin American cities, and aims to identify priority areas for union demands to create a more just future for women transport workers. Based on desk research of policy documents, media and academic literature, as well as individual interviews and a workshop with transport workers' union representatives in major cities in Mexico and Colombia, we outline a scenario of the just and feminist city as a basis for adapting and shaping policy design and implementation (Rosa et al., 2017).

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2.   STEM stands for 'Science, Technology, Engineering and Mathematics'.
3.   This could be violence by passengers, but also by the authorities or police forces - the latter more so in the case of informal work.

SCENARIOS OF FUTURE CITIES: TOWARDS JUST AND FEMINIST CITIES

When thinking about the future of cities and mobilities, a multitude of visions emerge, often shaped by buzzwords such as smart, sustainability and resilience. We are aware that these concepts shape the current problems and challenges of women transport workers, and after a brief passage through these concepts, we propose an alternative vision of the future of just and feminist cities.

THE CITIES OF THE FUTURE: SMART, SUSTAINABLE AND RESILIENT?

Views on what a smart city is or comprises vary widely among urban planners, policy makers and academics.

On the one hand, the concept encompasses a variety of smart technologies and processes applied in a city, from waste management to public transport, and on the other hand, it also refers to the multitude of actors at the governmental, economic or civil society level that take initiatives to make a city smarter. In this way, smart cities can be managed from the top down by collecting big data and using novel technologies to visualise, predict and optimise urban processes and manage and monitor infrastructures, as is already the case with Intelligent Transport Systems (ITS). In extreme manifestations of this top-down approach, as seen in cities such as Songdo (South Korea) or Masdar (United Arab Emirates), the main driver of the smart city is the economic potential for municipalities or large IT companies, which is at the same time the main drawback of policies driven by commercial interests that disregard citizens' freedom, privacy or workers' rights.

At the other end of the spectrum, bottom-up smart city solutions allow change and improvement to come from the city's 'users', be they businesses, start-ups (e.g. on-demand transport services such as Uber) or civic groups that address local problems through small-scale action and so-called 'tactical urbanism'. This approach, which assumes a certain acceptance of unpredictability, favours a decentralisation of power that may be at odds with the objectives of planners and decision-makers and weakens the bargaining and union power of transport workers.

Between these two approaches lies the vision of a smart city that offers itself as a 'local innovation platform', where the city becomes an intersection between private interests, the public sector and citizens coming together to add value, collaborate and innovate. This promising approach often pursued in the context of transit-oriented development (TOD), could pose challenges in organising and translating citizen projects into inclusive and practical outcomes. Smart city visions, therefore, are also criticised for risking exacerbating urban inequalities, not least due to a growing digital divide fostered by a narrow focus on emerging smart city technologies and the use of ICT (Walravens, 2015).

More recently, cities have begun to link their smart city visions to the sustainability goals that have been on the urban planning agenda since the 1990s, in order to harness the power of Big Data technology and its application to achieve optimal levels of sustainability. Accordingly, a smart sustainable city would be "a form for human settlements that will be able to improve, advance, and maintain its contribution to the goals of sustainable development by being pervaded, monitored, understood, and analysed by advanced ICT" (Bibri & Krogstie, 2019, p. 8). While sustainable development focuses on the process of transitioning to an environmentally sustainable path, the newer and popular concept of resilience is about adaptation and incremental change. The resilient city approach aims to achieve an urban condition that is able to withstand or adapt to hazards and crises, be they environmental, political or social (Jabareen, 2013; Zhang & Li, 2018; Redman, 2014).

In the cities of the Global North, the sustainable mobility paradigm (Banister, 2008) that dominates urban transport and mobility planning involves technical and engineering methods for calculating environmental risks and disadvantages such as CO2 emissions and pollution, optimising network and travel patterns, and allocating available resources, with little consideration of the potentially discriminatory or equalising patterns of mobility planning (Banister, 2008). However, recent studies have shown that achieving socially and economically sustainable urban development depends on equitable distribution and inclusive development in which gender equality is an important factor, and that women foster sustainable mobility by challenging car-centred and male-dominated transport planning (Yigitcanlar & Kamruzzaman, 2018; Kronsell et al., 2016).

JUST AND FEMINIST CITIES

In order to understand what a just city for women transport workers would look like, the following sections introduce the concept of justice in the context of transport and the city to create a scenario of the just and feminist city of the future.

Theories of justice allow us to question how resources, opportunities, responsibilities and benefits are shared or distributed within society. In recent decades, various approaches to justice have fed into transport and urban planning, such as reducing the power of the state and maximising market-based services (libertarianism), decentralising power to prioritise the equality of individuals (egalitarianism), providing sufficient services to meet people's basic needs (sufficientarianism) or increasing the benefits to people (utilitarianism). A combined 'Right to the City' approach (see Lefebvre, 1968; Harvey, 2009) advocates democracy and diversity as a prerequisite for more just cities—beyond the capitalist production of space—and seeks to ensure that all people in the city have the right to physically enter, occupy and use urban spaces and participate in urban life. For urban transport, this means that transport resources and investments should be equitably distributed for a general social benefit. Additionally, a 'spatial justice' approach (see Soja, 2010) recognises that poor and marginalised groups are often disadvantaged not only in terms of access to or financing of public transport but also in terms of more general patterns of discriminatory investment in infrastructure projects, such as the location and development of housing or health facilities. Despite this evidence, most current transport planning is focused on solving problems such as congestion, air pollution, rising costs or poor service levels, and entails a distributional justice approach that treats transport as a sector separate from other areas of urban development.

Focusing on how the governance and control of movement influence the (im)mobility of people, goods, resources or information, the concept of 'mobility justice' (Sheller, 2018) offers a theory that looks at urban transport while considering processes on different scales, and the variety of relationships within them. It forces us to ask who is involved in the decision-making processes, who sets the policy framework and who is affected differently by the outcomes. At the heart of mobility justice is an intersectional approach that recognises the ways in which different social and political forms of discrimination based on gender, race, ethnicity, class, religion or ability intersect. While mobility justice directly addresses inequalities in gendered mobility, it mainly focuses on the impact on passengers or the urban environment, neglecting the role of transport workers. However, transport workers play a central role in achieving just cities, as the outcomes of their ability to participate in decision-making affect their income, socio-economic (in)security and working conditions as much as passengers' experiences and use of public transport (Sgibnev & Rekhviashvili, 2020). Women transport workers' concerns can be addressed through mobility justice by understanding how their freedom of movement, life and work in the city can be reconciled with prevailing social gender relations, and how the working conditions of paid and unpaid (care) work are negotiated and played out on the urban and global level.

Leslie Kern, in her book The Feminist City (2020), picks up on these issues and acknowledges that women "experience the city through a series of barriers—physical, social, economic, and symbolic—that shape their daily lives in ways that are deeply (though not only) gendered" (Kern, 2020, p. 5). Accordingly, the obstacles faced by women in cities can be traced back to the lack of representation and participation of women in planning and decision-making positions and are often not recognised by the primary decision-makers—still predominantly men—in various areas of urban economic policy such as housing, schools, employment or mobility. As a result, the built environment has been structured for centuries in ways that support traditional gender roles and

segregated labour markets, as well as the operation of patriarchal family forms that determine what types of activities are carried out, by whom, where and when. Challenging these restrictions on women and gender-nonconforming body movements, Kern proposes a feminist approach to cities that reclaims "personal lived experiences, gut knowledge and hard-won truths" (Kern, 2020, p. 9) and draws on an intersectional perspective to create just urban environments.

Therefore, from a feminist urban perspective, four challenges arise for women transport workers. First, transport networks are often designed for typical commuters and not for gender-specific travel patterns. Women's journeys are often more varied and complex, involve chaining of trips, and reflect "the multi-layered and sometimes conflicting roles of paid and unpaid work" (Kern 2020, p. 36). Women are not only less connected to public transport, but also more dependent on it, as they have less access to private motorised vehicles or driving licences. Second, the spectre of urban violence against women's bodies limits their choices, economic opportunities and empowerment just as "workplace harassment pushes women out of positions of power and erases their contributions to science, politics, art and culture" (Kern 2020, p. 10). Third, work opportunities for women in the city raise issues of access to the workplace at unusual or non-commuting times, e.g. for early or late shifts, and in poorly connected, if not unsafe, urban environments, as well as reconciling work location and hours with care responsibilities. Fourth, social change in the feminist city relies on protest and union activism. Not only can the improvement of women's lives in cities be historically traced back to activist movements, but women also play an essential role in activism, often maintaining relationships between members and the movement and doing the legwork as well as the physical, emotional and domestic labour.

