ACCESSIBILITY AND DISABILITY FOR STUDENTS WITH DISABILITIES INSIDE THE HIGHER EDUCATION INSTITUTIONS

Dissertation

SUBMITTED TO THE NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION, NEW DELHI IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTERS OF PHILOSOPHY (M.PHIL)

BY:

NAYAB PARVEEN

Under the Supervision of:

PROF. VEERA GUPTA

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION, NEW DELHI

APRIL, 2022

DECLARATION BY THE SCHOLAR

This is to certify that the M. Phil. Dissertation being submitted by me on the topic entitled: "**Accessibility and Disability for Students with Disabilities inside the Higher Education Institutions**" has been completed under the guidance of Prof. Veera Gupta. It is declared that the present study has not previously formed the basis for the award of any degree, Diploma, Associateship or Fellowship to this or any other University.

Nayab Parveen

M. Phil Scholar

NIEPA, New Delhi

Reg. No.- 20201002

Academic Year: 2020-2022

CERTIFICATE OF THE SUPERVISOR

This is to certify that the Dissertation entitled: "**Accessibility and Disability for Students with Disabilities inside Higher Education Institutions**" is the work undertaken by Ms. Nayab Parveen under my supervision and guidance as part of her M. Phil. Degree in this University. To the best of my knowledge, this is an original work conducted by her and the dissertation may be sent for evaluation.

Prof. Veera Gupta

Professor &Head (I/C)

Department of Training and Capacity Building in Education

National Institute of Educational Planning and Administration (NIEPA)

New Delhi- 110016

AKNOWLEDGEMENT

Foremost, I would like to express my sincere gratitude to my supervisor Prof. Veera Gupta for the continuous guidance, immense knowledge and motivation. Her guidance helped me in all the time of research and writing dissertation. I am glad that she accepted me as her research student for M. Phil. Dissertation.

I would like to thank our Vice Chancellor, Prof. N.V. Varghese, for making all of the necessary arrangements in a virtual form to complete the research work during this difficult time.

I would also like to thank Dr. Farrukh Hafeez, Coordinator, Disability Unit Aligarh Muslim University as well Disability Coordinator of Jamia Millia Islamia for cooperation and by providing information for the research work.

Nobody has been more important to me in the pursuit of this dissertation than my father Quasim Ansari. A ton of thanks also belongs to my mother Nazma Khatoon, my sister Dr. Shaheena and my brothers Saud, Zeeshan and Afzal Shadab. I am indebted to my brother Afzal Shadab for the financial, emotional and moral support and love, you showed in me whatever I wish to pursue. I am thankful to my sister who always showed immense faith in me and for being my backbone.

Finally, there are my friends and seniors extremely thankful to Banashree Mondal for their support and cooperation throughout my journey.

Nayab Parveen

CONTENTS

LIST OF TABLES

ABBREVIATIONS

SWD	Students with Disabilities
PWD	Persons with Disabilities
RPWD	Rights of Persons with Disabilities
VI	Visual Impairment
HI	Hearing Impairment
CRPD	Convention on the Rights of Persons with Disabilities
UN	United Nation
WHO	World Health Organisation
AMU	Aligarh Muslim University
JMI	Jamia Millia Islamia
CPWD	Central public work department

ABSTRACT

The Government of India has undertaken numerous initiatives by framing various acts, legislations, and launching schemes and starting programs to ensure accessibility in higher education for students with disabilities. The problems associated with students with disabilities gaining access to higher education are complex and can be complicated further by difficulties encountered in the built environment of universities themselves. Persons with disabilities have the same rights as anyone else to participate in society: to attend school/college, to have family and friends, to have work and take part in social, political and cultural life and events. However, in reality, persons with disabilities are often not able to enjoy these rights and participate but find themselves excluded and discriminated against. The exclusion and discrimination are caused by a variety of barriers: institutional barriers, environmental barriers and attitudinal barriers. The present study attempted to study the physical accessibility inside the Aligarh Muslim University and Jamia Millia Islamia. Specifically, the study looked at the accessibility provisions of learning related infrastructures and facilities of universities for students with disabilities (Visual, Hearing Impairment and Locomotor Disabilities). The main objective is the identification of relevant buildings and accessibility provisions in them by using the Accessibility Audit checklist. The study finds that both the universities do not have optimal provision of physical accessibility therefore, it needs to be improved. The AMU has better accessibility provision compared to JMI. The study recommends adherence to the building regulations and standard requirements as informed by the respective national policy provisions to reduce accessibility restrictions in the universities. Understanding and accommodating students with disabilities has become a central focus for higher education. The students' experience of disability remains towards the margin of higher education's focus. Given enrollment trends, this status is ironic, but despite their increasing number, many students experiencing disability in many campuses/universities are viewed as different in ways that fail to affirm diversity or to facilitate their inclusion. The study also found that among different types of disabilities, the prevalence of locomotor disability was highest in both the universities followed by the visual impairment and hearing impairment. It also investigated the most common perceived physical barriers for students with disabilities such as inaccessible classrooms, libraries, canteens, corridors and restrooms. The study also followed a descriptive survey research design. It was a combination of both field based and document analysis. Primary data were collected through accessibility audit checklist from the coordinator of the disability unit cell of the

universities. The study also highlighted the challenges faced by students with disabilities while accessing the universities and how physical accessibility impacts on enrolment rate of these students. Finally, the study concludes with a set of recommendations to improve physical accessibility in both the universities and opens up scope for the future research.

Keywords: *Accessibility, Students with Disabilities, Higher Education in India, inclusive education*

CHAPTER-I

INTRODUCTION

CHAPTER I

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Disability is a complex phenomenon that reflects an interaction between persons with impairments and environmental barriers that prevent full and effective participation in society on an equal basis with others as a result of long-term physical, mental, intellectual, or sensory impairments (UN, 2006). Accessibility refers to ensuring persons with disabilities to live independently and actively participate in all parts of life. This briefly focuses on accessibility and methods for determining how accessible a space is or needs to be in order to facilitate the inclusion of persons with disabilities. Over the last few years, the number of students with disabilities who attend higher education has increased. Despite the fact that the number of students with disabilities has risen. It is also important to meet their needs which many vary students with students The physical barriers vary depending on the type of disability that the students have, for example, students with locomotor disabilities require ramps to enter buildings and lifts to travel from floor to floor, whereas students with visual impairments may require braille on doorways to display room numbers and students with hearing impairments need signage. The purpose of the present study is to examine the accessibility for the students with disabilities in Aligarh Muslim University and Jamia Millia Islamia. Specifically, the study looks at the availability of services which are required to meet a student learning needs and the physical barriers present in the universities. The enrollment of students with disabilities have increased in Aligarh Muslim University over the period of time. In 2015-16, there were 216 students with disabilities. In 2016-17, (252), in 2017-18, (169), in 2018-19, in 2019-20, (380) at Aligarh Muslim University. The enrolment of these students has also increased from 208 to 228 from 2015-16 to 2016-17, in 2017-18, (218), in 2018-19, (263) and in 2019-20, (236) at Jamia Millia Islamia. While AMU has consistently increased the enrollment number of the students with disabilities over the past five years but Jamia Millia Islamia has fluxgate the enrollment number of the students with disabilities over the past five years.

Number of students with disabilities increased from 216 to 252 (2015-16 to 2016-17) at Aligarh Muslim University and from 208 to 228 (2015-16 to 2016-17) at Jamia Millia Islamia.

Over 1 billion persons which is about 15% of the world's population have some form of disability (WHO, 2011). In 2007, India become a signatory of the United Nations Convention on the Rights of Persons with Disabilities (CRPD) (NCRPD, 2017). In India, 2.21% of population have some form of disability (Census, 2011). The prevalence of disability is found to be more in rural areas (2.24%) as compared to urban areas (2.17%) and more among males (2.4%) than among females (2%). The proportion of different types of disability among person with disability reported as: seeing (18.8%), hearing (18.9%), speech (7.5%), movement (20.3%), mental retardation (7.6%), mental illness (2.7%), multiple disabilities (7.9%) and any other (18.4%) (Census, 2011). Among the different types of disabilities, the prevalence of locomotor disability was highest in the country. Following that, policy began to change toward inclusion in the community and educational institutions, as well as more interactive ways, in recognition of the fact that "persons with disabilities by environmental factors as well as by their bodies", (CRPD,2006). Therefore, "Governments take legislative measures for the implementation of rights recognized in the Convention" (Math et al., 2019). The Person with Disability Act, 1995 was modified and rights-based legislation was enacted basically in the line with the provisions in the CRPD, the act adopted non- discrimination.

In 2015, the Indian government started the Accessible India Campaign (Sugamya Bharat Abhiyan) to promote barrier-free urban development for persons with disabilities in three broad areas: built environment, information technology, and transportation. The Ministry of Social Justice & Empowerment Department of Empowerment of Persons with Disabilities (DEPwD) remains the focal agency for the Campaign's successful execution. It has been a national flagship effort to achieve universal access and enablement for persons with disabilities by integrating built environment, transportation, and information and communication technology into infrastructure ecosystems. Now, under the RPWD Act, 2016, all public buildings (even those owned by the private sector and used for public purposes) must be made accessible in accordance with the standards). As per RPWD Act, 2016, 5% of the Indian population of students with disabilities should be in higher education institutes.

This study focuses on accessibility inside the higher education institutions and enrollment of students with disabilities at higher education institutions and also considers documenting the infrastructure of interior and exterior spaces for making a higher education institution accessible for students who have visual impairment, hearing impairment and locomotor disability. The role of accessibility is to help students with disabilities have equal access to

higher education so that they can live independently, participate freely, and achieve optimum in their life.

1.2 OPERATIONAL DEFINITION OF THE TERMS USED IN THIS STUDY

1.2.1 Students with Disabilities

In the present study students with disabilities refer to all 21 types of disabilities mentioned in RPWD act, 2016.

Physical Disabilities

A. Locomotor Disability
- Leprosy Cured Person
- Cerebral Palsy
- Dwarfism
- Muscular Dystrophy
- Acid Attack

B. Visual Impairment
- Blindness
- Low vision

C. Hearing Impairment
- Deaf
- Hard of Hearing

D. Speech and Language Disability

Intellectual Disability

- Specific learning disability
- Autism spectrum disorder

Disability caused due to

A. Chronic Neurological conditions
- Multiple sclerosis
- Parkinson’s disease

B. Blood Disorder
- Hemophilia
- Thalassemia
- Sickle cell disease

Mental Behavior

Multiple Disabilities

Any Other Category

Visual impairment: “Blindness” or total absence of sight; or “Low vision” or impairments affecting sight to the extent that the individual functioning in public areas is insecure or exposed to danger.

Hearing impairment: Deafness or hearing handicaps that might make an individual insecure in public areas because he is unable to communicate or hear warning signals.

Locomotor Disability: According to RPWD Act, 2016, “a person's inability to execute distinctive activities associated with movement of self and objects resulting from affliction of musculoskeletal or nervous system or both, including Leprosy Cured Person, Cerebral Palsy, Dwarfism, Muscular Dystrophy and Acid Attack”.

Accessibility: Accessibility of built environment refers to how readily, safely, and equally persons with disabilities can utilise buildings and other constructed areas.

1.2.2 Disability: According to National Health Portal India (2017), “Disability is a global public health problem as person with disability, throughout their life course have to face widespread barriers in accessing health and related services, such as rehabilitation and has worse health outcomes than person without disability. Disability is any continuing condition that restricts everyday activities”.

1.2.3 Inclusive Education

In the present study the term inclusive education is used which was defined by the Rights of Persons with Disabilities Act, 2016 “Inclusive education means a system of education wherein a student with and without disability learn together and the system of teaching learning process is suitably adapted to meet the learning needs of different types of students with disability”.

1.2.4 Access to higher education for students with disabilities in India

Understanding and accommodating students with disabilities has become a priority in higher education. The experience of disability among students remains on the edge of higher education's emphasis. Given enrollment patterns, this is an amusing state of affairs, yet despite their increasing numbers, many students with disabilities on many

campuses/universities are perceived as different in ways that fail to affirm diversity or promote their inclusion.

1.3 THEORETICAL FRAMEWORK

1.3.1 Rights of Persons with Disabilities Act, 2016

The PWD Act of 1995 has been replaced with the Rights of Persons with Disabilities Act of 2016. In accordance with the RPWD Act's principles (evolving concept of disability, accessibility, equal opportunity, discrimination, reasonable accommodation), Chapter III sections 16 and 17 detail educational institutions' responsibilities as well as specific measures to promote and facilitate inclusive education. The Rights of Persons with Disabilities Act, 2016 is the most comprehensive act on disability based on the social model of disability. Its goal is to gain a better knowledge of the factors that contribute to exclusion and disadvantage, as well as the problems that students with disabilities experience. All students with or without disabilities have a capacity that develops through time. As a result, such students' rights should be protected in order to protect their identity.

