

**DETERMINANTS OF FEMALE LABOR FORCE PARTICIPATION IN
KENYA**

BY

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DECLARATION

This research paper is my original work and has not been presented for a degree award in any other university or institution of higher learning.


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DEDICATION

I dedicate this study to my dear family and the entire nation.

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Despite all this support, the study's views exclusively belong to the author and do not exemplify the opinions of any individual recognized in this thesis. I, therefore, bear full responsibility for any errors.

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LIST OF ABBREVIATIONS

ELMPS- Egypt Labor Market Panel Survey.

ERS- Economic Recovery Strategy.

FDI- Foreign Direct Investment.

FGM- Female Genital Mutilation.

FLFP- Female Labor Force Participation.

GOK- Government of Kenya.

H.H- Household

ILOSTAT- International Labor Organization Statistics.

KEPSA- Kenya Private Sector Alliance.

KYEP- Kenya Youth Empowerment Program.

K-YES- Kenya Youth Employment and Skills Program.

LMIS- Labor Market Information Systems.

NDI- National Democratic Institute for international affairs.

NGOs- Non-Governmental Organizations.

NISR- National Institute of Statistics Rwanda.

MIMIC- Multiple Indicators Multiple Causes.

MLFP- Male Labor Force Participation.

PIHS- Pakistan Integrated Household Survey.

UNHS- Uganda National Household Survey.

ABSTRACT

Nations are embracing growth of Female Labor Force Participation as it has enabled economies reduce poverty rates, reduce gender inequality, improve economic growth and development, improve living standards within a large share of the population, as well as achievement of other SDGs. Kenya has also taken steps forward to reduce the gender labor gap, however, only a slight change has been witnessed given the government and non-governmental contribution. Previous studies looked into the determinants of Female Labor Force Participation with their approach and duration differing from the one used in this study. This study sought to analyze the determinants of female labor force participation in Kenya using the latest data, that is, 2015/16 Kenya Integrated Household Budget Survey data employing the logit model. The study pursued to provide up to date information on determinants of FLFP, acknowledging the change that may have occurred since the last study of FLFP was done. Findings revealed that education, marital status, age, infrastructure, household head and disability as important determinants of Female Labor Force Participation in Kenya. The study therefore suggested investment in education sector with an aim of ensuring the girl child remains in school up to secondary level. The study also recommended sensitization of the society on inclusion of disabled females by firms by the National Council for People with Disabilities.

CHAPTER ONE

INTRODUCTION

1.1 The Background of the Study

Labor force participation is the share of a country's population within the working-age (15-65), that actively takes part in the labor market, to produce goods and services in a specific period in time, normally though working or simply by looking for work (ILO 2017). TLFP rate shows the state of the country in regards to its active population. Global TLFR has had a downward trend, from 70.239% in 1990 to 66.385% in 2019. This decline was thought to have been attributed to by cyclical business trends which could be managed by improving a country's economic performance. Increasing the overall demand on goods and services could not support full employment, nor could recovery or boom business cycles halt the decline in TLFP rate. Further research explained the decline in world LFPR to be primarily caused by structural changes (Litzinger and Dunn 2015), such as; Welfare system, Economic globalization, Demographics and Education.

In 1990, the global gender labor participation gap was 29% while in 2019 the gap had reduced to 27.7% approximately (ILOSTAT). In 1990, Kenya's gender labor participation gap was at 7.11% which reduced to 5.22% in 2019. Females represent a larger share of the poor people and household heads therefore it profits the government to improve FLFP rates as one way of achieving the SDGs such as reducing poverty and gender inequality. The government has been promoting economic growth with the aim of increasing job opportunities for both genders, however, this worked in the first decade after independence only. In the late 1970s the economy experienced a steady decline in its performance, which incapacitated the economy's ability to generate more job opportunities especially in the formal sector.

Since then the informal sector has been growing to absorb the unemployed where it converts unemployment to underemployment (UNDP 2002) especially for females. Informal operations are almost equally owned between both genders; however, females' businesses operate at a smaller working capital and with fewer employees. The government supports women in business with programs such as Women Enterprise funds to encourage self-reliance through affordable credit.

1.2 Trend in labor force participation in Kenya

The government has been working on generating profitable and tenable job opportunities in conjunction with poverty reduction measures since independence through various policies. The economic growth stimulation policies and the Kenyanization policies worked in the first decade only as labor force growth superseded employment growth (Republic of Kenya, 1964). This is because the correlation between economic growth and creation of employment opportunities reduced over time, with other factors like political stability, strong legal systems, implementation of appropriate policies, and corruption among others influencing job creation significantly. The response to government policies on creation of employment vary according to sectors (Muniu & Thuku 2019, Kapsos 2006, Melamed & Hartwig & Grant (2011), with the service sector recording the highest correlation, followed by manufacturing and value addition in agriculture (Basnett & Sen 2013). Kenyanization involved replacement of non-citizens with citizens to increase job opportunities (Republic of Kenya, 1983), such as through work permits.

In response to increased unemployment even with the initial policies still at work, the government proceeded to engage in short-term agreements like tripartite agreements between the employees and labor unions (Republic of Kenya, 1969; 1973). It also regulated wages, improved education and training systems as well as directly creating of employment in order to increase the demand side of labor. In the late 20th C and early 21st C, the government used more modern methods of promoting employment such as improving the LMIS, investment in public infrastructure, policies promoting growth of industries and encouraging private investment. The Economic Recovery Strategy for Wealth and Employment Creation (2003-2007), also aimed at empowering people through creation of job opportunities and other ways of earning income. The Vision 2030 based on economic, social and political pillars aimed at improving the people's living standards in a clean and secure environment. Although the ERS saw the GDP grow from 0.6% in 2002 to 6.1% in 2006, all these and many more fiscal policies have not provided the high labor demand required to absorb the growing labor force, with the formal sector being most affected.

The government supports the informal sector, which is the largest employer regardless of the involved risks. The informal sectors' share of total employment has grown from 23% in 1990, to 70.2% in 2000, to 82% in 2010, to 83.6% in 2018. This has been mainly due to lack of structural

transformation (ILO/EAMAT, 1999), leading to low generation of formal job opportunities. Kenya still relies on export of raw materials without value addition for a higher market value. Therefore, informal sector has grown to protect the people against unemployment, transforming it to underemployment especially for females whose skills do not qualify the few formal jobs. It provides employment to Kenyans lacking vocational or professional training to acquire relevant skills in the labor market. These jobs are risky with limited security, poor working conditions, limited access to credit and capital and, low payments which most of the times can only provide from hand to mouth (Chen & Raveendran, 2012).

The rural population has a higher number of active people than the urban population by around 23%. Rural employment to population ratio was at 73.2% while the urban ratio was at 69.4% (KNBS 2015/16). This is due to the rural-urban migration that occurs in search of jobs but, once in town finding a job becomes an uphill struggle due to job competition, education, skills and experience requirements which may not be highly valued in the same way in the rural areas. Rural employment is mostly in small scale agricultural farms where workers are family members without pay.

Agriculture is the leading employer in Kenya especially for females (Mitullah et al 2017) even though other sectors are improving gradually. Employment in agriculture was roughly at 54.44% in 2019, with females occupying more jobs by almost 24%. The second largest employer is the Service sector under communication, transport, tourism and travel, financial services and many others at 38.25% in 2019, a rise from 32.3% in 2005. It contributes to 22% of the total female employment (World Bank 2018). Industry is the third largest employer, under the manufacturing, construction, mining and energy sectors. This is mainly occupied by males who take up an extra 11% above the total %age of females working in the industrial sector (World Bank 2018).

