

**EFFECT OF FINANCIAL INCLUSION ON WELFARE OF PERSONS LIVING
WITH DISABILITY IN KENYA**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF APPLIED
ECONOMICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF MASTERS OF ECONOMICS (COOPERATION AND HUMAN
DEVELOPMENT) DEGREE OF KENYATTA UNIVERSITY**

JANUARY, 2025

DECLARATION

This project represents my original work and has not been previously submitted for any academic award at any other university.

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DEDICATION

I would like to express my gratitude to my lovely children, supportive parents, Mr. and Mrs. Joseph Katam.

ACKNOWLEDGEMENT

First, I would like to express my gratitude to God for the gift of life and His unwavering grace throughout this research project.

I deeply value the effort of my supervisor, Dr. Peter Njenga, for taking the time to read and provide constructive feedback in every aspect, thereby improving my research skills.

I would like to express my gratitude to my parents, Mr. and Mrs. Joseph Katam, for their constant financial and emotional support throughout my studies

Finally, I appreciate my children Karl, Samara, and Maya for providing a conducive environment for my study and research activities.

May God richly bless all of them.

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ACRONYMS AND ABBREVIATIONS

| | |
|---------------|--|
| AfDB | African Development Bank |
| BLUE | Best Linear Unbiased Estimator |
| CBK | Central Bank of Kenya |
| EAC | East African Community |
| DH | Double Hurdle |
| FI | Financial Inclusion |
| FSDK | Financial Sector Deepening Program of Kenya |
| GHS | General Household Survey |
| GPII | Global Partnership for Financial Inclusion |
| ILO | International Labour Organization |
| KNSPWD | Kenya National Survey for Persons With Disabilities |
| MTP | Medium Term Plan |
| NCPWD | National Council of People With Disabilities |
| OLS | Ordinary Least Squares |
| PCA | Principal Component Analysis |
| PLWD | People Living With Disabilities |
| PWDs | Persons With Disabilities |
| QR | Quantile Regression |
| SADPD | Secretariat of the African Decade of Persons with Disabilities |
| SDGs | Sustainable Development Goals |
| SIDCA | Swedish International Development Cooperation Agency |

| | |
|--------------|---|
| SSA | Sub-Saharan Africa |
| UN | United Nations |
| UNHCR | United Nations High Commissioner for Refugees |
| WHO | World Health Organisation |
| VIF | Variance Inflation Factor |

OPERATIONAL DEFINITION OF TERMS

- Financial Inclusion:** It is the process of accessing financial products and services with an aim of meeting individual needs.
- Household welfare:** This encompasses the economic status of households and is determined using per capita household consumption expenditure.
- Household Expenditure:** Amount spent on consumption by a household.
- Education:** This is a system where people get enlightening experience by receiving instructions from a school, university, college or tertiary institution.

ABSTRACT

Financial services are difficult for people with impairments to obtain in both developed and developing countries. This is because they are not seen as a sizable consumer base by banks and other financial institutions. The Kenyan government has started a number of programs to help persons with disabilities with their financial circumstances. A cash transfer scheme that encourages the use of assistive equipment is one of these. Additionally, there are subsidies and grants available to assist with the costs of schooling. But raising awareness of these advantages is still difficult, particularly in rural regions. Despite these measures there is still a challenge of financial inclusion especially among the mainstream financial institutions. A large number of disabled individuals in Kenya are presently left out in terms of financial access from mainstream financial institutions like banks because the target audience is restricted to those who have severe disabilities. Despite efforts to implement disability laws, there are still issues with financial inclusion for persons with disabilities in Kenya. This study aimed to investigate the financial inclusion and welfare of households with disabled individuals in Kenya. The specific objectives were to determine the impact of financial inclusion on the welfare of persons with disabilities, to assess the effect of household expenditure on their welfare, and to evaluate the effect of education empowerment on their welfare. The study was based on Social Capital Theory, Theory of Inclusive Growth and Capability Approach Theory. A causal research design was used to clarify the relationship between variables, and the study relied on secondary data from the Kenya National Bureau of Statistics, the 2019 Census report, the Kenya Integrated Household Budget Survey, and Financial Access surveys. Descriptive and inferential statistics were performed to determine the impact of financial inclusion on the household welfare of individuals with disabilities residing in Kenya. The data set was found to be suitable for analysis after diagnostic tests such as residual autocorrelation, heteroscedasticity of the error term, normality, and multicollinearity were performed. Based on the study's findings, it was determined that the coefficient of determination (R^2) was 0.791 while the adjusted R^2 was 0.759. From the finding, it can be concluded that; financial inclusion, household expenditure and education empowerment explains 75.9 percent of the changes in the welfare of persons with disabilities. The results show that persons with disabilities' welfare increases significantly ($t=0.0520$, $p<.05$) with each unit increase in financial inclusion.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

According to World Health Organization (2023), approximately 1.3 billion people in the world are living with disabilities. This translates to sixteen percent of the world population. In Africa, the report estimates that 80 million people are living with disabilities. According to the report, this number continues to increase annually due to increase in the ageing population and the surge in non-communicable diseases. According to the World Bank Report (2023), the situation of the persons with disabilities (PWDs) is worsened by socio-economic outcomes such as unemployment, less education, high levels of poverty and lack of adequate access to health care. This puts the PWDs in a vicious cycle that requires deliberate interventions like financial inclusion programs. According to Global Survey on PWDs (2023), only 0.5% of the clients in microfinance institutions are PWDs, which indicate a very low level of inclusion from the mainstream financial institutions.

The United Nations Convention on the Rights of Persons with Disabilities (CRPD), adopted in 2006, is a landmark treaty that aims to protect the rights and dignity of PWDs. One of its critical areas of focus is ensuring that individuals with disabilities have equal access to financial services and economic opportunities. This commitment to financial inclusion is rooted in several key principles outlined in the CRPD. The CRPD emphasizes that persons with disabilities are entitled to enjoy all human rights and fundamental freedoms on an equal basis with others. This includes the right to participate fully in economic life, which encompasses access to financial services such as banking, credit, insurance, and investment opportunities. Article 28 specifically addresses adequate standard of living and social protection, highlighting the need for states to ensure access to financial resources.

A significant barrier for PWDs in accessing financial services is physical and systemic accessibility. The CRPD obligates state parties to respond appropriately to eliminate obstacles that hinder access to financial institutions. This includes ensuring that banking facilities are physically accessible, as well as providing information in accessible formats (e.g., Braille, sign language) so that individuals can understand their options. The CRPD encourages governments to develop policies that promote inclusive economic growth. This involves creating frameworks that support microfinance initiatives tailored for persons with disabilities, enabling them to start businesses or engage in self-employment. By fostering an environment where people with disabilities can contribute economically, countries can enhance overall economic development while reducing poverty levels among this demographic.

According to the World Bank (2023) the major barriers towards the economic and financial inclusion of PWDs are; inadequate assistive technologies and devices, societal prejudice and stigma as well as unfavorable physical environment. The report further indicates that 20% of the people living below the poverty line are PWDs with no access to basic needs like food, shelter and clothing. In terms of the demographics, a report by UNICEF (2021) indicated that out of the over one billion PWDs in the world, 240 million are children with the report revealing many disadvantages that these children face when compared to those without disabilities. According to this global report; 24% of the children with disabilities were less likely to receive responsive care, 42% were less likely to receive numeracy and foundational reading skills, 25% were more likely to be wasted, 53% more likely to get acute respiratory infections, 49% did not attend school and 41% more likely to be discriminated against. The UNICEF (2021) report also indicate that globally women have a higher prevalence of disability than men with the statistics indicating that 19% of women globally have disabilities compared to 12% of men globally. Further women with disabilities tend to face many barriers

than men in access to finances from formal institutions due to environmental and societal barriers. The welfare of PWDs globally has been largely dependent on various factors including financial inclusion programs.

People with disabilities, both in developing and developed countries, often face barriers regarding the utilization of financial services. This is because many financial institutions, including banks, have not recognized them as a significant customer base (Peprah, Avorkpo & Kulu, 2022). According to Goodman *et al* (2017), factors such as income, age, race, and home ownership can contribute to lower rates of banking among people with disabilities. Additionally, individuals with disabilities may have limited access to financial services due to their lower income earning capacity. For instance, a survey conducted by Mactaggart *et al.* (2018) ascertained that adults living with disabilities experience higher level of unemployment than those living without disabilities.

Globally PWDs are faced with the challenge of financial inclusion and this is attributed to several factors. According to the National Disability Institute (2017), PWDs in America still face challenges in terms of financial inclusivity despite the Americans with Disabilities Act being passed by the congress in 1990. A 2017 survey by the National Disability Institute found that the financial capability of PWDs in America is mostly affected by education, employment status, and household income. The survey revealed that out of 22,000 respondents surveyed, 15 percent had completed college education. Further those without employment were 39 percent. In terms of the household income, majority of the PWDs were earning less than US dollars 15,000 per annum. A survey by the National Disability Institute (2022) also indicated that 70 percent of PWDs in America had difficulties in paying monthly bills and covering expenses compared to 30 percent of those without disability. The survey also showed that household with disabilities were two times more going to spend most of their money as

opposed to saving due to increased medical expenses. Access to finance is also difficult for the PWDs in that the National Disability Institute (2022) indicated that 42 percent of PWDs borrowed from any non-bank loan as banks give them loans under much restrictions. The US through its government has however endeavored to change the situation over the years. The Americans with Disability Act (ADA) was passed by the congress in 1990 to enable the PWDs to have equal opportunities with those without. The Achieving a Better Life Experience (ABLE) Act, which was promulgated and came into effect in 2014, advocates for contributions involvement towards betterment of the lives of PWDs.

In Europe, it was estimated that there would be 120 million people with disabilities by 2020. A report by World Bank (2018) highlighted that access to formal employment by persons with disabilities was 48 percent which was lower compared to 72 percent for the persons without disabilities. Norway is one of the countries in Europe that has done a lot in improving financial access by PWDs through its programmes including accessibility of mobile applications and websites in all public bodies in 2016 (World Bank, 2018). Apart from such targeted assistance, Norway developed programmes aimed at mainstreaming the PWDs and the budget for this amounted to 1.6 billion Norway Kroners. In India the consequence of inadequate financial inclusion of PWDs has been documented. The Ministry of Social Justice and Empowerment (2022) reports that 41.4% of PWDs in India live in impoverished moreover deplorable conditions. Additionally, the report indicated that PWDs experience an average of 54.3% of deprivations, while people without disabilities face an average of 45.7%. In 2012, a dedicated Department of Disability Affairs was established to focus on policy issues and initiatives aimed at the welfare and empowerment of PWDs. This department was later renamed the Department of Empowerment of Persons with Disabilities in 2014. Its main role is to act as a nodal agency for matters related to disability, including coordinating among different stakeholders (Pinilla-Roncancio *et al.*, 2020). The department's vision is to build an

inclusive society geared towards provision of equal opportunities for development and growth, allowing PWDs to lead safe, dignified, and productive lives.

Financial inclusion for PWDs in the public sector is gaining traction in Africa, despite the challenges. In Nigeria, PWDs are becoming more excluded from the mainstream financial system, despite Nigeria having endorsed various international agreements. These include the United Nations Convention on the Rights of Persons with Disabilities (2007), the World Programme of Action Concerning Disabled People (1982), and the Standard Rules on the Equalization of Opportunities for People with Disabilities (1993). This has brought the right of PWDs to the forefront of global discussions (Imandojemu, Toyosi, & Ndidi, 2018). Financial inclusion of PWDs in Malawi has been in deplorable state and this has been attributed to barriers such as lack of adaptive technology, lack of financial literacy and high unemployment rates which makes commercial banks to be reluctant in extending their financial services to them (Liya, Opoku & Adusei, 2021). In Ghana, over half of individuals with disabilities prefer to use mobile money transactions instead of traditional financial platforms like banks, according to a study by Peprah, Avorkpo, and Kulu (2022). This is due to the physical and psychological barriers preventing them from accessing commercial banks and other traditional financial services, making mobile money services a more convenient option for PWDs in Ghana. This has resulted in an increased use of mobile money services among the population. However, the welfare of the PWDs is still in deplorable state in Ghana with high poverty levels which makes it difficult for them to meet their daily needs.

1.1.1 Disability and Financial Inclusion in Kenya

As per the Kenyan population census of 2019, 2.2 percent of Kenyans live with some disability. The prevalence of disability dropped sharply when compared to 3.5 percent from the 2009 census; 2019 census showed a sharp drop in disability prevalence. In terms of the

various categories, the prevalence of disability among men dropped from 3.7 percent in the 2009 census to 1.9 percent according to 2019 census. Between 2009 and 2019, the percentage of women with disabilities decreased from 3.9% to 2.5%. Additionally, there were more people with disabilities living in the countryside(2.6%) compared to those in the cities(1.4%), as claimed by KNSPWD 2019.

