

**EXAMINATION ON COSTS OF INCLUSION FACED BY STUDENTS
WITH DISABILITIES ENROLLED IN PUBLIC UNIVERSITIES: A
CASE OF KENYATTA UNIVERSITY, KENYA.**

By

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

To my beloved late father, Mr. Jimmy K. Cheruiyot whose life was an inspiration to my academic life but sadly never lived to see the final progress of this work: May his soul rest in eternal peace.

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ABBREVIATION AND ACRONYMS

AD	Assistive Devices
CCTV	Closed Circuit Television
GoK	Government of Kenya
HELB	Higher Education Loans Board
HI	Hearing impairments
IDEA	Individuals with Disabilities Education Act.
MoE	Ministry of Education
NAHT	National Association of Head Teachers
NGOs	Non-Governmental Organizations
NCES	National Centre for Education Statistics
NCIER	National Centre on Inclusive Education and Restructuring
NLTS	National Longitudinal Transition Study
OECD	Organization for Economic Co-operation and Development
SWDs	Students with Disabilities
PH	Physical handicapped
SS	Support Services
SNE	Special Needs Education
UNESCO	United Nation Educational, Scientific and Cultural Organization
VI	Visual impairments

ABSTRACT

Despite the fact that inclusion of SWDs spread over decades, their access and retention to completion in the mainstream higher institutions of learning is very limited. The purpose of this study was to examine the cost of participation in public university incurred by students with disabilities enrolled in public universities with a case of Kenyatta University. This study was based on social model of disability and human capital theory which emphasize on appropriate accommodation including adequate financial support to alleviate financial barriers to access to education for all. To gain a better on these costs, the following questions were considered: (1) What range of special learning needs are provided by students with visual, hearing and physical disabilities for their participation in Kenyatta Universities? (2) How much do students with visual, hearing and physical disabilities enrolled in a public university spend on special learning needs required for their participation per academic year? (3) How much do students with visual, hearing and physical disabilities enrolled spend on regular learning needs required for their participation in a public university per academic year? (4) What sources and level of financial support are available to students with visual, hearing and physical disabilities enrolled in a public university per academic year?

The study utilized a mixed method approach of enquiry to obtain both qualitative and quantitative data. Quantitative data was collected using questionnaires while qualitative data was obtained through interview schedule with a total of sixty (60) students with visual, hearing and physical disabilities who were registered with Kenyatta University Students with Disability Office (KUSDO) and were on session when the data was being collected. In order to ensure validity and reliability of research instruments, a pilot study was carried out at University of Nairobi before the actual study.

Quantitative and qualitative data were then collected and analyzed to answer the research questions using descriptive statistics with the help of SPSS software and Atlas-ti software respectively. Finally, analyzed data was presented using pie-charts, graphs and tables. The study established that SWDs enrolled in regular programmes spent an average of Ksh.138, 000 per academic year while those enrolled in institutional- based programmes spent an average of Ksh. 168,000 on regular learning needs per academic year. On the other hand, SWDs enrolled in regular and institutional- based programmes spent an average of Ksh. 200,500 and Ksh 300,175 on support provision per academic year respectively. Generally, the study revealed that, SWDs spent an average of Ksh.318, 000 and Ksh.176, 00 for in institutional- based and regular education programmes respectively. The findings also revealed that the amount of financial support available for university education of SWDs does not meet the costs they incur for their effective participation in these institutions of higher learning.

CHAPTER ONE: INTRODUCTION

This chapter presents the background to the study, statement of the problem, purpose of the study, research questions, significance of the study, limitation and delimitation of the study, assumptions of the study, theoretical and conceptual framework.

1.1 Background to the Study

Education is accepted globally as an important form of investment on human capital, especially to compensate disabilities which close all avenues of self-empowerment and leave education as the only tool for self-advancement (Heckman and Krueger, 2004). As a result of these form of marginalization, special attention in ensuring equal educational opportunities for every category of such challenged persons in the mainstream education setting is of great concern (UNESCO, 1990).

However, despite the fact that the economic and social gains that accrue not only to SWDs but also to the entire society by ensuring equal educational opportunities for all is well understood, the participation and retention rates of SWDs in higher education is very limited as compared to that of the general population (UNESCO, 2005). The rate of return on investment on inclusive higher education among SWDs ranged between 19 and 32 per cent (Kamal and Yasuyuki, 2009). For instance, education of SWDs reduces welfare costs and future dependence, reduces current dependence, increases employment or other productive activities which will in turn increases their potential productivity and wealth creation (World Bank, 2004). It also includes

improvements in human capital at the economy wide level; labour force participation gains; labour force productivity gains; GDP gains (through both productivity and participation); savings in transfer payments; and increased tax receipts (IHEP, 2004). The return of return on an inclusive higher education system of teaching and learning also improves the quality of experience for all students and is much more cost effective in comparison to the retro fit model (Heelan, 2012).

Most international conventions mandate the world community to ensure highest policy and budgetary priority for adequate and appropriate support provision to ensure effective participation of SWDs in the mainstream education setting (UNESCO, 1994). This includes the requirement by all institutions of learning to provide assistive devices and services, adaptation of the learning curricula and adaptation of school infrastructure to enhance their effective participation and communication of these learners (Johnson, 2006). Adaptation of school infrastructure may include provision of accessible sanitation facilities, widening of windows to allow more light in the classrooms, painting white lines across walkways, alternate examination venues, the use of readers as well as building ramps (Wolanin, 2005).

While institutions of learning provide most accommodation required for effective participation of SWDs, the support provision beyond what the institutions provides are provided by SWDs. For instance, SWDs may take twice as long as their peers without disabilities to complete degree

programmes which leads to additional room and semester costs which must be borne by SWDs (IHEP, 2004; Wolanin, 2005). In addition, the costs of diagnostics tests related to disability, sign language interpretation among others usually fall on the students and their families except in some few case where help to meet these costs may come through student financial aid, a social service program such as vocational rehabilitation, or the college (Belch, 2004; Wolanin and Steel 2004). As a result of these cost burden experienced by SWDs, adequate financial support to meet these costs is critical in ensuring equal access to higher education among these learners (Belch, 2004: Heelan, 2012: Fuller, Healey, Bradley, and Hall, 2004).

The Kenyan government among other developing countries has put in place measure to ensure adequate provision for effective inclusion of SWDs through various policy and statutory documents. The Ominde Report (Kenya Education Commission, 1964), The report on the National Committee on Educational Objectives and Policies (Gachathi report, 1976) and The Presidential Working Party on Education and Manpower Training for the next Decade and beyond emphasize on a clear national strategy to support the specialized training and provision of special instructional materials and services for special education programmes in regular education setting. The SNE policy (2010) also mandates that all learning institutions shall take into consideration the special learning of SWDs and sets out clear policy guidelines regarding the appropriate budgetary allocations for support provision for effective inclusion of these learners.

However, the role of the government in effecting support provision for effective inclusion of SWDs is unclear (Gichura, 1999: MoEST, 2005). To ensure adequate provision for effective inclusion of SWDs in the mainstream education system, a well-structured funding arrangement is, therefore, desirable. Increasingly, information on the cost of inclusion for these learners is required to provide insights to policy-makers on developing sustainable funding model to support the participation of this group.

1.2 Statement of the Problem

Despite the fact that inclusion of SWDs spread over decades, their access and retention to completion in the mainstream higher institutions of learning is very limited.

Out of about 115 million school-going population of SWDs world-wide, less than 40 million (35%) are included in higher institutions of learning with the majority dropping out during their first year (UNESCO, 2005). In Kenya, inclusion of SWDs in six public universities represents only 0.175% of the total university enrolments (Wawire, 2008).

While most studies reveals that the high cost of support provision required for effective inclusion of SWDs in higher education among other factors is the major cause of this form of exclusion (Fosters, 2003), limited studies have focused on the cost of participation of SWDs in these institutions of higher learning. In addition, while there has been a significant increase in government

financial support for education of SWDs as a means of alleviating exclusion of these learners, it's not clear whether the investments made have been adequate in addressing their costs of participation. This study, therefore, sought to establish the cost incurred by SWDs for their effective participation in public universities which stood out as a gap to be addressed.

1.2.1 Purpose of the Study

The purpose of this study was to establish the costs incurred by students with visual, hearing and physical disabilities for their inclusion in public universities with a case of Kenyatta University per academic year.

1.3 Objectives of the Study

To achieve its purpose, this study formulated the following objectives:

- i. Determine the range of special and regular needs available for effective participation of students with visual, hearing and physical disabilities enrolled in Kenyatta University.
- ii. Establish the cost of special learning needs incurred by students with visual, hearing and physical disabilities for their participation in Kenyatta University per academic year.
- iii. Establish the cost of regular learning needs incurred by students with visual, hearing and physical disabilities for their participation in Kenyatta University per academic year.
- iv. Establish the sources and level of financial support available to students with visual, hearing and physical disabilities for their participation in Kenyatta University per academic year.

1.4 Research Questions

To achieve its purpose, this study sought to answer the following questions:

- i. What range of special learning needs is available for inclusion of students with visual, hearing and physical disabilities enrolled in Kenyatta Universities?
- ii. How much do students with visual, hearing and physical disabilities enrolled in a public university spend on special learning needs required for their inclusion per academic year?
- iii. How much do students with visual, hearing and physical disabilities enrolled in a public university spend on regular learning needs required for their inclusion per academic year?
- iv. What sources and level of financial support are available to students with visual, hearing and physical disabilities enrolled in public universities per academic year?

1.5 Research Hypothesis

The study was guided by the following hypothesis:

- H₀₁. There is no significant difference between the cost of special and regular needs incurred by SWDs enrolled in regular education programmes (REP) and SWDs enrolled in institutional-based programmes (IBP) for their inclusion.

1.6 Significance of the Study

The findings of this study provided insight and understanding on cost of inclusion of SWDs in public universities. This may be helpful to financing agencies including Higher Education Loans Board (HELB), Ministry of Higher Education, Non-Governmental Organizations (NGO'S), and institutions of higher learning among other stakeholders for policy-making regarding budgetary allocation of dwindling to match the financial needs for university education for SWDs.

The findings of the study may also help financing agencies and institutions of learning that supports education of SWDs in monitoring of expenditure levels, designing, planning, and evaluation of financial support provided to these learners. Understanding of different cost of support services incurred by SWDs may also enhance setting policies that facilitates provision of adequate and appropriate special services for their effective inclusion in higher education.

The findings of this study might also play a role in forming a basis for other broad studies or sealing the wide knowledge gap on cost of inclusive education for SWDs.

1.7 Delimitation and Limitation of the Study

1.7.1 Delimitations of the Study

The study was limited to students with visual, hearing and physical disabilities. This is because they formed the majority of SWDs registered with Kenyatta University Students with Disability Office (KUSDO).

1.7.2 Limitations of the Study

The major limitation of this study was scarce literature in Kenyan context as most studies have been undertaken in developed countries thus the context within which the findings were made may not be the same as the Kenyan context.

1.8 Assumptions of the Study

The study assumed:

- i. The capability of the students to do the cost estimation.
- ii. The reliability of the research instruments to gather accurate cost information.

1.9 Theoretical and Conceptual Framework

1.9.1 Theoretical Framework

This study adopted the Human Capital Theory Schultz (1960) and Social Model Theory of Disability (UPIAS, 1976). The social model identifies the society as the main contributory factor in disabling people by unnecessarily excluding and isolating them from full participation in society (Oliver, 1996: UPIAS, 1976). In this view, lack of adequate support provision required for

effective participation of SWDs in the society is a major cause of their exclusion (Wolanin and Steel, 2010).

The social model theory, therefore, focuses on removing these elements of exclusion as a matter of full integration of SWDs in the society. These forms of exclusion may include but not limited to lack of adequate special learning equipment and services, restrictive physical structure in terms of the design of buildings and the general curriculum and inadequate financial support for these provisions. This theory, therefore, fits this study because it focuses on cost incurred by SWDs on these provisions as one of the logical step of ensuring adequate financial support that ensures effective participation in regular education setting rather than segregation model of service delivery.

