**Commuter-Commuter Interaction's Impact on Travel Satisfaction and Wellbeing for Commuters with Disabilities**

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**Abstract**

This study investigates the influence of fellow passenger interactions on travel satisfaction and wellbeing among commuters with disabilities (CWD) in a developing country. Employing qualitative methods such as ethnography and interviews, it explores the challenges CWD faces in public transport. In addition to building on previous studies regarding interaction on public transport, the study introduces the concept of Commuter-to-Commuter interaction. This study unveils the impact of fellow passengers on travel experiences and categorises interactions as positive, neutral, or negative, elucidating key features of this dynamic. Understanding these interactions is pivotal for developing interventions aimed at improving transportation accessibility. Unlike previous studies focusing on religion, race, gender, and age, this research addresses a gap by focusing on disabilities. Enhancing comprehension of inclusion dynamics informs policies for more equitable transportation systems, ultimately contributing to a supportive and accommodating environments for all commuters, including those with disabilities.

**Keywords**: Travel Satisfaction; commuters with disabilities; Developing Countries; Commuter-to-Commuter Interactions; Inclusive Transportation

# Introduction

A significant body of research has explored the complex interplay between an individual's subjective wellbeing (SWB) and travel satisfaction (Chatterjee et al., 2020; Clark et al., 2020; De Vos et al., 2013; Lunke, 2020). This research recognises travel as a crucial component influencing overall wellbeing. SWB encompasses various aspects, including self-assessments across life domains, emotional experiences, and personal growth (Clark et al., 2020; De Vos et al., 2013; Mokhtarian, 2019). Additionally, travel satisfaction, inherently linked to life satisfaction, is influenced by factors such as travel mode, activities, residential relocation, urban livability, and duration of travel (Friman et al., 2017; Wang et al., 2020; Mouratidis, 2020).

Despite extensive research, significant gaps remain in understanding travel satisfaction among commuters with disabilities (CWD), interactions with co-passengers, and contextual factors in developing countries (Kim et al., 2020; Sukhov et al., 2021; Mogaji, 2020). Addressing the experiences of CWD is crucial as it contributes to ongoing debates on inclusion, highlighting the importance of equitable access to transportation for all individuals, including those with disabilities (Cornet et al., 2022; Levine & Karner, 2023; Moharrak et al., 2024; Venkataram et al., 2023). This focus is particularly relevant as the global population ages, increasing the number of people with disabilities who rely on public transportation (Mogaji & Nguyen, 2023).

Understanding the nuances of Commuter-to-Commuter interactions is equally important, as these interactions can significantly impact CWD's travel satisfaction and overall wellbeing. Positive interactions foster a supportive travel environment, whereas negative interactions can exacerbate feelings of exclusion and discomfort (Choi et al., 2021). Additionally, the oversight of contextual variations between developed and developing countries affects the generalizability of research findings. Focusing on these interactions and the context of developing countries, our research aims to provide a more comprehensive and inclusive understanding of travel satisfaction among CWD, thereby addressing critical gaps in the existing literature.

To address these gaps, it is essential to understand the experiences of people with disabilities who rely on public transportation (McCausland et al., 2020; Kassens-Noor et al., 2021). Our research explores the nuanced dimensions of travel satisfaction for CWD, aiming to uncover how the behaviours and interactions of co-commuters on public transport influence their travel satisfaction and, ultimately, their subjective wellbeing. The central research question is: How do the behaviours and interactions of co-commuters on public transport impact the travel satisfaction of people with disabilities, and how does this eventually contribute to their subjective wellbeing?

Our current study probes deeper into the unique challenges faced by CWDs during their daily commute and interactions with fellow passengers. While previous studies have focused on individual actions and responsibilities for wellbeing during the commute, our research explores the behaviours of other passengers within this context. Additionally, we recognise the critical connection between CWDs and their interactions with other passengers, particularly in the specific context of Nigeria. Socioeconomic and cultural factors that promote mutual support among commuters play a substantial role in shaping the travel experiences of individuals with disabilities, enriching our understanding of commuter wellbeing dynamics.

In our study, we define travel satisfaction as the overall subjective assessment of commuting experiences by CWD, covering factors like comfort, convenience, safety, and interactions with co-passengers (Majumdar et al., 2021; Waygood et al., 2019; Zhao & Li, 2019). Similarly, wellbeing encompasses the holistic evaluation of CWD's physical, emotional, and social welfare affected by commuting, including safety, independence, and overall quality of life. We employed a mixed-methods approach to measure these, combining ride-along observations and semi-structured interviews with commuters with disabilities and transport services providers. Ride-alongs allowed direct observation of interactions, behaviours, and emotions during commuting, while interviews explored subjective perceptions, feelings, and wellbeing indicators (Mogaji et al, 2022). We used open-ended questions about comfort, safety, interactions, and overall wellbeing. To ensure validity, we employed rigorous qualitative analysis techniques like thematic coding and triangulation of data from multiple sources, enabling a comprehensive understanding of CWD's travel satisfaction and wellbeing in the context of their commuting experiences (Mogaji & Nguyen, 2021; Farinloye et al., 2019).

Insights derived from the research hold theoretical implications for understanding the relationship between commuting, activities during commuting, and travel satisfaction, with practical applications in creating a more inclusive public transportation system. Ultimately, the study aims to contribute to building a more equitable public transportation system, fostering respect and empathy among co-commuters. The study's findings offer actionable insights for policymakers, transport service providers, and commuters, aiming to create a more inclusive, comfortable, and satisfying travel experience for individuals with disabilities. Additionally, by addressing the research gaps identified, the study contributes to the broader objective of building a more inclusive and equitable public transportation system. Through increased understanding and awareness, the research strives to foster an environment of respect and empathy among co-commuters, ultimately benefiting society.

# Literature Review

## Travel satisfaction and wellbeing

Travel satisfaction plays a pivotal role in individuals' daily lives, significantly influencing their overall wellbeing and quality of life (Majumdar et al., 2021; Waygood et al., 2019; Zhao & Li, 2019). Extensive literature has investigated the determinants of travel satisfaction, delving into its variations across different regions, social demographics, and transportation modes. These studies offer valuable insights into the factors shaping travel satisfaction and its impact on individuals' overall life satisfaction and emotional wellbeing.

Zhao and Li (2019) examined regional and social disparities in general travel satisfaction among residents in Beijing, China, revealing variations based on region and socioeconomic factors. Their findings emphasise the significance of these factors in shaping individuals' travel satisfaction, aligning with our current study in Nigeria, a developing country. Similarly, Majumdar et al. (2021) identified key determinants of perceived satisfaction related to different types of trips in New Delhi, India, including socio-demographics, accessibility, built environment, security, mode choice, and safety perception. Notably, public transport users exhibited lower satisfaction levels compared to car commuters.

Lunke (2020) investigated commuters' satisfaction with public transport in Oslo, Norway, revealing significant impacts of travel time, waiting times, interchanges, and walking distances on travel satisfaction. Choi et al. (2021) emphasised the pivotal influence of commuters' attitudes on their overall commute satisfaction in Seoul, South Korea. Furthermore, the interaction of service quality attributes has been identified as a significant contributor to travel satisfaction. Sukhov et al. (2021) assessed travel satisfaction in public transport in Sweden, revealing complex interactions of service quality attributes leading to diverse configurations contributing to overall high travel satisfaction. Friman et al. (2017) found that satisfaction with daily travel directly impacts emotional wellbeing and life satisfaction, with driving and active modes of transportation having more positive effects than public transport.

These studies offer a comprehensive understanding of travel satisfaction, highlighting its relationship with regional disparities, socioeconomic factors, transportation modes, life satisfaction, and emotional well-being. They underscore the importance of improving transportation services, addressing contextual factors, and considering individuals' diverse needs to enhance overall travel satisfaction and quality of life.

## Commuters' wellbeing

Understanding commuter wellbeing is a critical focus in transportation research, particularly when considering the diverse challenges encountered by various groups, including individuals with disabilities (CWD). Research has delved into different dimensions of commuting and its impact on wellbeing across different contexts. Zijlstra and Verhetsel (2021) examined the relationship between weekly commuting hours and well-being, finding a negative association where increased commuting time correlates with lower overall well-being. This underscores the toll that extended commuting can take on individuals' quality of life, highlighting the need for strategies to mitigate these effects. Liu et al. (2021) explored how different commuting modes—such as public transport, walking, and cycling—affect hedonic and eudaimonic wellbeing. They noted that these modes can potentially enhance the commuting experience and overall wellbeing, although their study did not specifically address how disabilities may influence these outcomes.

