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Accessibility Issues of Disabled People in Pakistan: Case Study of Islamabad

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Abstract: *People with disabilities make up an important part of the poor in developing countries. Poverty, discrimination and isolation are widespread and continue to be experienced by people with disabilities. Mobility accessibility is an important factor in anti-poverty strategies by improving access to education, employment and social services. Among the target groups, three main types of barriers were identified, which are social barriers, psychological barriers and structural barriers to accessibility. The focus of this research is limited to structural barriers. The main objectives are to find accessibility features and gaps for disabled people in places they often visit. Three terms are central to this research: disability, accessibility and mobility. With clear processes and careful observations, a picture of accessibility and deficiencies in some selected areas is drawn. The result of this study is to mainly focus on the current mobility barriers of people with disabilities in Islamabad city.*

Keywords: Accessibility, Disability, Effectiveness, Implementation, Legislation, Universal Designing

Introduction

People with disabilities in developing nations like Pakistan encounter numerous challenges as a result of their dire financial situation. Furthermore, social exclusion and barriers to mobility raise the costs associated with disability and prevent disabled people from escaping poverty. These are regarded as the most significant phenomena, and they can also encourage disabled people to participate in the economic and social processes of society (s. Hussain et al., 2022). Legislation in many nations, including Pakistan, mandates that these issues be addressed; nevertheless, there are very few viable solutions. The severe lack of information regarding the mobility and access requirements of the elderly and individuals with disabilities, in addition to resource limitations, limits the ability to take action to ameliorate the situation (f. Hussain et al., 2022.

The group within society known as the disabled people. There is no way for a civilized nation to disregard the rights of those with disabilities. The Pakistani government enacted "the accessibility code of Pakistan 2006" in order to protect the rights and dignity of disabled persons, ensure their full participation in social and national activities, ensure their general welfare, and address other pertinent concerns pertaining to disabled persons (Mumtaz & Saqulain, 2022).

Lack of implementation resources is cited as a major factor in the ineffectiveness of legislation and access policies. Funding for this is rarely provided by governments since they are under pressure to meet other priorities (s. Hussain et al., 2022). For the supplier and users in less

developing nations, western disability standards and facilities that guarantee universal access are unaffordable and unrealistic because the majority of people are too impoverished to cover the costs of such standards. For a low-income nation like Pakistan, this is the reason thorough research is required to determine an appropriate and workable accessibility solution (Ali & Abdullah, 2023).

To guarantee accessibility for those with disabilities, an integrated system is required, which implies that consistency and continuity are necessary for an environment that is accessible to them. That is why all places that handicapped people visit or use must have accessible helpful features installed in order to guarantee the full benefits of accessibility for them. For people with disabilities, accessibility cannot be ensured solely by technological advancements in accessible features. For technical progress to be implemented successfully, social awareness and educational advancement are essential.

Objectives

The primary goal of this study is to offer insightful data on efficient accessibility for the elderly and disabled in Islamabad. Throughout the investigation, much attention was paid to achieving the following particular goals in order to satisfy this purpose:

1. Identify problem of movement and access deficiencies for handicapped people.
2. Observe facilities and deficiencies of available accessibility for disabled people in both indoors and outdoors.
3. Explore and some low cost and easily implementable access aiding features for disabled people.

Significance of the research

The research on disabled people's accessibility in Islamabad, Pakistan, is crucial for several reasons. This section discusses its potential effects on policy, society, and disabled people.