The cost of inclusion of SWDs was also based on the human capital theory. This theory basically concerned with the cost and benefits of educational investment and argues that investing in education and training creates "human capital", in form of new knowledge, skills and desirable attributes, all of which increase employability and productive capacities of all the beneficiaries just the same way as investment in new physical assets. This implies that for each additional year of education and training completed a series of economic benefits flow to both the individual who has added to their stock of knowledge, and to the community/economy to which the individual contributes that knowledge and more so to SWDs Wolanin, (2005). Human capital theory also argues that an individual will invest in education owing to

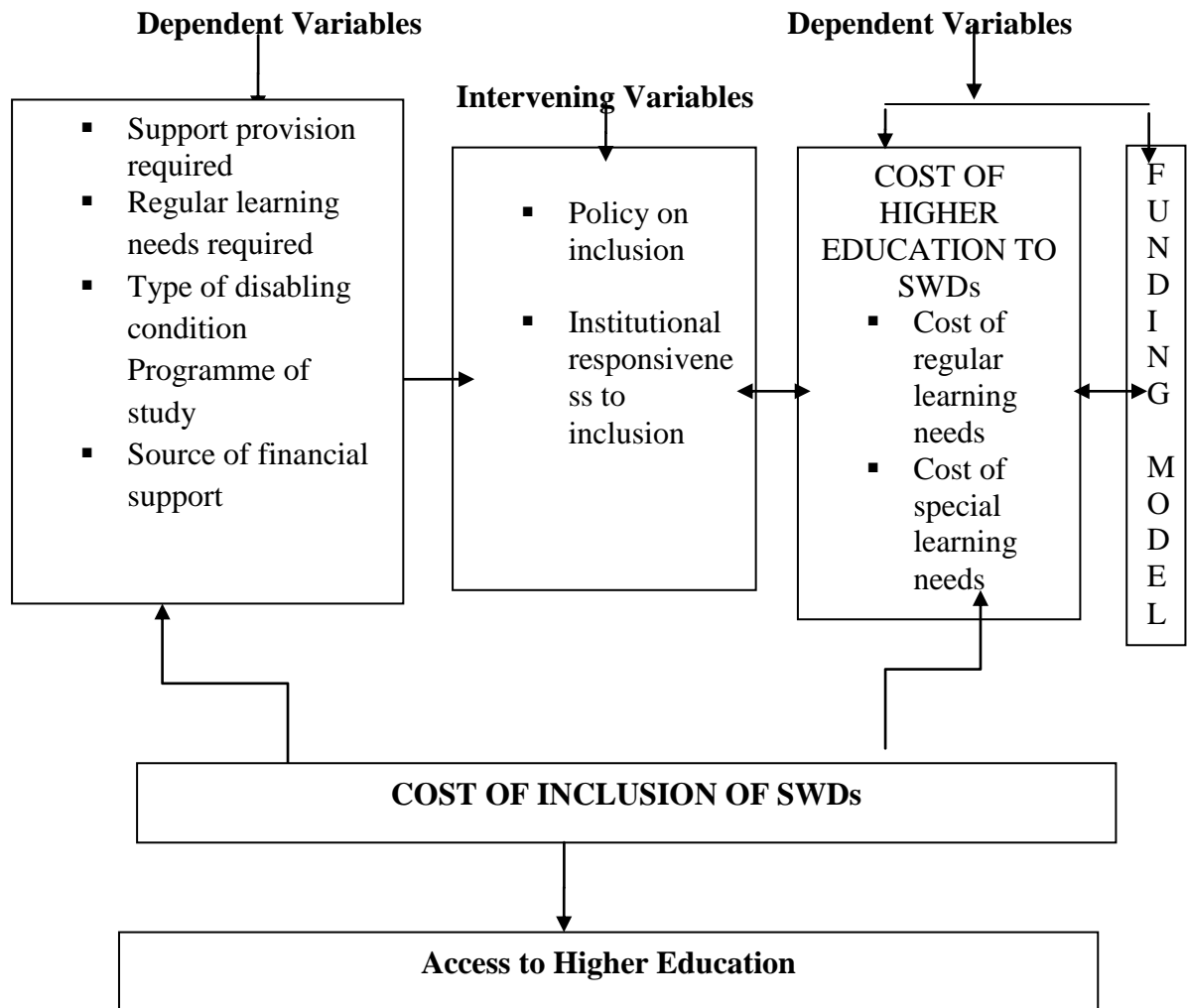
the significant returns and therefore graduates should be expected to contribute to the cost of their HE (Greenaway & Haynes, 2003).

The theory fits the study because investing in higher education for SWDs brings forth both social and economic benefits not only to SWDs but also to the entire community. Establishing how much SWDs invest on regular and special learning needs for their participation in these institutions of higher learning is also a logical step in developing appropriate funding model that meets their university education cost requirements.

1.9.2 Conceptual Framework

Access and retention of SWDs in the mainstream higher education is an ultimate goal in ensuring equal educational opportunities for all. This is achieved through provision of adequate and appropriate regular and special learning needs, appropriate inclusion policies and institutional responsiveness to inclusion. Higher institutions of learning with well-developed policies on inclusion and are responsive to inclusion of SWDs are also likely to provide a wide range of support provision and increased level of financial support thus reducing the cost incurred by SWDs. These will in-turn increase their access and retention. The policy makers may then decide on the funding model appropriate to SWDs based on the costs they incur for their university education. The relationship between these variables is illustrated in Figure 1.1.

Figure 1.1: Cost of Participation in Higher Education to SWD



Source: Adopted from Osman S. (2008). Financial costs of sprawls

1.10 Operational Definition of Terms

Assistive devices: Refers to any device or services used to improve the participation of SWDs in the mainstream education system (Council for Exceptional Children, 2005).

Cost: Refers to the minimum spending incurred by SWDs for their effective participation in public universities.

Inclusion: Refers to the practice of educating SWDs in the general education classrooms as opposed to education in segregation.

Persons with visual impairment: Refers to persons with impaired vision which requires support provision to enable them participate effectively in the general education setting.

Persons with hearing impairment: Refers to persons whose hearings are severe that they are unable to process linguistic information through hearing.

Persons with physical handicap: Refers to persons with severe orthopedic impairment.

Special Needs Education: Refers to education which provides appropriate modification to cater for diverse learning needs of SWDs.

Special Education Needs: Refers to educational needs that are unique to students with disabilities.

Support provision: Refers to specialized materials, equipment or services provided to SWDs to ensure their effective participation in the mainstream education system.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents literature review of previous researches that are significant in guiding the study. It has been reviewed under the following sections: Characteristics of SWDs in Higher Education, support provision required for inclusion of SWDs, cost of inclusive education and financial support for inclusion of SWDs.

2.2 Characteristics of SWDs in Higher Education

While several attempts have been made to promote access and retention of SWDs in higher education, their access is still very limited. Angela, Robinson, O'Meara, and Amanda, (2006) found that the proportion of SWDs in higher education has remained low despite their high proportion in secondary. Foundation of Tertiary Institutions of the Northern Metropolis (FOTIM), (2011) further revealed that the proportion of these learner is roughly less than 1% of the total student population enrolled in higher institutions of learning (FOTIM, 2011).

Out of this small population, students with visible disabilities form the highest population representing 53% of the total population of SWDs, while students with multiple disabilities and students with health impairments forms 34% and 13% of the total population of SWDs respectively (FOTIM, 2011). When proportions of these learners were examined across gender, male students were higher than the proportion of female students (Angela, Robinson, O'Meara, and Amanda, 2006; OECD, 2003).

A study by Institute for Higher Education Policy [IHEP], (2004) noted that SWDs unlike the non-disabled students are limited in the programme of study they are enrolled in, mode of study, course pursued and programme of study. For instance, the percentage of SWDs enrolled in undergraduate (UG) programmes are higher than those enrolled in post-graduate (PG) with the proportion of those enrolled in full-time programmes being higher than those enrolled in part-time programmes (Angela, Robinson, O'Meara, and Amanda, 2006). In addition, majority of these learners also pursued Arts courses, followed by those pursuing commerce but a low representation in the number of students pursuing sciences, education, health sciences and law courses (FOTIM, 2011). Most studies also revealed that stratification in courses pursued among SWDs as opposed to non-disabled students SWDs is majorly attributed to support provision requirement per course of study (Danmark, 1999; Wolanin and Steel 2010). Support provision is therefore critical in ensuring effective inclusion of SWDs in the mainstream education setting.

2.3 Support Provision for Inclusion of SWDs in Higher Education

Without the help of support provision, majority of SWDs would be excluded from the mainstream education setting. A study by UNESCO, (2005) revealed that about two-thirds of the population of SWDs known to the institutions of higher learning required educational supports and services whereby 80% of these learners required major adaptations on teaching strategy and environmental adaptations while only 20% required minor adaptations.

Institutions of higher learning play a major role in the provision of these special learning requirements (Danmark, 1999). Wolanin and Steel (2010) in their study on higher education opportunities for SWDs, established that most institutions of higher learning provided a wide range of academic adjustments including lengthening the time for degree completion, extending the time for examination, offering examinations in alternative formats such as places that do not have distractions for students with visual impairments and offering exams in alternative formats such as oral instead of written, provision of large print software for students with low vision and priority access to course registration.

The other academic adjustments mainly provided to these learners included facilitation of student funding, computers adapted with jaws and zoom software, materials in braille or audio format, digital recorders, sign language interpreter, accessible residence accommodation, and inter-campus transport specialized supervision (FOTIM, 2011; Nelson, 1996). The adaptation to physical facilities may include modifications on stack passageway widths, entry ways and elevators (Nelson, 1996) while special services provided in the libraries may include retrieval of materials from the stacks, photocopy assistance, sign language assistance or telecommunication device for the deaf, text enlargement or screen reader and adaptive technology which enabled SWDs to access online catalog (NCSPES, 2002).

However, while most institutions of higher learning provide a wide range of support provisions, these provisions are inadequate (FOTIM, 2011). The National Council on Disability (NCD), (2003) established that the support provisions which are inadequately provided included captioning services, alternate means of accessing courses, accessible library services and real-time captioning for students with hearing impairments. Another study by OECD, (2003) also established that more than 90% of higher institutions of learning had no structural modifications specific to the needs of SWDs. In addition, most of the libraries in these institutions paid less attention to the assistive technology that enabled SWDs to search library's online catalogue and database, reformatting of print to braille for students with visual impairments and employment of staff responsible specifically for SWDs (Nelson, 1996).

The limited studies in Kenya also reveals that support provision provided to SWDs are inadequate. Wachianga, (2011) examined the provision of support services for learners with physical disabilities in two selected schools in Kisumu East District in Kenya. The study established that while support provision facilitated socialization and academic participation of learners with physical disabilities, provision of most support services like mobility services, medical services and counseling services were inadequate. A study conducted by Kenya Integrated Education Programmes to analyse resource distribution for SWDs also established that the pupil to braille machine ratio for the visually impaired students is 5:1 instead of the recommended 1:1. For instance, the braille machine channelled to five hundred integrated primary

schools, one hundred secondary schools and three teaching training colleges, covered only 50% of the needs. These studies also established that inadequacy in these provisions is mainly due their high cost and more so the financial implications in meeting these costs.

Wawire, (2009), examined access and retention opportunities for Students with disabilities in Kenya's Higher Education and included the physical and support services available for these learners in public universities. The study found that the level of provision for mobility assistive services and equipment like ramps, wheel chair slides, wheel chairs and lifts for students with physical disabilities, braille transcribers, readers, audio reading equipment for those with visual impairments including sign language interpreters and hearing aids for students with hearing impairments among others were inadequate. She also notes that most of these institutions lack specifically designed toilets with large doors to accommodate wheel chairs for students with physical disabilities, transport services to move them around given the long distances between the hostels and classrooms, special allowances in terms of extra time and curriculum adaptation in terms of course content. Ong'eta and Nyambura (2012) also pointed out that while assistive technology are critical for effective learning of SWDs, most of these provisions are rarely provided. Establishing the cost of these special learning requirements is therefore one of the logical steps in ensuring adequate support provision.

2.4 Cost of Inclusion for SWDs

The cost of special education has been growing both in absolute and relative terms (Wolanin, 2005). As result, the high costs of special education and regular learning needs has been a major barrier to SWDs in their quest to complete higher education especially due to the fact that majority of SWDs come from low- income families (Wolanin and Steel 2010).

Most studies reveal that the cost of education per SWD is at least two to five times the cost educating the non-disabled students (Kakalik, Furry, Thomas and Carney 1999; Chambers, 2002; Wolanin, 2005). For instance, the costs of educating children with impaired speech and functionally blind children is 1.37 to 5.86 times the cost of regular education for non-disabled peers respectively (Kakalik, Furry, Thomas and Carney 1991). The elementary and secondary institutions of learning spent an average \$ 3883 for students with mild disabilities to \$ 8717 for students with severe disabilities (Odom, 2005). A study by OECD (2003) while examining inclusion of students with special educational needs in mainstream schools in New York also established that approximately \$832 billion per annum are expended on special education with the average cost per special education student ranging from \$30,000 to \$82,000 billion depending on the severity of the child's disability one quarter of this budget being spent on staff employed for the purpose full inclusion.

On the other hand, the average per pupil spending by school districts was \$ 7,591 per-pupil on special education services and \$ 4,300 on regular education services amounting to a total of \$ 12, 891 per pupil with tuition alone costing

two to three times per pupil expenditure (Chambers, 2002). Heather (2000) further noted that the average cost incurred by institution of learning on support provision for SWDs was \$ 7,153.50 per year with the instruction costs representing 68.16% of the total special education services expenditure, the cost of transportation represented 17.05% while the cost of administration was the least expensive and accounted to 2.52% of the total expenditure. While these studies have focused on the amount spent by the institutions for inclusion of SWDs, what is spent by SWDs on these special and regular learning needs especially in higher education needs to adequately explored.

