

Article

Invisible Journeys: Understanding the Transport Mobility Challenges of Urban Domestic Workers

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Abstract: Domestic workers represent an essential yet invisible workforce within urban economies, especially in developing countries. Predominantly women in low-income, single-headed households, they often work informally and rely on buses or minibus taxis for suburb-to-suburb travel. Despite their contributions, their transport needs are overlooked in traditional planning, which prioritises CBD-centric routes over the suburb-to-suburb journeys that define their invisible commute. The purpose of this study is to examine the transport mobility patterns of live-out domestic workers in urban areas, focusing on Centurion, one of the affluent neighbourhoods in the Metropolitan City of Tshwane, South Africa. To assess the transport challenges faced by domestic workers during their commutes, a Likert scale was utilised. The data were analysed using descriptive statistics facilitated by the SPSS software package to identify key trends and patterns in the responses. The key challenges of domestic workers are high transport costs, lack of access to affordable transport modes like rail and long commute times. Minibus taxi is the most commonly used mode accommodating both standard and non-standard working hours. The study also found that most of the domestic workers working in Centurion are migrant workers. To reduce the need to travel to work, mixed-income developments, and inclusionary housing are some of the concepts that can be adopted in affluent suburbs like Centurion. These two concepts not only address the need to travel to work but also spatial inequality and promotion of social integration whereby affordable housing are created within higher income areas.

Keywords: domestic workers; public transport; mobility; spatial inequality; transport services; urban mobility



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1. Introduction

Domestic workers form part of the informal and “invisible” workforce that provide essential support to household well-being and broader economic growth (Au Wee et al. 2019; Fudge and Hobden 2018). Since domestic workers are employed within private households, they remain invisible as workers and are isolated from others within their sector (WIEGO 2024). A domestic worker is an individual who performs household tasks within a private household on an occupational basis (Ermann and Kara 2018). Household responsibilities include duties such as cleaning, cooking, laundry, childcare, elderly care, gardening, and other personal services that support households functioning (Dawood and Seedat-Khan 2022; Ghosh 2021). Domestic work services enable employers to engage in work other activities outside their homes (Fudge and Hobden 2018).

According to the International Labour Organization (ILO) (2019), there are approximately, 67 million domestic workers worldwide. As of the fourth quarter of 2023, about

876,000 people were employed as domestic workers in South Africa (Stats SA 2024b). The domestic work industry is highly gendered, with women dominating the industry and accounting for about 80% of global population of domestic workers (Seiffarth et al. 2023).

Domestic work is undertaken either by paid outside workers or by family members (ILO 2018). A paid domestic worker is an individual hired and compensated by a household to perform household tasks. Both paid workers and carers play essential roles in the functioning of households; however, their contributions are often viewed and valued differently. A paid domestic worker is an individual hired and compensated by a household to perform household tasks, while a carer is mostly a family member who performs household tasks without direct financial compensation. Domestic work remains unrecognised and invisible despite the contribution towards the functioning of households and the broader economic growth (Ghosh 2021). It is argued that domestic workers are undervalued mainly because society views domestic work as a role that comes naturally to women (Tungohan 2018).

Across the globe, there has been an increase in demand for domestic services due to various reasons (Seiffarth et al. 2023). With rapid urbanisation and population growth, the demand for domestic work will continue to increase worldwide. Asia has the highest number of domestic workers in the world (Seiffarth et al. 2023). The demand for domestic workers, especially in China, increased partly due to aging population, urban development, and the rising income of households (Minghui 2017). In Africa, the demand for domestic workers is driven by factors such as high rates of unemployment and poverty, leading many individuals to seek employment in this field (African Domestic Workers Network 2023; Tade and Adeyinka 2012; Tanzer 2013).

In the Global South, the main groups of domestic workers are either “live-in” and “live-out” workers. The study focuses on “live-out” domestic workers who commute to their employer’s residence. Transport affects the ability of domestic workers to access employment opportunities and mobility. Transport needs of domestic workers in the urban areas are not properly understood, addressed, and integrated into urban policy frameworks. Therefore, the main objective of this study is to examine the mobility patterns of domestic workers in Centurion, City of Tshwane. To address the main objective of this study, the following two secondary objectives were formulated:

- (1) To identify the key factors that influence the transport choices of domestic workers in urban areas,
- (2) To investigate specific transport challenges encountered by female domestic workers in urban areas.

Although there are many studies on the transport mobility of women in general, only a limited number of studies have explored transport mobility issues encountered by domestic workers in urban areas (Erman and Kara 2018; Fleischer 2024; Montoya-Robledo et al. 2020; Rahat et al. 2023). Women are a heterogeneous group with different needs. By investigating the transport mobility patterns of domestic workers in urban areas, this study aims to fill this knowledge gap. Understanding the transport mobility dynamics of domestic workers helps harness their vital contributions to society, improves their overall quality of life, and protects their civil and human rights.

