

# Promoting Women's Well-Being Through Socially Sustainable Urban Transport: A Developing Country Study

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## ABSTRACT

This study delves into the intricate intersection of sustainable urban transport planning, gender perspectives, and their profound implications for women's well-being. Drawing from comprehensive literature reviews and employing the Analytical Hierarchy Process (AHP), the research investigates the complexities of women's mobility experiences and the design of transportation systems in the context of the city of Amman, Jordan. The objectives of the study encompass a nuanced examination of gender-conscious assessments within urban transport planning, emphasizing the non-neutral nature of transportation systems. By addressing the diverse travel patterns, responsibilities, and constraints faced by women, the research advocates for a departure from one-size-fits-all approaches. The study underscores the transformative potential of integrating women's voices, needs, and preferences in planning processes, paving the way for inclusive, equitable, and well-being-oriented urban transport systems. The AHP methodology involved surveying 38 stakeholders and decision-makers in Amman, Jordan, utilizing a structured questionnaire. The survey focused on key accessibility, safety, and livability indicators derived from stakeholder perceptions. These indicators, quantified through AHP, include factors such as the weighted annual adult transit pass cost, types of transport options available, safety concerns like air pollution emission and fatality rates, and various livability indicators encompassing citizen satisfaction, infrastructure investment, and mobility space usage. The findings reveal critical insights into the impact of gender on mobility patterns and preferences, unearthing gender disparities that necessitate urgent attention. The study's data, based on stakeholder perspectives, underscores the need for interventions that break down barriers and amplify opportunities, thus transforming transportation networks into enablers of women's empowerment and social participation. In conclusion, this research advocates for gender-sensitive sustainable urban transport planning as an imperative rather than an aspiration. By emphasizing stakeholder engagement, mitigating cultural biases in indicator selection, and strengthening data collection and management, the study lays the groundwork for transformative urban transport systems.

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Ultimately, this work positions cities that prioritize women at the center of their transport planning endeavors as pioneers in creating truly sustainable, inclusive, and transformative urban environments.

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## **1. The Landscape of Socially Sustainable Urban Transport and Gender Dynamics**

The global urban landscape is undergoing transformative shifts due to rapid urbanization, presenting both opportunities and challenges. This expansion, while indicative of progress, necessitates a delicate equilibrium between urban growth and sustainable development (Ranagalage et al., 2021). Amid the discourse of sustainability, the often-overlooked facet of social sustainability takes center stage, encompassing inclusivity, quality of life, and community well-being (Yuan et al., 2018; Luederitz et al., 2023). This study focuses sharply on the experiences of women within urban environments, elucidating the intersections of gender dynamics and sustainable urban transportation. Despite the acknowledged significance of gender in shaping urban dynamics, its integration into urban transportation planning and policy formulation remains marginal (Moyo et al., 2021). Women's distinctive mobility patterns, needs, and vulnerabilities wield a profound influence on their daily interactions within urban settings (Akyelken, 2017).

Sustainable urban transportation, as a potential catalyst for enhanced accessibility, safety, and overall urban livability, emerges as a promising avenue to improve women's experiences in cities. Yet, the intricate interplay between sustainable urban transportation and women's experiences remains a complex and insufficiently explored realm within the existing literature (Dehghanmongabadi & Hoskara, 2018; Akyelken, 2017). This paper endeavors to bridge this gap by scrutinizing the assessment of social sustainability within urban transportation, with a particular focus on the nexus between women's well-being and the distinctive challenges and opportunities present in developing countries. In these contexts, rapid urbanization and intricate demographic dynamics have compounded challenges related to equitable and accessible urban transportation (López et al., 2021).

As urban areas expand, disparities in transportation access can intensify existing inequalities, disproportionately impacting marginalized groups, especially women (Mikiki et al., 2021; Leandro-Reguillo & Stuart, 2021). Safety concerns, particularly rooted in gender-based violence, serve as formidable barriers, hindering women's full participation in urban life and limiting opportunities for education, employment, and social engagement (Mthembu et al., 2021; Bentes et al., 2017). This study underscores the imperative to prioritize women's well-being as an integral facet of sustainable urban development. By evaluating the social sustainability of urban transportation systems through a gender-conscious lens, this research aims to unveil latent challenges and avenues for improvement. Employing the Adaptive Total Sustainable Social Indicator (ATSSI) methodology as a comprehensive framework, the study seeks to illuminate the multidimensional aspects constituting social sustainability.