Kapitza (2024) shifted focus to the timing of commuting, comparing daytime versus nighttime commuting experiences. They found significant differences in time expenditure, stress levels, and perceptions of safety, particularly noting that women tend to perceive nighttime commuting as more unsafe. This gender-specific perspective highlights additional challenges certain demographic groups face in commuting environments. Deng et al. (2024) explored the broader spillover effects of commuting distance on subjective wellbeing, emphasising its impact across health, work, and community domains. Their findings underscore how commuting choices influenced by distance can significantly shape overall wellbeing outcomes, illustrating the interconnectedness of commuting experiences with broader aspects of life.

These studies collectively highlight the intricate relationship between commuting and well-being, emphasising the necessity for tailored interventions and policies to improve the commuting experience and enhance overall well-being for all commuters, including those with disabilities. Despite De Vos et al.'s (2013) comprehensive overview of travel and well-being studies, which underscores how travel behaviour influences well-being through travel experiences, activity participation, and mobility, there remains a significant gap in understanding the well-being of commuters with disabilities.

Verbich & El-Geneidy (2016) provided valuable insights into how individuals with disabilities perceive and prioritise bus service aspects in London, UK. Their findings highlighted that satisfaction hinges on factors such as the presence and condition of bus shelters and the availability of seating. They underscored the importance of improving waiting area conditions and providing clear information at bus stops to enhance satisfaction among riders with disabilities. Ralph et al. (2022) investigated access to out-of-home activities for people with disabilities, linking personal characteristics, including disability, and travel mode to willingness to travel. They found that people with disabilities often face higher travel time costs for accessing activities compared to those without disabilities.

Similarly, Mogaji and Nguyen (2021) conducted a qualitative study in Lagos, Nigeria, using semi-structured interviews with CWD to explore transportation challenges and coping strategies. They acknowledged the emotional toll and satisfaction self-evaluation among commuters dealing with inadequate public transport. However, despite these studies, limited insight remains into the unique well-being challenges faced by commuters with disabilities. This study aims to fill this gap by exploring the well-being experiences of commuters with disabilities in urban transport settings.

## Commuter-to-Commuter Interactions within Public Transportation

Public transport is a vital meeting point where diverse individuals interact within confined spaces for finite durations (Bissell, 2010, 2016, 2018). Extensive scholarly attention has explored these interactions, examining dimensions such as race, gender, religion, age, and socioeconomic status (Fleetwood, 2004; Gardner et al., 2017; Honkatukia & Svynarenko, 2019; Ohnmacht et al., 2009). Sensory aspects, including sounds, smells, and tactile sensations, profoundly influence perceptions and interactions (Rodaway, 2002; Haldrup et al., 2006). Language barriers, in particular, contribute to feelings of anxiety and alienation (Rodaway, 2002; Haldrup et al., 2006), while olfactory cues and the presence of alcohol further complicate dynamics, shaping interpretations and responses (Rodaway, 2002).

Recent studies have delved into encounters involving Muslim(-looking) passengers, revealing nuanced embodied experiences and shedding light on othering processes and the negotiation of difference (Shaker, 2021; Shaker et al., 2022). Qualitative investigations across European cities highlight how sensory cues, linguistic barriers, and cultural perceptions intersect, influencing interactions between Muslim passengers and other commuters (Rodaway, 2002; Haldrup et al., 2006). From seating choices to subtle expressions of politeness tinged with underlying disdain, these interactions mirror broader societal attitudes towards religious minorities, emphasising the need for inclusive mobility experiences.

Similarly, research on racial dynamics within public transport underscores persistent inequalities and discriminatory practices (Purifoye, 2015). Ethnographic studies in cities like Chicago illustrate racial tensions through acts of "nice-nastiness" and subtle exclusion, fostering discomfort and distrust among passengers (Fleetwood, 2004; Purifoye, 2015). Interventions addressing systemic biases are essential for fostering belonging among all passengers, irrespective of race, religion, or cultural background within public transport networks.

## Interactions with Service Providers/Staff

Public transport staff play a crucial role in shaping passenger experiences, but their interactions can often be marred by discriminatory practices, exacerbating dynamics of inclusion and exclusion (Purifoye, 2015). These interactions highlight the critical need for attention to the dynamics between service providers and users within transport systems. Urban transportation systems frequently perpetuate inequalities, contributing to disparities in access and reinforcing social segregation (Purifoye, 2015; Fleetwood, 2004).

Friman and Olsson (2023) delved into the challenges faced by individuals with mental and physical difficulties in achieving travel autonomy within transportation services. They identified barriers such as scheduling conflicts, long waiting times, and negative staff attitudes, significantly impacting how these individuals engage with transport services. These findings resonate with Bezyak et al. (2017), who identified attitudinal barriers as significant hurdles for people with disabilities using public transportation. These findings align with observations by Ugboma (2019) in Nigeria, where transport providers often neglect the needs of consumers with disabilities due to perceived inconvenience and demands.

Similarly, Mogaji and Nguyen (2023) shed light on issues within informal transport services, noting the lack of economic incentives that hinder improvements for commuters with disabilities. Despite these emerging insights, there remains a pressing need for research to delve deeper into the experiences of individuals with disabilities, particularly those navigating informal public transport systems. It is crucial to understand their interactions with fellow passengers and the broader socio-cultural context shaping these encounters (Nwaedozie et al., 2023; Shaker et al., 2022; Ugboma, 2019). Addressing this gap would enrich our understanding of consumer interactions in public transport and inform policies aimed at enhancing accessibility and social inclusion for people with disabilities in developing countries like Nigeria.

# Methodology

## Interpretative phenomenological methodology

This research adopts a qualitative phenomenological approach (Farinloye et al., 2024), grounded in empathy and thorough exploration, to comprehensively grasp the intricate tapestry of commuters with disabilities' experiences and interactions in the bustling urban landscape of Lagos, Nigeria. Our decision to utilise this methodology is justified for several reasons.

Firstly, it is crucial to recognise that while prior studies may have predominantly utilised longitudinal and quantitative methodologies, the unique nature of our investigation necessitates a departure from these conventional approaches. Unlike quantitative methods that often prioritise statistical analysis and generalizability, qualitative phenomenology offers a nuanced understanding of lived experiences, enabling us to explore the subjective realities of individuals with disabilities navigating the urban landscape of Lagos.

Our decision to embrace qualitative methods is grounded in recognising the complex and multifaceted nature of the challenges faced by CWD in urban environments. Lagos, with its diverse population and infrastructural complexities, presents a particularly intricate context that demands an in-depth exploration of the lived experiences of individuals with disabilities. By adopting a qualitative phenomenological lens, we aim to uncover the underlying dynamics, social interactions, and cultural frameworks that shape the daily realities of this marginalised population.

Furthermore, qualitative research aligns with our commitment to centring the voices and narratives of individuals with disabilities, allowing them to participate actively in the research process and share their unique perspectives. Through methods such as in-depth interviews, participant observation, and thematic analysis, we seek to amplify the voices of CWD, highlighting the nuances and complexities often overlooked in quantitative studies.

The need for a holistic understanding of the lived experiences of commuters with disabilities in Lagos, Nigeria, drives our choice of a qualitative phenomenological approach. By privileging depth over breadth and embracing the complexities of human experience, we aim to contribute valuable insights that inform policy, design interventions, and foster greater inclusivity in urban spaces.

## Research context

The study is in Lagos State, depicted in Figure 1 as a small region within Nigeria, West Africa, but a significant commercial hub and rapidly urbanising region (Soetan et al., 2021; Mogaji, 2022). With a population of approximately 20 million people occupying 3,577 square kilometres, Lagos is Africa's most populous city and exhibits high population density (Xiao, 2022).

A map of a city

Description automatically generatedFigure 1: The Map of Lagos in Nigeria. Source: Mogaji, 2020

The primary mode of commercial transport in Lagos is the "Danfo," recognisable by its distinctive yellow paint and ubiquitous presence on the city's streets (Figure 2). Despite safety concerns, Danfos remain popular, primarily operated by informal, self-employed drivers (Mogaji & Nguyen, 2021). Compared to cities like London, CWD in Lagos seldom receives free passes or benefits from municipal transportation services. Moreover, Danfos lack assistive technologies like ramps, further complicating accessibility for CWD (Nwaedozie et al., 2023). Focusing on Danfos and contextualising the study in Lagos is significant due to the city's representation of urban transportation challenges, including congestion and limited accessibility, impacting individuals with disabilities. Lagos exemplifies a developing country context with resource constraints and infrastructure gaps affecting mobility and quality of life for CWD. Research in Lagos contributes to a global understanding of inclusive transportation solutions, yet further comprehensive studies are needed to address existing gaps and enhance understanding.