1.3.2 Capability Approach

Accessibility in a built environment for the persons with disabilities is mainly based on the theoretical foundation of Amartya Sen's 'Capability Approach'. The United Nations Convention of Rights of Persons with Disability is the first human rights treaty which represents a major step to protect the rights of these children with disability. The general principle of UNCRPD is to respect the human diversity and differences by accepting the persons with disability. In capability approach there are mainly three important concepts which are capabilities, functioning, and difference. According to Sen, "A functioning is an achievement, whereas a capability is the ability to achieve. Functioning is, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead" (Sen,1987:36). From the capability approach perspective, Capabilities are generated by a combination of internal and external situations; they are not only internal features of a person or individual abilities. An individual frequent biological features are among the internal factors, for example impairments, disease, gender, and age. All of these factors lead to a wide range of biological requirements. External conditions, on the other hand, include both the physical and social environments.

Environmental differences, such as climatic conditions; institutional differences, such as the various public services available in various contexts; various relational perspectives, which relate to commodity requirements established by social norms, conventions, and customs; and distributional factors, such as how goods are distributed among groups, including families, are all covered (Deneulin & Shahani, 2009; Sen, 1999c). As a result, the capability approach "provides a way of conceptualizing the disadvantage experienced by individuals in society, which emphasizes the social, economic and environmental barriers to equality" (Burchardt, 2004, p.735). As a result, rather than special or integrated education, inclusive education is more reliant on the capabilities approach and the justice principle. The capacity approach is better suited to inclusive education since the equity principle is well justified in inclusive education because students with and without disabilities learn together in inclusive settings. Equity means that students with disabilities can benefit from equity principles, which provide them with a level appropriate playing field. According to the capability approach, everyone should be provided with facilities based on their capabilities and to improve their capabilities.

1.4 RATIONAL OF THE STUDY

The importance of education for students with disabilities in India has been highlighted by numerous national and international Acts and Policies. All of the measures have resulted in considerable improvements in the provision of additional educational opportunities to students with disabilities in educational institutions, as well as an increase in the number of students with disabilities enrolling in higher education. To encourage these students, the University Funds Commission has already worked to improve access to higher education in order to achieve better results by awarding special grants. According to the Persons with Disabilities Act of 1995, higher education institutions must make accommodations to ensure that persons with disabilities have access to education at all levels. According to the RPWD Act of 2016, the responsible government must ensure that the person with a disability has the same right to freedom, dignity, and respect for his or her own integrity as others. The government would take initiatives to improve the capacity of persons with disabilities by creating an appropriate environment. The Act provides that persons with disabilities have equal access to inclusive education, vocational training, and self-employment, and those appropriate buildings, campuses, and other services are made available to them, as well as that their individual requirements are met. All government-funded higher education institutions and those receiving government help must set aside at least 5% of seats for persons with benchmark disabilities. The standard rules on equalization of opportunities for

persons with disabilities in 1993 and the convention on the Right of Persons with Disabilities in 2006. The convention stipulates that signatory states must identify and eliminate obstacles and barriers to accessibility in buildings and other types of physical environment (United Nations, 2006). The Convention on the Rights of Persons with Disabilities addresses accessibility in its Preamble and as a specific Article. It also provides guidance on the terms "reasonable accommodation" and "universal design" in its "Definitions", Article on sign language in its "Freedom of expression and opinion, and access to information" Article on accessibility implications for "Living independently" and for "Personal Mobility".

1.5 STATEMENT OF THE PROBLEM

The issue of accessibility comes to the forefront among the basic needs of persons with disabilities. Accessibility in a built environment is the most important need for persons with disabilities. As a result, India is a signatory which signifies its importance United Nations Convention on the Rights of Persons with Disabilities. The idea is that built environments affect almost every area of human activity. On the other, almost all current architectural and building infrastructure improvements have been done without regard for the unrestricted movement of persons with disabilities.

Hence, the first step is to create a physical environment that allows persons with disabilities to access higher education institutions. Second, systemic barriers such as policy reforms, appropriate policy adoption, and curriculum and programme adaptations are all necessary, but they can only be executed if persons with disabilities are allowed to enter and move through higher education buildings. Therefore, an accessible audit must be carried out, and potential institutional building solutions must be devised. Considering the importance of accessibility in an educational built environment the present study is contextualised which is the entitled **'Accessibility and Disability for Students with Disabilities inside the Higher Education Institutions'.**

1.6 RESEARCH QUESTIONS

Following are the research questions:

1.6.1 How do educational buildings affect accessibility of students with Visual Impairment, Hearing Impairment and Locomotor disabilities?

1.6.2 How does the educational institution's accessibility impact to the enrolment in higher education for students with disabilities?

1.6.3 How does the institutional accessibility impact to the students who have different kind of disabilities? (VI, HI, and Locomotor disability)?

1.6.4 What are the challenges in implementing accessible building facilities for the students with disabilities in higher education institutions?

1.7 RESEARCH OBJECTIVES

The study is trying to find a reply of the following research question:

1.7.1 To do an accessibility audit in higher educational institution buildings for Visual impairment, Hearing impairment, and Locomotor disability.

1.7.2 To find the enrolment of students with disabilities in higher education over the past five years.

1.7.3 To examine the enrolment of students with disabilities in higher education with reference to the type of disabilities (Visual Impairment, Hearing Impairment and Locomotor Disability)

1.8 DELIMITATION OF THE STUDY

The study is delimited to the following points:

1.8.1 The study was limited to two central universities, Aligarh Muslim University and Jamia Millia Islamia.

1.8.2 The study has limited to students with disabilities (Visual Impairment, Hearing Impairment and Locomotor Disability) in higher education institutions.

1.8.3 The study has looked at physical accessibility for the students with inside the universities. It could not capture accessibility from home to higher education institutions.

1.8.4 This study only looked at enrollment of students with disabilities at both the universities (AMU and JMI) over the past five years, 2015-20.

CHAPTER-II

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

2.1 INTRODUCTION

The present study has focused on factors influencing the educational experiences of students with disabilities in higher education institutions. The chapter attempts to critically examine and review the types of research studies that have been undertaken and conducted at national and international levels on students with disabilities in higher education. The literature included in this study is based on accessibility inside universities. But unfortunately, there is a dearth of research studies in this area in the Indian context.

In this chapter, the researcher presents thematically a systematic review of various literature on accessibility with respect to persons with disabilities. This chapter reviews books, scholarly articles, reports, theses, and empirical studies on how provisions for persons with disabilities have been understood in the literature by various scholars, the challenges faced by persons with disabilities in "accessing" universities and the different facilities that are placed in universities. However, supportive services which are available in universities, despite the nature of impairment and the variety of challenges faced by persons with disabilities. Finally, this chapter concludes by identifying the gaps in the existing literature which leads to contextualizing the present study.

The review of the literature has been categorized into following themes:

1. Accessibility of educational buildings
2. Challenges faced while accessing the higher educational institutional buildings
3. Accessibility policy assessment in educational institutions

2.2 Accessibility of the higher education institutions

2.2.1 Kirno, S. & Premchaiporn, N. (2022), the study entitled ‘Accessibility of Persons with Disabilities in Higher Education Institutions’. The Indonesian government has made it illegal for colleges to refuse to admit students with disabilities. The Minister of Research and Technology Higher Education's Regulation No. 46 of 2017 concerning Special Education and Special Service Education in Higher Education makes this plain. Unfortunately, many

universities continue to refuse to admit persons with impairments to their campuses. The researcher has attempted to study why universities reject to admit students with disabilities and what the best alternatives for students with disabilities and their need to acquire entrance to higher education. Because it describes a specific, profound phenomena and extracts the essence of the participants' life experiences at a particular phenomenon. It was observed that universities must consider four criteria, availability, accessibility, acceptability and adaptability to establish inclusion in educational institutions.

2.2.2 Chauhan, A. S. (2020), studied on 'The need to disabled friendly buildings in India- A case study' the researcher in this case reveal that India have one of the largest groups of persons with disabilities with around 80 million persons with disabilities (PWDs). Indian developers must progressively utilise disability-friendly construction approaches in order to deal with this big portion of the population. 99acres.com discusses the different elements of the subject. One in twelve households in India has an individual with a disability (World Bank). The public and private buildings in the country are not helpful for the persons with disabilities. India is wasting valuable human capital by preventing persons with disabilities from actively engaging in the workforce. Dealing with day-to-day living is extremely difficult for the persons with disabilities. Developers all around the country must understand what they stand to gain by making the challenges of India's persons with disabilities easier to solve. All construction projects must include accessibility features for persons with disabilities. Every construction project must include ramps, restrooms, and other amenities. The adjustments must be included into both new and existing projects and public structures. A government push can be helpful, but it is up to real estate developers to incorporate best practises to make it easier for persons with disabilities to move around.

2.2.3 Access audit report (2018-19), The "I-Access right mission" is a field action project initiative that enables accessibility and inclusion of students with disability in higher education. Initiated by the Centre for Disability Studies and Action (CDSA) at Tata Institute of Social Science. The main objectives of this report were to take step for accessibility issues at university level regarding students with disabilities, the emerging issues and challenges of students with disabilities, to create awareness, and developing guideline for Universal design and accessibility for inclusion. The first step toward improving accessibility is to conduct an access audit. An access audit is a useful tool for identifying barriers both inside and outside facilities. Service providers are better positioned to make short and long-term access improvement action plans as a result of the access report's findings.

2.2.4 Sarma, J. (2016), Accessibility to the built environment in Delhi: understanding disablement through intersectionality. According to this report, creating a "culture of accessibility" starts with building ramps, providing information in plain language, and announcing bus stops. With more resources and awareness of accessibility, standards can be upgraded to a higher level of universal design, which is the ability to accommodate all individuals, including those with disabilities. Negative attitudes may persist after physical barriers are removed, but education and awareness-raising can help. Lack of accessibility leads to exclusion from mainstream society. Women's access to education, work, healthcare, and public transportation is examined. The findings show that health conditions, personal factors, and environmental factors impact the built environment's accessibility. The built environment remains inaccessible for many women with disabilities in the country. This study focused on issues facing low-income and middle-income women with mobility issues. The study identified barriers such as impairment severity, gender, social class, and lack of family support. Together with pre-existing physical and mental obstacles, these hurdles led to distinct forms of social exclusion. It's said in this study that the built environment is accessible in a lot of ways. These include health and personal factors, as well as the environment.

2.2.5 Singh J. D. (2016), study entitled, “Inclusive education in India-concept, needs and challenges”. The main aim of this study was to understand the problems facing students with disabilities to reach their inclusive educational target, how inclusive environments promote and how excellent education is delivered. Various plans and programmes for achieving inclusive education have been launched by the Indian government throughout the last five decades. Integrated Education for Children with disabilities (IEDC), National Educational Policy, 1986, The World Declaration on Education for All (1990), initiative for teacher training by The Rehabilitation Council of India Act ,1992. The National Policy for Persons with Disabilities, 2006, and others are among the policies and schemes. The authors said the number of children with disabilities in India is widespread, therefore it is difficult to provide all their needs in school. Lack of human and non-human resources, an insufficient number of certified teachers, perpetuating the negative attitude of other peers, teachers as well as community are the big difficulties that have been mentioned in this article. Cooperation between teachers, parents and community members is a key element in addressing these difficulties.

2.2.6 Ramanna, P. (2016), study entitled, "Accessibility of Persons with Disabilities for Barrier-Free Environment Issues and Challenges in India". The study concluded that persons with disabilities are neglected and discriminated against globally. These people have amazing abilities that go unnoticed. Inclusion, education, and equal opportunity can help them contribute to society and the economy. In India, the number of persons with disabilities is huge, their issues are complex, resources are scarce, social stigma persists, and attitudes are harmful. Improve barrier free access to education, employment, and public buildings.

2.2.7 Saksena, S., & Sharma, R. (2014), this case study entitled, "Deconstructing Barrier to Access Higher Education: A Case Study of Students with Disabilities in University of Delhi". The study concluded that barrier faced by students with disabilities while accessing the higher education. The study shows that attitudinal barriers to students with disabilities are more detrimental than physical access barriers to student's and college member's insensitive behaviours. The study ana2lyse key conclusions are summarised here. Access to information and provisions for students with disabilities must be improved. This will empower students with disabilities in their access to information and services while also assisting in the creation of enabling environments for them to have equal opportunities, with the term "environments" encompassing the physical environment, information, communication, and technology, as well as transportation. The biggest disadvantage at the time is not so much the lack of students with disabilities facilities and provisions, but limited access with the students with disabilities to information about them. It is similarly necessary to ensure that students with disabilities is made available in the correct formats for all programmes, scholarships and other facilities at the Resource Centre and at the equal opportunity cell etc. to guarantee that the university and colleges benefit from such provisions.