- **Addressing a critical knowledge gap:** Pakistan has few disability and accessibility studies compared to developed nations, as such, it is critical to fill in this literature gap that would prepare future research and informs policy and practice in comparable circumstances.
- **Informing policy and legislation:** the accessibility code of Pakistan 2006 has been inconsistently and inadequately implemented, showing the infrastructure and service shortages, which can be utilized to push for tougher law enforcement and new regulations, where this research compels policymakers to prioritize accessibility in urban development and better devote resources to address challenges.
- **Enhancing social inclusion:** accessibility is key to impaired social inclusion and disabled persons face challenges to public participation, highlighting the need for more inclusive policies. Disability integration into school, employment, and social life can be improved via accessibility, resulting in reduction of disability-related social isolation and marginalization.
- **Economic benefits:** enhancing accessibility can boost the economy, where disabled people can use public areas, transportation, and services. This includes more job opportunities and economic participation, attracting disabled tourists to an inclusive atmosphere can also attract disabled tourists. Thus, this research helps support the economic rationale for accessibility improvements.
- **Promoting tech integration:** the research emphasizes utilizing current technology to improve accessibility, highlighting assistive technology adoption gaps which encourages better technology use. Disabled-specific smartphone apps, automated systems, and smart city projects are developed and implemented, promoting technology integration and leading to innovative and cost-effective accessibility solutions.
- **Awareness and attitude change:** social views concerning disability greatly affect

accessibility measures, which may be greatly improved through this research. Disseminating information through scholarly papers, media, and public forums can shift opinions. Awareness increases community support for accessible projects and an inclusive society.

- **Sustainable development goal contribution:** the un sustainable development goals (SGDs) stress inclusivity and accessibility, where SGDs 10 (reduced inequalities) and 11 (sustainable cities and communities) are central focus of this study.
- **Practical recommendations** practical recommendations are key to this research, suggesting low-cost, easy-to-implement accessibility improvements for municipal governments, urban planners, and community organizations. These recommendations are viable and durable since they fit Islamabad's socioeconomic setting.

Literature review

Disability and accessibility

Disability is a general term that encompasses limitations on activities, participation restrictions, and impairments (who, 2023). An impairment is a problem with bodily structure or function; an activity limitation is a challenge that a person faces when carrying out an action; and a participation restriction is a challenge that a person encounters when participating in events in life. Physical, cognitive, sensory, emotional, developmental, or any combination of these could be considered disabilities. Other categories of individuals are taken into account while adding amenities that aid in mobility. Due to their incapacity to promptly evade hazardous situations, poor judgement, lack of confidence, and difficulty making decisions, these people are both older adults and youngsters. The sorts of disabilities that are taken into account while designing and installing mobility-aiding elements are shown in table 1.

Table 1. Basic types of disabilities considered for access aiding features

Types of disability	Description
Non- ambulatory	Impairments that, regardless of cause or appearance, for all practical purposes, restrict individuals to wheel chairs.
Semi-ambulatory	Disabilities that make people feel uneasy or unable to walk. People who use crutches or braces, amputees, people with arthritis, people with spastics, women who are very far along in their pregnancies, and people with heart and lung conditions may be semi-ambulatory.
Sight	Total blindless or partial impairments affecting sight to the extent that the individual functioning in public spaces is unsecure or vulnerable to danger.
Hearing	Hearing impairments or deafness that could cause someone to feel uneasy in public since they can't communicate or detect danger signs.

Accessibility and universal design

The capacity to access desired products, services, events, and locations is referred to as accessibility (together called opportunities). With the exception of a tiny percentage of travel (jogging, horseback riding, leisure driving), where movement is an aim in and of itself without a destination, access is the ultimate purpose of most modes of transportation. This perspective assumes that there are multiple ways to improve transport, including more mobility, improved land use accessibility (which reduces trip time), or improved mobility options like telecommunications or delivery services. When considering impairments and accessibility difficulties, the following elements could be

considered the scope of accessibility in transportation.

In building

Entrance

Doors

Elevator

Stair

Corridor or walking passage

Indoor parking

Outside building

Parking place

Sidewalk or footpath

Public transportation vehicles

Road crossing

Roundabout

Grade separated facilities e.g. Underpass over pass

Bus stop

Railway station

Water port

With the advent of assistive technology and "barrier-free" or "accessible design," universal design is a relatively new paradigm. It provides a framework for designing objects, spaces, communications, information, and policies such that the greatest number of people may utilize them in the greatest variety of contexts and without the need for unique or specialized design. The term "universal design" describes a comprehensive approach that results in goods, structures, settings, and modes of transportation that are practical and useful for everyone, not only those with impairments.