*Figure 2: People rushing to catch the Danfo bus highlight the inherent challenges for CWD.*

Our research focuses primarily on individuals with diverse disabilities who use public transportation in Lagos. To effectively reach this target group, we collaborated with a Non-Government Organization (NGO) for participant recruitment. We shared the research information with this organisation and requested their assistance in identifying suitable interview participants. Their extensive network facilitated the outreach, leading to interested individuals contacting us.

## Data collection methods

Over nearly two years, from October 2021 to March 2023, we collected qualitative data across five distinct phases. These phases encompassed the involvement of three key stakeholder groups: CWD, fellow passengers, and service providers within the transportation network. This extended timeframe allows for capturing diverse experiences and minimising potential biases associated with short-term studies.

### Phase 1: Observation

Our research assistants (RAs) played a crucial role in gathering data on the interactions of CWD using public transport. While this aspect was not initially planned for riding with CWD, the RAs were trained to be observant and attentive to any relevant interactions they might encounter during their journeys. These observations encompassed a wide range of scenarios, including how one commuter with disabilities communicated with another, the readiness to vacate designated spaces, instances of helpfulness from fellow passengers, or any other occurrences that could impact the travel satisfaction of individuals with disabilities. By closely and discreetly observing these behaviours, interactions, and potential challenges, we gained a deep understanding of the daily experiences and obstacles faced by people with disabilities within the intricate transport system of Lagos. This real-time, on-the-ground approach provided invaluable insights, and the observations were thoughtfully integrated into other aspects of our research, enhancing the overall depth and comprehensiveness of our data collection methods.

### Phase 2: Riding with CWD

Our research took a proactive and immersive approach to truly understanding the challenges faced by individuals with disabilities. In addition to our observations, we recruited seven willing participants who allowed our research assistants (RAs) to accompany them on their journeys. Like being travel buddies, this arrangement was carefully planned with agreed locations, times, and destinations. While the RAs were present for research purposes, this approach allowed them to actively engage and interact with the participants. During these journeys, the RAs could ask questions about the participants' interactions, observe their actions, and understand their experiences more profoundly. This interaction was not audio recorded because we deemed it crucial to engage with the participants fully.

Additionally, we acknowledge that there will be interview opportunities in Phase 3. This immersive approach provided us with a direct, firsthand experience of CWDs' barriers, and we witnessed their interactions with fellow passengers and service providers. It offered a unique perspective that enriched our understanding of the intricate complexities they encounter within the transport system. This method allowed us to gain deeper insights into the daily realities of CWD, further strengthening the authenticity and depth of our research.

### Phase 3: Semi-Structured Interviews with CWD

In addition to the seven participants as part of Phase 2 (riding with CWD), our research assistants (RAs) conducted in-depth semi-structured interviews with 16 additional participants (See Appendix 1 for the interview protocol), making a total of 23 participants for this phase. These face-to-face interviews were conducted at the NGO's office, mutually agreed locations, and, in some cases, with the presence of interpreters or personal assistants to accommodate special requirements. The interviews were audio recorded. To accommodate individuals unable to participate in audio-recorded interviews due to disabilities, we utilised measures like sign language interpretation and text-to-speech or speech-to-text technologies. These accommodations facilitated communication for individuals with hearing impairments or speech disabilities. This personalised and thoughtful approach allowed us to gather rich and nuanced insights, giving voice to the diverse experiences of CWD as they navigate the complexities of the transport system. Data saturation was achieved after an interview with the sampled CWD, as no new data emerged. Table 1 presents the demographic information of CWD participants.

**Table 1: Demographics information of CWD participants (Phase 2 and 3)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S/N | Gender | Age | Education | Employment | Form of disabilities |
| P1 | Female | 18-25 | Secondary | Student | Mobility/Physical |
| P2 | Female | 18-25 | Secondary | Unemployed | Mobility/Physical |
| P3\* | Female | 26–35 | Secondary | Employed | Restricted growth |
| P4 | Female | 26–35 | No formal | Employed | Vision |
| P5\* | Female | 26–35 | No formal | Employed | Hearing impaired |
| P6\* | Female | 26–35 | University degree | Self-employed | Mobility/Physical |
| P7 | Female | 26–35 | University degree | Employed | Hearing impaired |
| P8 | Female | 36–45 | University degree | Self-employed | Hearing impaired |
| P9 | Female | 36–45 | No formal | Unemployed | Restricted growth |
| P10 | Female | 46–55 | No formal | Unemployed | Hearing impaired |
| P11 | Male | 18-25 | Secondary | Employed | Mobility/Physical |
| P12 | Male | 18-25 | Secondary | Student | Mobility/Physical |
| P13\* | Male | 18-25 | Secondary | Self-employed | Vision |
| P14\* | Male | 26–35 | Secondary | Employed | Speech impairment |
| P15 | Male | 26–35 | University degree | Employed | Vision |
| P16 | Male | 26–35 | University degree | Self-employed | Mobility/Physical |
| P17 | Male | 26–35 | University degree | Self-employed | Vision |
| P18 | Male | 36–45 | University degree | Self-employed | Restricted growth |
| P19 | Male | 36–45 | University degree | Self-employed | Speech impairment |
| P20\* | Male | 36–45 | University degree | Unemployed | Mobility/Physical |
| P21 | Male | 36–45 | No formal | Self-employed | Mobility/Physical |
| P22\* | Male | 36–45 | No formal | Employed | Mobility/Physical |
| P23 | Male | 46–55 | No formal | Employed | Mobility/Physical |

\*Participants who participated in Phase 2

### Phase 4: Interviews with Passengers

Engaging with co-passengers proved crucial to our research, requiring careful observation and respect for personal space while initiating conversations onboard public transport. Research assistants (RAs) engaged passengers by observing activities or behaviours indicative of interactions with CWD. These conversations aimed to comprehend passengers' motivations and gather contextual information, with RAs mindful of potential hesitancy among participants in the bustling environment of Lagos. Additionally, a street intercept approach was adopted, allowing RAs to disembark with passengers to spontaneously inquire about incidents or experiences on the bus. These on-the-spot conversations were conducted without collecting personal details and varied in duration based on interviewees' willingness to engage. Interviews with individuals who encountered CWDs during their travels offered insights into broader public attitudes and behaviours. To ensure unbiased responses, these passenger interviews were conducted separately from the ride-along interviews involving CWDs.

Informed consent was obtained from participants prior to initiating conversations or interviews, ensuring awareness of the research's purpose, potential risks, and voluntary participation. Real-time insights were crucial due to Lagos' fast-paced nature, facilitating a nuanced understanding of interactions within the urban environment. Data recording involved audio recording methods to ensure accurate documentation. Saturation was reached after engaging with 63 participants, ensuring comprehensive data collection. At the same time, deliberate efforts were made to engage with a diverse range of passengers over an extended duration to ensure thoroughness. (Refer to Appendix 2 for the interview protocol.)

### Phase 5: Interviews with Service Providers

To comprehensively comprehend the commuting environment's dynamics, our research extended beyond interactions with passengers to include interviews with service providers, specifically Danfo Drivers and Bus Conductors. These interviews were conducted at their bus stops to explore their roles, perceptions, responses to incidents, and strategies for managing challenging situations among commuters. While our primary focus remained on understanding the experiences of CWD, engaging with service providers offered valuable insights into the operational aspects of the transportation system.

While the primary emphasis was on CWD, understanding the perspective of service providers played a crucial role in contextualising the interactions within the transportation system. The interviews with service providers aimed to uncover their involvement and interaction within the commuting environment, shedding light on systemic factors that influence the experiences of our target group. Through candid conversations, we gained insights into existing practices, challenges encountered, and strategies employed by service providers to deliver accessible transportation services.

After interviewing 81 service providers (refer to Table 2 for demographic information), saturation was achieved, as no new data emerged. The interview protocol is detailed in Appendix 3 for transparency and replicability in the research methodology.