2.2.8 Ahluwalia, S., & Gupta, D. (2012), study entitled "Accessibility of Central Government Buildings in Delhi". The study concluded that performance of the Indian government the accessible status clearly shows which has been given a back seat even after decent policy backing. The engineering department of the Central Public Works Department (CPWD) that has been lagging behind in delivering what it is expected to. But why it is so is a difficult question to answer. An access a building performs in relation to access and ease of use by a wide range of potential users, including persons with disabilities. The site of Ministry of Urban Development (MoUD) which is a much-detailed document focussing mainly on the accessibility of buildings. It incorporates the importance of moving towards

universal design (The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design).

2.2.9 Zaaeed. (2012), presented a study on Muslims with disabilities and accessibility, acceptance, and education that revealed that Muslims with disabilities endure barriers and stress in the Muslim communities. Lack of awareness from society towards disability and use of technology, the Job Access with Speech (JAWS) for persons with visual impairment was not known to ordinary people and, due to a lack of communication, made students with visual impairment miss special events. Islamic-workplace (CAMD 2012). An NGO that included a vision of full access for persons with disabilities and a mission to promote principles of accessibility toward an inclusive society.

2.2.10 Kannan, A. (2011), the study entitled, "for A Barrier-Free Higher Education". This paper examined bringing persons with disabilities into mainstream education requires raising awareness and improving accessibility. Physical barriers continue to prohibit persons with disabilities from pursuing higher education. The key to advancing higher education for persons with disabilities and their needs to raise awareness of the situation at educational institutions. Obstacles exist not just in terms of physicality, but also in terms of attitude and communication. The cost of making building changes to make it accessible was only 2% of the total construction cost. The institution was prohibited from making the expenditure not because of the cost, but because of society's insensitivity to disability.

2.2.11 Chard, G & Couch, R. (2010), The study entitled "Access to Higher Education for the Disabled Students: A building survey at the University of Liverpool". Those participated in the building survey were able to develop an accurate data base of information on the university's-built environment by completing the survey. It was feasible to upgrade and re-establish the wheelchairs path across campus as a result of this. Buildings with good internal and external access have been identified, and plans have been put in place to keep track of them. Buildings with limited access, likewise, can be included in long-term building renovation plans. Building services and architects, who now have access to tools such as those from the Joint Mobility Unit, are also helping to coordinate the ongoing signage plan (1993). In today's economic context, capital expenditures are always constrained, making it even more critical to prioritize construction work based on necessity and resources. Persons with disabilities face continuous difficulty as a result of hostile attitudes and inaccessible places; we, too, have faced these obstacles. The belief that all individuals have the right to

equal participation in society, education, and work contributes to the creation of an atmosphere that sends positive messages to the community and should offer a better working environment for all of us.

2.2.12 Baris, M. E., & Uslu, Y. (2009), the study entitled, "Accessibility for the disabled people to the built environment in Ankara, Turkey". The study found that most persons with disabilities impose major constraints, like lack of mobility, restrictions on getting and maintaining a profession, isolation and difficulties in integrating with capable persons. All these limits and others must be addressed to persons with disabilities, yet those restrictions are not enforced on them. They are being forced by a culture where persons with disabilities are discriminated and limited by refusing people the means to use their skills (Sutherland, 1981). The urban development agenda for the creation of living places in modern cities is the priority of creating social and physical environments that are freed from obstacles and difficulties and increase the freedom of movement of women, children, the elderly and the persons with disabilities, in particular, who, while designing, are considered "sensitive class." The results of this study demonstrated that there are many difficulties and obstacles in the physical environment in Ankara with respect to persons with disabilities use of the built environment. Most of the groups of persons with disabilities questioned have said that despite the difficulties these areas provide to persons with disabilities in terms of accessibility and their use, they use such constructed surroundings each day.

2.2.13 Soyingbe, A., & Ogundairoand, A. (2007), study entitled, "A study of facilities for physically disabled people in public building Nigeria". The study concluded that the importance of barrier-free buildings cannot be emphasized because they provide equal access to both persons without disabilities and persons with disabilities. Inaccessibility and noncompliance with supporting facilities with design and construction criteria have been noted as flaws in public buildings. The activities of persons with disabilities are restricted due to a lack of basic facilities in public places. The main focus was given to examine the accessibility (i.e. barrier-free) of public buildings for persons with disabilities (owners, designers, contractors, local authority and persons with disabilities), to indicate the level of persons with disabilities awareness of design and construction rules for public building accessibility (owners, designers, contractors, local governments, and persons with disabilities perspectives) and to identify the issues limiting the fulfilment of the accessibility guidelines.

2.3 Challenges faced while accessing the higher education institutions

2.3.1 Tudzi, E., Bugri, J., & Danso, A. (2020), this study entitled, "Experiences of students with disabilities in inaccessible built environments: A case study of a students with mobility impairment in a University in Ghana". this study attempted to find out about a female student's experiences with unusual mobility issues and how the university in Ghana accommodated her special requirements. The study found that it was unsuitable to leave the special needs of a student with disabilities at the discretion of individuals where there were distinct accessibility problems. It suggests a shift of attitude and an institutionalized of reasonable university accommodation. Appropriate actions were needed in the light of an inaccessible university environment. This was required for her, as would any other student, to enjoy her fundamental human right to education. Refurbishment, creation of accessible infrastructure and suitable accommodation on campus were needed. The relevance, as shown in this study and supported by the CRPD (UN 2006), of institutionalising a reasonable accommodation in the University is vital so that decisions are no longer left to individuals, while their fundamental right to education is denied to students with disabilities.

2.3.2 Ahmad, W. (2018), the study entitled, "Higher education for persons with disabilities in India challenges and Concerns". Students with disabilities face unique challenges in higher education, not just in terms of acquiring physical access to buildings, but also in terms of curriculum adaptation and accommodation, teaching, learning, and assessment. These factors constitute the eligibility criteria for evaluating higher education's ability to accommodate a varied variety of students. As a result, attempts to increase accessibility to higher education for persons with disabilities have been prioritized.

2.3.3 Ashigbi, et al. (2017), study entitled, "Mobility challenges of persons with disabilities in a university in Ghana". This study concludes that, the built environment of the University of Ghana presents major barriers for persons with disabilities with mobility This has the potential of adversely affecting the provision of inclusive and equal access to higher education in this renowned Institution. The Institution is seen as one of the most pro-disability institutions among the other public higher education institutions in Ghana. This gives cause for concern in the light of the imminent full implementation of the provisions of the Persons with Disability Act, 2006 (Act 715) in Ghana. The study establishes that the University still has a very long way to go in order to ensure a barrier free and socially inclusive university environment for all categories of students.

2.3.4 Pandey, S., & Pandey, Y. (2017), study entitled "Barrier Free Inclusion of Learners with Special Educational Needs in Regular Classroom: Issues and Challenges". The study concluded that India is progressing day by day so as its educational system but there is an emergent need to make several changes in the existing educational system so that the Learners with Special Educational Needs get equally benefitted. Our census rarely has disability related questions and most families prefer not to reveal data. It is required to aware and sensitize the education system and society using inclusive practices together with barrier free access. An important step has to be taken at school level to train teachers and support staff, to meet the needs of inclusive education, as good quality education is a basic prerequisite to ensure sustainable rehabilitation and the hope of a better future.

2.3.5 The Hindu. (2011), Amutha Kannan. For a" Barrier Free" Higher Education-Creating awareness and improving accessibility is key to bring students with special needs into mainstream education. Access to higher education remains a physical barrier for persons with impairments. The key to promoting higher education for persons with exceptional needs is raising awareness about the situation at educational institutions. Hurdles, according to G. Victoria Naomi, include not only physical barriers but also attitudes and communication barriers. Adapting the building to make it more accessible to persons with disabilities cost only 2% of the overall construction cost. She emphasised that it was not the cost of the expenditure that prohibited the institution from making it, but rather society's insensitivity to handicap.

2.3.6 Roy, P.C., & Bandyopadhya, R. (2009), study entitled, "Designing Barrier Free Services for Visually Challenged Persons in the Academic Libraries in India". The study concluded that the National Knowledge Commission (NKC) has also requested that the study identify constraints, problems, and challenges in order to recommend changes and reforms that will allow the existing library and information systems and services to be mobilised and upgraded, ensuring a holistic development of information services. 6 University libraries can provide leadership and experience to these special groups who do not have access to the standard services, launch new and inventive ways, develop and deliver specialist services. It is the democratic right of those distinct users, their constitutional right. University libraries can assure their access to information, bridging the gap between those who have access to information and those who do not. "Access for all" and "freedom of access to information" are referenced in the IFLA / UNESCO guidelines (IFLA – UNESCO Internet manifesto

guidelines). By creating a barrier-free environment, establishing new facilities, and reorienting professional university libraries, information can be made available to all.

2.4 Accessibility policy assessment in educational institutions

2.4.1 Agarwal & Steele (2016) "Disability considerations for infrastructure programmes" study. In collaboration with the UK Department for International Development, the Climate, Environment, Infrastructure, and Livelihoods Professional Evidence and Applied Knowledge Services (CEIL PEAKS) programme was developed by DAI (which includes HTSPE Limited) and IMC Worldwide Limited (DFID). All DFID policies and programmes are designed to be inclusive and accessible to all, including persons with disabilities and those who are marginalised due to their gender, geography, income or age. With this quick desk research, it's easy to find evidence of the impact of non-accessible infrastructure on persons with disabilities. It suggests ways to incorporate universal access into all infrastructure projects. Also read the DFID Disability Framework "Leaving No One Behind" (2014), which outlines how DFID encourages persons with disabilities to participate in all of its programmes. Infrastructure influences social well-being, income, education, and health. Inability to access infrastructure puts a social group at risk of social exclusion and lack of participation in society. Access to health, education, and employment is dependent on transportation infrastructure. India has separate accessibility rules for roads, buildings, highways, buses, and other structures. Some ministries require their inclusion in new and retrofit projects. A hospital, theatre, stadium, or any other public structure in Delhi must follow the National Building Code (BIS). Delhi's city roads and street design should follow the UTTIPEC (2010) guidelines. Buses should adhere to the UBS I & I. (IUT, undated). The National Informatics Centre should regulate access to government websites in India (NIC). The NIC website is accessible to all users regardless of their equipment, technology, or abilities (computer, mobile phone, etc.). This site can be seen by people who can't see with help from things like screen readers and lenses.

2.4.2 Ahmad, W. (2016), study entitled, “Inclusive education: Policy Perspective”. He examined the difficulties that the Indian education system faces in achieving the goal of inclusive education. In an inclusive education context, the author thought on how vital it is for children with disabilities to engage in all school activities and attain the desired learning outcome. The researcher then looked into several disability acts in order to improve inclusive education. The initiative modifications from the Persons with Disabilities Act 1995 to The

Rights of Persons with Disabilities Act, 2016. The RPWD Act, 2016 recognises the diverse needs of students with disabilities. According to the findings of the study, around 94 percent of children with disabilities did not receive any educational services (NSSO). Prior to the RPWD Act, 2016 government policies focused mostly on funding and physical access to regular schools, rather than instructional methods and assessment. Despite the fact that India is making significant efforts in the field of inclusive education, there are many questions, not only about the definition of the phrase "inclusive education," but also about the difficulties in implementing policy initiatives.

2.4.3 Anindita, et al. (2015), “Awareness of Barrier Free Environment for Children with Hearing Impairment in Inclusive Schools – A Survey”. The study concluded that, in spite of the fact that India is the living embodiment of "Spirit" Universality and has demonstrated unity in diversity, universalizing education has remained a significant problem due to the large number of children with disabilities, especially hearing impairment. Since "Education for All" has been established as a national aim, Teachers' primary goal in school is to create the best environment for students, thus the population of children who are disadvantaged should not be disregarded. As a child with hearing impairment numerous problems at every stage of life, and these parries generate many problems in the education of hearing-impaired children, thus it is vital for regular school class teachers to have information about barrier-free environments.

2.4.4 Anunobi, A. I. (2015), the study entitled, “An Assessment of Ramp Designs as Barrier-Free Accesses in Public Buildings in Abuja, Nigeria”. This study aims to highlight the technicalities involved in the design of ramp elements to help guide their use in public buildings. buildings. Short lengths and widths of ramps that hinder wheelchairs manoeuvrability; steep slopes, inappropriate surface materials, and non-levelled thresholds that impede wheelchairs use. For most ramps, the appropriate height of handrails was used, as well as handrails on both sides of the ramp and grasp ability. The built environment ministries, departments, and agencies should take steps to remove barriers for persons with disabilities to participate in the built environment. Accessibility standards and norms should include disability organizations. Construction engineers, planners, building inspectors, and other people who work on the design and construction of the physical environment should be kept up to date on disability policy and accessibility measures.

