

# BRIDGING MOBILITY GAPS: ACCESSIBILITY IN PUBLIC TRANSPORTATION FOR PERSONS WITH PHYSICAL DISABILITIES

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## ABSTRACT

Public transportation accessibility is critical to guaranteeing inclusivity, independence and equal membership in society, especially to persons with disabilities, the elderly and those with temporary mobility impairment. This current research dwells on accessibility features of transport systems in the general populace. The quantitative research method with descriptive research design was used to take a systematic study of available provisions. The study employed 120 respondents who use public transportation, selected through a non-probability purposive sampling method. Data were collected using a self-prepared interview schedule to measure the availability, adequacy, and usefulness of key accessibility features. The analysis involved different elements of accessibility, such as ramps, low-floor entry, priority seating, handrails, tactile paths, visual and audio announcements, signage, and staff assistance. The results indicated that whereas some entry-level accessibility solutions are present in the transport systems, most of the key features are either inadequate, not uniformly applied, or in bad conditions. The respondents complained of the challenges of independent boarding, navigation, and access to information that have a strong impact on their safety, comfort, and the quality of the traveling experience. Moreover, the infrastructural obstacles, the absence of awareness, and minimum application of accessibility criteria were also declared to be the key impediments of inclusive transportation. The research paper highlights the critical importance of extensive planning, proper execution of policies, and routine observation to achieve free movement of all users without any barriers. The study results can be of great use to policy makers, transport authorities, urban planners and social workers in coming up with more accommodating and accessible services of public transport.

**keywords :** Accessibility; Public Transportation; Persons with Disabilities; Inclusive Mobility; Barrier-Free Environment; Social Inclusion

## INTRODUCTION

Transportation is important in allowing mobility, independence and social inclusion of every societal member. The availability of transport is not just a luxury to individuals with physical disabilities, but a necessity that they use their entitlement to education, employment, healthcare and community living. Ramps, low-floor buses, wheelchair space, handrails, elevator, tactile walkways, and accessible ticketing systems are the key features of accessibility that allow the safety and independence of using public transport. Nevertheless, even with the policy measures and the stipulations of the law in favor of the rights of persons with disabilities, there are still quite a good number of transport systems that exhibit physical, structural, and attitudinal obstacles. Poor infrastructure, inadequate maintenance of accessibility equipment, lack of skilled personnel, overcrowding and minimal information to the masses tend to limit effective use of available services.

The process of rapid urbanization in the Indian context has raised the need of having an inclusive transport

system, although the accessibility is uneven in terms of geographical regions as well as modes of transport. Despite the introduction of measures like reserved seating, concession, and easy design standards, they are normally not applied consistently. This has exposed many physically challenged persons to reliance on others, lack of mobility and being ostracized socially. Hence, it is essential to evaluate the presence and sufficiency of accessibility considerations in public transportation in order to identify gaps and opportunities. This paper seeks to discuss the accessibility options that exist within the field of public transport by persons with physical disabilities and to emphasize why more inclusive planning and realization can improve equal participation and better standards of living.

## REVIEW OF LITERATURE

1. **Natarajan, A. & Sridhar, V. (2021)**, Public Transport Accessibility for Persons with Disabilities in Chennai: Operational Challenges. This study involved an operational audit of Chennai's public transportation services, including buses, trains, and metro systems, along with interviews with service managers. The research identified 18 operational barriers such as inconsistent availability of accessible vehicles, lack of realtime information on accessible routes, and the absence of trained personnel to assist persons with disabilities. The study also noted that during peak hours, the overcrowding of buses and trains further limits the ability of persons with locomotor disabilities to use these services, as they often find it difficult to navigate through crowded spaces.
2. **Srinivasan, V. (2022)**, A Comparative Study of Public Transport Accessibility for Persons with Disabilities in Indian Metros. This study used a comparative analysis method, examining the accessibility of public transport in Chennai, Mumbai, Delhi, and Bengaluru. This study used a comparative analysis method, examining the accessibility of public transport in Chennai, Mumbai, Delhi, and Bengaluru. The study found that while Chennai faces significant challenges, these are not unique and are shared with other Indian metros. However, the level of infrastructural development, enforcement of policies, and public awareness in Chennai is lagging behind cities like Delhi, where more comprehensive measures have been applied. The study suggests that learning from best practices in other cities could help address the barriers in Chennai.
3. **Maunder, D. (2012)**, Improving Accessibility for People with Disabilities in Urban Areas. The author conducted an observational study combined with interviews in urban areas across various developing countries to evaluate the accessibility of public transport for people with disabilities. The research highlighted that poorly maintained infrastructure, including broken pavements, uneven surfaces, and inadequate seating arrangements, presents significant barriers to mobility for persons with locomotor disabilities. The authors suggested targeted infrastructure improvements to enhance accessibility in urban environments.