It is evident that women in the formal sector mostly work in the service sector such as education and communications occupying the low paying jobs (Manda et al 2002). They also dominate in export services such as flower farms, textiles firms, and tourism (IBRD & World Bank 2007). These subsectors offer better working conditions and wages than other female-dominated jobs. Women own almost half of the micro businesses, however around 85% of these operate in the rural areas. The female-owned MSMEs record only 57% of incomes earned by male owned MSMEs.

They employ a maximum of 2 employees compared to male MSMEs who employ a minimum of 2 employees, resulting to 60% MSME employment being generated by male-owned MSMEs.

Women also participate in leadership and lawmaking positions and are seen to serve their citizens more appropriately than male politicians. Cavallo and Brienza (2006) proved that women leaders work to develop others, are adaptive, serve, are emotionally self-aware, communicate and are conscientious. Zenger & Folkman (2012) confirm that top leadership competencies trusted by the society to be male strengths were actually female leaders' strongholds, and they had the highest significance on good leadership. Regardless of these sublime qualities in women leaders, women in Kenya only accounted for 23% of the National Assembly and Senate positions, including seats reserved exclusively for women representatives in the 2017 elections. (NDI, FIDA 2018)

The highest FLFP rate in Kenya was in 1999 at 69.96%, influenced by the lifting of all administrative controls on trade. The government also supported participation of the private sector and improved on infrastructural development to raise demand for labor. Since then it declined rapidly (1999-2005); this was attributed to low economic growth in the previous years (1997-2002) that the economy recorded a negative growth (-3.233%) in 2002 (World Bank). The low performance was as a result of suspension of IMF loans for 3 years (1997-2000), inappropriate agricultural, land and industrial policies worsened by abysmal international terms of trade and poor governance. From 2006 onwards FLFP gained momentum partly due by policies like, The ERS (2003-2007), followed by Vision 2030 in 2006. However, FLFP never fully recovered from the drop in 1999 to 2005. This may be partly due to the ever-increasing workforce caused by the growing population surpassing the economy's capacity to create enough jobs. On the other hand, low economic growth is a result of poor governance, inappropriate policies, corruption and post-election violence.

Women account to more than half (50.5%) of the total population in Kenya as per the 2019 census, yet men have always accounted for the largest proportion of labor participants in Kenya. This may be supported by their social role as family bread winners while most women are engaged as house wives. Most women start at a disadvantaged position to engage in labor. They are more likely to be poor and vulnerable to adverse shocks (World bank 2004d) in their core productive and reproductive years than men especially if they experience a marital split-up (KGPA 2015/16).

Females are disadvantaged in terms of education (Morikawa, 2015) in some parts of Kenya where early marriages and FGM are practiced like North Eastern and Coastal regions. The government embarked on free primary and secondary education to reduce illiterate adult women who are likely to be twice male adults.

Women bear the risky childbearing, caring and household chores. Maternal mortality is scathing in areas with poor healthcare access and high fertility rates such as Northeastern parts of Kenya. Unpaid work of looking after the sick, young ones and, elderly is traditionally left of the hands of women at home (KGPA 2015/16). Caste societies only allow men to work while women stay at home in order to maintain a high social status (Eswaran et. al 2013). Kenyan women are much less likely to inherit or own any property such as land. Currently 27% more men (aged 20-49) own land as compared to females in the same age group. Gender bias still prevails in regards to accessibility of legal rights, ICT and financial services according to regional standards. Women in all sectors of the labor market go through gender wage discrimination where male wages are $\geq 30\%$ more than female wages yet both have the same qualification and conduct similar tasks (KGPA 2015/16).

Improved literacy levels have enabled women take on available jobs and political positions. Education follows a U-curve, where higher participation rates are present in illiterate women, due to extreme poverty levels that require them take part in meeting the family's needs (Dasgupta & Goldar, 2005). With increase in H.H income, low participation rates are experienced as women value domestic chores highly than paid work. At higher literacy levels in wealthy H.H, higher participation rates are witnessed since women here are in a better position to acquire jobs with good remuneration and favorable working conditions (Klasen and Pieters, 2012). We can learn more on raising FLFP rates from the Asian Tigers (Hong Kong, South Korea, Singapore and Taiwan) which are the world's fastest growing economies. They reduced on imports and focused on exports (especially electronics) using the available cheap female labor. However, we can hardly say the women here are satisfactorily better off due to the low wages and poor working conditions (Mitra-Kahn and Mitra-Kahn, 2010).

Working women enhance economic growth and development, although this should go hand in hand with better jobs, and not just any job (Verick, 2014). Quantity, quality and inclusiveness of jobs matter (World Bank, 2017). This study worked on current FLFP determinants with guidance from previous studies' determinants in order to know which areas to recommend more support in terms of women empowerment.

1.3 Problem statement

Inclusive and better jobs are the foundation of economic and social development (World Bank WDR, 2013). While women contribute to more than half of the population (50.5% as at 2019 census) in Kenya, only about two thirds (63.58%) participate in the labor force. In 2006 the gender labor gap was 9.41%, in 2016 it was 6.05%, while in 2019 it was 5.5%. This shows a slowly narrowing gap between male and female labor force participation rates due to factors such as increased education levels and better methods of births control. The study sought to analyze the determinants of FLFP in order to offer informed recommendations on how best to reduce the gender gap further.

Previous studies did not use current data sets; Nyambok (2006) focused on the rural FLFP in Kenya using 1998/1999 Integrated labor force survey data; Atieno (2009) addressed FLFP rate in the whole country focusing on relevant policies to reduce poverty, using the (1997) Welfare monitoring survey data. Therefore, this study contributes to the existing literature by analyzing determinants of FLFP using latest cross-section data (2015/16) KIHBS by KNBS, focusing on FLFP in the whole country including both the formal and informal sectors of the economy. The study inductively makes logical recommendations on how best to improve FLFP further, focusing on the determinants that contribute to FLFP strongly currently.

1.4 Research questions

- i) What are the determinants of female labor force participation in Kenya?
- ii) What are some of the policy recommendations we can make to improve female labor force participation in Kenya?

1.5 Research objectives

The principal objective of this study was to investigate the determinants of female labor force participation in Kenya. More precisely, the study sought to;

- i) Analyse the determinants of female labor force participation in Kenya.
- ii) Draw policy implications based on study findings.

1.6 Significance of the study

Females' economic activities tend to be low in most developing countries due to various social, economic, geographic and religious factors. Since women occupy the largest share of poor people and household heads, improving FLFP rates therefore, empowers women enabling countries to reduce poverty and improve their living standards (Blackden et al, 2007). FLFP is a long-term solution to this country's problems on income inequality, hunger, poverty, literacy levels and many more.

This area of study has received much attention from various scholars for various reasons in Kenya and other developing countries. Inferences made from this study's findings can be used to formulate robust policies that generate a greater impact on FLFP growth. Policies that influence controlled population growth, self-employment, higher education, as well as growth and sustenance of employment opportunities can be formulated to raise FLFP rates, which in turn helps reduce poverty levels and improve living standards in the country. Higher FLFP rates also enable the country achieve its SDGs as well as economic growth and development. This study was built onto the existing literature on determinants FLFP rates enabling new researchers observe the trend of FLFP determinants over time.