2.4.5 Ahmed, A. et al. (2014), study entitled “The Response of Accessibility Infrastructure for Persons with Disabilities to National Disability Policies in Higher Education Institutions of Developing Countries: Case Study of Ahmadu Bello University, Zaria and University of Malaya, Kalu Lumpur”. This study approach to identify and compare the accessibility provisions to learning infrastructures and facilities of public higher-education institutions for students with disabilities in developing countries. Ahmadu Bello University (ABU) in Zaria, Nigeria, and University of Malaya (UM) in Kuala Lumpur, Malaysia, were chosen as one university from each country. The goals include identifying relevant buildings and their accessible arrangements, using an audit checklist, and comparing the facilities' adequacy or otherwise against national policy regulations, using text analysis. The target audience expects an inclusive, bottom-up approach to Universal Design (UD), as well as policy adherence.

2.4.6 Kaur, S. (2013), “Fostering barrier free access for children with special needs in India”. The study emphasized on the need of barrier-free access, especially for children with disabilities. The research focused mostly on the teaching learning environment offered to students with special needs, as well as their physical surroundings and curriculum access. It also reviewed several Acts and Policies that place an emphasis on providing a barrier-free environment. The information in this page was gathered from a variety of secondary sources. The study outlined critical techniques for institutional managers and planners to help them create a mechanism that promotes accessibility and full participation of students with disabilities.

2.4.7 The Person with Disability Act, 1995:

The PwD (Equal Opportunities, Protection of Rights, and Full Participation) Act of 1995 was passed to implement the "Proclamation on the Full Participation and Equality of Persons with Disabilities in the Asian and Pacific Region." Blindness, low eyesight, curable leprosy, hearing impairment, locomotor disability, mental retardation, and mental illness were among the seven disabilities listed in the Act. The Act took a social welfare approach toward persons with disabilities, with the major emphasis on disability prevention and early identification, education, and employment for persons with disabilities. In addition, the Act provided for a 3% reservation in government jobs and educational institutions. It emphasised the need of creating barrier-free environments as a measure of non-discrimination.

2.4.8 The Rights of Person with Disability Act, 2016:

The PWD Act of 1995 has been replaced with the Rights of Persons with Disabilities Act of 2016. Cerebral palsy, dwarfism, muscular dystrophy, acid attack victims, hard of hearing, speech and language disability, specific learning disabilities, autism spectrum disorders, chronic neurological disorders such as multiple sclerosis and Parkinson's disease, blood disorders such as haemophilia, thalassemia, and sickle cell anaemia, and multi-disability have all been added to the list in the Right of Person with Disability (RPWD) Act of 2016. Persons with benchmark disabilities are those who have at least 40% of any of the disabilities listed above. PwD with high assistance requirements are individuals who have been certified as such under the Act's section 58(2). (RPWD Act, 2016). All government higher education institutions and those receiving government help must set aside at least 5% of seats for persons with benchmark disabilities.

2.4.9 The Rights of Persons with Disabilities Rules, 2017:

Chapter VI, Rules for accessibility, every facility must adhere to the following physical environment, transportation, and information and communication technology standards: public buildings, barrier free environment, transportation system for persons with disabilities. Provided, however, that the Central Government should specify the standard of accessibility for such services and facilities within six months of the date of notice of these regulations.

2.5 REFLECTIONS

In is chapter review of various articles, research papers, report and theses were done thematically. The review was divided into three themes like accessibility of educational buildings, challenges faced while accessing the higher education and accessibility policy assessment in educational institutions.

The first theme is related with the *accessibility of educational buildings;* it is observed that much research has been done in this area. Being able to sit in the class and study is not the begging of the process of learning for a students enrolled in the higher education.

The second theme is related with challenges faced while accessing the higher education institutions. while accessing the higher education there are so many challenges faced by the students but lack of accessibility inside and outside of the universities is the most challenging for the students with disabilities. why these challenges are remained in the area of inclusive education, there are dearth of literatures particularly focusing on these aspects.

The last theme is related to the policy assessment in educational institutions. The literature in this section was studied on policy assessment in India as well as abroad. Those studies highlighted that there are different policy initiatives done by the government for improving accessibility for students with disabilities. The initiative modifications from the Persons with Disabilities Act 1995 to The Rights of Persons with Disabilities Act, 2016 were given the most attention. The RPWD Act, 2016 recognises the diverse needs of students with disabilities. Prior to the RPWD Act, government policies focused mostly on funding and physical access to regular schools, rather than instructional methods and assessment. But the major issue while implementing different policy provisions is lack of the difficulties in implementing policy initiatives.

CHAPTER-III

RESEARCH METHODOLOGY

CHAPTER III

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology is the sequential and systematic way to study any research problem. The central question of the methodology is –how is the research conducted? It starts with choosing a research problem and ends with the study findings. It listed the numerous actions that a researcher would follow while researching her or his research problem, as well as the justification for each step. The research method, population, sample size, equipment, data collection procedure, and data analysis procedure are all part of the study's methodology. This chapter covers the data collection methodologies and processes, as well as how the data was analysed, all of which contributed to the results stated in the next chapter. This chapter explains the techniques and methods used in data collection, as well as how the data was analysed.

This chapter is illustrated under the following headings:

Research Design and Method

Sample and Sampling Procedures

Data Collection Tools

Data Analysis Technique.

3.2 RESEARCH QUESTIONS

Following are the research questions:

i. How do educational buildings affect accessibility of students with Visual Impairment, Hearing Impairment and Locomotor disabilities?

ii. How does the educational institution’s accessibility impact to the enrolment in higher education for students with disabilities?

iii. How does the institutional accessibility impact to the students who have different kind of disabilities? (VI, HI, and Locomotor disability)?

iv. What are the challenges in implementing accessible building facilities for the students with disabilities in higher education institutions?

b. RESEARCH OBJECTIVES

The study is trying to f

i. To do an accessibility audit in higher educational institution buildings for Visual impairment, Hearing impairment, and Locomotor disability.
ii. To find the enrolment of students with disabilities in higher education over the past five years.
iii. To examine the enrolment of students with disabilities in higher education with reference to the type of disabilities (Visual Impairment, Hearing Impairment and Locomotor Disability)

3.4 RESEARCH DESIGN AND METHOD

A research design is the entire design or programme of study that includes the plan, organisation, and method for obtaining answers to the research questions (Baker, 1994). The current research is purely exploratory in nature. The researcher employed a mixed method technique to address the research questions asked in this study, which is a mechanism for gathering, analysing, combining, or integrating both quantitative and qualitative data at various phases of the research process within a single study (Cresswell et al, 2003).

For this study data was collected by using both qualitative and quantitative approaches. Survey method, observation through accessibility audit checklist were used as data collection tools. The aim of observation through accessibility audit checklist to examine the provision of accessibility inside the universities for students with disabilities in higher educational institutions. The access audit checklist focused on the provision of support services to students with disabilities and facilitating and hindering factors affecting higher education institutions to support students with disabilities.

The present study included two central universities, AMU and JMI developed following quantitative and qualitative research as per the nature of the data which were collected from the Aligarh Muslim University and Jamia Millia Islamia (Coordinator of the Disability Unit Cell). This study followed a descriptive survey research design. It was combination of both field based and document analysis. The primary data was collected from university by the observation through the accessibility audit checklist and the document of the students with

disabilities (enrollment of the students with disabilities) from the coordinator of the disability unit cell of the universities.

3.5 SAMPLE AND SAMPLING PROCEDURE

The data was collected from two central universities (AMU and JMI). There were two major considerations in selecting these two universities for investigation. First, these universities are recognised and funded by UGC so they have to follow all the rules and regulations made by the central government. Second, these universities are providing varied courses in majority of discipline ranging from undergraduate to doctoral level. So, there are higher chances to students with disabilities get enrolled in these universities.

The purposive sampling techniques was employed as entire population (2415 Students with disabilities) enrolled in the two universities during the academic year 2015-2020.

Table 3.1: Sample Distribution

Years	Types of Disabilities			Students with Disabilities Enrolment
	Hearing Impairment	Visual Impairment	Locomotor Disability	
20015-16	-	45	171	216
2016-17	-	34	211	245
2017-18	2	64	186	252
2018-19	2	54	113	169
2019-20	3	87	290	380
Total	**7**	**284**	**971**	**1262**

Enrolment of students with disabilities, AMU

Table 3.2: Sample Distribution

Years	Types of Disabilities			Students with Disabilities Enrolment
	Hearing Impairment	Visual Impairment	Locomotor Disability	
20015-16	8	16	184	208
2016-17	15	25	188	228
2017-18	20	37	161	218

2018-19	21	51	191	263
2019-20	30	52	154	236
Total	**94**	**181**	**878**	**1153**

Year wise Enrolment of students with disabilities, JMI

3.6 DATA COLLECTION TOOLS

The tools in the present study are designed by keeping in view the objectives of the study. These tools are as follows;

"Accessibility audit checklist"

The Audit involves conducting a comprehensive inspection and assessment of:

- Building
- An environment
- Service

An Access Audit report was taken by CPWD to be created that compares the accessibility of a specific building, environment, or organisation to best-practice standards in order to benchmark its accessibility for persons with disabilities. Access Audits are a very useful tool for assessing the current level of accessibility and ease of entry, navigation, usability and ease of exit of premises by persons with different impairments and levels of disability.

3.7 Access Audit Checklist for Head of Disability Unit of University (Appendix A.1)

The access audit checklist focused on the provision of support services to students with disabilities and facilitating and hindering factors affecting higher education institutions to support students with disabilities. The accessibility audit checklist is designed by CPWD on the facilities for persons with disabilities in critical public buildings and their functional requirements. The access audit checklist covers facilities such as ramps, elevators/lifts, restrooms, signage, entrance, stairs, parking etc. The functional requirements of the facilities were also drawn up for the purpose of the study. The checklist helped the researcher to personally gather relevant information about the selected areas. It includes details in various features of the interior and exterior design in university buildings. The checklist was completely and accurately filled out by answering "yes" or "no" to the questions that were

made to indicate the barrier free interior and exterior design for students with Locomotor disability, students with visual impairment and students with hearing impairment. The checklist was used to calculate score for the accessibility in university buildings. The checklist was used to get a better insight into the audit. Observation was further supplementing the access of audit.

3.8 DATA ANALYSIS

The data was analysed mainly in quantitative ways so that meaningful trends could be visualised. Quantitative data collected through information schedules pertaining to the total enrollment of students with disabilities and qualitative data pertaining to the universities buildings and facilities provided for the students with disabilities inside the universities. In the present study, quantitative data was analysed using percentage. Qualitative data was analysed using thematic analysis.

Table 3.3: Methodological Diagram

Objectives	**Variables**	**Data Source**	**Tools for Data collection**	**Nature of the Data**	**Data Analysis**
To do an accessibility audit in higher educational institutional buildings for Visual impairment, Hearing impairment, and Locomotor disability.	To see the physical accessibility of universities for students of VI, HI, and Locomotor disability.	Document Analysis of the Universities	Accessibility Audit Checklist	Qualitative	Data were analysed on the basis of accessibility audit checklist.
To find the	To see the	Document of	Survey	Quantitative	The data

percentage of the enrolment of students with disabilities in higher education over the past five years.	last five years enrolment of the students with disabilities in these universities.	the universities	method		were analysed on the basis of enrolment of the students with disabilities in the universities.
To study the enrolment of students with disabilities in higher education with reference to the type of disabilities (Visual, Hearing, and Locomotor Impairments).	To see the different types of disabilities of the students and their enrolment in the universities.	Document of the universities	Survey method	Quantitative	The data were analysed on the basis of types of disabilities and their enrolment.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The main findings of the present study have been presented in this chapter. The purpose of data analysis is to sort data into meaningful and interpretable form. Interpretations are drawn from the analysed data which further helps in drawing conclusions. The analysis has been done as per the objectives of the study. The analysis and interpretation have been presented in various themes and subthemes as per nature of the data. The analysis of the first objective has been done by the accessibility audit checklist which was taken from the central public work department handbook. In the second objective, the researcher explored the percentage of enrolment of students with Visual, Hearing and Locomotor disabilities in Aligarh Muslim University and Jamia Millia Islamia over past five years. In third objective, the researcher explored the enrolment of students with disabilities in Aligarh Muslim University and Jamia Millia Islamia with reference to the type of disabilities (VI, HI and Locomotor disability).

4.2 TO DO AN ACCESSIBILITY AUDIT IN HIGHER EDUCATIONAL INSTITUTIONAL BUILDINGS FOR VISUAL IMPAIRMENT, HEARING IMPAIRMENT AND LOCOMOTOR DISABILITY

4.2.1 Physical Accessibility as per Students with Disabilities

4.2.2 Accessibility available for VI, HI, Locomotor Disabilities

It was analysed from the observation and the accessible audit checklist in Aligarh Muslim University and Jamia Millia Islamia. Students with physical disabilities may benefit from a barrier-free environment and an environment on campus that is disability-friendly (Wilson & Getzel, 2001). As a result, there are a variety of support services available to assist students with disabilities in improving their learning experiences in higher education institutions. The universities are responsible for fulfilling these students' needs, including their physical and learning environments.