A SCENARIO FOR THE JUST CITY

Ultimately, the idea of a feminist city is based on an "ongoing experiment for a different, better, and more just life in an urban world" (Kern 2020, p. 175). It is thus a nascent project that relies on small changes rather than a master plan and produces different futures adapted to each place, history, and context. If we combine this vision with the ideas presented by transport union representatives from Latin American cities, we can establish ten key points that define a just future city for women urban transport workers.

Just Cities must:

1. PROVIDE A BETTER QUALITY OF LIFE

Enable citizens to have equal access to urban services, infrastructure and resources, to use urban spaces and participate in urban life. This includes, but is not limited to, access to public spaces as well as public services for care, health and education, employment opportunities, and the freedom and ability to move freely in the city.

2. BE SMART

Planning processes take a bottom-up, user-centred approach, involving trade unions in consultations, negotiations and decision-making on new technologies and involve co-creation that also addresses challenges faced by smart technologies. Smart technologies must be deployed to make women's lives and work easier, and in a way that creates decent and secure job opportunities for women. The identification and removal of barriers in the recruitment and retention of women including challenging occupational segregation and exclusion, and the provision of digital access and education, is central.

3. BE RESILIENT

Resilience to climate hazards and recovery from crises is supported by positive adjustments towards sustainability and transport policies that support operators and workers in rapid change and adaptability.

4. BE SUSTAINABLE

Promote climate policies which improve and expand public transport, including public transport powered by clean energy and technologies.

5. BE INCLUSIVE

Marginalised population groups are visible and part of urban life and work. To achieve this, policymaking as well as financing starts from the embodied experiences and an intersectional approach that acknowledges the particularities of individual experiences by passengers as much as workers and is responsive to a diversity of needs and inequalities emerging from gender, age, race, ethnicity or ability.

6. BE CREATIVE

Facilitate the creation of alternative urban futures and spaces with the active involvement and participation of transport workers, unions and marginalised groups in the transformation of our cities.

7. BE SAFE

Ensure marginalised population groups, including women, can live and work safely, and that public transport is a space free of violence, harassment or abuse.

8. BE EQUAL

Provide dignified, equal and inclusive opportunities for women workers. Through social dialogue, negotiation and consultation between employers and workers, women's voices are heard, and women's rights are respected. Women are therefore found in all professional and political positions and are involved in shaping public transport policy.

9. BE CARING

Provide and facilitate networks of care and support in the workplace and beyond.

10. ENCOURAGE ACTIVISM

Provide diverse channels of civic engagement and encourage activism as a fundamental part of societal change.

CURRENT ISSUES OF WOMEN TRANSPORT WORKERS

While this report focuses on the challenges women transport workers may face in the future, we cannot ignore the issues that these workers face today. Indeed, addressing current problems is part of the foundation for long-term urban transformation. Below we will discuss some of the current issues that were repeatedly identified by the trade unionists and workers interviewed in this research. We refer to ITF reports *Impact of Future of Work on Women in Public Transport* (2019) and *Women in Public Transport* (2021) for further detail.

In a world of general gender inequality, the outbreak of the COVID-19 pandemic has not only highlighted the structural disadvantage of women[4] in terms of poverty, discrimination, violence, health or unemployment, but also marked major regressions in the progress made over the last decade in areas such as labour force participation or gender-based violence in LAC. Violence against women has increased at an alarming rate since the beginning of the pandemic, with domestic violence emergency calls rising between 25% in Argentina and 91% in Colombia (García, 2021). On top of the domestic insecurity women face, public spaces in cities—including public transport—rarely provide a safe and accessible environment for women.

Since, as Kern (2020) argues, women's experiences of urban violence and perceptions of fear limit their power, choices and economic opportunities, and are therefore a way for patriarchal structures to dominate and control women's movements, "any attempt to improve urban safety has to grapple with social, cultural, and economic elements as well as the form of the built environment" (p. 157). For this reason, a 'designing out fear' approach, as often used in transport spaces, is not enough, because public transport is still a hotspot for harassment and assault despite alarm systems, bright lights and surveillance cameras (Kern, 2020). An issue particularly salient within the LAC, where Bogotá was named as the city with the least safe transport system for women in an international comparison and Mexico City had the highest fear scores among female passengers: three out of four women feared sexual harassment, abuse and violence (Goldsmith, 2018).

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4. The gap is even greater when we acknowledge the intersectionality of indigenous women, African American populations, older people and/or people with disabilities that have limited access to social protection, health, information, services or justice (García, 2021).

Existing problems may be exacerbated for women who *work* in public transportation. The transport sector reports relatively high levels of violence against workers in the form of harassment and bullying, which tends to affect women more and which they experience as a "gendered amplified" barrier to working in the sector (Turnbull, 2013). Women interviewed for this research confirm the sexist and chauvinist work culture, which is compounded by the lack of education and training opportunities to support the career development of women workers and the outsourcing of service jobs to private companies, often offering more precarious working conditions than the public sector (e.g. the Mexico City metro).

Additionally, women often struggle to reconcile work and care responsibilities, as time spent travelling around the city - often with several stops in between for household and care tasks, which are often placed on women - is seen as a major obstacle (Goldsmith, 2018). This list of barriers to entry into and progression within the sector drives women workers into a vicious circle of insecurity, both in their professional and personal lives. Thus, women are simultaneously underrepresented in the transport sector and in some—usually better paid—functions (see **GBOS**) and overrepresented in the informal sector, where flexible working arrangements are more compatible with care responsibilities (Wright, 2018; Hiramatsu, 2021).

Over the last two decades, however, there has been a trend across LAC cities to formalise the existing informal mass transportation sector, often ignoring the informal work that many women performed. Through public-private partnerships, such as the construction of bus rapid transit (BRT), governments sought to increase efficiency, gain control over traffic congestion, reduce negative externalities, and address issues such as unsafe conditions or pollution (Paget-Seekins & Tironi, 2016). A concurrent trend is the outsourcing of services such as ticket control, fare collection, or technical services to private companies (e.g., Recaudo Bogotá S.A.S) or under public-private partnerships (e.g., TransMilenio S.A in Bogotá). Women mainly perform these outsourced and often precarious jobs (Dobrusin, 2022).

While these formalisations have led to the integration of various existing transport systems, institutional integration remains elusive, as national governments and city administrations lack clear visions for integration and sustainability to ensure the support of all stakeholders. In addition, integration is hampered by the reluctance of individual public transport operators who see their business model as directly affected by multimodal pricing and payment systems, a high degree of informality, and the involvement of several individual parties (Martínez Toro et al., 2019). To transform informal owner-operators into professional bus companies providing services to the state within the BRT framework, cooperation was encouraged or enforced. However, tenders for service provision often favoured large investors. The bids to operate the TransMilenio service in Bogotá, for instance, concentrated the public transport system in the hands of a few families, while excluding existing bus owners from the process (Paget-Seekins, 2015). For more details on worker-led formalisation, we recommend ITF report *A just transition for urban transport workers* (Dobrusin, 2022) and *BRT and the formalisation of informal public transport* (2019).

Finally, public transport workers are subject to strong health risks, exacerbated by the lack of drinking water or safe and clean sanitary facilities. For example, elderly cab drivers expressed concerns about their renal function because of the limited amount of drinking water they can consume due to the lack of accessible toilets (Hiramatsu, 2021). The outbreak of the COVID-19 pandemic has increased the workers' exposure to disease and health risks[5] and extra tasks they had to carry out, whether through additional safety and hygiene measures or by taking over shifts from sick colleagues, which affected their mental health. Although having been fighting for the basic needs of workplace health and safety, the accessibility to clean and safe sanitation, drinking water, and PPE for years, union representatives continue to fight for these basic amenities to keep workers well in their workplace.

