



## Universal Accessibility: A Tool for Safe, Sustainable and Friendly Environment- A Case Study

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### ABSTRACT

Disability is a global phenomenon of huge proportion, eliciting growing local, national and international concern. More than 600 million people in the world have some type of disability. Hence, accessibility in buildings is very important for many reasons. So it became necessary to remove architectural barriers that negatively influence buildings environment for e.g. ramps curb ramps, elevators, escalators, etc. Mostly this accessibility is not considered as a basic necessity by planners & architects. Barrier-free promotes freedom through design that is safe, functional for everyone. Because barrier-free design is fundamentally good design, so it became necessary to provide accessibility in buildings. This research study proposes is evaluating accessibility features that have been lacking in commercial buildings of Hyderabad. The guidelines are lying on remarks and evaluation of accessibility provide inside current existence in commercial buildings. A variety of the accessibility provisions observed are extremely far-off from satisfactory level. Therefore the conclusion reach be that if these issues are to be address suitably, much superior intellectual capacity must be developed on the part of the designers concerning the aim of barrier free principles, their level of implementation, and how they have an effect on and relate to disabled and able-bodied users. The data was collected through un-structured interviews with the experts, professionals, architects & planners. A questionnaire survey was then carried out to further explore the design requirements by the local people of Hyderabad. The collected data was analyzed by using SPSS software version 24.0. The research finally suggests important environmental free access. The findings of this study is a road map for managers, planners, architects and engineers for safe, sustainable, and environment friendly commercial buildings.

**Key words:** Built Environment, Universal Design, Accessibility, Barrier-Free

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### INTRODUCTION

In the most ideal everything being equal, the point is make an absolutely obstruction free condition, one where no orientational, useful, visual, sound-related, spatial or manoeuvring. Obstruction would survive for any client of a domain ... regardless of whether old, youthful, hampered by bundles, pregnancies, kid buggies, upkeep wagons, moving gear ... or then again whether they are among the numerous people who have a therapeutically identifiable impairment that turns into a disable when they are completing their day by day exercises. In such a world, numerous people whom we consider able-bodied would wordlessly acknowledge and exploit configuration includes that encourage the utilization of nature and for everybody give more noteworthy straightforwardness, security and usefulness.

General outline rose up out of marginally prior hindrance free ideas, the more extensive openness development, and versatile and assistive innovation and furthermore tries to mix style into these centre contemplations. As future ascents and present day medication builds the survival rate of those with noteworthy wounds, ailments, and birth deserts, there is a developing enthusiasm for widespread plan. There are numerous enterprises in which general outline is having solid market infiltration yet there are numerous others in which it has not yet been embraced to any incredible degree.

Widespread outline is additionally being connected to the plan of innovation, direction, administrations, and different items and environments [1].

Handicap isn't a wonder yet is a stage. Everybody at one point or alternate goes through such stages. The elderly, sick, pregnant, hefty, youngsters, people with break or with baggage could all be portrayed as going through a period of handicap. Notwithstanding amid such stages everyone has the privilege to live in nobility. Openness, in this way, can't be a part of sensitivity yet is particularly the privilege of each person. Hindrance free outline, in this way, is an expert commitment and in addition a societal responsibility of plan professionals [2].

Today, not all individuals can approach a place or an office effectively. Notwithstanding for a gathering of individuals – youngsters, elderly, ladies, and individuals with inabilities such as people with child kid buggy ,shopping baskets and wheelchair clients, and so on – achieving a place in a developed situation is once in a while still an incomprehensible issue. This circumstance has a logical inconsistency to the guideline embraced by the United Nations that "No piece of the developed condition ought to be outlined in a way that rejects certain gatherings of individuals based on their incapacity or frailty"[3]. The standard for outlining and arranging the developed condition conveys us to two terms: "openness" and "portability", which must be considered. "Accessible" here alludes to the objective of empowering

