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## **TRANSPORTATION BARRIERS CONFRONTED BY MOBILITY-CHALLENGED TRAVELLERS IN KLANG VALLEY**

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### **Abstract**

Accessibility enables individuals' full participation in society, which results in social justice and equity, thus promoting social sustainability. However, research indicates that physical barriers in the built environment impede disabled people, resulting in marginalisation when their inclusion is tied to physical space. Commonly, accessibility of the built environment is evaluated using an access audit with a predetermined checklist. Little effort has been made to explore disabled people's life experiences accessing the city centre. This qualitative study involves twenty go-along interviews with mobility-challenged travellers to learn about their experiences using land transportation from around Klang Valley to Kuala Lumpur city centre. Mobility-challenged travellers, notably wheelchair users, still need help to reach their destination with the current transportation services. In general, transportation use in Klang Valley has several issues, including the lack of accessible facilities and lack of safety concerns from service providers. These issues have psycho-emotional impacts on disabled people.

**Keywords:** accessibility, barriers, go-along interview, psycho-emotional

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## INTRODUCTION

Access to the built environment is a basic human right (Frías-López & Queipo-de-Llano, 2020). It is a spatial issue intersecting human biological and psychological conditions that differ based on intrinsic and extrinsic factors (Shakespeare & Watson, 2016). Accessibility promotes social sustainability and fosters sustainable development (Dempsey et al., 2011). In modern societies, where everyone has the right to a life without physical or mental obstacles, accessibility has emerged as a pressing issue (Yakob et al., 2022). For disabled people or OKU (from the Malay '*Orang Kurang Upaya*', a commonly used term in Malay, English and other languages in Malaysia), accessibility enables them to lead more independent lives. Nevertheless, an inaccessible built environment often creates unjust situations. It contributes to poverty, lower education, and poorer health among disabled people (WHO & World Bank, 2011), resulting in fewer opportunities to engage in built environment activities than non-disabled people (Bailey et al., 2015).

In general, prior research investigated the (in)accessibility of buildings (including transportation terminals in Malaysia) by using accessibility checklists in the access audit exercise (see Hashim et al., 2012; Kamarudin et al., 2014 for example). However, OKU's lived experiences, including their psychological and emotional views, have received little consideration, despite the dynamic interaction between disability and the built environment. Data used in this paper is part of the first author's doctoral thesis, entitled "*Physical Access for Disabled People's Inclusion in the City Centre: The Case of Kuala Lumpur*" (Kamarudin, 2021), completed in 2021. By employing the go-along interview method, findings of barriers in the built environment in the original research were divided into (1) transportation, (2) buildings and (3) street-level environment. The authors utilised the data from the thesis for their current research on strengthening access audit practice.

This paper is an extension of work presented at the 3<sup>rd</sup> International Conference on the Built Environment and Engineering, held in Putrajaya, Malaysia, in 2022, with the aim to explore transportation barriers faced by OKU when travelling to the KL city centre. This paper is expected to contribute to current knowledge of accessibility by revealing how OKU interacts with transportation-related services in the Klang Valley. This paper acknowledges that disability is, to a large extent, caused by discriminatory processes within society, as proposed by the social model of disability. Therefore, it is generally preferred to use the term 'disabled people' instead of 'persons with disabilities' to emphasise that disability is not solely an inherent trait of an individual but is shaped by societal barriers and attitudes.

## **THE SOCIAL MODEL OF DISABILITY**

The social model of disability views society as an external factor contributing to impairment by producing a disabling environment. An extended social-relational model of disability views 'disability' encompasses both structural and psycho-emotional (personal experience) dimensions (Reeve, 2014). The lack of physical access to buildings is an example of a structural dimension, that impedes disabled people's career and educational opportunities, resulting in exclusion. The psycho-emotional dimension of disability includes how emotionally disabled people react to social exclusion and physical barriers (i.e., feeling humiliated while being gazed at, and frustrated when confronted with inaccessible buildings).

Berghs et al. (2019) suggest that the social model may switch to a model that can better uphold and carry out rights. They call it a social model of human rights with "*the right to live a dignified life, as well as to live in an environment that enables people to flourish with disability*" (Berghs et al., 2019, p.1034). Hence, the authors include the 'voice' and participation of mobility-challenged city travellers in identifying physical barriers to transportation.

## **DISABILITY-RELATED TRANSPORTATION ISSUES**

For disabled individuals, an accessible door-to-door transport chain could facilitate independent mobility with a smooth journey (Frye, 2011; Hanson, 2004). Public transportation ought to adhere to set schedules, be reliable and safe, provide excellent service, make efficient use of resources, and accommodate the needs of riders (Khalid et al., 2014). Evidence from various contexts, however, demonstrates that not all links can be accessed. According to Hepworth and Ducatel, cited by Marston (2002), "*public transportation is all about anxiety, uncertainty, and waiting*".