Holloway (2001) found that SWDs incurred extra costs of assessing course information among other often expensive services deemed essential for the continuation of their studies and most of them thus faced financial difficulties in meeting these cost. These learners may also take twice as long as their peers without disabilities to complete degree programmes which lead to additional years of room and semester costs which must be borne by SWDs (IHEP, 2004; Wolanin, 2005; The National Council on Disability (NCD), 2003). In addition, the costs of diagnostics tests related to disability and cost of documentation of disability usually fall on the students and their families except in some few case where help to meet these costs may come through student financial aid, a social service program such as vocational rehabilitation, or the college (Wolanin and Steel 2004). These learners also incur extra cost on counseling, therapy, medication associated with disability,

special food to meet the dietary restrictions, wheelchairs maintenance among others (Odom, 2005).

The extra costs incurred by these learners varies with age level, gender, programme of study, type of handicapped and level of education (Kakalik, Furry, Thomas and Carney 1999; Chambers, 2002). A comparative analysis of cost studies in special education in elementary and secondary level of education established that special education costs are higher for students with severe disabling condition (Chambers, 2002). Studies also reveals that female, older and part-time students spend more on direct course costs (e.g., books, computers, and equipment) especially in the first year (Darmody, Smyth, and O'Connell, 2005).

The cost of educating SWDs also varied with the type of placement. A study by UNESCO (2005) established that cost of providing education for children with disabilities is estimated to be 7 to 9 times higher when placed in special schools as opposed to providing for their needs in mainstream education where the costs of transportation, institutional provision and administrative costs are reduced. Odom, (2002) while investigating instruction cost of SWDs in pre-school and early childhood education in inclusive and segregation model of service delivery further established that the average instructional cost in inclusion programmes was 11% less than the traditional model and that the total instructional costs per student to school per hour was 8% (\$5.77 versus \$6.28) lower for inclusion than for the traditional model.

Apart from the cost of special learning needs, SWDs incur high costs regular learning needs. A study by The National Council on Disability (NCD), (2003) further established that total cost of regular education needs incurred by SWDs which includes direct expenses for tuition, fees, room and board, as well as estimates and allowances for indirect expenses such as books, supplies, transportation, incidental and personal expenses is estimated at \$49,900 and \$59,100 for commuter and resident students respectively. The study also pointed out tuition fee as the highest cost element followed by the cost of rooms and boarding facilities. Darmody, Smyth, and O'Connell, (2005) further established that students enrolled on different types of courses spend an average of €25 per month on books and materials (those with medical expenses spend an additional €26 per month) with rents and printing/paper costs being the main area of expenditure for students.

Ibua (2010) examined a sample population of 1,630 respondents who were randomly picked from public universities, collaborating colleges, lecturers and administrators. The study estimated the cost of regular higher education borne by parents and students per academic year at Ksh 71,000 (\$2,405), Ksh.271,000 (\$9,180) and Ksh 481,500 (\$16,311) for government sponsored students enrolled in public universities, self-sponsored students enrolled in public universities and for students enrolled in private universities respectively. The study also found that the fee paid per year is very high for self-sponsored students with a mean of 147,244 as compared with a mean of 57,826 for regular students. Ngolovoi (2006) in the study on testing students'

loans also established that module I students pay tuition fees of Ksh 16,000 (US\$542), while the module II students pay about Ksh 150,000 (US\$5,081) and considerably more in some disciplines such as medicine. These research findings suggest that SWDs who are disadvantaged by poverty and the extra cost they incur as a result of disability faces more challenges in meeting the cost of higher education than the non-disabled peers. In addition, based on the fact that most SWDs rely on loans and bursaries for their university education, there is also need to examine the type and level of financial support in meeting these costs. This implies that if SWDs are not provided with adequate financial support to address their cost of participation, most of them will be simply priced out of higher education by their inability to afford the costs of higher education due to disability.

2.5 Financial Support for Inclusion of SWDs

Despite the fact that SWDs incur high costs for their participation in higher education as compared to non-disabled learners, these learners usually receive limited financial support. The World Bank's report: Education for All reveals that despite the fact that SWDs are faced with high cost of higher education there is lack of commitment on financial support to students with disabilities.

Most studies suggest that financial issues may deter disadvantaged groups from entering higher education and make continuing with their courses more difficult. Healy, Carpenter and Lynch, (1999) on their study of first-year institute of technology undergraduates in Ireland reports that financial

difficulties in paying for specific, often expensive, services deemed essential for the continuation of their studies are an important factor in explaining non-completion. However, while most countries have made commitment in funding education for SWDs, the amount of financial aid available to students from low-income families including SWDs does not meet the costs of ever increasing regular and special education college costs (NCD, 2003; Darmody, Smyth, and O'Connell, 2005; Rudebusch, 2003; Gardner, 2000; Wolanin, 2010). Furthermore, a study by National Centre for Education Statistics (2000) on institutional perspective on students with disabilities in post-secondary education further revealed that the amount of financial support rendered to SWDs is less than the amount rendered to students without disabilities. For instance, only 48% of SWDs received financial aid as compared to 59% of students without disabilities. In addition, SWDs who managed to obtain aid received an average of \$ 5,100 versus \$ 6,500 for students without disabilities.

Most studies revealed that special needs education costs are majorly funded by governments. UNESCO (2001) while examining the sources and the level of funding for special education cost established that special education funding sources in most developing countries includes governments, voluntary organizations, NGOs and parents with governments being major sources. That is, 63% of special education cost is covered by governments, 35% voluntary organizations, and 2% by external support. For instance, the government pays salaries to special teachers, running costs and purchases of textbooks while NGOs provide for transportation, building, technical equipment and materials

(UNESCO, 2001). On the other hand, Non-Governmental Organization (NGO's) forms the major alternative source of funding and provided up to 40% of the total cost of special needs provision (UNESCO, 2005) while in some few cases the cost of higher education may also be made by the social service agencies such as vocational rehabilitation (Wolanin, 2010).

The ability of the available funding model in addressing the costs of education for SWDs with disability depends on the funding model used. Nelson, Muir and Drown (2000) and National Center for Education Statistics (2000) established that schools finance systems whose funding model was based on average per pupil expenditure which linked special education funding to actual cost of special education were better in terms of addressing the financial needs of SWDs as compared to schools which used pupil weighting formula. Studies by New Jersey School Boards Association (1999) and Meijer (1999) on financing special education further established that a pupil weighting system where special education children are assigned to tiers that are based on categories of disability, and the districts received state categorical aid based on the number of students didn't adequately address the cost of special education.

Although these funding are predominantly met by private and public agency, most often than not, when the funds are not sufficient in covering the students' needs, additional funding had made out-of pocket that is by SWDs and their families or, conversely, students had to 'do without' (Holloway, 2001; Gardner, 2000; Wolanin, 2010; McCoy, Emer and Darmody). The out-of

pocket amount incurred by SWDs may be obtained from paid employment is estimated at €301, representing the largest component of average monthly income, €266 from parents and €224 from state grants (Holloway, 2001).

In Kenya, very limited studies have focused on financial allocation for higher education. Ngolovoi (2006) in the study on testing student loans established that undergraduate student loan scheme plays a major role in financing higher education and covers about three quarters of the yearly higher education costs that must be borne by government sponsored students and their family and about 40 percent of the tuition fee for the self-sponsored students. The study also established that the amount awarded to these ranged from a maximum Ksh. 42,000 (US\$1,423), Ksh. 55,000 (US\$1,863), Kshs 60,000 (US\$2,032) 2005/06, 2006/2007 and 2008/09 financial years respectively. Government-sponsored students also received a minimum bursary of Ksh. 4000 and a maximum amount of Ksh. 8000 per year while self-sponsored students did not receive bursaries from HELB and instead apply to the Ministry of Education for funds or to Constituency Development Fund (CDF) for grants or bursaries. The amount of loans and bursaries currently awarded to learners has not been adequately explored.

2.6 Summary of Literature Review

Most of the research studies reviewed on support provision, costs and the financial support available for inclusion of SWDs focused at primary and secondary level of education. Studies on support provision are in agreement that institutions of higher learning provide a wide range of support provision required for effective inclusion of SWDs. These studies are also in agreement that the support provisions provided by these institutions are inadequate in addressing the needs of SWDs.

Most studies reveal that the cost of education per SWDs is at least two to five times the cost educating the non-disabled students. Studies also revealed that SWDs bears most of these costs with the costs varying with age level, gender, programme of study, type of handicapped and level of education and gender. Those enrolled in module I students pay tuition fees of Ksh 16,000 (US\$542), while the module II students pay about Ksh 150,000 (US\$5,081) regular learning needs with tuition fee represent the highest cost followed by the cost of rooms and boarding facilities.

These studies on financial support for inclusion of SWDs suggest that financial issues may deter disadvantaged groups from entering and completing higher education. While these studies also revealed that governments play a major role in financing higher education for SWDs, they all conclude that the amount of funding available to these learners does not match the cost required for their effective inclusion.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodology used in the study. It describes in detail how the study was conducted by describing the study variables, location of the study, target population, sampling techniques and sample size, research instruments, pilot study, validity, reliability, data collection techniques, data analysis logistic and ethical considerations.

3.2 Research Design

The study adopted a mixed method research design which employs both qualitative and quantitative methods. Qualitative method was used to collect data on regular and support services required for inclusion while quantitative data was used to collect data on cost of these requirements. This design was considered appropriate because it enabled the triangulation of results which ensured that the strengths of one method overcome the weaknesses of the other method thus strengthening quality and reliability of the findings.

3.2.1 Study Variables

The study explored three levels of variables, independent, dependent and intervening variables.

3.2.1.1 Independent Variables

The dependent variables included the type of disability, regular and support provision, type of sponsorship and the amount of available financial support.

3.2.1.2 Dependent Variables

The dependent variable was the cost of inclusion per SWDs in public universities that is the cost of regular learning needs and the cost of assistive devices and support services.

3.2.1.3 Intervening Variables

The intervening variables included the policy on inclusion and the institutional responsiveness towards inclusion of SWDs.

3.3 Location of the Study

The study was carried out at Kenyatta University main campus. Kenyatta University is located in Kahawa, about 23 kilometres from Nairobi's city centre, along the Nairobi-Thika road and it is set on 1,100 acres of land. The university traces its history to a colonial military installation known as the Templer Barracks which was converted into Kenyatta College primarily as a teacher training institution in 1965. Kenyatta College was then elevated to a constituent college of the University of Nairobi in 1970 and was re-named Kenyatta University College. Kenyatta University College then became the third public university in Kenya on August 23, 1985 through the enactment of the *Kenyatta University Act* by the National Assembly of Kenya.

During this period, the majority of the graduates were from the school of education making the Kenyatta University a leader in educational courses. Over time, the university expanded the courses it offered to include certificates, diplomas, masters and Ph.D courses in various schools and departments. These include school of economics, engineering, environmental

studies, and health science, among others. In 1995, the department of special education was established under the school of education. Since then, this has acted as a magnet making Kenyatta University an institution with the highest numbers of SWDs in all public universities in Kenya.

This locale was selected purposively because it is the only public university that integrates the highest number of SWDs into various degree programmes in Kenya. It is also the only university that has established a disability office known as KUDSO (Kenyatta University Disability Students Office) which is mainly concerned with the provision and other affairs of SWDs in the university.

3.4 Target Population

The study targeted all one hundred and fifteen (115) undergraduate (regular and institutional-based) students with SWDs who were registered by KUDSO and were on session when the data was being collected. These comprised of eighty five (85) students enrolled in regular education programme: sixty-two (62), twenty-one (21) and two (2) students with visual, physical and hearing impairments respectively. It also comprised of thirty (30) students enrolled in institutional-based programmes: Eighteen (18) students with visual impairments, seven (7) students with physical disabilities and five (5) students with hearing disabilities.

3.5 Sampling Techniques and Sample Size

3.5.1 Sampling Techniques

The study adopted a stratified random sampling technique. According to Orodho, (2003), the rationale for stratified sampling is to ensure that certain sub-groups in the population will be represented in the sample in proportion to their numbers in the population itself. The total number of SWDs who were registered by KUSDO at the time when that data was being collected was first classified per programme of study. These students were further classified according to the type of disability. The population sample of more than twenty students per disability category was sampled but populations of less than twenty students were all examined.

Students with visual impairments enrolled in regular education programmes were sixty-two (62) and were sub-divided into three groups: Thirty-two (32) students with low vision, twenty-five (25) students with total blindness and five (5) students with albinism. Equal allocation method (one third of the total population from each stratum) was then selected randomly from each sub-group. A total of twenty-one (21) students were then selected as shown in table 3.1.

Table 3.1: Sample population of regular students with visual disabilities

Categories of persons with disabilities	Students with low vision	Students with total blindness	Learners with albinism	Total students with visual impairments
	32	25	5	62
Sample population	11	8	2	21

A third of the total populations of twenty-one (21) regular students with physical disabilities enrolled in regular education programme were selected through simple random sampling. The study, therefore, examined a sample population of nine (9) students with physical disabilities as presented in table 3.2.