## METHODOLOGY

The major focus of the present study is to analyze the accessibility features available in public transport for persons with physical disability in Chennai. The sample consisted of 120 respondents who are using public transport in Greater Chennai Corporation. Both primary and secondary data were utilized for the current study. Primary data were collected through **interview schedule** by using purposive sampling method and the secondary data were collected from the articles, journal and newspapers. The data were coded and analyzed with the help of SPSS version 30.

## ANALYSIS AND INTERPRETATION

**TABLE 1**

S.NO	Variables	Factors	Frequency	Percentage(%)
1	Age	15-25	29	24.2
		26-35	44	36.7
		36-45	33	27.5
		46-60	14	11.7
		<b>Total</b>	<b>120</b>	<b>100.0</b>
2	Gender	Male	58	48.3
		Female	62	51.7
		<b>Total</b>	<b>120</b>	<b>100.0</b>
3	Nature of Disability	Locomotor		
		Visual impairment	37	35.0
		Hearing impairment	43	43.3
			11	13.3
		Others	6	1.7
		Elderly	3	6.7
<b>Total</b>		<b>120</b>	<b>100.0</b>	
4	Assistive device used	Wheelchair	31	35.0
		Crutches	12	30.8
		Cane	35	11.7
		None	10	35.0
		Others	12	10.0
		<b>Total</b>	<b>120</b>	<b>100.0</b>
5	Frequency of using public transport	Daily	40	33.3
		Weekly	30	25.0
		Monthly	21	17.5
		Rarely	29	24.2

		<b>Total</b>	120	100.0
6	Most frequently used mode of transportation	Bus	52	43.33%
		Metro	57	47.50%
		Sub Urban Train	14	11.67
		<b>Total</b>	<b>120</b>	<b>100.0</b>
7	Income	Below 10000	24	20.0
		10001-20000	24	20.0
		20001-30000	16	13.3
		above 30000	3	2.5
		no income	53	44.2
		<b>Total</b>	120	100.0
8.	Education Qualification	Illiterate	19	15.8
		Schooling	30	25.0
		Diploma	7	5.8
		Under graduate	25	20.8
		Post graduate	25	20.8
		Government exam preparation	14	11.7
		<b>Total</b>	120	100.0

9.	Employment type	Self employed	14	11.7
		Private sector	41	34.2
		Public sector	19	15.8
		Unemployed	46	38.3
		Total	120	100.0

## INTREPREATATION

The table 1 shows that the socio-demographic details of the respondents, most of the respondents (36.7%) are in the age group of 26-35, Half of the respondent (51.7%) are female, Most of the respondent (42.5%) is commuter with visual impairment, (35.0%) of the respondent are rely on cane, Most (33.3%) of the respondent are using public transport in daily basis. Most of the respondents (48.50%) are using the metro frequently, (44.2) of the respondents stated they don't have any income. Most of the respondents (25.0%) have done their schooling, (38.3%) of the respondents are unemployed.