The poverty rate for persons with severe disabilities in Kenya is 42%, with 2.2% of Kenyans living with disability of various forms, most of who live in rural area (KNBS, 2019). They are seen as outcasts and liability. Often such persons are neglected and excluded from social and economic participation and in financial access from the mainstream financial institutions (KNSPWD, 2019). Although some PWD comes from the wealthiest, developed and inclusive societies, some still face poverty, vulnerability, marginalization and even destitution (Ondieki, 2018). In Kenya, poverty and disability have a strong correlation, with around 67% of PWDs living in poverty. Unfortunately, the majority of PWDs in the country do not benefit from the cash transfer programme as it only targets individuals with severe disabilities (Tirka, 2020). Nonetheless, the Kenyan government has implemented measures to provide support to PWDs and their families. For instance, the National Development Fund for Persons with Disabilities offers a cash transfer programme to support assistive devices, while funds and grants are available to help with education expenses. However, awareness barriers hinder access to these benefits, especially in rural areas. Financial inclusion still remains a challenge despite these measures especially among the mainstream financial institutions(Ondieki, 2018).

Figure 1.1 is indicative of the Kenyan government efforts in improving financial access services by PWD households.

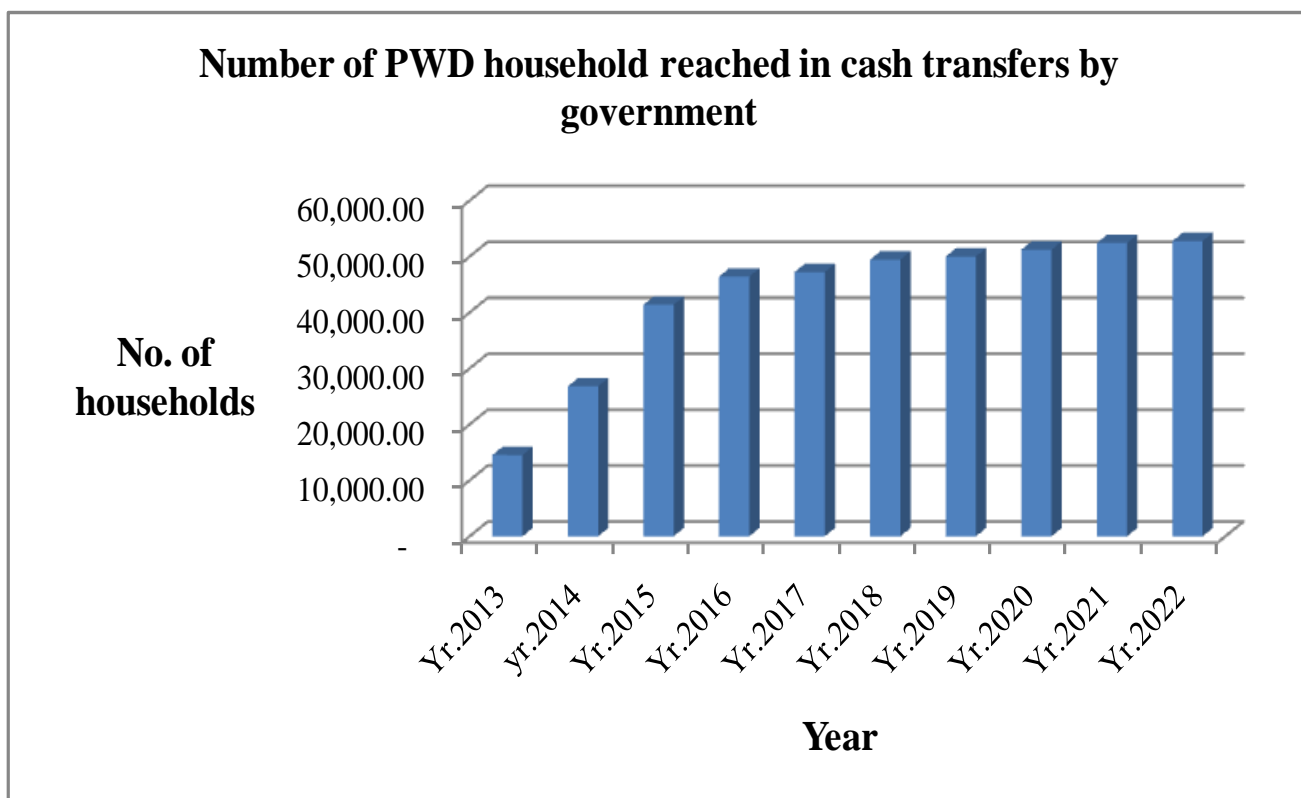


Figure 1.1 Numbers of households of PWDs accessing cash transfers
Source: Kenya Institute for Public Policy Research and Analysis (2022)

From figure 1.1 statistics, it is apparent that through the government cash transfer programmes the households of PWDs have been able to access financial services. The data showed that in 2013, the number of households accessing cash transfers was 14,518. In 2014, the number of households of PWDs accessing cash transfers increased to 26,793 then to 41,374 and 46,414 in 2015 and 2016 respectively. The year 2017 saw a further increase in the number of households to 47,231 which increased to 49,452 in 2018. In 2019, the number of households also increased to 49,993 which further increased to 51,224 in 2020. Finally, the number of households accessing cash transfers increased to 52,413 in 2021 and 52,757 in 2022. This trend shows the government’s endeavors to improve the welfare of the households of PWDs through the cash transfer programs.

1.1.2. Legal Framework towards protection of PWDs in Kenya and the world

The plan to incorporate and integrate PWDs started in harness in 2000 when active advocacy for their integration and inclusion attracted global consideration; the UN Convention on the Rights of Persons with Disabilities (UNCRPD) established in 2006, earmarking a momentous stride towards promoting inclusivity and empowering PWDs to participate in political, social, and economic development. Kenya signed and ratified the UNCRPD in accordance with its constitution, specifically Article 2 (6), as part of its commitment to promoting the rights of PWDs (Onsomu, Mose & Munene, 2022).

Ensuring that all people are included in the many developments within society is the goal of the UN Agenda 2030 for Sustainable Development Goals (SDGs). This means that PWDs should not be excluded from discussions on issues that are supported by the SDGs, including gender equality, poverty, good education, health and wellbeing, hunger, clean and affordable energy, inclusive industry, decent work, infrastructure, the effects of climate change, innovation, sustainable cities and communities, peace and justice, and clean water and sanitation. The goal is to ensure that the SDGs are fully implemented, leaving no one behind in the process.

People with disabilities (PWDs) in Africa are guaranteed a good quality of life, well-being, and a high standard of living through the implementation of laws and policies. These consist of the EAC Disability Policy (2012), the Africa Union Protocol on PWDs (2018), and Agenda 2063 of the Africa Union. The Agenda aims to lower hunger and poverty, raise real earnings, jobs, and decent work, give social security and protection for vulnerable populations (including PWDs), guarantee modern, livable housing, and provide basic, high-quality services like healthcare and education. The Africa Union Protocol on PWDs (2018) ensures that PWDs are not discriminated against, have the right to equality in the eyes of the law, the

right to life and liberty, free from inhuman treatment, accessibility rights, adequate living standards, education, work, health, political participation processes, self-representation, information access, and sports participation, recreation, and culture.

In terms of legislation and policy framework, Kenya has adopted policies geared towards economic empowerment of PWDs. The plan to incorporate and integrate PWDs started in harness in 2000 when active advocacy for their integration and inclusion attracted global consideration; culminating into the establishment of the UN Convention on the Rights of Persons with Disabilities (UNCRPD) in 2006. In 2003, the Persons with Disabilities Act was put into effect in Kenya to support and safeguard the rights of individuals with disabilities. As a result, the National Council for Persons with Disabilities (NCPWD) was founded on 2004, with members drawn from the government ministries and organizations dedicated to advocating for the rights of PWDs. This Act was later revised in 2016 to include among other rights, the mandatory requirement that any institution has to provide a friendly environment to persons living with disability. The NCPWD was then vested with the mandate of ensuring that all policies in the government including its plans and programmes promote the needs, aspirations and interests of PWDs. This goes as far as securing employment opportunities for PWD in the Public Service (Republic of Kenya, 2016). There have been deliberate efforts to enhance inclusivity by empowering people with disabilities and including them in political and socio-economic development. Kenya signed and ratified the UNCRPD in accordance with Article 2 (6) of the Kenyan constitution, as stated by Onsomu, Mose, and Munene in 2022.

The constitution of Kenya 2010 through Articles 27(4) advocates for equal protection and benefits of the law for all. Further Article 54 emphasizes on respect and dignity for PWDs,

this has compelled the government to put financial inclusion measures towards improving lives and livelihood of PWDs.

1.1.3 Welfare of Households with Persons Living with Disability

Most PWDs in Kenya, are grappling with impoverishment, inadequate access to health, housing, schooling and employment. Financial inclusion is an enabler to most PWDs towards realisation of their aspirations in addition to improving their conditions of living while actively participating in the society. Some of the contributions towards the economic and social inclusion of PWDs in Kenya, is incorporation of their needs in legislation, policy and law enforcement and equal opportunities (NCPWD, 2016).

Persons with disabilities face barriers such as attitudinal barriers, resource barriers and institutional barriers that hinder their participation and integration in economic and social activities. A household with a person with disability (PWD) can become more vulnerable to poverty due to the additional expenses incurred. These costs include medical costs especially if the person living with disability has a medical condition that requires him or her to take medication periodically. The costs that may also be incurred include setting up the premises where they reside for ease of access, buying them aiding equipments like the wheelchairs and the costs of maintaining them on regular basis (Asuman, Agyire-TetteyAckah&Ackah, 2020).

The determinants of well-being include; health, consumption, facilities of living, education, income, family expenses and access to transport facilities(Al-Shami, Majid, Mohamad and Rashid (2017). PWDshouseholds, have a higher propensity to be poor. This is manifested by household expenditures, income and ownership of assets (United Nations, 2018).

Fifteen percent of the population (a billion) exists with disability limitation. In spite of the high number of PWDs, there is still a higher level of their exclusion from economic and social

opportunities owing to poor technologies and devices, inadequate services from the government, and poor physical environment (McClain, 2019). According to World Bank (2019), it is apparent that the welfare of the PWDs is largely hindered by the unemployment rates, which is reported to be between fifty to seventy-five percent lower than those without disabilities. This is largely attributed to prejudice and bias towards the PWDs as some institutions view them as incapable of doing work (Limaye, 2016). Further, it is apparent that a third of fifty-eight million children living with disabilities are out of school. It is concerning that individuals with disabilities often face obstacles in accessing education, which is a crucial component of achieving sustainable development goals. Despite the challenges faced by people with disabilities, it is encouraging to note that 174 countries have ratified the UN convention on the rights of PWDs, a significant step towards promoting their inclusion in various aspects of the society.

1.1.4 Financial Inclusion (FI) and Household welfare of PWD

Financial inclusion (FI) is determined on the basis of access to finance instrument by a household or an individual. Financial inclusion initiatives aim to establish a strong financial market that provides accessible financial services for everyone. According to the World Bank (2014), financial inclusion involves accessing financial services formally such as payments, loans, deposits, insurance, and savings at economical rates. This inclusivity helps in facilitating the country's economic development (Arun & Kamath, 2015). Further, it help in creating opportunities for those who are poor in terms of consumption and ensures access to health, education and investment opportunities (Zhang & Posso, 2019). Under the financial inclusion programmes the penniless and marginalised population including the PWDs become the biggest beneficiaries (World Bank, 2019).

Financial inclusion is central to every economy since it is one of the most essential elements of the SDGs (Baido & Akoto, 2019). SDGs were formulated to eliminate poverty, hunger, inequalities, poor health while encouraging innovations. The Vision 2030 under the economic pillar recognises the financial inclusion as a key and significant feature of economic development and alleviation of poverty. A research by Puli, Layton and Shahriar (2024) indicates that globally, PWDs are less likely to have bank accounts or access credit facilities than non-disabled persons. For instance, the World Bank's "Disability Inclusion in Financial Services" report highlights that only 30% of PWDs have access to formal financial services compared to 70% of non-disabled individuals. According to data from the Global Findex Database by the World Bank (2022), approximately 94% of adults without disabilities have a bank account compared to just over half (54%) of adults with disabilities. Non-disabled persons generally experience fewer barriers when accessing financial services. They benefit from: Wider Access Points, greater awareness and education and favorable lending practices: Traditional banks and digital platforms are more readily accessible without specialized accommodations. Non-disabled individuals typically receive more information about financial products through various channels. Non-disabled persons also often encounter fewer biases in lending decisions, leading to higher approval rates for loans and credit.

This article provides empirical and theoretical evidence indicating a positive correlation between financial inclusion and economic growth. Additionally, financial inclusion policies are highly dependent on financial inclusion measures. Financial system in Kenya, is expanding its services to accommodate the PWDs in a bid towards increasing their financial inclusion. The banking sector in Kenya is for instance tailoring its services to accommodate those who want to visit the banks physically, those who want to use mobile and internet banking as well as use of ATMs. Figure 1.3. shows the various categories of services used by PWDs.