This study provides ways to reduce transport inequalities and combat transport-related social exclusion. Through inclusive transport policies, cities can better support domestic workers, enabling their full participation in the workforce and enhancing social equity. The paper is structured as follows: Section 2 provides the literature on the mobility of women. Section 3 describes the methodology used to investigate mobility patterns of domestic workers in Centurion, City of Tshwane, while Section 4 presents the results. Section 5 discusses the findings and their connection to broader urban mobility, focusing on how domestic workers navigate transport services. Lastly, Section 6 summarises and

concludes with policy recommendations for mixed-income developments and inclusionary housing in Centurion.

2. Literature Review

Transport enables women to participate more fully in the workforce, access healthcare, education, and other opportunities offered by the city. Women are part of marginalised and vulnerable groups that transport systems need to serve. In developing countries, low-income earning women are more vulnerable and often excluded from transport planning despite their contribution to economic growth (Nasrin and Chowdhury 2024). Across the world, mobility of women has increased partly due to changing gender roles and, to some extent, the influence of modern lifestyles (Mahadevia and Deepali 2016). Women who were once restricted to their homes, villages, or communities now travel considerable distances and even cross international borders to pursue paid employment (De Regt 2010). This is still the case in some countries, although in South Africa, women are generally more mobile and have greater access to transport options, enabling them to participate more actively in various economic and social activities.

The most common modes of transport in the City of Tshwane include minibus taxis, buses, commuter trains, and non-motorised options such as walking and cycling. Each of these options presents distinct advantages and disadvantages that influence user choices, particularly among low-income commuters like domestic workers. Minibus taxis are the most widely available and commonly used mode of public transport in South Africa. They offer commuters flexible schedules and access to informal, often routes not covered by formal transport. However, the main disadvantages are their high fares, inconsistent service quality, and safety concerns. Minibus taxis are often associated with reckless driving, and women commuters are particularly vulnerable to harassment or crime, especially at taxi ranks and during off-peak hours. Buses, including operators such as PUTCO, Tshwane Bus Services, and A Re Yeng, offer scheduled and formalised routes. These services are generally more affordable than taxis due to government subsidies. Nonetheless, bus access remains limited in peripheral townships and informal settlements, forcing many domestic workers to rely on other modes or to walk long distances to bus stops. Reliability and frequency outside peak hours also remain a concern. Metrorail, South Africa's commuter rail system, is designed to provide low-cost transport and primarily serves low-income passengers. While fares are significantly lower than other modes, Metrorail services are plagued by infrastructure issues, including frequent disruptions caused by cable theft, vandalism, and aging rolling stock. In addition, Metrorail's coverage is limited in many parts of the City of Tshwane, restricting its usefulness in areas like Centurion. The Gautrain is a modern, rapid rail system connecting Centurion with Pretoria, Johannesburg, and O.R. Tambo International Airport. It is reliable, safe, and efficient, making it popular among professionals. However, it is also cost-prohibitive for low-income workers. Fares are significantly higher compared to other public transport options, making it an inaccessible choice for most domestic workers. Walking and cycling are cost-free alternatives used by some commuters, particularly when accessing other modes of transport or travelling short distances. However, these options are limited by poor pedestrian infrastructure, lack of dedicated cycling lanes, and safety risks. Women walking in the early morning or after dark are especially vulnerable to crime, including theft and assault, making these modes unsafe for many.

The increase in women's mobility may necessitate that transport planners and policy-makers reconsider transport policies to better accommodate women's specific mobility and transport needs (Mahadevia and Deepali 2016). Sustainable Development Goal 11, target 11.1 aspires "by 2030, provide access to safe, affordable, accessible, and sustainable trans-

port systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons". To accomplish this goal, all the member States of the UN have a role to play. Therefore, the traditional approach to transport planning needs to be reconsidered so that transport systems cater for all.

The literature strongly suggests that transport mobility patterns of women and men differ significantly (Nasrin and Chowdhury 2024; Murphy et al. 2023; World Bank 2016). Compared to men, women rely more heavily on public transport (World Bank 2016). In South Africa, women use public transport more than men do (Statistics South Africa 2013). Because of limited affordability, women from low-income households do not have many options of transport modes (Nasrin and Chowdhury 2024). Developing countries often have a gender gap in vehicle ownership and driving licenses. Women are not likely to own vehicles and have driving licenses in developing countries compared to their male counterparts (Nasrin and Chowdhury 2024).