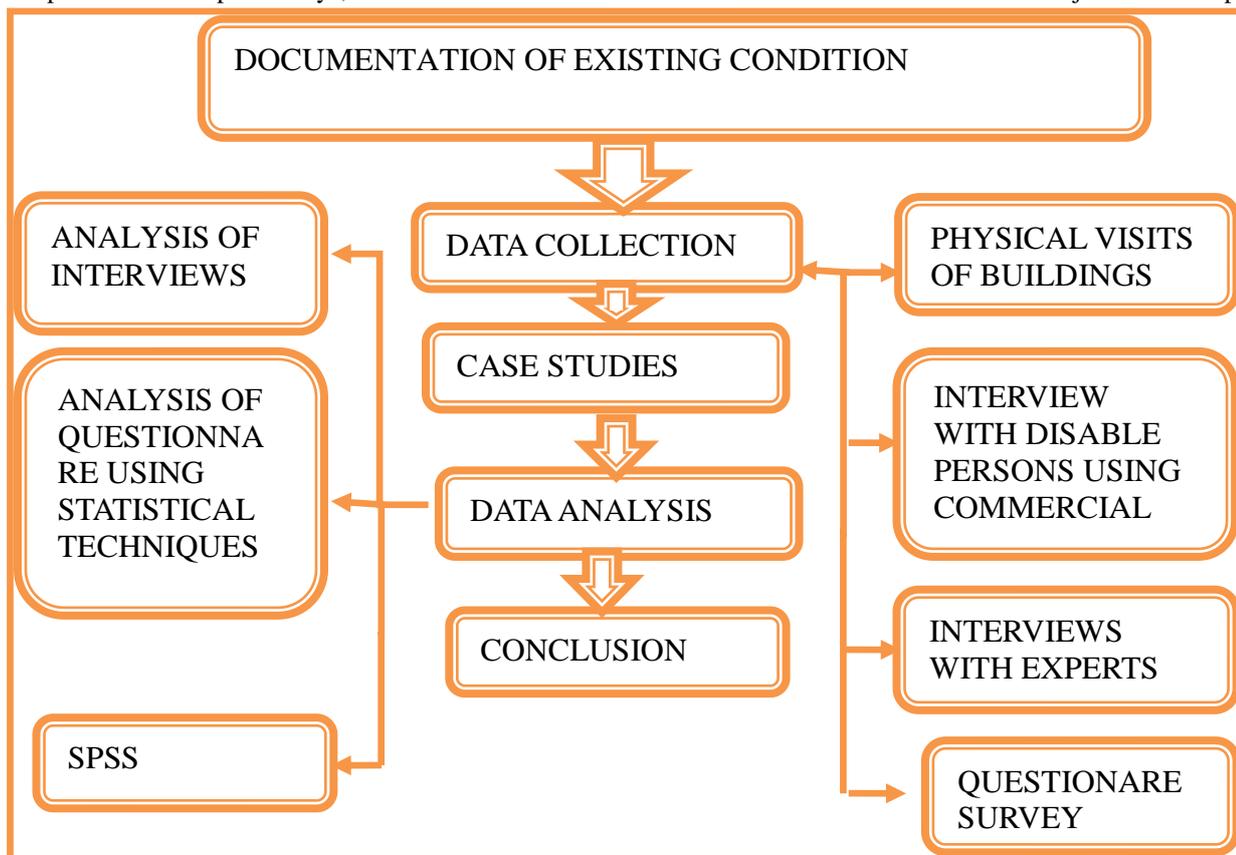


Fig. 1 Research Methodology

**THE SIGNIFICANCE OF ACCESSIBILITY, FUNCTIONALITY & SAFETY**

The idea of hindrance free plan is a generally new one, having developed inside the previous ten years as an expansion of "outline for the debilitated", which for the most part tended to the portability issues of wheelchair clients. The broadened perspective of the availability issue, however still firmly arranged towards the requirements of incapacitated people, has come to understand that numerous different clients, for the most part viewed as physically fit, experience the ill effects of the existence of an assortment of regularly un-deliberate synthetic boundaries, the consequence of absence of cognizance and information.

In the most ideal everything being equal, the point is make an absolutely obstruction free condition, one where no orientational, useful, visual, sound-related, spatial or manoeuvring. Obstruction would exist for any client of a domain ... regardless of whether old, youthful, hampered by bundles, pregnancies, kid buggies, upkeep wagons, moving gear ... or then again whether they are among the numerous people who have a therapeutically identifiable impairment that turns into a disable when they are completing their day by day exercises. In such a world, numerous people whom we consider able-bodied would wordlessly acknowledge and exploit configuration includes that encourage the utilization of nature and for everybody give more noteworthy straightforwardness, security and usefulness.

**RESEARCH OBJECTIVE**

The research objectives of current study is to unfold the current status of Hyderabad’s commercial buildings, through personal visits, surveys & interviews, current criterion measured in evaluating the superiority and value of accessible features in presented commercial buildings of Hyderabad, criterion which go ahead of the purely assessment of building accessibility to focus equally on physical barriers aspects. The development of these criteria was based upon detailed observations of accessible provisions, carried out in new and old buildings that are obtainable in Hyderabad.