**Table 2:** Demographics information of the transport service providers.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | | Frequency  n = 81 | % |
| Gender | Male | 76 | 93.8 |
| Female | 5 | 6.2 |
| Age | 18–25 | 8 | 9.8 |
| 26–35 | 18 | 22.2 |
| 36–45 | 9 | 11.1 |
| 46–55 | 31 | 38.3 |
| 56+ | 15 | 18.6 |
| Education | No formal | 58 | 71.6 |
| Secondary | 13 | 16.1 |
| University degree | 10 | 12.3 |
| Employment | Self-employed driver | 52 | 64.2 |
| Employed driver | 10 | 12.3 |
| Conductor | 19 | 23.5 |
| Experience | Less than five years | 13 | 16.1 |
| 5–10 years | 26 | 32.1 |
| More than ten years | 42 | 51.8 |

## Data analysis

All the data (including field notes, photographs and transcripts) were exported into NVivo, a qualitative analysis software. The study employed a Reflexive Thematic Analysis approach (Braun & Clarke, 2022), following Braun and Clarke's six phases of thematic analysis (Braun & Clarke, 2006). This approach views coding as an interpretive process beyond simple identification to gain deeper insights. Themes were not predetermined but emerged after coding and developed from the codes themselves.The initial data analysis was conducted by the first author, followed by a secondary analysis by the third author after the first round of peer review. The aim of the secondary analysis was to confirm existing themes, check for coding consistency among more than one coder and identify additional relevant themes, particularly concerning the wide range of challenges and opportunities impacting the lives of CWD. Both rounds of analysis commenced with familiarisation and immersion in the data, involving repeated readings of the interview transcripts to comprehend the content and uncover emerging themes. Based on this familiarisation, initial codes (case nodes) were generated in NVivo. These case nodes were then collated and merged to form child nodes. The child nodes were reviewed and assigned to relevant overarching themes, further reviewed and refined to eliminate dormant themes.

## Rigour and credibility

Our research methodology ensures rigour and reliability through several key elements. Member Check allows participants to validate findings, thereby enhancing credibility. We secured Ethics Approval to protect participants' rights and dignity, prioritising confidentiality and anonymity and addressing any discomfort. Informed consent was obtained from all participants, ensuring awareness of the research's purpose, their roles, and potential risks. Throughout the process, confidentiality and participant anonymity were rigorously maintained. Data collection methods were conducted transparently and sensitively, including audio recording and demographic information collection. These ethical considerations upheld the integrity of our research process while safeguarding the wellbeing and privacy of all participants. Collaborative Iteration involved team reviews to enhance accuracy and validity, while Author Reflexivity fostered self-reflection to acknowledge and minimise biases, ensuring objectivity and authenticity in our results.

# Findings

## The travel experiences and satisfaction

Understanding CWD's travel experiences and satisfaction necessitates a grasp of the context within which they utilise public transportation services. This unique context, especially in a developing country like Lagos, contributes to a more comprehensive global understanding of travel satisfaction and overall wellbeing. As previously outlined in the methodology, Lagos is a densely populated, bustling city with inadequate transport infrastructure and many residents, including those with disabilities, rely on Danfo. Nwaedozie et al. (2023, p1) described the Danfo as ‘unregulated, unsafe, and unreliable, yet meeting the growing transport needs.

Evidence gathered through direct observation, accompanying CWD, and conducting interviews with CWD and service providers has highlighted significant regulatory issues concerning Danfo transport services. It has been noted that Danfo operations lack adequate regulation, particularly concerning route adherence. Drivers frequently change routes abruptly, leading to confusion and inconvenience for passengers, including CWD. Furthermore, discrepancies in transport fares have been observed, with CWD sometimes being charged more compared to other passengers, prompting intervention from other passengers to question such disparities.

Moreover, the safety of Danfo services has been called into question. Many CWDs have reported sustaining injuries and feeling at risk due to the lack of regulations governing these vehicles. The unreliable nature of Danfo services exacerbates these safety concerns. While other commuters may be able to adjust to the unpredictability of Danfo schedules, CWD often faces additional challenges and struggles due to their limited mobility and accessibility needs. Overall, the evidence underscores the urgent need for improved regulation and accessibility measures within the Danfo transport system to ensure all passengers' safety and equal treatment, particularly those with disabilities.

In addition, our observations indicate that the limited number of public transport and the growing population of non-disabled individuals present challenges for CWD, who must contend with fellow passengers for limited space (see Figure 2). The hurried atmosphere often leads to negative attitudes towards these commuters, with perceptions of taking up valuable space or causing delays for others rushing to work. The research by Mogaji & Nguyen (2023) and Ugboma (2019) underlines the strain placed on all public transport users due to inadequate infrastructure. For instance, the expectation of 20 buses dwindling to just 5 creates a rush, and CWD, needing extra space and support, faces additional tensions. This frustration compounds CWDs' challenges, accentuating the impact of insufficient infrastructure on their travel experiences.

The concept of a collectivist society, as established by Hofstede and applicable in Nigeria, adds a unique dimension to commuter interactions. While the limited transport infrastructure creates pressure, there are still instances of genuine concern for others' wellbeing within this context. Empathy and care were evident during Phases 1 and 2 of data collection, particularly during off-peak periods when the transport system is less chaotic. Passengers often seek to reassure fellow travellers, creating a more relaxed atmosphere.

Nigeria's cash-based economy and the informal, unregulated nature of transport services also shape the experience. Though this is changing with the introduction of the Cowry contactless payment card on the regulated Bus Rapid Transit (Mogaji & Nguyen, 2024), Nigerian passengers frequently pay their transport fare in cash, and they may choose to pay for another person, unlike the cashless and contactless economy where everyone seems to have their cards. There were many instances where the co-passengers chose to pay the transport fare of the CWD. Often, they said something like – *'Conductor* [Bus Driver assistant who collects money]*, do not collect money from that person in a wheelchair, I will pay for her'*. Aligning with findings by Mogaji & Nguyen (2023), some individuals have reservations about this gift-giving; most seem accepting of this practice. This practice is deeply rooted in Nigeria's religious solid context, where disabilities can be perceived as both divine punishment and an opportunity for acts of charity and spiritual sacrifices. Our interviews with both co-passengers and CWD consistently verified this perspective. Giving alms to individuals with disabilities could also be considered a significant spiritual gesture. It sometimes (observed five times) involves a symbolic ritual where passengers circle money over their heads and give it to the conductor as a form of giving to the gods and washing away their problems. Interestingly, we spoke to one of the co-passengers who revealed that this practice, besides helping others, carries personal spiritual benefits. However, it is noteworthy that many disabled commuters are fully aware of these religious beliefs and often choose to decline offers from others to pay for them, recognising the profound spiritual significance underlying this act.

## The Interaction

The interaction between commuters and CWDs highlights other service users' attitudes within the context of transport service provision. This section presents a typology of *consumer-consumer interaction*.

### Positive Commuter-to-Commuter interaction

The concept of positive Commuter-to-Commuter interactions on public transport is exemplified by instances where individuals choose to support passengers with disabilities, displaying high levels of empathy and active engagement. In these situations, some commuters with no disabilities desire to extend assistance and create a compassionate environment, fostering a welcoming atmosphere for everyone on the journey. This interaction sets the stage for exploring the uplifting impact of interactions between passengers, particularly highlighting instances where people show empathy and are eager to contribute positively to the travel experience, especially for those with disabilities. For example, one of the CWD participants shared her experience with someone willing to pay for her transport far; she said:

*I was minding my business, and when the conductor was asking for money, the woman beside me said she would pay for me, though I had my own money. I was slightly embarrassed, but she later explained that I should use the money for something else. Her gesture touched me, and it meant a lot. -* **P1, Female,18-25, Mobility/physical impairment**

The woman paying the transport fare of the CWD participant highlights a kind gesture to recognise the financial hardship that many people with disabilities are experiencing in the country. Though the participant said she initially felt embarrassed, she later appreciated the gesture and how the woman had saved her some money.