Women's mobility, especially in the developing countries, is often constricted by patriarchal societal, and cultural norms that limit their access to various transport options and public spaces (Nasrin and Chowdhury 2024; Sil et al. 2023). Social and cultural norms dictate where, when, and how women can travel. Some cultures prohibit women from driving or being alone with a strange driver like in a ride hailing service. In Bangladesh, it is not socially acceptable for women to drive or ride a motorbike (Nasrin and Chowdhury 2024). Despite some progress in socio-economic terms, gender equality remains a significant issue in Nigeria. Women in Nigeria often encounter barriers to mobility due to cultural norms and inadequate infrastructure. For example, in Lagos, women are underrepresented in cycling and overrepresented as pedestrians (Zhen 2021). This issue requires gender-sensitive planning and infrastructure improvements.

In South Africa, although the situation is somewhat different, women still face distinct mobility challenges. Studies have shown that while women in South Africa are generally more mobile and have greater access to transport options, they still experience issues related to safety, cost, and reliability of public transportation (Parker and Rubin 2023; Vanderschuren et al. 2019). Gender-sensitive transport policies are crucial to ensuring that women can fully participate in economic and social activities without facing disproportionate barriers.

Safety and security are fundamental human needs, as outlined by Maslow's (1943) hierarchy of needs, that are crucial factors influencing women's transport mobility, especially in the context of personal safety (Madhuwanthi et al. 2016; Stark and Meschik 2018). The safety and security of women on transport are critical issues impacting their mobility, especially domestic workers who must often travel at unsocial hours (Javaid 2022; Montoya-Robledo et al. 2020). Kacharo et al. (2022, p. 3) define "safety as the condition of being protected from danger or harm caused by an unintentional accidental event, while security implies protecting transport users against malicious actions and behavior". Domestic workers frequently commute early in the morning or late at night, times when public transport options are limited, and the walk to and from transport points is often the most dangerous.

Personal security concerns severely impact women's freedom of movement and their ability to access economic and social opportunities (Allen et al. 2016). Unsafe transport environments often discourage women from using public transit, especially at these vulnerable hours, as harassment and other security risks are exacerbated during less crowded times. Safety and security shape how women navigate transport systems and public spaces. Without safe transport, women's mobility is limited in accessing essential services like education, healthcare, and employment opportunities (Sil et al. 2023).

Research further highlights that women experience high rates of harassment and often adopt safety strategies to avoid travelling at certain times or along specific routes, which limits their access to opportunities and perpetuates social exclusion (Allen et al. 2016). Women are more vulnerable to harassment and violence in public transport and public spaces (Mabaso and Matthews 2018), as they are assumed to be open persons (World Bank 2016). Duri (2023) found that perceived safety and security on transport is based on personal experiences.

3. Material and Methods

The data flow chart in Figure 1, represents the sequential methodological steps employed in this study, from the study settings to the final presentation of results.

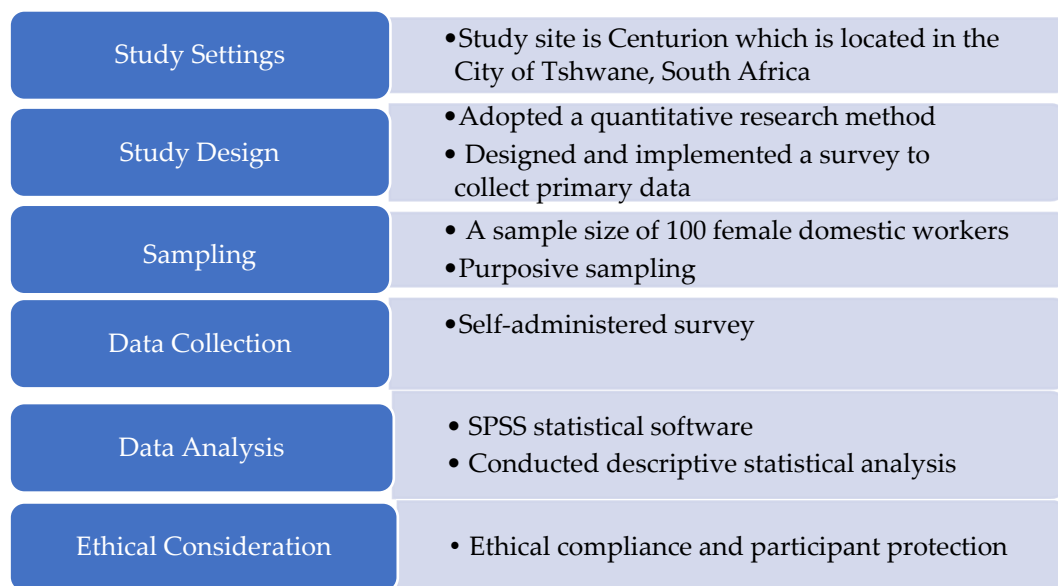


Figure 1. Data flow chart.

