

**INFLUENCE OF BUILT ENVIRONMENT ACCESSIBILITY ON WORK
PERFORMANCE AMONG PERSONS WITH DISABILITIES: A CASE
OF MOI TEACHING AND REFERRAL HOSPITAL**

By

William Komen

**A RESEARCH PROJECT REPORT SUBMITTED TO THE UNIVERSITY OF
NAIROBI IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF MASTER OF ARTS IN PROJECT PLANNING AND
MANAGEMENT**

UNIVERSITY OF NAIROBI

2014

DECLARATION

I declare that this research project is my original work and that it has not been presented or submitted for an award of a degree in any institution of higher learning.

SIGN.....

WILLIAM KOMEN

DATE

L50/70426/2013

This research project for defense has been submitted for examination with my approval as a University Supervisor.

SIGN.....

JULIUS C. KORING'URA

DATE

LECTURER

DEPARTMENT OF EXTRA MURAL STUDIES

UNIVERSITY OF NAIROBI

DEDICATION

I dedicate this work to all Persons with Disabilities who struggle on daily basis to achieve independence in Activities of Daily Living.

ACKNOWLEDGEMENT

This research project could not have been feasible without the support of many valuable people whom I am indebted to. While it may not be possible to mention all of them and their individual and collective contribution here, I nevertheless have to mention but a few. I wish to particularly single out my supervisor Mr. Julius C. Koring'ura for his outstanding professional guidance and encouragement he accorded me throughout as I was writing this research project. He actually spared most of his precious time to attend to my work. May I also acknowledge the support I got from the management of Moi Teaching and Referral Hospital, Eldoret especially the Human Resource Department for providing me with a profile of staff members in the hospital who are Persons With Disabilities. Special thanks go to my Head of Department, Mr. Naphtali Yego for according me the necessary support I required during the period I was writing this research project. Many thanks go to my workmates and colleagues in the department of Occupational Therapy, MTRH for their understanding and encouragement as I was writing this research work. I also acknowledge the support and encouragement I received from the lecturers and non-teaching staff of The University of Nairobi, Eldoret Centre. I am very grateful to my entire family for their material and financial support and for being there for me during time of need. I am also grateful to both my course mates and social friends for their encouragement and moral support. Finally I thank the Almighty God for granting with good health.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	ii
LIST OF FIGURES	v
LIST OF TABLES	vi
ABBREVIATIONS	viii
ABSTRACT	ix
CHAPTER ONE	1
INTRODUCTION	1
1.1 BACKGROUND OF THE STUDY	1
1.2 STATEMENT OF THE PROBLEM	4
1.3 PURPOSE OF THE STUDY.....	6
1.4 RESEARCH OBJECTIVES.....	6
1.5 RESEARCH QUESTIONS.....	6
1.6 RESEARCH HYPOTHESES	7
1.7 SIGNIFICANCE OF THE STUDY.....	7
1.8 BASIC ASSUMPTIONS OF THE STUDY	8
1.9 LIMITATION OF THE STUDY	8
1.10 DELIMITATION OF THE STUDY.....	8
1.11 DEFINITION OF SIGNIFICANT TERMS	9
1.12 ORGANIZATION OF THE STUDY	9
CHAPTER TWO	10
LITERATURE REVIEW	10
2.1 INTRODUCTION	10
2.2 THE CONCEPT OF ACCESSIBILITY.	10
2.3 THE CONCEPT OF DISABILITY	13
2.4 THE BUILT ENVIRONMENT.....	16
2.5 Basic Design Considerations in Vertical, Horizontal and Visual Accessibility.	19
2.6 WORK, EMPLOYMENT AND PERFORMANCE OF PERSONS WITH DISABILITY	23

2.8 THEORETICAL FRAMEWORK	28
2.8.1 THE SOCIAL MODEL OF DISABILITY	28
2.8.2 THE CHARITY MODEL OF DISABILITY	31
2.8.3 THE MEDICAL MODEL OF DISABILITY	32
2.9 CONCEPTUAL FRAMEWORK	33
2.9 KNOWLEDGE GAP	36
CHAPTER THREE.....	37
RESEARCH METHODOLOGY	37
3.1 INTRODUCTION	37
3.2 RESEARCH DESIGN.....	37
3.3 TARGET POPULATION.....	37
3.4 SAMPLE SIZE AND SAMPLING TECHNIQUE	38
3.4.1 SAMPLE SIZE.....	38
3.4.2 SAMPLING TECHNIQUE.....	38
3.5 DATA COLLECTION INSTRUMENT.....	38
3.5.1 QUESTIONNAIRES	38
3.5.2 INTERVIEW SCHEDULES	39
3.6 PILOT TESTING OF THE DATA COLLECTION INSTRUMENT	39
3.7 VALIDITY OF THE RESEARCH INSTRUMENT	39
3.8 RELIABILITY OF THE RESEARCH INSTRUMENT.....	40
3.9 DATA COLLECTION PROCEDURE	40
3.10 DATA ANALYSIS TECHNIQUE.....	41
3.11 ETHICAL CONSIDERATIONS	41
3.12 OPERATIONAL DEFINITION OF VARIABLES.....	41
CHAPTER FOUR.....	45
DATA ANALYSIS, PRESENTATION AND INTERPRETATION.....	45
4.1 INTRODUCTION	45
4.2 QUESTIONNAIRE RETURN RATE	45
4.3 DEMOGRAPHIC INFORMATION.....	45
4.3.1 GENDER	45
4.3.2 AGE BRACKET OF THE RESPONDENTS	46
4.3.3 EDUCATION QUALIFICATION.....	46

4.3.4 NATURE OF DISABILITY	47
4.3.5 YEARS WORKED AT MTRH.....	47
4.4 VERTICAL ACCESSIBILITY.....	48
4.4.1 FEATURES OF THE RAMP.....	49
4.4.2 STAIRS AND ITS CHARACTERISTICS	52
4.5 VISUAL ACCESSIBILITY AND ITS CHARACTERISTICS	56
4.6 HORIZONTAL ACCESSIBILITY	61
4.6.1 DOOR ACCESSIBILITY	61
4.6.2 RECEPTION.....	63
4.6.3 WAITING AREA ACCESSIBILITY	65
4.6.4 CORRIDOR ACCESSIBILITY	67
4.6.5 PAVEMENT ACCESSIBILITY	69
4.6.6 RESERVED PARKING.....	71
4.6.7 COMMENTS FROM RESPONDENTS.....	74
4.7 WORK PERFORMANCE AND THE BUILT ENVIRONMENT.....	74
4.8 GOVERNMENT POLICY AND LEGISLATION ON BUILT ENVIRONMENT ACCESSIBILITY	76
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION	79
5.1 INTRODUCTION	79
5.2 DISCUSSIONS.....	79
5.2.1 EMPLOYMENT OF PERSONS WITH DISABILITY	79
5.2.2 LEVELS OF ACCESSIBILITY / USABILITY OF THE BUILT ENVIRONMENT.....	80
5.3 INFLUENCE OF VISUAL, VERTICAL AND HORIZONTAL ACCESSIBILITY ON WORK PERFORMANCE AMONG EMPLOYEES WITH DISABILITY.....	82
5.4 CONCLUSION.....	82
5.5 IMPLICATIONS AND POLICY RECOMMENDATIONS.....	82
5.6 SUGGESTIONS FOR FURTHER RESEARCH	83
REFERENCE.....	84
APPENDIX 1: INTRODUCTORY LETTER.....	90
APPENDIX II: QUESTIONNAIRE	91
APPENDIX III: INTERVIEW SCHEDULE	102
APPENDIX IV: LETTER OF INTRODUCTION.....	103
APPENDIX V: NACOSTI PERMIT	105

LIST OF FIGURES

Fig. 1. 1 Conceptual Framework 35

LIST OF TABLES

Table 3. 1 Operational Definition of Variables	42
Table 4.1 Respondent Gender.....	46
Table 4. 2 Respondent Age bracket	46
Table 4. 3 Respondent level of education.....	47
Table 4. 4 Nature of Disability	47
Table 4.5 Years worked at MTRH.....	48
Table 4. 6 Ramps are available in all multi-storey buildings	48
Table 4. 7 Slope of the ramp is gentle enough.....	49
Table 4. 8 Landings and surfaces at the ramp are wide enough	50
Table 4. 9 Hand rails are available in either side of the ramps.....	50
Table 4. 10 Ramp surfaces are not slippery and slip resistant	51
Table 4. 11 General comment on accessibility/ usability of the ramps	51
Table 4. 12 Stairs are available in all storeyed buildings	52
Table 4. 13 Stair Characteristics	54
Table 4. 14 Overall Vertical Accessibility * Rating of general work performance in relation to built environ Cross tabulation	55
Table 4. 15 Chi-Square Tests.....	56
Table 4. 16 Enough light in and around buildings.....	57
Table 4. 17 Visual accessibility parameters.....	58
Table 4. 18 General Visual Accessibility in and around the buildings.....	59
Table 4. 19 General visual accessibility in the building * Rating of general work performance in relation to built environment Cross tabulation	60
Table 4. 20 Chi-Square Tests.....	61
Table 4. 21 Rating the accessibility/ usability of the doors	63
Table 4. 22 Characteristic Doors	64
Table 4. 23 Rating the accessibility/ usability of reception desk / areas	65
Table 4. 24 Waiting area Characteristics	66
Table 4. 25 Rating the accessibility/ usability of waiting areas.....	67

Table 4. 26 Corridor Accessibility.....	68
Table 4. 27 Corridors in all the buildings are wide enough.....	69
Table 4. 28 Pavements are available in my work place.....	69
Table 4. 29 Staircase Characteristic.....	70
Table 4. 30 Rating the accessibility/ usability of pavements.....	71
Table 4. 31 There is reserved parking for persons with disabilities	71
Table 4. 32 Rating the accessibility/ usability of the parking reserved for persons with disability.....	72
Table 4. 33 Overall Horizontal * Rating of general work performance in relation to built environment Cross tabulation	73
Table 4. 34 Chi-Square Tests.....	73
Table 4. 35 Pavement Characteristics	75
Table 4. 36 Rating of general work performance in relation to built environment	76
Table 4. 37 Opinion of HODs and Disability mainstreaming committee.....	77

ABBREVIATIONS

ADA	American Disabilities Act
ADLs	Activities of Daily Living
EAC	East African Community
EC	European Commission
HOD	Head of Department
ILO	International Labor Organization
MTRH	Moi Teaching and Referral Hospital
PWD	Person With Disability
UK	United Kingdom
UN	United Nations

ABSTRACT

The purpose of this study was to establish the influence of built environment accessibility on work performance among persons with disabilities; A case of Moi Teaching and Referral Hospital in Uasin Gishu County, Kenya. The specific objectives of this study were: To determine the level of vertical accessibility and its influence on work performance among employees with disabilities; To determine the level of horizontal accessibility and its influence on work performance among employees with disabilities; To establish visual accessibility level and its influence on work performance among employees with disabilities and To explore government policy on the built environment and how it influences work performance among employees living with disabilities. The study adopted descriptive cross sectional research design. There are 50 employees with various disabilities at MTRH. Forty four respondents participated in the study. Questionnaires and interview schedules were utilized to collect primary data whereas books, journals and official documents were used to collect secondary data. Data was analyzed using Statistical Package for Social Sciences (SPSS). Tables were used to present the analyzed data. The study findings indicated that much is needed to be done in terms of the built environment accessibility to enable persons with disability to carry out their daily activities meaningfully and independently. The research findings further revealed the influence of visual, vertical and horizontal accessibility on work performance among employees with disability (Chi-square p-value < 0.01). Further, results indicate that the management of the institution is fully implementing government policies and legislations that relate to the built environment and persons with disabilities. The study recommends measures geared towards disability mainstreaming.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The World Health Organisation (2012) considers disability as ‘an umbrella term, covering impairments, activity limitations, and participation restrictions etc reflecting an interaction between features of a person’s body and features of the society in which they live’. Golledge (1993) argues that although the built environment can present barriers to everyone in society, these barriers are magnified for a disabled person. According to Imrie (1996), the impact of built environment barriers will depend upon the disability, however almost all disabled people will encounter some negative experiences when negotiating the public realm. Lewis (2011) is of the view that poor planning has played a major role in contributing to the obstacles faced by disabled people. This view is supported by Peel and Posas (2009) who highlight the lack of consideration given to disabled people’s needs in planning policies and implementation. This is further corroborated by Barnes (1991) when he argues that institutional discrimination against disabled people is never more obvious than in the restrictions placed on mobility and access by a poorly designed built environment. He notes, there is nothing about listed buildings, and structures are still being erected which are not accessible to people with impairments in their upper limbs or with non visible impairments. He concludes thus "For the foreseeable future the majority of disabled people will still not be able to go where able bodied people go".

Mosey (1986) defined environment as the aggregate of phenomena that surround a person and influence that person’s development and existence. Environment includes non-human factors, such as physical conditions, things and ideas, and human components such as individuals and groups. Foster (1997) notes, ‘in environmental terms, disability is

seen as inability to negotiate what is, in effect, a purpose-built environment created to meet the needs of the ultimate stereotype modular manmade, able-bodied, and independent individuals'. He sees such environments as problematic in restricting independence and negating any sense and concept of equal opportunity.

In emphasizing the need for accessible built environment for all, Morris (1998) argues that "All human life is of value; that every one, whatever the impairment, is capable of exerting choices; that people who are disabled by society's reaction to physical, intellectual and sensory impairment and to emotional distress have the right to exert control over their lives; that disabled people have the right to participate in society". According to Royal College of Physicians of London (1998), equality of access depends on the physical environment as well as on communication. All parts of a building and the approach to it should be accessible to every disabled person. For a hospital this includes transport facilities, car parking and signage as well as buildings and furniture. Disabled employees are few in number, but they are in the hospital each working day for months or years. They have a legal right to expect nondiscriminatory employment practices, and to expect that all preventable barriers to communication and access be withdrawn. This statement seem to be supported by Hahn (1994) who argues that many of the rights that individuals with disabilities have fought are rights to be allowed equal access to physical places such as schools, work places, libraries, government offices, and commercial establishments.

Article 9 of The UN Convention On The Rights Of Persons With Disabilities states that; To enable persons with disabilities to live independently and participate fully in all aspects of life, State Parties shall take appropriate measures to ensure that persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and

communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas (Marianne Schulze, 2010).

East African Community (2012) policy on persons with disabilities with regard to Accessibility to physical facilities and services underscore the fact that PWDs are adversely affected by the conventional design of infrastructure and many social amenities and facilities and services. In this regard, the policy states that EAC shall, through this policy ensure that the following interventions are taken: Promote development/establishment of disability user-friendly facilities and infrastructure including education, health, judiciary, transport including air transport; Promote the use of sign language, Braille, tactile at EAC level including EAC conferences.

According to National Coordinating Agency for Population and Development (NCAPD) and Kenya National Bureau of Statistics (Nov.2008), there are 7 million PWDs in Kenya as per the Kenya National Disability Survey of 2008. The PWDs are disproportionately represented among the poor and tend to be poorer than their counterparts without disabilities. Kenya was the 27th Country to ratify the Convention on the Rights of Persons with Disabilities (CRPD) on the 19th May, 2008; The Constitution of Kenya, 2010 provides a firm foundation for policy and legislation on disability in accordance with the universal standards for the promotion and protection of fundamental human rights and freedom for PWDs. Article 21 of persons with disabilities Act (2004) states that Persons with disabilities are entitled to a barrier-free and disability friendly environment to enable them to have access to buildings, roads and other social amenities, and assistive devices and other equipment to promote their mobility. Article 22(1) of the Act states that a proprietor of a public building shall adapt it to suit persons with disabilities in such manner as may be specified by the National Council for Persons with Disabilities. Article 24 of the Act focuses on adjustment orders

and states that if the National Council for Persons with Disabilities considers that any premises, services or amenities are inaccessible to persons with disabilities by reason of any structural, physical, administrative or other impediment to such access, it may serve the proprietor with adjustment orders to make necessary adjustments or adaptations (The Persons with Disabilities Act, 2003).

Moi Teaching and Referral Hospital was started in 1917 as a cottage hospital that had a bed capacity of 60 to cater for the African health needs. Currently the hospital boasts of a bed capacity of over 800. It is the second National Referral Hospital in Kenya after Kenyatta National Hospital (KNH). The Hospital is located along Nandi Road in Eldoret town (310 kilometers Northwest of Nairobi the capital city of Kenya), Uasin Gishu County, in the North Rift region of Western Kenya. The MTRH serves a total population of 16.24 million people mainly drawn from the following regions; Nyanza (5.39 million), North Rift (5.50 million) and Western Province (5.35 million).