Paying for transport fares (observed 17 times over two months during Phase 2 of data collection) is one of many forms of positive Commuter-to-Commuter interaction. Helping to use public transport is also prevalent, especially for those with physical disabilities who may need to be carried inside the public transportation because the transport operator has not provided a ramp. One participant shared his experience, saying:

*When the bus comes [to the bus stop], I must be assisted into the Danfo and park my wheelchair. In most cases, people will ignore me, even the bus conductor will ignore me to call passengers, but there is a man who uses the same bus stop. I feel happy whenever I see him because I know he will help me -* **P21, Male, 36–45, Mobility/physical impairment.**

This experience shows the insensitivity of the bus conductor, who is unwilling to provide the needed support. Still, the passenger has to rely on Commuter-to-Commuter interaction with other service providers to help him. The excitement from this man when sharing this experience shows he looks forward to seeing the man who always helps him. It is a positive Commuter-to-Commuter interaction adopted as a coping strategy in engaging with the transport service provision. Additional evidence was gathered during Phases 1 and 2 of data collection, showing people empathising and understanding. From the fieldnote, we recorded that *People are also trying to help a physically disabled man with no wheelchair to use the pedestrian bridge.*

### Neutral Commuter-to-Commuter interaction

While there are negative and positive experiences at the different ends of the Commuter-to-Commuter interaction spectrum, commuters share their experience with those who are neutral and do not interfere with what is going on. These commuters with no disabilities are generally disengaged and uninterested in joining conversations or intervening in potentially abusive situations. They keep to themselves, focused on their activities, seemingly unconcerned about what transpires around them. This apathy is particularly evident in the context of the public transport mode (Danfo), where the limited space allows for these interactions to be readily observed. It becomes evident who is actively participating, helping, or simply ignoring the ongoing dynamics within the confined environment.

During the fieldwork, we found evidence of people minding their business and not interfering (observed 13 times over two months during Phase 2 of data collection). Even when CWD struggled, they did not interfere or offer help. This interaction was deemed neutral as there are instances of people visibly angry and restless because a CWD is boarding. One participant who is hearing impaired shared through sign language and as interpreted by the assistant that:

*I was struggling to engage with the bus conductor about my next stop because he was not paying much attention and could not hear me. No one on the bus said anything; everybody was alone. So finally, I had to write a note and pass it on to the conductor***—10, Female, 46–55, HearingImpaired.**

Another participant with restricted growth shared her experience trying to hold on to the bus, and no one was willing to assist. This neutral Commuter-to-Commuter interaction bothered some CWD participants, and we asked further if they wanted people to interfere. One of the participants with physical disabilities **[P20]** said: *People should offer to assist, and it is left for us to accept or reject the offer based on our evaluation of the situation*. One of the visually impaired commuters **[P4]** said: *If things were always in the right place, we would be fine and would not need to call for assistance.* These comments suggest that if everything is in order and public transport is genuinely accessible, people with disabilities will effectively engage within the marketplace without needing assistance.

### Negative Commuter-to-Commuter interaction

Negative Commuter-to-Commuter interactions on public transport often involve individuals displaying aggressive, arrogant, and impatient behaviours. These commuters are frequently in a rush, lacking empathy and understanding for others. They may openly express their frustration by shouting at the driver, demanding quicker services to avoid delays for everyone. Unfortunately, such negative interactions extend to CWD, who become inadvertent targets of this impatience. During Phase 2 of the study, observations revealed instances where passengers with disabilities felt intimidated by these aggressive behaviours (observed 22 times). This highlights a distressing aspect of public transport, where some passengers' attitudes contribute to an uncomfortable and unwelcoming environment, particularly impacting vulnerable individuals.

CWD participants discussed their interactions as they called for help and asked other commuters to get the attention of the Bus driver or conductor; as there are no audio-visual cues or any form of assistive technologies, CWD have to rely on their co-passengers to enhance their travel experiences, and this request for assistance can happen in a very volatile and high tension moment where everyone is under pressure, stressed with the transport system and not in a mood to assist CWD noted that it can always be embarrassing to ask for help when the facilities should have been provided. These CWD participants reiterated their need for dependency and would want to avoid unnecessary interactions. Fifteen CWD participants said they must call an Uber, a friend or their regular commercial motorcycle rider to pick them up when they are stuck somewhere. Though this is often not economically viable, they noted that it gives them independence.

Eleven CWD participants also mentioned avoiding Commuter-to-Commuter interaction because of their negative experiences with people. One visually impaired participant shared his experience:

*I went for a job interview and was unfamiliar with the place. I was asking people for directions or at least to help me. No one was interested. I was getting worried as it appeared I was putting myself in danger in an unknown place. I had to call Uber; it was expensive but safer –* **P15, Male, 26–35, Visual impairment.**

This vignette illustrates a form of disappointment on the part of the individual. Had the transport service provider offered assistive technology, which gave real-time information about available public transport, he could have independently checked and planned his journey instead of interacting with people unwilling to pay attention.

Seventeen CWD participants reiterated that poor infrastructure had allowed fellow commuters to laugh at them and make them feel worthless. They commented that people were often unwilling to help, as everyone was too busy and rushing. The CWD also mentioned that people look at them inappropriately, as though they should not go out and use public transport. One participant with restricted growth [**P18**] shared: *People think I am not human enough. They believe I am not entitled to a seat and want their children to share a seat with me*. Another participant who uses a wheelchair [**P6**] said: *Passengers can be unkind sometimes when you find a driver who waits for you, and then other passengers start looking at you with evil eyes like you are wasting their time.* These findings align with the experience of many vulnerable people, as reported in various studies that explore their experience in a retail store (Poria et al., 2009; Lehn, 2010; Husemann et al., 2022; Celik & Yakut, 2021). They suggest that irrespective of the service interaction, people with disabilities face this negative experience, which may prevent them from exploring the marketplace.

Seeing other service users become angry with CWD being helped was not surprising (observed eight times over two months during Phase 2 of data collection). The crowded areas, fast pace, and congested nature of the transport ecosystem in Lagos (see Figure 2) were also recognised as issues affecting these commuters' abilities. Everyone can see their struggle, but people often need more time to be able to assist. The bus drivers also admitted that customers' complaints often affect their attitude. One of the conductors said: *Everyone in Lagos is angry and in a rush. If you wait to assist people, they will just be shouting.*

## Impact

The experiences of people with disabilities in the context of public transport in Lagos reflect a range of challenges and opportunities that significantly impact their lives. This section presents how these factors affect various aspects of their lives:

### Access to opportunities

Travelling has a significant link to accessing opportunities, which, in turn, enhances subjective wellbeing. Lunke (2022) highlights the benefits of public transportation in opening up opportunities, even though factors such as waiting times, interchanges, and walking distances can significantly impact travel satisfaction. This notion aligns with Sukhov et al.'s (2021) perspective that travel satisfaction is influenced by a complex interaction of service quality attributes, resulting in diverse configurations that contribute to overall high travel satisfaction. Our data analysis reveals dissatisfaction with transport services, primarily shaped by commuter interactions. This dissatisfaction ultimately limits access to opportunities.

One participant shared her experience, saying:

This Danfo's rush and crowded nature make life incredibly difficult; I am limited to opportunities as I find it difficult to challenge abled people to seats on these buses. I cannot go out for job interviews, to networking events, or even meet some friends. Moreso, the negative attitude of the customers adds salt to this injury; you would expect people to care and show some empathy, but no, everyone is rushing - **P9, Female, 36–45, Restricted growth.**

The reliance on Danfo and the crowded environment pose significant challenges for disabled commuters navigating and reaching their desired destinations. The rush, coupled with negative attitudes from fellow passengers and the absence of assistive technologies, create barriers that hinder access to crucial events such as job interviews, educational institutions, and other opportunities. The need to ask for help, which can be embarrassing, highlights a lack of accessibility that limits the independence of disabled individuals. In summary, while travel is essential for accessing opportunities and enhancing wellbeing, the current state of transport services, particularly in crowded and informal settings, poses considerable obstacles for disabled commuters, impacting their ability to independently access opportunities and leading to a need for assistance that can be emotionally challenging.

Another participant shared his experience, saying:

Having to always ask for help is embarrassing; I often try to keep my dignity and compose myself, but Lagos transport will embarrass you; this limits my independence, and I often keep withdrawn and stay in my house, which is a safe place for me - **P16, Male, 26–35, Mobility/physical impairment**

### Managing travel experiences

Our observations and interaction with CWDs show that challenges and frustrations often mark their experiences. These difficulties are compounded by the already insufficient public transport system, leading to discomfort and feelings of being unwelcome. Negative interactions with impatient and aggressive fellow passengers further contribute to a distressing environment for CWD. The lack of necessary infrastructure, such as ramps for accessibility, leaves them dependent on the goodwill of others for assistance, which adds complexity to their travel experiences. However, it is crucial to recognise the significant impact of positive interactions on how these commuters manage their experiences. They find comfort, excitement, and assurance when encountering familiar faces on their regular routes, individuals who show empathy and support, or compassionate drivers.