5.   In Mexico City, as the union for workers in passenger transport STTP communicated in a letter to the public, 250 workers got sick and 41 died from COVID-19 (STTP, 2021)

DRIVERS OF CHANGE: WOMEN WORKERS' EXPERIENCES

Beyond the current issues women workers face in cities, future developments rooted in smart or sustainable city visions—some of which are already underway or have taken root—will pose novel challenges for women transport workers.
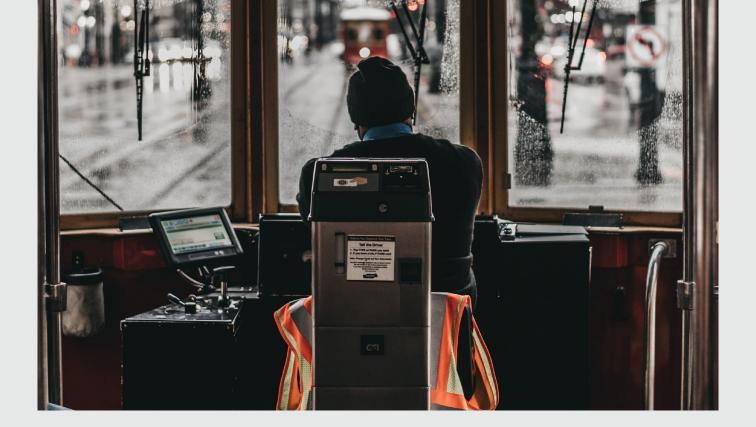
SMART CITY VISIONS AND TECHNOLOGIES

Smart city technologies, broadly defined as a set of technological innovations related to the increased use of digital data, are being deployed worldwide with the aim of improving services, sustainability and safety. Most smart city initiatives are based on tracking and analysing big data and are linked to the Internet of Things (IoT), artificial intelligence (AI) or algorithmic decision making (ADM)[6]. In public transport, this has been translated in recent decades into intelligent transport systems (ITS) based on virtual data exchange between different actors in the network and real-time tracking of vehicles through the city based on data from sensors or GPS signals to optimise traffic and the use of resources (Mehmood et al., 2017). In addition, smart city technologies offer the potential to automate driver and operator tasks, improve demand response and capacity sharing platforms, increase co-modality or inter-modality of transport modes and create new vehicle types for mixed passenger and freight use.

Within this context, Mobility-as-a-Service (MaaS) is estimated to experience strong growth in LAC. MaaS refers to various applications that enable the design of personalised and flexible mobility solutions that include transport services, such as applications for ride-hailing, ride-sharing, car or bike rental and shuttle services. In cities in LAC, ride-hailing platforms have gained popularity since 2012 with the introduction of apps such as Cabify or Uber in Mexico City or Bogotá. In addition, several transport operators offer real-time passenger information and mobile apps that allow monitoring of services, planning of trips or reservations. In Mexico City, for instance, it is possible to follow the status of the underground on Twitter, and cities like Bogotá and Rio de Janeiro offer web-based systems that allow real-time monitoring of the public transport network.

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6. For a broad account on the potential (negative) consequences of ADM on transport workers, we refer to Chapter 5 of The ITF People's Public Transport Policy: "Worker control of technology: the smart city".

MaaS services are often introduced with the promise of providing a smoother, more reliable and safer journey for passengers while improving urban mobility services and encouraging a shift to greener modes. Smart technologies also benefit transport authorities and operators as improved management of mobility systems leads to reductions in road maintenance costs, traffic accidents or energy consumption (Martínez Toro et al., 2019; Vassallo & Bueno, 2019). A comparison of Latin American cities with so-called smart and digital cities in Asia, Europe and North America has shown that the integration of public transport systems is progressing less rapidly, especially in terms of the application of ICT infrastructures, the adoption of public policies and green strategies enabling growth of smart mobility, and the financing and management involved. While the need for more inclusive and sustainable transport programmes is recognised in the region and various technologies are being gradually introduced, several factors are slowing down change, such as the less developed fixed and mobile phone capacity in the region and the limited use of bank accounts, credit cards, smartphones and the internet by public transport passengers (Martínez Toro et al., 2019). For transport workers, smart technologies offer new opportunities, such as making drivers' jobs more accessible, but also new challenges. For women transport workers, the introduction of smart city technologies has implications for job availability as well as job experience or quality and employment processes, i.e. recruitment.

Job availability

The automation of user services and interfaces, as well as ticketing systems with smart technologies (e.g. automated ticket vending and cashless payment with top-up cards or mobile devices), is one of the biggest challenges already facing women transport workers in LAC. Not only will this continue to affect job opportunities in the future—the transport sector being particularly vulnerable to automation (Dellot & Wallace-Stephens, 2017)—but it will also disproportionately affect women workers, as they are overrepresented in most of the occupations at risk of automation. In Mexico City, for instance, 55% of women employees on the trolleybus work in the operation support and money collection. In addition, the introduction of ITS to improve the service of company-operated buses and the BRT system led to women being replaced in informal jobs, checking bus timetables and counting passengers in minibuses, and the introduction of self-service ticket vending machines displaced women as fare collectors in minibuses (Wright, 2018). In Bogotá,

a union representative observes, "the introduction of new technology at the different stations [...] is replacing labour, women's labour especially. [...] Thus, at a station where there were five or six women workers, now there are two or three colleagues."[7]

In addition, smart city visions push for the development of self-driving and automated vehicles as they could reduce energy consumption and have a positive impact on the environment, service costs and driver jobs. Although small public transport operators in European cities have deployed various forms of automated shuttle buses, and Singapore trialled its first full-size automated 12-metre bus in 2019, the consensus is that the high initial financial cost of fully automated vehicles and limited operational capabilities will continue to limit the use of automated driving to low-speed and segregated road environments (Tirachini & Antoniou, 2020). Vehicle automation would pose a challenge to women transport workers, as it would replace the few remaining informal employment opportunities often occupied by women, as well as flexible platform work, and women in operational or supervisory positions who do not enjoy union protection would be more vulnerable and at risk of wage cuts.

Overall, these challenges reflect broader patterns in the transport sector and region: labour substitution through automation is estimated to increase and be higher in developing regions, as a greater number of jobs that depend on technical skills can potentially be automated. Experts also acknowledge that there is a technological bias against low-skilled and low-paid workers, with low-paid jobs five times more at risk of displacement due to the development of AI and robotics, which has a disproportionate impact on the availability of jobs for women workers. Looking ahead, however, experts predict that automation will not lead to a sudden and rapid elimination of jobs, but rather a steady reshuffling of the workforce over a period of decades, providing an opportunity for policy intervention and workforce preparation (Dellot & Wallace-Stephens, 2017; Lawrence et al., 2017).

Job quality and experience

For women transport workers, automation not only means an increased risk of being replaced, but also changes in tasks and quality of work, the effects of which are already being noticed in three ways.

Firstly, the replacement of ticket sellers and fare collectors with automated ticket systems has left the remaining colleagues with increased workload and stress, having to deal with more passengers as well as increasingly dissatisfied and angry customers. A union representative from Colombia explains that "at a ticket office where there used to be three or four people, there's now no more than one person to deal with 10,000, 5,000, 1,500 people per day. It's tough. As women workers, that is affecting our health more than anything. Because if there's just one person handling that workload, she cannot even go to the bathroom, meaning [she's] totally overworked."[8]

As a direct effect of automation, social skills, which are often necessary but not recognised as an essential part of women's work in transport, are strained. The example of Metrolínea in Bucaramanga shows that "ticketing or top-up workers, women like us are affected in how people systematically treat us, because [...] the first person who is blamed, the first point of contact for the passenger, [is] us, the ticketing staff. So, [if.] the system doesn't work well or offer a good service, which is then expressed in how workers are treated—or mistreated—by passengers."[9]

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7.   Union representative, SNTT Colombia, Interview on 23.11.2021.
8.   Union representative, SNTT Colombia, Interview on 23.11.2021.
9.   Union representative, SNTT Colombia, Interview on 23.11.2021.