In the United Kingdom, regularly used buses have low floors, giving wheelchair users priority boarding. Yet, according to Ferrari et al. (2014), the vertical and horizontal gaps between the train and platform (for stations built around 150 years ago) contribute to the 50% longer travel times for wheelchair users for rail services in London. Accessibility upgrades were prioritised for high-demand stations. Although measures were taken to reduce physical barriers, such as elevating a part of the platform to align it with the train doors, a substantial amount of work remains to allow step-free access from the street to the platform (Ferrari et al., 2014). Nonetheless, in 2018, Transport for London published pamphlets on how to avoid stairs at tube stations and additional guidance for disabled people and elderly passengers with transport access concerns (Transportforall, 2018).

In the Global South context, Zimbabwe presents an example where many bus drivers refuse to transport disabled passengers, which is a prevalent issue faced by the disabled community. Some reported having to purchase two tickets: one for the passenger and one for the wheelchair (Frye, 2011).

Meanwhile, it has been noted in Klang Valley, Malaysia, that buses do not adhere to schedules and that their drivers have negative attitudes towards OKU, which is frustrating (Mothiravally et al., 2014). These instances demonstrate that transportation barriers are socially constructed. A lack of accessible parking, inadequate parking size, inaccessible buses, and noncompliance to regulations and standards for access and facilities in the transportation hub (such as the absence of guiding blocks for the blind and lack of signage) all contribute to OKU's difficulty in using transportation in Malaysia (Hashim et al., 2012; Isa et al., 2016; Kamarudin et al., 2014).

Rahman et al. (2018) asserts that the location of OKU's home in relation to nearby facilities is crucial, as it can significantly affect their mobility and level of independence. Ideally, their home should be situated in close proximity to essential facilities with easy accessibility, enabling them to move around with minimal supervision. Nevertheless, there are still instances where OKU needs to travel to the city centre for certain reasons. Therefore, it is crucial to explore the availability and accessibility of transportation services for OKU to access the city centre.

### **PRIMARY DATA COLLECTION: GO-ALONG INTERVIEW**

In a go-along interview, the interviewer walks alongside the interviewee as they talk, a technique frequently used in ethnographic research (Kinney, 2017; Zahari et al., 2018). Evans and Jones (2011) assert that walking interviews produce richer data because participants are more likely to be motivated by meanings and connections to the environment and less likely to try and provide the 'right' response. Through participant observation and conversation, researchers can learn about the participants' emotions by observing their facial expressions, body language, and intonation (Kamarudin, 2021; Zahari et al., 2018). Analysing occurrences that have psycho-emotional consequences for OKU while experiencing transportation barriers (and facilitators) needed in-depth study instead of depending on surveys and statistics.

With each participant, the researcher allotted time for a ride-along using the research participant's preferred mode of transportation, such as taxis, buses, and trains, as well as a walk-along in public and travelling by cars driven by the participants. During the go-along journey, the accessibility of transit hubs and stations was also evaluated. The participants' homes or any other convenient meeting location close to their homes served as the starting point for data collection to identify barriers that participants faced when using transportation.

### **Recruitment of participants**

The study included twenty volunteers. Those with mobility issues were selected because their daily lives are more affected by physical barriers in an inaccessible environment. The participant had to be at least 18 years old (adults) and willing

to engage in the study, which included travelling with the researcher to the KL city centre. They could be a frequent or infrequent visitor to the city centre who resides in Klang Valley.

Since finding participants was difficult, the snowballing technique was used to recruit participants. The first person contacted was on the researcher's contact list from prior volunteer work. Potential participants were contacted by telephone to obtain their initial consent to participate in the study and to set a time for the go-along journey. Before the journey started, the participant received the consent form and participant information sheet. Participants were asked if they knew anybody who would be interested in taking part in the study. The vast majority of individuals contacted gave their consent to participate. Two contacted straightly declined to participate, and two others cancelled after scheduled appointments.

The use of specific mobility aids was not a requirement to take part in the study. The participants' attributes are detailed in Table 1 below.

