Reframing Transport Modelling through Gender and Care: Lessons from Accra, Ghana

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Summary

Transport systems in cities across the Global South are rarely designed with the needs of low-income women in mind. Yet, these women are among the most dependent on public and active transport, and among the most affected when those systems fail. This policy brief presents findings from the Gender-AIM project, which set out to help ensure that transport modelling tools and policy recommendations better reflect the interests of women with very low incomes in Accra, Ghana.

Five key findings emerged from participatory workshops with 60 women in Madina and Kaneshie. Their daily travel is shaped above all by care responsibilities; walking is the dominant mode of travel, yet pavement infrastructure is perceived to be absent or in very poor condition; two- and three-wheelers are considered unsuitable for many of their needs; sexual harassment and assault on public transport remain serious problems; and participants expressed deep frustration with the arbitrary governance of tro-tro fares and routes. Together, these findings point to a clear message: a just energy transition in transport cannot be designed without listening to the voices of those most dependent on it.

Key Policy Recommendations

- Invest in active travel infrastructure, with pavements as a first-order priority
- Introduce or expand school bus services in response to community-identified routes
- Regulate tro-tro fares and route structures to protect low-income passengers
- Improve transparency regarding how fares and routes are defined, and include petrol-price independence as part of the conversations of an energy transition in transport
- Address gender-based violence in public transport through enforceable policies
- Create programmes with clear targets for women's participation as drivers and operators in public transport



Tro-tro minibus taxi in Accra, Ghana.

Introduction and context

As part of the Southern Partner Fund available from CCG, the Transport Systems team has been working on the Access in Motion (AIM) project to advance work on inclusive, low-carbon transport energy planning in Zambia and Ghana. After initial stakeholder engagement and secondary data review in Ghana, AIM has been working on adapting modelling tools and developing policy scenarios with various stakeholders and policymakers. AIM's work in Ghana has been led by three academic institutions, namely Strathclyde University, Kwame Nkrumah University of Science and Technology (KNUST), and the University of Oxford. The workshops that formed the basis of this report were led by a lecturer and researcher in urban planning from the Kumasi Technical University (KsTU).

One of the main objectives of the AIM project is to "establish gender-sensitive and context-relevant data collection and modelling approaches". The Gender-AIM component is underpinned by this objective and informed by the recognition that transport systems, services, planning, policymaking, and knowledge production have systematically under- and misrepresented the interests of specific groups and genders.

The main objective of Gender-AIM is to gain a deeper understanding of how AIM's modelling tools and policy recommendations can be improved to better represent the interests of women with very low incomes in both current and future transport systems in Accra.

Our work on Gender-AIM is framed under principles of co-production and recognition justice, where outputs are built with a plurality of voices that are recognised as legitimate knowledge holders. Echoing calls to create more inclusive urban spaces, Gender-AIM creates opportunities for people who have been traditionally excluded to share their insights and recommendations with researchers and policymakers. However, due to time and budget constraints, the impact of our efforts is limited and there is room for improvement.

This document includes an outline of the methodology used in Gender-AIM, the main findings from two workshops, and the key recommendations for both transport researchers and policymakers. The policy brief aims to motivate researchers and policymakers involved in CCG and beyond to reflect on ways in which their work can include a wider group of voices and interests.

Aims and Methodology

A set of two workshops was carried out in Accra in late January and early February 2026. Women living in Madina (workshop 1) and Kaneshie (workshop 2) were invited to participate in a daylong workshop to discuss their views on mobility and transport services available to them. The invitation was shared with local leaders who then extended the invitation through their networks. Attendees were provided with breakfast and lunch, and were offered childcare and financial support, where needed. These provisions were offered with careful consideration of Ghanaian cultural norms. A total of 60 women took part in these workshops.

The workshops took place on a Saturday morning from 8:00 am to 1:00 pm. After a brief introduction, the group was encouraged to reflect on current mobility patterns and needs, with some follow-up questions on preferred travel modes, trip purposes,



Participants in the Gender-AIM participatory workshops in Madina, Accra, January 2026.

and reflections on accessibility, gender, and justice. Participants were then divided into two groups, one to discuss a dystopian mobility future and the other to discuss a utopian one. The two groups were divided at random, and interchanged after thirty minutes so that every participant could be part of both exercises. The third stage was a plenary discussion, where participants could share their recommendations with transport researchers and policymakers. The workshops took place mostly in Twi, but a Ga translator was available to support where needed. A detailed workshop agenda has been included in the Annex.

