

DOSSIER

Analysing transport from a gender perspective

Análisis del transporte desde una perspectiva de género

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Abstract

Operational safety implies not only eliminating or reducing accidents and incidents in the different modes of transport (air, rail, automotive, maritime, river and lake), but its ultimate aim is to protect the people who use these infrastructures and their services. In this sense, we present here how to approach their study comprehensively and how to use technology as an ally.

Resumen

La seguridad operacional implica no solo eliminar o disminuir los accidentes e incidentes en los diferentes modos de transporte (aéreo, ferroviario, automotor, marítimo, fluvial y lacustre), sino que su fin último es la protección de las personas que usan estas infraestructuras y sus servicios. En ese sentido, se presenta aquí cómo abordar su estudio de manera integral y cómo contar a la tecnología como aliada.

Both perceptions and levels of safety for women and men differ when using certain transport services and/or working in these industries. It is essential to acknowledge that there are distinctions that affect everything from vehicle and infrastructure use to mode of transportation choices, and ultimately impact the likelihood of accidents.

Within this framework, this article provides an initial exploration of the link between safety and gender perspective in transport and its implications for safety, highlighting the potential of innovation to enhance the safety of women in transport.

Transport, Public Life, and Insecurity

Analyzing transport from a gender perspective involves understanding the impact of cultural constructs on our personal and professional decisions. Gender roles traditionally assigned to men and women, along with gender biases and stereotypes, influence the transportation modes we choose, how we use transport systems, and even the decision to work in the transport sector.

These cultural constructs begin with the traditional division that associates men with the public sphere, where visible work, economic power, political participation, and spaces for social exchange are located. Conversely, women are assigned the private sphere with family and domestic connotations, linked to caregiving and reproduction tasks (Delgado De Smith, 2008; Rose, 1993). Because of this differentiation between public and private domains, the "male" dominated public space has become an insecure territory for women. This insecurity is a manifestation of gender-based violence that often disproportionately affects women, ranging from common crimes like theft, to road insecurity and sexual violence, such as harassment or sexual assaults (Falú, 2009; Montoya Robledo, 2019; Soto Villagrán, 2017).

Numerous studies at national and international levels demonstrate that these perceptions of insecurity influence how people move and their effective access to opportunities facilitated by transport (Scholl et al., 2022). In fact, the numbers highlight a clear issue regarding the safety and protection of women in transport. According to a 2016 Thomas Reuters survey, six out of ten women in Latin American cities have experienced a sexual harassment incident in transport, but over 70% do not report the incident. A study conducted by the Inter-American Development Bank's Transport Gender Lab on women's mobility patterns in Buenos Aires revealed that 44% of surveyed female users stated that safety-related reasons discourage them from using public transport. Additionally, the study revealed a normalization of harassment, as while 80% claimed not to have experienced sexual harassment situations on public transport, when analyzing specific experiences

(unwanted touching, intimidating stares, etc.), 73% admitted to having experienced them (Inter-American Development Bank, 2019).

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Furthermore, besides the safety challenges faced by women users of urban transport, there is a similar challenge for women working in the transport sector. For example, women in certain occupations within the sector are at a higher risk of experiencing workplace violence or harassment. This includes women who handle cash or drive buses or taxis, as well as those who deal with frustrated or intoxicated passengers at airports, trains, transport terminals, and ports. This risk is particularly pronounced when women work alone, at night, or in isolated locations such as toll booths or ships. A survey conducted in 2017 among 1,444 women working in the transport sector in Europe showed that more than half of the respondents had experienced some form of violence at work, with 44% reporting incidents within the last year, and at least 20% experiencing five instances of violence (Pillinger, 2017). In Argentina, according to data from the Office for Advice on Workplace Violence and an analysis of reports in 2021, out of 865 consultations, 65% were made by women. In this analysis, the transport sector accounted for the fourth-highest number of reports of workplace violence, at 7% of the total (Tomei, 2018).

This issue of workplace sexual harassment is not isolated and can be observed across various modes of transportation. In maritime transport, for example, an online survey conducted by the Women's International Shipping & Trading Association (WISTA) in 78 countries revealed that 60% of surveyed women had experienced some form of gender-based discrimination, and 25% reported physical and sexual harassment as common issues aboard fleets (Centre Anglo-Eastern Maritime Training, 2022).

Similarly, in aviation, a study conducted among flight attendants in North America and the United Kingdom showed that 26% of flight attendants had experienced at least one incident of sexual harassment in the past year, perpetrated by passengers, pilots, and supervisors (Węziak-Białowolska, Białowolski, Mordukhovich, & McNeely, 2020).