1.5 Organization of the study

The remaining chapters are organized as follows; The second chapter cover the hypothetical and factual literature on FLFP. The third chapter deals with the technicalities adopted for the analysis of the study. It takes into account the theoretical foundation (conceptual framework), model stipulation (specification), measurement of the variables under study, the wellspring of the data analyzed and the limitations of the study. Empirical results are discussed in chapter four while study's conclusions and policy implications are discussed in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section of the study presented the pertinent literature that relates labor decisions with individuals. It was organized into three sections; Section one handled the theoretical literature that connected individuals' value of time and education in labor decisions. Section two looked into some of the empirical studies that had been previously conducted to establish the determinants of FLFP rate in different societal settings. Section three worked to recapitulate the existing literature and identify the gap that this study sealed.

2.1 Theoretical literature review

The labor market comprises of actors, and outcomes. The actors are the government, individuals and the firms. Labor market outcomes are somewhat positive, for example being employed, a promotion, a wage increase or a bounty pension. Labor outcomes can also be negative in terms of discrimination, lacking a job, and low wages/poverty. Outcomes are as a result of decisions made by the actors in the labor market.

In the labor market, there exists the labor supply and labor demand sides, in which decisions are made, by the individuals, firms or the government. The demand side mostly involves the firms which must analyze willingness to pay for products, willingness to accept for labor provided, and available technology to know what to produce, what quantity to produce and where to produce from as well as whom to hire for which kind of work (Ehrenberg, R. G & Smith, 2017) Even with market imperfections, these firms must make centralized decisions for the decentralized market place, that results to profits.

The supply side confronts the issue on number of people available and willing to participate in the labor force as guided by population growth which is affected by emigration (reduces population), immigration (increases population) and fertility levels. Individuals must decide whether to take a job or not, relocate or not, which industry to work in, what salary to accept alongside several other decisions. The government also decides on how to protect the employees' rights while supporting favorable competition among the firms (Benjamin et. Al 2002). Labor supply combines the aspect

of quantity (time spent in labor); time allocation theory and quality (skills, education, health). When the both sides are combined with movement flexibility, the analysis present is on human capital development decision making. This section goes deep into the labor supply decisions made in the labor market, with the help of the above theories; the Human capital investment theory and the neoclassical model of allocation of time.

Human capital theory into how human beings allocate time for education to acquire skills and knowledge which when combined with personal competencies and attributes have the ability to create intrinsic and measurable economic value. In theory the more educated a person is, the higher the expected wages, in practice it may not be true because some jobs require more than just high education, they need experience. The latter model looks into how a typical laborer would allocate time between work and leisure: where work rewards them with both monetary and non-monetary benefits, while leisure would reward them with rest and stress reduction/management. Leisure may sometimes require funding and hence one cannot spend his whole time on leisure. Education requires funding too, including the opportunity cost of income foregone, that would otherwise be earned if the individual was engaged in work rather than studying. These models enable us understand and possibly predict how an individual would choose when and for how long to study, work and take a rest.

2.1.1 Human capital Theory

Human capital investment theory shows how investment in people could benefit individuals themselves and the society at large in the future (Vaizey, 1962). Human capital investment includes both education and health but we will be majoring on education since it is the key human capital investment good. Investment in education is different from expenditure on consumption, in that it may not provide immediate satisfaction but future benefits are assured. Education improved and increased the individual's economic potential and knowledge, which were largely concerned with the citizens' well-being, country's economic growth, development and leadership opportunities for the future generation (Schultz 1971).

Human capital theory improves the people's welfare in a community by reducing unequal dissemination of individual income. The theory enables us understand economic growth excluding

contribution from growth in material wealth and labor force. It explained why wages rise in an almost vertical progress for highly skilled personnel than for lowly skilled or unskilled personnel in the same organization (Schultz 1961). Therefore, through human capital we can solve the mystery of slow growth in poor countries (in Africa or Asia) and how Germany recovered in the postwar period. Human capital involves allocation of money for the purchase of knowledge or skills and allocation of time to acquire this knowledge. Hence benefits acquired from education attained should surpass the forgone earnings in form of capital and time; otherwise there's no need for it. This brings us into understanding more about allocation of time.

2.1.2 Neoclassical model of time allocation

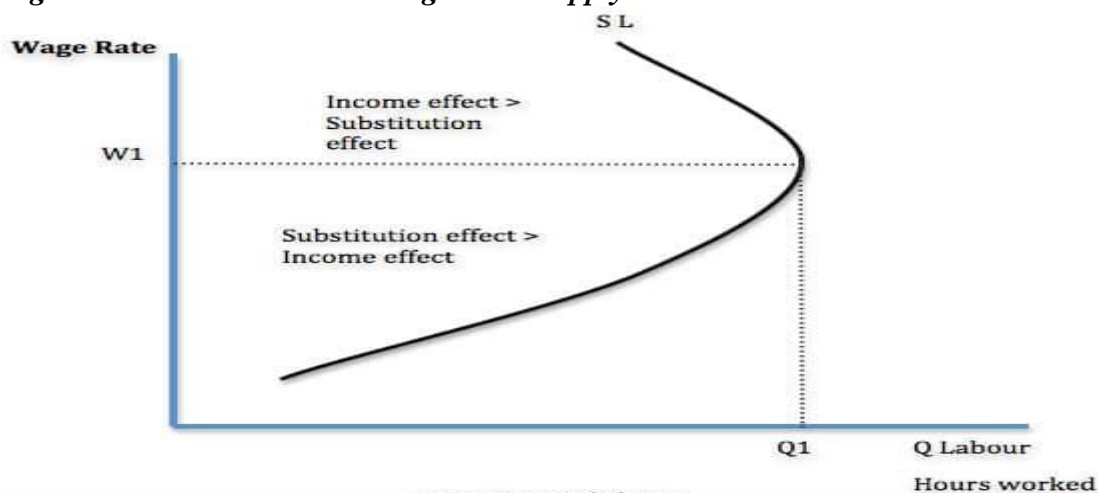
Each human being has 24 hours in each day and, is tasked on how to spend it. One way to spend time is through working or spending time in gratifying leisure activities. We maximize our utility on consumption and leisure subject to a time and budget constraint. Even staying at home is a form of work since one can engage in house production such as subsistence farming, bringing up children and, tailoring. On the other hand, if these people engaged in wage paying work, they would have to purchase these goods and services produced at home using the wages they made. Supply of leisure time is determined by the cost of leisure, the wealth of the individual (wages, savings, investments and non-labor income) and individual preferences. Since leisure is financed by our income, if an individual's income would increase, demand for leisure would also rise while desire for work would decrease holding other factors constant (wages and preferences). This is termed as the income effect; inheritance is a good example.

On the other hand, substitution effect occurs when income is held constant; if an individual's wages were to increase, demand for leisure would reduce, and therefore the individual would devote more time to work as compared to leisure. The government raising tax on one sector such as energy and reducing tax on another sector like social security is a good example of substitution effect. These effects occur alternatively in any labor market.

The upward sloping labor supply curve demonstrates the substitution effect where increase in an individual's wages results to increased working hours holding other factors constant. The downward sloping labor supply curve demonstrates the income effect where a rise in an

individual's wages results to less working hours, holding other factors constant. In normal circumstances these effects occur simultaneously, functioning antagonistically, therefore making it difficult to predict the resulting labor supply response, but, the stronger one dominates an individual's labor supply decision. Therefore, economic theory may not clearly predict which one will dominate, (Becker, 1965) hence labor supply curves could be positively sloped in cases where substitution effect dominates, or negatively sloped in cases where income effect dominates. When both effects manifest one after the other, it is referred to as the backward bending labor supply curve.

Figure 1: The Backward Bending Labor Supply Curve.