The primary objective of this study is to discern the validity of social sustainability within urban transportation systems, particularly in the context of developing countries. Understanding how gender intersects with dimensions like accessibility, safety, and livability can shed light on women's overall well-being (Akyelken, 2017; Shatilwe et al., 2021). Through a gender-sensitive lens, the research aims to operationalize the ATSSI framework to construct indicators encapsulating the evaluative essence of social sustainability. The identification of critical challenges and prospects for enhancing women's well-being through socially sustainable urban transportation stands as another pivotal goal of this research.

## **2. Literature Review**

### **2.1. Sustainable Urban Transport and Social Sustainability**

Sustainable urban transport is pivotal in fostering resilient and livable cities, aligning with environmental conservation and social inclusivity principles (Makarova et al., 2016). Social sustainability, encompassing equity, quality of life, and community cohesion, has gained prominence in the trajectory of urban development (Paidakaki & Lang, 2021; Jabbari et al., 2021). Despite its often-associated environmental focus, the nexus between sustainable urban transport and social sustainability is crucial, especially for impacting diverse populations, including marginalized groups (Guimarães et al., 2020).

Social sustainability in urban transportation involves accessibility, safety, and inclusivity. Accessibility ensures unimpeded access, transcending physical and economic constraints (Guimarães et al., 2020; Ghorbanzadeh et al., 2018). A socially sustainable transportation matrix serves all societal strata, ensuring equitable access (Zakharov et al., 2018; Yuan et al., 2018). Safety is crucial for social sustainability, mitigates traffic-related fatalities, fosters secure urban spaces, and contributes to social cohesion (Makarova et al., 2016; Wawer et al., 2022). Livability, intertwined with well-being and public health, characterizes a high quality of life and efficient transportation networks (Ding et al., 2021; Guimarães et al., 2020).

The Adaptive Total Sustainable Social Indicator (ATSSI) framework integrates social sustainability into urban transportation systems, offering a lens for assessing accessibility, safety, and livability (Chatziioannou et al., 2020; Ghorbanzadeh et al., 2018). Renowned for its integrative capabilities, ATSSI is adaptable to diverse urban contexts, including developing countries with pronounced urbanization challenges (Chatziioannou et al., 2020; Ghorbanzadeh et al., 2018).

Sustainable Urban Transport and Gender: Women's Experiences: Gendered nuances in the urban transport landscape substantially influence women's lives, often underexplored in planning and policy (Gupta et al., 2018). Women's experiences vary based on socioeconomic status, cultural norms, and location (Leão & Kanashiro, 2021; East, 2022), intersecting profoundly with transportation systems, dictating mobility patterns, safety perceptions, and access to urban opportunities. Women's distinct travel behaviors, often characterized by trip-chaining and non-work-related trips (Akyelken, 2017; Leandro-Reguillo & Stuart, 2021), necessitate tailored urban transportation solutions.

Gendered safety concerns, rooted in experiences of harassment and violence, serve as significant deterrents to women's mobility (Makarova et al., 2016; Leão & Kanashiro, 2021). Limited research, however, has delved into the impact of these concerns on women's perceptions and utilization of urban transport (Gupta et al., 2018). By exploring the intricate interplay between gender, safety, and sustainable urban transport, this study seeks to amplify the voices of women, ensuring their experiences shape the discourse on urban transportation.

In developing countries like Jordan, characterized by unique socio-cultural dynamics, understanding gender-specific challenges in urban transport is paramount (Nakase et al., 2021). The Adaptive Total Sustainable Social Indicator (ATSSI) framework, renowned for its adaptability, is employed in this study to address these challenges comprehensively (Amendola et al., 2022). Its integrative approach accommodates variations in socio-cultural dynamics, developmental trajectories, and geographic characteristics, offering a nuanced evaluation of social sustainability within urban transport systems.

Through the integration of both quantitative and qualitative dimensions, the ATSSI framework ensures a balanced amalgamation of data-driven insights and experiential

narratives (Grenfell & Rushton, 2022). This multidimensional approach enhances credibility by juxtaposing statistical evidence with lived experiences, facilitating the identification of critical gaps in accessibility, safety, and livability within urban transport systems.

