PUBLIC TRANSPORT TERMINAL FACILITIES FOR DISABLED PEOPLE - A CASE STUDY OF TERMINALS IN ANAND

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ABSTRACT

Accessibility is important in day to day life for everyone. Disability is an public health problem in developing countries like India. The problem which will increase in coming future because of increase in non-communicable diseases and due to age, with increase in life expectancy. The issues will be different in developed and developing countries; Infrastructure facilities should be according the needs of the disabled users. In India, a majority of the disabled lives in rural areas where accessibility, availability, and utilization of public terminals and its cost-effectiveness are the major issues to be considered.

Keywords— Keywords: Accessibility; problems; disabled; infrastructure facilities; transportation terminal

Introduction

In today's world transportation is must for day to day life of the people. There are various facilities at transport terminals which are used by normal people. But the major concern is the facilities for disabled people because if we consider the total population of them across the world it is 15% (110 -190 million) which experiences some sort of disability. So it becomes necessary to design and provide facilities at public terminals for them so they can do their work or travel without any difficulty. This paper will identify the various gaps which can be fulfilled.

Need of study

- To make Disable people feel independent, live normal life as the able people.
- Persons with disabilities are often neglected when it comes to public transport systems due to the lack of facilities that would accommodate them.
- The existing transportation terminal lacks the facilities that would satisfy the needs of the disabled.
- Disabled people need innovative technology which can be an equipment or product that can be used to increase, maintain capabilities of individuals with disabilities.
- Needs to adopt the latest technologies into its public transport terminal so as to help and make it easier to access for the disabled people.

Objectives

To excess the existing social infrastructure facilities for disabled people at public transport terminals**.**

To recommend the existing problem faced by disabled people by asking questionnaire.

Scope

This study is in reference to provide infrastructure facilities at public transport terminals for disabled people for **Anand city** only.

Study area profile

The Anand city is located in Gujarat, India. Anand is well known as milk city Asia's biggest dairy which is situated at Anand with logo as AMUL. Anand is a junction from the point of view of railway which approaches to Ahmadabad to Mumbai, Anand to cambay and third line towards north through Godhra. And our study will be focused on improving Infrastructure facilities for disabled people at Anand railway station.

Table 1. Demographical detail of Anand city

Particulars	Total	Male	Female
Population	209,410	108,403	101,007
Child (0-6)	21,269	11,279	9,990
City population	198,282	102,548	95,734
DISABLED	3769		
Literacy	89.47%	93.20%	85.50%
Total Workers	2980	1830	1440

As in table 1 the population of disabled people in Anand is 3769 which is 2% of the total population. These disabled people are categorized with there population in table 2 below.

Table 2. Types of disabled people with Population

Types	Population
In Seeing	306
In Hearing	285
In Speech	205
In Movement	653
Mental Retardation	453
Mental Illness	265
Any Other	1,397
Multiple Disability	195
Old age	14,658

Research Methodology

The facilities for disabled people has been checked for Anand city. The survey form has been designed and the data has been collected by observation and as well as by the questionnaires asked to the respondents or the employer who is working at the public terminal. And all the facilities are analyzed and compared with standard codes.

Table 3.Facilities for Disable facilities to be analyzed

Facility
PWD Parking
Kerb and Slope
Walkway
Doorway
Tactile
Staircase
Special Lane For Handicapped people at Platform Number 2,3,4,5
Handrail
Handicapped toilet
Signage
Elevator

Analysis of the provision of the Handicapped facilities provided at the Anand Terminal

Analysis of Walkway

Walkway	
a) Non-slippery Surface	☒
b) Clear Scale (min 1.2m – Enable wheelchair)	☑
c) Connected Properly	☒

The three walkway guideline to be provide such as non-slippery surface, clear scale of minimum 1.2m and connected properly. Station has not complied with the walkway standards, though the clear width is available but this surface is slippery and not properly connected.

Analysis of Kerbs and Slope

Ramp and kerb	
a) Slope with proper landing (min length 1.2m at interval of not more than 0.6m length of slope)	☒
b) Non-slippery surface	☒
c) Enable wheelchair users (1.2m min width)	☒
d) Proper slope (Max 1:12-min 1:20)	☒
e) Provided with handrails at both sides	☒

As shown in table above the kerbs and slope are not provide at the terminals which is compulsory to be provide at every railway stations as per the Indian standards.

Analysis of Doorway

Doorway	
a) Adequate door width for wheelchair users (min 0.9m width)	☑
b) Threshold leveled at steep slope(if any)	

Main doors have adequate width to enable the wheelchair user to pass through the doors. There is no threshold provided at the terminal which can be helpful for the wheelchair users for easy entry and exit.

Analysis of Tactile

Tactile	
a) Provided at needed areas	☒
b) Contrast in color	☒
c) Detectable underfoot	☒

The guiding blocks are only present at the platforms close to the rail. There are no detectable underfoot and are not located at all needed areas such as disabled toilet, ticket window and at slopes. The purpose of this facility is to help the Handicapped one's, particularly for those with vision problem to alert them about the danger in front, using their touch sensing of the feet.

Analysis of Handrail

The four handrail guidelines to be provided are listed below.

Handrail	
a) Fixed at proper height at slope(min 0.84-0.9m in height)	☑
b) At slopes and stairway – extended 0.3m in length both the sides	☒
c) Proper color contrast	☑
d) Non-slippery surface	☒

Terminal is provided with handrail at both the side of the stairs but the height of the handrail is not appropriate. Also the handrail is not covered with a non-slippery material to protect from wetness.

Analysis of Signage

As we know that there are no type of signage facilities as shown below in the table ,which is important for disabled people at terminals. The Braille instrument is used to guide the blind people.

Signage	
a) Clear direction signs	☒
b) Use of braille instruction	☒
c) Installation of Signage; - At Parking - Walkway - Doorway - At Washroom - Platform - At Ticket window counter	☒

Analysis of Ticket window counter

There should be a special ticket window counter for disabled people at present it's not available.

Analysis of Handicapped toilet

The six guideline which should be provided for Handicapped people at railway terminal. Railway terminal has provided Handicapped toilet. However, it is found that all doors at the toilet do not follows the guideline and causes difficulty for the wheelchair users.

Findings

From table 3 it is observed that the facilities which is important for the physical handicapped people like ramp, walkway, signage, disabled parking etc it is not available, which should be primary available, but maximum available facilities is staircase which can be used by the normal people, but can't be utilized by disabled people.

Suggestive measures

Fig 2. Various Disabled facilities

As in fig 2 foreign countries as well as some developed cities of India are using facilities like disabled parking, walkway, ramp and kerbs, signage, lower ticket counter, guiding block, disable toilet, escalators, elevators, special lane for disabled people etc. This kind of facilities will help handicapped people for their growth as well as they can do their employment, they can go to their business, and they can also earn for themselves. They will not face any type of difficulties at terminal.

Conclusions

From this study the analysis has been done that Anand is still not that much strong for providing the infrastructure facilities for the Handicapped people, still Anand has developing chance because there are possibilities which can be made into existence for disabled people.

This research will significantly help and increase the public buildings for better value by focusing on the disabled friendly facilities. Moreover, it will also help the friendliness environment of the Anand railway terminal for better usage and accessibility.

Feedback from the users is most important for improvement of the facilities at public building. There are so many innovative technologies which are used in foreign countries and can be used by Indian railway terminals which will create friendly environment.

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