Secondly, the increased use of AI and robotics enhances the employers' control over day-to-day tasks and as such creates an unhealthy degree of monitoring in the workplace (Dellot & Wallace-Stephens, 2017). Note that surveillance and monitoring is already taking place. In Mexico City, for example, it is reported that: "On the light train, we have monitoring via a black box […] any error is recorded in that little box and constitutes evidence against you. Obviously, they punish you or, depending on the gravity of the event, they can even sack you. […] As light train operators we've always had such monitoring [but] that didn't exist for the trolleybuses […] with the technology, these new units now come with cameras, one in the front section and one in the rear section. Initially, the cameras are to look after passengers, as they also have cameras in door sections where people get off […] as time has gone by, we've realised that they're also being used to check if someone is doing something wrong or is lying […] In that regard, we therefore feel that technology introduced in the form of cameras is now used for supervision more than anything, so as to ensure operators handle vehicles properly."[10]

For these reasons, monitoring workers through tracking and surveillance devices is already a major concern for union representatives. AI could take this to a new level of intensity, for example with sociometric badges based on machine learning that record the speed, tone and volume of voices but not the content of workplace interactions. In particular, women in jobs with male supervision are at risk, as research has found that gender-based harassment in the transport sector also takes the form of male rejection of women doing previously 'masculine' jobs and the intention to bully or harass women out of the job (Wright, 2018). For example, safety cameras are seen by many women drivers "as a tracking tool […] constantly watching us to see if we make a mistake [and] not used for the purpose they should be used for, which is to improve the system."[11]

Thirdly, the development of algorithmic decision making (ADM) through collected Big Data and thus the development of machine learning may imply that more and more work as well as decisions can be taken over by computers. As a result, workers can become victims of machine decisions and scapegoats for computer errors, or employers can hide behind machine decisions and not be held accountable for decisions that affect workers. Despite potential drawbacks, smart technologies also entail potential benefits—if deployed well. For example, they can humanise workplaces by eliminating mundane tasks and creating space for more intellectually stimulating work (Dellot & Wallace-Stephens, 2017). In ticketing, this could mean a shift away from sales towards customer care and service tasks with a wider range of services (including long-distance train and travel bookings). With the right measures, monitoring devices could also relieve the burden on staff and support women workers in claims of unequal treatment or harassment at work. In addition, vehicle tracking and security cameras can be a valuable addition to passenger information and help create a safer transport environment for women workers and passengers.

Recruitment

AI and robotics can make it easier or harder for women to access jobs. Well-designed **digital platform**s with appropriate matching strategies can connect women with job and training opportunities that match their needs and skills. In addition, HR departments are increasingly relying on algorithms to screen applicants before interviews. The AI-based recruiting software will streamline and change the current processes of employment. For employees, it changes both how they are hired—algorithms could reduce or potentially eliminate bias—and what it means to be an employee. For employers, this means lower costs, better job matching and faster hiring. Certain

10.   Union representative, ATM Union Mexico City, Interview on 22.11.2021.
11.   Union representative, ATM Union Mexico City, Interview on 22.11.2021.

tools are intentionally designed to help employers meet diversity goals. Furthermore, digitalisation can create a market for positive outcomes for women if it enables and is used to measure gender issue across the city. The data collected in a city on gender inequalities can be used to move things in a way that is beneficial for women, such as incentivising good employers, transparency in salaries across sectors and occupations, union density, tax payments and more.

GreenMóvil—an operator starting up in Bogotá, whose entire bus fleet is electric—could benefit from such a tool. "At the moment, [...] they have 1,200 vacancies for workers, but [...] they would like 50% of those vacancies with this new, environmentally-friendly operator to be filled by women, yet neither men nor women have wanted to apply. [...] They've only hired 300 workers so far to fill the 1,200 vacancies, but this involves very few women."[12]

However, while employers might better meet their diversity targets through the right software, the danger of ADM in recruitment processes is still high: studies found that shortlisting software actually exacerbate biases if trained on data that reflects previous hiring decisions and that the use of algorithms in CV screening can amplify biases, blocking people from employment due to ethnicity, gender or age. AI employed in recruitment processes, for example at Amazon, has "taught itself that male candidates were preferable" and consequently downgraded every element including 'women' in the application (Dastin, 2022; Dellot & Wallace-Stephens, 2017).

Furthermore, expansion of the gig economy is made possible due to increasingly sophisticated algorithms that, for example, predict passengers' mobility demands (e.g. Uber) or coordinate pick-up and delivery routes of drivers (e.g. Deliveroo). The uberisation of transport work offers potential for women to find flexible working contracts and independent work. However, recent studies have found that the reality for women working in the gig economy remains challenging (e.g. Hiramatsu, 2021), and so far does not show potential to bridge the gender gap (see Cook et al., 2018; Hunt & Samman, 2019).

12.   Union representative, SNTT Colombia, Interview on 23.11.2021.

SUSTAINABLE CITY VISIONS

With the proportion of the population living in cities doubling in the second half of the 20th century from 41% in 1950 to 81% today—expected to increase to 89% by 2050— LAC is one of the most urbanised regions in the world. At the same time, economic activity in the region is highly concentrated in urban centres, with about 60% of regional GDP generated in cities. Thus, cities are key to the diffusion of innovation, the creation of knowledge, the concentration of skilled labour, the development of dynamic economic activities, and the provision of educational, cultural, and recreational services (Findeter, 2013). Despite this potential, however, cities are vulnerable in the wake of the climate crisis. In particular, the situation of urban women, already disproportionately impacted by poverty and health issues, is exacerbated by climate change (Arora-Jonsson, 2011).

As a response to the need for urban development across cities in LAC and to address the challenges of rapid urbanisation and climate change, the Inter-American Development Bank (IDB) launched the Emerging and Sustainable Cities Initiative (ESCI) a decade ago (Office of Evaluation and Oversight, 2016). The initiative, aiming to help cities steer their economic and population growth towards more sustainable solutions, defines a sustainable city as one that provides a high quality of life for its residents, reduces its impact on the natural environment and has a local government that is fiscally and administratively capable of sustaining its economic growth and fulfilling its urban functions with broad citizen participation.

As part of this initiative, urban sustainability analyses and action plans have been carried out in multiple cities across LAC. In Colombia, Law 1083 of 2006 already stipulated that municipalities with more than 100,000 inhabitants must draw up and adopt mobility plans to give priority to alternative modes of transport (González, 2011). The visions for the sustainable city developed in the action plans for Bucaramanga and Barranquilla, for example, include developments in the transport sector, such as strengthening the capacity of urban transport authorities and coordination between different municipalities; developing and implementing urban freight logistics management plans that facilitate the supply of goods and services; and promoting sustainable mobility networks, such as cycling and walking. Although transport and inequality were among the top four priorities (along with land use and water) in 13 action plans prepared for cities in LAC, only six cities included inequalities in the investment budgets. Moreover, the issues raised relate to *socio-economic* inequalities, while gender issues were mostly excluded and absent from the debate. Yet, visions of a sustainable city affect women transport workers in at least five ways.

First, to adapt to the new challenges of urbanisation and growing cities, many local authorities are adding new lines or new modes of transport to the existing transport network. In the cities of the Global North, the reintroduction of trams into urban networks is used as a form of urban regeneration, underpinning a vision of sustainable and modern transitions. Rather than reducing traffic congestion or promoting socio-spatial integration, flagship transport projects, such as high-speed trains, subway lines or tramways, are an expression of worlding, a process in which public transportation acts as an image-shifter from congested megacities and urban marginality to world-class cities, redefining who (and who does not) have access to these newly branded urban cores (Beier, 2019).

Examples of new infrastructure projects in Bogotá include the TransMiCable, a gondola lift system with the aim of creating complementary transport connections to the TransMilenio, as well as a new metro. Unions in Mexico City have so far reacted positively to extensions of the metro network, focusing "on protecting [or] even pushing for the creation of new lines [...], [campaigning] for the extension to allow access to more areas of the Mexico City conurbation". The union, therefore, sees potential for women workers to "participat[e] in these extensions, precisely because they have all the knowledge [...] it could involve the participation of those workers, men and women alike."[13]

Second, smart sustainable city visions rely on the adoption of clean energy technologies in the transport sector (González, 2011). In most Latin American cities, this currently translates into testing new electric vehicles (EVs), such as the Volvo buses in Colombia, and electrifying the existing fleet. While 406 electric vehicles have already been purchased in Bogotá and 193 trolleybuses in Mexico City in recent years, it is estimated that by 2025 about 5,000 electric buses will be bought per year throughout the region. Studies assume that the electrification of the vehicle fleet can have a positive impact on the employment sector, as sustainable transport offers employment potential and investments in transport infrastructure create jobs. Accordingly, a 50% conversion to electric vehicles would create 10 million new jobs (Pek, et al. 2018).