## **2.2. Analytical Framework: Adaptive Total Sustainable Social Indicator (ATSSI)**

The ATSSI framework stands as a robust analytical tool for assessing and operationalizing social sustainability within urban transportation systems (Nadi & Murad, 2019; Nakase et al., 2021). Its adaptability and versatility effectively respond to the intricate interplay of social, economic, and environmental factors in urban transport systems (Amendola et al., 2022). Transcending conventional sustainability assessment paradigms, ATSSI offers a holistic lens for scrutinizing inclusivity, well-being, and overall quality of life in urban transportation.

Functioning as a structured framework, ATSSI integrates diverse indicators for a comprehensive evaluation of social sustainability (Serrano et al., 2020). Its adaptability accommodates variations in socio-cultural dynamics, developmental trajectories, and geographic characteristics. Aligned with principles of equity, justice, and inclusivity, ATSSI engages stakeholders from various segments of society, capturing a nuanced and holistic evaluation of social sustainability within urban transport systems (Souza et al., 2019; Nakase et al., 2021).

ATSSI integrates quantitative and qualitative dimensions, providing a balanced amalgamation of data-driven insights and nuanced narratives (Grenfell & Rushton, 2022). The multidimensional approach enhances credibility by juxtaposing statistical evidence with experiential insights, facilitating the identification of critical gaps in accessibility, safety, and livability within urban transport systems. As urbanization accelerates, the ATSSI methodology emerges as a guiding beacon, advocating for socially sustainable urban transportation systems prioritizing the well-being of diverse populations.

## **3. Methodology**

### **3.1. Sampling**

A purposive sampling strategy was meticulously employed to ensure a diverse representation of stakeholders in Amman, Jordan. The study engaged a total of 38 participants, carefully selected to encompass various perspectives within the urban transport landscape. Participants included women commuters of diverse ages and socio-economic backgrounds, urban planners specializing in sustainable transport, policymakers involved in urban development, and representatives from women advocacy groups actively championing gender-sensitive urban planning.

Demographic information, such as age, gender, occupation, and socio-economic background, was collected to provide a contextual backdrop to the findings. This comprehensive approach to sampling aimed to capture the multifaceted dimensions of women's experiences in urban transport.

### **3.2. Data Collection**

#### **3.2.1. Quantitative Data Collection (Surveys)**

A structured questionnaire, informed by an extensive review of existing literature on gender-sensitive urban transport planning, served as the primary instrument for quantitative data

collection. The survey covered key aspects related to accessibility, safety, and livability indicators within the urban transportation system.

Survey distribution was carried out through in-person interviews to facilitate direct engagement and ensure a more personalized interaction. Trained interviewers administered the structured questionnaire to participants, providing clarifications and guidance when necessary. This approach aimed to enhance the depth of responses and promote a comprehensive understanding of stakeholders' perceptions. The in-person survey method resulted in a total of 38 completed surveys, offering valuable insights for subsequent statistical analyses and the application of the AHP methodology.