4.2.1.1 Physical Accessibility

Physical accessibility is an essential requirement for students with disabilities (VI, HI and Locomotor disability), and students with physical needs. Most higher education institutions, particularly on university campuses have physical barriers. This is especially problematic for students with impairments, who frequently confront numerous physical barriers in their attempts to participate in university activities. Building features, building access, classroom access, and easy access to other locations inside a university, such as the availability of lifts, restrooms, and parking facilities, are all examples of physical support (Brown, 1992; Schneid, 1992). The researcher was interested in learning more about how physical accessibility is given at universities because it is one of the most significant support services for students with disabilities, depending on their individual needs.

4.2.2.2 Structural Accessibility

The availability of ramps on all buildings, lifts in each building, wheelchairs accessible classrooms, libraries, restrooms, labs, and canteens are all examples of structural accessibility (Singh, 2003). When it comes to higher education, students with impairments frequently face structural barriers.

Appendix: 1 and 2, shows that, both the universities had provided ramps tactile path, and lifts made modification of the existing buildings. On the other hand, it was also found that most of the lifts were not functional at AMU.

The data indicates that students with disabilities did not have proper structural accessibility other than ramps, tactile path facility. This clearly shows that the type of university, implementation of UGC programmes, disability cell or coordinator, and financial resources all influenced the availability of accessible support services.

On-campus accessibility to physical support for classrooms, libraries, and labs was used to assess academic accessibility. Students with disabilities navigate around the university campus in a variety of ways, including crutches, canes, walkers, wheelchairs, and scooters. As a result, educational institutions must ensure that classrooms, libraries, and labs are designed to accommodate students with mobility needs. Physical accessibility is critical not only for students with locomotor disabilities, but also for students with vision and hearing impairments for their inclusion in higher education.

As we discussed in the review of related literature chapter, the findings of the present study also showed that students with disabilities face many problems due to lack of physical

accessibility in the universities. A study conducted by Saksena & Sharma (2014) shows that that attitudinal barrier other students' intensive behaviour and biased perception towards students with disabilities are more detrimental than physical barriers inside educational institutions. Access to information and provisions for SWD must be improved: This will empower students with disabilities in their access to information and services while also assisting in the creation of enabling environments for them to have equal opportunities, with the term "environments" encompassing the physical environment, information, communication, and technology, as well as transportation. The biggest disadvantage at the time is not so much the lack of students with disabilities facilities and provisions, but limited access with the students with disabilities to information about them.

In the present study, it was found that all the students with disabilities in both universities were being provided all kind of learning resources including assistive technology. In the AMU, for students with disabilities, the Disability Unit provides advanced computing lab facilities, Braille service at the Maulana Azad library section, as well as assistive technology, screen-reading software, and mechanised newest talking software. Wheel chairs, Angel players, Crutches, Sticks, Hearing aids, Scientific calculators, Tricycles, and other aids and appliances are provided/distributed to PWD students free of charge twice a year under a specially sanctioned budget by the Disability Unit. The Disability Unit has pursued the authorities to have 143 ramps, 13 lifts, and 621 disabled-friendly bathrooms built at various locations around Aligarh Muslim University.

The "travel chain" refers to all elements that make up a journey, from starting point to destination, including pedestrian access, vehicles, and transfer points. If any link is inaccessible, the entire trip becomes difficult (Maynard, 2009). The accessibility goal is for people to have access to all vehicles and the full-service area, as well as the pedestrian environment (Iwarsson et al, 2000).

The best practices and design guidelines are tools to assist the designers and users in realising universal accessibility. The best practices highlight generic issues and list the major areas for continual improvement on universal accessibility,

4.3 Exteriors of building

- Walk and paths
- Ramps

4.4 Interiors of building

- Corridors
- Lifts
- Canteen
- Classrooms
- Laboratories
- Library
- Restrooms

To create an accessible built environment, the spaces between the various buildings and facilities must also be accessible in order to form a complete travel chain. The travel chain should be continuous in such a way that all users, regardless of their capabilities, can reach their final destination as well as the various points along the way without undue difficulty. Connectivity can be achieved by eliminating or mitigating the obstacles found along the travel path. Not only does it entail the provision of accessibility elements such as ramps, lifts, and tactile guide paths, but connectivity also concerns the whole travel experience and it should be looked at holistically at the early stage of a development. Continuity should be maintained throughout the travel journey.

4.3.1 Walks and Paths (Appendix 1, Figure: 1.1)

Being able to sit in the classroom is not the beginning of the process of learning for a student enrolled in university. First of all, the student with disabilities should be able to reach the classroom and the laboratories in order to make learning possible. So, in fact the "Travel-Chain', begins from the student with disability's home to the classroom. However, with this study of the accessibility inside the universities for the students with disabilities, the travel-chain is being started from the outer walk-path of the universities. The level of the road and the walk path is not at the same level. So, a wheelchair cannot move up to the walk path and a student with visual impairment or blindness can fall down. The walk path has tiles which have come out, again a hindrance for a wheelchairs user or a person using clutches or sticks to walk. It is also a hindrance for a student with visual impairment or blindness. It is difficult to identify that she/he has reached the correct destination as the signage is in only written form. In other words, it is difficult for a student with a visible disability to enter college independently. This becomes the first step towards the student with a visible disability losing one's self-confidence, besides coming to physical harm.

4.3.2 Walk and Pathway inside the university:

Walks and paths must be designed to help the visual impairment to navigate, tactile paving units are like braille for pavements. These raised bumps and ridges help guide people down sidewalks and across intersections. In most instances, raised ridges denote pathways (longer stretches between stops and changes). Raised domes, meanwhile, are used to indicate a stop or change (e.g., the presence of an intersection or edge or a shift in direction). Users register the different types of tactile signals with canes or their feet and respond accordingly.

There are 3 types of tiles: positional, directional and hazard warning tiles, each of them carries different meaning for the persons with visual impairment upon actual contact.

Tactile paving is first and foremost a mobility aid for visual impairment and needs to be treated as such – always. When tactile paving is not treated as a mobility aid, but as a mere paving or traffic issue, then the appropriate consultations do not take place and extraordinary mistakes occur. Tactile paving must never lead a person with visual impairment into an obstacle. If it does, then person with visual impairment will start perceiving it as a hazard in itself, rather than an aid to safe crossing. A person with visual impairment must be absolutely sure that while on the tactile paving surface he/she can manoeuvre him/herself according to the learned techniques in complete safety.

4.3.3 Signage:

Both the universities have directions indicating signage boards at every place in the university. The signage boards are at a raised height which is appropriately visible to a person with sight. However, this very fact and that the signage boards are in written format only, the student with visual impairment cannot reach their destination without assistance. Along with the present signage board it is also essential to have the signages in braille or raised pictorial-line representation forms. They could be attached at the lower end of the present signage boards. No turning signage as well as so it is very hazardous for students with visual impairment and also the student who uses wheelchairs.

4.3.4 Ramps:

Handrails have been provided on both sides of the ramp for students with visual impairment and students who use walking aids like sticks. A ramp should have handrails on both sides so that it can be used in both directions by persons with a mobility problem on one side. Ramp does not have tactile marking (Annendix: 2, Figure: 2.3 and Figure: 2.4) which can create

difficulty for a student with visual impairment related to easy mobility while using the ramp. It is wide enough for mobility of students who are using wheelchairs. A contrasting-coloured textural indication needs to be present at the top and bottom of the ramp. This would alert to students with visual impairment as to the location of the ramp. The ramp is very steep for mobility of students who are using wheelchairs without assistance so it is very hazardous for students who are using wheelchairs. Some of the bottom of the ramp has a very bumpy rough and broken beginning so which can create difficulty for students who use wheelchairs and also for students with visual impairment.

According to the Central Public Works Department (CPWD) "Ramp shall be finished with non-slippery material to enter the building. Minimum width or ramp shall be 1800 mm. with maximum gradient 1:12, length of ramp shall not exceed 9.0 M having double handrail at a might of 800 and 900 mm on both sides extending 300 mm. beyond top and bottom of the ramp. Minimum gap from the adjacent wall to the hand rail shall be 50 mm".

A handrail should be provided on each side of a ramp or stair flight throughout its length (including intermediate landings). The top of the handrail should be between 900- 1000mm from the surface of the ramp or line of the stair and between 900-1100mm from the landing.

4.4 Interiors of Buildings

4.4.1 Corridors:

The corridors are wide enough for students who are using wheelchairs. The white stripes are given the whole corridors for students with visual impairment so that can help to safe any obstacle. No sufficient lighting in every corridor for students with visual impairment so which can create obstruction for students with visual impairment. No tactile marking in corridors for mobility of students with visual impairment.

4.4.2 Lift:

No audio floor announcement system in the lift for students with visual impairment. No light indicators for students with impairment indication of opening and closing of lift doors and arrival of different floor levels. The emergency information given inside the lift in written format but not given by audio, braille system for students with visual impairment. The space inside the lift is very less so students who are using wheelchairs cannot move the wheelchairs inside the lift. Lift has narrow entry door so which can create problems for students who use

wheelchairs to enter the wheelchairs inside the lift. Most of the lifts in Aligarh Muslim University were non-functional.

According to the Ministry of Urban Development, Government of India 2016, the minimum clear floor or ground area required accommodating a single wheelchairs occupant is 900 mm x 1200 mm (Figure 2.2). Circulation dimensions the minimum clear floor ground area for a wheelchair to turn is 1500 mm whereas it may be ideal to provide 2000 mm.

According to all India Council for Technical Education (AICTE), standard size given by Svayam Foundation:

- Minimum internal dimensions of 1.30 m x 1.00m allowing access for one person using a wheelchair and turning a full circle, or two people using a wheelchairs side by side.
- The clear opening width of the doors should be a minimum of 0.80 m, preferably 0.85 m.
- Handrails inside the lift should be installed mounted 0.80 m to 0.90 m from the floor.

4.4.3 Canteen:

The menu of the canteen is in pictorial form, the canteen has a different menu for every day. They are displaying every day's menu in the writing form. There is no directional signage for students with visual impairment so which can create problems for them. The vendor does not know any sign language to communicate with students with hearing impairment so students cannot communicate to vender. The seats and tables are fixed together so students who use wheelchairs cannot use tables. No tactile marking in the canteen for students with visual impairment so which can create obstruction for their mobility.

4.4.4 Classrooms:

In the classroom there is no special seating arrangement for students with hearing impairment, visual impairment and those with locomotors issues, including wheelchair users. Seat and table are fixed to the floor on many of the demonstration classrooms in both universities. Thus, a student who is a wheelchair user cannot use a table and cannot be part of the regular sitting arrangement. The students who are using wheelchairs need some special tables in this classroom. The student with hearing impairment should be seated near the teacher so that the student listens more clearly. There is audio visual aid used in the class room but not in every class. There is no software for students with visual impairment. Like

jaws, and FM systems for students with hearing impairment. The smart board is not available in the classrooms. The seating arrangement of some classrooms are like a theatre so wheelchair users cannot not move everywhere in the classroom and also create problems for students with visual impairment. The students with visual impairment need full visual access, so the best seating arrangement for full participation, to arrange desks in a "U" shape. This will allow the students to see who is speaking, and participate fully in the conversation.

According to all India Council for Technical Education (AICTE), standard size given by Svayam Foundation:

- Minimum 2% to 5% of the seating available in classrooms should be made accessible to students with limited mobility or students who are using wheelchair.
- Tables must be between 0.7 m and 0.8 m high with at least 0.6 m of knee clearance to accommodate students in wheelchairs.
- Adjustable tables are recommended.

4.4.5 Library:

The Disability Unit provides advanced computing lab facilities, Braille service at the Maulana Azad library section, AMU as well as assistive technology, screen-reading software, and mechanised newest talking software. There is no signage in the library, no visual indicators for students with hearing impairment so students with hearing impairment cannot use library without an assistant. In the library there is no special sitting arrangement for students who are using wheelchairs but the height of the table is sufficient for students who use wheelchair so they can also use table easily and leg space allows to wheelchair users to fit under the table. Braille touch is not available for students with visual impairment so which can create obstruct for their mobility.

4.4.6 Restrooms:

Some of the restrooms are specially made for students who use wheelchairs and students with visual impairment. Handrails are also available in the three sides to provide support for students with visual impaired and student who use wheelchairs. But some of the restrooms do not have three sides of handrails (Appendix: 2, Figure:2.11). No signage provided for students with hearing impairment. No tactile marking in the floor for students with visual impairment.

4.4.7 Findings

After conducting the checklist in both the universities, the results were drawn that some university buildings are not at all accessible for the students with disabilities. There were no signage boards in braille for the students with visual impairment and no tactile marking on the paths. Students who use wheelchairs cannot move without any assistance because the paths are not smooth and have a very bumpy surface and so it becomes difficult for them. The height of bookshelves in the library is not appropriate as they are not easily reachable and also the space between the bookshelves is very narrow so it becomes very difficult for their mobility.