Table 3.2: Sample population of students with physical disabilities enrolled in regular education programme

SDWs	Total Population	Sample Population
Students with physical disabilities	21	7

The total numbers of students with hearing impairments were only two (2) and thus the entire population was examined. The study, therefore, examined a sample population of two (2) students with hearing disabilities as presented in table 3.3.

Table 3.3: Sample population of students hearing impairments enrolled in regular education programme

SDWs	Total Population	Sample Population
Students with hearing impairments	2	2

On the other hand, SWDs enrolled in institutional-based programme were less than twenty each disability category and the entire population was examined. This comprised eighteen (18) students with visual impairments, seven (7) students with physical disabilities and five (5) students with hearing disabilities. A total sample population of thirty (30) institutional-based students with visual, hearing and physical disabilities was examined as shown in table 3.4.

Table 3.4: Sample population of institutional-students with visual, hearing and physical disabilities

Students with hearing disabilities	Students with physical disabilities	Students with visual disabilities	Total population
5	7	18	30

3.5.2 Sample Size

A total of sixty (60) students with visual disabilities, hearing and physical disabilities were sampled as presented in table 3.5.

Table 3.5: Sample Size of SWDs

Category of SWDs	Students with VI	Students with HI	Students with PH	Total sample size of SWDs
SWDs enrolled REP	21	2	7	30
SWDs enrolled in IBP	18	5	7	30
Total	39	7	14	60

3.6 Research Instruments

Questionnaire and interviews were used to collect data.

3.6.1 Questionnaires

Questionnaire was developed based on the research questions and they were used to gather information on the cost of support provisions and regular learning needs required for effective inclusion and the available level of funding for university education from the SWDs. It consisted of four sections: The first section sought information related to student's background including disability status and course of study, the range of assistive devices and support service available for their effective inclusion in terms of **type, quantity and availability**. The second and the third sections sought information regarding the cost of regular learning and special learning needs for SWDs respectively. Finally, the last section sought information on level and amount of financial

support available for university education for SWDs. Researcher sought the expertise of braille specialist from Kenyatta University resource centre to help in braille (from print to braille) the questionnaires for students with total loss of vision and also debraille (print to braille).

3.6.2 Interview schedule

Interview schedule was also used to collect data regarding regular and special learning needs required for inclusion of SWDs. This method calls for direct contact between the researcher and the respondent (Kothari, 2004). Interviews were conducted by the researcher and the questions asked included; What range of regular learning needs do you require for your inclusion, What range of special learning needs do you require for your inclusion, what range of both regular and special learning needs are provided by Kenyatta University and what range of both regular and special learning needs are provided by yourself? Interviews with students with hearing impairments were conducted with the help of sign language interpreter.

3.7 Pilot Study

Before the actual study, a pilot study was conducted in the University of Nairobi. The population sample constituted twenty (20) students with disabilities: Ten (10) students with visual impairments, seven (7) students with physical disabilities and three (3) with hearing impairments. The same instruments were administered to the same group of respondent after a period of two weeks. Two weeks was considered long enough to avoid recall by the respondents on the first test and short enough for maturity of the respondents

and achievement of similar results as the first test. The findings were analyzed and compared to establish validity and reliability of the instruments. The ratio between the test and the retest scores is an indication of the reliability of the instrument whereby the greater the value of the ratio, the higher the reliability of the instrument. This was determined by calculating **Pearson's product moment correlation coefficient (r)** between the first test and the retest. Pearson's product moment was chosen as it enabled the researcher to test for correlation between the first and the second test. These helped in identifying the unanticipated problems that might have appeared during the actual study and allowed for the revision of the research instruments before the actual data collection. It also made it possible to determine the appropriateness of the research tools. Kumar (1996) noted that in the test-retest (repeatability test), an instrument is administered once, and then again, under the same or similar conditions.

3.7.1 Validity

Validity is the ability of an instrument to measure what it is required to measure in terms of measurement procedures. The validity of the instrument was tested through content validity and criterion validity. Criterion validity was established by examining the test items of the research instruments carefully with the guidance of the supervisors to ensure that they exhaustively answered the research questions and met the expectations of the research. It also involved ensuring a logical link between the research questions and the objectives. On the other, criterion validity hand was determined by subjecting the instrument to a pilot study.

3.7.2 Reliability

Reliability of the instruments was determined through test-retest method. The instruments were administered to the respondents and analyzed. After one month, the same instruments were administered to the same respondents and analyzed. Pearson Product Moment Formula was then used to compute the correlation co-efficient of the two answers. This helped in determining the extent to which the contents were consistent in producing similar results. Using the Pearson Product Moment Formula, a correlation of 0.05 confidence interval level was used to determine the reliability of the items in questionnaires. The internal consistency value of 0.98 was established and indicated the reliability of the instruments.

3.8 Data Collection Procedures

After the acquisition of research permit from the Ministry of Education, Science and Technology, the data were collected by the researcher using questionnaires and interviews. Questionnaires were used to regular and special learning needs, the cost and the amount of available financial support for education of SWDs in a public university. First, the researcher made a courtesy call to sample population of SWDs two weeks before data collection using the list and contacts obtained from Kenyatta University students with disability office (KUSDO) to seek their consent. All SWDs who expressed willingness to participate in the study were also contacted to arrange an appointment in a quiet place on campus or any other place according to their preference after two weeks of the first contact and one week before the data collection.

During data collection, the purpose and procedure of the study were explained to the students before they responded to the questionnaires. The print questionnaires were converted to Braille for students who were totally blind while the font size of the questionnaires was magnified for persons with low vision to enhance their eligibility by the resource room assistance. The students then answered the research questionnaires individually within approximately forty minutes. The researcher personally administered the questionnaires and assisted the students by clarifying the questions where need be. Researcher also conducted interviews with SWDs on range of regular and special learning needs used for their inclusion in the university while administering the questionnaires.

3.8.1 Data Analysis

Quantitative data on cost of assistive devices and support services were organized using a step-down costing methodology, which offered a relatively simple and practical approach to costing: This involved determining the cost centres, cost items for each cost centre, quantity/ frequencies of each cost centre, allocating the cost to each cost item using an appropriate allocation bases and finally analyzing cost per procedure. Correlation analysis was employed to calculate the reliability of pilot study data and the data collected during the actual study. The quantitative data collected during the study was also computed with the help of Statistical Package for Social Sciences (SPSS) computer software (version 13.1).

3.9 Logistical and Ethical Considerations

3.9.1 Logistical Considerations

The researcher obtained a research permit from the Permanent Secretary (PS) Ministry of Higher Education through the Dean, Graduate School. Permission was sought from Kenyatta University Dean of Students' office before administering the research instruments in the field. The researcher also booked informal appointments with the respondents to establish rapport and to discuss the relevance of the study. The researcher also ensured that the questionnaires were translated to braille for students with total loss of vision and enlargement of the questionnaires text to ensure eligibility among students with low vision with the help of the braille specialist from Kenyatta University resource room centre.

3.9.2 Ethical Considerations

The researcher sought informed consent from the respondents before data collection and assured the respondents of confidentiality and anonymity of the research findings. The researcher also explained to the respondents what the research entailed and how data would be used before getting their informed consent from. The researcher also treated SWDs with dignity during the data collection by administering questionnaires and carrying out the interviews at the convenience (time and place) of the respondents.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter presents results and statistical analysis of the data collected from 60 students with visual, hearing and physical disabilities enrolled in Kenyatta University. The study employed questionnaires as the primary tool for data collection and the derived data were analyzed and interpreted with regard to the research questions. The results of the findings were presented in the following format:

- Demographic characteristics of the respondents.
- The range of assistive devices (AD) and support services (SS) required for inclusion of SWDs in a public university.
- The average cost of AD and SS required for inclusion of SWDs in a public university per academic year.
- The average cost of regular learning needs required for inclusion of SWDs in a public university per academic year.
- The total cost of regular and special learning needs required for inclusion of SWDs in a public university per academic year.
- The sources and level of financial support available for inclusion of SWDs enrolled in a public university.

4.1 Methods of Data Analysis

Descriptive and inferential statistics were used to analyze the data. The Statistical Programme for Social Science (SPSS) was utilized to prepare and while Atlas ti was used to organize and analysis qualitative data. The inferential statistics used was T-test which enabled the researcher to test the significance differences between the variables. The following was the null hypothesis:

HO1: There is no significant difference between the cost incurred by SWDs enrolled in regular education programmes (REP) and SWDs enrolled in institutional-based programmes (IBP) on regular and special needs required for their inclusion

4.2 Demographic Characteristics of the respondents

This section summarizes the demographic characteristics of the respondents. These include gender, type of disabling condition, severity of disabling condition, course of study, level of study, field of study, type of sponsorship and mode of study.

4.2.1 Gender

The study sought to establish the gender distribution among SWDs enrolled in Kenyatta University. The study noted a gender disparity among SWDs enrolled in both regular and institutional-based education programmes in favor of male students. Figures 4.1 present the findings.

Figure 4.1: Gender of SWDs enrolled in Kenyatta University

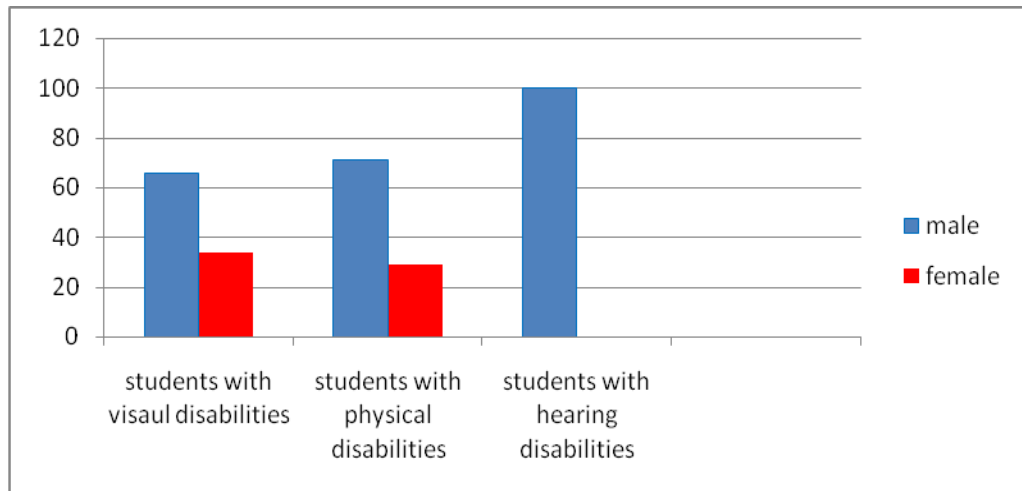


Figure 4.1 reveals that of the total population of students with visual, physical and hearing impairments enrolled in regular education programme, male students represents 64%, 71% and 100% as compared to 36%, 29% and 0% female respectively. This finding supports the finding by the Ministry of Education (2009) which revealed a glaring gender disparity among SWDs and more so students with HI which widens with every additional level of schooling. This finding also concurs with the finding by OECD (2003) which revealed that the proportion of female SWDs in higher education is at least 40% as compared to at least 60% for male SWDs. This implies that female SWDs are prone to exclusion as compared to the non-disabled students and thus there is need for critical examination on the barriers affecting their access in these institutions of higher learning.

4.2.2 The Population of SWDs per Disability Category

The researcher also sought to establish the population of all SWDs enrolled in Kenyatta University per disability category. Figure 4.2 presents the findings.

Figure 4.2: Type of disabling condition

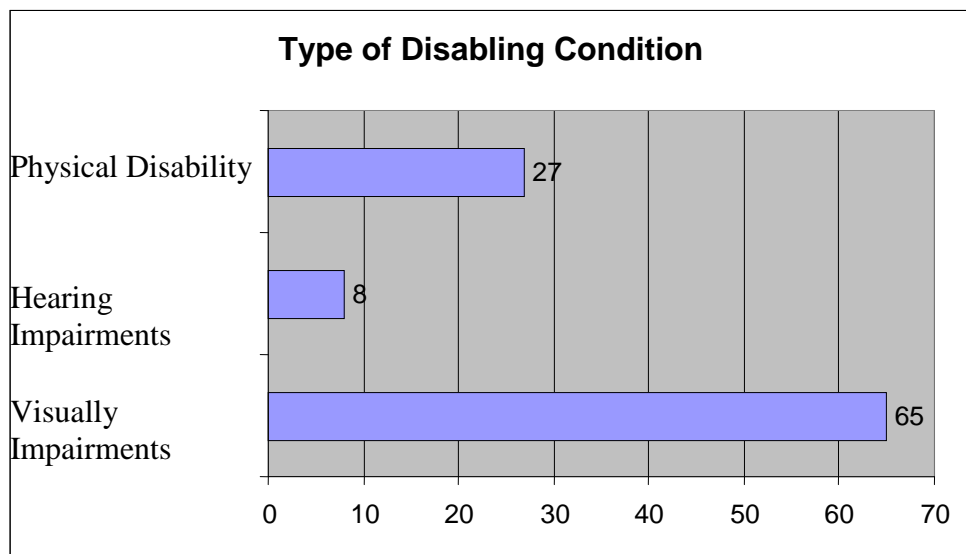


Figure 4.2 revealed that students with visual impairments forms the majority at 65% of the total SWDs served in the university while students with physically disabilities and hearing impairment forms only 27% and 8% respectively. This result is consistent with the finding by FOTIM (2011) which established that majority of the SWDs being served by many universities are students with visual and mobility impairments. The study finding is also in line with the finding by NCSPEC (2002) which noted that students with visible disabilities especially those with visual disabilities comprise the majority of SWDs served in post-secondary programmes.