Section 3.1 describes the geographical and contextual setting of the study. Section 3.2 outlines the empirical approach used in the research, adopting a quantitative method through surveys. The section also justifies the choice of methodology. Section 3.3 explains the sampling strategy, detailing the sample size of 100 domestic workers and the use of non-probability purposive sampling. Section 3.4 describes the use of SPSS version 26.0 software for statistical analysis. It explains the role of descriptive statistics in summarising the data, generating tables, charts, and graphs to present findings clearly and interpret trends effectively. Lastly, Section 3.5 highlights the researcher's adherence to ethical standards to protect the participants' rights and well-being.

3.1. Study Setting

The study was conducted in Centurion, an affluent suburb situated in Region 4 of the City of Tshwane within the province of Gauteng of South Africa. With a population of approximately 240,000, Centurion covers an area of about 395 square kilometres (City of Tshwane 2020). Centurion is one of the most influential suburbs in Region 4 strategically located between City of Tshwane and City of Johannesburg (City of Tshwane 2020). The suburb is well connected by various transport modes including the Gautrain railway line that runs through the centre of Centurion; metro railway as well as runs through Centurion; roadways link to Johannesburg, Tshwane, Krugersdorp, and O.R. Tambo International. The largest taxi rank in Centurion is situated in the CBD of Centurion, near Centurion Mall and bus services operating in the area include Tshwane Bus Services, Gautrain Buses,

PUTCO, and A Re Yeng. Since 1994, Centurion has experienced growth which is partly due to business relocating to the area ([Property24 2024](#)). The housing options in Centurion include stand-alone private houses to gated communities, housing estates, and high-rise apartments. As one of the suburbs with high income earners, Centurion has many gated communities situated in private areas with limited access to public transport ([Landman and Badenhorst 2014](#)). People who live in gated communities typically can afford to employ domestic workers. However, some of these workers often reside on the periphery of the city that can result in long distance travels which may require multiple transfers.

3.2. Study Design

The study followed an empirical approach to collect primary data through the use of a survey. A quantitative research method was adopted in this study as surveys are particularly effective for studies involving large populations. The rationale for choosing a quantitative research method is that it allows for the efficient collection and analysis of data, offering faster processing times compared to other methods ([Creswell 2014](#)). Moreover, a quantitative research method provides findings that can be generalised to a broader population ([Creswell 2014](#)). Moreover, many transport mobility studies have utilised the quantitative research method due to its acknowledged advantages by various authors ([Delbosc and Currie 2011](#); [Tyrinopoulos and Antoniou 2013](#); [Vella-Brodrick and Stanley 2013](#); [Ye and Titheridge 2019](#)). However, a limitation of this approach is that the researcher cannot ascertain whether the responses provided by participants are true or not true ([Creswell 2014](#)).

3.3. Study Sample

The data collection was conducted in September 2019 in Centurion, City of Tshwane. As the sampling frame for domestic workers in Centurion was unavailable, a sample size of 100 ($N = 100$) was determined to be adequate to perform basic statistical procedures in this study, following the recommendations of [De Vos Anna Susanna et al. \(2019\)](#). Given the absence of a comprehensive sampling frame, non-probability, purposive sampling was the most suitable sampling method to allow the researcher to exercise judgement in selecting participants who best serve the purpose of the study ([Grinnell and Unrau 2010](#)). Participants were selected based on their availability and willingness to participate, with the specific inclusion criteria being that they had to be female live-out domestic workers employed in Centurion and commuting from different townships across Gauteng.

3.4. Data Analysis

The SPSS statistical software package (IBM SPSS Statistics for Windows, Version 26.0) was used to facilitate data analysis. The SPSS provided the researcher with essential statistical functions, including descriptive statistics. Descriptive statistics summarised and quantified findings in a clear and structured manner through tables, graphs, and charts ([Steinberg 2015](#)). As described by [Sheard \(2018\)](#), descriptive statistics help in the interpretation and comparison of quantitative data.

3.5. Ethical Consideration

Ethical clearance was granted by the University of Witwatersrand and the study adhered to ethical standards set by the institution, ensuring that the research is conducted in a manner that respects the rights, dignity, and well-being of all participants. All the participants were made aware of their rights before participating in the study, including the following: (1) their participation was voluntary, with no obligation to take part; (2) they could withdraw from the study at any time without providing a reason; (3) their identities and responses would remain confidential and anonymous; and (4) they could request

a summary of the research findings upon completion. Participants were asked to sign informed consent forms to show their willingness to participate in the study. The consent form outlined the purpose of the study, their rights as participants, and the measures in place to protect their privacy.

4. Results

This section presents results on the transport mobility of 100 female domestic workers working in Centurion. The results begin with Table 1 with a summary on socio-economic characteristics that shape mobility experiences of domestic workers working in Centurion. This is followed by an overview on transport challenges experienced and how respondents perceive safety and security on transport. Lastly, the section presents a list of interventions perceived by domestic workers as measures to improve daily mobility.