In the Maulana Azad Library, AMU has been as the assistive technologies like screen reading software, talking software, Braille services, Hearing aids, and other aids and appliances are there for the students with disabilities.

4.5 TO FIND THE PERCENTAGE OF THE ENROLMENT OF STUDENTS WITH DISABILOITIES IN ALIGARAH MUSLIM UNIVERSITY AND JAMIA MILLIA ISLAMIA OVER PAST FIVE YEARS (2015-2020)

4.5.1 Factors influencing enrolment of students with disabilities in universities

Enrolment of students with disabilities in universities are affected by many factors as mentioned in the literature review but physical accessibility is the most important for students with disabilities. The availability of ramps on all buildings, lifts in each building, wheelchair accessible classrooms, libraries, restrooms, labs, and canteens. When it comes to higher education, students with impairments frequently face physical barriers. Thus, the enrolment of students with disabilities is very low.

4.5.2 Enrolment of students with disabilities (VI, HI, Locomotor disabilities) in universities

With the expansion of disability regulations and provisions, the number of students with disabilities attending higher education institutions has risen considerably. These regulations and provisions assist higher education institutions in removing barriers to participation in higher education for students with impairments (Tincani, 2004). Despite this, the enrolment of students with disabilities at universities may be affected as a result of their impairments.

Table 4.1: Enrolment of students with disabilities at AMU

Years	Types of Disabilities			Students with Disabilities Enrolment
	Hearing Impairment	Visual Impairment	Locomotor Disability	
20015-16	-	45	171	216
2016-17	-	34	211	245
2017-18	2	64	186	252
2018-19	2	54	113	169
2019-20	3	87	290	380
Total	**7**	**284**	**971**	**1262**

From table 1, it can be observed that out of the 28000 (100 percent) students of AMU, 1262 (4.5 percent) students with disabilities have enrolled in the university over past five years. The data in the above table indicate that the majority of the students with disabilities were enrolled in 2019-20. However, it is seen that the number of students with disabilities enrolled showed a gradual increase from 2015-2020. However, the number decreased slightly in 2018-19. Comparatively over the past five years, it is evident that highest enrolment was seen in the 2019-20 followed by 2017-18. The lowest enrolment was seen in 2018-19.

Table 4.2: Year wise Enrolment of students with disabilities at JMI

Years	Types of Disabilities			Students with Disabilities Enrolment
	Hearing Impairment	Visual Impairment	Locomotor Disability	
20015-16	8	16	184	208
2016-17	15	25	188	228
2017-18	20	37	161	218

2018-19	21	51	191	263
2019-20	30	52	154	236
Total	**94**	**181**	**878**	**1153**

In table 2, it can be observed that out of the 21,161 (100 percent) students in JMI, 1153 (5.4 percent) students with disabilities have enrolled in the university over past five years. A total of 1153 students with disabilities enrolled in the university. The data in the above table indicate that the majority of the students with disabilities were enrolled in 2018-19. However, it is seen that the number of students with disabilities enrolled showed a gradual increase from 2015-2020. However, the number decreased slightly in 201-18 and 2019-20. Comparatively over the past five years, it is evident that highest enrolment was seen in the 2018-19 followed by 2019-20. The lowest enrolment was seen in 2015-16.

4.5.3 Findings:

It was found that enrolment of the students with disabilities at Aligarh Muslim University over the past five years 2015-2020, 1262 students with disabilities enrolled in various courses. Total 28000 students have enrolled in the university out of them 1262 (4.5 percent) students were with disabilities.

It was analysed that enrolment of the students with disabilities at Jamia Millia Islamia over the past five years 2015-2020, 1153 students with disabilities enrolled in various courses. Out of 21161 students, there were 1153 (5.4 percent) students with disabilities.

4.6 TO STUDY THE ENROLMENT OF STUDENTS WITH DISABILITIES IN AMU AND JMI WITH REFERENCE TO THE TYPE OF DISABILITIES (VISUAL IMPAIRMENT, HEARING IMPAIRMENT AND LOCOMOTOR DISABILITY)

A study by Paul (2000) suggests that, despite the enactment of various disability laws contributing to the rising educational enrolment of students with disabilities in higher education institutions, students with disabilities confront various challenges when pursuing higher education. There is a scarcity of study on the nature of these obstacles and challenges. Ahmad (2018). As discussed in the chapter on review of literature, a few studies have been undertaken to understand the experience of students with disabilities in higher education. The researcher could not find many studies from the Indian context.

4.6.1 Accessibility

Accessibility in terms of specific disabilities (Visual impairment, Hearing impairment and Locomotor disability) was investigated.

Accessibility for the students with visual impairment was limited in the universities. For the locomotor disability (e.g., students who use wheelchairs), access to buildings was severely limited, as almost every building had an entrance ramp but ramp had broken begging. Once inside the buildings the students may also encounter difficulty, as there are few buildings with low level public convenience (e.g., drinking water), Figure 1.13, there was no ramp for students who use wheelchairs, no tactile path for students with visual impairment. Accessibility to the university for the students with hearing impairment was also limited. The enrolment of the students with hearing impairment students were very less in AMU. There were only 7 students enrolled over past five year 2015-2020.

4.6.2 Barriers Encountered by students with disabilities (VI, HI, and Locomotor disability) in higher education

In this section, the researcher attempted to find from the students with disabilities on their enrolment and to understand what were the barriers affecting their type of disabilities in the universities. The factor that emerged as theme:

4.6.3 Physical Barrier

Physical accessibility is one of the most critical criteria in successful enrolment of students with physical disabilities. The participation of students with disabilities have been found to be affected by a number of environmental barriers. Majority of the students with locomotor disabilities stated that their impairment did not affect their academic life, but they had problems with accessing some areas like attending classes on the first or second floor. Both the universities did not have good access and the distance between classrooms, library, restrooms. They also did not have easy access to their classrooms and departments and libraries.

A student's active participation is dependent on various factors in both natural and designed educational contexts. Students with disabilities were only partially able to access both colleges. These universities had inadequate accessibility, not just because the buildings were old and had not been modified to make them barrier-free, but also because the new structures were inaccessible. There was no special arrangement for students who used wheelchairs in terms of classroom accessibility.

Overall, it was found that both universities have taken steps to accommodate students with disabilities by improving physical accessibility, such as installing ramps in the majority of buildings. On the other hand, it was clear that students with impairments faced physical difficulties in gaining access to classes, libraries, and other university structures. The physical environment was inadequately altered to allow full inclusion, despite concentrated support from the disability cell/coordinator.

4.6.4 Academic Barriers

Students with visual impairments have very different educational experiences than students with locomotor disabilities or hearing impairments. A study conducted by Moisey (2004), students with visual impairments at higher education institutions face academic challenges as a result of insufficient learning resources and a lack of teaching experience with students with special needs. In this study, assistive technologies are those that are available to students to help them maximise their capacity to effectively finish the course. Adaptive computers, tape recorders, sound amplification systems, television enlargers, speech synthesisers, keyboards with large keys, braille, and technology assessments and evaluations are just a few of the adaptive tools and services available. For their education, students with visual impairments must rely on assistive technologies such as computers, speech software, and braille. Students with hearing impairments rely on hearing aids and signage, but students with locomotor disabilities struggle with challenges such as entering classes, libraries, and labs, which we discussed in the physical barrier section.

Students with visual and hearing impairments learning experiences in higher education institutions are largely determined by the availability and use of learning tools. Using technology to help students in higher education achieve better academic results. As a result, the researcher has analysed data, based on the number of students enrolled with reference to types of disabilities.

Table 4.6.1: Enrolment of students with disabilities at AMU

Years	**Types of Disabilities**			**Students with Disabilities Enrolment**
	Hearing Impairment	**Visual Impairment**	**Locomotor Disability**	
20015-16	-	45	171	216

2016-17	-	34	211	245
2017-18	2	64	186	252
2018-19	2	54	113	169
2019-20	3	87	290	380
Total	**7**	**284**	**971**	**1262**

With reference to the type of disabilities in students in Aligarh Muslim University. since 2015 to 2020, the study revealed that in 2019-20, there were 290 highest numbers students with locomotor disabilities. Every year the number of locomotor disabilities students were comparatively more than the other type of disability. However, the number of students with visual impairment were (87) in the 2019-20 and comparatively they were the second highest. The number of Hearing impairment were the least to be enrolled in the university over the past five years. There were only 7 students with hearing impairment enrolled in the past five years. Followed by 284 students were visual impairment and 971 students were with locomotor disability. However, the enrolment of students with hearing impairment in 2015-16 1nd 2016-17 was zero. The enrolment of the students with hearing impairment was very less in the university.

Table 4.6.2: Year wise Enrolment of students with disabilities at JMI

Years	**Types of Disabilities**			**Students with Disabilities Enrolment**
	Hearing Impairment	**Visual Impairment**	**Locomotor Disability**	
20015-16	8	16	184	208
2016-17	15	25	188	228
2017-18	20	37	161	218
2018-19	21	51	191	263
2019-20	30	52	154	236
Total	**94**	**181**	**878**	**1153**

It was analysed that enrolment of the students with disabilities at Jamia Millia Islamia over the past five years 2015-2020, 1153 students with disabilities enrolled in various courses. 21161 students enrolled in the university out of them 1153 students with disabilities. With reference to the type of disabilities students with disabilities in this university, the findings depicted that the vast majority of the students since 2015 to 2020, the study revealed that in

2018-19, 191 students with locomotor disabilities were the highest to be enrolled in the university. Every year the number of locomotor disabilities students were comparatively more than the other type of disabilities. It was also seen that the numbers students with visual impairment enrolled increased from 2015 to 2020. However, the number of students with visual impairment were (181) in the 2019-20 and comparatively they were the second highest. The number of Hearing impairment were the least to be enrolled in the university over the past five years.

4.6.5 Findings:

Three types of disabilities were analysed at these universities like, Hearing Impairment, Visual Impairment and Locomotor Disability. At the Aligarh Muslim University there were only 7 students with hearing impairment, 284 students with visual impairment, and 971 students with locomotor disability enrolled in the over past five years. 94 students with hearing impairment, 181 students with visual impairment, and 878 students with locomotor disability were enrolled at Jamia Millia Islami over past five years. The numbers of students with hearing impairment were also very less in both the universities.

4.5.7 RECOMMENDATIONS

To provide equal educational opportunities to students with disabilities in the universities.

To equip higher education institutions with the facilities to provide access to students with disabilities. It has been felt that students with disabilities need special arrangements inside the university for their mobility and independent functioning. It is also a fact that many university buildings have architectural barriers that students with disabilities find difficult for their day-today functioning. To monitor the implementation of all existing and future legislation and policies pertaining to higher education of students with disabilities.

CHAPTER-V

EDUCATIONAL IMPLICATION AND CONCLUSION

CHAPTER V

EDUCATIONAL IMPLICATION AND CONCLUSION

5.1 INTRODUCTION

This chapter provides the education implications, future study suggestions and conclusion. The educational implications, such as theoretical implications and policy implications, were thoroughly discussed.

5.2 THEORETICAL IMPLICATION

As discussed in the theoretical framework, all institutes of higher education are required to follow the provisions of the RPWD Act, 2016 regarding reasonable accommodations during programme examinations. While the RPWDA uses the term "inclusive education" and describes every part of it for the education of children with disabilities in schools, the term "higher education" is absent from Chapter III on education. In the case of higher education institutions, the complete programme for making education inclusive for children with disabilities while integrating them into mainstream schools is found to be missing. A few examples include offering reading material in appropriate medium, modifying the examination system to their needs, training the teachers, and other welfare measures such as giving assistance devices at no cost. Higher Education is first mentioned in Chapter VI, where reservation for those with benchmark disabilities is made essential. While the Act mandates the implementation of awareness programmes and sensitization workshops at universities and other institutions, it also mandates the inclusion of disability studies at various levels in curriculum and the establishment of Centres for Disability Studies.

5.3 IMPLICATIONS FOR POLICY MAKING

In order to increase the number of students enrolled in higher education institutions, the government of India plays an essential role in providing support services to students with disabilities. The following are some findings and policy initiatives regarding higher education:

The HRD ministry must make it essential for all institutes of higher education to enrol the required number of students with disabilities, and strict compliance must be maintained through the UGC.

All college institutes should be required to promote the fact that there is a reservation for students with disabilities in all degree programmes.

All institutes of higher education must follow the provisions of the RPWD Act, 2016. It is the duty of educational institutions, to make buildings campuses and various facilities accessible, and provide reasonable accommodation based on the individual's requirements.

Every year, each university must submit a detailed data on students with disabilities. It should be assured that all institutes submit information on the number of students with disabilities admitted in a given academic year, the type of their disability, and the overall number of students with disabilities as well as the nature of their disability. This would make it easier for the UGC to gather data and analyse the impact of the provisions for students with disabilities that have been implemented.