However, this has not yet translated into reality, but rather the opposite: in Bogotá, the hasty introduction of new electric buses and other electric vehicles has meant that the local government has hardly consulted with the unions, the transport company or citizens. Despite the union's pleas for a just transition, the municipality refused to hire the workers directly and insisted that drivers be hired from private contractors, delaying the project and laying off 6,000 workers from the traditional bus system (Dobrusin, 2022). Besides workers' displacement, (hasty) electrification has other pitfalls. An "EV lock-in" would involve multi-layered environmental and social problems, such as increased demand for resources and energy, an increase in car use and thus displacement of space for more sustainable forms of mobility, such as cycling and walking, as well as high traffic volumes and traffic accidents (Henderson, 2020).

For women workers, the introduction of electric vehicles has additional implications. Previously, driving a (trolley) bus was seen as a man's job, as certain tasks involved technical skills and some muscle power. This perception has changed with the introduction of electric vehicles, which are generally more safe for workers (and passengers), and are less physically demanding. A worker from Mexico City explains:

> *"In practice [...] if the trolleybus breaks down, you have to get out of the vehicle and lower the trolley poles so as to detach them from the power line. And [...] with the old vehicles, [...] it was really hard to haul the cable. You didn't need to be very strong, but you had to perform a certain manoeuvre, and that would sometimes become difficult. Even male comrades would hurt their fingers doing those manoeuvres, and we'd say that if they, who had the strength and perhaps greater expertise at hanging – because you have to hang or run – well, we thought women would find it difficult. But the training is the same now [...] for both sexes."[14]*

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13.   Union representative, SNTSTC Mexico City, Interview on 23.11.2022
14.   Union representatives, ATM and SNTSTC Mexico City, Interview on 23.11.2021.

In other cities, such as Mumbai, Gothenburg or Tbilisi, the introduction of new electric buses was taken as an incentive to specifically train women drivers. Yet a similar effort in Ghana did result in the number of women bus drivers increasing from 24 to 75 immediately after the program, but the women did not stay in the job, because they did not feel welcome in the traditionally male-dominated work environment and profession, were discouraged after accidents, and lacked the support system or workplace facilities to coordinate their caregiving responsibilities (Montague-Nelson 2021).

Third, most action plans for sustainable development in LAC cities include a vision of strengthening public transport through integrated networks. This means both integrating the ticketing and payment systems and the use of ICT, as well as an institutional integration of different transport modes. In combination with emerging approaches of Transit-Oriented Development (TOD), aiming to coordinate transport investment with land development, this will shape the future of cities and have several implications for (women) transport workers.

On the one hand, relying on smart city technologies, informal networks can be integrated into the public system, replacing small and medium-sized operators with large national or transnational operators. In Mexico City, for example, digitalisation enables the measurement of actual traffic flows in the city, making it possible to produce maps of informal and formal transport (Bihr and Figueroa, 2020). On the other hand, TOD has the potential to benefit transport workers as investment in public transport not only creates additional job opportunities, but also improves accessibility to peri-urban areas, creates multi-modal public transport hubs and provides affordable housing. In theory, TOD is aimed to create a vibrant environment for residents and workers with different incomes and life experiences, leading to greater integration and opportunities for women who work and live outside the urban cores.

However, previous examples have shown that TOD in reality poses many risks, including increasing property values in the areas, gentrification and a rather homogeneous group of (high-income) residents. The experience of TOD in Latin American and Caribbean cities such as Bogotá, Quito, Curitiba and Guatemala City has in many ways reinforced the patterns of spatial segregation already present (Rodríguez, 2021).

Fourth, plans for sustainable cities of the future include reducing emissions and the need for motorised transport by shifting to active mobility, such as walking and cycling. One way of achieving this is by creating multi-modal transport hubs, which aim to connect small neighbourhoods with larger (inter)regional areas and offer passengers a way to switch from public transport to collective transport or micro mobility services (e.g. car sharing, bike sharing, e-scooters) available 24/7.

The Bucaramanga Action Plan in Colombia aims to strengthen public transportation while promoting cycling by integrating the existing metro line with other collective transport systems, developing complementary strategies for shared lanes, and promoting sustainable modes of transportation, including bicycles, public transit, and car-sharing (Findeter, 2013). In response to a new sustainable mobility initiative, Mexico City offers both bicycle and car-sharing services through a private company (*autocomparte*). In Lima, the municipality of San Isidro developed a bicycle service system with benefits for owners of businesses participating in the mobility agreement developed by the city (Martínez Toro et al., 2019). Bogotá is also increasingly promoting cycling as an alternative mobility option. During the pandemic, the bicycle network was expanded to become one of the most extensive in LAC and one of the largest in the world. By 2024, 280 km of additional bike lanes are planned to cover 50% of trips by bike or alternative transport modes such as e-scooters, making the city a global reference for alternative mobility (Allenby, 2021).

Fifth, another vision that promotes cycling and walking in cities is the 15-minute city, which has been initiated in smaller European cities in recent years. Pioneering this idea in LAC, Bogotá is currently planning to become a 30-minute-city (López Hernández, 2021). Rather than designing large-scale transportation networks, the city aims to create sustainable neighbourhoods where public services and spaces, including housing, education, health, and employment, are available within 30 minutes and connected by green corridors where pedestrians and bicyclists have priority. The goal of this vision is to reduce the average time it takes to get to and from work—about two hours for many residents—while also reducing the amount citizens spend on transportation.

Both issues are faced by women workers in other LAC cities, such as Mexico City, where "the traffic is chaotic. [...] This means that travelling from one point to the other takes up to two hours or more", explains a union representative. Workers, thus, "spend more time travelling than working, and obviously [having] little spare time for leisure, for relaxation or even for healthcare, as you are completely stressed out on arrival because you had to deal with so much traffic. I believe that the project [of a 30-min city] is a very interesting one and [...] would be very beneficial, especially to achieve an optimal quality of life for workers or indeed for all citizens, which we've not been contemplating."[15]

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15.   Interview with union representative, ATM Union Mexico City, 22.11.2021.

Women workers in particular, who are often affected by long commutes, suffer in terms of health and quality of life. Planned with 'typical' commuting behaviour—coined male, able-bodied and working—in mind, transport networks are often difficult to access beyond city boundaries and regular working hours and potentially more expensive for women with more complex and diverse travel patterns. This makes the commuting for women transport workers difficult, inaccessible and unsafe. Apart from the potential reduction of commute times, the visions of the 15- or 30-minute city are based on strong public participation, with policy decisions being made with the involvement of a wide range of stakeholders, including residents, workers and trade unions.

Overall, there is a variety of approaches to achieving sustainable cities, starting with the planning or design of urban spaces and networks or with the creation of incentives to change the mobility behaviour of city dwellers. Women play a fundamental role in shifting mobility patterns towards more sustainable solutions. Research has shown that women are more willing to adapt their travel behaviour and accept that action is needed to make the transport sector more sustainable. Kronsell and colleagues (2016) point out that masculinity is the accepted norm in the transport sector, i.e. the natural order that is often not challenged, the standard to aspire to in an equal society. In the context of climate change and the transition to a more sustainable society, a masculine norm—more and more mobility and use of cars—would lead to a "catastrophic scenario" (p. 706). Incorporating the experiences and practices of women workers into visions for the future of the city and creating greater gender equality brings not only benefits but also success in achieving the Sustainable Development Goals.

CONCLUSION: MEASURES TO PROMOTE SOCIALLY JUST AND FEMINIST CHANGE

Based on the challenges that future women transport workers will face, we used the literature review and interviews to develop a list of actions to help transportation unions, workers, operators and local governments make demands and advocate for socially just and feminist change.

EDUCATE AND TRAIN RESILIENT WOMEN WORKERS FOR NEW OCCUPATIONS

The goal of just and feminist cities is to create a workforce that is resilient to crises and technological change, and to promote smart city technologies without replacing labour, while promoting gender equality. Newly introduced smart technologies and clean energy vehicles are transforming the work of drivers and operators, providing new opportunities for women workers to enter the labour market and take on different roles that challenge gender-based occupational segregation.