Global disability and accessibility perspective

Disability accessibility is a global issue, but especially in developing nations like Pakistan, where financial restrictions and socio-cultural attitudes offer substantial impediments. Disability and accessibility research is rising, yet gaps exist, especially in low-income countries (Shakespeare, 2017). Disability includes impairments, activity limitations, and participation restrictions, interacting with numerous constraints that prevent equal and effective social involvement. Global study shows that disabled people experience severe barriers to public areas, transportation, and key services, lowering their quality of life (who, 2023). Moreover, many affluent nations have made progress toward inclusive environments, where the ada in the us and the equality act in the UK have set severe accessibility criteria for public spaces and transportation. Even in these countries, standards implementation and enforcement are difficult, nonetheless, it is important to recognize that practical application and regular monitoring are as much important of as legal frameworks (Cieza et al., 2018).

In contrast, underdeveloped nations struggle to set and enforce accessibility norms, where economic and social factors generally take precedence over accessibility in low-income nations (Grech and Soldatic, 2016). This leaves disabled-accessible infrastructure and services lacking, with many developing countries developing stigma and discrimination against disability attitudes, making it harder for disabled people. Similarly, lack of disability statistics and research in Pakistan exacerbates the problem. The 2006 Pakistani accessibility code addressed these difficulties, however its implementation has been patchy. Service delivery and infrastructure development lag behind policy framework. Public buildings, transportation systems, and schools typically fail to meet code accessibility criteria (khan et al., 2015).

Cities present special issues for disabled people. Developing countries' infrastructure often ignores disabled people's requirements, including uneven sidewalks, no curb ramps, inaccessible public transportation, and buildings lacking wheelchair-accessible entryways (Nolan & Gleeson, 2017). Garg and Kaur (2020) found comparable concerns in Delhi, highlighting how many south Asian cities disregard impaired mobility. Similarly, Islamabad’s infrastructure is hard for disabled people to use, despite being the capital. Most Islamabad buildings, parks, and public transport are inaccessible to disabled people. There is a clear lack of ramps, elevators, tactile paving for the visually handicapped, and

sufficient signage (Ahmad et al., 2020).

Social and psychological barriers

Besides physical impediments, psychological and social hurdles hinder disabled people's mobility and inclusion. Pakistani society marginalizes disabled people, making it hard for them to claim their rights and use public services. Lack of public awareness and education about disability rights and needs perpetuates these hurdles (Rehman and khan, 2021). Recent technological advances may help impaired people with accessibility. Mobile navigation apps, automated public transport, and smart city efforts can improve mobility and access. Budgetary restrictions and infrastructure issues slow the implementation of such technologies in Pakistan. New technical solutions and urban design to promote accessibility are not integrated (Yasin et al., 2023).

Context-specific solutions for developing countries' socio-economic and cultural situations are lacking in the literature. Many research and policy frameworks are based on western standards, which are impractical in low-income areas. Grech and Soldatic (2016) propose inexpensive, sustainable, and culturally relevant indigenous accessibility methods. Accessibility for disabled people requires inclusive policymaking. However, disabled people and advocacy groups rarely participate in Pakistani policymaking. Exclusion leads to policies that don't completely address disabled people's practical challenges. To ensure disabled views are heard and addressed, policy making must be more participatory (gul, 2020).

Methodology

This study on disabled people's accessibility in Islamabad, Pakistan, uses a comprehensive and exhaustive analysis of the city's accessibility. To meet study goals, this section describes the research design, data gathering, sampling, and data analysis methodologies.

Research design

This mixed-methodologies study uses qualitative and quantitative methods to understand accessibility difficulties. This approach integrates numerical data with rich personal experiences for a complete analysis (Basias & Pollalis, 2018). The research uses quantitative data collected through surveys, while qualitative data is collected through in-depth interviews and observational studies to record handicapped people's lived experiences.