1.2 Statement of the Problem

An accessible built environment can facilitate greater inclusion and participation and is recognised as a core element for the realisation of a society based on equal rights as it provides people with independence and the means to pursue an active social and economic life (EC Expert Group on Accessibility, 2003). This is in contrast to the arguments of Imrie and Kumar (1998) that the built environment tends to perpetuate the conception that disabled people are different and 'unable' by restricting their possibilities for access and mobility. To them, streets are obstacle courses which prevent easy movement while most buildings have steps into them which act as effective barrier against wheelchair users.

To deal with physical barriers in the workplace, ILO Code of Practice (2001) on Managing Disability in the Workplace recommends that workplace accessibility should

include: the provision of accessible toilets and washrooms; appropriate signage to take account of those with visual or hearing impairments; accessible workplace instructions; electronic equipment that can be used by disabled people and a plan to ensure that disabled people can be safely evacuated in the event of an emergency. The new European Disability Strategy 2010–2020, states that accessibility is a precondition for participation in society and in the economy (European Commission, 2010). To Kerbler (2012), the new EU strategy is certainly most welcome but, its continued focus on accessibility shows that, despite longstanding commitments to achieving barrier-free access, the right of people with disabilities to an accessible built environment is still not ensured. To him, guaranteeing accessibility is an area where more progress still needs to be made. Laws have been adopted, strategic documents formulated and international conventions ratified, but the level of practical implementation has remained low. Regulations and standards, where these exist, are not properly and consistently implemented and enforced. Consequently, there has not been much improvement at the levels concerned.

According to the Kenya National Survey for Persons with Disabilities (KNSPWD) (2007), 15% of PWDs are likely to be affected by environmental factors on a daily basis and 3% on a weekly basis. 65% of PWDs regard the environment as a major problem in their daily lives. The report recommends that there is need to develop policies that target infrastructure to be disability friendly to PWDs. The report also underscores the need to integrate and mainstream issues affecting PWDs in all national policies and programs. It is against the backdrop of these findings that necessitates the need to establish the influence of built environment accessibility on work performance of Persons with Disabilities. This study therefore sought to determine the influence of built environment

accessibility on work performance of People with Disabilities: The Case of Moi Teaching and Referral Hospital, Uasin Gishu County.

1.3 Purpose of the Study

The purpose of this study was to establish the influence of built environment accessibility on work performance among Persons Living with Disabilities, the case of Moi Teaching and Referral Hospital, Uasin Gishu County, Kenya.

1.4 Research Objectives

1. To establish the level of vertical accessibility of the built environment and its influence on work performance among employees with disabilities.
2. To establish the level of horizontal accessibility of the built environment and its influence on work performance among employees with disabilities.
3. To establish visual accessibility level of the built environment and its influence on work performance among employees with disabilities.
4. To explore government policy on the built environment and how it influences work performance among employees living with disabilities.

1.5 Research Questions

1. To what level does vertical accessibility of the built environment influence work performance among employees with disabilities?
2. How does horizontal accessibility level of the built environment influence work performance among employees with disabilities?
3. To what extent does visual accessibility of the built environment influence work performance among employees with disabilities?
4. To what extent does government policy on the built environment accessibility influence work performance among employee with disabilities?

1.6 Research Hypotheses

Ho:- There is no relationship between vertical accessibility of the built environment and work performance among employees with disabilities.

Ho:- There is no relationship between horizontal accessibility of the built environment and work performance among employees with disabilities

Ho:- There is no relationship between visual accessibility of the built environment and work performance among employees with disabilities

1.7 Significance of the Study

The efficiency and independence of PWDs in work performance depend largely on accessible and disability friendly built environment within which actual work take place. This implies that the work environment must be accessible and disability friendly as much as possible so that it meets the requirements of individual PWD. Equally, accessible and disability friendly built environment is critical as it promotes independence of PWDs in areas of activities of Daily Living (ADLs). This ensures that PWDs are not dependent on other people. Accessible and disability friendly built environment will enhance work productivity of PWDs.

This study therefore sought to establish the influence of built environment accessibility level and it's influence on work performance among PWDs. This will in turn inform the setting of policies and regulations that will ensure structural features or elements of buildings and other related built environment are disability friendly. It also sought to bring to the fore elements which are pertinent in ensuring that built environment is accessible and disability friendly to all members of the society. It also sought to establish a framework that will guide institutions in ensuring that upcoming buildings are disability friendly and existing ones are modified to conform to the set

rules and regulations that govern public establishments as far as the built environment is concerned.

1.8 Basic Assumptions of the Study

This study assumed that the respondents were a true representation of the target population. It also assumed that the study was carried out within stipulated timeframe and budget. The study also assumed that target respondents responded positively during the data collection process.

1.9 Limitation of the Study

Hesitation of respondents to participate was considered as a limitation in this study. To mitigate on this limitation and to ensure respondents gave relevant information without fear, the researcher secured an introductory letter from the university in order to assure respondents that information given was strictly for academic purposes. The researcher used questionnaires to collect data, which as a data collection tool has its limitations. Questionnaires collect data that is quantitative in nature and have the demerit of depriving the respondents of opportunities to express their attitudes, behaviors and feelings in relation to the objectives of the study. This will limit respondent choice. To address this limitation, the researcher in addition to closed ended questions incorporated open ended questions and interview schedule that gave the respondents an opportunity to express their attitudes, feelings and behavior in relation to the objectives of the study.

1.10 Delimitation of the Study

This study focused on influence of built environment accessibility level on work performance among PWDs. It focused on the case of MTRH situated in Uasin Gishu County, Kenya. It also confined itself to PWDs in gainful employment.

1.11 Definition of Significant Terms

In this study the following terms are contextualized to mean what is stated against each term.

Access route- Any route in a surrounding that is available and understandable for a person to use.

Accessibility- Is the extent to which a given surrounding for instance the built environment is available for use to as many people as possible.

Barriers- Obstacles in the environment that prevent people from free movement and participation in activity performance.

Building -Any structure that accommodates facilities to which people have access to.

Built environment- All structures, buildings and spaces that are man- made and meant to serve a certain purpose.

Designated car parking- Parking spaces reserved for persons with disabilities.

Disability- Anything that make an individual unable to use part or parts of their bodies.

Discrimination -Treating people who are different in an unfair, biased or prejudicial way.

Pavement- Section of a roadway that is used by walking individuals and at times wheel chair users.

1.12 Organization of the Study

This research project is organized into the following chapters: In introduction of the study, literature review and research methodology.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature that is related and relevant to this study by other researchers. Specifically focused was the concept of accessibility, built environment, disability, Basic Design Considerations in Vertical, Horizontal and Visual Accessibility, work and employment of persons with disability, theoretical framework, social model of disability, charity model of disability, medical model of disability, conceptual framework and knowledge gap.

2.2 The concept of Accessibility.

Accessibility is defined as the opportunity for an individual at any given location to take part in a particular activity or set of activities (Jones, 1981). An accessible built environment has been recognised as a core element for the realisation of a society based on equal rights as it provides citizens with autonomy and the means to pursue an active social and economic life (EC Expert Group on Accessibility, 2003). Lack of access can exclude people with disabilities, or make them dependent on others (Meyers et al, 1982). According to Finklestein (1972), it was not ‘the individual’s disability but the barrier in the environment’ that was making things go wrong. This view held by Finklestein is further supported by Barnes’ (1991) argument that the physical environment has been constructed without reference to the needs of disabled people.

Guy further argues that the commercially driven developer market has in the past had little interest in the final use value of the building and therefore little drive to implement provisions for access (Guy, 1998). Douglas (2006) is of the view that discrimination and bias do exist within disability circles when he argues that while inclusive design should encompass all disabilities, the wheelchair user is still

categorised as the main disabled user, and therefore individuals with sensory and visual impairments are continually overlooked by those designing accessible environments. To him, inclusive design seeks to provide a 'barrier free environment'. Ensuring inclusive access is a mainstream concern throughout the built environment industry and involves breaking down stereotypes, realigning value systems and accepting the social model of disability which acknowledges disabled people are excluded and disadvantaged by physical barriers as well as by social behaviour and attitudes. An inclusive society has no social or environmental barriers to equality of access and everyone has the opportunity to contribute and participate in everyday activities (Shakespeare and Watson, 2002; Barnes and Mercer, 2005).

Environmental accessibility plays a considerable role in development: an estimated 25per cent of the world's population can benefit from environmental accessibility measures and progressive removal of barriers to their full and effective participation in social life and development. A recent study by the World Health Organization, in collaboration with the World Bank Group, estimated that as at 2010 there are more than one billion persons (approximately 15 per cent of the global population) living with disabilities. The DDA outlines four options for improving access to physical features. These are: removing the physical feature; altering the feature; providing a reasonable means of avoiding it; and providing the service by a reasonable alternative method (DDA 2002). This view is in tandem with (Ferneeuw's(2005) argument that today accessibility for all is recognized as a basic necessity and there are attempts all over the world to ensure this. Barrier-free features are now becoming fundamental to all design concepts. Barriers make an environment unsafe and cause a high level of difficulty to the user. But more importantly, barriers cause space to be out of reach, denying people the opportunity of participation in various spheres of

life. This ranges from education, economic, social, and cultural and may be other activities. This loss of opportunity is not only a loss for the person concerned but also society's loss, which misses out on their contribution. Simply put, a barrier causes exclusion and its removal is necessary for ensuring inclusion and participation of all in society.

According to Americans with Disabilities Act (1990) access to the built environment for people with disabilities is required as a civil right. As with implementing other civil rights legislation, although the principle of equal treatment is clear, the regulations and standards intended to help realize the ideal do not provide the details needed to resolve problems in the built environment. Practical applied solutions come from knowledge, and shared knowledge of accessibility comes from interactions among people with disabilities, healthcare providers, designers and planners, and other building professionals. Representatives of these different sectors of our society are beginning to pool their knowledge to invent built environments that meet the legal regulations, best use the skills of designers and the building industry, and provide access for consumers with disabilities. Too often, however, attempts to meet accessibility regulations have resulted in a profound lack of fit between the ideals of an accessible built environment and what is actually built for use by persons with and without disabilities.

Fougeyrollas and Gray (1998) argue that the traditional notions of disability are being challenged by recent developments in social policy, research findings, and even in some areas of design. For instance, they argue that people with disabilities have formed an influential sociopolitical group whose members consider much of the built environment to be a barrier to their participation in activities. They have attacked these barriers to inclusion as other disadvantaged groups in society have challenged

discrimination based on race or gender. Disability advocates have been a major force in having legislation passed that eliminates these barriers (Hahn, 1985, 1988; Zola, 1989). The premise is that the effects of many disabling conditions can be alleviated primarily through the adoption of public laws and policies that require all buildings to be made accessible (Mace et al., 1991).

Bickenbach et al., (1999) argue that accessibility is a universal requirement that benefits all members of society including the ‘temporarily able bodied’. Failure by Governments, social institutions, commercial organizations etc. to deliver an accessible built environment stems from assumptions of an extremely narrow range of human variation at odds with that of any ‘normal’ population.

In Charlton (1999), one disabled commentator reports that structural inaccessibility (lack of ramps, curb cuts, elevators) for example, is endemic throughout the so called ‘developing’ countries. Steinfield (2006) for example notes that the notion of universal design implies that there is a single universally acceptable solution to all design problems. To him, such an assertion is both ‘utopian and simplistic’. It is also unachievable due to ethnic and cultural divisions within and across nation states as well as the diverse needs of different impairment specific groups. Gossett et al. (2009) for instance argue that in terms of compatibility, whilst bright lighting may be a suitable accommodation for people with certain visual impairments, it can pose significant problems for people with epilepsy or seizure disorders.

2.3 The Concept of Disability

A consensus has developed that disability is a complex phenomenon, at least in part socially constructed, and in any event not in any straightforward sense a discrete attribute of a person. Disability, most researchers now agree, is a collection of outcomes

of social and other environmental interactions with mental and physical health conditions (WHO, 2001).

According to WHO (2011) global estimates suggest that the incidence of impairments in all societies is increasing and that as many as one billion people (15%) of the world's population, are disabled. While estimates of disability prevalence rates may be quite unreliable, there does seem to be a general consensus that these rates will increase in the future. This notion is backed by Thomas (2005) when he points out that increasing life expectancy means that more people will acquire impairments that are associated with ageing. He further points out that development interventions and advances in health care provision are likely to bring about better survival rates for disabled children. The WHO predicts a huge increase in the numbers of people dependent on daily care in the first half of this century, including a 120% increase in India and a 257% increase in Sub-Saharan Africa (Harwood et al, 2004).

In recent years, the concentration on the functional deficits and problems of the individual alone as a basis for understanding and managing disability has been systematically and robustly challenged. 'Disability' has evolved to become not simply a personal attribute but a complex collection of conditions, activities and relationships, many of which are created by the social environment. It is also viewed as a "process" emphasising the importance of the gap between individual capacity and environmental demands and the role of intra-individual factors such as personality, and extra-individual factors such as the built environment (Verbrugge and Jette, 1994).

Disability is about the systematic exclusion of disabled people from everyday life. Examples include the inability of schools and colleges to accommodate the needs of disabled children, discrimination against disabled workers in employment, a disability benefit system which does not cover the cost of living with impairment,

housing, transport, public buildings and information systems which take no or little account of the needs of disabled people, and a culture which, in a variety of ways, denies the very existence of impairment and the experience of disability (Barnes, 1991; Oliver, 1990; Zarb, 1995). Disability nowadays is considered as a social rather than a medical issue (Goldsmith, 1997; Holmes-Siedle, 1996), because it is seen as the outcome of interaction between persons with impairments and a non-inclusive society (United Nations, 2006).

Globally, PWDs are often marginalized and face difficulties as a result of their disability. Most have no access to education, health, employment or rehabilitation. The majority experience hardships as a result of widespread social cultural and economic prejudices, stigmatization, abuse and violence. Attitudes and practices embedded in cultural beliefs, taboos and religion create obstacles to the participation of PWDs in both social and cultural activities. Global awareness created during the 1981 International Year for Disabled Persons (IYDP) expanded social participation and equality for disabled persons. This was followed by the 1982–1992 UN Decade for Persons with Disabilities. To ensure the decade had desired impact, a comprehensive document, the World Programme of Action Concerning Disabled Persons, was developed and adopted through a UN resolution in 1982. The document provided guidelines on effective measures for the realization of full participation of PWDs in social life, development and equality (Africa Union of the Blind, 2007).

Disability is defined in Article 260 of the Constitution of Kenya (2010) as including physical, sensory, mental, psychological or other impairment that affects a person's "ability to carry out ordinary day-to-day activities". According to The Kenya National Survey for Persons with Disabilities (KNSPWD)(2007), the prevalence of disability in Kenya is 4.6%.w The prevalence is highest in Nyanza (7 %), followed by

Coast (5%) and Central (5%) provinces. It is lowest in North Eastern (3%), Rift Valley (3%) and Western (3%). The most prevalent forms of disability are visual (30%) and physical (30%), followed by hearing (12%) and mental (11%). Visual disability is highest in Nairobi (53%), followed by Coast (35%) and Eastern (30%). More females (55%) than males (45%) experience visual difficulties. Physical impairment is highest in Central (39%), followed by Western (34%), Nyanza (31%) and Rift Valley (30%). Most disabilities were caused by diseases (19%) congenital disorders (14%) and accidents (12%).

2.4 The Built Environment.

The built environment encompasses all buildings, spaces and products that are created or modified by people. It includes structures such as buildings, houses, schools, playgrounds, streets or sidewalks that have been designed and constructed by people (Shalinsky, 1986). Buildings are used for many functions including employment, education, accommodation, business, entertainment and recreation. According to NHS Confederation (2003), well designed hospitals take into consideration patient and staff requirements can have a positive impact on patient outcomes, staff performance and staff and patient safety.

Fearn (1993) argue that there is only one environment which all individuals should be able to share equally and independently. In order to achieve equality of access, this environment either has to be designed from the outset for maximum flexibility to meet varying needs, or adapted and used in ways that achieve that flexibility.

Kent (2005) argues that in order for the built environment to be fully inclusive it should not solely be available to those who are disabled, but anyone. Gray et al (2003) argue that in creating built environments to mitigate disabilities, design practitioners,

landscape architects, city transportation planners, developers and contractors, and many others need to be recognized as important players. For instance, if the goal is to develop environments that best reduce activity restrictions for people with physical and cognitive differences, built environment professionals may benefit from discussing building plans with people who are mobility impaired. The process requires a successful interchange between intermediate consumers (such as builders) and end-user consumers (such as people with disabilities) before construction begins. Such integration of knowledge and interests should result in buildings that serve a broad spectrum of the public, meet government mandates, are economically feasible, avoid costly retrofitting, and allow for creative design.