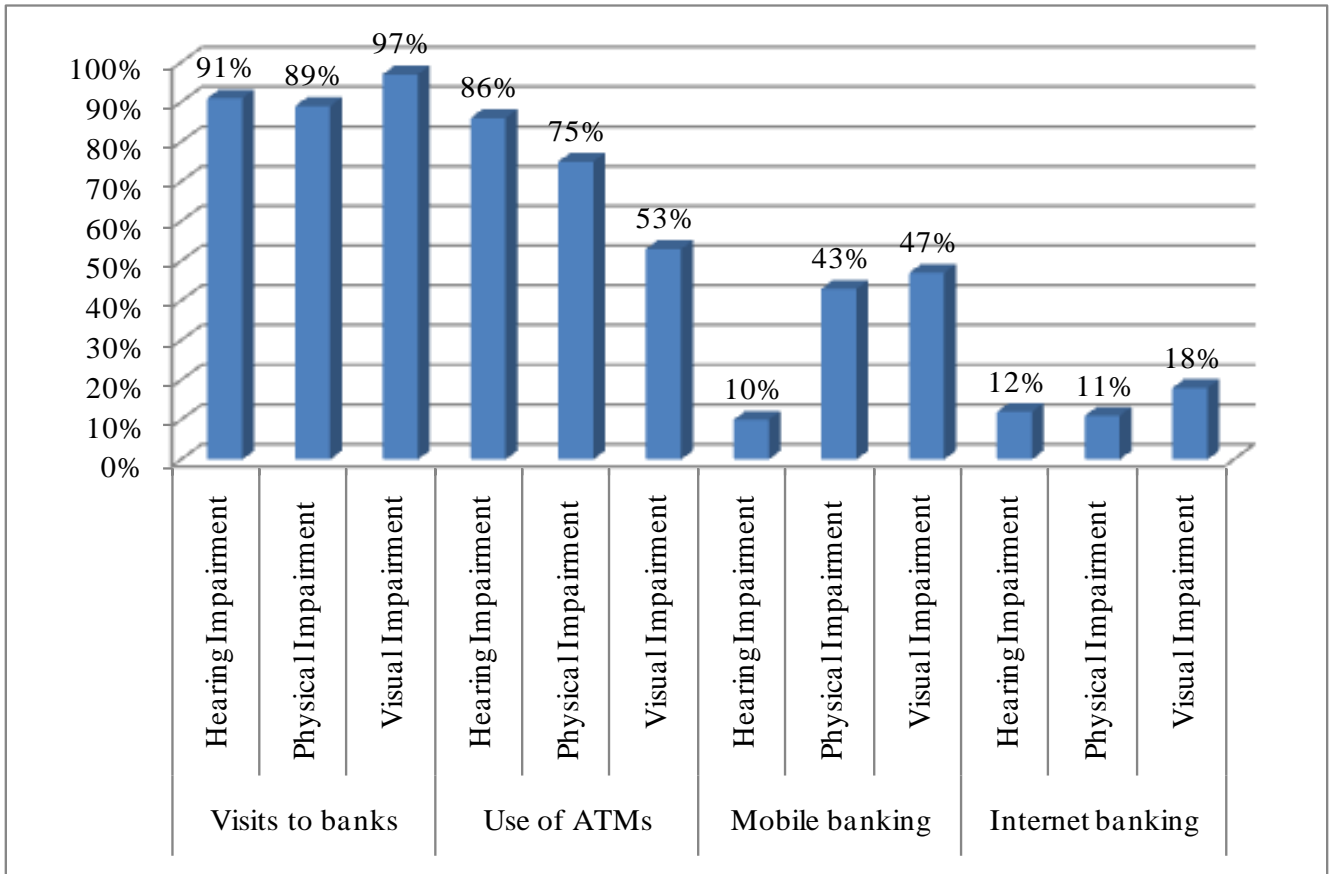


Figure 1.2: Use of Banking Services by PWDs
Source: Kenya Bankers Association (2021)

Based on the statistics presented in Figure 1.3, the leading category of access to the banks by PWDs is visits to the banks where those with hearing impairments surveyed by the KBA were 91%, physical impairment were 89% and those with visual impairment were 97%. The use of ATMs is classified as 86% with hearing impairment, 75% with physical impairment, and 53% with visual impairment. On the use of mobile banking services those with hearing impairment were 10%, physical impairment 43% and 47% were those with visual impairment. In terms of the internet banking, 12% of those surveyed had hearing impairment, 11% had physical impairment and 18% were visually impaired. These statistics show an increase in financial access by PWDs through various platforms. Expansion in the financial service sector in Kenya accelerated the formation and authorization of three Credit Reference Bureaus (CRBs), implementation of a regulatory framework for SACCOs, and the amendment of the Microfinance Act, which regulates the way these institutions take deposits. In terms of capital

requirements, the base limit for banks was increased from Kes. Five Hundred million to Two billion to improve consumer protection in terms of deposits and investments. Further, this was geared towards encouraging small banks to merge and become stonger and larger in terms of capital base(CBK,2013).Kenya was assisted to establish the Financial Sector deepening programme (FSDK) by the Department for International Development (DFID) based in the United Kingdom whose mandate is administering Foreign Aid.FSDK was incorporated with an aim of helping the country stimulate creation of wealth thus poverty reduction especially with the low income citizens and the marginalized (FSD,2014).

Financial inclusion ensures consumption among households, thus theycan mitigate momentary income distress through borrowing from a financial institution to supplement their cash need (Duong & Thanh, 2015). With this households can handle cases of illnesses, low production of food, natural disasters and reduction in commercial produce. Besides households may have desired education, nutrition and food by borrowing from a Financial Institution (Haughton & Khandlker, 2009).

PWDs face social, physical and economic hinderances which can lead them to hunger and poverty (Opoku, Swabey, Pullen & Dowden, 2019). PWDs may be prevented from accessing skills, knowledge and education due to these barriers. PWDs also have huge expenses to incur and this tend to drain most of their financial resourcesdriving them to poverty. PWDs also face several hinderances in accessing social protection programmes (United Nations, 2018). Other hinderances that they face include; denial of required documentation, and their inability to access the grant offices due to discrimination (Limaye, 2016). This pinpoint towards the importance of education and income when analyzing financial inclusion of household welfare. The current study will focus on FI and household welfare of PWDs in Kenya.Changes in

education and household expenditure /income will also depict changes in household welfare with PWD.

The GPFII (Global Partnership for Financial Inclusion) established parameters in 2012 that were approved by the G20. In 2016, GPFII gave features of these parameters as; quality, service, usage of services (by SMEs and population), financial literacy, and access of digital infrastructure (GPFII, 2016). Financial inclusion is assessed on the basis of quantitative and qualitative indicators of access, quality, usage and impact(Giovanna,2010).

Figure 1.4Displays the trend usage of financial services, in Kenya between the year 2006 and 2016.

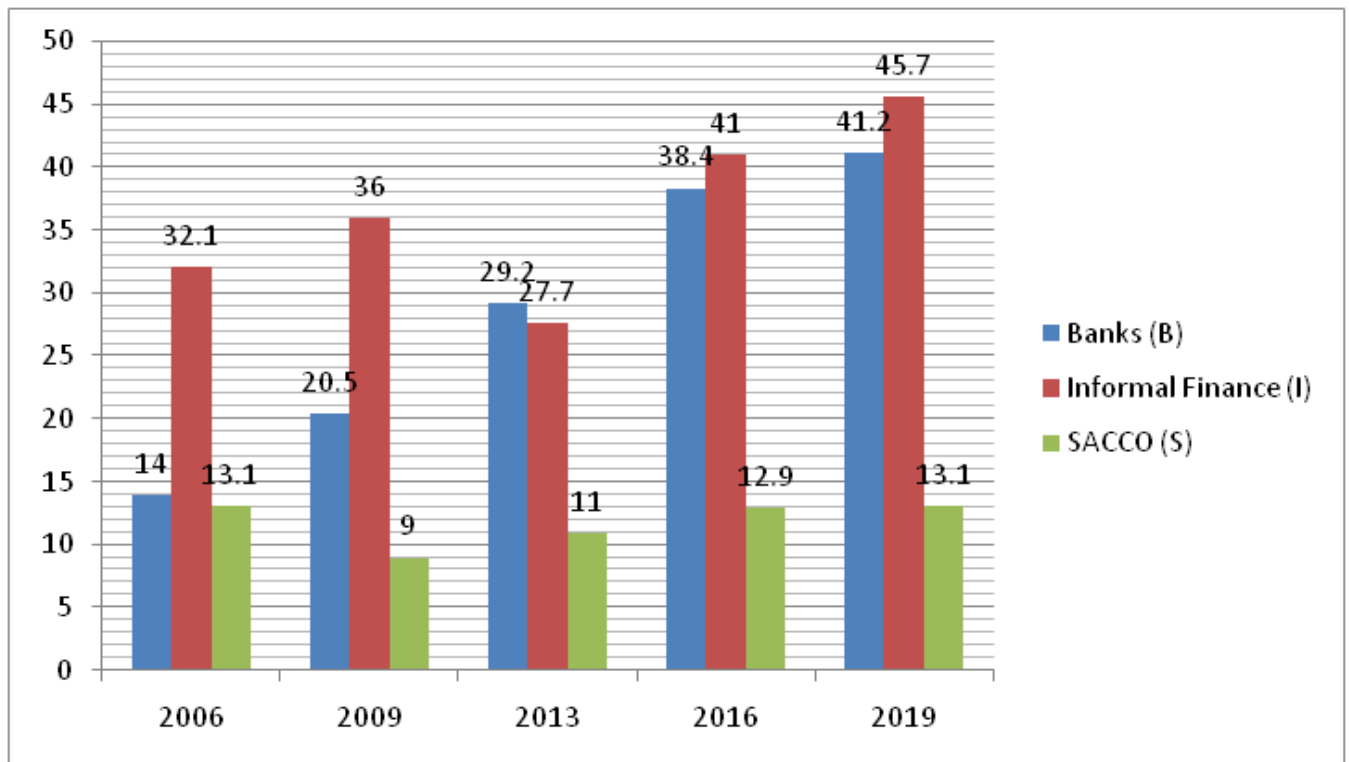


Figure 1.3: Use of Financial Service in Kenya (2006 -2019)
Source: FinAccess Data (2019)

Figure 1.4 depicts a positive growth in Financial Inclusion among households over the period 2006 - 2016. The financial inclusion by banks was 14% as at 2006 compared to use of informal finance which was the highest in 2006 at 32.4% while the SACCOs had the least at 13.1%. In

2009, there was an increase in financial usage for banks and informal finance at 20.5% and 36% respectively. However, the usage from SACCOs decline to 9% compared to 2006. The gap between banks and informal finance narrowed in 2013 as banks overtook the informal finance to stand at 29.2% against 27.7% for informal financing. SACCOs on the other hand had a slight increase to 11% compared to 9% in 2011. Finally as at 2016, the banks increased its share of financial inclusion to 38.4% while informal financing rose to 41% and SACCOs declined to 12.9%.

1.2 Statement of the Problem

The need towards solving the financial challenges facing the PWDs is gaining traction in Kenya. According to the 2019 census, 2.2% of Kenyans are PWDs. The 2019 census revealed that 1.9 percent of gentlemen are PWDs while women constitute 2.5percent. Most disabled persons in Kenya live in rural areas and they lead a very miserable life reason being they are not able to meet their daily needs as they are living in poverty (Kenya, population Census, 2019). They are seen as outcasts and liability. Often such persons are neglected and excluded from social and economic participation. Such persons are not exposed and do not even know that they have rights that protect them (Ondieki, 2018).

According to the NCPWD (2019) most PWDs in Kenya are languishing in poverty owing to their exclusion from employment, inability access to education and failure to appropriately address their needs like healthcare needs. The high levels of poverty also implies that their financial capacity becomes limited as they have low income levels which cannot sustain their expenditure for instance medical expenditure and cost of maintaining the aiding tools that they use (International LabourOrganization, 2014). Through the National Council of Rights of PWDs, there is an increased emphasis towards addressing the financial needs of the PWDs in Kenya. This is meant to eliminate poverty among the PWDs as well as making them productive

members of the society through disability mainstreaming programs. The financial inclusion of the PWDs ensures additional benefits by not only eliminating poverty but also helps in national development (Ondieki, 2018). Vision 2030 under the economic pillar gives prominence to financial inclusion as central in economic growth.

The government has endeavored to increase financial access among the PWDs through its cash transfer program which increased from 14,518 households in 2013 to 52,757 households in 2022 (KIPPRA, 2022). Despite the government efforts, the PWDs still faces the challenge of financial access from the mainstream financial institutions like the banks and SACCOs leaving them to informal financial channels which often attracts extremely high interest rates. According to FinAccess Data (2019), only 13.1 percent of the PWDs accessed finances from the SACCOs and 41.2 percent accessed finance from the banks. Further the data also indicated that 45.7 percent accessed data from informal finance channels. These leaves out a sizeable population of PWDs without access to financial services and as a result become unable to improve their welfare.