In contrast to developed countries with better transport infrastructure, where amenities like WiFi, power sockets, and suitable workspaces are more common, many CWDs in developing countries are crammed together in small buses that are not conducive to productivity or enjoyment during the commute. They must find ways to keep themselves engaged, often using mobile phones or occupying themselves as best as possible, depending on the mix of passengers on the bus. In their efforts to manage their travel experiences, CWDs sometimes travel with family members. This insight emerged during Phase 2 (Ride with Participants) and interviews, revealing that having a close family member around helps them manage their emotions and excitement. Thirteen CWD participants highlighted how they rely on family members for assistance in accessing transportation services. However, this interaction with family members also comes with negative experiences, which can discourage CWD from engaging more frequently with their families and friends.

One participant shared her experience, saying:

Having my family members with me when using Danfo is very calming and reassuring, and I like it, but I cannot always ask them to follow me. They have their own lives, and it is important for me to manage my own travel experience. I need to be able to survive in this Lagos**—P2, Female, 18-25, Mobility/physical impairment.**

One of the passengers who is not disabled shared her experience, saying:

We all must agree that Lagos is very busy, and the travel experience is something else. I feel for this person with disabilities. They are trying, but it is unfortunate that things are not done properly. I do try to help them, pay for their fares, and engage in conversation with them on the bus to improve their experiences, but that's just all I can do in my journey with them.

### Changing travel mode

Many CWDs in Lagos want to enhance their travel experiences and satisfaction, so they consider changing their travel mode. This transition is driven by several factors, including the informal nature of the city's transport services, the financial implications of alternative modes, and the need to minimise interactions with hostile customers. Additionally, managing their overall well-being is crucial in their decision-making process.

The informal setup of transport services in Lagos prompts CWD to explore more structured and reliable alternatives. Nine CWDs specifically shared their interest in using ride-sharing services like Uber, which provide a more comfortable and controlled environment for their transportation needs. Four CWDs contemplated obtaining a specially adjusted vehicle that caters to people with disabilities or hiring a personal driver. However, the cost associated with these options is acknowledged as a significant barrier, highlighting CWD's financial challenges. The desire to minimise interactions with hostile customers influences the decision to change their travel mode. Most CWD participants (91.3%, n=21) have experienced discomfort and unwelcoming attitudes from fellow passengers in the existing public transport system, leading them to seek ways to avoid such situations.

One CWD expressed her frustration with the commuters and considered using shared mobility. She narrated her ordeal, saying:

I have been seriously considering changing to Uber or Bolt [Shared mobility] as fellow passengers' discomfort and unwelcoming attitudes in Danfo make life unbearable. You wonder what you have done for them, but while I want my sanity, I cannot financially sustain what I want - **P6, Female, 26–35, Mobility/physical impairment.**

This concern around changing travel mode was further reiterated by another passenger who is not disabled; he said:

I will not be surprised if these people with disabilities start using taxis; they cannot stand this stress, but I know it can be expensive; life is really unfair, but they need to find a way to travel that respects their dignity and well-being.

### Mental wellbeing

The mental wellbeing of CWD is profoundly influenced by the challenges they encounter while using public transport. As Friman et al. (2017) found that satisfaction with daily travel has a direct impact on emotional well-being and both direct and indirect effects on life satisfaction, evidence from our data presents qualitative insight into the impact on the physical and mental wellbeing of CWD as they navigate the inherent challenges within the transport sector and service delivery.

These challenges shape their evaluation of travel satisfaction and underscore their responsibility for maintaining their wellbeing. Numerous CWDs express valid concerns about the risks they face in keeping up with Lagos's fast-paced environment. This sentiment supports the findings of Ugboma (2019), who also explored the experiences of CWD in the city.

Negative attitudes and perceptions that CWD encounters contribute significantly to feelings of isolation and frustration. Instances of feeling unworthy or being subject to inappropriate gazes weigh heavily on their mental health. Eight CWD participants even shared their concerns about how others view their disabilities as divine punishment, which adds to their emotional burden. Among those who became disabled due to accidents (n=2), a shared sense of frustration emerged. They expressed how they used to be active participants in Lagos's vibrant hustle and bustle just a few years ago. Now, they depend on public transport, feeling captive in their mobility. One CWD participant shared her experience:

*Living in Lagos as someone with a disability can be draining, even with the fact that mine is not as bad as some people's, at least I am not using a wheelchair, the struggles with the people, the conductor and the whole transport infrastructure take a toll on my mental health, it can be depressing, and you wonder why you were even born in Lagos* **- P8, Female, 36–45, Hearing impairment.**

On a more positive note, there are instances of uplifting interactions that significantly impact the emotional wellbeing of CWD. These positive moments, where fellow commuters show empathy and support, uplift their spirits and counterbalance the negative experiences. This experience aligns with earlier comments from CWD participants who mentioned looking forward to encounters with certain individuals during their daily commute. One participant shared her insights.

*Lagosians can be caring if the situation is good for everyone. We are caring human beings; it is just the situation that is frustrating us all. So, I don't blame these people because I have had good experiences with some people on public transport. They are very supportive and courteous. It's not always bad, and I often try to stick with those positive experiences***—P6, Female, 26–35, Mobility/physical impairment.**

These positive interactions serve as a source of encouragement and demonstrate the potential for creating a more inclusive and compassionate environment.

### Financial implications

The financial implications of using public transport in Lagos are particularly significant for people with disabilities. Reports indicate that a typical Lagos resident earning minimum wage would spend a substantial 50% of their income on transportation to work (Ludi, 2022). Recognising the socioeconomic disparity, especially in an emerging economy like Nigeria, individuals with disabilities are further burdened financially when accessing transport services. Additionally, they must often contend with passengers who display rudeness, arrogance, and a lack of empathy, as Mogaji and Nguyen (2023) highlighted. In some instances, drivers may charge more to accommodate wheelchair users, creating additional challenges in using public transport. Even when public transport is meant to be subsidised by the government, the informal and unregulated nature of transport services in Lagos makes it challenging to implement effective reductions that reach the vulnerable population in need. Many passengers have considered alternative transportation options like Uber (n=9) or commercial motorcycles (n=7), but these options add to their expenses and cannot be used regularly. One passenger shared her reservations:

*As a lady who is a dwarf* [restricted growth], *I get some unwarranted attention when I use public transport, which is often inconvenient, and I try to use Uber sometimes; while it gives me privacy, it can be very expensive to maintain, so the financial implication also comes as a challenge in managing my interaction with other commuters -* **P3, Female, 26–35, Restricted growth**

Co-passengers' kindness in offering to pay fares can alleviate some of the financial burdens, but it also underscores the economic challenges that disabled individuals face. Ultimately, this financial issue has a cascading effect on their wellbeing. When they cannot afford to use a safe mode of travel, they often choose to stay indoors, missing out on opportunities and further hindering their overall wellbeing. This creates a cycle where limited financial resources restrict their ability to access necessary services, reducing their quality of life.

# Discussion

The study explores the complex dynamics of commuter interactions, particularly among individuals with disabilities, within the challenging public transportation context of Lagos, a densely populated city with limited infrastructure in a developing country. Building upon previous research on travel satisfaction across demographic groups (Kim et al., 2020; Malokin et al., 2021; Waygood et al., 2019; Purifoye, 2015; Shaker, 2021; Shaker et al., 2022), our investigation aligns with studies examining commute satisfaction determinants in developing countries (Choi et al., 2021; Molin et al., 2020; Sun et al., 2021; Mogaji et al., 2023). Our findings unveil a nuanced picture of commuter interactions, impacting travel satisfaction, wellbeing, access to opportunities, and financial aspects for individuals with disabilities. The informal nature of Lagos' public transport system, characterised by Danfo buses, presents challenges similar to those in other developing nations (Nguyen & Mogaji, 2022; Ugboma, 2019; Nwaedozie et al., 2023; Xiao, 2022), exacerbating difficulties for disabled commuters due to limited space and assistance, leading to negative perceptions from fellow passengers.

In addition to shedding light on the interactions and challenges faced by individuals with disabilities in public transportation, the study contributes to a broader understanding of travel experiences, satisfaction, and emotional wellbeing (Chatterjee et al., 2020; De Vos et al., 2022; Mouratidis et al., 2019; Sun et al., 2021). It emphasises the need to consider travel behaviours and infrastructure context in discussing policy recommendations or potential improvements in the commuter experience. Moreover, it highlights the nuanced dynamics of Commuter-to-Commuter interactions and their influence on overall travel experience and wellbeing, underscoring the intricate nature of these interactions.