To demonstrate the need for stakeholder involvement, Imrie (2000) argues that contemporary infrastructures are now viewed by disabled people and their organisations as a visible example of societal neglect of disability issues, and the result of architects and designers 'complete denial of bodily diversity and difference'. The growing emphasis on an inclusive approach to make the internal and external features of the physical and cultural environment accessible to disabled people has resulted in the elevation of debates about the importance of accessibility and generation of accessibility and universal design.

De Jong et al. (2002) posits that the physical environment impedes access to services in a number of ways not just the entry to premises in the first instance as has been found previously. According to Centre for Universal Design (2011), universally designed products and environments are based on the following seven principles: Equitable use (The design is useful and marketable to people with diverse abilities); Flexible in use (The design accommodates a wide range of individual preferences and abilities); Simple and Intuitive (Use of the design is easy to understand, regardless of

the user's experience, knowledge, language skills, or current concentration level); Perceptible Information (The design communicates necessary information effectively to the user, regardless of their sensory abilities); Tolerance for Error (The design reduces hazards and adverse consequences of accidents); Low Physical Effort (The design allows efficient usage with minimum effort); and Size and Space for Approach and Use (Appropriate space is provided to enable comfortable and effective use for anyone regardless of physical and sensory ability).

To show the serious need of an accessible built environment, Baris et al. (2009) argue that there are very few people who remain able-bodied and healthy all their lives. It is, therefore, important that the built environment, which includes public buildings, are made barrier-free by appropriately designing, constructing and maintaining them to meet the needs of all users equally. Wylde and others are in agreement with Baris when they report that as many as 9 out of 10 of individuals may be architecturally disabled in some way or other at some time in their lives (Wylde, et al., 1994).The need for making the built environment barrier-free is so important that Morrow, cited by Peel, et al. (2009), advances five arguments for its implementation. These are: a moral argument that access to the environment is a basic human right and that there is a moral obligation to tackle the barriers and obstacles to creating and sustaining an inclusive environment; a sustainability argument that adaptable and flexible buildings and environments are better able to accommodate the changing needs of society and individuals; a professional argument to operate within an equal opportunities framework as required in professional codes of conduct; an economic argument that excluding individuals from the workplace and/or market, and costly post-hoc design solutions do not make business sense, and legal arguments enshrined in statutory instruments.

2.5 Basic Design Considerations in Vertical, Horizontal and Visual Accessibility

In the long term, perhaps one of the best ways of promoting a barrier-free built environment is to take account of the needs of disabled people when designing new infrastructure projects. As Berman-Bieler (2010) points out, the additional costs of making infrastructure fully accessible to all are thought to be less than one per cent at the design stage, as compared with the far greater cost of making alterations or renovations at a later stage. Attention to designing in features that benefit everyone, and especially disabled people, can pay dividends without costing more. For example, non-slip floors in lobby areas, clear signage incorporating Braille and possibly audio instructions, and the intelligent choice of paint and colour contrast in decoration schemes, can make a huge difference to visually impaired people in finding their way about. From society's viewpoint, there may also be additional savings which accrue within the public sector; for instance through mitigating the costs of social care and support services (Heywood, 2001; Heywood and Turner, 2007). Inclusive access and sustainability are therefore complementary because of their potential to reduce whole life costs and improve building performance.

Ferneeuw (2005) argue that for PWDs to access the built environment, certain fundamental needs should be met. For wheelchair users the main problems are about moving and working from a sitting position; thus many requirements are associated with the dimensions and other aspects of wheelchairs. Considerable energy is required to propel a wheelchair manually up ramps, over changes in level or over soft or uneven surfaces. Thresholds and changes in level should be avoided. Ground and floor surface should be hard, even and slip resistant. For wheelchair access to tables, workbenches or washbasins, a clear space for knees and footrests is needed. For walking aids users to move securely, ground and floor surfaces should be even and slip resistant. Handrails

should be provided on stairs and ramps. Resting places should be provided along travel routes. For people with impaired vision, orientation can be eased by the use of contrasted colors and changes in texture of the floor material.

Design and plan arrangements should be simple. Contrasting colors and warning blocks, change in texture should be used to aid the identification of doors, stairs, steps, ramps, pedestrian crossings, etc. The path of travel should be easy to detect by a sightless person using a long white cane. To minimize the risk of hazards, obstacles, protruding elements and low overhanging signs have to be avoided in the pathway. Hazards should be emphasized by means of illumination, contrasted colors and materials and projection on the ground for protruding elements. People with impaired vision have difficulty reading signs and printed information. Blind people are restricted to tactile reading. The main information has to be translated in Braille and visual information should be doubled with audible information, for example, in airport, lifts and buses. People who are hearing impaired have difficulty in understanding words and sounds in noisy environments. Rooms should be acoustically insulated. Supplementary visual information should be provided for example in airport and buses and for the use of lifts, alarms, bells.

To facilitate the recruitment of persons with disabilities and job retention by workers who acquire a disability, employers should take steps to improve the accessibility of the work premises to people with different types of disability. This should include consideration of entrance to and movement around the premises and of toilet and washroom facilities. Accessibility should also be understood to include signage in use, manuals, workplace instructions and electronic information. These should be reviewed, where necessary, for accessibility to people with visual impairment and for people with intellectual disability in particular. Accessibility for people with

hearing impairment includes access to information frequently conveyed by sound – such as the ringing of a bell, a fire alarm, whistle or siren. Such facilities should be reviewed and complemented, where necessary, with alternative devices such as flashing lights. In planning to improve accessibility, employers should consult with the disabled worker and with specialist technical advisory services, which might include organizations of persons with disabilities, and refer to any criteria established by the competent authorities. Emergency planning should ensure that persons with disabilities are able to safely and effectively evacuate the workplace to an area of safety (ILO, 2001).

According to Thorpe (2003) the principal entrance of any building should not only be usable by everyone, but must always be identifiable within the building façade. This is to allow views into the building for reassurance. Goldsmith (1976) observes that to the disabled persons, public lavatories are the most important of all public buildings in the built-environment since their absence could induce crisis. Attention to designing in features that benefit everyone, and especially disabled people, can pay dividends without costing more. For example, non-slip floors in lobby areas, clear signage incorporating Braille and possibly audio instructions, and the intelligent choice of paint and colour contrast in decoration schemes, can make a huge difference to visually impaired people in finding their way about. Inclusive access and sustainability are therefore complementary because of their potential to reduce whole life costs and improve building performance.

In Slovenia a study carried by Kerbler (2012) on public facilities accessibility showed that none of the public facilities analyzed were completely free of barriers. The findings showed that for physically impaired persons, the most common barriers were identified as a lack of parking spaces for people for disabilities and their unauthorized occupancy, high curbs and sidewalks that are not reduced to ground level at road

intersections, inadequate road infrastructure (such as paved areas, grates for drainage, sewer covers, etc.), stairs, missing ramps or ramps that are too steep or too long and do not require safe access, heavy entrance doors and other heavy doors in the buildings, thresholds that are too high, elevators often out of order, lack of handles or rails, narrow doors and narrow passageways/corridors, information desks and other equipment too high (e.g., parking meters, switches, information boards, computer information points, ticket machines, etc.), and inadequately equipped or inaccessible toilets for people in wheelchairs or their absence.

For sensory impaired persons, inadequate information systems are the greatest hindrance. Blind and partially sighted people drew attention to unreadable inscriptions, the absence of labels (e.g., tactile markings; contrasting markings on windows, stairs and dangerous edges; signage in Braille, etc.), no acoustic signals (e.g., verbal warnings and announcements, etc.), poor lighting of rooms, drain gratings with gaps so wide that blind persons' sticks can become stuck in them, barriers on walking paths (such as advertising boards, flower pots, parked bicycles, etc.). For hearing impaired persons, particularly serious barriers are the lack or absence of interpreters, lack of lighting signals (such as lighting displays), poor sound systems and an absence of induction coils/loops, and tinted windows or improperly installed information panels (e.g., reflection of light on the glass surfaces is too high on the information desk window, which does not allow lip reading).

In Ghana, Danso, A. K. et al. (2012) carried out a study whose findings revealed that most of the building elements were barring and not disability-friendly: there were obstructions on access routes to and around buildings, absence of designated car parks, and unfriendly vertical and horizontal means of circulation in buildings and

lack of accessible sanitary accommodations. In addition, the general lighting and signage were poor.

2.6 Work, Employment and Performance of Persons with Disability

According to Jacobs (1991), work includes all forms of productive activity, regardless of whether they are reimbursed. There are two elements that constitute the concept of work: work behaviors and work skills, aptitudes and physical capacities. Work behaviors also known as prevocational readiness are those behaviors that are necessary for successful participation in a job or independent living e.g. motivation, attendance, punctuality and responsibility. They are antecedents to specific work skill. Work skills, aptitudes and physical demands are required to perform the tasks of an actual job. Physical demands are factors defined in the selected characteristics of occupations defined in the dictionary of occupational titles (US Department of Labor,1991).These demands include; standing, walking, lifting, pushing, carrying, climbing, balancing, stooping, kneeling, reaching, and talking (US Department of Labor,1979).

Even if successful in finding a job, a disabled person may be disadvantaged by a workplace not designed to meet his or her needs, or be denied opportunities for career development (Arthur and Zarb, 1995). Colin (1992) pointed out that when disabled person do find work, the majority find themselves in poorly paid, low skilled, low status jobs which are both unrewarding and undemanding termed as "secondary sector jobs within the modern labour market. According to Mourad (2009), employment plays an important role in everyone's life since it presents a route for one's social inclusion and is a source for gaining the necessary financial resources needed for one's wellbeing.

In most parts of the world, the employment rate of persons with disabilities is much less in comparison to the non-disabled, and the situation is worse in developing

countries. For example in the US in 2004, only 35% of persons with disabilities reported being employed full-time or part-time, compared to 78% of those without disabilities (Harris and Associates, 2004). In South Africa only 19% of people with disabilities are employed, compared to 35% of the total population (ILO information Sheet, 2011).

Adaptations may be required to the workstation to enable the worker with a disability to perform the job effectively. In planning adaptations, employers should consult with the disabled worker involved and with worker representatives. Similarly, adaptations may be required to tools and equipment to facilitate optimal job performance. These, too, should be planned in consultation with the disabled worker, and worker representatives. For some workers with disabilities, it may be necessary to review the job description and make changes – for example by deleting a part of the job which the person is unable to perform and replacing this with another task or tasks. Flexibility of work schedules can be a significant factor in enabling some individuals with disabilities to perform a job satisfactorily. This should be considered, once again in consultation with the workers concerned and their representatives. Performance requirements may need to be reviewed, in consultation with the disabled workers and their representatives, particularly at an early stage after recruitment, or after an existing employee has acquired a disability (ILO, 2001).

In Article 27 the United Nations Convention on the Rights of Persons with Disabilities (CRPD) recognizes the right of persons with disabilities to work, on an equal basis with others; this includes the opportunity to gain a living by work freely chosen or accepted in a labour market and work environment that is open, inclusive and accessible to persons with disabilities (Metz, 2008). According to the ILO, the unemployment rate of persons with disabilities in some developing countries can reach

as high as 80 per cent or more. The World Bank in 2000 estimated that due to the exclusion of persons with disabilities from mainstream society, the total loss to the gross domestic product was between US \$1.37 trillion to US \$1.94 trillion worldwide (Khor, 2002). According to The

Kenya National Survey for Persons with Disabilities (KNSPWD) (2007) 16% of PWDs worked for pay, 33% worked on own family business and 24% did not work. PWDs residing in urban areas are more advantaged in accessing employment opportunities (26%) compared with their rural counterparts (9%).

2.7 Government Policy and Legislation on Built Environment Accessibility

Despite the various attempts in terms of legislation and the design of statutory building instruments, the built environment of many countries has remained largely inaccessible (Imrie, 2002). To Imrie, this situation is explained by the fact that the statutory and legal provisions underpinning the construction of barrier-free environments are feeble or absent in most countries.

Gray et al (2003) argue that in creating built environments to mitigate disabilities, design practitioners, landscape architects, city transportation planners, developers and contractors, and many others need to be recognized as important players. For instance, if the goal is to develop environments that best reduce activity restrictions for people with physical and cognitive differences, built environment professionals may benefit from discussing building plans with people who are mobility impaired. The process requires a successful interchange between intermediate consumers (such as builders) and end-user consumers (such as people with disabilities) before construction begins. Such integration of knowledge and interests should result in buildings that serve a broad spectrum of the public, meet government mandates, are economically feasible, avoid costly retrofitting, and allow for creative design.

To demonstrate the need for stakeholder involvement, Fougeyrollas and Gray (1998) argue that the traditional notions of disability are being challenged by recent developments in social policy, research findings, and even in some areas of design. For instance, they argue that people with disabilities have formed an influential sociopolitical group whose members consider much of the built environment to be a barrier to their participation in activities. They have attacked these barriers to inclusion as other disadvantaged groups in society have challenged discrimination based on race or gender. Disability advocates have been a major force in having legislation passed that eliminates these barriers. The premise is that the effects of many disabling conditions can be alleviated primarily through the adoption of public laws and policies that require all buildings to be made accessible (Mace et al., 1991).

In response to the unique needs facing people with disabilities, 1981 was designated as the United Nations' Year of the Disabled Persons with the aim of sensitizing and directing the attention of the member states to the plight of disabled people. In 1982, all member states unanimously adopted the World Plan of Action aimed at making the physical environment accessible to all including persons with various types of disabilities. This was in recognition of the fact that the situation of the disabled persons should, as Weiss puts it, "be improved mainly by the adaptation of society and not necessarily through measures related to individuals. It is therefore the built environment that ought to adapt to peoples' possibilities of using it (Weiss, 1984).

In order to achieve the above objectives, it is important to develop programs and strategies that will eliminate all design barriers that tend to limit the degree of integration and independence of those with disabilities. This can be achieved through amending the Building Codes and Regulations to incorporate accessibility in the design

and construction of the built environment and adapting the existing buildings to the special needs of persons with disabilities.

The Housing Act (2009) of Kenya makes it mandatory for the availability of adequate housing with adequate space, privacy, safety, lighting, ventilation, basic and social infrastructural services and free from environmental hazards. Where a building is one to which persons with disability have, or may reasonably be expected to have access, that building shall be designed in such a manner as will facilitate the access to, and use of, that building and its facilities by persons with disability. The Act states that access shall be provided from a point or points on the plot boundary to at least one entrance and to a lift complying with Regulation. Such access shall be free from steps, kerbs, steep ramps, doors or doorways which would impede the passage of a wheelchair or other form of barrier which would prevent access by the persons with disability. Where car parking is provided, such car parking space shall be accessible from the said entrance and lift.

The Persons with Disabilities Act (2003) makes it an offence for any employer to discriminate against a person with a disability in relation to special facilities or modifications, whether physical, administrative or otherwise, that are required at the work place to accommodate the person with a disability. An employer shall provide such facilities and effect such modifications, whether physical, administrative or otherwise, in the workplace as may reasonably be required to accommodate persons with disabilities. The Act also stipulates that Persons with disabilities are entitled to a barrier-free and disability-friendly environment to enable them to have access to buildings, roads and other social amenities, and assistive devices and other equipment to promote their mobility. To this effect, the Act makes it a mandatory that a proprietor of

a public building shall adapt it to suit persons with disabilities in such manner as may be specified by National Council for Persons with Disabilities.

2.8 Theoretical Framework

The World Bank (2008) describes models of disability as mechanisms to “conceptualize and compare different ways of thinking and talking about disability and certain analytical frameworks or mindsets”. Bernell (2003) observed that the definition of what constitutes disability is very much grounded in the theoretical or conceptual framework in which it is based, and that the strengths and weaknesses of the particular framework or model has a significant impact on disability policy.

There are various models that are commonly used to understand the concept of disability. Some prominent ones include; the social model, the medical model and the charity model. This study adopted the social model as it sought to establish the influence of the built environment accessibility on work performance of persons with disabilities.

2.8.1 The Social Model of disability

The social model arose in response to the critique of the medical model of disability. It has generated a caucus of academic writing, predominantly written by academics and activists who themselves have disabilities and is the total antithesis to the medical model. The primary focus of analysis is the manner in which the social model shifts away from consideration of the deficits of the functional, physiological and cognitive abilities of the impaired individual, to the ability of society to systematically oppress and discriminate against disabled people, and the negative social attitudes encountered by disabled people throughout their everyday lives. Disability is therefore situated in the wider, external environment, and is not explicable as a consequence of an individual’s physical and/or cognitive deficiencies. Thus, in focusing upon the manner

in which disability is socially produced, the social model gives precedence to the importance to politics, empowerment, citizenship and choice. Furthermore, disability is the result of society's failure to provide adequate and appropriate services. Consequently, the needs of disabled people are not adequately accounted for within the contemporary social organization of society. It is perceived in attitudinal terms-as a socio-cultural rather than a biological construct (Lang, 2007).