S.NO	Variables	Factors	Frequency	Percentage(%)
		NA	24	20.0
1	Availability of low- floor or kneeling bus facilities in public buses	Yes	42	35.0
		No	22	18.3
		Sometimes	24	20.0
			8	6.7
Total			120	100.0
2	Accessability of footpaths near bus stops	NA	51	42.5
		Yes	26	21.7
		No	36	30.0
		Sometimes	7	5.8
Total			120	100.0
		NA	46	38.3

3	Accessibility of entry and exit points at metro stations	Yes	54	45.0
		No	8	6.7
		Sometimes	12	10.0
Total			120	100.0
4	Availability and functionality of accessible toilets at metro stations	Na	50	41.7
		Yes	51	42.5
		No	6	5.0
		Sometimes	13	10.8
Total			120	100.0
	Availability and functionality of ramps	Na	56	46.7
		Yes	19	15.8
5	and lifts at suburban railway stations	No	41	34.2
		Sometimes	4	3.3
Total			120	100.0
4	Accessibility of emergency systems at railway stations	Na	56	46.7
		Yes	7	5.8
		No	46	38.3
		Sometimes	11	9.2
Total			120	100.0

## INTERPRETATION

Table 2 shows that ‘Not Applicable’ responses indicate that the respondent does not use that particular mode of transport (bus/train/metro); therefore, the results are based only on those who use that specific mode. Most (35.0%) of the participants reported that low-floor or kneeling bus facilities are available in public buses, (42.5%) that there is no Accessibility of footpaths near bus stops, most (45.0%) of the respondents stated that there is Accessible entry and exit points at metro stations, most (42.5%) of the respondents reported that accessible toilets at metro stations are Available and functional, Most (34.2%) of the respondents stated that there is no Availability and functionality of ramps and lifts at suburban railway stations, most (38.3%) of the respondents stated there is no Accessibility of emergency help systems at railway stations.

## MAJOR FINDINGS

### DEMOGRAPHIC FINDINGS

- Most of the respondents (36.7%) are in the age group of 26-35.
- Half of the respondents (51.7%) are female.
- Most of the respondents (42.5%) are commuters with visual impairment.
- (35.0%) of the respondents rely on a cane.
- Most (33.3%) of the respondents are using public transport on a daily basis.
- Most of the respondents (48.50%) use the metro frequently.
- (44.2) of the respondents stated they don't have any income.
- Most of the respondents (25.0%) did their schooling.
- (38.3%) of the respondents are unemployed.

### FINDINGS RELATED TO ACCESSIBILITY FEATURES AVAILABLE IN PUBLIC TRANSPORT FOR PERSON WITH PHYSICAL DISABILITIES

- Most (35.0%) of the participants reported that low-floor or kneeling bus facilities are available in public buses.
- Most (42.5%) of the participants said that there is no accessibility of footpaths near bus stops.
- Most (45.0%) of the respondents stated that there are accessible entry and exit points at metro stations.
- Most (42.5%) of the respondents reported that accessible toilets at metro stations are available and functional.
- Most (34.2%) of the respondents stated that there is no availability and functionality of ramps and lifts at suburban railway stations.
- Most (38.3%) of the respondents stated there is no accessibility of emergency help systems at railway stations.

## SUGGESTION AND CONCLUSION

Providing physical disabled people with convenient public transport is an essential condition of attaining social inclusion, equal opportunities, and independent living. The solution to the current obstacles needs to be a multi-faceted and synchronized action that involves governmental institutions, transport agencies, community representatives, social workers, and disability-

oriented organizations. The needs of more buses with low floors and giving ramps, correct curbs at bus stops and creating a barrier free infrastructure with accessible shelters and foot paths, lifts, tactile walks and wheel chair friendly facilities should be given priority in the bus and railway systems. Minimization of platform-train gaps at railway stations and the provision of accessible sanitation facilities and functionality elevators should also be done to facilitate independent and safe travel. Moreover, transport personnel should be trained on disability sensitization regularly, the reserved seating provisions should be strictly followed, the accessibility facilities must be maintained, clear signage should be there and the redressal mechanism of grievances must also be effective to enhance service delivery.

Social workers and non-governmental organizations can promote supportive commuter behavior by conducting advocacy, mobility training, and accessibility audits, and the promotion of supportive commuter behavior can be encouraged through public awareness initiatives.

In sum, the research findings conclude that despite accessibility resources that are implemented, the implementation process is still uneven and insufficient which restricts independent mobility and participation in education, employment, healthcare, and social life. Having an enhanced access to the public transportation system through universal design, good policy implementation and willingness of the society to accommodate persons with physical disabilities therefore plays a central role in enhancing the dignity, autonomy, equal participation and high quality of life of these persons.

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