Although Financial inclusion (FI) is one of the pillars that supports improvement of household welfare among people living with disabilities, very little research has been undertaken to determine its outcome on the welfare of households of PWD. For instance, Wameyo (2015) studied the nexus between the microcredit services and self-help groups growth for PWDsin Kenya. The study did not however address the financial inclusion of PWDs and the aspect of household welfare as measured by the per capital household income and expenditure. This study examined how financial inclusion has impacted on the household welfare as determined by household income and expenditure. In their 2018 study, Mwangi and Atieno examined how financial inclusion affects consumption expenditure in Kenya. However, they did not investigate financial inclusion specifically for PWDs, which was the key focus of this study.

Additionally, their study did not demonstrate the nexus between FI and household welfare of PWDs. Other studies were done in other jurisdictions outside Kenya. For instance, a study by Limaye (2016) on disability mainstreaming through financial inclusion focused on the Indian context whose policies and operating framework is different from that of Kenya.

The findings from this study would fill the existing knowledge gaps by underscoring the importance of implementing policies that promote financial inclusion as a means of enhancing household welfare of PWDs. By examining the effect of financial inclusion on household welfare, the study significantly contributes towards understanding of how access to financial services influences economic stability, income opportunities, health and education outcomes, vulnerability reduction, and poverty alleviation among the PWDs. This therefore implies that the past studies have contextual and conceptual gaps which this study aimed to fill by specifically addressing financial inclusion and household welfare of PWDs within the Kenyan context.

1.3 Research Questions

- i. What is the effect of financial inclusion on welfare of people living with disability in Kenya?
- ii. How does education empowerment influence household welfare of persons living with disabilities in Kenya?
- iii. How does household expenditure allocation affect the household welfare of persons living with disabilities in Kenya?

1.4 Objectives of the Study

The study's general objective was to evaluate the impact of financial inclusion on household welfare of persons living with disabilities in Kenya. The specific objectives were to:

- i. Establish the effect of financial inclusion on the welfare of people living with disability in Kenya.
- ii. Explore the effect of education empowerment on household welfare of persons living with disabilities in Kenya.
- iii. Examine the relationship between household expenditure allocation and the household welfare of persons living with disabilities in Kenya.

1.5 Significance of the Study

It is anticipated that this research will shed light on the challenges that households with PWDs face owing to financial exclusion and critically help in understanding the steps made so far in ensuring the financial inclusion of PWDs and the improvements to be made to ensure that total financial inclusivity is achieved. It will also help in understanding how financial inclusion of PWDs will improve their welfare and ultimately its impact on the country's economy.

A number of parties will benefit from the study. First, the government of Kenya will use the findings and the recommendations for practice and to come up with policies that will guide the country on the way forward regarding financial inclusion and household welfare of PWDs. The study will also help the government through its state corporation; NCPWD to identify the specific challenges that the PWDs face owing to their financial exclusion. Consequently, it will be able to engage the various financial actors in the sector to ensure that financial requirements of PWDs are addressed.

Consequently, it will also be of significant to the PWDs since through the policy implementation, they will have access to financial services, thus improving their livelihood. It will also help the NGOs and donors dealing with PWD by identifying specific financial challenges that they face hence be able to design programmes that can uplift the welfare of the PWD.

Lastly the study is expected to help as a foundation for subsequent studies on financial inclusion and household welfare of PWDs. It is thus expected to help the scholars in future studies through the recommendations that are made from the study specifically those suggesting the areas to be considered in the future studies.

1.6 Scope of the study

The study inquired the impact of financial inclusion on the welfare of Kenyan households with disabilities from 2000 to 2023. On household welfare the study focused on two subcategories of consumption which include; education and housing expenditures (including rent and utilities). This period is considered appropriate since it is the period when Kenya as a country established the NCPWDs through an act of parliament, ratified the 2006 UN convention on the rights of PWDs, passed the 2010 constitution outlining the rights of every person including the PWD and was also the period that Kenya expanded its financial inclusion and access among Kenyans as the financial sector witnessed a rapid expansion.

There are various categories of PWD in Kenya, but the scope of this study excluded the mentally challenged and focus on the persons aged 18 years and above. This is because they are usually the targeted group in the disability programmes given that they are adults and can be able to take care of the needs of their families and households if financially empowered.

1.7 Organization of the Project

There are five chapters in this project. The background of the investigation has been outlined, and chapter two presents the empirical literature and pertinent theories that have been studied. The research approach used is presented in Chapter 3. The results are summarized in Chapter 4, and the study's conclusion and policy recommendations are included in Chapter 5.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter evaluates the theoretical and empirical gaps that currently exist with regard to PWD households' welfare and financial inclusion.

2.1 Theoretical Literature Review

The main constructs and variables being studied are bound by the theoretical framework, which is underpinned by several theories. This study is informed by Social Capital Theory, Theory of Inclusive Growth and Capability Approach Theory.

2.1.1 Social Capital Theory

This theory emphasizes the value of social networks, relationships and trust as a resources that individuals and groups can use to achieve social or economic benefits. This theory is relevant to the study as it provides valuable insights into how social connections and networks for PWDs can facilitate access to financial services, improve economic opportunities and overcome systemic barriers.

Social networks such as relationship with family, organizations and communities can provide PWD with critical information about available financial services and programs thus increased access. Community groups and organizations working with PWD can act as intermediaries, improving awareness and reducing informational barriers.

The theory posits that establishing trust between financial institutions and PWD is crucial for overcoming skepticism or fear or fear of discrimination. Networks of PWD advocacy groups can advocate for inclusive policies and create an environment of confidence.

This theory informs the current study by explaining how financial inclusion helps in reducing isolation of PWD as many of them face social and economic exclusion. Strong social capital can help integrate them into mainstream financial systems by leveraging collective advocacy and peer support.

The theory further advocates for microfinance and community support for PWD in enhancing their financial inclusion. Community-based financial models such as savings groups and cooperatives rely on social capital to ensure participation and trust among members, making them more accessible to PWD.

The theory advocates for policy and institutional support for financial inclusion of PWD. Advocacy and collective action fostered by social capital can influence policymakers and financial institutions to prioritize the financial inclusion of PWD, leading to systemic change thus improved financial inclusion. Demrgüç-Kunt, Klapper and Singer (2013) explains that for a nation to develop, there is need for financial access hence financial sector policies should always remain a top priority for countries in addition to devoting attention to financial inclusivity.

The theory further emphasizes on the importance of encouraging behavioural change. The social norms within communities that value inclusivity can encourage financial institutions to adopt practices that accommodate PWD such as accessible branches or digital tools.

The theory is relevant to the study as it applies practically, in a community where PWD are actively supported by local organizations or advocacy groups, members can share experiences, pool resources and collectively negotiate with financial institutions for better services, such as lower fees or accessible banking options. Trust within these networks can also encourage informal lending or saving groups that PWD can rely on while transitioning to formal financial systems.

The theory helps us understand the challenges associated with limited or weak social networks for PWD which may reduce access to the financial inclusion or cash transfer program benefits. The theory highlights the need for social capital to be complemented with institutional change, such as accessible infrastructure, anti-discrimination policies and tailored financial products for PWD to enhance their financial inclusion. The theory states that over-reliance on informal networks might delay broader systemic inclusion in formal financial systems.

The theory informs the study in highlighting the importance of fostering relationships, trust and advocacy for households of PWDs. By leveraging these social assets, barriers to financial inclusion can be reduced, empowering PWD to access and benefit from financial systems effectively. The economic growth success is a function of financial inclusion, stability and composition of financial institutions (Sparatt & Stephen,2013).

2.1.2 Theory of Inclusive Growth

Financial inclusion is seen as a pathway to inclusive growth, where broad access to financial services leads to poverty reduction, economic empowerment and shared prosperity. It emphasizes the importance of addressing inequalities in access to finance.

The inclusive growth theory is anchored on equal treatment and involvement of all people in the society in any developments being undertaken. The theory is also anchored on a socially inclusive society where people feel respected, valued and their daily necessities are catered for hence live with dignity. Therefore, an inclusive society is a society where people have a great sense of belonging. One aspect of inclusion is financial inclusion which enables PWDs to cater for their basic needs (Kimosop, 2013). Financial inclusion helps households of PWDs to engage in more productive activities like farming and businesses that will help them in generating more income which translates to economic empowerment. Financial inclusion enables the PWDs to cater for their household needs (Mutambara, 2014). This theory will be

useful in this study in illustrating the inclusivity and the needs of households with PWDs and the role of financial inclusion in helping households to address their needs.

2.1.3 The Capability Approach Theory

Economist Amartya Sen and Martha Nussbaum introduced the Capability Approach Theory in 1980. This approach emphasizes the importance of what individuals can accomplish and become based on their capabilities rather than merely focusing on resources or utility. The theory posits that genuine inclusion necessitates empowering marginalized groups to realize their full potential by equipping them with essential tools, opportunities, and support (Bhokal-Nair et al., 2023). In terms of financial inclusion, this perspective offers a detailed understanding of how PWDs can attain access to financial services and engage fully in the economic sphere.

Financial inclusion is vital for PWDs, allowing them to handle their finances proficiently, invest in their health and education, and enhance their overall quality of life (Naami, Mills & Abbey, 2023). The Capability Approach can be utilized within the realm of financial inclusion for PWDs to pinpoint specific capabilities vital for their financial access. These capabilities may encompass access to information by understanding financial products and services, mobility through ensuring physical access to banks and ATMs, and digital literacy by improving PWDs' ability to navigate online banking platforms. Additionally, the capability approach can assist PWDs in evaluating functionings, which refer to various activities or states that they value (Naami et al., 2023). For PWDs, pertinent functionings may include opening a bank account, seeking loans or credit, participating in savings programs, and assessing their ability to attain such functionings helps reveal the obstacles they encounter in accessing financial services.

The capability approach can also be utilized to understand systemic barriers that prevent PWDs from achieving their desired functionings: these barriers comprise physical obstacles like the absence of accessible banking facilities, attitudinal barriers involving discrimination from service providers, and economic barriers that cover the higher costs related to acquiring necessary adaptations or technologies (Bhogal-Nair et al., 2023). Ultimately, by employing the capability approach, policymakers can create interventions that enhance the capabilities of PWDs, such as instituting regulations that compel banks to offer accessible services, providing training programs aimed at improving digital literacy for PWDs, and launching awareness initiatives designed to reduce stigma surrounding disabilities in financial settings.

The theory informs the current study by emphasizing on the importance of enhancing individual capabilities and freedoms by addressing the barriers that limit the access of PWDs to financial opportunities and freedom so they can achieve well-being and live a life they value. This is because access to financial services is not just about economic transactions only; its about expanding financial opportunities and enabling PWDs to overcome societal and cultural barriers to achieve meaningful lives.

2.2 Empirical Literature Review

2.2.1 Financial Inclusion and Household Welfare of Persons Living with Disabilities

Globally, Many scholars have studied how access to financial services affects household welfare. For instance, Fitzpatrick (2015), assessed on the effect of owning a bank account in the United Kingdom using a panel data from 2010 to 2014. The researcher used the causal effect research design. The panel regression analysis showed that having a bank account in Europe accelerates credit access and consumption of household appliances. In the same breathe, Amendola, Boccia, Mele and Sensi (2016) accessed the welfare of households as a result of acquiring credit from financial institutions in Mauritania. The study used a household survey

for 2014 and used descriptive research design. The results from correlation analysis established that greater financial access reduced reliance on household production and increased investment in human capital. Furthermore, DeLoach and Smith-Lin (2018), assessed on financial inclusion in Indonesia in 2017. The research employed a descriptive design and utilized regression in analysis. The study established that households who had access credit and savings are better able to respond to adult health shocks by borrowing or liquidating assets.

Nanziri (2016) assessed financial inclusion levels in South Africa using pooled data set from 2000 to 2015. The research employed a descriptive design and utilized regression analysis for its analysis. Based on the study, having a high level of financial inclusion is linked to increased investment rates, employment opportunities, and income, as well as lower poverty rates. As a result, in order to maintain the well-being of households, it is crucial that a large portion of the population access financial services in a formal way. Similar study was done in Nigeria by Ibrahim and Olasunkanmi (2019). The study used causal effect research design and covered the period 1988 to 2017. The results from regression analysis argued that increase in financial inclusion significantly reduces poverty. However, Demirguc-Kunt and Klapper (2012) reported that more than three quarter of adults in SSA have no bank account. Based on panel data from June 2012 obtained from the Global Financial Index World Bank, regression analysis showed that less than 25% of adults in Africa have a financial institution account. Many of them resort to informal methods of saving.