Figure 3 offers a comprehensive overview of the research findings, highlighting the dynamic nature of commuter-to-commuter interaction and its key features within public transport (Refer to Table 3). This interaction unfolds in three primary forms: positive, neutral, and hostile; service providers can also influence each other and significantly impact commuters' travel satisfaction and overall well-being. Additionally, it is crucial to acknowledge the context of service provision, as exemplified by Purifoye's (2015) examination of racial dynamics in Chicago's public transport, which may not directly apply to Lagos due to its predominantly homogenous racial makeup. Similarly, comparing Nigeria's transportation infrastructure to countries like the UK and Australia, as observed by Bissell (2010, 2016), underscores the importance of recognising contextual differences. These contextual factors can shape the quality of transport services and customer experiences (Mogaji & Nguyen, 2023), consequently influencing commuter interaction dynamics. Subsequently, the subsequent section presents the theoretical significance of this research and its practical implications.

A diagram of a service

Description automatically generatedFigure 3: Commuter-to-Commuter Dynamics in Public Transport

## Theoretical contributions

This section presents several significant theoretical contributions and extends existing knowledge in transportation satisfaction, well-being, and commuter experiences, particularly those with disabilities, within various country contexts.

First, we recognised the literature on commuter interactions, which offers valuable insights into various aspects such as religion, race, gender, and sexuality (Shaker, 2021; Purifoye, 2015; Rink, 2016). Our study acknowledges and builds upon this prior research by explicitly defining the concept of "Commuter-to-Commuter interaction" within the context of public transport, referring to the interpersonal exchanges, communications, and engagements between individuals using public transportation services, known as commuters. It encompasses various forms of communication, assistance, cooperation, conflict, and social dynamics between passengers during their journeys. This concept highlights the sensorial aspects of these encounters within the context of public transport. While previous studies have explored interactions among passengers in public transport (Gardner et al., 2017; Lubitow et al., 2020; Honkatukia & Svynarenko, 2019; Lagerqvist, 2019), our contribution lies in specifically framing these interactions as commuter-to-commuter interactions and examining their implications for travel satisfaction and wellbeing. By doing so, we aim to deepen the understanding of the dynamics within public transport environments and open avenues for future research to explore this concept further. Table 3 summarises the key Features of Commuter-to-Commuter interaction on public transport.

Table 3: Key features of Commuter-to-Commuter interaction on public transport

|  |  |
| --- | --- |
| Features | Description |
| Communication | This encompasses verbal exchanges such as conversations, requests for assistance, or sharing information about the journey. Non-verbal communication, including gestures, facial expressions, and body language, also significantly conveys messages between passengers. |
| Assistance | Commuters may offer assistance to one another, especially those needing help navigating the transport system, finding seats, or carrying luggage. This assistance can range from simple gestures like holding a door open to more significant acts such as helping someone with mobility issues board or exit the vehicle. |
| Cooperation | In situations where challenges arise, passengers may cooperate to address them collectively. This could involve working together to resolve issues such as delays, overcrowding, or disruptions to the service. Commuters may coordinate efforts to ensure everyone's needs are met, and the journey proceeds smoothly. |
| Conflict | Despite efforts to maintain harmony, conflicts may arise between passengers due to various factors such as differing preferences, cultural differences, or misunderstandings. Conflicts could manifest as arguments, disagreements over seating or space, or frustration with other passengers' behaviour. |
| Social dynamics | The interactions among commuters contribute to the overall social atmosphere within the public transport environment. These dynamics can vary depending on factors such as the time of day, the passengers' demographics, and the journey's specific context. Commuters may form temporary social groups, engage in small talk, or coexist in shared silence, each contributing to the overall experience of the journey. |

Second, while previous studies such as those conducted by Shaker et al. (2022) and Shaker (2021) have predominantly focused on religion, others like Purifoye (2015) and Rink (2016) have examined the dynamics of race within Commuter-to-Commuter interactions, there remains a gap in understanding how disabilities shape these interactions. Similarly, studies by Gardner et al. (2017) and Lubitow et al. (2020) have examined the impact of gender and sexuality, while Honkatukia and Svynarenko (2019) and Lagerqvist (2019) have explored age-related factors. However, there has been a notable lack of attention to disabilities as a critical dimension of identity within Commuter-to-Commuter interactions. This study fills this gap by focusing on disability as a key factor influencing commuter experiences in public transport. By focusing on how individuals with disabilities navigate social interactions within the public transport environment, the study offers a fresh perspective on the dynamics of inclusion and exclusion in commuter spaces. By acknowledging disabilities as a protected characteristic and examining how they intersect with other dimensions of identity, such as race, gender, and age, this research expands the theoretical understanding of commuter interactions. Additionally, by highlighting the experiences of CWD, the study contributes to broader discussions on accessibility, social inclusion, and equity within public transportation systems. Thus, by examining disability within the framework of commuter interactions, this study provides valuable insights that can inform policy and practice aimed at creating more inclusive and accommodating transportation environments for all individuals.

Third, while previous studies on travel satisfaction and well-being have previously focused on developed countries with considerable sufficient transport infrastructure (De Vos et al., 2019; Farinloye et al., 2019; Malokin et al., 2021; Mogaji et al., 2024), this present study in the Nigerian context reveals substantial transport inequality concerns, particularly affecting lower-income residents in many other developing countries around the world. Our study underscores the critical role of infrastructure, which is often inadequate, in shaping travel satisfaction and overall wellbeing. The study also recognises the influence of collective cultural norms, providing a more comprehensive perspective on the socioeconomic factors impacting travel experiences. This insight emphasises the necessity of addressing infrastructural deficiencies and cultural considerations when designing transportation services, thereby striving for a more inclusive and satisfactory public transportation system in a developing country like Nigeria.

## Practical and managerial implications

This study carries significant managerial implications for various stakeholders, including transport service providers, managers, commuters, and other parties concerned with the wellbeing of vulnerable individuals.

Acknowledging the often informal and unregulated nature of transportation services in many developing countries, where there may be limited incentives for change, it becomes essential to advocate for improved education and awareness as a form of corporate social responsibility. While it is true that the informal sector exists, this should never serve as a justification for offering inadequate service. Transport regulators, disability advocates, social enterprises and charity organisations can conduct regular and comprehensive disability awareness training for transportation staff, emphasising effective communication, sensitivity, and proper assistance. This training should include educating drivers, conductors, and station personnel on the specific needs and challenges faced by CWD. Encourage staff to be proactive in helping, fostering a culture of inclusivity, and ensuring a safe and respectful environment for all passengers. By emphasising the importance of education, raising awareness about the needs of passengers, and advocating for better practices, we can drive positive change in the transportation sector, even within the informal context. Viewing this advocacy not as an optional addition but as a fundamental aspect of responsible service provision is crucial.

While previous studies have emphasised the importance of investing in infrastructure upgrades, it is essential to reiterate this point in our research. Prioritising improvements in infrastructure that specifically cater to the needs of individuals with disabilities is crucial. This includes the installation of ramps, elevators, and tactile markers in transportation hubs to enhance overall accessibility. Such enhancements will significantly improve CWD's travel experiences and work to reduce any negative attitudes they may face. Transport service providers should develop and implement real-time accessibility information systems. Provide CWD access to up-to-date information about accessible transportation options, route modifications, and potential disruptions through mobile apps or digital displays at stations. This empowers individuals with disabilities to make informed decisions, reducing uncertainty and making their travel experience more predictable and manageable.

Based on our observations of the needs of commuters with disabilities (CWDs) during our research and interactions with them, transport hub managers should consider including designated quiet areas or safe waiting zones at bus stops specially tailored for individuals with sensory sensitivities. These upgrades create a smoother journey for CWD and demonstrate a commitment to inclusivity, potentially attracting a more diverse range of passengers. The combination of infrastructure improvements and accessible design reflects a proactive approach towards creating a more welcoming and accommodating transportation environment for everyone.

There is a need for community engagement and feedback mechanisms, especially for those co-passengers who are indifferent and neural; they have opportunities to share their concerns without confronting the CWD. Transport service providers should establish channels for direct feedback from commuters, including CWDs and their caregivers. Providers should launch awareness campaigns to promote inclusive behaviour among all passengers. Share stories highlighting the challenges and triumphs of CWD to foster empathy and understanding. Encourage passengers to offer assistance, respect designated spaces, and consider others' needs. Fostering a culture of mutual respect and support among passengers makes the travel experience more positive and accommodating.