All the respondents are female, with the majority in the age range of 25–45 years. Most of the domestic workers are not married (62%), while 38% are married. Among the respondents, the majority identified themselves as the head of the household (43%). This distribution suggests that a substantial number of domestic workers are either the primary earners or have significant responsibilities within their households. The income distribution shows that most domestic workers (67%) earn between R3001 and R4000 per month while a minority (4%) earn more than R4000. For some, income is derived from working for multiple households. At least 62% of respondents reported working for more than one household, which may indicate a need to supplement income or reflect the prevalence of part-time work arrangements.

Domestic workers working in Centurion reside in various townships within Gauteng province, highlighting the regional diversity of their living situations. A significant proportion of respondents live in Olievenhoutbosch (40%) which is about 15 km from Centurion Central Business District. However, many domestic workers reside in townships that are significantly distant from CBD and require multiple transport modes to complete their journeys. For instance, KwaMhlanga is approximately 102 km (one way) from Centurion, while Hammanskraal is 76 km away, Soshanguve is 80 km, and Mabopane is 60 km. These distances pose considerable challenges for domestic workers, who often face long and arduous commutes. The lengthy travel times can lead to earlier departures and later returns home, affecting their overall well-being and family time. Moreover, the extended travel distances can result in higher transportation costs, reducing the net income of domestic workers.

While migrant domestic workers form a significant proportion, South Africans accounts for the largest share of domestic workers. In this study, “South Africa” refers to the country in which the research was conducted and where the domestic workers are employed. In contrast, “Southern Africa” refers to the broader geographical region that includes neighbouring countries such as Zimbabwe, Lesotho, Eswatini (formerly Swaziland), Malawi, and Mozambique. These countries are part of the Southern African Development Community (SADC), and are known for high levels of cross-border migration into South Africa. Many of the migrant domestic workers in this study originate from these countries, often seeking employment opportunities in South African cities due to economic challenges in their home countries. The high number of local domestic workers suggests a high demand for local domestic workers. Domestic work remains a common form of employment for lower-income workers in Africa. This often leads them to opt for domestic work, as it can be easier to find employment in this sector without legal documentation. The consequence of this situation is that undocumented workers may be more vulnerable to exploitation and may have limited access to legal protections and social services.

Table 1. Profile of domestic workers.

Information	(N = 100)
Age (years)	
18–24	32
25–45	45
46–64	23
Gender	
Female	100
Male	0
Marital status	
Married	38
Unmarried	62
Monthly income (Rands)	
Less than 2000	6
2002–3000	23
3001–4000	67
More than 4000	4
Transport cost per month (Rands)	
300–500	25
501–700	36
701–900	27
901–1100	12
Country of origin	
South Africa	66
Southern Africa	34
Place of residence	
Atteridgeville	6
Diepsloot	6
Hammanskraal	6
KwaMhlanga	4
Kempton Park	5
Laudium	2
Mabopane	2
Mamelodi	7
Mnandi	5
Olievenhoutbosch	40
Soshanguve	5
Tembisa	7
The Reeds	5

The most frequently used mode of transport for work is minibus taxi. A considerable proportion of domestic workers working in Centurion (24%) spend between 60 and 100 min

on a trip to work. At least 64% of the respondents do not have access to train transport, even though Metrorail in South Africa is an affordable mode of transport for low-income earners. However, Metrorail does not have wide coverage and is not available in many regions of the City of Tshwane. The most common factors perceived as important when choosing a mode of transport are safety (84%), followed by cost (75%), reliability (73%), and time taken (71%). Table 2 summarises overall mean and standard deviation on statements regarding transport challenges.

Table 2. Transport challenges.

	Item	Overall Mean	Std. Deviation
V102	Transport cost is burden to me	4.30	1.235
V106	There is lack of information on bus timetables and routes	4.30	1.345
V103	My salary covers monthly transport cost	4.00	1.146
V107	I do not have access to train transport	3.98	1.512
V104	Bus transport is expensive for me	3.97	1.432
V101	Getting transport from my workplace is difficult	3.82	1.218
V112	Waiting time for transport is long after work	3.76	1.478
V100	Getting transport to my workplace is difficult	3.70	1.259
V111	Waiting time for transport is long in the morning to work	3.45	1.547
V119	Transport is available during the weekend for leisure trips	3.35	1.459
V105	There are no buses in my township	3.23	1.757

The respondents were asked to rate the level of their agreement on transport challenges using a Likert scale (1 to 5), where 1 represents strongly disagree and 5 represents strongly agree. Item V102 (Transport cost is a burden to me) and V106 (There is lack of information on bus timetables and routes) have both the highest mean of 4.30, indicating that transport cost and lack of transport information are concerning challenges for most of the domestic workers working in Centurion. V105 (There are no buses in my township) has the lowest mean of 3.23; however, it remains a relevant challenge since other respondents do not have access to bus transport. With the highest standard deviation of 1.757, V105 (There are no buses in my township), suggests a wide range of responses which maybe due to differences in access to buses across different regions. Item V103 (My salary covers monthly transport cost) has the lowest standard deviation of 1.146, indicating less variation in responses, meaning most domestic workers working in Centurion have similar experiences regarding transport costs. Table 3 shows item mean and standard deviation for each statement regarding transport safety and security.