- **Area of study:** the study was conducted in Islamabad, Pakistan's capital, due to its political importance and diverse population. Accessibility issues are relevant to the city's infrastructure, which includes public buildings, transit, and recreation. Islamabad’s planned city status provides a unique perspective on how urban design affects disability accessibility.
- **Population target:** this study targets disabled Islamabad residents and policymakers, urban planners, and disability advocacy groups. Involving these parties ensures a multifaceted grasp of difficulties and solutions.
- **Sample strategy:** both quantitative and qualitative study participants were selected via purposive sampling. This method includes people with physical, sensory, and cognitive challenges, where representation from a variety of experiences and obstacles, volunteers from different socioeconomic backgrounds was ensured through researcher’s judgement (Campbell et al., 2020).

Data collection methods

This study collected data via surveys, in-depth interviews, and observational investigations.

- **Surveys:** disability accessibility in Islamabad was quantified using a structured survey. Mobility, access to public buildings, transit, and social services were covered in the poll. It also collected demographic data to examine how age, gender, and socioeconomic status affect accessibility. The poll was distributed online and in-person to reach a wide audience. Social media and disability advocacy groups helped distribute the survey online, while hospitals, marketplaces, and community

centers held in-person surveys (Davidavičienė, 2018).

- **In-depth interviews:** a subgroup of survey participants were interviewed in-depth to supplement quantitative data. These interviews explored disabled people's firsthand experiences and viewpoints. A semi-structured interview guide ensured consistency while letting participants discuss their individual perspectives (Flick, 2015). Policymakers, urban planners, and disability advocacy groups were questioned to understand Islamabad's accessibility difficulties and prospects. These interviews helped identify policy intervention areas and gave context.

Observational studies

Islamabad public places and transportation networks were observed for physical accessibility. Visited places were rigorously documented for accessible features such ramps, elevators, tactile paving, and signage. High-traffic places like bus stops, metro stations, public buildings, parks, and commercial districts were observed. The purpose was to identify physical barriers to impaired accessibility and offer data to corroborate survey and interview findings (Mukherjee, 2019).

Data analysis

To fully evaluate the data, quantitative and qualitative methods were used.

Quantitative analysis: to uncover impaired accessibility trends, statistical software was used to evaluate survey data. Descriptive statistics summarized participant demographics and accessibility difficulties. Chi-square testing and logistic regression were used to analyze demographic characteristics and accessibility experiences (Zhang et al., 2023).

Qualitative analysis: interview and observational data were thematically examined. Coding the data revealed accessibility issues and solutions themes and trends. Thematic analysis illuminated disabled people's lives and stakeholders' views. Triangulation of quantitative findings with qualitative data provided a more robust and thorough interpretation (Gupta & Gupta, 2022).

Ethical considerations

Ethics were crucial during research. All participants gave informed consent, understanding the study's goal, procedures, and opportunity to withdraw. Participants were given unique identifiers and data was securely stored to protect anonymity (Pandey & Pandey, 2021). Disability rights and dignity were always protected in the study, which followed ethical principles for vulnerable population research. Participants were carefully protected from damage and discomfort during the trial (Verma et al., 2024).

Limitations

This study sheds light on Islamabad's disability accessibility difficulties, although it has limits. Purposive sampling can capture varied experiences, but it may limit generalizability. Surveys and interviews using self-reported data may induce response bias (Kumari et al., 2023). Although comprehensive, the observational studies were limited to a few sites and may not fully represent Islamabad's accessibility. To improve generalizability and robustness, future research should expand observational studies and use random sampling (Verma et al., 2024).