5.4 SUGGESTIONS FOR FUTURE

The present study is only limited to two universities however the scope for future study to audit more central and state higher education institutions to see how accessible the physical buildings are. The present study examines only inside the university's buildings. There is a need to carry out more research to understand how accessible of physical environment outside of higher education institutions. in other words, the learning of students with disabilities starts from the home therefore, it is important to understand how students with disabilities reach to higher education institutions. It is the right of students with disabilities to get access barrier free environment from their home to higher education institutions.

5.5 CONCLUSION

Accessibility in the context of disability is at the top of the list of essential demands for students with disabilities. The idea is that constructed environment has an impact on practically every element of human behaviour. As a result, it is determined that denying the fundamental nature of the right to access built environments is to deny the foundation of all human rights, such as the ability to live independently, receive an education, find work, receive proper health care, and participate in political, economic, social, and recreational activities. Disability is not just a health problem but it is the interaction between individuals with a health condition and personal and environmental factors such as negative attitudes, inaccessible transportation and public buildings and limited social support. Overcoming the

difficulties faced by persons with disabilities requires interventions that can remove environmental and social barriers.

The findings of the present study, an accessibility audit was done in Aligarh Muslim University and Jamia Millia Islamia to examine how accessible the university buildings for the students with disabilities (VI, HI, and Locomotor disabilities). The findings of the study suggest that the results were drawn was that university buildings are not optimally accessible for the students with disabilities. Students who use wheelchairs cannot access in every area without any assistance because the paths are not smooth enough. More or less similar condition was found in both universities' campuses. On the other hand, every year the number of enrolment of students with disabilities (VI, HI and Locomotor disabilities) were increased in the both universities. The number of Locomotor disabilities were comparatively more than the visual impairment. Students with disabilities experience difficulties at various phases of higher education, mainly from the standpoint of physical accessibility. The goal of the present study was to understand challenges faced by students with disabilities in various academic and non- academic domain and support available for them. It is clear from the findings that students with disabilities continuously face barriers to moving freely inside universities and benefiting from the services/facilities provided to them. This study brought to light that there was clear evidence of progress in providing in accessing higher education by students with disabilities, however the higher educational institution buildings are not equipped enough to provide barrier free physical accessibility unfortunately these students have to rely on others to for the accessibility. There is a need to implement educational polies on grass route level in order to make students with disabilities and inclusive part of mainstream population and access all their rights without any barriers. However, much more work is required, particularly in terms of removing barriers to physical accessibility.

BIBLIOGRAPHY

Access Audit report (2018). *I-Access right mission" is a field action project initiative that enables accessibility and inclusion of students with disability in higher education. Initiated by the Centre for Disability Studies and Action (CDSA) at Tata Institute of Social Science in 2013.*https://www.tiss.edu/view/11/projects/all-projects/i-access-rights-mission/

Access audit report. (2006). Delhi University North Campus. *Samarthya, NATIONAL CENTRE FOR PROMOTION OF BARRIER FREE ENVIRONMENT FOR DISABLED PERSONS*http://eoc.du.ac.in/access-audit-report.pdf

Accessible India Campaign. (2017). *Samarthyam*. Retrieved from http://samarthyam.com/accessible-india-campaign

Ahmad, W., 2018. *Higher Education for Persons with Disabilities in India Challenges and Concerns*. https://www.researchgate.net/publication/325619759

Ahmad, W. (2016). Inclusive Education Policy Perspectives. *Journal of Disability Management and Rehabilitation*, 3(1), 1–3. Retrieved from https://www.researchgate.net/publication/325619840_Inclusive_Education-Policy_Perspectives/citations

Ahluwalia, *S., & Gupta, D. (2012).* Accessibility of central government buildings in Delhi. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2118777

Kuppusamy, A. (2016). Accessibility of Indianuniversities' homepages: An exploratory study. Journal of King Saud University – Computer and Information Sciences http://dx.doi.org/10.1016/j.jksuci.2016.06.006

Government of India. (2020). All India Survey on Higher Education. Retrieved from https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/aishe_eng.pdf

Chard, G., & Couch, R. (2010). Access to Higher Education for the Disabled Student: A building survey at the University of Liverpool. *Disability & Society*, *13*(4), 603-623. doi: 10.1080/09687599826632

Disabled Access Audits (DDA) | Access Audit Reports - Access Rating. (2022). Retrieved from https://www.accessrating.com/access-audits/

Government of India. (2017). Notification. Ministry of Social Justice & Empowerment, Department of Empowerment of Persons with Disabilities. Retrieved from https://enabled.in/wp/wp-content/uploads/2017/03/DraftRPwD-Rules2017.pdf

Government of India. (2020). National Education Policy 2020, Ministry of Human Resource Development. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Kannan, A. (2011). For a 'barrier-free' higher education. https://www.thehindu.com/features/education/For-a-lsquobarrier-free-higher-education/article14967413.ece

National Health Portal of India. (2018). Nhp.gov.in. Retrieved from https://www.nhp.gov.in/disease/non-communicable-disease/disabilities

Narayan, C. and John, T. (2017). The Rights of Persons with Disabilities Act, 2016: Does it address the needs of the persons with mental illness and their families. *Indian Journal of Psychiatry*, 59(1), p.17.

Rights of Persons with Disabilities Bill - 2016 Passed by Parliament. (2018). Pib.nic.in. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=155592

Saksena, S., Sharma, R., & Tiwary, B. K. (2019). Understanding accessibility, inclusion and performance of students with disabilities in higher education: A case study of University of Delhi. *The Future of Higher Education in India*, 259-278. https://doi.org/10.1007/978-981-32-9061-7_16

The World Health Organization's New Definition of Disability - Rolling Rains Report. (2017). *Rollingrains.com*. Retrieved from http://www.rollingrains.com/2007/10/the-world-health-organizations-new-definition-of-disability.html

Tudzi, E., Bugri, J., & Danso, A. (2020). Experiences of students with disabilities in inaccessible built environments: A case study of a student with mobility impairment in a University in Ghana. *Scandinavian Journal of Disability Research*, 22(1), 116-126. doi:10.16993/sjdr.539

Umarji, V. (2022). 'India's gross enrolment in higher education rose marginally in 2019-20'. Retrieved 6 March 2022, from https://www.business-standard.com/article/education/india-s-gross-enrolment-in-higher-education-rose-marginally-in-2019-20-121061001249_1.html

Hpod.law.harvard.edu. 2022. [online] Available at:

https://hpod.law.harvard.edu/pdf/Disabled-people-and-development.pdf

Ugc.ac.in. 2022. [online] Available at: https://www.ugc.ac.in/pdfnews/8381868_Draft-

Guidelines-UGC_20-Feb-2021.pdf

Annexure- 1

<table>
<tr><th colspan="2">Jamia Millia Islamia (University-1)</th></tr>
<tr><td> 
Figure 1.1: Path University walk begins</td><td> 
Figure 1.2: Main gate of the university</td></tr>
<tr><td> 
Figure 1.3: Path outside the main gate</td><td> 
Figure 1.4: Path inside the main gate</td></tr>
</table>

Figure 1.5: Walks and paths inside the university

Figure 1.6: Zakir Hussain Library

Figure 1.7: Ramp without handrails

Figure 1.8: Ramp with handrails

Figure 1.8: Entrance of canteen

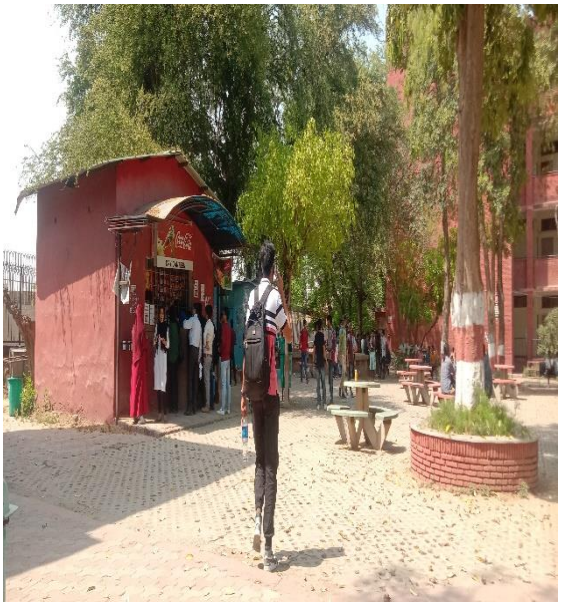

Figure 1.9: Dry canteen

Figure 1.10: Examination controller

Figure 1.11: Examination controller

Figure 1.12: Restroom

Figure 1.13: Drinking water

Annexure- 2

Aligarh Muslim University: 2

Figure 2.1: Main Gate of the University (Bab-e-Syed)

Figure 2.2: Maulana Azad Library (Main entrance)

Figure 2.3: Department of Education

Figure 2.4: Faculty of Arts

Figure 2.5: Main gate of Computer Centre

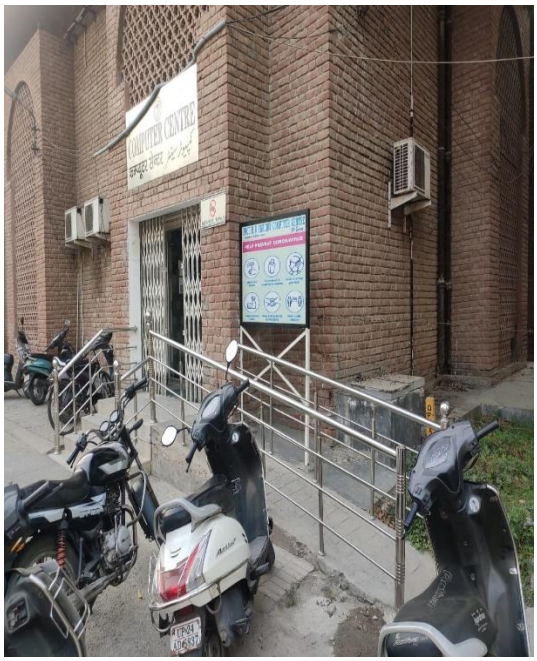

Figure 2.6: Computer Resource Centre (Ramp)

Figure 2.7: Sports Complex

Figure 2.8: Central Canteen of the

	University
 **Figure 2.9: Ramp**	 **Figure 2.10: Chemical Laboratory**

Figure 2.11: Toilet

Appendix- 3

Accessibility Audit Checklist (Taken from Central Public Work Department Handbook)

Name of University:

Respondent:

Designation of the respondent:

Accessible Route (Chapter 1 of the CPWD Handbook)

S.No.	Questions	Yes	No
1	An accessible route connects the entrance gate, parking, alighting point all other external facilities with the accessible entrance		
2	The accessible path is:		
	Minimum 1200mm wide		
	The surface of the pathway must be firm non - slip and preferably covered		
	There should not be a gradient of more than 1:12 or a cross slope of 1:50 in the pathway		
	If free of any barriers or obstacles. Grating if any is perpendicular to the direction of the path		
	Has a kerb ramp in case there are and level changes between the traffic lane and the accessible path?		
	Has tactile guiding path including directional, hazard warning and positional tiles provided for independent navigation across all the chief functions at the building?		
	Has resting spaces and wheelchair parking spaces outside the line of traffic in cases where the walking distance is more than 300mm?		
	Has accessible directional signage directing to the accessible entrance?		

Accessible Entrance (Chapter 7 of CPWD Handbook)

S,No.	Question	Yes	No
1	The main entrance is accessible to all users, if not there is an alternate accessible entrance to the front of the building and into the entrance lobby. (If stairs or ramp are present, please refer the corresponding section		
	The accessible entrance has a landing 1500 x 1500 mm		
	The entrance door is usable by disabled persons		

	There is a difference in floor finish that is identifiable by blind users at the door entrance		
	The entrance has an audio signal		

Reception and Lobby (Chapter 6, 11 of CPWD Handbook)

S.No.	Questions	Yes	No
1	Is the reception counter identifiable from the entrance?		
	Is there 900mm wide and 1200mm deep clear space in front of the reception counter?		
	Is a part of the counter between 760 mm to 800mm from the floor with a 400mm to600mm clear recess under the counter?		
	Does the counter contrast in colour with the background wall and the floor?		
	Is there accessible identification signage for the reception?		
	Is there accessible directional signage directing to various building facilities at the reception?		
	Is there live assistance available at the counter to guide persons to their destination?		
	Can any of the staff members communicate in sign language?		
	The lobby is at one level with adequate manoeuvring space for wheelchair users.		
	Is printed information available in accessible alternate formats?		