Makunda (2016) did a study on financial inclusion as a proxy indicator of poverty in Kenya over the period 2006 to 2016. A descriptive research design was utilised and analysed using SPSS. Three measures were used; quality, usage and access. The outcome showed that in terms of usage and access, there were differences across different levels of wealth but in terms of quality there was no notable differences. The paramount indicators identified were usage of

mobile money, savings, pensions and insurance. The study focused on financial inclusion as a proxy indicator of poverty in Kenya and thus left out the aspect of household welfare of PWD which the current study focused on.

Addury (2019) executed research on the impact of inclusive finance on the welfare in Indonesia from 2000 to 2014. The study analyzed financial inclusion, from the standpoint of household income investments, deposits and credit levels, living facilities and income of household. Panel data regression analysis was used. The study instituted a positive correlation between credit amount and household income. Secondly it was established that the credit amount had significant impact on consumption and expenditures in an household. In addition, there was no significant effect on the amount of credit, savings, or investments in household facilities. The study only focused on households welfare resulting from financial inclusion leaving out the aspect of persons living with disability. The current study therefore looked at the impact of FI on the well-being of PWDs households.

Mallick and Zhang (2019) studied how financial inclusion impacted China's household welfare between the year 2009 to 2017. The research was conducted using a desktop research design, and its findings showed that overall consumption is significantly increased through albeit the impact being great among urban households as opposed to rural households. Food consumption was found to be greatly affected among the various types of consumption. Among the urban households, financial inclusion was also found to decrease inequality of consumption. The study was done in China thus presenting a scope gap as this study focused on Kenya.

A study conducted by Ajefu, Haghpanahan and Haghpanahan (2020) examined how inclusive finance affects mental health. The research design used was cross-sectional. The Nigerian General Household Survey (GHS), which was carried out in 2015 and 2016, provided the data. The results of the study showed that higher FI significantly affected mental health. The distance

between a household and the closest financial institution was examined as part of a variable method to gauge financial inclusion. The influence of financial inclusion on mental health through remittances, food expenses, and risk-coping strategies was evaluated. The findings support the advantages of financial inclusion. Due to the study's execution in Nigeria, there is a scope gap.

2.2.2 Education and Financial Inclusion of Household Welfare of PWD

Fafchamps and Shilpi (2014) did a study on education and household welfare using the data from 2001 to 2010. Data collected through census from Nepal. The study examined how the partial derivatives of projected household welfare differs from parental education. The study focused on schooling, child survival, child labour and fertility. Descriptive research design was utilised. The researcher established that education of female had no strong association with beneficial outcomes in comparison to men contrary to the popular assumption. The link between education and women, the outcomes ranks were very strong: Specifically women that got access to schooling than their peers tended to educate their children much better. On the contrary, the link between education and welfare of households for men is strong even with control for educational rank. The study however focused on education and financial inclusion in terms of gender hence the PWDs were not examined. This study therefore aimed to address the current research gap.

Ogundari and Aromolaran (2014) evaluated the household well-being as a result of education in Nigeria from 2000 to 2012. This study assessed the effect of attaining education in household on the basis of earnings in labor market and per capital expenditure of household food items. According to the regression analysis, tertiary education had a higher return than the formal primary up to postgraduate education levels. Moreover, per capital expenditure in household was increased by more years of attaining tertiary education in comparison to the other educational

levels. The study was conducted in Nigeria, creating a scope gap. To address this, the study was conducted in Kenya.

Wang, Zheng, Wang, Peng, Ma and Li (2017) did a study on classification of the association between household welfare in Miyun Reservoir Watershed, China from the period 1988 to 2013. The study found out that proximity to Beijing, skills, education, family structures had significant influence on welfare of households whereas the quantity of eco-compensation fund and capital have a significant contribution to dependence of ecosystem. Hence maintaining a balanced size of family, skills levels, age structure and improvement of education while strengthening ecosystem services payment among low households would help in improving their welfare. The study presented a conceptual gap by using household welfare as the independent variable. This study used household welfare of PWD as the dependent variable.

2.2.3 Household Expenditure and Financial Inclusion of Persons with Disabilities

Dupas and Robison (2013) conducted a study among women market vendors in a village in Western Kenya to investigate the nexus between savings and household expenditure. The study period was from 2007 to 2011. The randomized control trial (RCT) found that users of savings products increased their private expenditure by 13%. Studies have shown that there is a positive correlation between household welfare and savings, while studies that focus on credit usage do not show the same link. It is crucial to note that the outcome can vary depending on the population being studied. For example, a randomized controlled trial conducted on rickshaw drivers showed conflicting results.

Bernerjee *et al.* (2015) undertook an RCT study to establish the role of micro credit lending and the link with average monthly consumption expenditure per capita in India over the period 2005 to 2014. Experimental research design was used. The RCT, 15 to 18 months later showed an increase in the household expenditure on durables leading to profitability. Crepon *et al.*

(2014) assessed on micro credit borrowing in Morocco over the period 2006. The regression analysis revealed that access to microcredit borrowing led to increased profits and investments, offset by reduced labor income, which neutralized the impact on overall consumption. Whereas credit to households in Mexico depicted an improvement in the well being, there was no significant impact between FI and household consumption, (Angeluci *et al.*, 2013).

Mwangi (2017) did a study on dynamics of inclusive finance and welfare in Kenya using financial access surveys from 2006 to 2015. The study used a causal effect research design and analysis done using regression. The findings showed that per capita income as one of the main drivers of FI. FI significantly reduces poverty rates for both urban and rural households. The study was based on past literature thus presenting a methodological gap. The current study was based on actual data with a cross sectional research design.

2.3 Overview of Literature

Previous studies have several gaps including the contextual gaps. For example, Addury (2019), Mwangi (2017), and Mallick and Zhang (2019) concluded that including more people in the financial system has a huge influence on the well-being of households. Muiruri (2019), Hong and Liu and Dai (2019) established a significant effect between income and household welfare. In addition, a close linkage was also established between education and household welfare. For example Fafchamps and Shilpi (2014); Ogundari and Aromolaran (2014) established that education have an impact on household welfare.

Secondly there are methodological gaps in the previous studies. For example, Addury (2019) used a cross-sectional research design with panel data regression, while Mallick and Zhang (2019) utilized a desktop research design, and Makunda (2016) applied a descriptive research

design. Ajefu, Demir, and Haghpanahan (2020) also used a cross-sectional research design. The current study adopted a cross sectional research design.

In addition past studies have been done on other countries whose policies and institutional settings are different from that of Kenya. For instance a study by Mallick and Zhang (2019) was done in China, Vedeld (2020) focused on South Africa. However single country analyses is vital as each country is unique in its own way. This is because lessons learnt in one country may not necessarily apply or be relevant to other countries. The current project therefore aimed at filling the knowledge gaps by answering these research questions: What is the impact of financial inclusion on household welfare of persons living with disabilities in Kenya?

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the research approach that was used. It goes over the model formulation, the highlights of the theoretical background, and the research design. The chapter also defines the study variables and provides details on how they were measured. Additionally, the chapter discusses the study area, including the data type, target population, and sources. Finally, the chapter outlines the data analysis and processing procedures.

3.1 Research Design

A study's framework is provided by a research design (Etikan & Bala, 2017). The research used the causal research design. A causal research design helped in ascertaining the nature and extent of cause and effect relationships. As stated by Zikmund, Babin, Carr & Griffin (2012), the design helps in analysing specific situation or problem with an aim of explaining the relationships between variables. The purpose of the study was to evaluate how financial inclusion affected Kenyan households welfare of PWDs. Consequently, it was appropriate to use an explanatory research design to clarify the relationship between the studied variables.

3.2 Target and Sample Population

The study specifically targeted the PWDs in Kenya as documented under NCPWDs records. The records for the PWDs on the aspects being analysed; household expenditure, education and financial inclusion was obtained from KIHBS and KIPPRA. The data was compared and average figures calculated.

3.3 Theoretical Framework

The study was backed up by the theories reviewed in the preceding chapter where each has played a crucial role. Social Capital Theory advocates for policies that promote financial inclusion through development of social capital and mitigation of social exclusion (Mhanga, 2022). Theory of Inclusive Growth highlights the essence of financial inclusion in helping households with PWDs to address their needs. The Capability Approach Theory is helpful in the study as it advocates for PWDs to have equitable access to capabilities which include financial inclusion and access to education to gain skills, development and empowerment which is gained through education.

3.4 Empirical Model Specification

The study's model specification is grounded on the variables utilized in the study which fits a linear mathematical equation in 3.1 below. The linear model is used when a researcher wants to investigate the connection and relationship linking two sets of variables, where one is dependent on the other. This applies to the theoretical framework of financial inclusion, education, and household expenditure, as explained by Rencher and Schaalje (2008).

$$Y = \beta_0 + \beta_1 X + \epsilon \dots \dots \dots (3.1)$$

where; Y is the dependent variable, in this study it is the household welfare of PWD while X is a proxy for the predictor or the independent variable in this study it is the financial inclusion.

The variable ϵ in the model represents the error term. It accounts for measurement errors, random fluctuations or the impact of factors beyond our control. The study's objective involves multiple predictor variables based on a multiple linear model, as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots \dots \dots (3.2)$$

Where;

Y : Household welfare of PWD in Kenya between 2000 and 2023

X_1 : Financial Inclusion (count of PWDs who accessed credit/cash transfer)

X_2 : Household Expenditure (count of PWDs who utilized the finances in making payment for utilities & purchases)

X_3 : Education empowerment (level of education measured using the schooling years for PWDs) 8 years for primary education, 12 years for secondary education, and 14 years for tertiary education)

β_0 : Constant term

β_1, \dots, β_3 : Regression Coefficients that indicate diverse importance level

\mathcal{E} : Error term

3.5 Definition and Measurement of Variables

This segment outlines the measurement and interpretation of the variables used in the study, which includes: financial inclusion, education, and household welfare. Table 3.1 below lists the variables along with their definitions and measurements.

Table 3.1: Definition and Measurement of Variables

| Variable | Definition | Measurement |
|-----------------------|---|---|
| Financial Inclusion | Accessing financial services to meet individuals' needs. | Measured using amount of credit/cash transfers accessed by PWDs from financial institutions like banks, sacco, microfinance and the government. |
| Education Empowerment | Highest academics achievements of PWDs in Kenya | Measured in terms of percentage of PWDs with higher education learning (Tertiary, colleges and Universities) |
| Household welfare | Encompasses consumption of food and non food items, expenditure within household as the proxy for household wellbeing | Measured by cash spent by PWDs on essential non-food items and basic food items for direct satisfaction of household needs and consumer durables. |
| Household expenditure | The amount spend on consumption by an household to meet their everyday needs. | Per capita income of PWDs (purchasing power parity) measured in Kenya shillings |

Source: Author's Computation

3.6 Data Type and Sources

The study made use of existing data to determine how financial inclusion affected the household welfare of PWDs in Kenyan context. Secondary data on the study variables: financial inclusion, education, household expenditure and household welfare was acquired from Kenya National Bureau of Statistics (KNBS), Kenya National Population Census (2019, and Kenya Integrated Household Budget Survey. Data from KIHBS was regarding household

expenditure among the PWDs. Data from KNBS and KIPPRA helped in showing the trends of welfare of PWDs in terms of education and financial access. The collected data from these sources was compared and average done to avoid inconsistencies. The data collected was limited to persons living with disabilities in Kenya. The collected data was then analyzed using Stata version 13.

3.7 Data Analysis

Descriptive and inferential statistics was then analyzed to demonstrate how financial inclusion affects the household welfare of individuals living with disabilities in Kenya. The characteristics of the variables under study were summarized using descriptive statistics, including minimum and maximum values, the mean, and the standard deviation. Furthermore, inferential statistics were employed to ascertain the correlation among the variables under investigation. Tables and graphs were then used to illustrate the information. The study's objectives were to investigate how financial inclusion affects PWDs' welfare in Kenya. The second goal is to look at how PWDs' education affects their welfare, and the third is to assess how household expenditure affect PWDs' welfare. The association between the predictor variables (financial inclusion, education, and household expenditure) and the dependent variable (household welfare) was investigated using multiple regression analysis.

The model used was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots \dots \dots (3.3)$$

Where; Y=Household welfare

X_1 =Financial Inclusion

X_2 = Household expenditure

X_3 =Education

ϵ =Error term

Further, Stata Version 13 was used with a confidence level of 95%.

3.8 Diagnostic tests

Diagnostic tests is important in establishing the model failure or its inadequacy. In this study, various diagnostic tests were conducted including heteroscedasticity of error term; autocorrelation of residuals; normality and multicollinearity tests. Autocorrelation was tested using Durbin Watson test; Breush-pagan-Godfrey test was conducted to check heteroscedasticity; the Kolmogorov-Smirnov test was further conducted to test normality; and multicollinearity test was carried out using the Variance Inflation Factor (VIF).