**Table 1:** Participants' attributes

<b>Walking aid</b>	<b>Health condition</b>	<b>Sex (M/F)</b>
Manual wheelchair	Spina bifida	1 M / 2 F
	Polio	1 M
	Spinal cord injury	5 M / 1 F
Motorised wheelchair	Cerebral palsy	2 M
	Congenital amputation	1 M
Skateboard	Polio	1 M
Crutches	Cerebral palsy	1 F
	Single-leg amputee	1 M
Prosthetic leg	Single-leg amputee	1 M
Unaided	Clubfoot	1 F
	Acquired brain injury	1 M / 1 F

*Source: Adapted from Kamarudin (2021)*

Ten of the twenty participants used manual wheelchairs (those with polio, spina bifida, and spinal cord injury). Three individuals used motorised wheelchairs (those with cerebral palsy and congenital amputation). One person (a polio survivor) used a skateboard, two people (those with cerebral palsy and a single-leg amputee) used crutches, and one person used a prosthetic leg (single-leg amputee). Three individuals were walking unaided; one had a clubfoot, and two had acquired brain injuries.

## **RESULTS AND DISCUSSION**

The four months of fieldwork data collection were divided into individual analyses, which were then combined using analysis processes, i.e., transcribing,

coding, and theme development. Mobility-challenged travellers place a high value on having an accessible built environment and transportation services that permit them to move around freely. The go-along interviews, however, reveal that not all transportation services are disabled-friendly. Due to the numerous physical barriers, independence was not always possible.

The diversity of physical mobility limitations aided the researcher in gaining a deeper understanding of the needs of participants while travelling using land transportation. Despite having similar mobility aids and impairments, each participant had unique abilities, needs, and ways of negotiating barriers. A lot can be learned about OKU's relationship to accessibility, the value of providing access for them, and how 'disabled' they felt in an inaccessible setting from the go-along interview. This go-along interview method emphasised OKU's genuine experiences using various forms of transportation, which could not have been learned elsewhere.

Mobility-challenged travellers, particularly wheelchair users, face numerous obstacles when attempting to independently use different modes of transportation. They require more assistance from service providers regarding the provision of physical access in enabling their inclusion. While some OKU were willing to accept assistance, the majority felt they had the right to travel independently. Most wheelchair users feel insecure and uncomfortable in situations that require them to be carried to a different floor, such as at a train station. These emotions are one of the consequences that could prevent OKU from enjoying a social life. Some OKU would instead remain at home than risk their safety or be exposed to physical and emotional harm. However, how OKU perceived barriers varied based on factors such as age, impairment, motivation, attitude towards impairment (intrinsic factors), and the condition of the physical environment (extrinsic factor).

### **Bus-related facilities**

OKU's mobility is aided by accessible low-floor buses with a flip-out ramp, wheelchair parking space, and priority seating on bus services. In addition, discounted fares are provided for them. Most wheelchair users appreciate accessible bus service because it eliminates the need for them to be transferred to the bus seat. However, it was obvious that accessible buses are lacking; hence, they do not cover all routes leading to KL city centre.

In some instances, accessible buses lacked maintenance. As shown in Figure 1 (a) (figures to be read from left to right), the accessible feature, such as the ramp, cannot be flipped out. Meanwhile, most bus stops have high kerbs without a kerb ramp or kerb cut, as shown in Figure 1 (b), and Figure 1 (c) shows how cars abuse bus stops by parking in front.

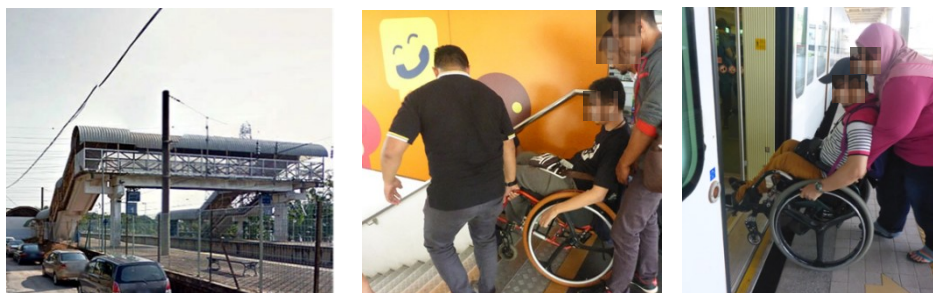


**Figure 1:** (a) Accessible bus with a maintenance issue, (b) High kerb without kerb cut, (c) Cars parked in front of a bus stop

*Source: Kamarudin (2021)*

### **Rail lines and facilities in the stations**

Observations from the go-along journeys indicate that the rail services facilitate OKU's access to the KL city centre more than they create barriers. OKU passengers in trains and stations have benefited from numerous facilities, including discounted fares, priority seating, priority ticket counters, special gates, lifts, escalators, stair lifts, ramps, staircases with handrails, and accessible toilets. However, it should be noted that not all stations provide every facility necessary for OKU, despite the existence of regulations and guidelines. In some cases, the facilities that are available may lack legible signage, leading OKU to believe that they are not provided. Moreover, some stations are completely inaccessible, as depicted in Figure 2 (a), where passengers are required to climb up a bridge to reach the opposite platform.