Information and Communication

S.No.	Question	Yes	No
1	The website proving information about the building/service complies with web accessibility standards.		
2	There is information detailing the accessible facilities in the building with photographs		
3	All publications/brochures are available is also available in alternate accessible formats such as: • Braille • Large Print • Audio • Available in Hindi& English		
4	Staff members are trained in Indian Sign Language interpretation.		
5	Assistive technology such as Loop hearing systems, Audio orientation tools, interpretative videos or audio tours in with captioning or sign language, wheelchairs etc. are available		

Stairs (Chapter 4 of CPWD Handbook)

S.No.	Question	Yes	No
1	Are the step risers 150 mm high and tread 300mm wide?		
	Is there a colour contrasting strip at the edge of the steps?		
	Do the stairs have handrails at two levels on both sides that are continuous on the landing?		
	Do the handrails project beyond the end of the flight and curve back in accordance with section on handrails.		
	Are there tactile warning tiles provided at the beginning and end of each flight?		
	Are steps uniform in width and height?		
	Handrails have been provided on both sides of the stairs?		

Ramp (Chapter 2 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is a ramp is provided as an alternate route to the stairs?		
	Is the ramp gradient not steeper than 1:12. In case of higher height difference the gradient may be gentler		
	Ramp width is not less than 1800mm		
	Handrails have been provided on both sides of the ramp and are continuous on the landing.		
	Landings have been provided at specified internals and at the beginning and end of the ramp.		
	Tactile warning blocks have been installed 300mm from the top, bottom and landings of each ramp run in external environments.		
	Do the ramps have tactile warning tiles at the beginning and end of each ramp run.		
	Handrails have been provided on both sides of the ramp?		

Elevator/Lift (Chapter 13 of CPWD Handbook)

S.No.	Question	Yes	No
1	There exists an elevator that connects all floors of the building?		
2	If yes, it has-		
	Step free access from the entrance to the lift?		
	The elevator car has an internal space of 2000mm deep 1100 mm wide?		

	The elevator door width is 900mm wide?		
	There is a visual and a n audio floor announcement system in the lift.		
	The elevator controls in the lift (including alarms /speakers/phones) are between 800mm to 1200mm. They have a good contrast and the buttons are self - illuminating, in raised numbers and Braille?		
	The elevator call buttons and floor numbers outside the lift on each floor are in Braille and Raised Lettering.		
	There are handrails on both the sidewalls and the rear wall of the lift car?		
	There is a landing 1500 mm x 1500mm in front of the lift?		

Corridors, Doors and Doorways (Chapter 6 and 7 of CPWD Handbook)

S.No.	Question	Yes	No
1	The corridor is minimally 1200mm wide?		
	There is 1500 mm x 1500mm space to allow a wheelchair user to turn around at some point on the corridor?		
	There is a colour contrast between the floor, walls, doors and the ceiling?		
2	The clear width of the door is minimally 900 mm?		
	There is adequate space available to open the door even by a wheelchair user?		

Accessible Toilet (Chapter 8 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is there an accessible cubicle with dimensions 1750 mm x 2200 mm in the ladies and gent's toilet block?		
	The WC should be installed in a corner with centreline of the WC at a distance of 450mm to 500mm from the adjacent wall. The front edge of WC should project 750mm of/from the rear wall.		
	The seat height of the WC is 450mm?		
	There is 800mm of clear transfer space next to the WC?		
	There is clear knee space of at least 750mm height x 750mm width x 200mm depth under the wash basin, with additional toe -space of 300mm height x 750mm width x 230mm depth		
	The floor -surface of the toilet is non -slippery?		
	There is a colour contrast between the floor, wall and sanitary fittings?		
	A horizontal grab bar is installed on the adjacent wall, at a height of 200mm from the WC seat?		
	All toilet accessories, soap dispensers, coat hooks are at accessible reach. In addition to accessible toilets, do the other toilets following Standardization of placement of utilities?		

Cafeteria/ Canteen and Drinking water facilities (Chapter 15 of CPWD)

S.No.	Question	Yes	No
1	There is adequate circulation space in the cafeteria?		
	Tables allow easy wheelchair access and have a knee space of 750 mm under them?		
	Hand wash area is accessible? • Not higher than 750mm above the floor level		
	All counters, buffet tables and vending machines should be placed at accessible height. Menus at the cafeteria are available in accessible formats: • Braille • Large Print • Audio • Available in Hindi& English		
	Staff is trained to assist students with disabilities.		
2	Can the drinking water facility be easily accessed by persons with disabilities?		

Signage (Chapter 10 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is there prominent visible signage using the international symbol of accessibility, identifying/advertising/signifying accessible entrance and exit, reserved car parking, presence of toilets for persons with disabilities, cloakrooms, and availability of special services?		
2	Does the signage size comply with not less than 60 mm for doors,110 mm for corridors and 200 mm for external use?		
3	Are all visual signage in the facility provided with Braille and Tactile supplements?		
4	Wherever possible, are Audio signage provided along with Braille and Tactile signage?		
5	Are all Braille and tactile signage placed at between the height of 900 mm and 1500mm, with ideal location at 1050 mm above the finished floor level?		
6	Are all visual signage in the building using high colour contrast?		
7	Are there both visual and auditory substitutes for public address systems and LED Display board information in the building?		

Appendix- 4

Accessibility Audit Checklist (Taken from Central Public Work Department Handbook)

Name of University: AMU

Respondent: Dr. Farrukh Hafeez

Designation of the respondent: Coordinator, DUC

Accessible Route (Chapter 1 of the CPWD Handbook)

S.No.	Questions	Yes	No
1	An accessible route connects the entrance gate, parking, alighting point all other external facilities with the accessible entrance	✓	
2	The accessible path is:		✓
	Minimum 1200mm wide		✓
	The surface of the pathway must be firm non - slip and preferably covered	✓	
	There should not be a gradient of more than 1:12 or a cross slope of 1:50 in the pathway		✓
	If free of any barriers or obstacles. Grating if any is perpendicular to the direction of the path		✓
	Has a kerb ramp in case there are and level changes between the traffic lane and the accessible path?		✓
	Has tactile guiding path including directional, hazard warning and positional tiles provided for independent navigation across all the chief functions at the building?		
	Has resting spaces and wheelchair parking spaces outside the line of traffic in cases where the walking distance is more than 300mm?	✓	
	Has accessible directional signage directing to the accessible entrance?	✓	

Accessible Entrance (Chapter 7 of CPWD Handbook)

S.No.	Question	Yes	No
1	The main entrance is accessible to all users, if not there is an alternate accessible entrance to the front of the building and into the entrance lobby. (If stairs or ramp are present, please refer the corresponding section	✓	
	The accessible entrance has a landing 1500 x 1500 mm	✓	
	The entrance door is usable by disabled persons	✓	

Cafeteria/ Canteen and Drinking water facilities (Chapter 15 of CPWD)

S.No.	Question	Yes	No
1	There is adequate circulation space in the cafeteria?	✓	
	Tables allow easy wheelchair access and have a knee space of 750 mm under them?	✓	
	Hand wash area is accessible? • Not higher than 750mm above the floor level		✓
	All counters, buffet tables and vending machines should be placed at accessible height. Menus at the cafeteria are available in accessible formats: • Braille • Large Print • Audio • Available in Hindi& English		✓
	Staff is trained to assist students with disabilities.		✓
2	Can the drinking water facility be easily accessed by persons with disabilities?		✓

Signage (Chapter 10 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is there prominent visible signage using the international symbol of accessibility, identifying/advertising/signifying accessible entrance and exit, reserved car parking, presence of toilets for persons with disabilities, cloakrooms, and availability of special services?		✓
2	Does the signage size comply with not less than 60 mm for doors,110 mm for corridors and 200 mm for external use?	✓	
3	Are all visual signage in the facility provided with Braille and Tactile supplements?		✓
4	Wherever possible, are Audio signage provided along with Braille and Tactile signage?		✓
5	Are all Braille and tactile signage placed at between the height of 900 mm and 1500mm, with ideal location at 1050 mm above the finished floor level?		✓
6	Are all visual signage in the building using high colour contrast?	✓	
7	Are there both visual and auditory substitutes for public address systems and LED Display board information in the building?		✓

	The elevator door width is 900mm wide?		
	There is a visual and a n audio floor announcement system in the lift.		
	The elevator controls in the lift (including alarms /speakers/phones) are between 800mm to 1200mm. They have a good contrast and the buttons are self - illuminating, in raised numbers and Braille?		
	The elevator call buttons and floor numbers outside the lift on each floor are in Braille and Raised Lettering.		
	There are handrails on both the sidewalls and the rear wall of the lift car?		
	There is a landing 1500 mm x 1500mm in front of the lift?		

Corridors, Doors and Doorways (Chapter 6 and 7 of CPWD Handbook)

S.No.	Question	Yes	No
1	The corridor is minimally 1200mm wide?	✓	
	There is 1500 mm x 1500mm space to allow a wheelchair user to turn around at some point on the corridor?	✓	
	There is a colour contrast between the floor, walls, doors and the ceiling?	✓	
2	The clear width of the door is minimally 900 mm?	✓	
	There is adequate space available to open the door even by a wheelchair user?		✓

Accessible Toilet (Chapter 8 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is there an accessible cubicle with dimensions 1750 mm x 2200 mm in the ladies and gent's toilet block?	✓	
	The WC should be installed in a corner with centreline of the WC at a distance of 450mm to 500mm from the adjacent wall. The front edge of WC should project 750mm of from the rear wall.	✓	
	The seat height of the WC is 450mm?	✓	
	There is 800mm of clear transfer space next to the WC?	✓	
	There is clear knee space of at least 750mm height x 750mm width x 200mm depth under the wash basin, with additional toe -space of 300mm height x 750mm width x 230mm depth	✓	
	The floor -surface of the toilet is non -slippery?		✓
	There is a colour contrast between the floor, wall and sanitary fittings?		✓
	A horizontal grab bar is installed on the adjacent wall, at a height of 200mm from the WC seat?		✓
	All toilet accessories, soap dispensers, coat hooks are at accessible reach. In addition to accessible toilets, do the other toilets following Standardization of placement of utilities?	✓	

Stairs (Chapter 4 of CPWD Handbook)

S.No.	Question	Yes	No
1	Are the step risers 150 mm high and tread 300mm wide?	✓	
	Is there a colour contrasting strip at the edge of the steps?	✓	
	Do the stairs have handrails at two levels on both sides that are continuous on the landing?	✓	
	Do the handrails project beyond the end of the flight and curve back in accordance with section on handrails.	✓	
	Are there tactile warning tiles provided at the beginning and end of each flight?		✓
	Are steps uniform in width and height?		✓
	Handrails have been provided on both sides of the stairs?	✓	

Ramp (Chapter 2 of CPWD Handbook)

S.No.	Question	Yes	No
1	Is a ramp is provided as an alternate route to the stairs?	✓	
	Is the ramp gradient not steeper than 1:12. In case of higher height difference the gradient may be gentler	✓	
	Ramp width is not less than 1800mm	✓	
	Handrails have been provided on both sides of the ramp and are continuous on the landing.	✓	
	Landings have been provided at specified internals and at the beginning and end of the ramp.	✓	
	Tactile warning blocks have been installed 300mm from the top, bottom and landings of each ramp run in external environments.	✓	
	Do the ramps have tactile warning tiles at the beginning and end of each ramp run.		✓
	Handrails have been provided on both sides of the ramp?	✓	

Elevator/Lift (Chapter 13 of CPWD Handbook)

S.No.	Question	Yes	No
1	There exists an elevator that connects all floors of the building?		✓
2	If yes, it has-		
	Step free access from the entrance to the lift?		
	The elevator car has an internal space of 2000mm deep 1100 mm wide?		

	There is a difference in floor finish that is identifiable by blind users at the door entrance		✓
	The entrance has an audio signal		✓

Reception and Lobby (Chapter 6, 11 of CPWD Handbook)

S.No.	Questions	Yes	No
1	Is the reception counter identifiable from the entrance?		✓
	Is there 900mm wide and 1200mm deep clear space in front of the reception counter?		✓
	Is a part of the counter between 760 mm to 800mm from the floor with a 400mm to600mm clear recess under the counter?		✓
	Does the counter contrast in colour with the background wall and the floor?	✓	
	Is there accessible identification signage for the reception?		✓
	Is there accessible directional signage directing to various building facilities at the reception?	✓	
	Is there live assistance available at the counter to guide persons to their destination?		✓
	Can any of the staff members communicate in sign language?		✓
	The lobby is at one level with adequate manoeuvring space for wheelchair users.	✓	
	Is printed information available in accessible alternate formats?	✓	

Information and Communication

S.No.	Question	Yes	No
1	The website proving information about the building/service complies with web accessibility standards.	✓	
2	There is information detailing the accessible facilities in the building with photographs		✓
3	All publications/brochures are available is also available in alternate accessible formats such as: • Braille • Large Print • Audio • Available in Hindi& English	✓	
4	Staff members are trained in Indian Sign Language interpretation.		✓
5	Assistive technology such as Loop hearing systems, Audio orientation tools, interpretative videos or audio tours in with captioning or sign language, wheelchairs etc. are available	✓	