Findings

Accessibility problems in movement

Making a few tweaks to the way that transport vehicles are designed is not enough to provide accessible transportation. Public transportation needs to be reasonably priced, dependable, and safe for people who need to utilize it in order to be considered truly accessible. A public vehicle that is accessible is useless if the associated infrastructure—such as the sidewalk and bus stop—is not accessible. In order to identify the core accessibility gaps, all connection facilities' deviations were scanned.

Footpath

When building roads, pedestrians are given less consideration. There have even been instances where their rights have been violated. A footpath is a feature that aids in separating foot traffic from vehicle traffic. Due to their limited

mobility, people with disabilities should be handled with greater caution when they are on public roads. The following describes the obstacle and flaws in the pathway environment.

Lack of a landing area for the path

Irregular footpath caused by frequent traffic from nearby abutting properties

Unlawful and bothersome parking on the path

Uneven sidewalk surfaces, signboards, merchandise, and trash; undesired obstructions present

Disorganized pedestrian movement; improperly installed ramps; and lack of tactile paving to assist visually impaired people.

Road crossing

Crossing of the road older and disabled persons tend to be slow people. When they cross a driveway, they are located in the most vulnerable of circumstances.

The following flaws in the road environment made their circumstances worse:

Limited curb ramps where the zebra crossing is located

Limited tactile surfacing and an auditory sign to direct visually impaired individuals.

Unorderly pedestrian movement

Improperly placed ramps

Drivers' disregard for oncoming cars**.**

Vehicles of public transportation

Public transportation vehicles

Wheelchair users could not find any accessible features in the automobiles. Other categories of disabled individuals can access amenities such as grab rails and seat reservations. However, it is discovered that the granted privileges are not usable because of the general public's ignorance and lack of understanding. The most frequent obstacles to accessible movement in vehicles are as follows:

Majority of bus operators do not adhere to the legally required practice of keeping seats reserved for the disabled, and bus attendants also refuse accessibility (the accessibility issues are depicted in photograph 2)

Steps with high risers that are elevated (usually a distance of 30 to 50 cm from the ground to the first step)

Absence of at-grade boarding or ramps

Inadequate entrance grab rails. These also include the insides the car

Insufficient color contrast at the offset and grade change locations

Unsmooth or split-level floor surfaces

Seat spacing and narrow aisles (inaccessible legroom)

Access is discouraged by the helpers:

A common accessibility issue for impaired travelers is that volunteers often make their lives more difficult by viewing them as slow travelers who pose a significant obstacle to providing prompt services.

Bus stops

The majority of the public buses in the area lack ticket booths. The vehicle collects the fare. Consequently, the bus drivers have become accustomed to simply slowing down their vehicle when loading and unloading passengers. Owing to the limited number of public buses in the area, riders desire to board the bus as soon as feasible. Because of this, the purpose of bus stops is viewed as being quite unimportant in many regions.

From an accessibility perspective, the bus stops are unsatisfactory due to the following items being absent: lack of an audio sign to assist blind persons. Wheelchair users

Cannot access the curb ramp lack of tactile surfaces to assist blind individuals there is no set location for the bus to halt

Overpass and underpass

Facilities for pedestrian crossing that are grade separated are the overpass and underpass. Wheelchair users are not intended to be able to access these facilities. Throughout the investigation, the following particular problems were noted: no deep colored markings are supplied for individuals who are visually

challenged. Every twelve steps, a landing should be provided for the people's comfort. In the majority of instances, there is no landing. Every underpass has inadequate lighting and environmental conditions. Because of improper upkeep, the overpass stairway's surface became slick.

Bus terminal, railway station and water terminal

Public spaces like bus terminals, train stations, and waterfronts are examples of sites where it is important to guarantee accessibility for individuals with disabilities. Because people must relocate to these locations in order to travel across districts. At these locations, there was no accessible feature for those with visual impairments, such as an auditory sign or a detectable warning sign.

Problem during mode change

There are many people living in the city of Islamabad. A specific number of individuals come to this city for various reasons. However, it is determined that there are not enough buses to serve every resident of Dhaka. It doesn't appear like the other modes, like autorickshaws and cabs, are enough.