4.2.3 Programme of Study

The study further sought to determine the programme of studies in which SWDs examined enrolled in. Figure 4.3 shows the findings.

Figure 4.3: Programme of study

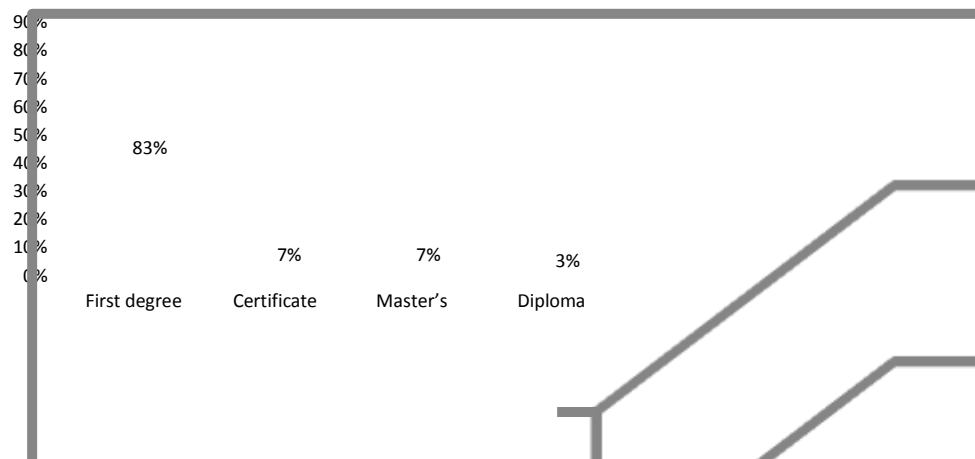


Figure 4.3 reveals that 83% of the respondents enrolled in first degree programmes, followed by those who enrolled in certificate, master's and higher diploma programmes at 7%, 7% and 3% respectively. This implies that enrollment of SWDs in masters and other post-graduate programme is very limited. This finding supports the finding by Angela, Robinson, O'Meara and Amanda (2006) which established that majority of SWDs are enrolled in undergraduate programmes as compared SWDs enrolled in post-graduate programmes.

4.2.4 Field of Study

The study also sought to determine the field of study pursued by the respondents. Figure 4.4 summarizes the findings.

Figure 4.4: Field of Studies Pursued by SWDs

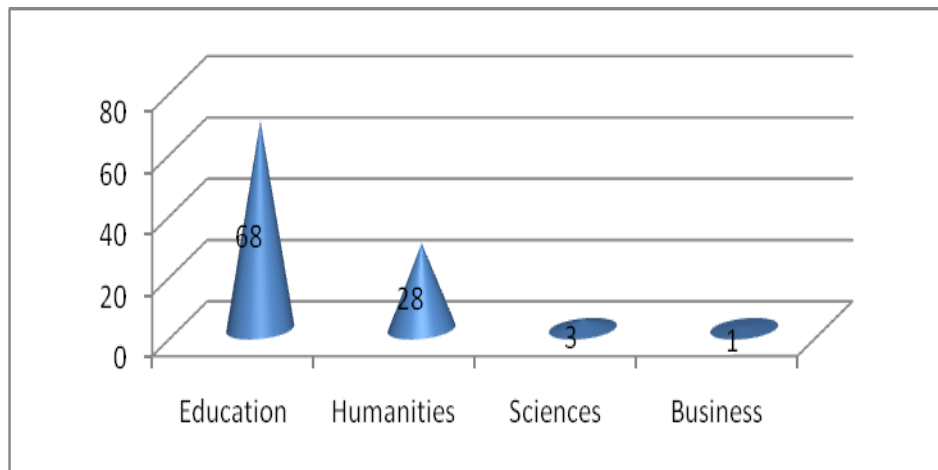


Figure 4.4 revealed that 68% of students with visual, hearing and physical disabilities enrolled in Kenyatta University specialized in education courses while 29%, 3% and 1% specialized in humanities, sciences and business courses respectively. This finding agrees with the finding by the FOTIM (2011) which established that majority of SWDs in higher education pursue art courses including education with low representation in science, business, health sciences and law courses. This may be largely attributed to the fact that most education and humanities courses are less expensive and do not require so much adaptation for effective participation of SWDs as compared to science and business courses.

4.2.5 Type of Sponsorship

The study also sought to determine the type of sponsorship available for SWDs. Figure 4.5 summarizes the findings.

Figure 4.5: Type of sponsorship

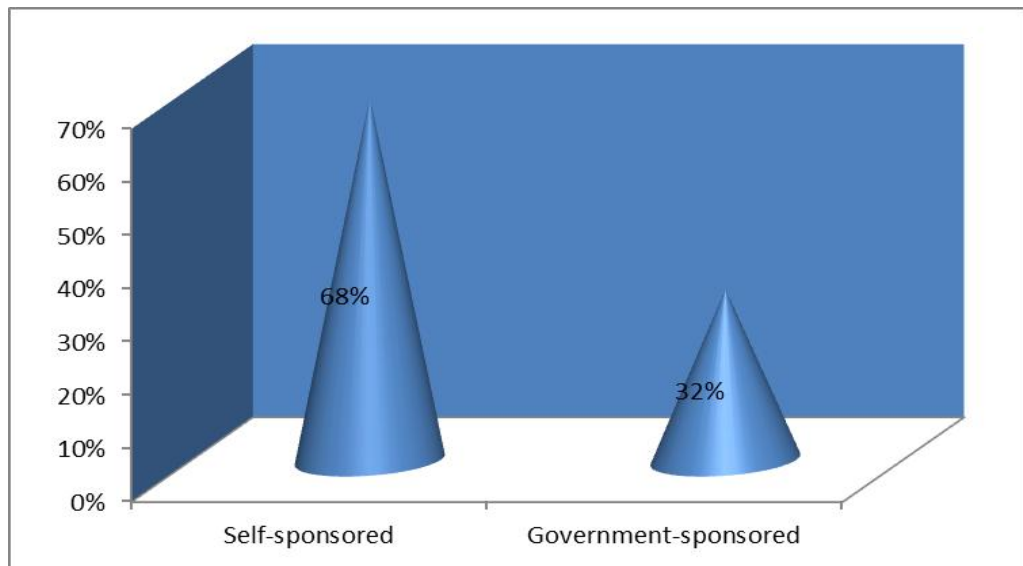


Figure 4.5 reveals that 68% of SWDs enrolled both in regular and school - based education programmes in Kenyatta University were self-sponsored as compared to 32% government-sponsored. This finding is in line with the finding by Idua (2010) who revealed that most students in public universities are self-sponsored. This may largely be explained by the fact that most SWDs could not attain entry point of B+ as required by the Joint Admissions Board (JAB) and were enrolled in parallel education programmes.

4.3 Assistive Devices and Support Services for inclusion of SWDs

4.3.1 The use of Assistive Devices and Support Services among SWDs

The study sought to find out the number of SWDs who required assistive devices and other reasonable accommodations for their inclusion in the university. Figure 4.6 presents the findings.

Figure 4.6: Need for assistive device and support service

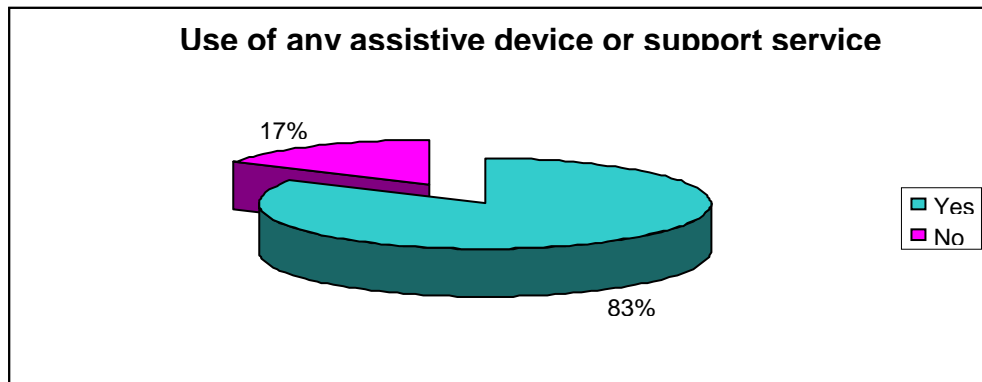


Figure 4.6 indicates that 83% of SWDs examined required assistive devices and support services for their inclusion in the university while only 17% didn't require any form of support provision. This finding is in line with the finding by NCSPES, (2002) which established that the percentage of SWDs in post-secondary institutions that qualified for supports and services across all types of institutions is approximately 67%, or about two-thirds of the population of SWDs known to the institutions' disability support offices. This implies that support provisions are critical for effective participation of SWDs in higher education.

4.3.2 Range of AD and SS Required for Inclusion of SWDs

The study also sought to find out the range of support provisions required by the respondents for their inclusion in the university. Assistive devices and support services required by SWDs varied based on individual needs. Figure 4.7, 4.8 and 4.9 present the findings.

Figure 4.7: Assistive Devices and Support Services Required by Students with Visual Impairments

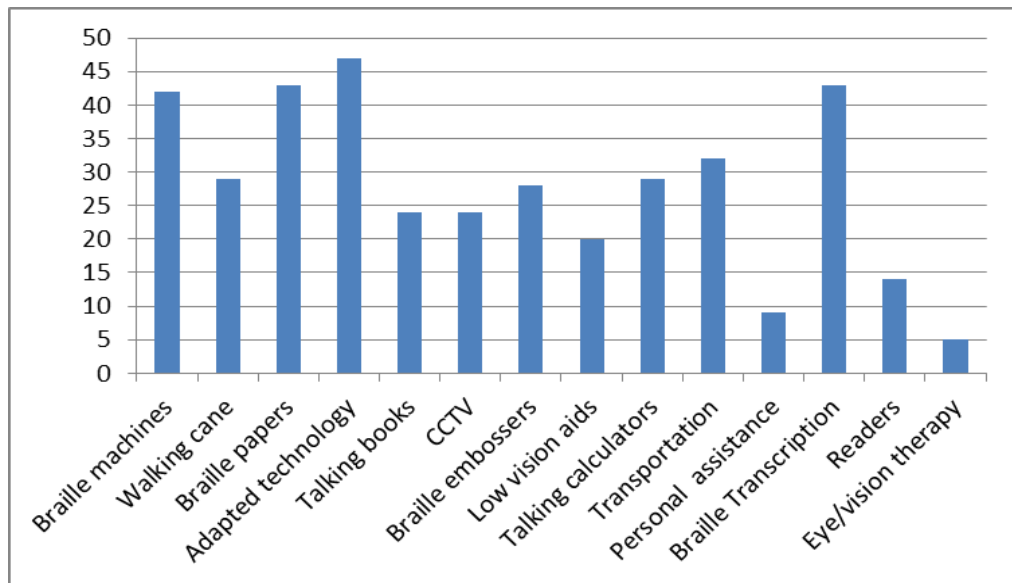


Figure 4.7 reveals that the most frequently required AD and SS among students with visual impairments were adapted technology and braille transcription respectively. The adapted technology included adaptation to enable the access on-line service, adaptation of computers among others while the support services included braille transcription services, within campus transportation, on-line service assistance, readers, eye therapy and dining services .Other adaptive devices required by these learners included adapted computers, braille machines, braille papers, walking cane, talking books,

talking calculators, braille embossers, Closed Circuit Television (CCTV) and low vision aids respectively

Figure 4.8: Range of support services required for inclusion of students with PH (Percentage of the total population of SWDs)

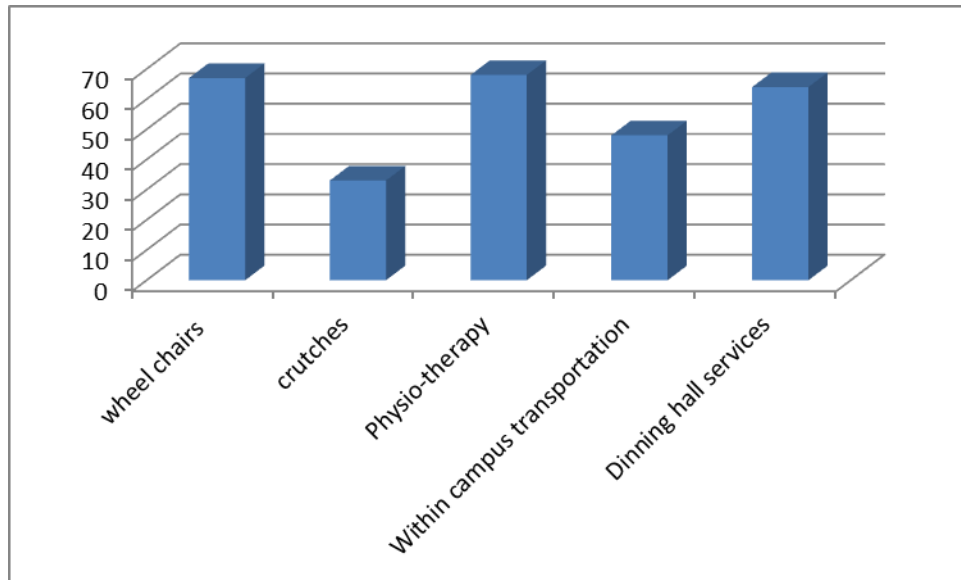


Figure 4.8 reveals that students with physical disabilities required limited level AD and SS for their effective participation in the university as compared to students with visual impairments with wheel chairs and crutches being the most commonly required AD while physical-therapy, within-campus transportation and dining hall services being the most commonly required SS. Out of the total students with physical disabilities, 67% required wheel chairs while 33% required crutches; 68%, 48% and 64% of these learners required respectively. This finding indicates that as long as provision for mobility is assured, students with PH can easily access higher education as their non-disabled peers.