Training and development opportunities should focus on building the skills and capacity needed for the technological and organisational changes that accompany visions of smart and sustainable cities. In Mexico City, for instance, union representatives advocating for training women drivers state that "initially [there was] a barrier to women being employed on trolleybuses [because of] mechanical issues [and] male comrades [that] had already been involved in a series of accidents—they'd hurt their fingers or hands while lowering trolley poles." However, nowadays "with the new technology, it involves nothing more than pressing buttons, and we feel that [training] would be easier for women, not because they couldn't do it, but because risk alleviation is also involved."[16]

16.   Union representative, SNTSTC Mexico City, Interview on 23.11.2021.

Promoting the resilience of women workers and addressing the systemic exclusion of women from decent and safe employment not only requires training and development opportunities for women seeking to enter the labour market, but also opportunities for training and upgrading the skills to technological changes for current workers seeking to secure employment in the future. To date, many workers in low-paid occupations with low technological skills or little education have never received professional development opportunities. Therefore, both employers and governments have a responsibility to support lifelong learning (Dellot & Wallace-Stephens, 2017).

Training for the existing workforce should focus on the transition from jobs threatened by automation. Some transport companies and enterprises already provide training opportunities preparing women workers to find alternative, more stable employment within the same company. SNTT in Colombia, for example, "offers women workers [...] to be relocated to other duties within the same company or within the same system—transferred to bus driving for instance—[so that they are] retrained or switched directly and not just automatically have their contracts terminated."[17] Similarly, in Mexico City, ticket sellers can be trained to move into administrative roles. For successful implementation and sustainability of transition through training and education, union involvement is fundamental. In Mexico City, transitions are regulated by an internal agreement between the union and operators, thanks to which the union can ensure workers can "switch from one area to another [...] with some extra training, as we've been doing with our ticket clerk comrades on the light train, for example."[18] Representatives of the metro workers acknowledge that, thanks to a long struggle and the collaboration with educational institutions, workers' training has culminated in qualifications for new jobs and "women are in the position where they now find themselves. Before, there were categories that were filled exclusively by men, but, little by little, through training, these new opportunities have been created."[19]

With education and training opportunities, women can secure more stable employment conditions, as well as enter "areas that were previously the sole preserve of men so that women can make the best of themselves in those positions [and] thrive in those areas."[20] Indeed, preparing women for professions in policy design and urban planning as well as engineering, implementation, management and maintenance of public transport, provides platforms for the recognition, integration and mainstreaming of gender concerns into future city visions.

17.   Union Representative, SNTT Colombia, Interview on 23.11.2021.
18.   Union representative, ATM Mexico City, Interview on 22.11.2021.
19.   Union representative, SNTSTC Mexico City, Interview on 23.11.2021.
20.   Union representative, SNTSTC Mexico City, Interview on 23.11.2021

CO-CREATE AND NEGOTIATE AUTOMATION STRATEGIES AND TRANSPORT POLICIES

Many existing planning approaches, including TOD, involve coordination across different sectors as well as collaboration among various stakeholders (e.g. municipal land regulators, urban development agencies, builders, transport operators, land owners and occupants) (Rodríguez, 2021). While this approach represents a shift from previously rather isolated strategies, the key for feminist and just cities is to move beyond mere coordination and collaboration and towards meaningful and sustainable co-creation that involves advocacy groups, union representatives, environmental agencies and public workers (Leino & Puumala, 2021).

Participating in co-creation processes can pose several challenges for unions.

First, the speed at which visions are discussed, implemented or changed is very high. This poses challenges for accountability and organising new workers, as well as for local governments, which often lack the expertise and financial capacity to keep up with and respond to new technologies and regulate their use and deployment (e.g. regarding data security and protection). Generally, the absence of interventions in policy is most likely to result in an increase of income, power and wealth of private investors, businesses or operators (Lawrence et al., 2017).

Second, new technology often involves actors with whom unions and representatives have not dealt with in the past, such as companies with little interest in or experience with engaging citizens or workers in the process. In the case of online platforms, this has already led to a situation where private operators and investors are interested in higher profits without being accountable to their employees. As a result, workers are increasingly exposed to a corporate management style where the burden of risk is transferred to the workforce (Vassallo & Bueno, 2019; Tubaro & Casilli, 2021).

Third, with the transition periods between contracts and tendering processes, unions often lose their participation and bargaining power. This happened with the introduction of a new elevated trolleybus and cable bus in Mexico City, where there was a "disagreement over the investment that was made [and although] this transport is going to be awarded to our company [...] in two years' time [...] during this time we obviously cannot have any union participation, a factor that as a union we don't feel is very helpful to us. Although it may be a private investment for now, we believe that we must have some input, precisely because these are very promising projects for the city, plus they're innovative."[21]

Therefore, companies and public sector organisations, together with their employers and unions, should develop smart and sustainable development and automation strategies. The benefit confirmed by research is that technology is better adopted in organisations that involve managers and scenario experts in addition to workers in the development of strategies for new technologies. In addition, the co-creation processes offer workers the opportunity to discuss and negotiate working environments and conditions and how the productivity gains resulting from automation and smart technologies can be redistributed, e.g. for shorter working weeks that benefit workers and not just entrepreneurs or investors (Dellot & Wallace-Stephens, 2017; Lawrence et al., 2017).

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21. Union representative, ATM Mexico City, Interview on 22.11.2021.

CREATE NETWORKS OF SUPPORT AND SAFE SPACES FOR WOMEN WORKERS

In recent years, advances have been made in creating safer and less fearful cities, mainly through design measures, such as improving street lighting, removing obstacles or creating easily navigable routes through public spaces and residential areas. The goal of a just and feminist city of the future is that all marginalised populations, including women, can live, work and dwell safely in the city. As safety remains an important issue for many women transport workers, several unions have launched initiatives to combat violence, to learn from each other and understand the scope and importance of the problem. A representative in Mexico City, for instance, learned from other comrades who "have launched their initiatives, including on [...] how to control violence not only at the workplace, but support with violence at home, domestic violence" and reflects, "In Mexico such acts of violence are often overlooked. It's very difficult for comrades, women or men, to mention that they experience domestic violence. [...] It's very difficult to report it, so there's a lot of violence, but we don't denounce it, we say nothing, it's not mentioned, and it's worse at work."[22]

Safety refers not only to the direct impact of violence and harassment, but also to the question of sanitation and safe environments. Here it is fundamental to recognise the various needs of workers of different genders, age and abilities. Women workers do not only need clean and safe bathrooms, but also facilities and spaces to change, rest or breastfeed. Providing these spaces at the workplace is not an impossible task, as Mexico City's subway (Sistema de Transporte Colectivo, STC) has shown.

To support unions' efforts to continue advocating for the provision of clean toilets, safe and suitable spaces, ITF has a sanitation charter (and toolkit for activists), which sets out guidance on what action should be taken by employers and governments. In support of trade union efforts and the ITF's stance to ratify and implement ILO convention 190 to End Violence and Harassment for All at Work—including gender-based discrimination, violence and harassment—further measures can be introduced at local and regional levels. For this, networks of support and exchange play a fundamental role. As previous examples have shown, trade union representatives and workers learn from each other about initiatives that support women in reporting and dealing with violence in domestic and work settings. Targeted training within unions can strengthen women workers' positions and create networks where women can learn from each other and how to defend their rights.

As previous examples in Colombia have shown, trainings to educate women workers about their rights not only serve to educate, but also provide spaces for exchange and support. Similarly, some unions have already taken a step to appoint a women's representative. For the members of the SNTSTC union in Mexico City this has helped them not only to coordinate information and communication with women workers, but also to approach them about "issues, say, about violence, sometimes [...] some problem that women workers have in their work area, we can approach them, and it's really a very valuable asset that's available within each branch."[23]

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22.   Union representative, ATM Mexico City, Interview on 22.11.2021.
23.   Union representative, SNTSTC Mexico City, Interview on 23.11.2021.