The bus used to transport people from place to place; passenger loading and unloading occurs at bus stops; the distance between rickshaw stops and bus stops becomes challenging for those with disabilities, particularly those who use wheelchairs. The route from the rickshaw to the bus is inaccessible and unsuitable for people with disabilities. All things considered, the current public transportation system is determined to be ineffectual for individuals with disabilities due to its complex route planning and lack of suitable alternatives.

Case study

Metro bus terminal

The Rawalpindi –Islamabad metro bus is a 83.6 km bus rapid transit system operating in the Islamabad Rawalpindi metropolitan area of Pakistan. For this reason, the bus terminal was deemed to be an area of interest for handicapped accessibility. It was determined that the bus station was not completely handicapped accessible. Nevertheless, certain elements that help wheelchair users gain access were discovered. It was discovered that there was a sufficient ramp to make the area wheelchair accessible.

Nevertheless, certain elements that help wheelchair users gain access were discovered. It was discovered that there was a sufficient ramp to make the area wheelchair accessible. Measurements revealed that the ramp's width is 1500 mm, and its slope is 1:12. At the bus terminal, there was a passenger restroom that was easily accessible. However, it was found to be challenging to find the restroom because there was inadequate signs and direction.

It was determined that the other passenger amenities were uncomfortable. It was discovered that the whole terminal plan was absent from every area of the entry. Furthermore, it was hard to move a blind on your own due to unclear signage and directions. There was nothing unique that could make it easier for those who are just somewhat mobile to board on their own. It was discovered that temporary businesses and poor maintenance caused some ramps to become unusable. There was no central system in place to signal the departure of the bus.

https://www.google.com/imgres?imgurl=https%3a%2f%2fi.ytimg.com%2fvi%2fa4nx8ra-9be%2fmaxresdefault.jpg&tbnid=ihcq20d_icfqkm&vet=12ahukewibxegb98odaxvpdqqehcq2bagqmygcegqiarbt..i&imgrefurl=https%3a%2f%2fwww.youtube.com%2fwatch%3fv%3da4nx8ra9be&docid=dzjna_r_bofv5m&w=1280&h=720&itg=1&q=disable%20people%20in%20metro%20bus%20turminal%20in%20islamabad&hl=en&ved=2ahukewibxegb98odaxvpdqqehcq2bagqmygcegqiarbt

Practical guidelines to enhance access and mobility of persons with disabilities

It is necessary to have some guidelines in order to help development workers and policymakers who may be working to promote the mobility and access of people with disabilities grasp the significance of certain components of these activities. The list addresses particular facets of the transportation environment; it is not all-inclusive.

improved pedestrian environments with parallel to public transport systems

A safe and accessible sidewalk should be the right width—at least 1200 to 1500 mm—have a smooth surface free of obstacles like tree roots and potholes, be free of overhanging items, and be ramped for people in wheelchairs and other people with mobility issues. Maintaining the walkway's usability and continuity requires keeping it free of debris, dirt, construction sites, parked cars, and other obstructions

For those who are blind or visually handicapped, tactile warning signs and a tactile guide path should be installed. Regularly spaced seating areas could be installed along popular pedestrian routes. Particularly when left unattended, street works should be protected by a continuous, impenetrable barrier throughout the whole perimeter. (Takamine, 2004 October)

Everywhere sidewalks cross highways, pavements, medians, or other raised surfaces, curb ramps ought to be used. Visually impaired pedestrians may find auditory signals at signalized junctions helpful. At the edge of street crossings, tactile surfaces are crucial because they alert visually impaired people when they are about to cross the roadway. There are several ways to make crossings safer by having cars drive slower. In addition to slowing down vehicles, raised crosswalks give people a level place to cross. Raised crossings ought to be constructed at the same level as the sidewalk and with a minimum width of 2400 mm.