The highest mean score 3.60 was found in item V109 (I fear harassment in train) suggesting that harassment in trains is a concerning issue for many respondents. Item V113 (I feel safe travelling home at night) has the lowest mean at 1.85, indicating that most respondents do not feel safe travelling at night. Item V118 (I feel safe travelling by foot) has the highest standard deviation of 1.604, showing a variation in how domestic workers working in Centurion perceive their safety while walking. With the lowest standard deviation of 1.390, item V110 (I fear harassment in minibus taxis at night) suggests that respondents share a similar concern in minibus taxis as women users. However, it should be noted that harassment in minibus taxis or buses was not an option in the survey; this question was only asked in relation to trains. Table 4 summarises perceived interventions that can improve daily journeys of domestic workers working in Centurion.

Table 3. Transport safety and security.

	Item	Overall Mean	Std. Deviation
V109	I fear harassment in train	3.60	1.531
V114	I feel safe travelling by bus during the day	3.41	1.464
V110	I feel unsafe in a minibus taxi at night	3.31	1.390
V108	I fear harassment in bus transport at night	3.25	1.424
V115	I feel safe travelling by minibus taxis during the day	2.98	1.456
V118	I feel safe travelling by foot	2.95	1.604
V116	I feel safe travelling by train	2.53	1.579
V117	I feel safe travelling by bicycle	2.24	1.478
V113	I feel safe travelling home at night	1.85	1.410

Table 4. Perceptions on interventions to improve daily transportation.

	Item	Overall Mean	Std. Deviation
V121	More bus routes	4.38	1.135
V128	Public transport vehicles not roadworthy should not be on the road	4.26	1.252
V125	Improved frequency of buses	4.18	1.298
V125	Improved train safety	4.13	1.516
V127	Improved frequency of trains	4.02	1.512
V124	Transport allowance from my employer	4.02	1.392
V120	Cheaper transport fares	4.01	1.580
V122	Improved walking paths	3.95	1.466
V123	Provision of cycling paths in my township	3.68	1.601

To improve the journey experiences of domestic workers working in Centurion, the researcher developed a set of questions aimed at gathering insights from respondents on potential improvements in transport mobility. In Table 4, the items listed are organised from the highest to lowest mean score to provide a better understanding of key improvements. With an overall mean of 4.38 and a standard deviation of 1.135, item V121 (More bus routes) indicates that respondents strongly agree that expanding bus routes is crucial. Moreover, item V121 (More bus routes) reflects one of the highest levels of importance among all factors. Item V128 (Public transport vehicles not roadworthy should not be on the road) also had a high mean score of 4.26 and a low standard deviation of 1.252, indicating that respondents largely support ensuring that only roadworthy vehicles are allowed to operate. In addition, it shows a strong concern for safety and vehicle standards. While the respondents supported the provision of cycling paths in their communities (V123), the item has the highest standard deviation of 1.601, This suggests that while there is an interest in cycling infrastructure, opinions are more varied across the respondents.

5. Discussion

An analysis of profile of domestic workers working in Centurion include socio-economic characteristics such as age, income, country of origin, place of residence, marital status, and transport cost. The study found that a larger proportion (66%) of domestic workers working in Centurion are South Africans. This finding is consistent with research conducted by [Dinkelman and Ranchhod \(2012\)](#) reporting that local people constitute a larger portion of the domestic workers working in South Africa. However, the study also reveals that although the majority of domestic workers are South African, there is a considerable number of migrant workers from Southern Africa. According to [Au Wee](#)

[et al. \(2019\)](#), migrant domestic workers make an important contribution towards economic growth and the demand for migrant workers is steadily increasing across some cities in the world, especially Europe where there is an aging population. Undocumented migrant workers often face unique challenges such as fear of deportation, lack of access to formal employment, and discrimination ([Gächter 2022](#)) which can significantly influence their transport needs and experiences. They are often compelled to rely on unsafe, informal, or unregulated transport options, which are not only unreliable but may also expose them to higher risks of exploitation, harassment, and physical harm. Moreover, the financial instability associated with informal employment limits their ability to afford safer and more reliable transport modes, further entrenching their dependence on these unsafe options.