In addition to these initiatives taken internally by unions, unions should advocate for and support efforts by planning and management authorities to incorporate gender perspectives and safety audits. Audits offer a tool for planners, providers and sector policy makers to measure policies, resources and systems "to ensure that transport provision meets the needs of women while promoting sustainable development and providing value for money" (Hamilton & Jenkins 2000, p. 1793). In this sense, gender audits, like safety audits as an alternative form, assess urban spaces through the people who actually live, work and reside there on a daily basis. This means that management staff can use the tools provided by the audits to evaluate how the organisation and the environment are meeting the needs of women, to identify priorities for improvement, and to measure progress towards gender-related goals.

SUPPORT FLEXIBLE BUT RELIABLE WORKING ARRANGEMENTS

Beyond networks of support, just and feminist cities facilitate networks of care and offer dignified, equal and inclusive opportunities for women workers. For women to be represented in all professional and political positions and to participate in shaping public transport policy, working conditions and contracts must be adapted to their needs and responsibilities.

In Colombia, the SNTT union is fighting for women workers' rights to reliable and permanent contracts, as many companies in transition are offering only temporary contracts to women workers. This is not a singular case and employment conditions are often particularly problematic for women workers taking on care work. At Recaudo Bogotá, for example "80% [...] are women, the majority women heading households",[24] which means that whole families rely on the income of these women workers.

In addition to financial responsibilities, women are often expected to take on various care responsibilities. In fact, on a global level women still perform 76% of unpaid labour that accounts for approximately 9% of global GDP. Women still bear the main responsibility, and have to balance care responsibilities and paid work. The entrenched gender norms that undervalue the contribution of most women to unpaid care work account for the low participation of women in the labour market as well as the high concentration of women in low-paid and low-skilled occupations. For these various tasks women fulfil throughout the day, they have different travel patterns (more non-work travel, shorter trips, chain trips and run household errands and accompany others), are more dependent on public transport, and use more sustainable modes such as walking or public transport (Barrientos, 2019).

When drafting employment contracts for women workers, it is important that these responsibilities are recognised and that the employment agreements allow women to work and perform caregiving duties without compromising the reliability, duration, or pay of the contracts. Unions should advocate for decent work and labour rights, i.e. minimum wages, working hours and facilities, and flexible working arrangements for women workers to support care work, as well as parental rights – thereby recognising the responsibilities of both men and women in child rearing.

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24.   Union representative, SNTT Colombia, Interview on 23.11.2021.

STRENGTHEN UNION ACTIVISM THROUGH CROSS-SECTORAL COLLABORATION AND POLITICAL ALLIES

In order to promote socially just and feminist change and achieve climate goals, research has shown that it is crucial to increase the proportion of women in decision-making positions across the transport sector and to introduce new ways of thinking and problem-solving (Kronsell et al., 2016).

Much of the current effort by trade union representatives is to find allies in decision-making positions and in politics so that their voices are heard. As the collaboration with decision-makers in the Pacto Historico in Colombia shows, unionists are already engaged in finding political allies for their concerns. Nevertheless, in most places, "women's participation in the political sphere [...] hasn't actually been very good."[25] Political representation and participation is particularly relevant for women transport workers, because "being socialized to go unnoticed affects women's inclination (or lack thereof) to take up public roles and voice their opinions, whether that's through running for political office, becoming a professor, or being vocal on the Internet. This socialization is then aggressively reinforced by the misogynist discourse faced by women who do dare to stand up as individuals" (Kern, 2020, p. 112).

Trade unionists acknowledge that "[...] as women we need to be able to play a more active part in every area: in the political sphere, in decision-making, exerting greater influence over those decisions that imply major change for us as women. Because that is currently lacking: as women we need to participate and to show that we need to be taken into account and indeed to ensure that consideration is given to our rights in such decisions. While it is true that at city hall level projects are being undertaken for 2023 and 2024, the Integrated Transport System overall is not really bolstering the position of women. [...] As women we need to come together so as to be able to demand active participation in all the systems that we see and to be able to assert our rights as women."[26]

25.   Union representative, SNTT Colombia, interview on 23.11.2021.
26.   Union representative, SNTT Colombia, interview on 23.11.2021.

Another form of allyship and support network building that promotes women's participation in the labour force and trade union activism is the promotion of cross-sectoral cooperation. For example, transport unions can learn lessons from the care sector, where the ILO (Adati et al., 2018) is promoting the building of alliances between care workers' unions and civil society organisations representing the counterpart of care work and unpaid care to develop integrated, coordinated, and transformative care policies.

In public transport, cross-sectoral cooperation can take place between workers from different modes of transport, between workers from different companies, across sectors and with workers from the formal and informal sectors. For example, for a trade unionist in Mexico City, it is crucial to exchange with

> *"social initiatives, not only in our own sector or in our own environment, but also in other sectors or on other issues that are useful for us. [...] We have now managed to form an alliance with some bicycle taxi groups. These bicycle taxi groups advertise that they offer a service from the trolley bus, minibus or metro stop to your front door [...]. So they have set up a kind of cooperative, but they want to become a union. They want to change that and they have often approached us because about two years ago they got a proposal from the government to make their service more efficient and cover more logistics for mobility in their city because they tend to operate [...] in the outskirts of the city."[27]*

This cooperation shows not only that the needs and potential of informal transport workers are supported, but also that a support network for trade union concerns and activities has been created. Cross-sectoral cooperation with non-unionised platform workers, workers from other unions or sectors, and community organisations or NGOs is a fruitful way to advance and link workers' rights and union activism.

SUPPORT ALTERNATIVE AND DIVERSIFIED FINANCING OF PUBLIC TRANSPORTATION

A transition to socially just and feminist cities should promote the inclusion of marginalised groups, as well as an intersectional approach to mobility planning that takes into account the mobility needs of different population groups. This requires the recognition that there is no one-size-fits-all solution and that, as decolonial approaches to transport planning show, each place has its own socio-economic and historical context that shape the challenges and potential of urban mobility.

Creating smart and sustainable mobility plans for the future therefore requires thinking about the specificities of each location, the implications of visions for the future and sources of funding. In many infrastructure and mobility projects in recent decades, funding has come from private investors or development banks. For example, for the construction of the BRT system in Bogotá, contracts worth USD450 million were signed with the World Bank for TransMilenio, and the private sector participated in the provision of services. However, investments coming from a financing agency (e.g. the World Bank or IMF) or the private sector often come with strings attached for public transport operators, such as (partial) privatisation or outsourcing, resulting in a loss of control over workers and employment opportunities or security (Paget-Seekins, 2015). Diversifying investment opportunities to support reliable and safe employment conditions for women workers can therefore take two approaches.

27.   Union representative, ATM Mexico City, Interview on 22.11.2021.

First, a gender equality clause can be incorporated into existing institutional frameworks and funding agreements for municipal transport authorities. For example, the funding requirements for the Bogotá Metro project totalling USD400,000 from the Inter-American Development Bank to support the implementation, management, execution and sustainability of the project include a USD60,000 gender equality component. This component to finance the development of a gender mainstreaming strategy aims to ensure women's participation in the work throughout the implementation of the Metro project and to "support consultants with expertise in institutional processes and urban design with a gender perspective" (Inter-American Development Bank, 2022).

Second, workers involved in the creation of alternative financing can participate in smart city technologies through collective ownership. Often, the main beneficiaries of smart technologies are private companies, investors and entrepreneurs, and citizens are deemed to be beneficiaries of improved services resulting from smart city projects. While the introduction of new technologies often involves investment and profits by private companies or operators, the risk and cost of decent work is usually transferred to municipalities or left to workers to remedy deficiencies. This is the case with workers for on-demand mobility platforms, who face algorithmic management at an early stage but are neither explicitly involved in the innovation process nor own the value it creates (Martínez Toro et al., 2019).

As digital technologies can have a destabilising potential and impact on power relations, a democratisation of problem identification, decision making as well as financing, control and ownership of machines and smart technologies is needed. Ideally, this starts with a discussion about hierarchies of needs, services and goals within a city and a free transfer of technologies between cities. Transferring ownership of the technology that creates wealth to workers could be achieved, for example, through the establishment of sovereign wealth funds that invest in corporate assets and new technologies, redistributing power and determining who benefits from the introduction of new technologies. The distribution of capital ownership should ensure that dividends from automation are shared and ownership is democratised through the creation of employee shareholding companies that allow workers to have a greater stake in the companies they work for (Dellot & Wallace-Stephens, 22017; Lawrence et al., 2017). The ITF's People's public transport policy report offers a number of recommendations on procurement conditionality and publicly owned data.