In fostering an inclusive and supportive environment for individuals with disabilities using public transportation, fellow commuters should demonstrate awareness, empathy, and understanding of diverse needs. They can help when needed, respect designated spaces, be mindful of noise and space, and give individuals extra time when required. Educating themselves about disabilities, reporting incidents, and advocating for inclusivity within their social circles can make a significant difference. Offering positive encouragement, engaging in respectful conversations, and promoting awareness of challenges faced by individuals with disabilities are essential to ensure a more respectful and inclusive public transportation experience for all passengers.

# Conclusion

This research addresses significant gaps in the literature by examining the travel experiences of individuals with disabilities (CWD) on public transport, shedding light on systemic challenges and interactions with fellow passengers. Positive interactions offer relief from difficulties, emphasising the importance of social support. Focusing on commuter interactions in a developing country enhances understanding of travel satisfaction and wellbeing for vulnerable groups, contributing to theoretical frameworks and practical solutions for inclusive transportation systems. However, limitations include the qualitative nature of the study, limited generalizability, and potential biases in data collection and assessment of wellbeing. Future research could quantify travel satisfaction longitudinally, refine the *consumer-consumer interaction* typology, explore technological interventions, compare contexts across developing countries, extend the focus to other vulnerable groups, and assess the long-term effects of improved services.

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# Appendices

**Appendix 1: Interview Guide for Interview with Commuters with Disabilities**

*Interviewer's Pre-Interview Note:*

* *Begin the interview by warmly welcoming the participant and expressing gratitude for their participation.*
* *Acknowledge the importance of the participant's insights in enhancing our understanding of commuter experiences in Lagos.*
* *Reassure the participant that their anonymity will be protected throughout the interview process.*
* *Remind the participant that their involvement in the interview is entirely voluntary.*
* *Ensure the participant that all information shared will be kept strictly confidential and used solely for research purposes.*
* *Encourage the participant to ask any questions or raise concerns before proceeding with the interview.*

**Introduction and Context:**

* Can you please share with us your experiences with using public transportation in Lagos?
* How would you describe your typical commute on public transportation?

**Understanding Travel Experiences:**

* What are some of the challenges or difficulties you encounter during your commute?
* Can you give examples of interactions you've had with other commuters while using public transportation?

**Interaction with Other Commuters:**

* Could you tell us about a time when another commuter showed empathy or provided assistance during your commute?
* Have you experienced any negative interactions or hostile behaviour from fellow passengers? Can you share specific instances?

**Impact on Travel Satisfaction and Wellbeing:**

* How do these interactions with other commuters affect your overall satisfaction with your travel experience?
* Can you describe how these interactions influence your emotional wellbeing during your commute?

**Access to Opportunities:**

* Do you feel that your experiences on public transportation impact your access to opportunities, such as job interviews or social events?
* Have you ever faced any limitations or barriers in accessing opportunities due to your commuting experiences?

**Consideration of Changing Travel Mode:**

* Have you ever considered changing your mode of transportation? If so, what factors influenced this consideration?
* How do you think changing your mode of transportation could affect your commute and overall travel experiences?

**Mental and Emotional Wellbeing:**

* How do you cope with any emotional challenges you encounter while using public transportation?
* Can you share an example of a positive interaction that positively impacted your mental wellbeing during your commute?

**Financial Implications:**

* How do the financial aspects of using public transportation, especially in relation to your disability, affect you?
* Have you experienced any challenges in affording transportation services, and how does this impact your overall financial situation?

**Closing Remarks:**

* Is there anything else you would like to share about your experiences with public transportation in Lagos?
* Thank you for participating in this interview. Do you have any final thoughts or comments?

**Follow-up and Consent:**

* Before we conclude, do you have any questions or concerns about the interview process?
* Do we have your consent to use the information you've provided in our qualitative research study?

*Note to Interviewer:*

* *These questions are designed to facilitate in-depth discussions and gather rich qualitative data on the participant's experiences with commuter-to-commuter interaction on public transportation in Lagos.*
* *Adjustments can be made based on the specific need of the participants and the participant's responses during the interview.*
* *Ensure to maintain a respectful and empathetic approach throughout the interview, especially when discussing sensitive topics related to disabilities and challenging experiences.*
* *Allow the participant ample time to express themselves and ensure they feel comfortable sharing their perspectives.*

**Appendix 2: Street Intercept Interview Questions: Understanding Consumer-to-Consumer Interaction**

*Interviewer's Pre-Interview Note:*

* Stay vigilant and prioritise wellbeing.
* Obtain informed consent, respect privacy, maintain confidentiality, and address any participant concerns.
* Approach participants when they're receptive and ensure a friendly approach.
* Look for individuals showing openness to conversation and willingness to share experiences.
* Stay connected, support each other, and seek guidance or assistance when needed.

**Introduction and Context**

* Can you tell me about your recent journey on public transport?
* Did you encounter any specific interactions with fellow passengers during your trip?
* What was the overall atmosphere like on the bus during your journey?

**Encountering Commuters with Disabilities (CWD)**

* Did you notice any passengers with disabilities onboard during your trip?
* How did you perceive the interactions between passengers with disabilities and other commuters?

**Motivations and Experiences**

* Can you describe any instances where you or other passengers assisted commuters with disabilities during the journey?
* What motivated you to engage or interact with CWD during your trip?

**Perceptions and Attitudes**

* How do you think interactions with CWD contribute to the overall atmosphere or experience onboard public transport?
* Have you observed any changes in passenger behaviour or attitudes towards CWD over time?

**Challenges and Opportunities**

* In your opinion, what are some of the challenges faced by passengers with disabilities when using public transport?
* Are there any opportunities for improving interactions between CWD and other commuters?

**Reflections and Suggestions**

* Looking back on your journey, is there anything you would change or do differently regarding interactions with CWD?
* Do you have any suggestions for enhancing the inclusivity and accessibility of public transport for passengers with disabilities?

**Conclusion**

* Thank the participant for their insights and contribution to the research.
* Offer the opportunity for any additional comments or reflections on their public transport experiences.

**Appendix 3: Interview Guide for Interview with Transport Service Providers**

*Interviewer's Pre-Interview Note:*

* *Keep questions concise and to the point, considering that drivers may be busy and time constrained.*
* *Pay close attention to the responses of the service providers, acknowledging their insights and demonstrating active listening throughout the interview.*
* *If needed, ask clarifying questions to ensure a clear understanding of the service provider's responses, but avoid lengthy explanations.*
* *Respect the time constraints of the service providers and aim to conduct the interview efficiently while still gathering valuable insights.*
* *Establish a positive rapport with the service providers to foster open communication and encourage them to share their experiences comfortably.*
* *Focus on capturing key points relevant to understanding the involvement of service providers in ensuring travel satisfaction for commuters with disabilities.*
* *Take concise notes during the interview to record important details and observations for later analysis.*
* *Express gratitude to the service providers for their participation at the conclusion of the interview, ensuring a respectful and appreciative interaction.*

**Introduction and Role Understanding:**

* Can you please describe your role as a Danfo Driver/Bus Conductor and your responsibilities in ensuring smooth commuting experiences for passengers?
* How long have you been working as a service provider in the transportation sector, and what motivated you to join this profession?

**Interaction with Commuters with Disabilities:**

* Have you encountered passengers with disabilities during your work? If so, can you describe some of the interactions you've had with them?
* How do you typically respond to the needs of passengers with disabilities, such as those requiring assistance boarding or alighting the vehicle?

**Perceptions and Responses to Incidents:**

* What are your perceptions of passengers with disabilities and their experiences on public transportation?
* Can you recall any specific incidents involving passengers with disabilities, and how did you respond to them?

**Challenges and Strategies:**

* What are some of the main challenges you face in providing accessible transportation services to passengers with disabilities?
* Can you share any strategies or practices you employ to address these challenges and ensure the comfort and safety of all passengers?

**Closing Remarks:**

* Is there anything else you would like to share about your experiences as a service provider in the transportation sector?
* Thank you for participating in this interview. Do you have any final thoughts or comments?

**Follow-up and Consent:**

Before we conclude, do you have any questions or concerns about the interview process?

Do we have your consent to use the information you've provided in our research study while ensuring confidentiality and anonymity?