### **3.3. Data Analysis**

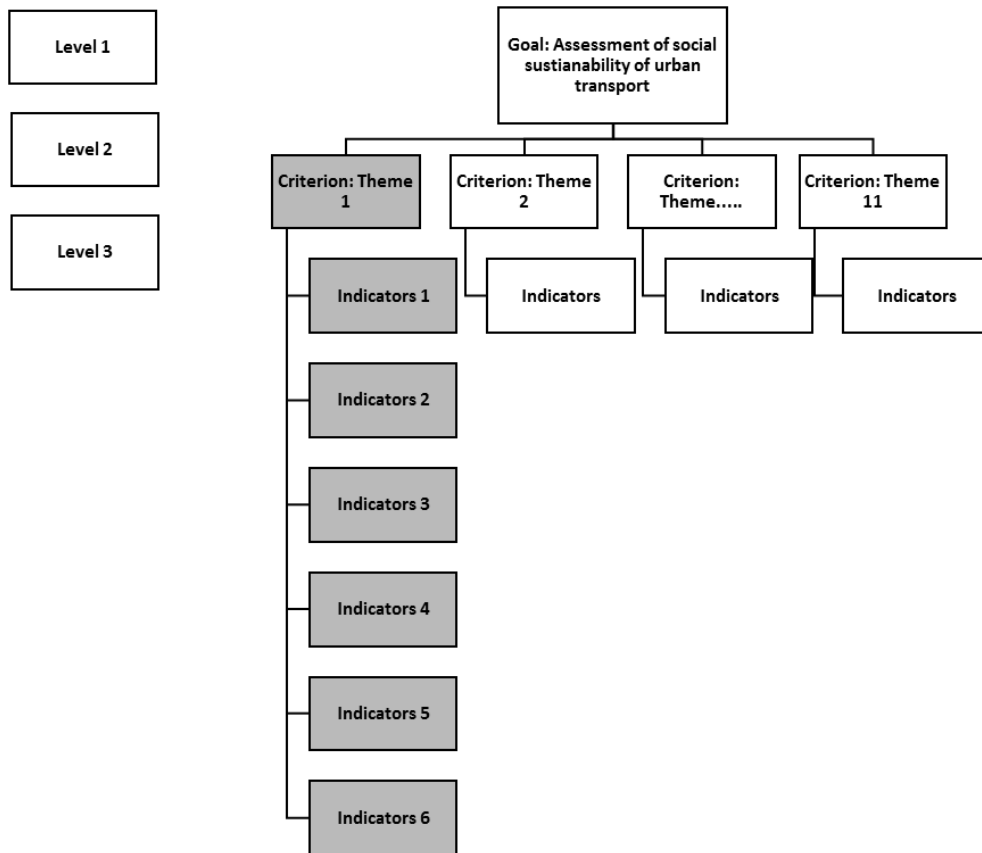
The collected data underwent a thorough and integrated analysis, employing both quantitative approaches to derive comprehensive insights into the gender-conscious aspects of urban transport planning in Amman, Jordan.

### **3.4. AHP Data Analysis**

The AHP methodology played a pivotal role in synthesizing stakeholder judgments on key indicators. Pairwise comparison matrices were constructed to capture the relative importance of different factors, such as the perceived safety of public transportation versus the availability of diverse transport options. Stakeholders' judgments were gathered through a structured process, and the consistency ratio was calculated to ensure the robustness of the AHP results.

### **3.5. Steps for Conducting Analytic Hierarchy Process (AHP)**

In the initial stage of AHP, the decision-making issue and goal are systematically introduced, hierarchically framing the relevant decision elements. These elements encompass decision indicators and choices, forming a hierarchy aligned with the problem under examination, as illustrated in Figure 1.



*Figure 1.* Reflection of the understudied problem

The second step involves conducting pair comparisons through the design and distribution of a questionnaire to gather opinions from respondents. Each decision maker assigns their preferred values to individual elements, and these individual judgments are transformed into group judgments for each pair comparison using the geometrical average. The scale ranges from one to nine, where one signifies equal importance, and nine indicates the extreme importance of one element over the other, as detailed in Table 1. Sample questionnaire items are presented in Figure 2.

A options	Scale																B options	
	Extremely preferred	Very strongly	Strongly	Moderately	Equally	Moderately	Strongly	Very strongly	Extremely preferred									
Indicator 1	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Indicator 2
Indicator 1	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Indicator 3
Indicator 1	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Indicator 4
Indicator 1	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Indicator 5

Figure 2. Example response to a questionnaire answered by respondent.

The subsequent data analysis follows a defined procedure. The pairwise comparison matrix (matrix A) is derived from collected interview data. The principal right eigenvector 'w' is computed from matrix A.

If the condition  $a_{ik} \cdot a_{kj} = a_{ij}$  is not satisfied for all  $k, j$ , and  $i$ , the Eigenvector method is chosen (Jalaliyoon et al., 2012). In cases of matrix incompatibility or incomplete consistency, normalization is performed to obtain vector  $W_i$ .