The research team included both male and female researchers from the University of Oxford, Strathclyde, KsTU and KNUST who agreed on the workshop structure and took part in related workshop activities. The workshop was led by an experienced female lecturer and researcher in urban planning from KsTU, with extensive expertise in creating spaces for open conversation and inclusive participation in Ghana. The venue was selected to be a place with which participants were familiar, that was close to their residences, and that had no ties to any governmental institution.

Findings

1. Mobilities of care: transport is not gender neutral

During discussions on mobilities, the centrality of care responsibilities in workshop participants' daily movements was explicit and centre stage. Their trips are frequently undertaken to take children to school, care for elderly relatives, or get provisions for their household. This relationship between care responsibilities and trip purpose has been widely researched and discussed under the umbrella term 'mobility of care' (Sánchez de Madariaga 2013; Plyushteva and Schwanen 2018; Orjuela and Schwanen 2023). The women also raised two additional points. First, the use of transport modes is also affected by care responsibilities as not all modes will provide the same opportunities to, for example, be accompanied by a child or carry groceries. Second, care responsibilities are often associated with immobility, given that the women cannot leave their house unless someone can take care of their children.

Around the world, care responsibilities are disproportionately taken up by women with wide implications for their livelihoods. According to the women in the workshops, their care responsibilities often prevent them from taking

up a job elsewhere, having more time for themselves, or accessing goods and services offered by the city to the same extent as their male counterparts. However, transport policy and research often assume that transport infrastructure and services are gender neutral.

Two main recommendations follow from this first finding. First, there was an explicit call to have dedicated school buses and routes for children. The organisation and regulation of this may entail considerable effort from policymakers, but equally significant would be the benefits to many women in terms of accessibility, time, and improved quality of life. While this was not a suggestion that emerged from the Gender-AIM workshops, active travel alternatives to take children to school in low-income communities have been trialled in other Global South contexts such as Bogotá (Saviera and Oviedo 2025) and Maputo (see the On the Way to School project, for example).

Second, standard origin-destination surveys and transport models often render care trips invisible. The work done by Madariaga (Sánchez de Madariaga 2013; Zucchini 2015) is key to understanding how to bring the umbrella category of care into these surveys. Additionally, having care responsibilities is not typically included as a limit to accessibility, but in our workshops, it was made explicit. Efforts in this regard can be seen in Orjuela et al. (2026), for example, but these need to go much further.

2. Tro-tro fares, routes, and the case for electrification

Participants expressed strong frustration with the lack of transparency in the ways tro-tro fares and routes are defined. In terms of fares, it was mentioned that their perception is that whenever petrol prices go up, tro-tro fares go up, but when petrol prices go down, there is no corresponding drop in fares. In terms of routes, there was



PHOTO: ANTON IVANOV, SHUTTERSTOCK

A woman in a crowded tro-tro.



PHOTO: NICOLAS DE CORTE, DREAMSTIME.COM

Bus and tro-tro station at Kaneshie market, Accra, Ghana.

a general frustration with trip-shortening practices especially in the evening rush hours when, along most routes, what used to be covered by one single trip is covered by two separate ones, implying two different tickets.

Most workshop participants shared that they were already on very tight budgets, which resulted in them walking for most of their trips and limiting their use of public transport. This means this is a segment of the population which is disproportionately harmed by this fuel price and fare volatility. In the search for a just transition, it will be important that these frustrations are considered and addressed in a transparent and just manner.

Including electric vehicles in the public transport network will receive more support from various communities if framed not only as an

environmental action, but as a safeguard against fuel price and fare volatility. However, if this case is to be made, the level of transformation required will involve transparency on fare and route definitions that go beyond changes in vehicle technology. A just transition, therefore, requires technology changes to be matched with governance reforms and procedural innovations as well.

3. Two- and three-wheelers are not the answer

Due to the early success in electrifying two- and three-wheelers in several African contexts, particularly through retrofitting, a dominant narrative has been building that this is an opportunity for African cities to leapfrog towards sustainable mobility. However, for the women in our workshops, these are the least useful modes due to safety concerns, comfort, cargo- and child-carrying capacity, and gendered norms.