The social model marked the 1970s and 1980s. It emerged as a result of a political movement led by people with disabilities to destabilize and deconstruct the medical model of disability. It was a response to the medicalization of disability and its profound negative effects on the self-identity of many people with disabilities, and the negative attitudes created as a result of the charity and medical models. The aim was to create positive attitudes about people with disabilities by people with disabilities, their families, and especially society as a whole. This was to be achieved by creating a better understanding of the rights of people with disabilities and the imperative to overcome the economic, social, and environmental barriers that affect the ability of people with disabilities to participate and engage in community life like other citizens. Terminology mattered, leading to the identification of "people with disability" and "people/persons with disabilities" as the most appropriate terms. The emergence of the social model made room for considering issues of abuse, negligence, isolation, and marginalization in the lives of disabled women, children, and men by shifting the focus away from the disabling condition as presented in the medical and charity models to the environment as a disabling element (Hans and Patri, 2003).

The social model of disability is based on a distinction between the terms "impairment" and "disability." Impairment is used to refer to the actual attributes (or lack of attributes), the abnormality, of a person, whether in terms of limbs, organs or

mechanisms, including psychological. Disability is used to refer to the restrictions caused by society when it does not give equivalent attention and accommodation to the needs of individuals with impairments (Pam et al., 2012).

According to Morris (2000), the social model of disability gives us the words to describe our inequality. It separates out (disabling barriers) from impairment (not being able to walk or see or having difficulty learning) as it separates disabling barriers and impairments and enables us to focus on exactly what it is which denies us our human and civil rights and what action needs to be taken. Oliver (1981) argue, 'This new paradigm involves nothing more or less fundamental than a switch away from focusing on the physical limitations of particular individuals to the way the physical and social environment impose limitations upon certain categories of people'. According to Beresford (2002), the social model approach to disability sees the problem as society's barriers, rather than the person's condition, allows disabled people to lift the blame from their shoulders and place it squarely onto societies. This model of disability empowers disabled people to challenge society to remove those barriers.

A fundamental aspect of the social model concerns equality. The struggle for equality is often compared to the struggles of other socially marginalized groups. Equal rights are said to give empowerment and the "ability" to make decisions and the opportunity to live life to the fullest. A related phrase often used by disability rights campaigners, as with other social activism, is "Nothing about us without us"(James and Charlton, 2000). The Social Model of disability advocates for a change in society's values and practices in order to remove the barriers to participation that truly discriminate against disabled people. It is clear that this is possible and is starting to happen, e.g. changing steps into ramps, providing information in Braille or other formats, valuing different learning styles. The understanding and acceptance of the

social model of disability by non-disabled people builds a community of allies that speeds the progress of attitudinal change. This in turn will have a positive impact on creating a barrier-free society that will gain the full benefit of the talents and contributions of all its citizens, and in which disabled people will take their rightful place in education, the workforce and all aspects of community life. Removing barriers for disabled people usually benefits everyone (e.g. ramps may be used by porters and those with pushchairs, wheeled suitcases, etc.).

2.8.2 The Charity Model of disability

The charity model was the principal paradigm up to World War II and is the philanthropic and charitable approach to disability that provided medical treatment, community aid, and safekeeping for those described as being “less fortunate” and “defective.” This model portrays disability as a personal tragedy with people with disabilities being objects of pity and referred to as “crippled,” “crazy” or “idiot.” A common fund-raising strategy for disability projects was to portray people with disabilities as those who needed “help,” “care,” and “protection” from people without disability. This entrenched society’s view of people with disabilities as dependent. In addition, people with disabilities were sometimes portrayed as being dangerous and weird, creating fear and unease toward them. This led to the belief that some people with disabilities needed to be hidden from society or institutionalized for the “good and protection of society.” It also promoted the perception that people with disabilities do not have the capacity to become equal members of society or the capacity to contribute economically and socially to their community’s development. Therefore, many people with disabilities were institutionalized “for their own good” (Barnes and Mercer 2003).

The Charity Model casts the disabled person forever in the “poor unfortunate” role. It emphasizes and encourages dependence on others rather than independence –

one might say it is a form of “killing with kindness” since if this is taken to extremes the disabled person may lose those life skills they had and become increasingly dependent. The disabled person is represented as “brave” and “admirable” solely because they live with their impairment, an object of pity and the focus of attempts to extort money from others in order to address the person’s extensive and expensive needs. There is little or no recognition of the potential for independence or of the role of the disabled person in selecting the services they need or want.

2.8.3 The Medical Model of Disability

Our society often considers disability to be a tragedy for the individual and a burden for the family and society. This is based on the ‘medical model’ of disability. This model focuses on the lack of physical, sensory or mental functioning, and uses a clinical way of describing an individual’s disability. There are certain ‘norms’ in development and in functioning against which the person is judged – the focus is on what they cannot do, rather than what they can do. This model leads to a dehumanising view, where only the nature and our society often considers disability to be a tragedy for the individual and a burden for the family and society. This is based on the ‘medical model’ of disability. This model focuses on the lack of physical, sensory or mental functioning, and uses a clinical way of describing an individual’s disability. There are certain ‘norms’ in development and in functioning against which the person is judged – the focus is on what they cannot do, rather than what they can do.

This model leads to a dehumanising view, where only the nature and severity of the impairment is important, together with the extent to which the difference can be put right or minimised. This model defines and categorises disabled people by their impairment, and it casts the individual person as “the victim” or “the problem”. Severity of the impairment is important, together with the extent to which the difference can be

put right or minimised. This model defines and categorises disabled people by their impairment, and it casts the individual person as “the victim” or “the problem”. Many disabled people have rejected this model. They say it has led to their low self esteem, undeveloped life skills, poor education and consequent high unemployment levels. Above all, they have recognised that the medical model results in the breaking of natural relationships with their families, communities and society as a whole.

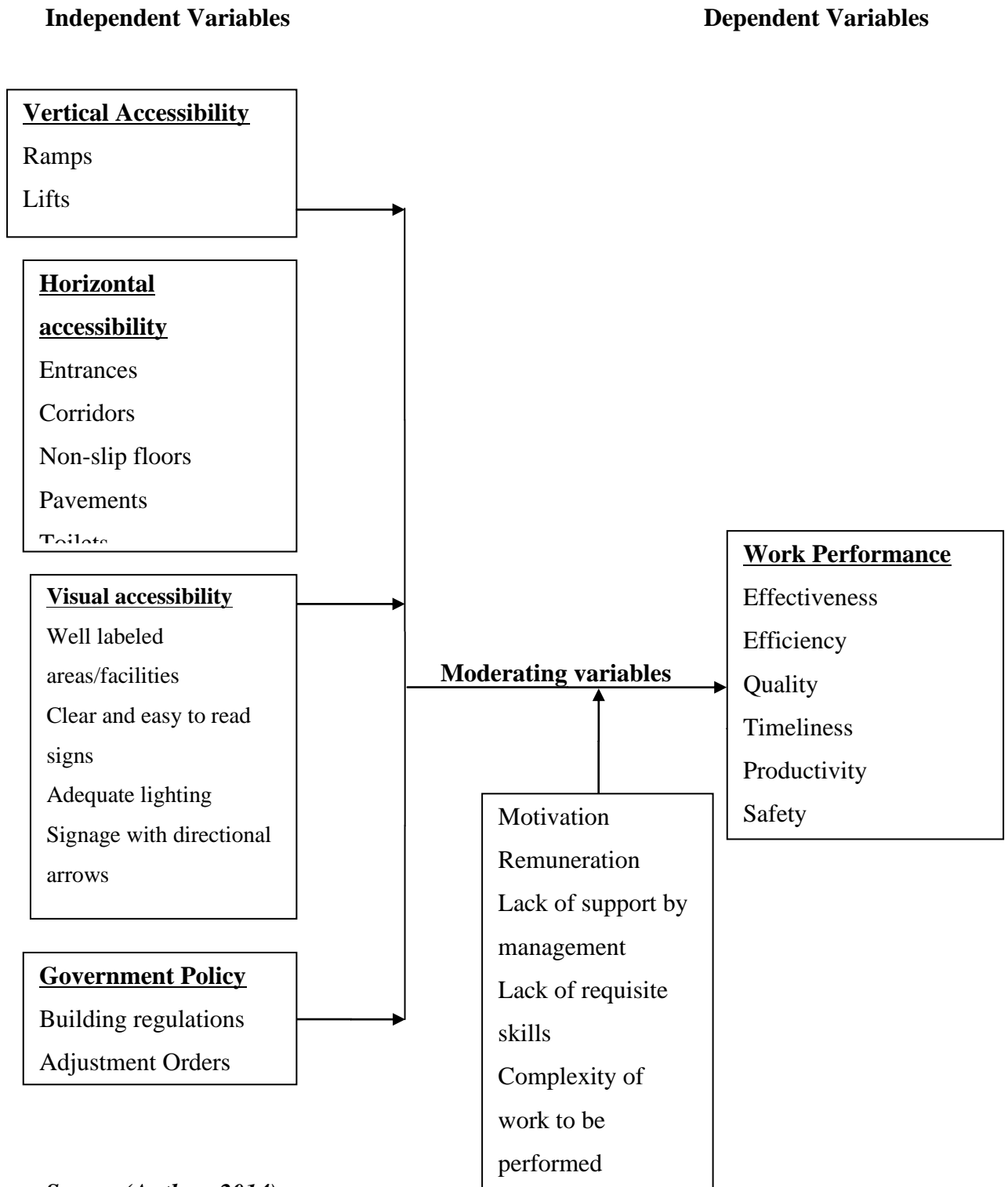
Hubbard (2004) notes that medical model “denotes a medical cause that stresses a causal relationship between the origins and outcomes of disability”. She also notes that under this model a medical determination becomes a prerequisite for being considered disabled and the individual is basically assigned the role of being ‘sick’. Smart and Smart (2006) state that a major strength of this model lays in its explanatory power, and its use of the language of medicine lending scientific credibility to the idea that disabilities are wholly an individual experience”. Lutz and Bowers (2003) note that the medical model is a linear process that begins with the aetiology of the ‘disease’ followed by its pathology and subsequent manifestation. Hence the model focuses on the ‘disease’ process itself, by finding a cure and returning the patient to a ‘normal’ or at least former level of functioning.

2.9 Conceptual Framework

The level of accessibility of the built environment influence work performance of employees, either living with a disability or able bodied. This study aims to shed light on the influence of built environment accessibility on work performance of persons living with disabilities by focusing on the following independent variable: Vertical accessibility (Ramps, Lifts and Stairs) of the built environment; Visual accessibility (Well labeled areas/facilities, Clear and easy to read signs, Adequate lighting and Signage with directional arrows) of the built environment; Horizontal accessibility (

Entrances, Corridors, Non-slip floors, Pavements, Toilets, Doors and Parking Lots) of the built environment and government policy and legislation (building regulations and adjustment orders) on the built environment. The dependent variable in this study is Work performance (Effectiveness, Efficiency, Quality, Timeliness, Productivity and Safety). Accessible built environment will positively influence work performance of individual employee as evidenced by their Effectiveness, Efficiency, Quality, Timeliness, Productivity and Safety. This will be more so if the independent variable will not be influenced by any intervening variable. The inter linkage between the independent variables and the dependent variable is illustrated in the conceptual framework below.

Fig. 1. 1 Conceptual Framework



Source (Author, 2014)

2.9 Knowledge Gap

The reviewed literature discussed above has in great length focused on the built environment, persons with disabilities in relation to the built environment, rights of persons with disabilities to gain access to the built environment and policy documents on persons with disabilities and accessibility issues. However, none of the above reviewed studies have addressed the issue of the influence of built environment on work performance of persons with disabilities. This created a dearth gap that this study tried to fill.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covered the following areas; Research design, target population, sample size and sampling technique, data collection instrument, piloting of the data collection instrument, validity of the instrument, reliability of the data collection instrument, data collection procedure, data analysis technique, ethical considerations and operational definition of variables.

3.2 Research Design

According to Orodho (2003) research design is a scheme, outline or plan that is used to generate answers to research problems. This study will adopt descriptive cross sectional research design. Descriptive research study is a study that describes the variables in a situation of interest. To Creswell (2000), descriptive method of research is used to gather information about the present existing condition. Mugenda and Mugenda (2003) argue that descriptive research design determines and reports the way things are. Cross-sectional surveys are primarily used to gather information concerning individuals' opinions, beliefs, perceptions, or practices (Creswell, 2008).

3.3 Target Population

Mugenda and Mugenda (2003) define population as an entire group of individuals, events or objects with some observable characteristics. The target population in this study was about fifty (50) registered employees With Disabilities working at The Moi Teaching and Referral Hospital situated in Uasin Gishu County, Kenya.

3.4 Sample Size and Sampling Technique

Orodho and Kombo (2003) define sampling as the procedure a researcher uses to gather people, places or things to study. It is the process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group.

3.4.1 Sample Size

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985). According to available information at Human Resource office, there are fifty (50) registered employees with various disabilities working in MTRH. Due to the small number of the target population, this study will adopt the census sampling technique. According to Orodho (2003), small samples can form samples and can be studied as distinct cases. Mugenda and Mugenda (2003) state that when the census is small there is no point of sampling if time and resources allow as this increases reliability.

3.4.2 Sampling Technique

Due to the small number of the target population, this study adopted the census sampling technique. In this method the entire population is taken when data is being collected.

3.5 Data Collection Instrument

3.5.1 Questionnaires

Both closed and open-ended self-administered questionnaires were used to gather primary data. Self-administered questionnaires are free of bias since they are respondent-only and they increase the rate of response (Kothari, 2004). Mugenda and Mugenda (1999) state that, questionnaires are typically used to determine the current status or situation or to estimate the distribution of characteristics in a population. Secondary data was obtained from

text books, journals and relevant documents. The study employed a five-point Likert scale to rate the various responses. Respondents were required to read, understand and mark (x) against appropriate choice they made.

3.5.2 Interview Schedules

The Interview schedules were used to capture the facts, views and opinions of the head of departments, members of disability mainstreaming committee. The researcher assured them of the confidentiality of the answers given. Using an interview guide, the researcher asked questions to the respondents and noted down their answers given. The information that the researcher hopes to collect from the interview schedules are the plans the institution have in effecting structural adjustment of existing buildings and in cooperating designs friendly to PWDs in upcoming structures.

3.6 Pilot Testing of the Data Collection Instrument

In this study the researcher conducted a pilot test of the data collection instrument where five (5) Persons with Disabilities working at Uasin Gishu District Hospital were provided with questionnaires to fill. This sample was believed to possess similar characteristics as they were in gainful employment, were persons with disabilities and perform their occupations in a built environment.

3.7 Validity of the Research Instrument

Validity is concerned with the meaningfulness of research components. For instance when researchers measure behaviours, they are concerned with whether they are measuring what they intended to measure. (Bollen, 1989). In this study, external validity was used. According to Cook and Campell (1979), external validity of a study or relationship implies generalising to other persons, settings, and times. Generalising to well-explained target populations should be clearly differentiated from generalising across populations. Each is

truly relevant to external validity: the former is critical in determining whether any research objectives which specified populations have been met, and the latter is crucial in determining which different populations have been affected by a treatment to assess how far one can generalize.

3.8 Reliability of the Research instrument

Reliability is concerned with precision and accuracy. For research to be reliable, it must show that if carried out on a similar group of respondents in a similar context, similar results would be found. According to Bollen (1989), reliability is the extent to which measurements are repeatable when different persons perform the measurements, on different occasions, under different conditions, with supposedly alternative instruments which measure the same thing. In sum, reliability is consistency of measurement. Its stability of measurement over a variety of conditions in which basically the same results should be obtained (Nunnally, 1978).

To measure reliability, this study utilized Test-retest reliability approach. Test-retest reliability refers to the temporal stability of a test from one measurement session to another. The procedure involved administering the test to a group of respondents and then administering the same test to the same respondents at a later date. The correlation between scores on the identical tests given at different times operationally defines its test-retest reliability.

3.9 Data Collection Procedure

After a pilot study was conducted and reliability of the data collection instrument ascertained, actual data collection was done. Respondents were asked to read through the questionnaire and seek clarifications on areas they do not understand. They were then asked to fill the questionnaires which were collected on agreed place, time and day. Respondents were guided in filling the questionnaires where need was and questions and clarifications

addressed. On the interview schedule, an interview was arranged in a selected place and time. Respondents were guided during the interview process and their responses recorded.