Source: www.economicshelp.org

This curve shows that as wages increase above the minimum wage, the substitution effect prevails, increasing the number of hours worked. However, as the wages continue to grow, the curve bends backwards resulting to less and less working hours due to the income effect. This curve was clearly depicted in the colonization era when Africans worked for Europeans; it was thought they had limited wants, the reason for low working hours with increased wages. To increase the working hours, they required to be subjected to taxes, which raised their need for income. Miracle and Fetter (1970) disagreed with this while attacking the limited wants misconception in Kenya and Copper belt countries. More so in Kenya they established that Africans loved money and depicted no proof of restriction to their craving for wealth. The study argued that the backward bending curve applied in this setting due to invisible costs (fear of getting less wages; subjection to alien or insufficient amounts of food; loss of wives if left behind for a long time; and savage working conditions) correlated with working for Europeans. Therefore, the price of working for the

Europeans was higher than their robust aspiration for wealth that Africans automatically provided labor in such a way as the backward labor supply curve would suggest.

2.2 Empirical literature review

Empirical literature proves that the labor market comprises of two sides; the demand side (employers) and the supply side (employees). Each individual side has its own determinants which in general form the determinants that affect female labor force participation in the market, although these may differ from one country to another depending on the level of economic growth. These factors are divided into several categories which include economic factors (access to clean water, health center, electricity, and non-labor income), geographical factors (urban, rural, distance to work, climate), households' composition (household heads gender, number of children, husbands' income, type of family), government policies (maternity leave approval, child care services) and individual factors (terminal illnesses, education level, marital status, age).

Several studies on women empowerment and labor force participation have been conducted both in developed and developing economies using different methodologies and variables. Studies like Sackey (2005) used probit and multinomial logit models on non-current time series data (1975-1991) to analyze the role of education on FLFP participation in Ghana. The study left out marital status for further study. The study however added the female's religion, ethnicity and H.H assets into variables analyzed. He argued that fertility and female labor are influenced by Education, Non-capital assets, Child survival rate. The study concluded that, the school factor positively influenced FLFP rates but negatively influenced fertility rates.

Naqvi & Shahnaz, (2002) related the females decision to work with her empowerment in Pakistan. The study sort to shed light on: who made the decision on whether a woman participated in any economic activity? Was it the woman herself, the head of the house (man) or the society? The study found that with higher leaning a woman has a chance for a higher payment (hence being a productive member of the society) and, this upgrades outstandingly the higher the leaning ladder she climbs *ceteris paribus*. The study included women aged 15-49 only because they could answer both questions on labor participation and decision making. They argue that un-married or women married to illiterates, had a higher chance of participating in labor than those married in well-off

families. However, the study may have inclined more on wage employment and did not properly describe the three market states; not in the labor force, employed and unemployed.

Nazier and Ramadan (2018) related women's empowerment (which affect her decision-making power and mobility freedom) to determinants of FLFP, in male a dominated country like Egypt using the MIMIC model. They used recent 2012 ELMPS data, which was nationally representative being the third round in a periodic longitudinal survey. The MIMIC model choice was good with the advantage of exploring any linkages between empowerment determinants (the latent variable) with its several indicators without directly observing the variable. It also allows the simultaneous consideration of the different indicators maintaining their interdependence. Including the regional dummy played a significant role regarding the impact of economic and social resources on the females' empowerment levels. The study argued that, wealth, employment level, age and parents' attributes are more important to a woman's level of empowerment than education; contrary to most studies.

Naqvi and Shahnaz (2002), Magidu (2010) and Kanjilal-Bhaduri (2018), Nabalanga and Sennoga (2014) established education was an important factor to all employees especially women in acquiring formal education. Magidu (2010) used a logit model to look into the socioeconomic determinants of labor force participation in Uganda labor market and confirmed that education was an important factor especially in the formal sector. The study used 2008/9 UNDS data which was the most current multipurpose study. However, it was limited regarding information on earnings or willingness to pay for extension services (studies with income variable meet resistance in Uganda), therefore, the author included access to infrastructure to fill this gap.

Bhaduri and Pastore (2018) sought to find out if the low labor market returns to education led to low FLFP rates in India. They argue that the relationship between a woman's education and paid work is U-shaped. Women with low education engaged in work, mainly due to low income levels in the household, they also faced stigma of working in low paying jobs. Women with higher education worked because there were fewer family constraints and could find non-stigmatizing jobs. They advocated for above secondary level female education while including broader technical education and vocational training due to high returns on education.

Nabalanga and Sennoga (2014) looked into the determinants that influenced one into working in the formal sector, agricultural sector, informal sector or not working at all, using a multinomial logit model. Although the data did not reveal all the information on skills status and the main employment sector, it did manage to confirm education is a crucial factor as well as access to credit in securing employment especially for the youth and women and those residing in urban areas. It argued that labor outcomes for women resulted into low quality employment opportunities while in youth it resulted in underemployment (due to low wages or no wages). Rwandan government responded to this by encouraging post-secondary education (to increase literacy) and, empowering women by lawfully allowing them to own land to increase asset ownership to encourage self-employment.

Mariara (2003) tested whether low FLFP rate is caused by socio-economic characteristics as well as wage gender discrimination in Kenya. The study confirmed that education and other socio-economic factors are positive determinants of FLFP rates and that there isn't any evidence of female discrimination, except for male favoritism in all sectors. Nonetheless, presence or absence of discrimination could change with different education dummies since the results are uptight to the chosen education dummy. It was not possible to account for workers that engaged in several jobs at the same time making it difficult to incorporate and endogenize job groups.

Nyambok (2006) looked into the socioeconomic determinants of FLFP rate in rural Kenya. The study omitted variables on wages and hours of work (contrary to previous studies) to avoid inaccurate information since many rural women are non-paid family workers or are unemployed. This study found contradicting results with previous studies on married women. The variable did not significantly affect the probability of a rural woman to participate in labor. Culture had a negative effect on the girls' education due to low income, since the male child was preferred in case of low income families (Deolalikar, 1996), yet education contributed positively in raising the FLFP rate.

Atieno (2006) looked into FLFP in the informal sector in Kenya. The study argued that informal sector employees are mostly under-employed since it eases out open unemployment transforming it to underemployment. Formation and growth of the informal sector was as a result of lack of opportunities in other sectors and not an outcome of any change in the explanatory variables.

Government efforts to increase female participation in the informal sector needed to include both the demand and supply sectors of the economy. The Government needed to correct the structural problems that affected access to female employment opportunities in the labor market as it championed female education.

Moyi et al (2013) found that women were more likely to be unemployed or underemployed than men in Kenya even after controlling for personal and household characteristics. The study argued that gender differences in individual and household characteristics explained above 80% of the male-female unemployment gap leaving only 11% unexplained. However, these gender differences could only account for around 5% of male-female underemployment gap leaving above 94% unexplained. The unexplained part of underemployment could be explained by high poverty levels (Sackey & Osei, 2006), since underemployment is more likely to be present in rural areas than urban areas.

Sorsa et al (2015) included complex variables in this study. The study argued that stringent labor market regulations (that encourage capital intensive activities), social, cultural and religious factors, large wage gap (below reservation wage for females), lack of job growth (especially female jobs), skill mismatches and lack of jobs (although hard to capture in regression) were some of the factors influencing FLFP negatively, however, this is diminishing with time due to increase in education. Husbands' education and income had a negative impact on FLFP due to maintenance of status and higher castes as Eswaran et al (2013) argued also. Females education suggested a U-shaped curve with employment as Bhaduri and Pastore (2018) had confirmed. Financial development and inclusion, infrastructure and active labor market policies (such as the rural employment programs) influenced FLFP positively. However, the author cautioned on the interpretation of these results since it is difficult to obtain valid labor data in India.