Figure 4.9: Range of AD and SS required for inclusion of students with HI (Percentage of the total population of SWDs)

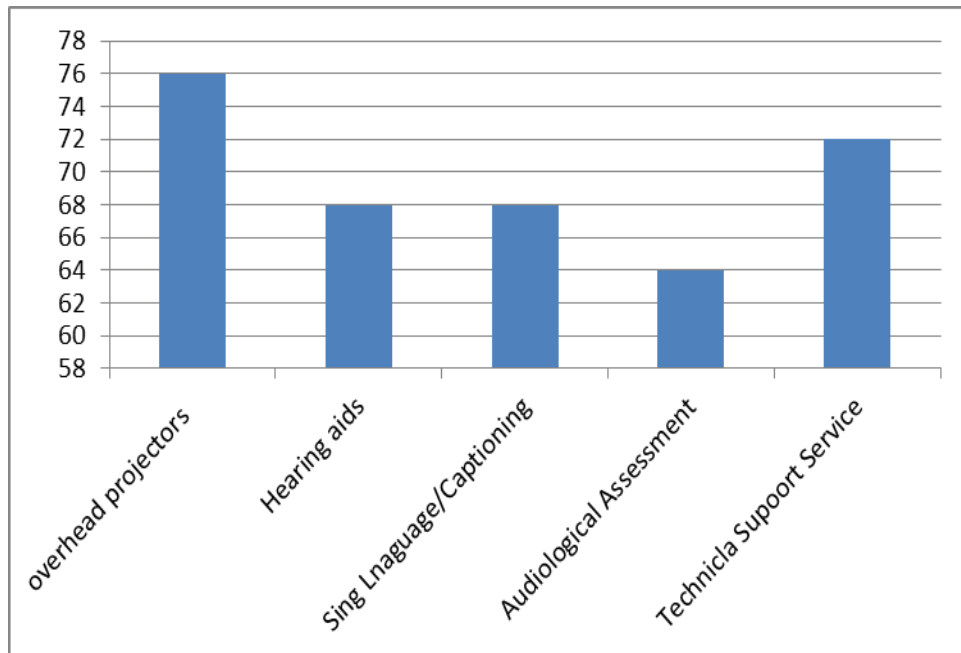


Figure 4.9 reveals that students with HI also require limited range of AD and SS as compared to students with visual impairments. Majority of students with HI at 76% required overhead projectors while 68%, 68%, 64% and 72% of these learners required captioning/sign language interpretation, audio logical assessment and technical support services for their inclusion respectively. The findings also imply that students with hearing impairments can participate effectively mainly if are provided with appropriate adaptive technology. This finding is in line with the findings by FOTIM, (2011) and Nelson, (1996) which revealed that students with hearing impairments required sign language interpreter, overhead projectors and hearing aids among other assistive devices and adaptive technology for their effective participation in higher education (FOTIM, 2011; Nelson, 1996).

4.3.3 Providers for AD and SS available for inclusion of SWDs in the University

The study also sought to establish the range of AD and SS provided by university for inclusion of SWDs. Figure 4.12 summarizes the findings.

Figure 4.10: Providers for AD and SS available for inclusion of SWDs in the University

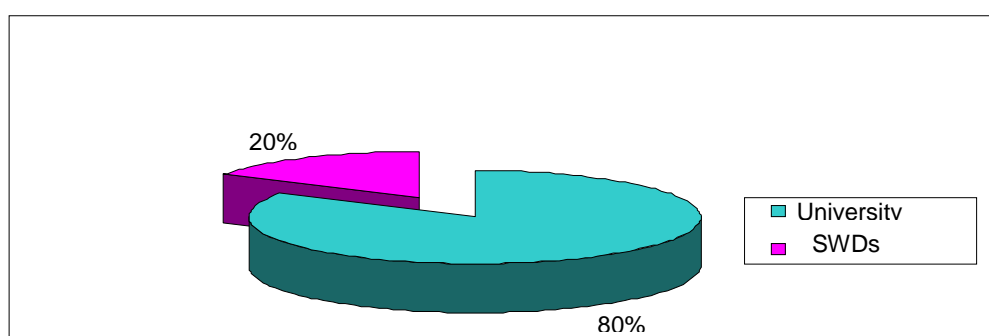


Figure 4.10 reveals that 80% of the AD and SS that were required for inclusion of SWDs were provided by university while only 20% were not provided. This finding supports the findings by Wolanin and Steel, (2010) who established that institutions of higher learning plays a major role in providing accommodations to SWDs in terms of academic adjustments, auxiliary aids and support services. This finding also supports the finding by the National Centre for Education Statistics (2000) which revealed that public universities provide most accommodation to SWDs as compared to private universities.

4.3.4 Accessibility of AD and SS Provided by University for Inclusion of SWDs

The study also sought to determine whether the AD and SS provided by university for inclusion of SWDs were accessible. Figure 4.11 summarizes the findings.

Figure 4.11: Accessibility of AD and SS provided by the university for inclusion of SWDs

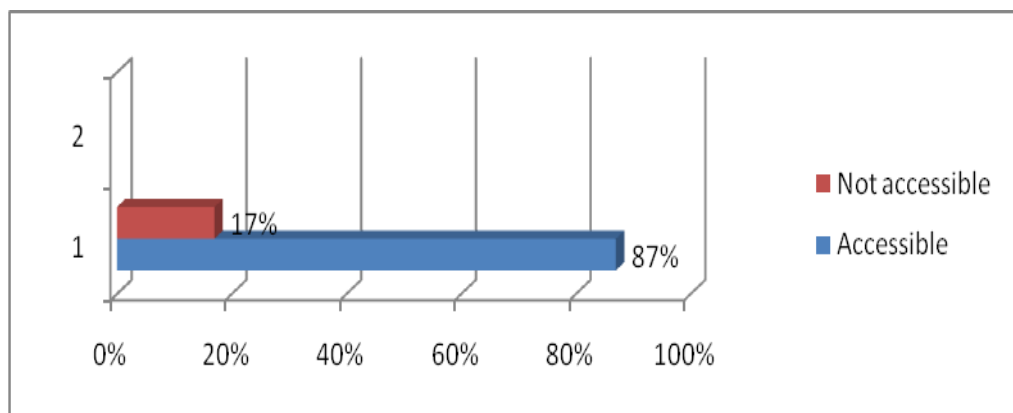


Figure 4.11 reveals that 87% of the AD and SS provided by the university are accessible while only 17% are not accessible. This finding is in line with the National Centre for Education Statistics (2000) which established that SWDs had reasonable access to support provisions in most post-secondary institution.

4.3.5 Adequacy of AD and SS Provided by University for Inclusion of SWDs

The study also sought to establish the adequacy of the assistive devices and support services that were provided by university for inclusion of SWDs. Figure 4.12 indicates the results.

Figure 4.12: Adequacy of AD and SS available for inclusion of SWDs

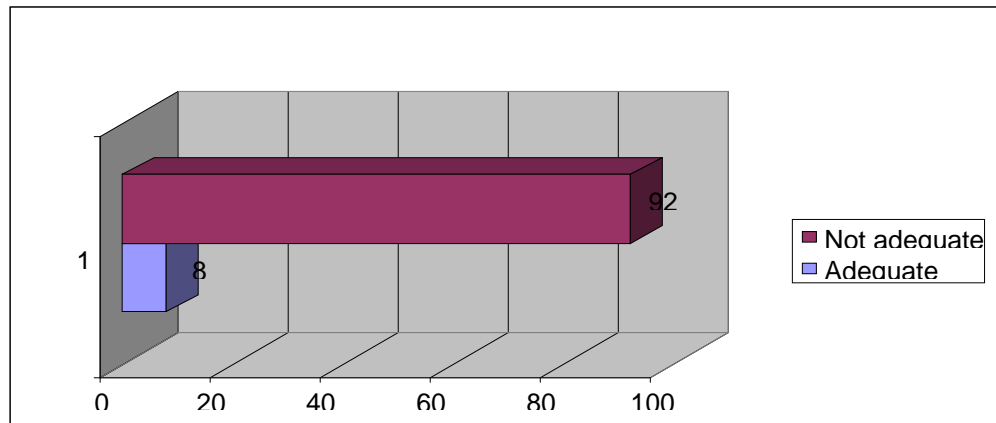


Figure 4.12 indicates that 92% of the AD and SS that were provided by the university were inadequate while only 8% were adequate. This finding agrees with the findings by Wawire, (2009), who found that AD and SS provided by the institutions of higher learning were inadequate. This finding is also in line with the findings by Mariga and Phachaka (1993), Nelson (1996) and Wachianga (2011) who noted that although institutions of higher learning provided a wide range of support provision for inclusion of SWDs, most of these provisions are inadequate for their effective participation.

4.4 Average Cost of AD and SS Incurred by SWDs

The study sought to establish the amount expended by SWDs on AD and SS required for their inclusion. Figures 4.13 and 4.14 summarize the results.

Figure 4.13: Average cost of AD and SS incurred by SWDs Enrolled in Regular Education Programme (REP) and Institutional-based programme (IBP).

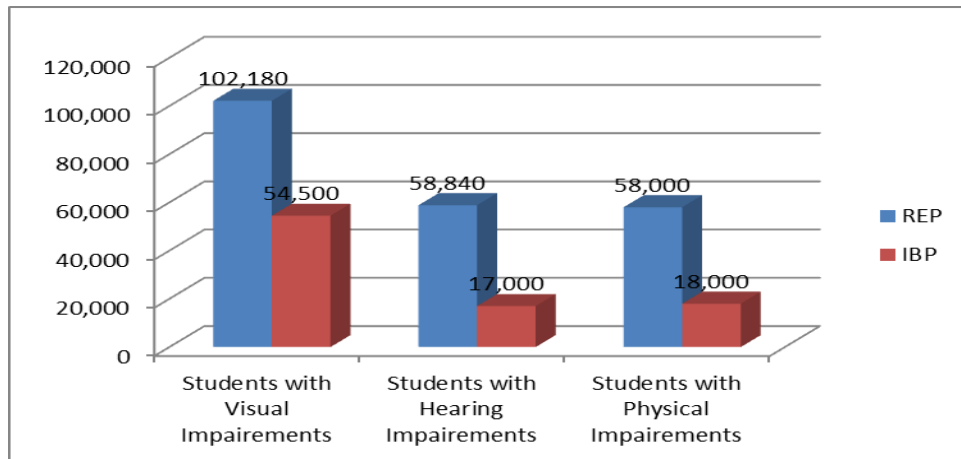


Figure 4.13 reveals that students with visual impairments enrolled in IBP spent more than twice the amount spent by students with hearing and physical disabilities on AD and SS required for their inclusion. Students with VI notably spend an average of Ksh. 54,500 for both the assistive devices and support services per academic year as compared to Ksh. 17,000 and Ksh.18,000 for students with HI and PH respectively. It is important to note that students enrolled in IBP spent less than students enrolled in regular education programmes because they spent only three months per academic year as compared to nine months for SWDs enrolled in regular programmes.

4.5 Average Cost of Regular Learning Needs Incurred by SWDs

The study also sought to establish the cost of regular learning needs for SWDs. Tables 4.1 summarize the findings.