3.10 Data Analysis Technique

Completed questionnaires were edited for completeness and consistency before responses were processed. The data was then coded to enable the responses to be grouped into various categories. Ordinal scale was used in data measurement and both inferential and descriptive statistics were used to analyze the data. SPSS was used to describe the data. Chi Square was used to assess the relationship between built environment accessibility and its influence on work performance of people with disabilities. Tables were used to present findings of the analyzed data.

3.11 Ethical Considerations

In this study, respondent's right to confidentiality will be highly respected and anonymity strongly adhered to. The respondents will be fully informed about the aims of the study and their consent to participate in the survey will be obtained and recorded. Other ethical issues that pertain human subjects like participant right to participate and to terminate participation midway will be explained to the participants.

3.12 Operational Definition of Variables

To achieve the purpose of the study the researcher investigated the influence of the built environment accessibility on work performance of PWDs working at MTRH. The objectives of this study were; To establish the level of vertical accessibility of the built environment and its influence on work performance among employees with disabilities; To establish the level of horizontal accessibility of the built environment and its influence on work performance among employees with disabilities; and To establish visual accessibility level of the built environment and its influence on work performance among employees with

disabilities. To achieve these objectives questionnaires with various sections were used where each section had specific questions for each objective. The operational definition of variables is summarized in the table below.

Table 3. 1 Operational Definition of Variables

Objective	Variables	Indicators	Measurement scale	Tools of analysis	Types of tools
To establish the level of vertical accessibility of the built environment and its influence on work performance among employees with disabilities.	<u>Independent</u>	Availability of accessible Ramps, Lifts and Stairs	Ordinal	Descriptive statistics, Tables	Tables
	<u>Dependent</u>	Work Performance	Effectiveness, Efficiency, Quality, Timeliness, Productivity and Safety		

To establish the level of horizontal accessibility of the built environment and its influence on work performance among employees with disabilities.	<u>Independent</u>	Availability of accessible Entrances, Corridors, Non-slip floors,	Ordinal	Descriptive statistics, Tables	Tables
	<u>Dependent</u>	Work performance Pavements, Toilets, Doors and Parking Lots Effectiveness, Efficiency, Quality, Timeliness, Productivity and Safety	Ordinal		

<p>To establish visual accessibility level of the built environment and its influence on work performance among employees with disabilities.</p>	<p><u>Independent</u> Level of Visual accessibility of the built environment</p>	<p>Well labeled areas/facilities, Clear and easy to read signs, Adequate lighting and Signage with directional arrows)</p>	<p>Ordinal</p>	<p>Descriptive statistics, Tables.</p>	<p>Tables.</p>
	<p><u>Dependent</u> Work performance</p>	<p>Effectiveness, Efficiency, Quality, Timeliness, Productivity and Safety</p>			

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings of the research from the field data collected. The respondents that participated in the study are also highlighted here. They comprise persons with disabilities in formal gainful employment.

4.2 Questionnaire Return Rate

Out of a targeted sample of 55 PWDs, 50 questionnaires were returned giving a percentage rate of 91.0%. A total of 6 (0.1%) questionnaires were discarded as a result of non response, being improperly filled or incompleteness. The researcher ended up with 44 usable questionnaires which represent a response rate of 80.0%. This shows a high response rate for the questionnaires distributed. This was consistent with most studies with large sample sizes given that almost any procedure for handling missing values was expected to yield similar results (Saunders et al., 2007).

4.3 Demographic Information

4.3.1 Gender

Other than gender, other demographic information sought from the respondents who participated in the study include respondent; age bracket, educational levels, nature of disability and number of years worked at MTRH. As seen in table 4.1, by gender the respondents who participated in this study were 50% male and 50% female.

Table 4.1 Respondent Gender

Gender	Frequency	Percent
Male	22	50.0
Female	22	50.0
Total	44	100.0

4.3.2 Age bracket of the respondents

In terms of respondent age bracket, the age category with the highest frequency was 36-40 years (27.3 %) followed closely by 31-35 years (22.7 %). Other distributions are as follows; 26-30 years (15.9%), 21-25 years and 41-45 years brackets at (13.6%), 46-50 (4.5%) and 51-55years (2.3%). This can be taken to mean that PWDs who are in gainful employment at MTRH are of relatively young age. Table 4.2 below shows these research findings.

Table 4. 2 Respondent Age bracket

Age category	Frequency	Percent
21-25	6	13.6
26-30	7	15.9
31-35	10	22.7
36-40	12	27.3
41-45	6	13.6
46-50	2	4.5
51-55	1	2.3
Total	44	100.0

4.3.3 Education Qualification

The qualifications held by the respondents ranged from primary education to post graduate qualification in the following order; primary (6.8%), secondary (20.5), certificate

(36.4%), Diploma (25.5%), Degree (2.3%) and PhD (4.5%). This shows that majority of the employees possess tertiary education and that they are hired based on their earned academic qualifications. Table 4.3 below gives a summary of these findings.

Table 4. 3 Respondent level of education

Level of education	Frequency	Percent
Primary	3	6.8
Secondary	9	20.5
Certificate	16	36.4
Diploma	11	25.0
Degree	2	4.5
Masters	1	2.3
PhD	2	4.5
Total	44	100.0

4.3.4 Nature of Disability

Respondents reported nature of disability as tabulated below; Visual (11.4%).Physical (86%) and others (2.3%).This shows that majority of the PWD employees have physical disabilities as shown in table 4.4 below.

Table 4. 4 Nature of Disability

Disability	Frequency	Percent
Visual	5	11.4
Physical	38	86.4
Others	1	2.3
Total	44	100.0

4.3.5 Years worked at MTRH

The findings revealed that majority (36.4%) of the respondents have between 1-5 years working at MRTH, followed by those with 6-10 and 11-15 at years (25.0%) of service. Those with less than 2 years in service were only 2 (4.5%). This implies that majority of the

respondents have been in the service of MTRH for fairly longer period. Table 4.5 below gives a summary of these findings.

Table 4.5 Years worked at MTRH

Years worked	Frequency	Percent
<1	2	4.5
1-5	16	36.4
6-10	11	25.0
11-15	11	25.0
16-20	2	4.5
>20	2	4.5
Total	44	100.0

4.4 Vertical Accessibility

The respondents were asked to state whether ramps were available in their multi-storey buildings. Availability of ramps are important for vertical accessibility since PWDs are able to propel a wheelchair manually up ramps. A significant proportion (97.7%) of the respondent agreed that the ramps are available (table 4.6).

Table 4. 6 Ramps are available in all multi-storey buildings

Response	Frequency	Percent
No	1	2.3
Yes	43	97.7
Total	44	100.0

4.4.1 Features of the ramp.

The ramps require considerable energy over changes in level or over soft or uneven surfaces. And therefore its availability is not enough alone. Features like gentleness are important to lessen energy used by PWDs especially, those using wheel chairs. The study undertook to get more information on the ramps pertaining to its surfaces, slope and so on. The study findings indicted that the orientation of the ramp was important since less sloppy ramps are manageable than steep ramps. The majority (61.4%) of the respondents agreed that ramps were gentle and thereby managed by the disabled. A further 20.5% strongly agreed that the number who strongly agreed were 20.5%.

Table 4. 7 Slope of the ramp is gentle enough

Response	Frequency	Percent
Disagree	6	13.6
Undecided	2	4.5
Agree	27	61.4
Strongly Agree	9	20.5
Total	44	100.0

This supports the fact that the ramps are gentle enough to be used by the PWDs and other users. Similarly, the landings and surfaces at the ramp are reasonably wide enough (86.3%), with those agreeing to the landing and surface being wide at 63.6% and those strongly agreeing at 22.7% (table 4.8).

Table 4. 8 Landings and surfaces at the ramp are wide enough

Response	Frequency	Percent
Strongly Disagree	2	4.5
Disagree	3	6.8
Undecided	1	2.3
Agree	28	63.6
Strongly Agree	10	22.7
Total	44	100.0

This implies that the movement along the ramps poses no danger to the users. The research findings indicated existence and non existence of handrails on the sides of the available ramps. 38.6% and 31.8% of the respondents strongly disagreed and disagreed respectively that hand rails are missing (Table 4.9). This implies that the institution should ensure that hand rails should be installed on either side of ramps that they miss.

Table 4. 9 Hand rails are available in either side of the ramps

Response	Frequency	Percent
Strongly Disagree	17	38.6
Disagree	14	31.8
Undecided	2	4.5
Agree	8	18.2
Strongly Agree	3	6.8
Total	44	100.0

On availability of hand rails on both sides, the respondents indicated that the rails are fairly available on both sides of the ramp. On general texture of the surface of the ramps, 5% of respondents reported that they are not slippery and are slip-resistant (table 4.10).

Table 4. 10 Ramp surfaces are not slippery and slip resistant

Response	Frequency	Percent
Strongly Disagree	2	4.5
Disagree	1	2.3
Undecided	3	6.8
Agree	33	75.0
Strongly Agree	5	11.4
Total	44	100.0

On the general usability of the ramps, the research findings indicated that the accessibility/ usability of the ramps is either average or good (table 4.5), since the number of respondents that said it was average and good were 40.9% and 34.1 respectively (table 4.11).

Table 4. 11 General comment on accessibility/ usability of the ramps

Response	Frequency	Percent
Poor	2	4.5
Average	18	40.9
Good	15	34.1
Very good	4	9.1
Excellent	5	11.3
Total	44	100.0

4.4.2 Stairs and its characteristics

The stairs were better installed than the ramps. The respondents agreed that the stairs were available on all the storey buildings. Indeed all the respondents (100%) agreed that the stairs are available in all the buildings (table 4.12).

Table 4. 12 Stairs are available in all storeyed buildings

Response	Frequency	Percent
No	0	0
Yes	0	100.0
Total	44	100.0

In terms of the uniformity of the stair cases, a significant proportion of the respondents (97.7%) either agreed or strongly agreed that the stairs were of uniform orientation (table 4.13). The same sentiments were shared by the respondents on whether landings are available in all the stairs. The landings were available with 75.0% and 22.7% strongly agreeing and agreeing respectively. Regarding the width of the stair case, to allow two-way traffic, the research findings indicated conformity because 77.3% of the respondents indicated that they agree or strongly agree. On whether hand rails are provided for in either side of the stairs, 38% of respondents agreed and 13.6% strongly agreed. Respondent opinion was divided on whether stair ways are well illuminated. Respondents were required to rate the accessibility/ usability of the stairway(s) and the results of the finding revealed that close to 60% of the respondents gave an affirmative agreement on it as seen in table 4.13.

The respondents were also asked to give general comments on the accessibility/usability of the stairway(s) in their place of work. The respondents suggested

that there is need to provide rails which are evenly distributed on the ramps. They further indicated that some stairs are small and hidden and hence not accessible. They lamented that the stairs are occasionally blocked when cleaning is in progress. The study results also affirmed the unavailability of lifts in the building. Perhaps this was part of the initial architectural design of the building since the story is only up to 2nd floor (see table 4.13).

Table 4. 13 Stair Characteristics

Staircase Characteristic	Response						Total
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree		
Staircase uniformity	N	1	0	0	28	15	44
	%	2.3	0	0	63.6	34.1	100
Landings are available in all the stairs	N	1	0	0	33	10	44
	%	2.3	0	0	75	22.7	100
Stair way is wide enough to allow two-way traffic	N	3	4	3	22	12	44
	%	6.8	9.1	6.8	50	27.3	100
Hand rails are provided in either side of the stair way	N	6	10	5	17	6	44
	%	13.6	22.7	11.4	38.6	13.6	100
Stairs are well illuminated	N	11	11	3	15	4	44
	%	25	25	6.8	34.1	9.1	100
Rating the accessibility/ usability of the stairway(s)	N	1	10	3	26	4	44
	%	2.3	22.7	6.8	59.1	9.1	100

The study sought to establish if there was any effect or influence of the vertical accessibility on the performance of duties by the respondents. This was done by using Chi square test of independence. The independent variable was the vertical accessibility of the built environment while the dependent factor was the performance of work by the PWD employees. In order to determine the association between them, the respondents were asked to respond to numbers to questionnaire items on characteristic of the item on a 1-5 point-likert scale, where 5-denoted Strongly Agree, 4-denoted Agree, 3-denoted Undecided, 2-denoted Disagree and 1-denoted Strongly Disagree which connotes their performance of duties and the general score of the of the vertical accessibility of the built environment. The results were coded and analyzed by conducting a chi-square test of independence. The table below gives a cross tabulation of the two variables.

Table 4. 14 Overall Vertical Accessibility * Rating of general work performance in relation to built environ Cross tabulation

Count		Rating of general work performance in relation to built environment					Total
		Poor	Average	Good	V. good	Excell.	
Overall	Agree	2	5	0	0	0	7
Vertical	Undecided	3	12	2	1	0	18
Accessibility	Agree	0	8	4	1	1	14
	Strongly Agree	0	1	3	0	0	4
Total		5	26	9	2	1	43

Chi-square calculations from the cross tabulation table yields the chi square statistic (table 4.15) together with the p-value at 12 degrees of freedom.

Findings in table 4.15 reveals that there is a significant association between the vertical accessibility of the built environments and the performance of duties by employees with disability. This is shown by the fact that a chi-square test of independence of variables returned calculated Chi-square (χ^2) values greater than the critical value (χ^2). The findings imply that the performance of the duties by the respondents is not affected by the built environment. Consequently there are adequate built environments to ensure

Table 4. 15 Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.399 ^a	12	.174
Likelihood Ratio	18.167	12	.111
Linear-by-Linear Association	8.127	1	.004
No of Valid Cases	43		

This implies that to ensure vertical accessibility benefits all users, adjustments need be introduced in identified components of the built environment.

4.5 Visual accessibility and its characteristics

The built environment encompasses all buildings, spaces and products that are created or modified by people. It includes structures such as buildings, houses, schools, playgrounds, streets or sidewalks that have been designed and constructed by people (Shalinsky, 1986). One of the objectives of the study was to establish the influence of visual accessibility of the built environment on work performance among PWDs. Two aspects that were important here were the lighting of the building that enhances visibility and the collection of all conventional and international designs that aids visibility of PWDs on the other hand. The study findings

indicated that the buildings have enough light in and around them. This is clear since the respondents that agree and strongly agreed were cumulatively 68.1% as seen in table 4.6 below.

Table 4. 16 Enough light in and around buildings

Response	Frequency	Percent
Strongly Agree	2	4.5
Agree	28	63.6
Undecided	1	2.3
Disagree	8	18.2
Strongly agree	5	11.4
Total	44	100.0

On the other hand, other parameters of visual accessibility such as signage, size of symbols/letters, posters and bill boards, international symbols and information panels were investigated. The respondents were asked to indicate, on a five-point likert scale on each of the stated parameters of visual accessibility. The research findings indicated the size and symbols were not large enough and noticeable by persons with disability (table 4.7).

Posters and the bill boards are not strategically located in the buildings. A record 69.5% of the respondents disagreed that the posters and bill boards are placed strategically in and around buildings. Other visual accessibility parameters were also scrutinized and generally they were not friendly to PWDs. They include the fact that information panels are not fully strategically located. To confirm this 47.7% of the respondents disagreed and 15.9% of them strongly agreed. On the other hand international symbols of disability like the wheel chair are not fairly displayed, since those who agreed comprised half (50%) and the rest half disagreed. This is shown in table 4.17 below.

Table 4. 17 Visual accessibility parameters

Visual accessibility Characteristic	Response						Total
	Frequency/Percentage	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Size and symbols/letters are large and noticeable by persons with disability	N	4	15	5	17	3	44
	%	9.1	34.1	11.4	38.6	6.8	100
Posters and billboards are strategically located	N	3	5	6	29	1	44
	%	6.8	11.4	13.6	65.9	2.3	100
Information panels are strategically located	N	5	5	6	21	7	44
	%	11.4	11.4	13.6	47.7	15.9	100
International symbols of disability are well displayed	N	10	7	5	14	8	44
	%	22.7	15.9	11.4	31.8	18.2	100
Total							

Generally, the General visual accessibility in the building is average, though by all standards they are not disability friendly. The proportion of respondents who responded that the visual accessibility was average was 40.9%. This was followed by those who said the visual accessibility was good (36.4%) and those who indicated that it was poor (36.4%). See table 4.18 below.

Table 4. 18 General Visual Accessibility in and around the buildings.