**Figure 2:** (a) Inaccessible station, (b) OKU being assisted in getting to a different floor level, (c) Horizontal and vertical gap between platform and train door

*Source: Kamarudin (2021)*

Meanwhile, mechanical facilities provided at train stations (such as lifts and escalators) were frequently claimed to be under maintenance and thus unavailable to OKU. As a result, they must be lifted by passers-by to reach the intended level, as shown in Figure 2 (b). Figure 2 (c) depicts the gap between the

platform and the train door, posing a risk for OKU, particularly for wheelchair users and those using sticks or crutches. The material used to make the train seats is also crucial in ensuring OKU's comfort and safety. With weak muscles on the right side of one participant's body, the participant easily slid from the seat when the train was cornering.

### **Taxi services**

In terms of availability of vehicle options and size, ease of booking, prices, and driver attitude and service, participants who had used both taxi and e-hailing services preferred the latter service. The lack of storage space for a wheelchair is a physical barrier in taxis, as the natural gas vehicle (NGV) cylinder is usually stored in the boot of the taxi. The number of passengers that can be accommodated without sacrificing space for a wheelchair may be determined by the car's options and size. OKU has more control over their pick-up point with e-hailing due to the booking method. OKU also receive a competitive and predictable fare and better service from e-hailing drivers compared to taxi drivers because the e-hailing operator provides a review facility service in the e-hailing app, which helps to reduce discrimination against OKU. Furthermore, the driver and vehicle information in the e-hailing app made OKU feel more secure when using the service.

Wheelchair users, however, must be transferred from their wheelchairs into the vehicle. Problems arise for those who are unable to move themselves to the car seat and prefer direct access to the vehicle without having to be transferred. OKU feels physically uncomfortable when being lifted to transfer to and from the car seat, as depicted in Figure 3. In addition, it impacts their psycho-emotional state when they are carried in public, and people watch them.



**Figure 3:** Transferring OKU from the wheelchair into a car  
*Source: Kamarudin (2021)*



### **Private transportation**

The lack of accessible parking, particularly for wheelchair users, is the top concern for those who drive their own vehicles directly to KL city centre or train station. Only drivers with an OKU registration card and sticker are permitted to park in accessible parking spaces, but not drivers driving OKU passengers. However, it is common for non-disabled drivers to occupy accessible parking spaces even though they are not driving OKU passengers. Meanwhile, parking for motorcycles with a wheelchair compartment, as shown in Figure 4, does not exist.



**Figure 4:** Motorcycle with wheelchair compartment  
*Source: Kamarudin (2021)*

### **Other transportation issues**

A mobility van with a hydraulic lift or ramp is highly valued for those with limited ability to self-transfer into a vehicle, but the service is currently very limited. Besides those operated by charity associations, the main public transport operator provided the service at once. However, it was not available anymore when the go-along journeys were undertaken. Last but not least is the traffic congestion issue. Traffic congestion is inconvenient for everyone, but for OKU, being stuck in traffic might worsen their health (e.g., for those requiring scheduled toileting), no matter if they are using public or private transport.

### **CONCLUSION**

This paper has contributed to a better understanding of physical access issues encountered by mobility-challenged travellers when using transportation and transportation-related facilities in Klang Valley. Overall, the current modes of transportation do not fully enable free mobility for OKU's inclusion. There are

several issues concerning the various modes of transportation used by OKU in Klang Valley to access the KL city centre. First, accessible transportation-related facilities, such as accessible parking spaces, accessible buses, and physical access facilities, are lacking. Second, safety concerns which include the threat posed by the gap between the platform and the train door, the choice of materials for the facilities, and the danger posed by staircases and escalators in the transportation hub. Finally, on the psycho-emotional effects of the transportation barriers and the negative public perception of OKU. Some OKU may give up their journey due to the ongoing difficulty or overcoming these challenges. Even though individuals may use the same type of walking aid and have the same type of impairment, depending on their biography, they may perceive potential barriers in varying degrees.

Access to facilitate OKU's inclusion in the built environment should ideally begin when OKU leaves their home, using a range of transportation until they reach their destination. OKU are the expert in barriers as they experienced the barriers first-hand. Therefore, their voices should be considered when formulating policies and planning and designing facilities and infrastructures. The establishment of a go-along interview method in identifying barriers in the built environment is suggested to be integrated with access audits to strengthen ways to enhance accessibility in the built environment.

Hopefully, this paper provides insights that can assist policymakers and practitioners in the Global South, particularly for countries in transition, in improving their practices and, ultimately, the lives of disabled people. The presented findings are meant to facilitate planning and designing a more inclusive built environment. OKU can contribute to a more socially sustainable environment if given the opportunity to participate and be recognised in decision-making processes.

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