This finding does not imply that two- and three-wheelers should not be part of an energy transition. However, both transport researchers and policymakers need to be mindful that their uptake is not gender neutral. Demand modelling, for example, will need to be disaggregated if it is to capture how future scenarios offer different alternatives to different genders. Policies to support electric mobility in these modes should be accompanied by corresponding efforts in remodelling tro-tro or other public transport alternatives so that they cater to the needs of diverse segments of society.

4. Walking is the backbone of their mobility, but Infrastructure fails them

The most frequently used mode of transport by women who participated in the workshops was walking, and yet, pavement infrastructure is perceived to be non-existent or in very poor condition. Although the importance of walking as a mode of mobility is well evidenced, many cities around the world continue to prioritise investments in road infrastructure for motorised vehicles. This lack of investment has implications far beyond preference or comfort. Investment in pavements and walking infrastructure has implications in terms of road safety, air pollution exposure, and more broadly the recognition and empowerment of various communities through the creation of spaces aligned with their interests, needs, and abilities.

Particularly in the Kaneshie workshop, some participants were vocal about the physical strain and pain caused by carrying babies on their backs and highlighted the significant reduction in such discomfort if walking infrastructure, including pavements, were better adapted for the use of prams. Their current practice of carrying infants on their backs is therefore mostly out of necessity and not a cultural preference as it is sometimes framed. The absence of pavements, on the other hand, exposes them to fast moving vehicles on the road.

Improving walking, cycling, and wheeling infrastructure is essential. The utopian scenarios the women developed did not always involve widespread use and ownership of private four-wheeled vehicles. Among the participants, there was a clear understanding that private vehicles may be a solution for some but are not equitable or sustainable at larger scales. Active mobility remained a part of utopian scenarios when accompanied by adequate infrastructure that is safe, well-connected and provides shade.

5. Gender, safety, and power in public transport

Sexual harassment and assault on public transport constitute a very serious problem in Accra, as in many cities around the world. When the topic was raised in the workshops, every participant had at least one story to share with the group. This issue needs urgent attention.

Some of the factors mentioned that make harassment and assault on public transport such a widespread problem are the absence of women tro-tro drivers and conductors, gender-based violence in public space, the lack of codes of conduct for drivers and passengers, and lack of reporting mechanisms in instances of assault or misconduct. Without addressing the problem of sexual harassment and assault, an energy transition in public transport will fail to include those who have systematically been victimised by simply being in public spaces.

Recommendations

The following recommendations for transport researchers and policymakers, while not exhaustive, are intended to result in actionable and measurable positive impacts for women like the ones who took part in the Accra workshops.

For transport researchers:

- Disaggregate travel demand by gender and trip purpose, including care trips, in modelling exercises
- Consider including care responsibilities in accessibility modelling
- Do not treat two- and three-wheeler adoption as gender-neutral in electrification scenarios
- Incorporate pedestrian infrastructure quality into accessibility and mobility assessments
- Use participatory and co-produced methods to generate knowledge and understanding on topics and issues that cannot be captured satisfactorily using travel surveys

For transport policymakers:

- Invest in active travel infrastructure, with pavements as a first-order mobility priority
- Introduce or expand school bus services responsive to community-identified routes
- Regulate tro-tro fares and route structures to protect the interests of low-income passengers
- Increase transparency regarding how fares and routes are defined, and include petrol-price independence as part of the conversations of an energy transition in transport
- Address gender-based violence in public transport through enforceable policies
- Create programmes with clear targets for women's participation as drivers and operators in public transport
- Provide libraries and other community infrastructure to support care systems. A case in Latin America that may serve as inspiration is Bogotá, Colombia, where 'care blocks' have been developed (Montoya-Robledo and Fernández-Gallego 2026; Guevara-Aladino et al. 2024).

Conclusion

These findings from the two workshops with women in Madina and Kaneshie point to a clear message: a just energy transition in transport cannot be designed without the voices of those most dependent on it. For transport researchers, this means disaggregating travel demand by gender and trip purpose, incorporating care responsibilities into accessibility modelling, and resisting assumptions that emerging technologies will be adopted uniformly. For policymakers in Ghana and beyond, it means prioritising investment in walking infrastructure, regulating tro-tro fares and routes transparently, introducing school bus services, and taking urgent action on gender-based violence in public transport alongside, not after, the shift to electric vehicles.

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