Improving bus system

For people with impairments, the height and inclination of the stairs on high-floor buses can be significant obstacles. By installing handrails and grab handles and designing steps appropriately, entrances can be made better. Priority seating is crucial, especially in crowded buses.

Bell pushes can be helpful in buses that stop only upon request to indicate a request for the next stop. Because they won't have to get up from their seats while the bus is going, this not only makes using the bus easier for those with speech and hearing impairments, but it also makes it safer for all other passengers. For passengers who are partially sighted, clearly readable destination and route number displays on the outside of the bus are crucial for helping them find their way, and they are also useful for all passengers, particularly at night. The ideal buses for wheelchair users to board are those with high floors and raised boarding platforms, or low floors with extendable ramps. The operator gains from these options as well because they expedite boarding and alighting. Other possibilities involve level boarding from small roadside platforms and using mechanical lifts, with a detachable bridge section to cross the gap. A low-cost option is to improve operating procedures, although this will require some retraining and conductor and driver oversight. The best results will come from using techniques like signaling important stops, regularly pulling

up near to curbs, and consolidating driving patterns within the framework of a broader improvement in customer orientation in bus services (Takamine, October 2004).

Door to door transport service

Even in cases when major improvements have been made to accessibility, certain disabled people may not be able to use regular (fixed route) public transport provided by buses or railroads. A sizable portion of travelers with impairments may need transportation from door to door.

These kinds of transportation can be offered via accessible vans, accessible taxis, or a range of smaller cars. Compared to fixed route transportation, this form of transportation is by nature more costly. Yet, for certain disabled people who are unable to use accessible fixed route vehicles, door-to-door transportation is essential to their survival and productivity.

Therefore, local governments or nonprofit organizations must provide funding for this kind of service.

The majority of people with disabilities cannot afford to utilize them without such subsidies. Since it might take some time to make fixed route transportation accessible, door-to-door service could be created as a temporary solution (Takamine, October 2004).

Training

Individuals with cognitive disabilities might benefit greatly. When it comes to making public transportation services more accessible to individuals with disabilities, employee, manager, and government training has played a significant role. This is especially crucial in Bangladesh, where conductors, drivers, and supervisors sometimes lack empathy for their passengers, let alone consideration for those with special needs.

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Passengers with disabilities frequently cite ignorance and attitude hurdles as the main obstacles preventing them from accessing public transportation. It may be possible to create disability awareness modules that encourage transportation employees to see their employment as advancing equality rather than providing welfare. Direct participation of groups serving the disabled in the training is typically beneficial. /

It is imperative to provide disability awareness training not only to front-line staff but also to those who develop, plan, and oversee transportation networks. Employees at many structured public transportation providers receive regular training on safety and operational issues. It is simple to add disability awareness modules to these programs, especially for incoming recruits.

Orientation, which is also known as travel training, is provided to new from training, since many of them are able to utilize public transportation independently provided it is dependable and predictable. In order to encourage travel education, public transportation providers can collaborate well with social workers and groups that support people with disabilities (Takamine, October 2004).

a few more enhancements additional enhancements could be made to guarantee accessibility. The amenities are primarily expensive and intended for a particular use. If a region has a high rate of disabled individual for short distance travel, one of the possible modes of transportation is the rickshaw. However, wheelchair users are unable to fully utilize it. Therefore, in areas where wheelchair users are

common, customized rickshaws could be offered duals moving around, then modifications can be implemented.

People with disabilities who cross the road at grade level feel uncomfortable on busy roads. The pedestrian overpass's elevator can be of assistance to them. These kinds of amenities can be found in places where disabled individuals are present. In situations when elevators are impractical, lift ramps can be supplied.

Conclusions and suggestions

This study examined disabled people's mobility and public involvement in Islamabad, Pakistan, and the major challenges they confront through a mixed-methods approach which included quantitative surveys, in-depth interviews, and observational studies to understand city accessibility. Lack of ramps, elevators, and tactile paving, as well as social and psychological hurdles caused by society attitudes and ignorance, were found.