3.8.1 Autocorrelation Test

An autocorrelation test was carried out using the Durbin-Watson test. According to Greene (2008), the Durbin-Watson statistic ranges from 0 to 4. In the absence of autocorrelation, the statistic is 2.0. A value less than 2 indicates weak autocorrelation, while a value greater than 2 indicates serial autocorrelation. From the findings in shown in Appendix II, Table A, the Durbin-Watson statistic after transformation is 2.0028. It appears that there was no autocorrelation since the statistic was 2.0028, which is close to 2.

3.8.2 Normality Test

The normality test used the Doornik-Hansen test to check if the data was distributed normally or not. The test's null hypothesis assumes the data is normally distributed, while the alternative hypothesis assumes it is not. According to Green (2008), a p-value of less than 0.05 indicates the data is not normally distributed, while a p-value greater than 0.05 indicates normal distribution. Based on the results in Appendix II, Table B, all the variables had p-values greater

than 0.05. Additionally, the overall test for normality resulted in a p-value of 0.0740. Therefore, it can be concluded that the data used was normally distributed.

3.8.3 Heteroscedasticity Test

The test for heteroscedasticity is used to determine if the variability of variables is consistent across a range of variables. The Breusch-Pagan test is commonly employed for this purpose. The null hypothesis assumes constant variance across the predictor variables, while the alternative hypothesis suggests that the variance is not constant. A p-value of 0.05 or less indicates the presence of heteroscedasticity, whereas a p-value greater than 0.05 suggests that there is no heteroscedasticity. Appendix II, Table C displays the results of the heteroskedasticity test conducted using the Breusch-Pagan test. Given that the p value is 0.2593 ($p > 0.05$), it is clear that there was no heteroskedasticity issue. Instead of non-constant variance, this suggests that there is constant variance for a variety of predictor factors.

3.8.4 Multicollinearity Test

Using the Variance Inflation Factor (VIF) and the tolerance level ($1/VIF$), the multicollinearity test was carried out. Multicollinearity is present under the Green (2008) test if the tolerance level is less than 0.1 and the VIF is greater than 10. The findings are as presented in Appendix II, Table D. Based on the findings the VIF for financial inclusion is 1.83, household welfare 1.48 and education empowerment is 1.30. The mean VIF is 1.54. Further, the tolerance level for financial inclusion is 0.54645, household welfare is 0.67568 and education empowerment is 0.76923. Therefore, since the VIF values are below 10 and tolerance level ($1/VIF$) are above 0.1, it can be inferred that there was no multicollinearity problem.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This study looked at how financial inclusion affected the household welfare of PWDs in Kenya. Stata version 13 was utilized for the analysis and the study made use of secondary data. The mean, median, and standard deviation of household welfare, household spending, financial inclusion, and education empowerment are shown in the descriptive statistics. Graphs are also used to display each variable's trends. The study also provides an empirical analysis of the data, which includes regression analysis, correlation matrices, and diagnostic tests (autocorrelation, heteroscedasticity, normalcy, and multicollinearity tests).

4.2 Descriptive Analysis

The study's unit of analysis was the PWDs in Kenya. The descriptive statistics thus helped in depicting the trends in terms of the changes in the independent and the dependent variable over the study period (2000 to 2023). The study focused on welfare of PWDs and the initiatives put in place including financial access, household expenditure, and education empowerment. As stated by Mishra *et al*, (2019), descriptive analysis involves measures of central tendency, which include the mean and median, as well as measures of dispersion, which in this study was the standard deviation (SD).

A summary of the study's variable-specific descriptive statistics is displayed below in Table 4.1.

Table 4.1: Descriptive Statistics

| | Household Welfare | Household Expenditure | Financial Access | Education of PWD (%) |
|---------------------------|--------------------------|------------------------------|-------------------------|-----------------------------|
| Mean | 939,737,500 | 38,200.05 | 18.17 | 14.77 |
| Median | 654,000,000 | 39,900.37 | 16.38 | 13.20 |
| Minimum | 208,700,000 | 18,610.72 | 7.45 | 6.24 |
| Maximum | 2,097,000,000 | 50,067.85 | 35.67 | 31.40 |
| Standard deviation | 626,822,318 | 8,287.99 | 7.86 | 6.09 |
| Skewness | 0.84 | -1.01 | 0.90 | 0.98 |
| Kurtosis | -0.99 | 0.43 | 0.17 | 0.95 |
| Observations | 24 | 24 | 24 | 24 |

Source: Author's Computation from Study Data (2024)

From the findings in Table 4.1, household welfare had a mean of Kshs. 939 Million; median of Kshs. 654 Million, minimum of Kshs. 208 Million, Maximum of Kshs. 2 billion. The standard deviation of household welfare was Kshs. 626 Million. From the result, it is apparent that the average amount of cash sent to PWDs is Kshs. 939 Million. On average the household expenditure spend by PWDs is Kshs. 38,200 as shown by the mean. The median of household expenditure is Kshs. 39,900, minimum of Kshs. 18,610, Maximum of 50,067 and SD of 8,287. Financial inclusion was determined based on the cash and credit transfers made to PWDs in Kshs. This implies that the average credit and cash transfer for PWDs households was 18billion shillings. The median is Kshs. 16.38 billion, minimum cash transfer was Kshs. 7.45 billion and

Maximum of Kshs. 35.67 billion. The SD for financial access is 7.86. Education of PWDs was measured based on percentage of those who had benefited from sponsored education programs. In Table 4.1, the data shows that the mean is 14.7%, the median is 13.2%, the minimum is 6.24, and the maximum is 31.4. The standard deviation is 6.09. Further trend analysis of these variables using a time series graph was conducted, which is shown below.

Figure 4.1 illustrates the progression of financial inclusion, measured by PWDs' access to financial services through institutions, over the years.

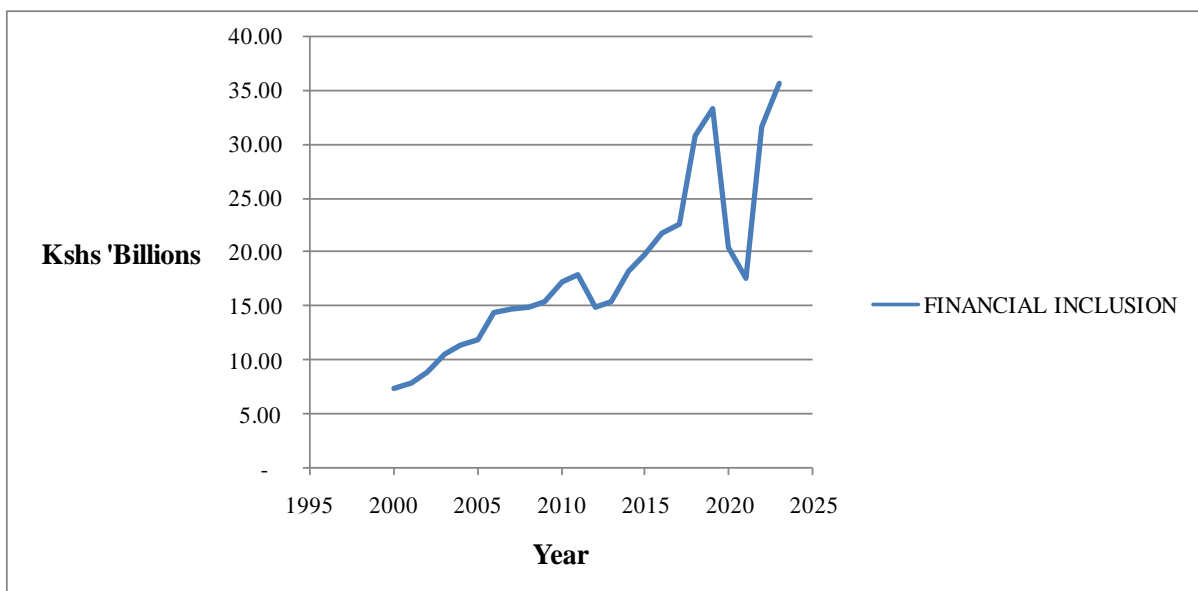


Figure 4.1: Financial Inclusion

Source: Author’s Computation from Study Data (2024)

In Figure 4.1, the level of financial inclusion is shown as measured by the financial access of persons with disabilities (PWDs) through financial institutions. The data indicates that financial inclusion has been increasing over the 23-year period. In 2000, the financial access was 7.45 billion, and this has increased to Kshs. 35.6 billion in the year 2023, more than four times the initial amount.

Figure 4.2 below depicts the trend in the rate of education enrolment by PWDs.

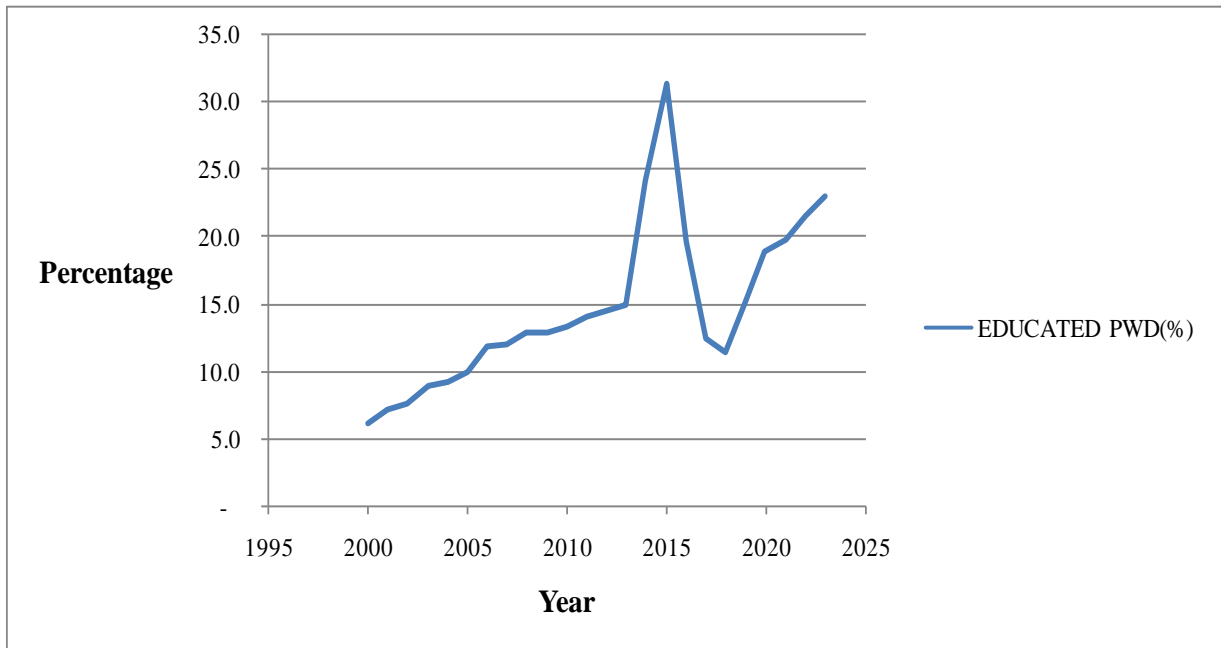


Figure 4.2: Education of PWDs

Source: Author's Computation from Study Data (2024)

The percentage of PWDs who have accessed education at higher learning institutions is shown in Figure 4.2. The trend in Figure 4.2 indicates a steady increase over the 23-year period, with the exception of a decline between 2015 and 2019. In 2020, there was an increase to reach 23%, signifying an improvement in the educational empowerment of PWDs.

Per Capital Household Expenditure of PWDs is shown in Figure 4.3 below:

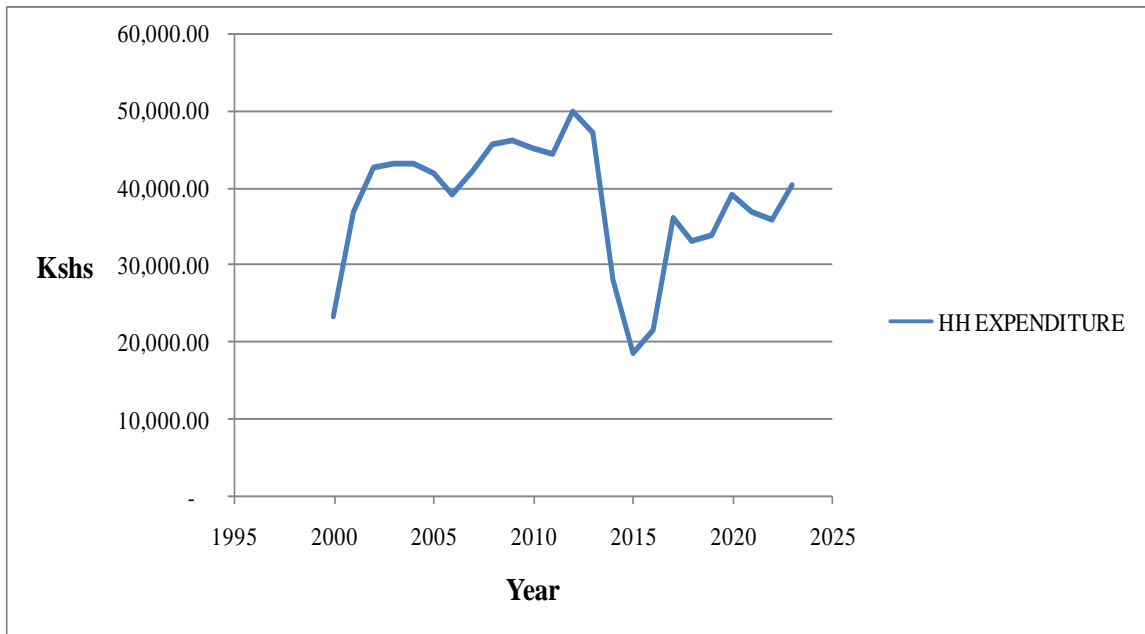


Figure 4.3: Per Capital Household Expenditure of PWDs

Source: Author’s Computation from Study Data (2024)

Based on figure 4.3, the per capita household expenditure showed a fluctuating trend from 2000 to 2010. This was followed by a downward trend until 2015, after which it steadily rose to Kshs. 40,580 in 2023. This suggests that the majority of PWDs did not have a steady source of livelihood and relied on financial inclusion to meet their daily expenses.