2.3 Overview of the literature

The overall literature agrees that improvement in FLFP is important as a cause and consequence of growth in every economy. Several studies focused on developing countries where the socioeconomic factors found to influence FLFP rate were unique, based on the region while others were common. These factors were grouped into, individual, geographical, political, household

characteristics, social-economic, cultural and religious factors to which some are education, area of residence, and house-hold head among others. The most common and significant factor being education: especially higher levels above secondary school, except Sorsa et al. (2015) in India. The demand side is supported by job creation and self-employment promotion through access to financial services. The literature agrees that jobs aren't enough until good working conditions, better wages and accommodative labor laws that support females in both paid work and family duties are achieved.

The studies reviewed used different methodologies to relate FLFP and its determinants, some of which are OLS, multinomial logit, probit models and Oaxaca blinder decomposition. Since OLS has a tendency of bringing forth results that go beyond 0 and 1 values which can contradict interpretation of the findings, this study used the Logit model: the dependent variable is labor participation with binary outcomes. However, probit model would give similar results, but the author maintained Logit model due to its ease of interpretation and it's slightly fatter tails making it more robust to outliers. The study drew from the most recent 2015/16 KIHBS data. Since there are few studies addressing this matter in Kenya, we looked into the reasons for the steady decline of Kenya's labor gender gap, including under-researched FLFP determinants such as infrastructure and, access to credit.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter concentrates on the theoretical model of the study, covering the econometric model, definition of variables and sources of data used in this study.

3.1 Theoretical framework

According to Becker 1965, time spent outside work is greater than time spent at work. Households maximize utility subject to the budget constraint by consuming goods in the market and leisure activities. Becker argued that consumer goods and use of time are combined in different ways in a household setting to produce goods such as meals which provide utility to the members; however, none provides utility separately as earlier thought. Leisure consumes time and finances; touring, raising children, or visiting a theater. Consumer goods may lean on the finances side only; basic goods and luxury goods.

Individuals must allocate time between work and leisure, so that they can work and earn enough to support consumption and leisure costs and actually get time for leisure. Therefore, if they benefit more from working, they may forego leisure to work more (substitution effect) and vice versa. However, as finances increase, they may forego work for leisure activities instead (income effect). When both effects occur one after the other, we get the backward bending labor supply curve (Mincer, 1962). In order to earn these individuals may be subjected to attending school and training where one of the costs of education and training is the foregone earnings for not engaging in work. There are several factors that influence females' choice of time allocation, at work or school, which this study analyzes, to try and get a clear picture of this decision-making process.

Mincer 1962 used the time allocation theory when looking into labor force participation of married women as they trade off the available time between nonpaying home chores and paid labor. Time allocation theory assumes that individuals are reasonably logical: they chose the bundle with the highest utility subject to a budget constraint, where income is a function of wages, non-labor income such as inheritance or husbands' income. Therefore, there are two scenarios;

- 1) She maximizes her utility by participating in the labor force: $U_1 = g(C, R, X, \epsilon)$

2) She maximizes her utility by not participating in the labor force: $U_2 = f(C, R, X, \epsilon)$.

U_1 and U_2 are utilities that represent the individuals' well-being when participating in the labor or not respectively. C represents consumption on goods and services. R represents time spent on leisure activities. X represents observable individual characteristics (age or chronic diseases). ϵ represents unobserved individual characteristics such as risk aversion/loving character, innate entrepreneurship skills, expectations, cultural/ religious beliefs, and information (Krelle, 1997).

Therefore, this individual prefers participating in labor if the index in U_1 is greater than U_2 : benefits from participation in labor surpass benefits from not participating in labor. Each utility is constrained by income (wages, and non-labor income), time and individual preferences. Preferences are some of the unobserved variables that are hard to account for hence they will be represented by the error term (ϵ). Time is divided into working hours and leisure hours. Therefore, the time restriction in this study is ; $T = R_t + K_t$

T is the maximum amount of time available for any individual which is 24 hours. R_t is time spent on leisure activities and K_t is time spent on paid work activities.

The budget restriction shows the individuals total income on the right side and her total expenditure on the left side as follows: $P_g G = W K_t + NLI$

P_g is the prices of goods and services purchased by the individual. G is the quantity of goods and services purchased by the individual. W is the wage rate payable to an employed individual. K_t represents the number of hours in a day dedicated on work that results in payment. NLI is the non-labor income.

Given the above breakdown, FLFP rate is a function of several determinants that influence the decision on time allocation and, can be simplified as follows;

$FLFP = f(\text{education, age, gender of household head, non-labor income, household size, residence, access to credit, infrastructure, poverty, shocks, religion and culture})$

3.2 Empirical model specification

As we put every effort in establishing the determinants of FLFP rate, we settled on a suitable method of analysis. The Ordinary Least Squares method of analysis was the easiest to use and interpret. However, it was not suitable due to its outcome of probabilities below/beyond the 0-1 range, which would result in illogical results. Therefore, this study used a specialized nonlinear model of analysis, the Logit model. It restricted its outcomes to either 1 or 0 giving us a very

simple time in interpreting the results. It is also called Logistic regression and, is used to describe data and to explain the relationship between one conditional binary variable and one or more predictor variables. The Probit model can also bring forth similar results but, the researcher settled on this choice because with Logit model it is easier to understand its structural form and interpret results.

As we analyze determinants of female labor force participation, we know that the choice on labor force participation is a function of its predictor variables. Therefore, the regression equation was as follows;

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \text{-----} (1)$$

Y_i is the dependent variable, which represented the outcome of labor participation. The β 's represented the coefficients of the predictor variables. The X 's were the accounted for independent variables with which any change would influence change in the dependent variable. ε was the error term representing all predictor variables not accounted for but would influence the dependent variables' outcome.

We did a simple illustration on the outcome where the female participated in the labor force or not given the predictor variable at hand, holding all other predictors constant.

$$Y_i = \{1 \text{ if in labor force or } 0 \text{ if out of labor force}\} \text{-----} (2)$$

The study estimated the probabilities of the females participating in the labor force given the independent variables, as simplified below;

$$P(Y=1 | X) = g(x, \beta) \text{-----} (3)$$

$$P(Y=0 | X) = 1-g(x, \beta) \text{-----} (4)$$

Logistic distribution used logistic cumulative distribution function commonly known as the *cdf* to estimate Z as a function of the *cdf*. Therefore, the probability of a female participating in the labor force could be simplified into;

$$P_i = Pr(Y = 1 | X) = \square((X_i' \beta) \text{-----} (5)$$

\square was the *cdf*, while the logistic index; Z was represented by $(X' \beta)$. Z stood for the constant, the predictor variables with their coefficients and the unobserved predictor variables as shown below;

$$Z = \beta_0 + \beta_1 X_i + \varepsilon_i \text{-----} (6)$$

The non-linear function of the equation shows P_i is the probability of a female participating in the labor force. Since the law of total probability states that total probability of the sum of possible events should equal 1. It means the probability of a female not participating in labor force is $1 - P_i$. Then equation (5) can be simplified as follows.

$$\alpha + X_i' \beta + \varepsilon_i = \ln \left\{ \frac{P_i}{1-P_i} \right\} \text{-----} (7)$$

Cameroon and Trivedi 2005 proposed that the labor equation can be further simplified as follows;

$$P_i = Pr (Y = 1 | X) = \frac{\exp(X_i' \beta)}{1 + \exp(X_i' \beta)} \text{-----} (8)$$

For which the likely hood function is

$$L = \prod_{i=1}^N P_i^{Y_i} (1 - P_i)^{1-Y_i}$$

Where Π is the product term for all i 's, that is; $i = 1, 2, \dots, n$

The log like function that was estimated for our model to address the first objective is as shown;

$$\log L = \sum_{i=1}^N (y_i \ln P_i + (1 - y_i) \ln (1 - P_i)) \text{-----} (9)$$