**RESEARCH METHODOLOGY**

This study involved visits of several commercial buildings of Hyderabad, questionnaire survey, and unstructured interview with the experts, officers and with the users of buildings. In order to deal with the accessibility, a questionnaire survey was conducted with local public in order to visualize the problem with the eyes of user. The study involved multi-stages of random time surveys at the commercial buildings shopping markets in order to visualize every aspect regarding accessibility. This study focuses accessibility in existing commercial buildings of Hyderabad city. Total four commercial buildings were visited in Hyderabad. Survey includes the procedure from parking to moving inside in the building. Several meetings & interviews were conducted with the experts of relevant field, in order to importance of accessibility in commercial buildings. Fig. 1 presents the research methodology of current study.

**Current Situation of Commercial Buildings of Hyderabad**

Inappropriate facilities that do not fit the situation are mostly found. Ramps, Slopes that cannot be well used by users are provided in some buildings. Basic facilities are inappropriate and not provided, e.g., ramps, side walk ways, lifts, escalator, appropriate parking, etc as a result. It can be concludes from the analysis of study that level of accessibility of commercial buildings of Hyderabad is very low. Where perhaps there was no much awareness on the needs to provide accessible linkages for the Peoples with disability Users faced several difficulties at many areas and among others it involved safety issues on top of the accessibility issues studied. Some of the facilities provided may not be appropriate for them.

**DATA COLLECTION AND DATA ANALYSIS**

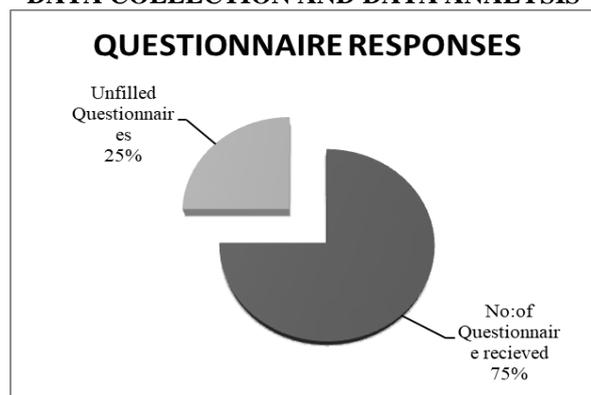


Fig 2. Rate of Response from Respondents

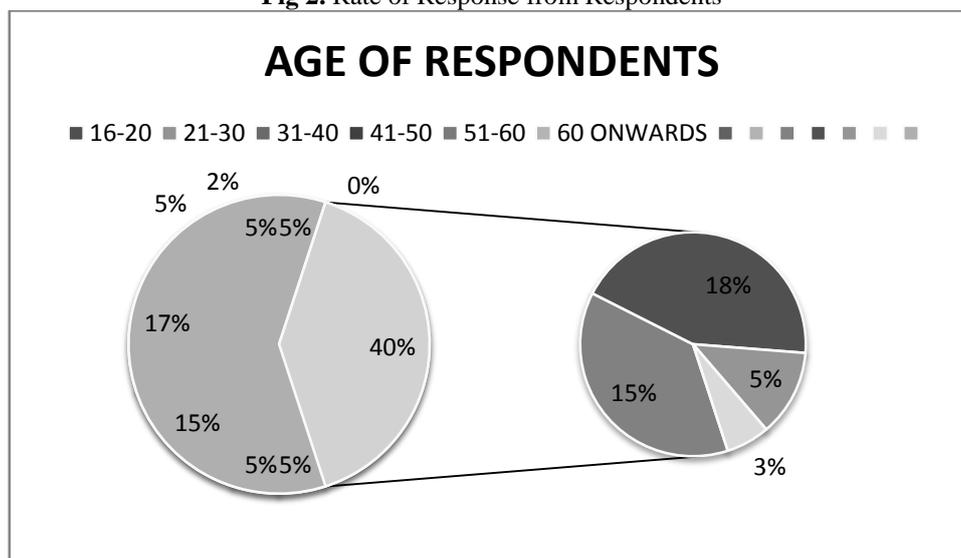


Fig. 3 Age of Respondents

The data was collected through a questionnaire survey. Field experts and users of buildings were the targeted respondents of this survey. Total 100 questionnaires were distributed among targeted respondent. The response of questionnaire is given in figure 2 and 3.

To analyse the data, a five point likert scale was adopted as mentioned below.