4.3 Inferential Analysis

The inferential analysis involved carrying out the correlation analysis and regression analysis.

4.3.1 Correlation Analysis

The Pearsons' correlation test was used to conduct the correlation analysis, and Table 4.2 displays the results.

Table 4.2: Correlation Test

| | | Household welfare | Financial Inclusion | Household Expenditure | Education Empowerment |
|-----------------------|---------------------|-------------------|---------------------|-----------------------|-----------------------|
| Household welfare | Pearson Correlation | 1 | | | |
| | Sig. (2-tailed) | | | | |
| Household Expenditure | Pearson Correlation | .029* | 1 | | |
| | Sig. (2-tailed) | .601 | | | |
| Financial Inclusion | Pearson Correlation | .426* | .037 | 1 | |
| | Sig. (2-tailed) | .000 | .588 | | |
| Education Empowerment | Pearson Correlation | .401* | .179 | .117 | 1 |
| | Sig. (2-tailed) | .000 | .063 | .083 | |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author's Computation from Research Findings (2024)

A correlation coefficient exceeding 0.8, according to Greene (2008), denotes a substantial correlation between the variables and implies that it would be challenging to derive reliable, independent information from them. According to Sachs (2009), a correlation coefficient (R) of -0.8 or 0.8, which corresponds to a coefficient of determination (R²) of 64 percent, indicates a strong correlation between two variables. The collinearity issue is indicated by a pair of variables that have a strong correlation.

Household expenditure and household welfare show a positive and negligible association (r=0.29, p>.05), according to Table 4.2's results. This implies that as household expenditure

increases the household welfare does not increase significantly. This findings negets investigation according to Bernerjee *et al.* (2015), which postulates that household expenditure increases and well-being improves positively.

The findings also reveal that there is a significant and positive correlation between financial inclusion and household welfare ($r=0.426$, $p<.05$). This implies that as the level of financial access increases among the PWDs, their welfare improves significantly. The findings are congruent with findings by Addury (2019) which found a significant correlation between financial inclusion and household income in Indonesia.

The results also show that education empowerment of PWDs have a positive and significant correlation ($r=0.401$, $p<.05$). This means that as the PWDs get education empowerment, their welfare also increases. This could be because with education, there is a high possibility of getting employment or skills that can be used in self-employment hence getting income to meet their household needs. The findings are consistent with findings by Ogundari and Aromolaran (2014) who evaluated the household well-being because of education in Nigeria from 2000 to 2012 and found a positive relationship.

4.3.2 Regression Analysis

The inferential statistics covered the regression analysis with an aim of indicating the effect of financial inclusion on welfare of PWDs. The findings are as shown in Table 4.3.

Table 4.3: Regression Output

| Household Welfare | Coef. | Std. Err. | T | P> t | [95% Interval] | Conf. |
|--------------------------|--------------|------------------|----------|-----------------|-----------------------|--------------|
| Financial Inclusion | 0.0520 | 0.0103 | 5.06 | 0.000 | 0.03060 | 0.07350 |
| Household Expenditure | 0.0110 | 0.0063 | 1.75 | 0.096 | 0.00219 | 0.07350 |
| Education Empowerment | 0.0280 | 0.0045 | 6.22 | 0.000 | 0.01859 | 0.03734 |
| Constant | 8.0198 | 0.2012 | 39.86 | 0.000 | 7.60007 | 8.43951 |
| Number of Obs | = | 24 | | | | |
| F (3, 20) | = | 25.24 | | | | |
| Prob > F | = | 0.00 | | | | |
| R-squared | = | 0.791 | | | | |
| Adj R-squared | = | 0.759 | | | | |

Source: Author’s Computation from Research Data (2024)

The regression model that was used is;

Based on the findings in Table 4.3, the regression model thus becomes;

$$Y = 8.0198 + 0.052X_1 + 0.011X_2 + 0.028X_3 + \varepsilon \dots\dots\dots(3.4)$$

Where; Y=Household welfare

X_1 =Financial Inclusion

X_2 = Household expenditure

X_3 =Education

ε =Error term

From the results in Table 4.3, the study established that the coefficient of determination (R^2) was 0.791 while the adjusted R^2 was 0.759. According to Greene (2008), the coefficient of determination (R^2), is used to determine the percentage of variations in the dependent variables due to changes in the independent variables. From the finding, it can be concluded that;

financial inclusion, household expenditure and education empowerment explains 75.9 percent of the changes in the welfare of PWDs (dependent variable).

In the study, the first goal was to determine how financial inclusion affects the welfare of people with disabilities (PWDs). According to the results presented in Table 4.3, it is evident that a one-unit increase in financial inclusion of PWDs leads to a significant 0.052 times increase in their welfare. The p-value of 0.000 indicates that the impact of financial inclusion was indeed significant. These findings align with those of DeLoach and Smith-Lin (2018) which established that financial inclusion had helped in improving the welfare of families in Indonesia specifically health. In another study, Nanziri (2016) established that financial inclusion in South Africa had helped in reducing poverty hence improving the welfare of people. A study by Addury (2019) also found a significant correlation between financial inclusion and household income in Indonesia.

A research by Puli, Layton and Shahriar (2024) indicates that globally, PWDs are less likely to have bank accounts or access credit facilities than non-disabled persons. For instance, the World Bank's "Disability Inclusion in Financial Services" report highlights that only 30% of PWDs have access to formal financial services compared to 70% of non-disabled individuals. According to data from the Global Findex Database by the World Bank (2022), approximately 94% of adults without disabilities have a bank account compared to just over half (54%) of adults with disabilities. Non-disabled persons generally experience fewer barriers when accessing financial services. They benefit from: wider access points, greater awareness and education and favorable lending practices: Traditional banks and digital platforms are more readily accessible without specialized accommodations. Non-disabled individuals typically receive more information about financial products through various channels. Non-disabled persons also often encounter fewer biases in lending decisions, leading to higher approval rates for loans and credit.

Examining the impact of household expenditure on the welfare of individuals with disabilities (PWDs) was the study's second objective. Holding other parameters constant, Table 4.3's results show that an increase of one unit in household expenditure leads to a non-significant rise of 0.011 times in PWDs' welfare. It is clear from the p-value of 0.096 that the effect was not significant. These results conflict with the majority of earlier research, which found a strong correlation. For instance, a study by Dupas and Robison (2013) on women market vendors in a village in Western Kenya investigated the relationship between household expenditure and savings. The randomized control trial (RCT) found that users of savings products increased their private expenditure by 13%. In another study, Bernerjee *et al.* (2015) discovered a positive correlation between household expenditure and improvement of well being.

Families with PWDs often face unique economic challenges that can adversely affect their overall welfare. According to research, households with disabled children experience higher rates of poverty compared to those without disabled members (World Bank, 2022). The presence of a disabled child typically results in increased out-of-pocket expenses for medical care, therapy, special education, and other necessary services. These additional costs can strain the financial resources of families, leading to greater economic hardship. In contrast, non-disabled households generally have more stable income sources and fewer unexpected expenses related to health care or special needs. This stability allows them to allocate resources more effectively towards savings and investments in education or housing (Yosef, Soffer & Malul, 2019). Access to social services and support systems also differs markedly between these two groups. Families with PWDs may rely heavily on government assistance programs such as Supplemental Security Income (SSI) or Medicaid. While these programs provide essential support, they may not fully cover the extensive costs associated with raising a child with disabilities. Moreover, navigating these systems can be complex and time-consuming, adding an additional layer of stress for caregivers (Qiu, Jiang, Sun & Du, 2023).

On the other hand, non-disabled families typically have greater access to employment opportunities and educational resources that can enhance their economic status. They are less likely to encounter barriers that impede their ability to work or participate fully in society. Furthermore, the emotional toll on caregivers often parents of children with disabilities can lead to increased stress levels and decreased mental health outcomes (Yosef, et al., 2019). This situation contrasts sharply with non-disabled households where parents may experience fewer care giving burdens and have more opportunities for social engagement.

Finally, examining the impact of education empowerment on the welfare of PWDs was the study's third and final objective. From the study findings, when all other factors are held constant, a unit increase in education empowerment significantly raises the welfare of PWDs by 0.028 times. The impact of education empowerment is significant, as indicated by the p value of 0.000. Studies in the past have also shown a link between household welfare and education empowerment. A study by Fafchamps and Shilpi (2014) on education and household welfare in Nepal between 2001 and 2010 found that those families with better education had been able to improve their welfare in comparison with those that had less education. Ogundari and Aromolaran (2014) evaluated the household well-being because of education in Nigeria from 2000 to 2012 and found a positive relationship.

Reports have also shown that the education system worldwide exhibits significant disparities between PWDs and non-disabled individuals. These disparities manifest in various forms, including access to education, quality of education, retention rates, and overall educational outcomes. According to estimates from the World Health Organization (2023) and the World Bank (2021), approximately one billion people experience some form of disability, with 93 to 150 million being children. This demographic faces substantial barrier that hinders their educational opportunities compared to their non-disabled peers.

One of the most critical differences lies in access to education. According to World Bank (2021), children with disabilities are ten times less likely to attend school than other children. In low and lower-middle-income countries, it is estimated that around 90% of children with disabilities do not receive any formal education. This stark contrast highlights systemic issues such as physical inaccessibility of school buildings, lack of suitable learning materials, and societal discrimination that prevents equal access. In contrast, non-disabled children generally have greater access to educational institutions. They are more likely to be enrolled in schools from an early age and face fewer barriers related to infrastructure or societal attitudes. Non-disabled students typically benefit from a more comprehensive educational experience that includes better-trained teachers, diverse learning materials, and a broader range of extracurricular activities that enhance their overall development (UNESCO, 2018). Retention rates for PWDs are alarmingly low; even if they manage initial enrollment, many drop out before completing primary or secondary education. Factors contributing to this trend include bullying, violence in schools, and a lack of supportive services that cater specifically to their needs.

Reports indicate that children with disabilities are at an increased risk for school violence and bullying, which can severely influence their willingness and ability to continue their education. In contrast, non-disabled students generally enjoy higher retention rates throughout their schooling years. They are more likely to transition successfully from primary to secondary education and beyond due to a supportive environment that fosters academic achievement without the additional challenges faced by PWDs (UNICEF, 2022).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The summary, conclusion, and recommendations based on the study's findings are presented in this chapter.

5.2 Summary of the Study

Despite the growing awareness and sensitization efforts towards the rights of PWDs, few empirical studies have been carried out to evaluate how financial inclusion affects the welfare of their households. The study's general objective is to evaluate the impact of financial inclusion on household welfare of persons living with disabilities in Kenya. Most disabled persons in Kenya live in rural areas and they lead a very miserable life reason being they are not able to meet their daily needs as they are living in poverty (Kenya, population Census, 2019). They are seen as outcasts and liability. Often such persons are neglected and excluded from social and economic participation. Such persons are not exposed and do not even know that they have rights that protect them (Ondieki, 2018). The research used the causal research design. The causal research design helped in ascertaining the nature and extent of cause and effect relationships. Stata version 13 was utilized for the analysis of secondary data collected. This section hence discusses the findings based on the study's objectives.

Per capita household spending was used to measure the dependent variable, which was the household welfare of PWDs, and it was then regressed against three independent variables: financial inclusion, household expenditure, and education empowerment for PWDs. In order to regress the result variable against the predictor variables, the study examined secondary data spanning the years 2000 to 2023. The Kenya National Bureau of Statistics (KNBS), the 2019

Kenya National Population Census report, and the Kenya Integrated Household Budget Survey were some of the platforms from which this data was obtained. Data analysis was carried out using statistical tools such as regression analysis, diagnostic analysis, descriptive analysis, and Pearson's correlation analysis using the SPSS software.