The findings emphasize the necessity for comprehensive and successful disability accessibility programs, portraying that the accessibility code of Pakistan 2006 is inconsistent and inadequate. Public places, transit systems, and buildings have physical obstacles that indicate a systemic issue that requires policy and infrastructure adjustments.

The research also emphasizes the necessity for cultural changes alongside physical improvements because society attitudes and awareness affect accessibility, clearly emphasizing that making Islamabad accessible to disabled people is difficult, but there are also ways to improve. Policy enforcement, infrastructure improvements, technological integration, and social education are needed to address these concerns, which may result in Islamabad becoming more inclusive and allow all inhabitants to engage in public life by stressing accessibility, enhancing social cohesion and quality of life.

Recommendations

Some of the recommendations regarding accessibility that may be drawn from this research are as follows:

Policies and laws

1. **Strengthen policy enforcement:** the accessibility code of Pakistan 2006 must be strictly enforced. Regular monitoring, accountability, and non-compliance fines can achieve this.
2. **Inclusion in policy development:** disabled people and advocacy groups should help create policies that address practical issues.
3. **Resource allocation:** governments should prioritize accessibility upgrades for transportation, public buildings, and recreational spaces.

Infrastructure and urban planning

1. **Universal design principles:** use universal design principles in all new buildings and renovations to make public places accessible to all.
2. **Accessibility audits:** regularly assess public locations and structures to identify and fix problems. Disabled people should participate in these audits to address any impediments.
3. **Technological solutions:** promote accessibility with mobile navigation apps and automated public transport systems. These technologies should be used in urban planning and public services.

Social awareness and education

1. **Awareness campaigns:** inform the public about disability rights and needs. These ads should influence perceptions and lessen stigma.
2. **Training programs:** create and deliver accessibility training for public service providers like transit operators and urban planners.
3. **Community engagement:** involve the community in accessibility activities to generate ownership and collaborative responsibility for an inclusive environment.

Limitations

Albeit the care taken to craft a comprehensive methodology and eliminate all the limitations, some still persist that may impact the insights derived from this research. Some of these are as follows:

- **Limitations in sampling:** purposive sampling captures varied experiences but may restrict generalizability. The sample size and selection criteria may not fully represent Islamabad's disabled community, overlooking some subgroups' unique issues.
- **Limitations on data collection:** self-reported data in surveys and interviews may skew responses. Participants may have given socially desirable replies or had differing perceptions of accessibility impediments, affecting the outcomes.
- **Scope of observation:** only chosen public locations and transportation systems were observed. This scope may not fully represent Islamabad's accessibility. Some areas with major accessibility concerns may have been omitted, obscuring the challenges.
- **Technological obstacles:** assistive technologies were highlighted in the study, however Islamabad's technological ecosystem was not comprehensively examined. The adoption constraints of existing technical solutions may have been overlooked.

Future research direction

- **Greater geographical reach:** future studies should include other Pakistani cities and rural areas besides islamabad. This would assist find regional accessibility solutions and better understand accessibility issues across settings.
- **Longitudinal study design:** tracking accessibility improvements requires longitudinal investigations. These studies would evaluate policies and programs' long-term efficacy, guiding continual improvement.
- **Technological integration:** research should examine how sophisticated technologies improve accessibility. Smart city solutions, automated transit systems, and mobile accessibility apps should be studied for practicality, uptake, and efficacy.
- **Evaluation of inclusive policies:** research should assess policy inclusion and handicapped people and advocacy groups' involvement in policy creation and implementation. This would highlight participatory gaps and suggest stakeholder engagement improvements.
- **Sociocultural dynamics:** future research should examine socio-cultural factors affecting accessibility. Understanding how society views, cultural norms, and accessibility interact helps improve awareness and education campaigns.
- **Intersectional analysis:** future study should examine how gender, age, and socioeconomic position affect disability accessibility experiences using an intersectional perspective. This would illuminate the challenges faced by varied disability populations.

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