Response	Frequency	Percent
Excellent	1	2.3
Very Good	2	4.6
Good	16	36.4
Average	18	40.9
Poor	8	15.9
Total	44	100.0

From the findings above, the visual accessibility of the built environment is average or good, since the majority of the respondents are saying so. This means that in terms of visual accessibility, the work place is not badly off. The respondents did not comment so much on the visual accessibility except the fact that international signs must be displayed at strategic locations within and without the buildings. Therefore, in terms of the built environment, the level of visual accessibility is above average.

4.5.1 Influence of the visual accessibility of the built environment on work performance among PWDs

The study sought to establish if there was any influence of the visual accessibility on the performance of duties by PWDs. This was done by using Chi-square test of independence. The independent variable was the visual accessibility of the built environment, while the dependent variable was the performance of work by employees with disability. In order to determine the association between the two variables, the respondents were asked to respond to numbers 1-5 on the five point Likert scale, where 5-denoted Strongly Agree, 4-denoted Agree, 3-denoted Undecided, 2-denoted Disagree and 1-denoted Strongly Disagree which connotes their performance of duties and the general visual accessibility of the built environment. The results were coded and analyzed by conducting a chi square test. A chi-square calculation from the cross tabulation table yields the chi square statistic together with the p-value at 12 degrees of freedom.

Table 4. 19 General visual accessibility in the building * Rating of general work performance in relation to built environment Cross tabulation

		Rating of general work performance in relation to built environment					Total
		Poor	Av.	Good	Very good	Excell.	
General visual accessibility in the building	Excellent	0	0	1	0	0	1
	V. Good	0	1	0	0	0	1
	Good	0	6	7	1	1	15
	Average	3	14	1	0	0	18
	Poor	2	5	0	0	0	7
Total		5	26	9	1	1	42

A chi-square calculation from the cross tabulation table yielded the chi square statistic table 4.20 together with the p-value at 16 degrees of freedom. The Chi-square (χ^2) results were as follows.

Table 4. 20 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.622 ^a	16	.156
Likelihood Ratio	24.457	16	.080
Linear-by-Linear Association	10.667	1	.001
No. of Valid Cases	42		

From the chi-square statistic and the p-value above (>0.05), the study findings indicated that there is no significant association between visual visibility of the built environments and work performance by the employees with disability. Therefore MTRH as an institution meet the requirements of visual accessibility of the built environment. However, the institution should ensure that elements of the visual accessibility of built environment are accessible so that all employees irrespective of their abilities can perform work to their full potential.

4.6 Horizontal Accessibility

4.6.1 Door Accessibility

The second objective of the study was to establish the influence of horizontal accessibility of the built environment on work performance among employees with disabilities. Parameters investigated included door characteristics such as signage location at the door for instance whether; signage is within eyelevel, signage is visible when the door is open, door handles are easy to grasp with one hand, doors are wide enough to allow wheelchair mobility and whether doors are easy to open. The study findings indicated that the signages are located at eye

level. This makes the PWDs see clearly which door is which that they intent to get to. A significant majority of (93.2%) agreed and strongly agreed that doors at MTRH have door signage located within eye level. In terms of signage visibility when the doors are open, more than half (50.0%) of the respondents did not agree that signage are visible when the door is open. Therefore whenever the door is open then the signage are not visible. The door accessories like handle are other important considerations for door accessibility. Over 60.0% of the respondents agreed that the door accessories are easy to grasp with one hand. This implies that in terms of accessories like handles it is not bad going by the standards.

The ease with which one can open the doors is an important component of horizontal visibility. Over 70.0% of the respondents indicated that the doors are not easy to open. This appears to contradict respondent response on whether door handles are easy to grasp (>60%). However, it is possible to turn the accessory around with a lot of ease but the door may be hard to push. Therefore many hindrances like push back hinges need to be avoided. The doors were also satisfactorily (60.5%) wide enough to open. On rating the accessibility/ usability of the doors, the respondents felt that the accessibility/usability of the doors is above average. The study findings indicated that door ease of opening stood as follows; average 27.3%, 38.6% good and 2.3 % very good. This is shown in table 4.21.

Table 4. 21 Rating the accessibility/ usability of the doors

Response	Frequency	Percent
Poor	1	2.3
Average	12	27.3
Good	17	38.6
Very good	1	2.3
Sub Total	31	70.5
None response	13	29.5
Total	44	100.0

4.6.2 Reception

Reception is one of the most important areas in any building because it acts as a resting place while one is waiting for service. This study finding indicates that the reception areas were fully available in the buildings (100%) and over seventy percent (72.8%) of these receptions are clearly marked as such. They are also fairly strategically located on the entrance door. The proportion of the reception areas that are strategically located at the entrance constituted 65.9%. At least fifty nine percent (59.1%) of the reception areas were well labeled. The other dimension of accessible areas that concern the reception is the reception height. Most of the respondents were not happy about the reception height (79.6%) as opposed to those who are happy about the height (15.9%).

On the rating of the accessibility/ usability of reception desk / areas, the respondents were equally divided on the responses since those that indicated it is average or good were each 34.1% as shown in table 4.22 below.

Table 4. 22 Characteristic Doors

Door(s) Characteristic	Response						Total
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree		
Signage located at eye level	N	2	0	1	18	23	44
	%	4.5	0	2.3	40.9	52.3	100
Signage is visible even when doors are open	N	6	20	2	10	6	44
	%	13.6	45.5	4.5	22.7	13.6	100
Door accessories are easy to grasp with one hand	N	2	5	6	28	3	44
	%	4.5	11.4	13.6	63.6	6.8	100
All doors are easy to open	N	3	8	1	29	3	44
	%	6.8	18.2	2.3	65.9	6.8	100
All doors are wide enough	N	0	16	1	25	2	44
	%	0	36.4	2.3	56.8	4.5	100
	N	1	10	3	26	4	44
	%	2.3	22.7	6.8	59.1	9.1	100
Total							

On the rating of the accessibility/ usability of reception desk / areas, the respondents were equally divided on the responses since those that indicated it is average or good were each 34.1% (table 4.23).

Table 4. 23 Rating the accessibility/ usability of reception desk / areas

Response	Frequency	Percent
Poor	12	27.3
Average	15	34.1
Good	15	34.1
Very good	1	2.3
Excellent	1	2.3
Total	44	100.0

4.6.3 Waiting Area Accessibility

Waiting areas also comprise another component of horizontal accessibility. The study also attempted to find out if the waiting areas are available in all the buildings. The research findings indicated that there are plenty of waiting areas since 93.2% of the respondents indicated that they are available in all the buildings. Asked whether the waiting areas are clearly marked with the words “WAITING AREA’, a significant proportion (72.7%) of the respondents indicated that the waiting areas are clearly marked. The research findings further indicated that the seats in the waiting areas do not have back rests. 68.2% of the respondents indicated so. In the waiting areas, designated sitting spaces for wheel chair users are missing in most of the waiting areas (88.7%).

Table 4. 24 Waiting area Characteristics

Waiting area Characteristic	Response						
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Waiting areas are available in all the buildings	N	1	1	1	21	20	44
	%	2.3	2.3	2.3	47.7	45.5	100
All waiting areas are clearly marked “WAITING AREA”	N	14	18	6	5	1	44
	%	31.8	40.9	13.6	11.4	2.3	100
All public seats in the waiting areas have back rests	N	11	19	2	8	4	44
	%	25	43.2	4.5	18.2	9.1	100
There are designated sitting spaces for wheel chair users	N	31	8	1	3	1	44
	%	70.5	18.2	2.3	6.8	2.3	100

Asked on the accessibility/ usability of waiting areas, the responses were as indicated in tale 4.25 below

Table 4. 25 Rating the accessibility/ usability of waiting areas

Response	Frequency	Percent
Poor	19	43.2
Average	13	29.5
Good	10	22.7
Very good	1	2.3
Excellent	1	2.3
Total	44	100.0

4.6.4 Corridor Accessibility

Corridors are passages within a building that enable one to access the various locations of a building. The study findings indicated that corridors in all the buildings are wide enough to allow free movement of PWDs. A significant proportion (86.4%) of the respondents indicated that the corridors are wide enough to allow free movement particularly for those that use wheel chairs. The corridor floors have been designed such that they are not slippery, since 93.2% agreed and strongly agreed that the floors of the corridors are not slippery. The corridors too have a good lighting system (79.6%). Changes on the corridor levels are ramped, although not to a large extent (63.7%). These findings are shown in table 4.26 below.

Table 4. 26 Corridor Accessibility

Corridors Characteristic		Response					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Corridors in all the buildings are wide enough	N	0	5	1	20	18	44
	%	0	11.4	2.3	45.5	40.9	100
Corridor floors are not slippery	N	1	0	2	26	15	44
	%	2.3	0	4.5	59.1	34.1	100
All corridors have enough lighting system	N	0	5	4	31	4	44
	%	0	11.4	9.1	70.5	9.1	100
Changes in corridor levels are ramped	N	0	1	15	20	8	44
	%	0	2.3	34.1	45.5	18.2	100

Asked to give an overall rating on the accessibility/ usability of corridors, the respondents gave a rating of 70.5%. This implies that it is satisfactory and a small effort may be needed for improvement (table 4.27)

Table 4. 27 Corridors in all the buildings are wide enough

Response	Frequency	Percent
Disagree	5	11.4
Undecided	1	2.3
Agree	20	45.5
Strongly Agree	18	40.9
Total	44	100.0

4.6.5 Pavement Accessibility

Pavements are other structures that their availability will enhance mobility and performance of the employees. A significant proportion (97.7%) of the respondents indicated that pavements are available in the work place.

Table 4. 28 Pavements are available in my work place

Response	Frequency	Percent
No	1	2.3
Yes	43	97.7
Total	44	100.0

Asked whether the pavements lead to main entrance of a building, the respondents agreed strongly with 15.9% and 61.4% agreeing respectively. On the other hand, there was all indication that the pavements are not slippery, since those who were in agreement comprised

84.1% cumulatively for those who agreed and those who strongly agreed. In terms of the width, the study findings indicated that more than almost half (49.8%) of the pavements are not wide while the rest half are wide (50.2%). This implies that the pavements need to be designed such that they are wide enough to allow wheel chair mobility.

Table 4. 29 Staircase Characteristic

Staircase Characteristic		Response					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
The pavements lead to the entrance of main building	N	0	3	7	27	7	44
	%	0	6.8	15.9	61.4	15.9	100
The pavements are not slippery	N	0	1	5	28	9	44
	%	0	2.3	11.4	63.6	20.5	100
The pavements are wide enough to allow wheelchair mobility	N	6	16	3	14	5	44
	%	13.4	36.4	6.8	31.8	11.4	100

The respondents were asked to rate the accessibility/ usability of pavements. Those who rated it as poor comprise 20.5%, average 36.4%, Good 31.8% and very good 6.8 (table 4.30).

Table 4. 30 Rating the accessibility/ usability of pavements

	Frequency	Percent
Poor	9	20.5
Average	16	36.4
Good	14	31.8
Very good	3	6.8
Excellent	2	4.6
Total	44	100.0

4.6.6 Reserved parking

The other dimension of horizontal accessibility is parking lot. The study findings indicated that there are indeed reserved parking for PWDs. The proportion of respondents who indicated that there is reserved parking comprised 81.8%. This is shown in table 4,31 below.

Table 4. 31 There is reserved parking for persons with disabilities

Response	Frequency	Percent
No	6	13.6
Yes	36	81.8
None response	2	4.5
Total	44	100.0

These reserved parking spaces are somehow marked for disabilities. The proportion of respondents who agreed and strongly agreed were 54.5% and 9.1% respectively while those who disagreed comprised 13.6%. In terms of location the reserved parking is not strategically

and conveniently located. At least fifty-six (56.8%) of the respondents disagreed that the reserved parking are strategically and conveniently located.

Asked to rate the accessibility/ usability of the parking reserved for persons with disability, 34.1% of the respondents rated it as poor. This implies that action must be taken to up the parking status for employees who PWDs. Table 4.32 below shows these findings

Table 4. 32 Rating the accessibility/ usability of the parking reserved for persons with disability

Response	Frequency	Percent
Poor	15	34.1
Average	10	22.7
Good	9	20.5
Very good	1	2.3
None response	9	20.5
Total	44	100.0

The study sought to establish if there was any influence of horizontal accessibility of the built environment on work performance among employees with disabilities. This was done by using Chi square test of independence. The independent variable was the horizontal accessibility of the built environment while the dependent factor was the performance of work by the PWD employees. In order to determine the association between them, the respondents were asked to respond to numbers on questionnaire items on characteristic of the item on a 1-5 point-likert scale, where 5-denoted Strongly Agree, 4-denoted Agree, 3-denoted Undecided, 2-denoted Disagree and 1-denoted Strongly Disagree which connotes their performance of duties and the general score of the of the horizontal accessibility of the built environment. The results were coded and analyzed by conducting a chi-square test of independence. The table 4.33 gives a cross tabulation of the two variables.

Table 4. 33 Overall Horizontal * Rating of general work performance in relation to built environment Cross tabulation

Count		Rating of general work performance in relation to built environment					Total
		Poor	Aver	Good	V. good	Excell.	
Overall	Strongly	2	1	0	0	0	3
Horizontal	disagreed						
Accessibili	Disagreed	3	14	3	0	0	20
ty	Undecided	0	11	4	2	1	18
	Agree	0	0	2	0	0	2
Total		5	26	9	2	1	43

Chi-square calculations from the cross tabulation table, yields the Chi square statistic (table 4.34) together with the p-value at 12 degrees of freedom. Findings in table 4. reveals that there is a significant association between the horizontal accessibility of the built environments and the performance of duties by employees with disability. This is shown by the fact that a Chi-square test of independence of variables returned calculated Chi-square (χ^2) values greater than the critical value (χ^2) of 21.03 or p-value=0.025 (<0.05) (table 4.34).

Table 4. 34 Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.332 ^a	12	.025
Likelihood Ratio	21.617	12	.042
Linear-by-Linear Association	10.657	1	.001
No of Valid Cases	43		

The findings imply that the performance of the duties by the respondents is affected by horizontal accessibility of the built environment and the management of MTRH must take action on it by making necessary adjustments.

4.6.7 Comments from Respondents

Built environment should include international symbol of disability. Ramps should have rails on both sides. Stair cases should be even. They should also not be blocked and every now and then in the name of cleaning. The doors should be easily accessible and allow wheel chair mobility. The reception desk should be placed in strategic locations and properly marked as such. The waiting area need to be labeled, but the seats and benches must usable by all.

4.7 Work Performance and the built environment

The study sought the opinion of the respondents to ascertain if the built environment has an influence on effectiveness of discharging their duties. The study findings indicated almost an even spread. However, a higher proportion (52.3%) of the respondents felt that the built environment has an effect on effectiveness in discharging their duties. Out of this 20.5% disagree on the same while 13.6% could not tell if their effectiveness is influenced. A similar trend was witnessed for influence on the efficiency in discharging their duties with a cumulative percentage of 59.1% out of which 22.7% strongly agreed. A significant 65.9% of the indicated that the built environ does not influences the quality performance of their duties with 34.1% strongly disagreeing. On productivity of the work performance a significant 65.9% indicated that indeed the built environment influence productivity in their work performance. The amount of time to accomplish any task is also influenced by the built environment accessibility with 61.4% indicating so.

Table 4. 35 Pavement Characteristics

Pavements Characteristic	Response						Total
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree		
Built environ not influencing my effectiveness in discharging my duties	N	9	14	6	9	6	44
	%	20.5	31.8	13.6	20.5	13.6	100
Built environ not influencing my efficiency in discharging my duties	N	10	16	5	8	5	44
	%	22.7	36.4	11.4	18.2	11.4	100
Built environ not influencing quality performance of my duties	N	15	14	1	7	7	44
	%	34.1	31.8	2.3	15.9	15.9	100
Built environ not influencing productivity in my work performance	N	12	17	0	9	6	44
	%	27.3	38.6	0	20.5	13.6	100
Built environ not influencing the amount of time to accomplish my tasks	N	13	14	2	9	6	44
	%	29.5	31.8	4.5	20.5	13.6	100
Level of built environment promotes safety associated with my work performance	N	12	15	4	9	4	44
	%	27.3	34.1	9.1	20.5	9.1	100

Those who indicated that it does not affect their time of accomplishing a task comprised 34.1% with those 13.6% strongly agreeing. Concerning whether the built environment promotes safety associated with work performance, a higher proportion (61.4%) negated the statement to imply that the level of built environment does not promote safety associated with my work performance. The general rating of the respondents on work performance in relation to built environment is at 60.5%. Again there is room for improvement to have an integral built environment that fully accommodates PWDs. See table 4.36 below.