The study found that domestic workers are paid considerably low wages and salaries which is in line with study by [Burger et al. \(2018\)](#). Domestic workers in South Africa are poorly remunerated because of an oversupply of low-skilled labour in the country ([Burger et al. 2018](#)). According to the [Department of Employment and Labour \(2024\)](#), the minimum hourly wage for domestic workers is set at ZAR 27.58. However, the current minimum wage remains insufficient to meet their basic living expenses and needs. Similarly, in other developing countries, domestic workers are poorly remunerated with no legal or social protection ([Ghosh 2021](#)). As indicated by [Erman and Kara \(2018\)](#), domestic workers commuting long distances also spend more on transport. Income is a key factor influencing mode choice ([Meng et al. 2018](#)). In South Africa, low-income earners relying more on public transport, while others may walk or cycle which may be less convenient or less safe ([Stats SA 2021](#)). The Income and Expenditure Survey (IES) 2022/2023 reveals that the average annual household income in South Africa was ZAR 204,359, with a median income of ZAR 95,770 ([Stats SA 2024a](#)). Disparities are evident when comparing male-headed households, which had an average income of ZAR 239,590, to female-headed households, which averaged ZAR 158,481 ([Stats SA 2024a](#)). Racial disparities persist, with white-headed households earning an average of ZAR 676,375 per annum, while black African-headed households earned ZAR 143,632 ([Stats SA 2024a](#)).

Transport cost was found to be a common concern among domestic workers working in Centurion even though their salaries or wages covered their transport costs. This finding is in line with a study conducted in the City of Tshwane whereby “expensive taxis, bus service availability /accessibility and buses which do not keep to schedules” were found to be the most common problems ([City of Tshwane 2015](#), p. 68). Domestic workers, as part of the impoverished workers in South Africa, allocate a substantial portion of their income towards costs related to work commuting ([Kerr 2018](#)). The minibus taxi is the most available and frequently used mode of transport by respondents, yet the most expensive compared to buses or Metro rail ([Kerr 2018](#)). There is a need to address the needs of low-income earners to improve transport accessibility and ensure equitable mobility for all individuals. The National Household Travel Survey 2020 indicates that among public transport modes, taxis were the most expensive for workers ([Stats SA 2021](#)). The taxis were the most expensive for commuters, with average monthly travel costs of ZAR 960, followed by buses (ZAR 745) and trains (ZAR 581) ([Stats SA 2021](#)). When these figures are compared against average monthly earnings across different occupations in South Africa, the transport burden becomes low-income earners like domestic workers. For instance, domestic workers may spend 30% to over 90% of their income on taxi transport alone.

This study found that safety and security on transport was a major concern. The respondents regarded Metrorail as unsafe. Metrorail services have experienced high levels of crime, including assaults and robberies ([Nxele and Ngubane 2024](#)). Factors contributing to this include overcrowding, inadequate security measures, and infrastructure challenges. These issues have led to a decline in passenger confidence and usage ([Nxele](#)

and Ngubane 2024). Women in South Africa are more vulnerable to crime and harassment on Metrorail (Mabaso and Matthews 2018). The fear of being a victim of crime on the train not only impacts daily travel and mode choice but perpetuates existing transport inequalities. Research reveals that women do not feel safe on public transport or when they walk (Ceccato 2017; Loukaitou-Sideris 2014; Mowri and Bailey 2023). A study in India found similar concerns where women feel unsafe on public transport due to the high risk of harassment and crime (Mahadevia and Deepali 2016). Because of limited transport options, women endure all types of harassment on transport (Ismawati et al. 2023; Nasrin and Chowdhury 2024; Neupane and Chesney-Lind 2014; Valan 2020). The study also found that while respondents feel safe travelling by bus during the day, they do not feel safe travelling by bus at night. Similarly, in Ethiopia, women do not feel safe on buses at night and during peak hours in the morning because of overcrowding (Kacharo et al. 2022).

The study found that long commuting times are primarily due to spatial inequality, as domestic workers often reside in peripheral townships located significant distances away from affluent places of employment in Centurion. This issue is compounded by limited direct public transportation options between peripheral areas and suburban employment hubs. Similar patterns of spatial mismatch and lengthy commutes have been documented among low-income workers in other South African cities (Burger et al. 2018; Kerr 2018). However, the severity of commute times specifically observed in Centurion is notably influenced by the high degree of residential segregation and limited integrated public transport, highlighting area-specific challenges that policymakers should address.

6. Conclusions

Access to transport enables women to participate more fully in the workforce and access healthcare, education, and other opportunities offered by the city. However limited access to transport may create a negative impact for many, for example, limited opportunities, unemployment, transport inequalities, social exclusion from essential services, and poverty. This study highlights the mobility challenges faced by domestic workers working in Centurion and the perceived measures that can improve daily travel.

The most common challenges encountered by domestic workers are high transport costs, lack of transport information, long commute times, and limited access to affordable and safe public transport options. Domestic workers who reside in distant townships from Centurion have transport challenges that are further exacerbated. Domestic workers often spend a significant portion of their income on transportation. This financial burden can be particularly challenging for those already earning low wages. Domestic workers frequently travel early in the morning or late at night, times when public transport options are limited and less safe, increasing their vulnerability to harassment and crime. Some domestic workers are not legally documented, which makes it harder for them to access formal employment and transport services. This can lead to exploitation and limited legal protections. Being part of a low-income group, domestic workers are often more vulnerable to exploitation, both in terms of wages and working conditions, including transport-related challenges.