INFORM AND EDUCATE PASSENGERS

Dignified, safe, equal and inclusive work for women workers is also shaped by the interactions between workers and passengers. Measures that can be taken by unions as well as transport companies are information and education campaigns, through which they take an active role in educating passengers and all participants in the urban transport space.

There is the potential to use information campaigns to inform passengers about expected, respectful behaviour, which includes standing in queues, paying for tickets or offering seats to those in need, as well as their responsibilities in contributing to the creation of safe transport spaces. So far, studies have found that information campaigns in public transport have helped to reduce gendered violence and harassment (Lubitow et al., 2020). This education also serves to address broader societal issues. In public transport as well as other public spaces in Stockholm or Geneva, for example, sexist advertising has been universally banned (Kern, 2020).

The automation of ticket sales has led to additional stress and an unpleasant working atmosphere for the employees. This can be countered with information campaigns instructing passengers "not to see the problem directly with the ticket seller, but with information or education, which doesn't really exist here in Bogotá. There is no training or information aimed directly at passengers. Here, the passenger arrives at the station, and that's where they have to get information directly."[28] Although the use of ticket vending machines is inevitable, the frustration of passengers is often left to the workers, while transport operators or administrative authorities rarely bother to take action on the matter. While much could be done to create user-friendly interfaces adapted to the different abilities of users, additional information campaigns can help staff guide passengers in the correct use of vending machines and reduce the stress of navigating smart city technologies.

Information campaigns for passengers and other workers can also be used to educate them about their role in the public sphere. This can be education about the safe and respectful use of shared road space, as has been done in information campaigns in the newly introduced trams in Cuenca (Ecuador),[29] as well as information for passengers and workers about their rights and opportunities to engage politically and make their voices heard, for example through feedback systems or participatory decision-making tools on the premises.

28. Union representative, SNTT Colombia, Interview on 23.11.2021.

IMAGINE AND RETHINK THE ROLE OF TECHNOLOGY AND SOCIAL CONTRACT

To achieve socially just transitions within the development of sustainable and smart cities, there is an additional need to rethink the role technology plays or will play in the workplace of the future. Currently, the argumentative cycle in which automation and new technologies are replacing women workers, hinders an active involvement of these in shaping and co-creating the future, as efforts are spent on solving most emerging puzzles with little foresight. To take part in shaping the future of cities, it is relevant to actively reframe and rethink the role of relations between humans and technologies.

Technological advances can bring challenges to transport workers. For instance, "at Recaudo Bogotá [...] technology is used against workers, as with security cameras, which are constantly watching workers to see when they slip up or make a mistake of some kind. We know that there's a need for such equipment to exist and that these machines are being introduced into the mass transport system and on buses, because we need to make progress as a society, but as we make progress we must also think about progress for workers, so as to ensure that they are not left on the scrapheap by these new machines."[30] But new technologies can eliminate mundane tasks and increase productivity levels, which could lead to higher wages and allow workers to focus on more human-centred tasks beyond the technical capabilities of machines.

The challenge with these innovations is to address economic and geographic inequalities using robots and AI in a way that automates on workers' terms (Dellot & Wallace-Stephens, 2017). By actively involving workers in the strategies for introducing and implementing smart technologies, they can be used to make work easier, ensure greater efficiency and increase safety. A union representative from Mexico City reflects:

> "In a certain way, this technology makes us more efficient and more productive in that we're more aware that we have to do our work well. So, that's the message that we're now trying to instil in new generations – and especially in older workers, as the older ones find it hard to adapt to the technology."[31]

Therefore, the goal of a just city is to find new ways to integrate technological innovations in everyday tasks to support women workers and create friendly human-machine relationships. For trade union representatives, the question of the future of the women workers is also a question of recognising and re-evaluating the importance of human relationships and values:

> "At the end of the day it is always about maintaining your economic situation. But now [...] I think that with this pandemic that has emerged, the primordial things are being taken up again [...] as a priority of concern because it is no longer just about being workers, it is about being human. I think that is also what we have to have as people, to reflect on that part."[32]

29. http://tranvia.cuenca.gob.ec/?q=node/194; http://www.cuenca.gob.ec/?q=node/26949.
30. Union Representative, SNTT Colombia, Interview on 23.11.2021.
31. Union representative, ATM Mexico City, interview on 22.11.2021.
32. Union representative, ATM Mexico City, Interview on 22.11.2021.

Rethinking the future of smart and sustainable cities from an intersectional and equitable perspective goes beyond the question of women's role in transport and aims to rethink the social contract, i.e. the division of rights and responsibilities between workers, the state and citizens, as well as the social division of gender roles. Just and feminist cities of the future will be shaped by innovative ideas and visions centred on the human experience and a higher quality of life and work for diverse populations. To achieve this, freedom of movement and accessibility to key infrastructures and services play an important role. Rethinking the social contract and social gender norms requires innovative ideas for short-term changes, such as ensuring welfare systems that promote labour market flexibility while providing a minimum level of security for workers, as well as long-term changes, such as introducing a universal basic income.[33]

33.   Universal Basic income is a sum of money paid to every citizen on an unconditional level.

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GLOSSARY

Artificial intelligence (AI) describes work processes of machines that rely on (human) intelligence and are implemented in computer systems through the study of intelligent problem-solving behaviour. Advances in AI enable potential automation of a wide range of human tasks.

Algorithmic Decision Making (ADM) is a decision-making process that is automated based on the analysis of large amounts of data with the aim of supporting selection and evaluations in the form of classification, association, filtering and prioritisation.

Automation is a form of digitalisation in which machines, systems or algorithms can be controlled remotely or operate autonomously.

Digitalisation describes the process of transforming something into a digital form, as well as the increasing use of digital technologies, which can be observed in the global economy, society and transport technologies.

'Digital platforms' (also the **'Gig economy'** or **'platform economy'**) are intermediaries that enable and control the flow of information online between consumers, producers and traders, as well as employers and employees. In the urban transport sector, Uber is an example of this kind of platform.

Gender-based occupational segregation (GBOS) refers to the gender differences in professional practice observed in society, both within and across sectors. ITF has moved away from naming GBOS to the systemic exclusion of women from decent, safe work in the transport and logistics industry.

Gender gap refers to unequal outcomes, e.g. in pay, benefits or opportunities, based on gender in the workforce, as well as women's limited access to assets or rights.

The Internet of Things (IoT) is the technology of linking digital services to physical objects or devices and connecting different digital services to send information or networks over the Internet for the purpose of discovery, control and data distribution.

Key workers is an alternative term to 'essential workers' that refers to workers who perform jobs that are central to society but also have the right to strike, from which essential workers are often excluded. Key occupations in which women are significantly overrepresented include personal care workers, cleaners and support workers, healthcare professionals, educators and personal service workers.

Urbanisation is the process whereby a region or country becomes increasingly urban, meaning that a growing proportion of the population lives in urban settlements. Urbanisation refers more broadly to the transition of a population, land use, and economic and cultural activities from rural to urban areas, and thus often refers to changes in land use patterns on the fringes of urban agglomerations where land is urbanised through sale and development for urban purposes.

Smart city refers both to the use of smart technologies (e.g. intelligent transport systems or IoT) in urban environments to connect, network, protect or improve the lives of residents or to facilitate administrative processes, and to the way technology is managed in urban areas.

Transport poverty includes the inability to meet transport costs, lack of access to private motorised vehicles and difficulties in accessing key activities such as employment, health services, nutrition or education, as well as exposure to transport externalities, all of which result in a person being disadvantaged in accessing and moving around the city.

Worlding refers to a place's efforts to create a world-class image, often as an alternative to the image of large, crowded, congested or uninhabitable cities, to promote economic growth, political investment or cultural vitality.

World-making is a collective process of shaping inhabited spaces through symbolic practices and communication. Based on constructivist theory, world-making is a movement away from a single truth about a fixed world towards recognising the multiplicity of truths and contradictory versions of worlds in the making.

WE MOVE THE WORLD