Binary Logit Model

According to our first objective function on determinants of female labor force participation rate, the model was simplified as; $FLFP \text{ rate} = f(X_i \beta + \varepsilon)$

FLFP is the female labor force participation rate, X_i is a vector of predictor variables, β identifies vector of parameters to be estimated, while ε represents unobserved predictors not included in the equation to be estimated. This equation can be further simplified to;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \varepsilon_i$$

Y is the dependent variable taking a dichotomous nature; female participating in the labor force or not. β_0 is the constant. X_1 to X_{11} are the predictor variables accounted for in this study. They represent distinct variables as shown below;

X_1 is Age	X_5 is Education status	X_9 is Household head gender
X_2 is Disability	X_6 is Household size	X_{10} is Non-labor income
X_3 is Religion	X_7 is Infrastructure	X_{11} is Access to Financial services
X_4 is Marital status	X_8 is Urban/Rural	

3.3 Variable Description and Measurement

3.3.1 Independent variables to be used in this study

A. Socioeconomic factors

Non labor income; this variable was captured any other source of income apart from the one supplied through labor. It was represented by a proxy of any income received by the household in cash or kind. Previous studies show that presence of non-labor income, may have a negative correlation with FLFP rates if females can provide what they need while out of labor.

Infrastructure; This variable showed how people can easily access health centers, clean water, market or work. It was measured by a proxy on how far it is to the nearest health center. Previous studies show that infrastructure and technology development could influence the amount of time available for household duties and paid labor (Klasen and Pieters 2013). They argued that developed infrastructure and access to clean tapped water and electricity influenced FLFP rates positively, however at different levels.

Access to financial services; this variable captured the ability of a female to obtain financial services, which was captured by access to credit in this study. Previous studies show a positive correlation between access to financial services and FLFP (OECD, 2012)

B. Personal factors

Civil status; this variable captured the marital status of the female. It was captured by dummy variables where married females were indicated as 1 and 0 if otherwise. Previous studies suggested a negative correlation between married females and FLFP rate due to patriarchy, especially if the head (man) is earning enough to support the entire household. However, unmarried females must work to provide for themselves and their families.

Education status; this variable captured the highest level of education of the female. The study used dummy variables to capture the different levels of education from primary level to tertiary levels while the reference group remains those with no education. Previous studies support a positive correlation between females' literacy levels and FLFP rate, since higher literacy levels provide good job opportunities and higher payments.

Age; This variable captured the age of the female as a continuous variable. The study used women aged 15-60, since age 15-25 may participate in part time work while still in school, while those above 64 years may have retired, ill or no more. As age increased the participation rate was expected to increase up to a certain point due to additional years of experience.

Disability; These were mental or physical conditions that limits a persons' ability to engage in normal activities and are recognized by the law such as mental, physical, sensory, cognitive, intellectual or developmental among others. The abled differently people (used nowadays to show positivity) are often older and engage in part-time work or self-employment due to their divergent ways of handling economic activities. Even with increased government and NGO support, it is much more likely to find unemployment in abled differently people than non-disabled people due to their need for special needs. Inclusion of disabled people in the labor system is estimated to improve the GDP by 3-7% by ILO.

C. Geographical factors

Area of residence; the variable captured the state of development of the residential area where the female lives in. The study used dummy variables to capture this where females living in urban areas were represented by 1 and, 0 if otherwise.

D. Family structure

Household head gender; this variable captured the gender of the household head. The study captured this variable using dummy variables where it took the value 1 if the female was head of the household and 0 otherwise. Female headed H.H were most likely to have a positive correlation with FLFP rate, because they have to provide for themselves, while male headed H.H have higher probability of low FLFP rates unless poverty levels are too high that the male cannot provide alone.

Household size; this variable captured the number of members per each household. With extended families, FLFP rate may be high especially the households' heads' income is not enough to provide for everyone. When many of the members are young children, the correlation with FLFP rate may be negative, since females are mostly tasked with caring for the young and may lack time to engage in external payable labor.

E. Religious factors

Religion; this variable captured the form of worship carried out in the H.H. Religious institutions influence FLFP in a complex way due to their flexibility in response to current situations. We can only evaluate the correlation effect and not causality. The more patriarchal a religion is, the more

it may influence FLFP rates negatively. The study captured religion using dummy variables to represent the different types of religion while those with no religion are the reference group.

3.3.2 Dependent variable in this study

Labor force participation outcome; This study took into account one dependent variable, which is female participation in labor, where when a female participates in labor was indicated by 1 and 0 if otherwise. The study defines FLFP as total number of employed females as well as those actively looking for work.

Table 1: Description of predictor variables

Explanatory variables	Variable Description and Measurement
Non-labor income	This refers to the female's other source of income apart from her salary/wages. This income was received by the household in cash or in kind. It took the value of 1 if a female received non-labor income and 0 if otherwise.
Marital status	This showed the marital status of the female, taking the value of 1 if a female is married and 0 if Otherwise.
Education status	This variable used dummies to capture the females' level of education that is, those with no education to primary, secondary, tertiary, graduates and post graduates.
Age	This is a continuous variable that captured the age of the female between the age 15years to 60 years. This age group was considered because it is the age female are more productive.
Area of residence	It refers to the female's residential area, taking the value 1 if she resides in urban area and 0 if in rural areas.
Household head	It refers to the households head gender, taking the value 1 if the female is the head of the household and 0 if otherwise.
Household size	This is the total number of people living in a particular Household.
Infrastructure	This captured access to social amenities where a proxy on distance to the nearest health center was used.

Credit	This refers to the ease of access of credit services to females. It took the value of 1 if the female could access credit and 0 if otherwise.
Disability	This captured the ability to conduct activities normally, taking the value of 1 if the female is disabled and 0 if otherwise
Religion	This is a qualitative variable with six categories. The first category took the value of 1 if the female had no religion and the value of 0 if otherwise. The second category took the value of 1 if the female was a catholic and the value of 0 if otherwise. The third category took the value of 1 if the female was a protestant and the value of 0 if otherwise. The fourth category took the value of 1 if the female was a Muslim and the value of 0 if otherwise. The fifth category took the value of 1 if the female was a Hindu and the value of 0 if otherwise. The sixth category took the value 1 if the female was in another religion and the value of 0 if otherwise

3.4 Data source

This study used the 2015/16 Kenya Integrated Household Budget Survey (KIHBS) data carried out by Kenya National Bureau of Statistics (KNBS). The data was collected under the devolved government; from September 2015 to August 2016 via three main questionnaires and two diaries administered to Households while market and community questionnaires were administered at cluster level. The sampling was conducted in 3 stages consisting of 5360 clusters drawn from 96000 enumeration areas of the 2009 KPHC. After stratification of urban and rural areas for each of the 47 counties, 92 sampling strata resulted with Nairobi and Mombasa considered as wholly urban. The national sample resulted into a total of 24,000 households which were determined differently for each county. Each household had an average of 4 members; therefore, the average sample size was 96000. The study was restricted to persons ranging from 15-60 years, who are the working age population in the labor force.