Table 4.1: Average costs of regular learning needs incurred by SWDs enrolled in regular programmes

Cost of regular needs	Regular learning needs	Cost per semester	Cost per year (Ksh)
Instructional costs	Tuition fee	8,000-75,000	16,000-150,000
	Other fees	6,000-11,000	12,000-22,000
	Books and other stationary	3,500	7,000
	Instruction cost subtotal	17,500-89,500	35,000-179,000
Living cost	Accommodation	5,500-6,500	11,000-13,000
	Personal effects	3,500-6,400	7,000-12,800
	Food	4,500-7200	9,000-14,400
	Transportation	3,000-5500	6,000-11000
	Living cost subtotal	16,500	33,000-51200
Total costs	Total instructional and living costs	50,500-190,500	68,000-230,200

Table 4.1 reveals that students with visual, hearing and physical disabilities enrolled in regular education programme spent an average of Ksh. 68,000 to Ksh. 230,200 per academic year on regular learning needs in higher education with instruction costs being the most expensive cost element estimated at Ksh. 35,000 to Ksh. 179,000 for government-sponsored and self-sponsored students respectively. The finding also reveals that the cost of regular learning needs for SWDs is higher than the cost of regular learning needs for non-disabled students estimated at Ksh. 71,000 (\$2,405) and Ksh.271,000 (\$9,1800) per academic year for module I and module II students enrolled in public universities. Accommodation cost is rated the second most expensive living cost at an average of Ksh. 11,000 per academic year while personal effects, food and transportation were estimated at Ksh. 7,000, Ksh. 9,000, and Ksh. 6,000 respectively. This finding also supports the finding by Darmody, Smyth, and O'Connell (2005) which revealed that for both part-time and full-time students, instructional costs (e.g. books, computers, equipment) and accommodation present the highest cost of higher education especially for SWDs and other disadvantaged groups. It's worth noting that the cost of accommodation for these learners is slightly higher than the average costs of accommodation for the non-disabled peers estimated between Ksh.7, 000 to Ksh. 20,000 per academic year for government-sponsored and self-sponsored students respectively (Ngolovoi, 2006).

Table 4.2: Average cost of regular learning needs incurred by SWDs enrolled in institutional-based programmes

Cost	Regular learning needs	Cost per session	Cost per year(Ksh)
Instructional Costs	Tuition fee	40,000	120,000
	Other fees	3,500	10,500
	Books and other educational expenses	3,000	9,000
	Instruction cost subtotal	46,500	139,500
Living Cost	Personal effects	3,000	9,000
	Food	3,000	9,000
	Accommodation	4,000	12,000
	Living cost subtotal	10,000	30,000
	Total Costs	56,500	169,500

Table 4.2 shows that students with visual, hearing and physical disabilities enrolled in institutional-based programmes spent an average of Ksh.169, 500 per academic year for regular learning needs required for their participation in university. The tuition fee and accommodation cost are rated the most expensive cost elements estimated at KShs. 12, 000 each. The cost of food, personal effects books and stationaries also contribute significantly to the cost

of participation of SWDs at Ksh. 9,000 each. This finding support by Ngolovoi (2006) which revealed that students enrolled in institutional-based programmes spent an average of Ksh. 150,000 (US\$5,081) for their participation in public universities. This indicates that SWDs enrolled in institutional-based programmes do not incur so much extra cost on regular learning needs required for their inclusion in public universities.

4.6 Relationship between the Cost of Regular and Special Learning Needs per Programme of Study

The researcher further calculated the total cost incurred by SWDs on both regular and special learning needs required for their inclusion in the university. Tables 4.3 present the findings.

Table 4.3: Average cost of regular and special learning needs Incurred by SWDs

Disability categories	Regular education programme AD and SS Regular education		Institutional-based programme AD and SS Regular education	
	Students with VI	102,180	216,380-256,380	222,500
Students with PH	58, 000	179,000,-219,000	186,000	169,500
Students with HI	58, 840	179, 840-219,840	185,000	169,500
Average costs	73,006	191,740-231,740	197,833	169,500

Table 4.3 reveals that government-sponsored SWDs enrolled in regular education programme spent an average of Ksh. 26, 4746 to Ksh. 304,746 for government-sponsored and self-sponsored programme respectively. On the other hand, SWDs enrolled in institutional-based programme spent the highest amount for their inclusion at an average of Ksh. 36, 7333 per academic year. This finding supports the finding by Ibua, (2010) who revealed that fees paid per year is very high to self-sponsored with a mean of 147,244 as compared with a mean of 57,826 for regular students and standard deviation of 83,000.

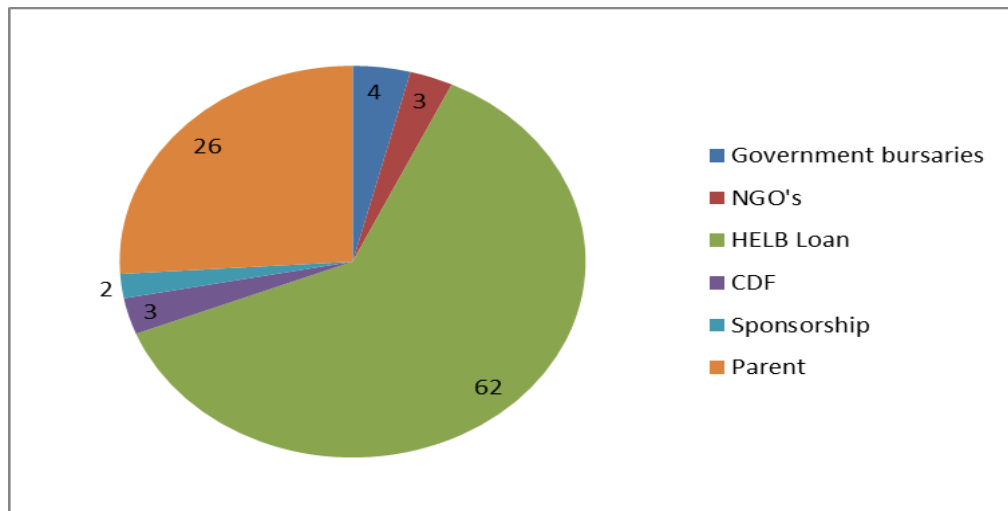
In a comparative analysis to test the significant differences between the cost incurred by SWDs enrolled in IBP and those enrolled in REP. The hypothesis was tested at a significance level of 0.05. Using a 't' test, the study established that $df=24$ ($P>0.05$), a 't' ratio was found to be 11.508. This implies that there is a significant difference between the costs incurred by self-sponsored SWDs enrolled in REP and those enrolled IBP per academic year. This finding also agrees with the finding by Chamber (1996), OECD (1999), Wolman and Parrish (1996), Chambers, et al., (2002), Chaikind et al. (1993) and NJBA (1998) who estimated that the cost of special learning needs for SWDs is twice as much of the regular learning needs.

4.7 Financial Support Available for Inclusion of Students with Visual, Hearing and Physical Disabilities Enrolled in a Public University

4.7.1 Sources of Financial Support for AD and SS that are not provided by the university

Students were asked to indicate their main sources of financial support for their participation in the university. Majority of SWDs at 62% relied on Higher Education Loans Board (HELB) financial support followed by those relying on parental support at 26%. The least financial support was from government bursaries, NGOs, CDF and sponsorship at 4%, 3%, 3%, and 2% respectively. Figure 4.14 summarizes findings.

Figure 4.14: Sources of financial support available to SWDs



This finding agrees with the finding by UNESCO (1995) and UNESCO (2001) which established that education for SWDs is majorly funded by the government with the voluntary bodies being the major alternative source that is, 63% of special education costs are covered by the government, 35% voluntary organizations, and 2% by external support. The high level of

financial support from HELB may be attributed to the fact that SWDs enrolled in both regular and institutional-based programmes are entitled to HELB loan and bursaries while high level of parental financial support is mainly attributed to the fact that majority of SWDs are self-sponsored most of whom do not apply for HELB loan. On the other hand, low level of financial support from NGO's may be attributed to the fact that most financial support from this organizations are channeled directly to the institutions of learning and not to students.

4.7.2 Amount of HELB Loan Received by SWDs per Academic Year

Students were also asked to estimate the amount of financial support they received from HELB. Figure 4.15 summarizes the findings.

Figure 4.15: Amount of HELB Loan Received by SWDs per Academic Year

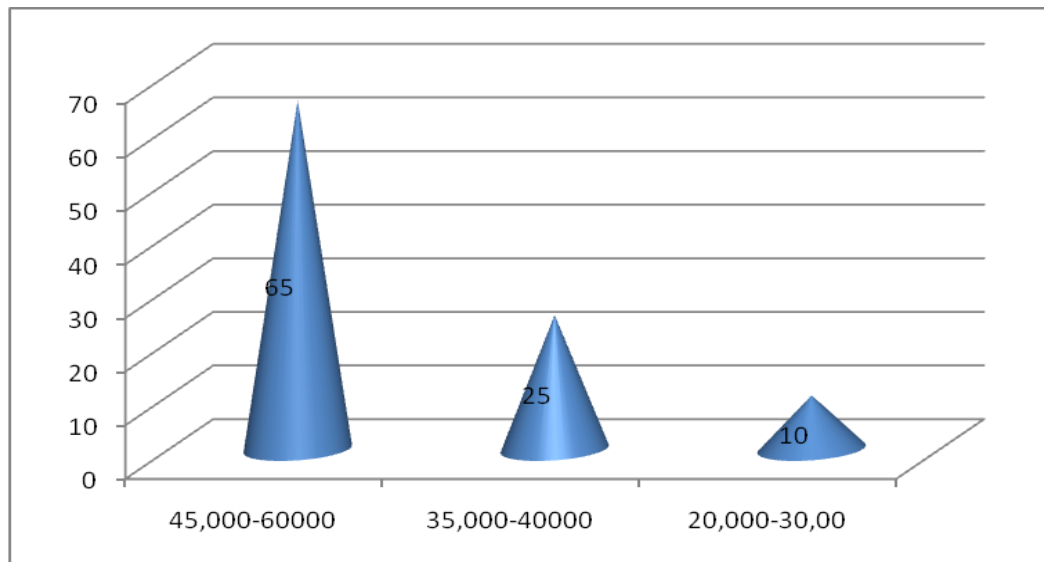


Figure 4.15 Figure 4.1 shows that the largest proportion of SWDs (65 per cent) received a maximum loan of between Ksh. 45,000 and Ksh. 60,000 per

academic year from HELB, while only 25% and 10% received a minimum of between Ksh. 35,000-Ksh. 40,000 and Ksh. 20,000-Ksh. 30,000 respectively. This finding supports the finding by Ngolovoi (2006) who revealed that the maximum amount of loan received by students in universities have increased since when it was introduced in 1995 from Ksh. 42,000 (US\$1,423), Ksh. 55,000 (US\$1,863) in 2005/06 financial year to Kshs 60,000 (US\$2,032) from 2008/09 to date (Ngolovoi, 2006).

4.7.3 Amount of Bursary Received by SWDs from HELB

When asked to indicate the amount they received, forty two students (81%) indicated they received KShs. 8, 000 while only ten students (19) received KShs. 6, 000. Figure 4.16 summarizes the findings.

Figure 4.16: Amount of bursary received by SWDs from HELB

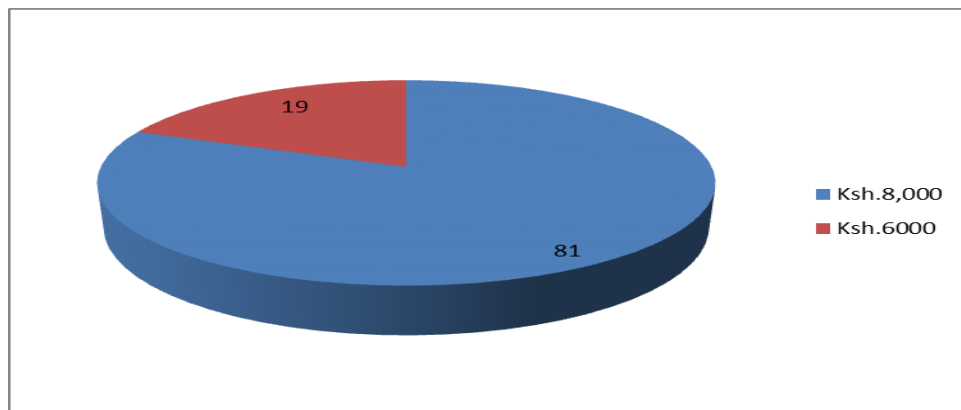


Figure 4.16 show that SWDs receives a minimum bursary of Ksh 6,000 and a maximum of Ksh. 8,000 per academic year. This implies that majority of SWDs who received HELB loan were awarded the maximum loan of Ksh. 60,000 plus a maximum bursary of Ksh. 8,000. This findings support the results by Ngolovoi (2006) which revealed that government-sponsored

students received a minimum bursary of Ksh. 4000 and a maximum amount of Ksh. 8000 per year, whereby all SWDs must have been among the students receiving the maximum loan.

4.7.4 Amount of Financial Support Received by SWDs from other financing agencies

The study also sought to establish the amount of financial support available from other financing agencies for their inclusion of SWDs in the university.

Table 4.4 summarizes the findings.

Table 4.4: Amount of financial support received by SWDs from other financing agencies

	KShs.	Frequency
Government bursaries	40,000	2
	20,000	1
	12,000	1
NGOs	70,000	2
	50,000	1
	35,000	2
CDF	20,000	2
	8,000	3

Table 4.4 shows that other stakeholders that support SWDs include NGOs, Government bursaries and CDF. The highest government bursary given was KShs.40, 000 and the lowest was KShs.12, 000 while the highest NGOs fund given was KShs.70, 000 and the lowest amount reported was KShs.35, 000. The Community Development Financial support was rated the lowest with amount awarded ranging from KShs.8, 000 to a maximum of KShs.20, 000. The findings are in line with the findings by UNESCO (2001) which revealed that governments play a major role in providing financial support for inclusion of SWDs in higher education while NGO's forms the major alternative source.