In the case of a matrix that is positive and reversed, the Eigenvector technique can be employed, wherein:

$$e^T = (1, 1, \dots, 1) \tag{1}$$

$$W = \lim_{k \rightarrow \infty} \frac{A^k \cdot e}{e^T \cdot A^k \cdot e} \tag{2}$$

Achieving convergence in the array of responses involves iteratively repeating this process several times. In the presence of an incompatible matrix, decisions are made through multiple iterations. Subsequently, the application of the following formula is necessary to convert the raw data into significant absolute values and obtain the normalized weight vector  $w = (w_1, w_2, w_3, \dots, w_n)$ :

$$Aw = \lambda_{\max} w, \quad \lambda_{\max} \geq n$$

$$\lambda_{\max} = \frac{\sum a_{ij} w_j - n}{w_i} \tag{3}$$

$$A = \{a_{ij}\} \text{ with } a_{ij} = 1/a_{ji}$$

A: pair-wise comparison

w: normalized weight vector

$\lambda_{\max}$ : maximum eigenvalue of matrix A

$a_{ij}$ : numerical comparison between the values i and j

To validate AHP results, the consistency ratio (CR) is computed using the formula  $CR = CI/RI$ . The consistency index (CI) is determined by the formula:

$$CI = \frac{\lambda_{\max} - n}{n - 1} \tag{4}$$

The consistency ratio is considered acceptable if it is lower than 0.10. Table 3 provides the values of the Random Consistency Index (RI) based on the matrix dimension, aiding in the evaluation of result reliability.

Table 1.  
Consistency Index (RI), adapted from Saaty (1980)

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0	0	0.52	0.89	1.11	1.25	1.35	1.4	1.45	1.49	1.51	1.54	1.56	1.57	1.58

## 4. Results

### 4.1. Accessibility Dimension: Women's Inclusive Access to Transport Services Evaluating Accessibility Indicators

To comprehensively assess social sustainability in urban transportation, a gender-conscious exploration of the accessibility dimension is imperative. This involves considering factors such as affordability, reliability, and suitability to diverse travel needs. The following presents the ranking of Accessibility indicators, crucial for empowering women's independent navigation through the urban environment.

Table 2.  
Overall Ranking of Accessibility Indicators

Indicator	Ranking
Weighted annual adult transit pass cost adjusted by median family income	14%
Types of transport options available	17%
Extent of transport plans covering public transport, intermodal facilities, and infrastructure for active modes	25%
The Livable Communities/Transit Service	9%
Number of buses passing in peak and off-peak hours	36%

### 4.2. Enhancing Accessibility for Women

#### 4.2.1. The Impact of Weighted Annual Adult Transit Pass Cost on Women's Socio-Economic Constraints

The weighted annual adult transit pass cost, a pivotal factor in the accessibility dimension, significantly affects women's socio-economic mobility. As identified by Akyelken (2017) and Guimarães et al. (2020), high transit costs disproportionately impact women who often rely on public transportation as a lifeline. This cost burden may limit their mobility and access to various opportunities, reinforcing socio-economic disparities.

#### 4.2.2. Key Insights

- The cost burden of transit passes significantly affects women's socio-economic mobility.
- Affordability is a critical factor in ensuring equitable access for women in urban transport.



### 4.2.3. The Role of Diverse Transport Options and Comprehensive Plans

Diverse transport options and comprehensive plans play a pivotal role in ensuring equitable access for women. As highlighted by Hortelano et al. (2021), a well-planned, multimodal transport system caters to the diverse travel patterns and needs of women. By offering a range of transport modes and comprehensive plans, urban environments can enhance the inclusivity of their transportation systems.

### 4.2.4. Key Insights

- A variety of transport options and comprehensive planning are essential for meeting diverse travel needs.
- Multimodal transport systems contribute to the inclusivity of urban transportation (Akyelken, 2017; Guimarães et al., 2020; Hortelano et al., 2021)

## 4.3. Safety Dimension: Gender-Based Security Concerns and Solutions Evaluating Safety Indicators

The safety dimension, crucial for social sustainability in urban transport, acquires a unique gendered perspective when considering women's experiences. This section presents the ranking of Safety indicators, offering insights into the security concerns and potential solutions that impact women's willingness to utilize public transportation modes.

Table 3.

*Overall Ranking of Safety Indicators*

<b>Indicator</b>	<b>Ranking</b>
Noise hindrance	3%
Air Pollution Emission	4%
Number of enforcement efforts per year	4%
Bicycle and pedestrian level of service	5%
Percentage of the population feeling safe from security violations in the transport system	10%
Fatality and injuries in traffic accidents	16%
Number of active transport users in peak and off-peak hours	29%
Percentage of the residential area served with active transport tracks	30%

## 4.4. Enhancing Safety for Women

### 4.4.1. Addressing Noise Hindrance and Air Pollution

Addressing noise hindrances and air pollution is critical to creating secure urban spaces for women. As noted by Hortelano et al. (2021) and Leão & Kanashiro (2021), poorly illuminated spaces, overcrowded environments, and inadequate security measures contribute to women's vulnerability. Implementing strategies to minimize noise and air pollution ensures safer and more comfortable urban environments for women.