Table 4. 36 Rating of general work performance in relation to built environment

Response	Frequency	Percent
Poor	5	11.4
Average	26	59.1
Good	9	20.5
Very good	2	4.5
Excellent	2	4.6
Total	44	100.0

4.8 Government Policy and Legislation on Built Environment Accessibility

Most of those interviewed agreed that employees with disabilities face various problems related to the built environment. All (100%) the head of departments interviewed were satisfied with the way the built environment is designed in the institution. They suggested that to accommodate PWDs, restructuring of the existing structures that seem not to be accessible or those that have minimal accessibility ought to be redone so that they become more accessible and work performance of employees with disabilities is enhanced.

Majority of the HOD's (72.7%) were in agreement that the hospital has developed a draft policy on disability mainstreaming which seeks to ensure among other things that all buildings and other built environment components are accessible to all, employees with disabilities included. In addition a further 27.3% strongly agreed on the same. To demonstrate the management's commitment to government requirements, those interviewed alluded to the fact that the hospital has established a Disability Mainstreaming Committee to champion for the rights of persons living with disabilities.

Table 4. 37 Opinion of HODs and Disability Mainstreaming Committee

Statement		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Totals
My Institution has developed a draft policy on disability mainstreaming	N	6	16	-	-	-	22
	%	27.3	72.7				100
My Institution has established a Disability Mainstreaming Committee which is active	N	3	18	1	-	-	22
	%	13.6	81.8	0.05	-	-	100

All (100%) of the Disabilities Mainstreaming Committee members interviewed shared the same views that accessibility of the existing structures must be structured to accommodate requirements of employees with disabilities. In particular, the HOD's and Disabilities Mainstreaming Committee members interviewed suggested the following as the way forward to accommodate PWDs in the built environment accessibility.

- (i) Implementing fully all relevant legislations that touch on the built environment and persons with disabilities.
- (ii) Incorporating the views/opinions of the employees who are PWDs.

(iii) Ensure upcoming structures / buildings are disability friendly and accessible to all.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter presents a summary of the whole study and discussion of the findings of the study. The findings of the study reveal pertinent issues that closely touch on PWDs in relation to the built environment where they work. In addition the implications and policy recommendations derived from the findings are stated. The chapter also presents suggestions for further research.

5.2 Discussions

The issues that revolve around PWDs have long been debated by scholars and it is now enshrined in most reformed constitutions across the world. This study in its central investigation on the level of accessibility and influence of built environment on work performance brought forth aspects of accessibility that need initiated or better still be improved. The phenomena of accessibility while it is taking root in most built environment require to be looked into continuously for the sole purpose of ensuring that reforms to cater for the growing needs of the PWDs are addressed from time to time.

5.2.1 Employment of persons with Disability

The Kenyan constitution, under article 24 (4), provides that no one should be discriminated directly or indirectly against any person on any ground, including race, sex, pregnancy, marital status, health status, ethnic or social origin, colour, age, disability, religion, conscience, belief, culture, dress, language or birth. The study results indicate compliance in terms of this important provision. The number of males and females were equal in number and it is indeed a good trend to be emulated. There was also a remarkable representation across the age brackets. It is also important that the respondents are qualified

in one way or another, so that merit still stands out as a very important feature to be considered. Most of the PWDs have physical disability and this means that for the employees to move in and out of the building, vertical, horizontal and visual accessibility is important for their mobility.

5.2.2 Levels of Accessibility / Usability of the Built Environment

There was a considerable access for the PWDs when we consider all the three types of accessibilities; vertical, horizontal and visual.

5.2.2.1 Vertical Accessibility

Ramps were available in the building and its features met the standard requirements for it to be used comfortably by PWDs. For instance, the slope was gentle and the landings and surfaces at the ramp are reasonably wide enough thereby facilitating faster movement along the ramps and hence pose no danger to the users. The hand rails were also there but they needed to be uniform in its installation and be featured on both sides. The vertical accessibility of the built was not badly off and in terms of rating it is good. Stairs are a common feature on the buildings since they were available. These are generally used by all members of the populace and the reason for a hundred percent agreement of its presence by the respondents and the fact that stairs are very crowded and moving on it is cumbersome. On the other hand sensitization to cleaners is important since some of them close the stair ways when cleaning, not conscious of the inconvenience they are causing to employee PWDs. Again in terms of the rating, it can be said that the stairs are good. The influence of the vertical accessibility did not exist because it meant that the components that enhance vertical accessibility were adequate enough to cause any influence on the vertical accessibility. However, one or two areas for improvement will not miss.

5.2.2.2 Visual Accessibility

The visual accessibility aspect that was important was the lighting of the building that enhances visibility. There was enough lighting in the building. Because light can be natural (sun light) or electricity, other measure that can be taken to ensure light all round is the installation of automatic generators that can be able to switch on and off during power black outs. Visual signs like size and symbols/letters, posters and bill boards, international symbols of disability and information panels that enhance visual accessibility must be visible as much as possible. There was adequate visibility on signage and there is room for improvement if need be. The influence of the visual accessibility on the work performance was not there. This implies that there was satisfactory availability or right orientation of the visual signage. However, the institution should ensure that the built environment is visually accessible so that the respondents can work to their full potential.

5.2.2.3 Horizontal Accessibility

The horizontal accessibility apparently was wider in scope and included doors, reception areas, waiting areas, parking and pavements together with their orientation. The door accessories like handle were other important considerations for door accessibility. In the case of the study they were easy to turn but the doors themselves were hard to open. The width of the door need be always be enough to allow free entry and exit. Receptions were also available and clearly visible and they are also fairly strategically located on the entrance door. The availability and the labeling of the waiting area are good. However, the waiting area seats did not have back rests and designated place for the wheel chair users was not there. Corridors are excellent in terms of accessibility and usability besides being available. The pavements were not satisfactory and need to be designed such that they are wide enough to allow wheel chair mobility. The study findings indicated that there are indeed reserved

parking for PWDs. However, they are not strategically not located. This implies that action must be taken to up the parking status of the PWDs.

5.3 Influence of Visual, Vertical and Horizontal accessibility on Work Performance among Employees with Disability

Chi-square calculations indicated that, there is no significant association between the vertical accessibility and performance of duties by PWDs. Similarly, there is no significant or influence association between the visual accessibility and performance of duties by PWDs. However there was influence of the horizontal accessibility with the performance by the PWDs. This has the implication that horizontal accessibility is inadequate and something needs to be done to reverse the situation.

5.4 Conclusion

The institution has fundamental duty and obligation to enhance the work performance of all its employees irrespective of their abilities. The built environment needs to be accessible as much as possible so that the employees perform optimally. The presence of the structures that enhances accessibility alone is not enough. There is need to ensure there is progressive mainstreaming of this vulnerable group to ensure their maximum productivity.

5.5 Implications and policy Recommendations

Based on the foregoing discussion of the findings and conclusion, one thing that is clear is seeking opinions and ways of our best PWDS can be mainstreamed in order for them to accomplish and fulfill their career. The study had the following implications and recommendations which are specific to the three types of accessibilities investigated and discussed.

Ramp - Provide rails on both sides of the ramp.

Stair cases – Stairs should be wide, large and not hidden but accessible. They should always be open.

Doors - Doors should be designed such that they are easily accessible using wheel chairs. They should have user friendly accessories.

Reception desks - The reception desks should be placed in strategic places and properly labeled.

Waiting area- The waiting area should be well labeled and the seats and benches strategically located. Allocate seats to wheelchair users. Benches should have back rests.

Corridors- Corridors should be decongested from items and human traffic.

Pavements- they should be big and wide enough to allow wheel chair mobility.

5.6 Suggestions for Further Research

Due to the scope of the study some issues were not captured. To bring more light into the issue investigated in this study, it was suggested that studies to improve on the work performance of PWDs in relation to the built environment be done to cover other areas like the home.

REFERENCE

- African Union for the Blind (2007) State of Disabled Peoples Rights in Kenya (2007) Report. Nairobi, Kenya: Africa Union of the Blind.
- Babbie, E. (1990) Survey Research Methods. Belmont, California: Wadsworth Publishing Company, 2nd ed., 1990.cited at:webpages.acs.ttu.edu/rlatham/.../sampling_methodology_pdf
- Baris, E.M. and Uslu, A. (2009) *Accessibility for the Disabled People to the Built-Environment in Ankara, Turkey*”, *African Journal of Agricultural Research*, Vol. 4 (9), pp. 801-814.
- Barnes, C. (1991) Disabled People and Discrimination in Britain: The Case for Anti-Discrimination Legislation. London: Hurst & Co.
- Barnes, C., and Mercer, G. (2003) *Disability*. Cambridge: Polity Press.
- Bernell, S. L. (2003). *Theoretical and applied issues in defining disability in labour market research*. *Journal of Disability Policy Studies*, 14(1), 36-45.
- Bickenbach, J.E., et al., (1999) Models of Disablement, Universalism and the International Classification of Impairments, Disabilities and Handicaps. *Social Science and Medicine*. 48(9): p. 1173 - 1188.
- Bollen, K. A. (1989). *Structural Equations with Latent Variables*. John Wiley & Sons.
- Centre for Universal Design (2011) *The New Principles of Universal Design*. Centre for Universal Design, College of Design, North Carolina State University. Available at:<http://www.ncsu.edu/project/design-projects/udi/center-for-universal-design/the-principles-of-universal-design/>
- Charlton, J. I., (1999) *Nothing About Us Without Us: Disability Oppression and Empowerment*. Berkeley, CA: University of California Press.
- Creswell, J. (2008) *Educational research: Planning, Conducting, and Evaluating Quantitative and Qualitative research*. New Jersey: Pearson: Merrill Prentice Hall.
- DDA (2002) *Disability Rights commission*: <http://www.drc.org.uk>.
- Douglas, J. (2006) *Building Adaptation (2nd Ed.)*. Butterworth-Heinemann.
- East African Community policy on persons with disabilities (March, 2012)* EAC Secretariat. Arusha, Tanzania.
- EC Expert Group on Accessibility (2003) *A Europe Accessible for All: European Commission for Employment and Social Affairs, Brussels*.

- Fearn D (1993) *Access Audits: A Guide and Checklists for Appraising the Accessibility of Buildings for Disabled Users*. Centre for Accessible Environments, London.
- In Ann Salvage and Gerry Zarb,(1995), *Measuring Disablement in Society: Working Paper 2* Gaining Access: Disabled People and the Physical Environment
- Ferneeuw,S. (2005) *Planning a Barrier-Free Environment: A Practical Manual To Improve Physical accessibility in Afghanistan*(http://www.undp.org.af/publications/keydocuments/2005_cdap_guidelines.pdf)
- Finklestein, V. (1972) *The Psychology of Disability*. Accessed at <http://www.leeds.ac.uk/disability-studies/archiveuk/finkelstein/01%20-%20Talk%20to%20GPs.pdf>
- Fougeyrollas, P. and Gray, D.B. (1998) *ICIDH, Handicap and Environmental Factors and Social Change: The Importance of technology*. In DB Gray, LA Quatrano, and ML Lieberman (Eds.), *Using, designing and assessing assistive technology*. Baltimore: Brookes Publishing.
- Goldsmith, S. (1976) *Designing for the Disabled, (3rd Ed.)*. London, RIBA Publications.
- Golledge, R. (1993) *Geography and the Disabled: A Survey with Special Reference to Vision Impaired and Blind Populations*. Transactions of the Institute of British Geographers, 18(1), pp. 63-85. Cited at: www.soaconference.com.au/wp-content/uploads/2013/Butland-movement.pdf
- Gossett, A., Mizra, M., Barnds, A. K. and Feidt, D. (2009) *Beyond Access: A Case Study on the Intersection Between, Accessibility, Sustainability and Universal Design*. *Disability and Rehabilitation: Assistive Technology*, 4 (6) 439-450.
- Guy, S. (1998) *Developing Alternatives: Energy, Offices and the Environment*. *International Journal of Urban and Regional Research*, 22 2 p264-82.
- Hans, A., and A. Patri. 2003. *Women, Disability and Identity*. London: Sage Publications.
- Harwood, R. Sayer, A. and Hirschfield, M. (2004) 'Current and Futures Worldwide Prevalence of Dependency, its Relationship to Total Population and Dependency Rates' In *Bulletin of the WHO* 82(4). Geneva: WHO: pp 251-258.
- Hubbard, S. (2004). *Disability studies and health care curriculum: The great divide*. *Journal of Allied Health*, 33(3), 184-188.

- ILO Information Sheet (2011) *Employment and Disabled Persons*. Available at <<http://www.hpod.org/pdf/employment-disabled.pdf>.
- Imrie, R. (1996) *Ableist Geographies, Disablist Spaces: Toward a Reconstruction of Golledge's Geography and the Disabled*. Transactions of the Institute of British Geographers, 21(2), pp. 397-403. Cited at: www.soaconference.com.au/wp-content/uploads/2013/Butland-movement.pdf
- Imrie, R. (2000) *Responding to the Design Needs of Disabled People*. *Journal of Urban Design*, 5 (2) 199-219.
- Imrie, R. (2002) *Inclusive Design, Disability and the Built Environment*. Presentation to the Practical, Recommendations for Sustainable Construction (PRESCO) – CRISP Joint Conference, Ostend, Belgium. At: <http://www.etnpresco>
- Imrie, R. and Kumar, M (1998) *Focusing on Disability and Access in the Built Environment*. *Disability and Society* 13 (3) p357374. At: www.academia.edu/3580977/Focusing_on_Disability_and_Access_in_the_Built_Environment
- International Labour Organization (October 2001) *Code of Practice on Managing Disability in the Workplace: Tripartite Meeting of Experts on the Management of Disability at the Workplace*. Geneva.
- Jacobs, K (1991) *Occupational Therapy: Work-related Programms and Assessments* (2nd ed.). Boston: Little, Brown.
- James, I. C., (2000). *Nothing About Us Without Us: Disability Oppression and Empowerment*. University of California Press. p. 3. ISBN 978520224810.. Available at: en.wikipedia.org/wiki/Social_model_of_disability#cite_ref-1
- Jones, S. R (1981) *Accessibility measures: A Literature Review, Transport and Road Research Laboratory, Berkshire*.
- Kent, R. (2005) *Disability Access Provisions for Historic Buildings: The Building Conservation Directory*. Cathedral Communications. <http://www.buildingconservation.com/articles/accessbcd98/access.htm>
- Kerbler, B. (2012) *A Toolkit for Detecting and Eliminating the Barriers that People with Disabilities face in the Built Environment: the Case of Slovenia, Europe*. DOI:10.4305/METU.JFA.2012.2.11
- Khor, H.T (2002) *Employment of Persons with Disabilities: Social-Economic and Environmental Research Institute*. Vol. 4(3):4 – 7. Available at: www.dcidj.org
- Lang, R. (2007) *The Development and Critique of the Social Model of Disability*. Leonard Cheshire Disability and Inclusive Development Centre. UCL. Available

atwww.ucl.ac.uk/Icccr/centrepublishations/workingpapers/Wpo3_Development_Critique.pdf

- Lansley, P, McCreadie C, Tinker A, Flanagan S, Goodacre K and Turner-Smith A (2004) '*Adapting the homes of older people: A case study of costs and savings*', Building Research & Information, 36(6): 468–483.
- Lewis, J. (2011) *Student Attitudes Towards Impairment: An Assessment of Passive and Active Learning Methods in Urban Planning Education*. Teaching in Higher Education, 16(2), pp. 237-249. Cited at:www.soaconference.com.au/wp-content/uploads/2013/Butland-movement.pdf
- Marianne, S. (2010) *Understanding The UN Convention On The Rights Of Persons With Disabilities: A Handbook on the Human Rights of Persons With Disabilities*. Fedex Office and Print Services. New York.
- Meager N, Dewson S, Evans C and Harper H (2002) *Costs and Benefits to Service Providers of Making Reasonable Adjustments Under Part III of the Disability Discrimination Act, DWP Research Report 169*, Leeds: Centre for Disability Studies.
- Meyers A. R. et al.(19882) *Barriers, Facilitators, and Access for Wheelchair Users: Substantive and Methodologic Lessons from a Pilot Study of Environmental Effects*. Social Science & Medicine, 2002, 55:1435-1446. doi:10.1016/S0277-9536(01)00269-6PMID:12231020
- Morris, J.(2000) *Untitled Conference Presentation*. In GLAD, Reclaiming the Social Model of Disability Report, London: Greater London Action on Disability, 1-3. Available at:<http://www.leeds.ac.uk/disability-studies/archiveuk/index.html>
- Mourad, M. (2009) "*Employers' Attitudes and Concerns about the Employment of People with disabilities*," *International Review of Business Research Papers*, Vol. 5(4), Jun: 209 -218. Available at: www.dcidj.org
- Mugenda, O. M, and Mugenda, A.G (2003) *Research Methods. Qualitative and Quantitative Approaches*. ACTS Press. Nairobi
- Mugenda, O.M. and Mugenda, A.G. (1999) *Research Methods: Quantitative and Qualitative Approaches*. Nairobi, Kenya. ACTS Press.
- National Coordinating Agency for Population and Development (NCAPD) and Kenya National Bureau of Statistics (2007) *Kenya National Survey for Persons with Disabilities – Main Report*. Coordinating Agency for Population and Development. Nairobi. Kenya. Cited in www.ncapd-ke.org