4.7.5 The Extent to which the Available Financial Support meets the Cost of University Education for SWDs

The study also sought to find out to what extent the HELB financial support meets the cost of inclusion in KU. Figure 4.17 shows the finding.

Figure 4.17: The extent to which the available financial support meets the cost of university education for SWDs

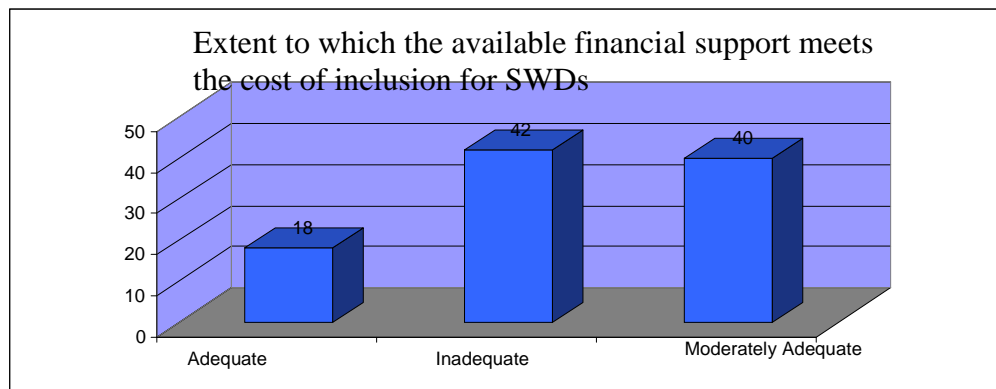


Figure 4.17 shows that majority of SWDs at 42% felt that the amount of financial support that were available for their inclusion were inadequate, 40%

felt that the financial support available to them were moderately adequate while only 18% felt that the funds were adequate. This finding contradicts with the finding by Ngolovoi (2006) who revealed that undergraduate student loan scheme covers about three quarters of the yearly higher education costs that must be borne by government-sponsored students and their family and about 40 percent of the tuition fee for the self-sponsored students.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion and recommendations based on the findings of this study. The purpose of this study was to establish the cost of inclusion for persons with visual, hearing and physical disabilities in public universities, a case of Kenyatta University. The study was limited to students with disabilities while cost information was limited to 2010 /2011 academic year expenditure. The study adopted a case study method of research. The data were collected using questionnaire. Questionnaires were used to gather data on the range of assistive devices and support services used as well as financial implications by the 57 undergraduate and 3 postgraduate students. This was done to address the research questions. Data collected were organized, coded and analyzed using the Statistical Package for Social Sciences (SPSS). All the findings were presented according to the research questions. Data presentation was enhanced through frequencies, totals, percentages, bar graphs and tabulation.

5.2 Summary of the Findings

5.2.1 Assistive Devices and Support Services for Inclusion of Person with Visual, Hearing and Physical Disabilities in a Public University

The study findings indicate that persons with VI required a wide range of AD and SS as compared to persons with HI and PH. Students with VI required low vision aids including the magnifying glass and Closed Circuit Television

(CCTV), braille machines, braille embossers, talking books, talking calculators, braille papers, white cane among others while the SS included transportation, readers, guides, eye checkups, vision therapy, dining hall services among others. The AD for persons with PH included the wheel chairs and crutches while persons with HI required the hearing aids, among other adaptive technologies and interpreter service. This means that persons with VI incur the highest cost on the AD than other categories depending on the severity of the disabling condition. The study findings further revealed that there was a wide gap between range of AD and SS required and the range of AD and SS available for inclusion of SWDs in the university were not available.

5.2.2 The average Annual Cost of AD and SS Required for Effective Inclusion of SWDs in a Public University

In general, majority of the students at 53% rated the cost of assistive devices and support services as high while 32% and 15% of the students rated the cost of these support provisions as moderate and low respectively.

SWDs enrolled in REP spent an average of Ksh. 61,356 on AD and SS and Ksh. 68,000 to 230,200 on regular learning needs while SWDs enrolled in IBP spent an average of Ksh 29,835 on AD and SS and Ksh. 29,833 on regular learning needs.

On the other hand, SWDs enrolled in REP spent an average of Ksh. 129,556 for both regular and special learning needs per academic year while SWDs enrolled in IBP spent Ksh.199, 333.

5.2.3 Funding University Education for Students with Disabilities

Majority of the students representing 58% obtained their financing support for their education from the Higher Education Loans Board (HELB). Financing support from self/parent/guardian represented 17%, CDF contributed 8% while government bursaries and NGOs contributed 7% each. The least financier reported was sponsorship representing only 3%. The highest government bursary given was KShs. 40, 000 and the lowest KShs.12, 000. The highest NGOs fund given was KShs.70, 000 and the lowest KShs.35, 000. The highest HELB loan was KShs.60, 000 and the lowest KShs.20, 000. The highest Community Development Fund given was KShs.20, 000 and the lowest KShs.8, 000. On HELB bursaries, five students indicated they received KShs.8, 000, three received KShs.6, 000 while others did not receive any financial support at all.

5.4 Conclusion

From careful consideration of the data analysis and the consequent discussion, and summary of the findings, the study concluded that:

- i. Although the AD and SS are provided for inclusion of SWDs, most of them are inadequate. For instance, SWDs enrolled in REP spent an average of Ksh. 129,556 on support provision and an average of Ksh. 197,833 for regular learning needs yet they receive an average of Ksh. 100,000 from financing agencies.
- ii. In general, the cost of assistive devices and support services for SWDs are very high and cost more than two times the cost of their regular learning needs. For instance, SWDs enrolled in IBP spent an

average of Ksh. 197,833 on support provision required for their participation and Ksh. 169,500 on regular learning needs.

- iii. On the extent to which the HELB financial support meets the cost of inclusion of SWDs in Kenyatta University, majority of the students revealed that HELB financial support does not meet their cost of participation.

5.4 Recommendations

From the discussion and conclusions derived from the data collected and analyzed, the researcher suggests the following recommendations:

- i. The Ministry of Higher Education, Higher Education Loans Board, Government bursaries and other financing agencies should provide adequate financial support to meet the cost of participation of SDWs in higher education so as to empower them academically.
- ii. Universities should create an inclusive ethos across their services, teaching and learning environments to promote effective participation students with disabilities.
- iii. Funding needs to be provided to cover both the cost of regular and support provision required for effective participation of SWDs in universities.
- iv. Universities and other institutions of higher learning should establish disability office that sets policies on support provisions

for SWDs and solicit for funds from the government and non-governmental organizations for these provisions.

- v. Funding for university education for SWDs should be allocated through a ‘throughput’ model, whereby funding is allocated based on the range and cost of services required for effective participation in these institutions of higher learning.
- vi. More of financial support should be provided to SWDs in the form stipends and grants rather than loans to encourage enrolment and completion of higher education among SWDs..

5.5 Recommendations for Further Research

The researcher made the following recommendations for further research:

- i. This study focused on the cost of higher education incurred by SWDs. Future research can be carried out on the cost incurred by institutions of higher learning for inclusion of SWDs.
- ii. This research focused on persons with visual, hearing and physical disabilities. Future research can be carried out with other categories of SWDs.
- iii. Future research can also be carried out in other tertiary institutions of learning including private universities.
- iv. Future research can also be carried out on the cost of higher education for SWDs enrolled in other post-secondary education programmes.

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APPENDIX I: INTRODUCTORY LETTER

Dear Participants,

The purpose of this letter is to seek your help with a study that seeks to establish the cost of inclusion for students with visual, hearing and physical disabilities in Kenyan Public Universities: The case of Kenyatta University. This is in partial fulfillment of the requirements for the Degree of Master of Education (Special Needs Education) in School of Education, of Kenyatta University.

I have decided to carry out such a research because i believe that there is need to look at the cost of inclusion of students with visual, hearing and physical disabilities who form the majority of person with disabilities. The study aims to provide insight and understanding on this area of study and to inform policy with regard to financing higher education for persons with disabilities.

The following questionnaire asks questions on the range of assistive devices available for inclusion of SWDs, the cost of these devices and the level of available financial support for these provisions. The information gathered from these questionnaires will be treated with confidentiality and no identification is required. Please feel free to answer the questions as sincerely and fully as possible.

Thank you for your co-operation.

Sincerely,

Judith Chepkorir

APPENDIX II: QUESTIONNAIRE FOR SWDs

SECTION 1: BACKGROUND INFORMATION

Please put a tick or write in the spaces provided where necessary.

1.1 What is your gender?

(A). Male

(B). Female

1.2 Which of the following categories describes your disabling condition?

(A) Visually impaired

(i) Low vision

(ii) Totally blind

(B) Hearing impaired

(i) Hard of hearing

(ii) Deaf

(C) Physical disability -----

(D) Albinism -----

(E) Others specify-----

1.3 To what extent do the condition in 1.3 above hinders your effective participation in Kenyatta University.

(A) Severely

(B) To some extent

(C) Not at all

1.4 Which programme of study are you enrolled in?

(A) Diploma

(B) Higher diploma

(C) First degree

(D) Master degree

(E) Others (specify) -----

1.5 Which field of study are you pursuing? E.g. Education, special education Medicine, etc

.....

1.6 Which type of sponsorship are you enrolled in i.e if self-sponsored or government sponsored?

(A). Government sponsored

(B). Self-sponsored

1.7 Which mode of study are you enrolled in?

(A) Regular (B) Institutional based (C) Part-time

SECTION 2: SUPPORT PROVISION FOR INCLUSION OF SWDs

2.1 Do you require any assistive device or support service for your effective participation in Kenyatta University?

Yes No

2.2 List the range of assistive device and support services that you require for your inclusion in Kenyatta University (both in the library, lecture hall and resource room?)

Assistive devices	Amount required per semester/ session	Approximate cost per each in k.sh	Approximate cost per year (K.Sh)
<i>I</i>			
<i>Ii</i>			
<i>ii</i>			

Support service	Frequency required per semester/ session	Approximate cost per each in k.sh	Approximate cost per year (K.Sh)
<i>i</i>			
<i>ii</i>			

2.3 In your opinion, do you think the AD and SS provided by university for your inclusion are accessible?

2.5 Comment on the adequacy of assistive devices and support services that are available for your inclusion in the university (i.e. if they adequate or inadequate)

SECTION 3: THE COST OF INCLUSION FOR SWDs

3.1 How do you rate the cost of assistive device and support service that you provide personally for your effective inclusion in Kenyatta University?

Low Moderate High

3.2 Approximately how much do you spend on the regular education needs per academic year?

Learning material/equipment and services	Approximate cost per e per semester (K.Sh)	Approximate cost per e per year (K.Sh)
i. Fees		
ii. Accommodation		
iii. Books and other stationeries		
iv. Food		
v. Others (specify)		

3.2 Approximately how much do you spend on the special learning needs per academic year?

Learning material/equipment and services	Approximate cost per e per semester (K.Sh)	Approximate cost per e per year (K.Sh)
i. Assistive Devices		
ii. Support Services		

SECTION 4: FINANCIAL SUPPORT FOR HIGHER EDUCATION FOR SWDs

4.1 Which sources of financial support are available for your university education? *(Please tick where appropriate)*

- (A) Government bursaries-----
- (B) NGOs-----
- (C) HELB -----
- (D) Community Development Fund----
- (E) Scholarship-----
- (F) Sponsorship-----
- (G) Self / parent or guardian-----
- (D) Other(s) specify-----

4.2 (i) Do you receive funding from HELB?

Yes No

(ii) If yes, how much loan do you receive per year?

(A).20, 000-30,000

(B).35, 000-40,000

(C).45, 000-50,000

(D).55, 000-60,000

(ii) If yes, how much do you receive per year?

(A). Below 4,000

(B). 4,000- 6,000

(C). Above 8,000

4.3 If you do not receive any funding from HELB, please give reasons why-----

4.4 How much funding do you receive from other sources per year?

<u>Sources of funding</u>	<u>Amount per year (ksh.)</u>
(A) Government bursaries	-----
(B) NGOs	-----
(C) Community Development Fund	-----
(D) Scholarship	-----
(F) Sponsorship	-----
(D) Other(s) specify	-----

4.5 To what extent do the available amount of financial support meets the cost of your university education (both the cost of regular and special learning needs)?

Very large extent Moderately Very small extent

APPENDIX III: INTERVIEW GUIDE

1. ASSISTIVE DEVICE AND SUPPORT SERVICES AVAILABLE FOR INCLUSION OF SWDs

- a. What range of regular learning needs do you require for your inclusion
- b. What range of special learning needs do you require for your inclusion
- c. What range of both regular and special learning needs are provided by Kenyatta University
- d. What ranges of both regular and special learning needs do you provide by yourself?