### 4.4.2. Key Insights

- Noise and air pollution significantly impact women's sense of security.
- Strategies for improving urban environments should focus on minimizing environmental hazards.

### 4.4.3. Strategies to Increase Feeling of Safety and Reduce Accidents

This subsection explores strategies aimed at increasing the feeling of safety and reducing accidents for women in urban transport. Hortelano et al. (2021) and Leão & Kanashiro (2021) emphasize the need to identify "hotspots" of harassment, understand the spatial and temporal

dynamics of incidents, and incorporate women's voices in safety interventions. Moreover, fostering gender-sensitive attitudes among transport personnel and community policing initiatives are integral to addressing women's safety concerns.

#### **4.4.4. Key Insights**

- Strategies for enhancing safety include identifying harassment hotspots and involving women's voices.
- Gender-sensitive attitudes among transport personnel contribute to creating safer urban spaces (Hortelano et al., 2021; Leão & Kanashiro, 2021).

### **4.5. Livability Dimension: Women's Well-Being in Urban Transport Environments Evaluating Livability Indicators**

Livability, integral to social sustainability, encompasses the quality of life for urban dwellers, with a specific focus on women's well-being. The following table showcases the ranking of Livability indicators, highlighting their impact on women's health and overall satisfaction.

Table 4.  
*Overall Ranking of Livability Indicators*

<b>Indicator</b>	<b>Ranking</b>
Equity of exposure to environmental impacts of transportation	3%
Percentage of public investment in transport	4%
Actively involve citizens through public outreach	7%
Citizen's satisfaction with the variety and quality of transport options	9%
Self-containment - portion of trips that start and end within a defined region	9%
The proportion of infrastructure, operational, and environmental costs covered by the price	14%
Quality of transport for disadvantaged, disabled, children, and non-drivers	15%
Mobility Space Usage Indicator	19%
Frequency and coverage by public transport for all neighborhoods (poor and rich)	21%

### **4.6. Enhancing Livability for Women**

#### **4.6.1. The Importance of Equity in Exposure to Environmental Impacts**

In this subsection, we emphasize the importance of equity in exposure to environmental impacts for ensuring women's well-being. Akanmu et al. (2022), Zhang et al. (2019), and Al-Nammari & Malhis (2022) shed light on the disproportionate impact of vehicular traffic-induced air and noise pollution on women's health. Promoting non-motorized modes and integrating green spaces into transport infrastructure contributes to women's well-being by providing spaces for relaxation and mental rejuvenation.

#### **4.6.2. Key Insights**

- Environmental impacts disproportionately affect women's health.
- Non-motorized modes and green spaces contribute to creating a more livable urban environment.

#### **4.6.3. The Role of Public Investment and Inclusive Outreach**

The role of public investment and inclusive outreach is crucial in enhancing overall satisfaction with transport options for women. Engaging citizens from all sectors of the community through open, inclusive public outreach, as highlighted by Leão & Kanashiro (2021), becomes instrumental in shaping transport systems that align with the diverse needs and preferences of women.

#### **4.6.4. Key Insights**

- Public investment and inclusive outreach are pivotal in enhancing overall satisfaction with transport options.
- Engaging citizens through open, inclusive public outreach is essential for shaping gender-responsive transport systems.

#### **4.7. Integration with Quantitative Findings**

Qualitative insights were integrated with quantitative findings to provide a holistic understanding of the gendered dynamics within urban transport systems. This integration allowed for a nuanced exploration of the narratives behind statistical trends and correlations.

### **5. Discussion**

The synthesis of findings from the evaluation of Accessibility, Safety, and Livability dimensions within urban transport systems reveals critical insights into the complex interplay between gender-conscious planning and social sustainability. The nuanced understanding derived from the data, coupled with insights from literature and the Analytical Hierarchy Process (AHP) methodology, forms the foundation for a comprehensive discussion on the implications and potential avenues for transformative urban transport planning.