Based on the findings, the research established that the coefficient of determination (R²) was 0.791 while the adjusted R² was 0.759. From the finding, it can be concluded that; financial inclusion, household expenditure and education empowerment explains 75.9 percent of the changes in the welfare of PWDs.

The study's primary goal was to determine how financial inclusion affected the welfare of PWDs. The results show that PWDs' welfare significantly increases by 0.052 times for every unit increase in financial inclusion. The considerable impact of financial inclusion is indicated by the p value of.000.

Examining the impact of household expenditure on the welfare of PWDs was the study's second goal. According to the findings, while all other factors remain constant, a unit increase in household expenditure results in a non-significant rise in PWDs' welfare of 0.011 times. The effect was not significant, as indicated by the p-value of 0.096 which is >0.05.

Ultimately, the study's third goal was to investigate how education empowerment affects the welfare of PWDs. According to the study's findings, when all other factors are held constant, a unit increase in education empowerment significantly raises the wellbeing of people with disabilities by 0.028 times. The tremendous impact of education empowerment is indicated by the p value of.000.

5.3 Conclusion of the Study

In summary, the study underscores the significant and positive impact of financial inclusion, and education empowerment on the welfare of PWDs in Kenya. Household expenditure was

found to be non significant. The first objective was aimed at examining the influence of financial inclusion on household welfare of PWDs. The study affirms that providing financial services to PWDs significantly enhances their well-being, emphasizing the importance of accessible financial opportunities. Finally, with education empowerment, education emerges as a crucial factor in enhancing the welfare of PWD households, stressing the need for investment in educational initiatives tailored to this community.

5.4 Policy Implications

Based on the above conclusions, the study proposes the following policy implications:

As noted from the findings, financial inclusion affected the welfare of PWDs significantly. The results show that PWDs' welfare significantly increases by 0.052 times for every unit increase in financial inclusion. Based on the findings, the study recommends the enactment of legislation on financial inclusion of PWDs in Kenya as an avenue for boosting the economy thus an added advantage. The government, particularly through the National Council of People with Disabilities, should enact legislation promoting financial inclusion for PWDs. This entails not only providing financial services but also developing the necessary infrastructure to facilitate accessibility. Another recommendation is the need of clarifying the objective of each financial inclusion initiative. Policymakers and practitioners should clearly define the objectives of financial inclusion initiatives for PWDs. This clarity will aid in assessing the effectiveness of each initiative and ensure alignment to improve their household welfare. In terms of promoting investment, both public and private sectors should be encouraged to invest in financial inclusion initiatives for PWDs. Additionally, policies fostering inclusivity should be prioritized to support marginalized communities.

Secondly, the study findings showed that education empowerment had a significant and positive effect on household welfare of PWDs. According to the study's findings, when all other factors are held constant, a unit increase in education empowerment significantly raises

the wellbeing of people with disabilities by 0.028 times. For this reason, the study recommends that the government should investment in education initiatives for PWDs and create more awareness of the same.

5.5 Suggestion for Further Research

To further expand our understanding, the study suggests the following avenues for future research:

1. Examining other socioeconomic aspects: To give a thorough evaluation of the effects of financial inclusion, future research might explore socioeconomic aspects such as independence and self-esteem that go beyond household welfare.
2. Regional Analysis: Similar research might be carried out at the regional level, particularly for each county in Kenya, to provide a more detailed understanding of the variables affecting PWDs' welfare in various regions.
3. International Analysis: To compare findings and provide highlights of how other nations use the element of financial inclusion to improve PWDs' household welfare, a comparable study carried out in a different country will be highly beneficial.

5.6 Contribution of Knowledge

The findings from the study contributes to knowledge by underscoring the importance of implementing policies that promote financial inclusion as a means of enhancing household welfare of PWDs. Government and nongovernmental organizations are encouraged to create an enabling environment for financial institutions to serve marginalized populations effectively. Future research should focus on longitudinal studies that track the long-term impacts of financial inclusion on household welfare of PWDs. In conclusion, by examining the effect of financial inclusion on household welfare the study has significantly contributed to our understanding of how access to financial services influences economic stability, income

opportunities, health and education outcomes, vulnerability reduction, and poverty alleviation among the PWDs.

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APPENDICES

APPENDIX I: DATA USED IN THE STUDY

| YEAR | HH WELFARE (Amount spend in Shs.Billions) | HH EXPENDITURE (Per Capita) | FINANCIAL INCLUSION (Shs'Billions) | EDUCATED PWD(%) |
|-------------|--|--|---|----------------------------|
| 2000 | 208.70 | 23,483.74 | 7.45 | 6.2 |
| 2001 | 342.00 | 37,033.03 | 7.99 | 7.2 |
| 2002 | 393.00 | 42,726.68 | 9.01 | 7.7 |
| 2003 | 424.00 | 43,234.42 | 10.60 | 9.0 |
| 2004 | 449.00 | 43,160.63 | 11.50 | 9.3 |
| 2005 | 453.00 | 41,948.33 | 11.97 | 10.0 |
| 2006 | 459.00 | 39,217.36 | 14.50 | 12.0 |
| 2007 | 513.00 | 42,358.19 | 14.80 | 12.2 |
| 2008 | 587.00 | 45,827.15 | 15.00 | 13.0 |
| 2009 | 598.00 | 46,399.75 | 15.40 | 13.0 |
| 2010 | 607.00 | 45,281.61 | 17.33 | 13.4 |
| 2011 | 623.00 | 44,525.44 | 18.00 | 14.1 |
| 2012 | 701.00 | 50,067.85 | 15.00 | 14.6 |
| 2013 | 685.00 | 47,182.81 | 15.42 | 15.0 |
| 2014 | 756.00 | 28,216.33 | 18.22 | 24.2 |
| 2015 | 770.00 | 18,610.72 | 19.73 | 31.4 |
| 2016 | 1,000.00 | 21,545.22 | 21.83 | 19.7 |
| 2017 | 1,708.00 | 36,162.69 | 22.63 | 12.6 |
| 2018 | 1,638.00 | 33,123.03 | 30.77 | 11.5 |
| 2019 | 1,696.00 | 33,924.75 | 33.33 | 15.1 |
| 2020 | 2,009.00 | 39,219.90 | 20.50 | 19.0 |
| 2021 | 1,937.00 | 36,956.48 | 17.67 | 19.8 |
| 2022 | 1,900.00 | 36,014.18 | 31.67 | 21.6 |
| 2023 | 2,097.00 | 40,580.85 | 35.67 | 23.0 |

Sources : National Council of People with Disabilities (2023)

: Kenya National Bureau of Statistics (2023)

: Kenya Natonal Population Census (2019).

APPENDIX II: DIAGNOSTIC TESTS RESULTS

Table A: Autocorrelation Test

| Household Welfare | Coef. | Std. Err. | T | P> t | [95% Conf. Interval] | |
|---------------------------------------|--------------|------------------|----------|-----------------|-----------------------------|---------|
| Financial Inclusion | 0.0520 | 0.0103 | 5.06 | 0.000 | 0.03060 | 0.07350 |
| Household Expenditure | 0.0110 | 0.0063 | 1.75 | 0.096 | 0.00219 | 0.07350 |
| Education Empowerment | 0.0280 | 0.0045 | 6.22 | 0.000 | 0.01859 | 0.03734 |
| Constant | 8.0198 | 0.2012 | 39.86 | 0.000 | 7.60007 | 8.43951 |
| Durbin-Watson Statistic (original) | | 2.2893 | | | | |
| Durbin-Watson Statistic (transformed) | | 2.0028 | | | | |

Table B: Normality Test

| Variable | PR (Skewness) | Pr (Kurtosis) | adj chi2 | Prob>chi2 |
|---------------------------------|--------------------------|--------------------------|-----------------|---------------------|
| Household welfare | 0.822 | 0.155 | 2.229 | 0.322 |
| Financial Inclusion | 0.887 | 0.816 | 0.197 | 0.844 |
| Household Expenditure | 0.783 | 0.175 | 1.992 | 0.366 |
| Education Empowerment | 0.567 | 0.621 | 3.721 | 0.109 |
| Test for Multivariate normality | | | | |
| Doornik-Hansen | chi2 (8) = 14.310 | prob>chi2 = 0.0740 | | |

Table C: Heteroskedasticity Test

| | |
|--|----------|
| Breusch-Pagan / Cook-Weisberg test for heteroskedasticity | |
| Ho: Constant Variance | |
| Cariables: fitted values of household Welfare, Financial Inclusion, Household Expenditure, Education Empowerment | |
| chi2 (1) | = 1.27 |
| Prob>chi2 | = 0.2593 |

Table D: Multicollinearity Test

| Variable | VIF | 1/VIF |
|-----------------------|------|---------|
| Financial Inclusion | 1.83 | 0.54645 |
| Household welfare | 1.48 | 0.67568 |
| Education Empowerment | 1.30 | 0.76923 |
| Mean VIF | 1.54 | |

Table E: Pearsons Correlation Analysis

| | | Household welfare | Financial Inclusion | Household Expenditure | Education Empowerment |
|-----------------------|-------------------------------------|-------------------|---------------------|-----------------------|-----------------------|
| Household welfare | Pearson Correlation Sig. (2-tailed) | 1 | | | |
| Household Expenditure | Pearson Correlation Sig. (2-tailed) | .029* | 1 | | |
| Financial Inclusion | Pearson Correlation Sig. (2-tailed) | .601 | .426* | 1 | |
| Education Empowerment | Pearson Correlation Sig. (2-tailed) | .000 | .588 | .117 | 1 |
| | | .401* | .179 | .083 | |
| | | .000 | .063 | | |

*. Correlation is significant at the 0.05 level (2-tailed).

Table F: Regression Analysis

| Household Welfare | Coef. | Std. Err. | T | P> t | [95% Interval] | Conf. |
|--|--------------|------------------|----------|-----------------|-----------------------|--------------|
| Financial Inclusion Household Expenditure Education Empowerment Constant | 0.0520 | 0.0103 | 5.06 | 0.000 | 0.03060 | 0.07350 |
| | 0.0110 | 0.0063 | 1.75 | 0.096 | 0.00219 | 0.07350 |
| | 0.0280 | 0.0045 | 6.22 | 0.000 | 0.01859 | 0.03734 |
| | 8.0198 | 0.2012 | 39.86 | 0.000 | 7.60007 | 8.43951 |
| Number of Obs = | 24 | | | | | |
| F (3, 20) = | 25.24 | | | | | |
| Prob > F = | 0.00 | | | | | |
| R-squared = | 0.791 | | | | | |
| Adj R-squared = | 0.759 | | | | | |

APPENDIX II: Research Approval Letter



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Executive Dean, Graduate School

DATE: 13th March, 2024

TO: Catherine Chepkemai Katam
C/o Applied Economics Dept.

REF: K101/CTY/PT/25302/2018

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 17th January, 2024 entitled "Impact of Financial Inclusion on Welfare of Persons Living with Disability in Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Also, please ensure that you publish article(s) from your project before submitting it to Graduate School for examination as per the Commission for University Education and Kenyatta University guidelines.

Thank you.

A handwritten signature in black ink, appearing to read 'Annbell Mwaniki'.

ANNBELL MWANIKI
FOR: EXECUTIVE DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Applied Economics

Supervisors:

1. Dr. Peter Miring'u Njenga
C/o Department of Applied Economics
Kenyatta University

AM/Inn

APPENDIX III: Research Authorization Letter



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

P.O. Box 43844, 00100

NAIROBI, KENYA

Tel. 8710901 Ext. 57530

Website: www.ku.ac.ke

Our Ref: K101/CTY/PT/25302/2018

DATE: 13th March, 2024

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR CATHERINE CHEPKEMOI KATAM – REG. NO. K101/CTY/PT/25302/2018.

I write to introduce Catherine Chepkemoi Katam who is a Postgraduate Student of this University. The student is registered for M.Econ degree programme in the Department of Applied Economics.

Catherine intends to conduct research for M.Econ Project Proposal entitled, “Impact of Financial Inclusion on Welfare of Persons Living with Disability in Kenya”.

Any assistance given will be highly appreciated.


Yours faithfully,

A handwritten signature in black ink, appearing to read 'E. Kimani', written over a horizontal line.

**PROF. ELISHIBA KIMANI
EXECUTIVE DEAN, GRADUATE SCHOOL**

AM/inn

APPENDIX IV: Research Permit

| | |
|---|--|
|  <p>REPUBLIC OF KENYA</p> |  <p>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION</p> |
| <p>Ref No: 100597</p> | <p>Date of Issue: 04/July/2024</p> |
| <p>RESEARCH LICENSE</p> | |
|  | |
| <p>This is to Certify that Ms.. catherine chepkemoi katam of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: impact of financial inclusion on welfare of persons living with disability in kenya for the period ending : 04/July/2025.</p> | |
| <p>License No: NACOSTI/P/24/37117</p> | |
| <p>100597</p> |  |
| <p>Applicant Identification Number</p> | <p>Director General</p> |
| <p>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION</p> | |
| <p>Verification QR Code</p> | |
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