3.5 Diagnostic tests

3.5.1 Multicollinearity

Multicollinearity occurs where two or more explanatory variables in a multiple regression model are highly linear. When a predictor variable can predict another; redundant information is created leading to skewed results. Some of its drawbacks are; a very small t-statistic, wide coefficient

confidence intervals, the partial regression coefficient may be an inaccurate estimate, large standard errors among others. To detect multicollinearity, we use the Variance Inflation Factor (VIF) and determine the severity of the issue. Value 1 shows independence in the predictor variables. Values between 2 and 5 reveal the issue is mild and may not necessitate any corrective measures, while those above 5 show severe multicollinearity levels which need be addressed. If this much severe, the study rectifies the issue through removing of one of the predictor variables.

3.5.2 Heteroscedasticity

Heteroscedasticity is evident when the standard errors of a variable measured over a certain time period are not constant, ($\text{Var}(U_i) = \sigma_i^2$ Where $i=1, 2, \dots, N$). It is severe in non-linear models because the maximum likelihood estimates (MLE) of the parameters are biased and inconsistent. The confidence intervals and hypothesis tests based on usual standard errors are wrong, hence inferences made are misleading. We tested for heteroscedasticity through the Breusch Pagan test. If present, the study was to use the robust standard errors which correct the

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents the data analysis, discussion and interpretation of the regression results on the determinants of female labor force participation in Kenya. It includes the summary statistics, multicollinearity tests as well as the logit regression results.

4.1 Description of variables

Tables 4.1 and 4.2 describes the summary statistics of the variables used in the study. It presents the mean, standard deviation, minimum and maximum values of the variables under study.

Table 4.1: Summary statistics of Qualitative variables

Variable	Observation	Mean
Employment (Female is employed=1)	24,784	0.15696
Marital Status (Female is married=1)	24,799	0.5636
Education		
No education (Female has no education=1)	24,799	0.2642
Primary education (Female has primary education =1)	24,799	0.3536
Secondary Education (Female has secondary education =1)	24,799	0.1533
Tertiary Education (Female has tertiary education =1)	24,799	0.0610
Graduate (Female is a graduate =1)	24,799	0.0137
Postgraduate (Female has postgraduate education =1)	24,799	0.00125
Residence (urban =1)	24,799	0.3010
Credit (Female could access credit =1)	24,799	0.007823
Religion		
No religion (Female has no religion=1)	24,799	0.0102
Catholic (Female is a catholic =1)	24,799	0.2086
Protestant (Female is a protestant =1)	24,799	0.6260
Muslim (Female is a muslim =1)	24,799	0.1463
Hindu (Female is a Hindu =1)	24,799	0.001048
Other religion n (Female is a member of other religion =1)	24,799	0.007783
Household Head (Female is a household head=1)	24,799	0.2368
Nonlabor (Female received non-labor income=1)	24,780	0.01437
Disability (Female being disabled=1)	24,754	0.02598

Education of the respondents was explored and established that from the 24799 respondents, about 26% had no education, 35% had finished primary education, and 15% had finished secondary education. The study found that 6% of these respondents had completed tertiary education, 1% were graduates while 1% had completed postgraduate studies. The observation that a few proportion of female furthered their education beyond secondary corroborates the Syomwene & Kindiki's (2015) assertion that despite the efforts and the progress in promoting women education in Kenya, there still exists a large gap between male and female education.

Religion of the respondents was explored and it was established that from the 24799 respondents, about 1% had no religion, 20% were Catholics, 62% were Protestants. The study found that 14% of these respondents were Muslims, 0.1% were Hindus and 0.7 % belonged to other religions. From these descriptive statistics, it was observed that over 80% of the respondents were Christians (Catholic and Protestants). This observation is in agreement with Farida (2021) who found that 85% of Kenyans are Christians. The observation that a few proportion of female further their education beyond secondary corroborates with Syomwene & Kindiki's (2015) assertion that despite the efforts and the progress in the promoting women education in Kenya, there still exists a large gap between male and female education.

Approximately 24% of households are headed by females while each household had an average of 5 members, with a maximum of 17 members and a minimum of 1 member per each household. On average 0.7% of females had access to non-labor income in cash or in kind. On average 57% of the female interviewed were married and about 30% lived in the urban areas. The summary statistics further revealed that out of 24799 respondents about 2.6% were disabled in one way or the other. Descriptive statistics for quantitative variables is illustrated in Table 4.2.

Table 4.2: Summary Statistics for Quantitative Variables

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
House hold size	24,799	4.798	2.243	1	17
Age	24,799	31.23	12.36	15	60
Distance	10,271	34.245	117.5	1	999

From Table 4.2 it is observed that the least number of individuals in the households surveyed, was 1 while the highest was 17. The descriptive statistics further revealed that most of the respondents that responded to the questionnaire were about 31 years as revealed by the mean of the age. The youngest respondent was 15 years while the oldest was 60 years. Further it was revealed that on average the nearest health center from the respondents' area of residence was about 34 Km. The shortest distance to the nearest health center was 1 Km while the longest distance was 999 Km.

4.3 Correlation Analysis

Correlation matrix is shown in Table 2.9.

Table 4.3: Matrix of Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Marital Status	1.000																			
(2) No education	-0.010	1.000																		
(3) Primary education	-0.092	-0.486	1.000																	
(4) Secondary education	-0.046	-0.258	-0.294	1.000																
(5) Tertiary	0.067	-0.147	-0.168	-0.089	1.000															
(6) Graduation	0.008	-0.058	-0.066	-0.035	-0.020	1.000														
(7) Postgraduate	0.025	-0.019	-0.022	-0.012	-0.007	-0.003	1.000													
(8) Household size	0.005	0.014	0.002	-0.026	-0.001	-0.011	-0.009	1.000												
(9) Residence	-0.005	-0.019	0.008	0.032	0.001	-0.007	-0.005	-0.384	1.000											
(10) Credit	-0.013	-0.006	0.004	0.002	-0.006	0.004	-0.003	-0.007	0.015	1.000										
(11) No religion	0.017	0.028	-0.040	-0.032	-0.022	-0.009	-0.003	-0.002	-0.008	0.002	1.000									
(12) Catholic	-0.044	-0.019	0.011	0.029	0.008	0.032	-0.008	-0.018	0.019	0.001	-0.051	1.000								
(13) Protestant	-0.007	0.052	0.100	0.055	0.039	-0.011	0.015	0.014	-0.000	0.003	-0.130	-0.710	1.000							
(14) Muslim	0.052	-0.058	-0.133	-0.099	-0.058	-0.019	-0.011	0.003	-0.020	-0.004	-0.036	-0.196	-0.497	1.000						
(15) Other religion	0.030	-0.007	-0.058	-0.030	-0.011	-0.008	-0.003	-0.002	-0.003	-0.008	-0.009	-0.049	-0.124	-0.034	1.000					
(16) Age	0.372	-0.013	-0.146	-0.050	0.064	0.013	0.037	0.008	-0.018	0.002	0.024	-0.001	0.009	-0.026	0.027	1.000				
(17) Household head	-0.048	-0.021	-0.068	-0.023	0.041	0.016	-0.000	0.010	-0.024	0.007	0.018	0.017	-0.010	-0.011	-0.004	0.369	1.000			
(18) Non labor Income	-0.004	-0.006	0.020	-0.013	-0.012	0.018	-0.004	-0.020	0.038	0.007	-0.003	0.002	0.007	-0.011	-0.002	0.014	0.004	1.000		
(19) Distance to health	0.002	-0.024	0.004	0.027	0.043	0.030	0.026	-0.007	0.002	-0.018	-0.019	0.004	-0.019	0.034	-0.019	0.006	0.008	-0.002	1.000	
(20) Disability	-0.047	0.021	-0.029	-0.027	-0.009	-0.015	0.034	0.013	0.012	0.004	0.002	0.002	-0.010	0.013	-0.003	0.074	0.026	0.009	-0.001	1.000

The results revealed a positive but weak correlation between marital status and age. This implied that possibility of being married increased with age. This is true because as a lady ages there's a high possibility that she will have completed education and have settled for marriage. Marital status and residence showed a negative but weak association. This may be due to the fact that most of the ladies in urban areas may be pursuing education and therefore may take a long time before they get married. A negative and weak correlation coefficient was revealed between residence and household size. This may be due to the fact that most of the female in urban areas are sensitized on family planning and therefore have few children. The results also revealed a negative but weak association between residence and age. This may true because most of the female in urban are either taking their studies and relocate to rural upon their retirement that happen at their advanced age. The results further revealed a positive weak correlation coefficient for household head and non-labor income. This is may be attributed to the fact that if the female is head of the household she will be required to go out of way to get some income for the family including income in kind from relatives or friends.