- National Planning and Building Authority (2009) Planning and Building Regulations. Available at: <https://law.resource.org/pub/ke/ibr/ke.building.2009.html>
- NHS Confederation (2003) *Future Healthcare Network. Investing in Design: Developing a Business Case for Good Design in Health*. London.
- Orodho A. J. (2003) *Essentials of Educational and Social Sciences Research Methods*. Nairobi: Masola Publishers.
- Orodho, A. J. and Kombo, D. K. (2003) *Research Methods*. Nairobi: Kenyatta University, Institute of Open Learning.
- Owusu-Ansah F. E. and Alorwu, D. (2012) *Designed to deter: Barriers to facilities at secondary schools in Ghana*. *African Journal of Disability*; Vol 1, No 1 (2012), 9 pages. doi: 10.4102/ajod.v1i1.2
- Pam, T., Lorraine, G., and Natalie, M., (2012) *Defining Impairment within the Social Model of Disability*. Available at: leeds.ac.uk.
- Peel, D. and Posas, P.J. (2009). "Promoting disability equality and inclusive learning in planning education", *Innovations in Education and Teaching International*, Vol. 46, No. 2, pp. 227–235.
- Beresford, P (2002) *Thinking About 'Mental Health': Towards a social model*, *Journal of Mental Health*, 11(6):581-584. Cited at: 163.22.14.202/2006SP/reportpdf/2007/A_different_way_of_looking_at_disability-The_social_model Public Health 2003;93(9).
- Saunders, M., Lewis, P. & Thornhill, A. (2007). *Research methods for business for Students: 4th edition*. Pearson Education Limited Artes Graficas
- Shalinsky, W. (1986) *Disabled Persons and their Environments*. *Environments*, 17(1), 1-8.
- Smart, J. F., & Smart, D. W. (2006) *Models of disability: Implications for the counseling profession*. *Journal of Counseling and Development*, 84, 29-4
- Steinfeld, E. (2006) *Position paper: The Future of Universal Design*. IDEA Centre, University of Buffalo. <http://futureofud.wikispaces.com/Position+Paper+-+Steinfeld>
- The Persons with Disabilities Act (2003) *Kenya Gazette Supplement No. 111. 9th January, 2004*. Nairobi, Kenya.
- Thomas, P. (2005) *Disability, Poverty and the Millennium Development Goals: Relevance, Challenges and Opportunities for DFID*. Available at www.disabilitykar.net

- Thorpe, S.J. (2003) *Design for Accessibility: Architects' Handbook*. E.P.P Books, with permission from Blackwell Publishing, Oxford, U.S.A. ISBN9988-0-7037-3.
- U.S Department of Labor (1979) *Guide for Occupational Exploration*. Washington, DC: Superintendent of documents, U.S, Government Printing Office.
- U.S Department of Labor (1981) *Selected Characteristics of Occupations Defined in the Dictionary of Occupational Titles*. Washington, DC: Superintendent of documents, U.S, Government Printing Office.
- Verbrugge, L. and Jette, A. (1994) *The disablement process*. *Social Science & Medicine*, 38 (1), 1-14
- Webster, S. (1985) *Educational Research: Competence for Analysis and Applications*, 6th Edition. New Jersey: Macmillan
- Weiss, H. (1984) Report of the International Expert Seminar Building Concept for the Handicapped, CIB W84 Building Non-Handicapping Environments, Stockholm, April 1984.
- World Health Organisation (2011) *World Report on Disability*, Geneva: World Health Organisation. Available at: http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf
- World Health Organization (2012) *Disabilities*. In Rains, M. and Butland, R., *Lifting the Barriers: Planning for Increased Mobility through the Adelaide CBD*. School of Natural and Built Environment. The University of South Australia: Cited at: www.soaconference.com.au/wp-content/uploads/2013/Butlandmovement.pdf.

APPENDIX 1: INTRODUCTORY LETTER

WILLIAM KOMEN

MOBILE PHONE NO: +254 726 990 310

REF: REQUEST TO PARTICIPATE IN RESEARCH

My name is William Komen, a student at The University of Nairobi. I'm carrying out a study on **“INFLUENCE OF BUILT ENVIRONMENT ACCESSIBILITY ON WORK PERFORMANCE AMONG PERSONS WITH DISABILITIES: A CASE OF MOI TEACHING AND REFERRAL HOSPITAL”**. You have been identified as one of the people who can be of assistance to me.

Please kindly note that the information you will provide will be solely for academic purposes and will be treated as such with utmost confidentiality. To ensure anonymity do not write your name on the questionnaire. Your identity will not be disclosed in any way.

For you to proceed to fill this questionnaire, kindly sign the section below.

I hereby consent to participate in this study.

SIGN.....**DATE**.....

APPENDIX II: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

PLEASE TICK (✓) APPROPRIATELY ON EACH ANSWER YOU CHOOSE.

1. Your Gender

Male () Female ()

2. Your Age bracket

Less than 20 Years () 21-25 Years () 26-30 Years () 31-35 Years () 36-40 Years ()
41-45 Years () 46-50 Years () 51-55 Years () Above 56 Years ()

3. What is your highest level of Education?

Primary School () Secondary School () Certificate () () Diploma Degree ()
Masters () PhD ()

4. Nature of disability

Visual () Physical () Hearing () Mental ()

Other(s), Specify.....

5. How many years have you worked for MTRH?

Less than 1 Year () 1-5 Years () 6- 10 Years () 11-15 Years () 16-20 Years ()
Over 20 Years ()

SECTION B: VISUAL ACCESSIBILITY OF THE BUILT ENVIRONMENT

1. There is enough lighting in and around the building(s) to assist users in visual orientation.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

2. The size and symbols/letters used in signage in and around main buildings are large enough and noticeable from a distance by a person with disability.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. Posters and billboards are strategically located in right distance and height to allow for visual accessibility by a person with disability.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Information panels are strategically located and within a height that can be read by a person with disability.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. International symbols of access such as the wheel chair symbol in combination with directional arrows are well displayed in entrances of building (s) to show that the building is disability accessible.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. How would rate the general visual accessibility in the building(s) in your work place?

Excellent () Very Good () Good () Average () Poor ()

7. What suggestions would you make regarding the general visual accessibility in and around the buildings in your workplace?

.....
.....

SECTION C: VERTICLE ACCESSIBILITY

a). Ramps

1. Ramps are available in all multi-storey buildings to allow persons with disabilities gain access into all floors of the building.

Yes () No ()

If your answer is **YES in (1) above** Please answer the following:

2. The slope of the ramp is gentle enough to allow wheel chair movement.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. Landings and surfaces at the ramp are wide enough to allow a wheel chair user to rest or change direction

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Hand rails are available in either side of the ramps.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Ramp surfaces are not slippery and slip resistant

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. Generally, how would you rate the accessibility/ usability of the ramps in your work place?

Excellent () Very Good () Good () Average () Poor ()

7. What is your general comment on the accessibility/usability of the ramps in your work place?

.....
.....

b). Lifts

1. Lifts are available in all storeyed buildings in my work place.

Yes () No ()

If **YES in (1) above**, kindly answer the following questions

2. The available lift(s) serve all floors of the building.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. The internal dimensions of the lifts have enough space and can allow a wheel chair user to turnaround

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Lifts in the building(s) have wide and clear doors to allow a wheel chair go through without any obstruction.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Lifts have sufficient lighting system.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. There are clear landing areas in front of the available lift(s)

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

7. Generally, how would you rate the accessibility/ usability of the lift(s) in your work place?

Excellent () Very Good () Good () Average () Poor ()

8. What is your general comment on the accessibility/usability of the lifts in your work place?

.....
.....

c). Stairs

1. Stairs are available in all storeyed buildings in my work place.

Yes () No ()

If **YES in (1) above**, kindly answer the following questions

2. All Stair cases are uniform.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. Available stairs are not slippery.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Landings are available in all the stairs.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Stair way is wide enough to allow two-way traffic.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. Hand rails are provided in either side of the stair way

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

7. Stair cases are well illuminated

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

8. Generally, how would you rate the accessibility/ usability of the stairway(s) in your work place?

Excellent () Very Good () Good () Average () Poor ()

9. What is your general comment on the accessibility/usability of the stairway(s) in your work place?

.....
.....

SECTION D: HORIZONTAL ACCESSIBILITY

a). Doors

1. Signage indicating purpose of room or room number is located at eye level.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

2. Signage is visible even when doors are open

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. Door accessories such as handles and knobs are easy to grasp with one hand.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. All doors are easy to open

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. All doors are wide enough to allow wheel chair movement.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. Generally, how would you rate the accessibility/ usability of the door(s) in your work place?

Excellent () Very Good () Good () Average () Poor ()

7. What is your general comment on the accessibility/usability of the door(s) in your work place?

.....
.....

b). Reception Desks/Areas

1. Reception desks are available in my work place

Yes () No ()

If **YES in (1) above** answer the following questions

2. The reception desks/areas are clearly marked as such

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. Reception desk(s) is located strategically and in clear view from the entrance door.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Reception desks are well labeled and easy to locate.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Reception desks are of sufficient height to allow a wheel chair user to gain access.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. Generally, how would you rate the accessibility/ usability of the reception desks in your work place?

Excellent () Very Good () Good () Average () Poor ()

7. What is your general comment on the accessibility/usability of the reception desks in your work place?

.....

c) Waiting areas

1. Waiting areas are available in all the buildings in my work place

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

2. All waiting areas are clearly marked “WAITING AREA”

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. All public seats in the waiting areas have back rests.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. In all the sitting arrangements in the waiting area, there are designated spaces for wheel chair users.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Generally, how would you rate the accessibility/ usability of the waiting areas in your work place?

Excellent () Very Good () Good () Average () Poor ()

6. What is your general comment on the accessibility/usability of the waiting areas in your work place?

.....
.....

d). Corridors

1. Corridors in all the buildings are wide enough to allow wheel chair users move around.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

2. Corridor floors are not slippery

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. All corridors have enough lighting system.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Changes in corridor levels are ramped

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Generally, how would you rate the accessibility/ usability of the corridors in your work place?

Excellent () Very Good () Good () Average () Poor ()

6. What is your general comment on the accessibility/usability of the corridors in your work place?

.....
.....

e). Pavements

1. Pavements are available in my work place

Yes () No ()

If **YES in (1) above** please answer the following questions

2. The pavements lead to the entrance of main building

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. The pavements are not slippery

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. The pavements are wide enough to allow wheelchair mobility

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Generally, how would you rate the accessibility/ usability of the corridors in your work place?

Excellent () Very Good () Good () Average () Poor ()

6. What is your general comment on the accessibility/usability of the corridors in your work place?

.....

f). Toilets

1. There are toilets reserved for Persons with disabilities in my workplace.

Yes () No ()

If **Yes in (1) above** please answer the following questions

2. The toilets are strategically located and within view

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. The toilets are clearly marked “**FOR PEOPLE WITH DISABILITY**” or as such

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Toilet space is wide enough to allow a wheel chair user turn around

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. Toilet seat is of good height to allow use by a wheelchair user

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. Toilet surface is not slippery

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

7. Wash basins are conveniently located

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

8. Toilet doors are easy to close and open

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

9. Grab bars are installed

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

10. Doors are wide enough to allow wheelchair movement

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

11. Flushing arrangements are provided for e.g. closet is conveniently mounted on the wall

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

12. Generally, how would you rate the accessibility/ usability of the toilets in your work place as per as disability is concerned?

Excellent () Very Good () Good () Average () Poor ()

13. What is your general comment on the accessibility/usability of the toilets in your work place as per as disability is concerned?

.....
.....

g). Reserved Parking.

1. There is reserved parking for persons with disabilities in my work place

Yes () No ()

If **Yes in (1) above** please answer the following

2. The reserved parking is clearly marked **“RESERVED FOR PERSONS WITH DISABILITY”**.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. The reserved parking is strategically and conveniently located

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. Generally, how would you rate the accessibility/ usability of the parking reserved for persons with disability in your work place?

Excellent () Very Good () Good () Average () Poor ()

5. What is your general comment on the accessibility/usability of the reserved parking in your work place?

.....
.....

SECTION E: INFLUENCE OF THE BUILT ENVIRONMENT ON WORK

PERFORMANCE

1. The level of built environment accessibility of my workplace does not in any way influence my effectiveness in discharging my duties

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

2. The level of built environment accessibility of my workplace does not in any way influence my efficiency in discharging my duties

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

3. The level of built environment accessibility of my workplace does not in any way influence the quality of my work performance.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

4. The level of built environment accessibility of my workplace does not in any way influence my productivity in work performance.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

5. The level of built environment accessibility of my workplace does not in any way influence the amount of time I take to accomplish any given task.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

6. The level of built environment accessibility of my workplace promotes safety which is associated with my work performance.

Strongly Agree () Agree () Undecided () Disagree () Strongly Disagree ()

7. Generally how would you rate your general work performance in relation to the built environment accessibility?

Excellent () Very Good () Good () Average () Poor ()

8. Give suggestions on what ought to be improved in the built environment in order to make individuals improve their work performance

THE END

Thank You For Your Participation

APPENDIX III: INTERVIEW SCHEDULE

SECTION A: DEMOGRAPHIC DATA

Interview Number []

Gender Male [] Female []

Age: -----

Department: -----

Designation: -----

SECTION B: POLICY ISSUES IN RELATION TO BUILT ENVIRONMENT

ACCESSIBILITY FOR PERSONS WITH DISABILITIES

1. Are you satisfied with the way the built environment is designed in all your structures in the institutions?

.....

2. If **No** in (1) above, what do you think needs to be done?

.....

3. Do you think the structures in your institutions are disability friendly?

.....

4. If **No** in (3) above, what adjustments can be made?

.....

5. What measures has your institution put in place to ensure that the built environment is disability friendly?

.....

6. Do you know of any existing Government policy or legislation that addresses issues relating to disability and Persons Living with Disability?

.....

7. Has any of the existing policies or legislation been implemented in your institution?

.....

8. Other than existing government policies or legislation, does your institution have it's own policy in place that address disability issues with regard to the built environment accessibility?

.....

THE END

Thank You For Your Participation

APPENDIX IV: LETTER OF INTRODUCTION



UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION.
DEPARTMENT OF EXTRA- MURAL STUDIES

Telegram: "CEES"
Telephone: KARURI 32117&32021
Your Ref:

P.O BOX 30197, NAIROBI
or P.O BOX 594 ELDORET
KENYA

28TH MAY, 2014

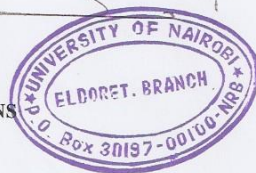
TO WHOM IT MAY CONCERN

SUBJECT: WILLIAM KOMEN, L50/70426/2013

The above named is a student at the University of Nairobi, College of Education and External Studies, Department of Extra Mural Studies pursuing a course leading to the award of Masters of arts in Project Planning and Management. For this course to be complete, he is required to write and submit a research project. Therefore, the purposes of this letter is to kindly request you to accord him necessary assistance in getting information that will enable him complete the Research project. His area of study is titled "Influence of built environment accessibility on work performance among persons with disabilities: a case of Moi Referral Hospital."

Thank you,


SAKAJA Y. M.
CENTRE ORGANIZER
ELDORET AND ENVIRONS



APPENDIX V: NACOSTI PERMIT

THIS IS TO CERTIFY THAT:
MR. WILLIAM KOMEN W
of UNIVERSITY OF NAIROBI, 0-30100
ELDORET, has been permitted to conduct
research in Uasin-Gishu County
on the topic: INFLUENCE OF BUILT
ENVIRONMENT ACCESSIBILITY ON WORK
PERFORMANCE AMONG PERSONS WITH
DISABILITIES: A CASE OF MOI REFERRAL
HOSPITAL
for the period ending:
30th November, 2014

Permit No : NACOSTI/P/14/4077/2238
Date Of Issue : 3rd July, 2014
Fee Received :Ksh 1,000



[Signature]
Secretary
National Commission for Science,
Technology & Innovation