The mobility challenges found in this study are not exclusive to domestic workers. Instead, they reflect broader problems experienced by low-income women in urban areas more generally. Low-income women across different sectors share similar difficulties in accessing affordable, reliable, and safe transportation. Such challenges not only restrict their ability to work and participate in economic activities but also reinforce social exclusion and economic disparity.

The study limitations were the sample size and geographic scope. Although the sample size was sufficient for basic statistical analysis, it created a limitation for representation of other cities in South Africa. The focus of the study was on Centurion, an affluent suburb in Tshwane, which may limit the generalisability of findings to other regions with different socio-economic characteristics. Future research will address this limitation by expanding the geographic scope to include multiple urban areas. This will enhance the generalisability of the findings. A large sample size will also help to mitigate sampling bias and provide a more comprehensive understanding of the population. In addition, the use of qualitative research methods instead of quantitative research methods could have provided deeper insights into the lived experiences of domestic workers concerning their transport mobility. To address this limitation, future research should incorporate qualitative methods, such as interviews or focus groups, to complement the quantitative findings. While this research has identified and quantified the key problems, such as high transport costs, lengthy commute times, and inadequate transport safety and security, practical solutions remain limited and warrant additional investigation. Therefore, future research should focus on the feasibility and effectiveness of potential interventions, such as targeted transport subsidies, integrated urban planning, improved infrastructure, and inclusive transport policy measures to comprehensively address the identified challenges.

The most valued perceived interventions to improve daily transport challenges were “More bus routes, Public transport vehicles roadworthiness, Improved frequency of buses, Improved train safety and Improved frequency of trains”. However, the other measures also received positive responses. These measures should extend beyond mere convenience and encompass inclusive transport policies. Based on the results found in this study, it is evident that more should be done to improve the transport mobility of domestic workers in the city. The following are recommendations that could be implemented by policymakers and the city to address the challenges faced domestic workers and other women earning low income:

- (1) Integrated urban and transport planning: Integrated planning can have a positive impact by reducing travel distances, improve accessibility to public transport, enhance transport safety, and create equitable transport systems and sustainable transport options. Integrated planning encourages Transit-Oriented Development (TOD) where residential areas, places of employment, and essential services are located closer to each other. The financial feasibility of TOD can be assessed through a cost-benefit analysis, considering the long-term savings from reduced travel distances and improved public transport accessibility. Stakeholders such as urban planners, transport authorities, policymakers, and communities should collaborate to develop and implement these plans. Funding can be sourced from government budgets, public-private partnerships, and international development grants.
- (2) Mixed-income housing development: The city should prioritise the development of mixed-income housing projects closer to places of employment. This would reduce the need for long commutes and improve social integration. The development of low-income housing close to higher income areas is a long-term solution that reduces the need to travel to work for domestic workers. A financial plan for mixed-income housing development can include tax incentives for developers and government subsidies for low-income housing. Engaging local communities in the planning process ensures that the housing projects meet the needs of all residents.
- (3) Subsidy scheme for public transport: As a short-term solution, a subsidy scheme for all modes of public transport, including minibus taxis, would reduce the burden of transport cost borne by commuters in South Africa. Minibus taxis are the most commonly used form of transport for many low-income workers yet not subsidised, which

place a disproportionate financial burden on low-income commuters. A government subsidy could lower fares and improve access to more affordable transport options not only for domestic workers but other marginalised and vulnerable groups. The financial feasibility of a subsidy scheme can be evaluated by analysing the potential economic benefits, such as increased employment and reduced traffic congestion. Key stakeholders include the national government, local municipalities, and transport operators. Funding for the subsidy could come from a combination of government budgets, fuel levies, and donor support.

- (4) Improvement of safety for night travel: The installation of CCTV cameras in buses, trains, improved street lighting, and visible policing in areas perceived as unsafe would create a safer space for commuters. This recommendation can be implemented by allocating municipal budgets for the installation of CCTV cameras, improved street lighting, and increased policing. Collaboration between law enforcement, transport providers, and community safety organisations is crucial. Public awareness campaigns can also play a role in promoting safety measures.

These recommendations can lead to a more sustainable, inclusive, and equitable urban transport system, improving the overall quality of life for domestic workers and other low-income earners. The city should look beyond the need for huge sums of money to make meaningful transport improvements. While large infrastructure projects can be costly and time consuming, some impactful measures, like installing CCTV cameras and ensuring visible policing, do not require massive financial investments. Relatively low-cost interventions can significantly improve the safety and security of commuters. Small strategic steps in improving quality of transport systems can make a big difference.

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