1 Very Unimportant 2) Unimportant 3) Neutral 4) Important 5) Very Important

The level of significance was assessed with Statistical Software Package SPSS using Average Index (AI) method calculated with formula adopted from [6].

**RESULTS AND DISCUSSIONS**

The table 1 of availability of external and internal elements define the respondents’ point of view and describe that what elements they have found in their visit. In the reply of the question regarding the availability of External Barrier Free Walkway they said ‘NO in the buildings Max bachat, National bank of Pakistan, Jamiya latifabad market and Dawood Center respectively. In the response of next question regarding the availability of External Ramp they said ‘YES’ in all four aforesaid buildings. The question about the availability of External Ramp the respondents reacted with ‘YES’ in all selected buildings while in the question of Sensor door regarding the availability the respondents of two building, Dawood centre and Max bachat said ‘YES’ and the respondents of other two buildings said ‘NO’ in accordance with their observation. The question about the parking for senior citizens and sign boards availability asked from respondent they answered ‘NO’ all commercial buildings of Hyderabad were lacking with these facilities.

The further part of the same table no: 5.1(a) speaks of the Internal elements of four buildings depicts the response of respondents regarding the internal elements in all four selected buildings. In the response of first question of internal elements regarding the availability of Barrier Free Toilet the respondents of all four buildings said ‘NO’. In the reply of the question regarding the Lifts the respondents, of the all three selected buildings reacted the same with ‘NO’. While only Dawood centre building’s respondents said ‘YES’ In the reply of the question regarding the Escalator the respondents, of the all three selected buildings reacted the same with ‘NO’. While only Dawood centre building’s respondents said ‘YES’ In the reply of the question regarding the Floor slip resistance the respondents of all four buildings said ‘Yes’. The respondents of all three buildings said ‘YES’ in the response of the question regarding the availability of signs while Jamiya latifabad market respondents refused by saying ‘NO’. Over all satisfactory level of respondents were very low.

**Table -1** Mean score of Likert scale about all four building

External Elements (Attributes) of Selected Buildings					
S. No	Satisfaction With	Max bachat	National bank of Pakistan	Jamiya market Latifabad	Dawood Center Building
Barrier Free Walkway					
1	Satisfaction with the provided space of Walkway	---	----	-----	---
External Ramp					
1	Satisfaction with the elevation and comfort ability of Ramp by all age groups	3.33	2.84	2.37	3.80
2	Satisfaction with the elevation and comfort ability of Ramp by PWDs	3.27	3.36	2.43	3.77
3	Satisfaction level with the width of Ramp	2.87	2	----	4.15
Entrance sensor doors					
1	Availability of automatic doors	3	--	---	4.03
2	Satisfaction with Entrance width and spaces	--	--	---	3.77
Parking for senior citizens					
1	Availability of parking	--	--	---	---
Signage					
1	Satisfaction level of Pasted and fixed Directional and instructional Signs	3	2.52	---	3.30

**Table -2** Mean score of Likert scale about all four building

Internal Elements (Attributes) of Selected Buildings					
S. No	Satisfaction With	Max bachat	State bank	Latifabad market	Dawood Center Building
Barrier Free Toilet					
1	Level of comfort with the design of Toilet	--	---	----	-----

Lift					
1	Satisfaction level with the barrier free design of lift and space	---	--	-----	3.87
Escalators					
1	Satisfaction level with escalator and space	---	---	---	3.87
Floor slip resistance					
1	Satisfaction level with floor material				
Signage					
1	Satisfaction level of Pasted and fixed Directional and instructional Signs	3.20	2.52	----	3.30

### CONCLUSION

The research work was done on around four buildings of Hyderabad. The buildings include max bachat thandi sarak, National bank of Pakistan, Jamiya market latifabad and dawood centre; one of the major aims of study was to unfold the current status of commercial buildings Hyderabad, through personal visits, surveys & interviews. It can be concludes from the analysis of study that level of accessibility of commercial of Hyderabad is very low. From the questionnaires and interviews from respondents, it is observed that general condition of the built environment in this city is not satisfying from the view of accessibility. The respondents of four commercial buildings the respondent has very low level of satisfaction with the installed facilitations. All the external and internal attributes of building regarding the public facilities such as External barrier free pedestrian walkway, External ramps, External ramp, signage, senior citizens parking and toilets, all mechanical facilities, Building entrance foyer Door, sensor system were found very low. Hence, this learning has great emphasis to fill the gaps that presently prevail in the commercial building condition in Hyderabad.

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