Lastly, it is essential to highlight the connection between road safety and gender. Within gender

stereotypes, women are characterized by lower use of private cars and a higher aversion to risk, as well as being more cautious and respectful of rules. This is reflected in the lower rate of women killed in road accidents, which is significantly lower than that of men. However, it is crucial to note that a gender perspective is often absent from road safety strategies. For instance, data demonstrates gender gaps in vehicle and infrastructure design that directly affect women. A study analyzing road accident data in the United States found that women wearing seatbelts were 47% more likely to sustain serious injuries compared to men under the same conditions (Bose, Segui-Gomez, & Crandall, 2011). Since the 1970s, crash tests have been conducted using male figures, leading to a lack of data on female physiognomy. Consequently, in road accidents, women are three times more likely to suffer whiplash injuries compared to men due to the data gap regarding female anatomy. Although women may have less access to vehicle driving, they are equally or more affected in other roles in public spaces. For example, in Argentina, out of all female fatalities in road accidents in 2019, 45.2% were passengers in cars or on motorcycles, while 24.8% were drivers, 15% were pedestrians, and no data is available for the remaining percentage.

Technology and Innovation for Universal Safety

What can be done to improve the quality of life and safety for women in the transport sector?

We are currently at a critical juncture, with the Fourth Technological Revolution transforming how we move, relate, protect ourselves, and communicate. Simultaneously, we are aware that there are significant gender gaps in our industry, which hinder achieving a more inclusive and sustainable transport system. Therefore, we have an excellent opportunity to harness technology to address the safety challenges discussed earlier.

Firstly, current innovations have facilitated the collection of disaggregated, geolocated, and real-time mobility data. These features have led to the development of multiple web applications driven by transport operators, government entities, and even citizen groups, which enable more efficient and safer use of transportation. For instance, a report from the International Automobile Federation (FIA) in 2016 lists several technological measures that can contribute to reducing personal safety concerns for women. These measures include closed-circuit television, mobile applications, reporting websites, and the use of social media campaigns (Allen & Vanderschuren, 2016). Other innovations include the use of crowdsourcing to create maps of areas considered unsafe, both based on personal experiences

and infrastructure audits. These maps serve as inputs for city policymakers to identify physical and social issues to address.

Indeed, data is the new fuel and, therefore, the primary input for creating more effective public policies to improve the quality and safety of transportation systems for women. However, it is also essential to leverage the new developments stemming from advances in artificial intelligence for the analysis of such data. This is the case with ELSA, a digital tool created by GenderLab and funded by the Inter-American Development Bank, which aims to prevent sexual harassment in workplace environments. The tool measures three indicators: tolerance, prevalence, and confidence. The company's personnel complete a 10-minute questionnaire, which is then processed by ELSA to identify areas of opportunity and potential recommendations for providing an early and accurate response to harassment issues within organizations. Along the same lines, artificial intelligence systems connected to closed-circuit television are being developed to identify risk situations in different public spaces and transportation systems. This technology will enable early alerts in such situations and act as a deterrent to potential acts of sexual violence against women.

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On the other hand, there are also other innovations that may seem straightforward but have a direct impact on safety. Small changes like these affect women's mortality rates in road accidents. An example of this is the recent design of female crash test dummies, developed at the Swedish National Road and Transport Research Institute under the leadership of Dr. Astrid Linder. Currently, the use of female crash test dummies is not mandatory, but several companies are already evaluating their vehicles using these models, which provide better insights into the consequences of a possible crash on the female body and generate disaggregated data to improve vehicle design and have a positive impact on road safety.

To conclude, it is important to note that technology can be an ally or a barrier to improving the safety and protection of women. By itself, it is only a tool for change,

requiring public policies that provide a regulatory framework and ensure comprehensive solutions to the safety challenges that women face in transport. In effect, multisectoral and institutional interventions are needed that go beyond the technological tool and address behavior changes to eliminate gender biases and stereotypes in transport.

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Therefore, the inclusion of a gender perspective to protect and ensure women's safety should begin with efforts to highlight the issue and require the same rigor applied to other factors that affect safety. In this sense, having protocols for handling sexual harassment cases, investigating and processing information, having a comprehensive institutional framework to address these processes, and having gender-sensitive infrastructure, vehicles and procedures are just some examples of actions that will ensure the operation of safer and more inclusive transport for all people.



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