#### **5.1. Accessibility: Breaking Socio-Economic Barriers**

The evaluation of Accessibility indicators underscores the multifaceted challenges faced by women in accessing urban transport services. The weighted annual adult transit pass cost, identified as a key determinant, disproportionately affects women, particularly those reliant on public transportation as a lifeline. This financial burden can serve as a significant barrier, limiting women's mobility and access to various opportunities, as noted by Akyelken (2017) and Guimarães et al. (2020), emphasizing the urgent need for affordable and inclusive transportation systems.

Diverse transport options and comprehensive plans emerge as pivotal elements in ensuring equitable access for women. A well-planned, multimodal transport system, as highlighted by Hortelano et al. (2021), caters to the diverse travel patterns and needs of women, fostering inclusivity. Offering a variety of transport modes and comprehensive plans is essential to enhance the inclusivity of urban transportation.

#### **5.2. Safety: Creating Secure Urban Spaces**

In delving into the Safety dimension, the evaluation of indicators provides a nuanced understanding of gender-based security concerns and potential solutions within urban transport environments. Noise hindrance and air pollution, identified as critical factors, significantly impact women's sense of security. Addressing these environmental hazards becomes imperative to create safer and more comfortable urban spaces for women.

Strategies to increase the feeling of safety and reduce accidents further underscore the need for targeted interventions. Identifying harassment hotspots, understanding spatial and temporal dynamics, and incorporating women's voices in safety interventions are crucial steps. This aligns with the recommendations of Hortelano et al. (2021) and Leão & Kanashiro (2021), emphasizing the importance of a gender-sensitive approach in crafting strategies to enhance safety for women.

### **5.3. Livability: Fostering Well-Being in Urban Environments**

The evaluation of Livability indicators sheds light on the integral role of this dimension in women's well-being within urban transport environments. Equity in exposure to environmental impacts emerges as a crucial consideration, recognizing the disproportionate impact of vehicular traffic-induced air and noise pollution on women's health. Non-motorized modes and the integration of green spaces into transport infrastructure are identified as key contributors to creating a more livable urban environment for women.

Public investment and inclusive outreach stand out as pivotal elements in enhancing overall satisfaction with transport options for women. Engaging citizens from all sectors of the community through open, inclusive public outreach, as highlighted by Leão & Kanashiro (2021), becomes instrumental in shaping transport systems that align with the diverse needs and preferences of women.

### **5.4. Integration of Findings and Implications**

The comprehensive assessment of Accessibility, Safety, and Livability dimensions not only provides a snapshot of the current state of urban transport planning but also paves the way for informed interventions. The intricate interplay between these dimensions necessitates holistic and integrated strategies that transcend traditional, gender-blind planning approaches.

The findings emphasize the urgency of adopting gender-sensitive urban transport planning as a cornerstone of sustainable development. The data, coupled with insights from literature and AHP methodology, underscores the transformative potential of integrating women's voices, needs, and preferences in planning processes. This integration is not merely an aspiration but an imperative for fostering inclusive, equitable, and well-being-oriented urban transport systems.

## **6. Limitations and Future Directions**

While the study provides valuable insights, it is essential to acknowledge its limitations. The reliance on stakeholder perceptions and the AHP methodology introduces subjectivity, and future research could benefit from more extensive, diverse datasets and quantitative analyses. Additionally, the study's focus on the city of Amman, Jordan, highlights the need for contextual sensitivity, and future research should explore the applicability of findings across different urban contexts.

## **7. Conclusion: Charting the Path Forward**

In conclusion, this study illuminates the intricate dynamics between sustainable urban transport planning, gender perspectives, and women's well-being. The integration of Accessibility, Safety, and Livability indicators, informed by literature and stakeholder perceptions, offers a holistic understanding of the challenges and opportunities embedded in urban transport systems.

The discussion emphasizes that gender-conscious urban transport planning is not a mere checkbox but a fundamental prerequisite for cities aspiring to be truly sustainable, inclusive, and transformative. The path forward requires a departure from one-size-fits-all approaches, active stakeholder engagement, and the mitigation of cultural biases in indicator selection. By charting this course, cities can position themselves as pioneers in creating urban environments that prioritize the well-being, safety, and empowerment of all residents, transcending gender divides. The journey toward sustainable urban development must be an

inclusive one, where the diverse experiences and needs of women are central to shaping the cities of tomorrow.

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