Generally, the correlation matrix revealed weak correlation coefficients between all pairs of variables. This ruled out chances of multicollinearity among the variables. This therefore suggested that the estimates were precise.

4.3 Testing for Heteroscedasticity

Since the study adopted logit model, we plotted residuals squared a proxy for variance of the error term against fitted values and observed the pattern. The fitted values were used as proxy of the magnitude of the independent variables. The pattern obtained is shown in Figure 4.1 below.

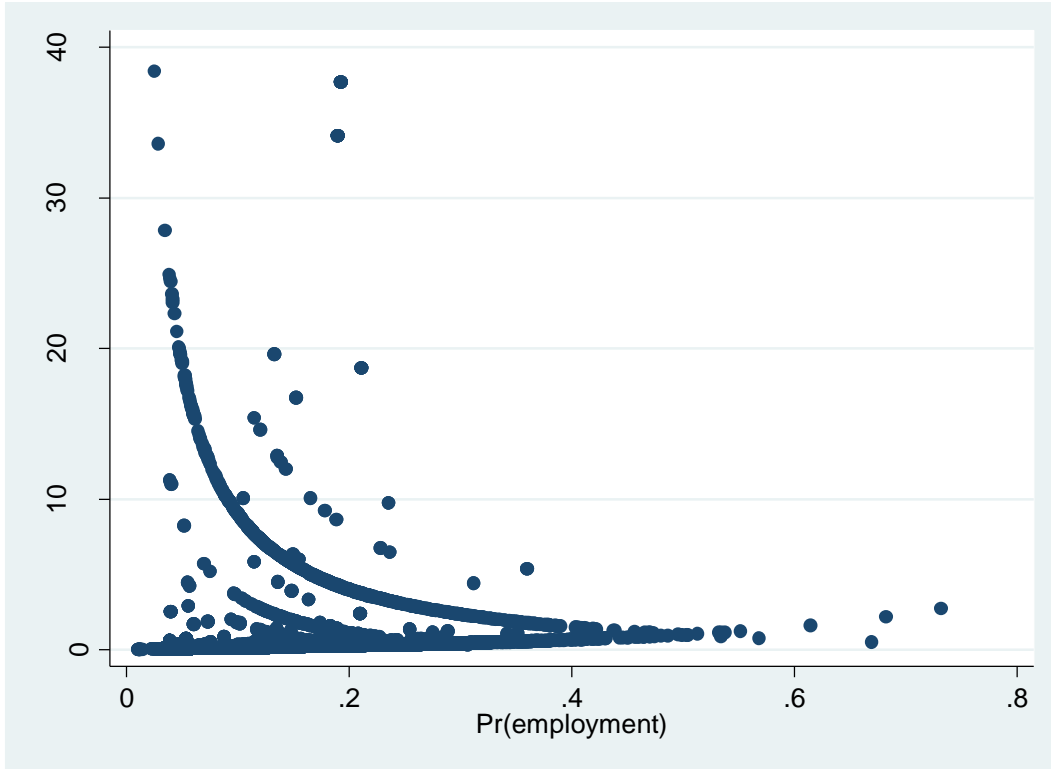


Figure 4.1: Heteroscedasticity Test

Heteroscedasticity was found to be present given that a clear pattern was observed. This implied the variance of the error term varied with changes in the magnitude of the independent variables. Thus the pattern suggested that the null hypothesis of no heteroscedasticity was rejected. This implied presence of heteroscedasticity. To correct this, the study adopted robust standard errors in the Logit model.

4.5 Empirical Results

The regression results are presented in Table 4.4

Table 4.4: Regression Results

VARIABLES	Logit Results	Marginal Effects
Marital Status	0.829*** (0.069)	0.829*** (0.069)
No education	-0.096 (0.108)	-0.096 (0.108)
primary	0.167 (0.106)	0.167 (0.106)
secondary	0.474*** (0.119)	0.474*** (0.119)
Tertiary	0.048 (0.157)	0.048 (0.157)
Graduate	-1.548** (0.613)	-1.548** (0.613)
Household Size	-0.014 (0.014)	-0.014 (0.014)
Area of Resident	-0.069 (0.068)	-0.069 (0.068)
Credit	0.054 (0.150)	0.054 (0.150)
No religion	-0.202 (0.429)	-0.202 (0.429)
Catholic	-0.243 (0.323)	-0.243 (0.323)
protestant	-0.258 (0.320)	-0.258 (0.320)
Muslim	-0.364 (0.324)	-0.364 (0.324)
Age_resp	0.021*** (0.002)	0.021*** (0.002)
Household Head	0.750*** (0.066)	0.750*** (0.066)
Non labor income	-0.421 (0.305)	-0.421 (0.305)
Distance	0.002*** (0.000)	0.002*** (0.000)
Disability	-0.355* (0.201)	-0.355* (0.201)
Constant	-3.094*** (0.334)	-3.094*** (0.334)
Observations	10,225	10,225
Prob > chi ²	0.0000	
Pseudo R ²	0.0681	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From Table 4.4 it is revealed that the model performed well with regards to overall significance.

This was evidenced by a significant F statistic. This implied that all explanatory considered in

the study were jointly important in influencing female labor force participation. The Pseudo R² showed that the explanatory variables explained 6.8 % of the variation in female labor force participation.

Regarding individual significance, the results revealed a positive and significant coefficient of marital status, age, household head and distance to the nearest health center. It was also revealed that individually, graduate and disability negatively influenced female labor force participation. Specifically, the marginal effects results revealed that compared to a Hindu, unmarried, postgraduate, not disabled female who is also not a household head, the probability of married female to participate in the labor increased by 82.9 % points *ceteris paribus*. This was contrary to previous studies for instance Naqvi & Shahnaz (2002) who found that participation in labor reduced in married women especially in patriarchal societies where the head of the household (man) decides on behalf on the females. The probable cause of this direction of these results may have been due to reduced incomes of male partners. This may have motivated the females to participate in the labor force so as to provide efficiently for the entire family as shown by Stephan & Janneke (2015). The partner could also be supportive in the job hunt.

The marginal effects results revealed that compared to a Hindu, unmarried, postgraduate, not disabled female who is also not household head, the probability of females with secondary education to participate in the labor increased by 47.4 %age points *ceteris paribus*. This is may be due to the fact that these females can participate in the easily available informal jobs. The Human Capital Theory and several studies such as Thamma-Apiroam (2016), Nazier & Ramadhan (2018) and Sackey (2005) agree with these results confirming higher chances of employment opportunities to females with higher levels of education.

Female labor force participation was also influenced by the females' status in the household positively. The coefficient of household head was significant implying the importance of the variable in influencing female participation in the labor force. The marginal effects results revealed that compared to a Hindu, unmarried, postgraduate, not disabled female who is also not household head, the probability of female who is a household head to participate in the labor increased by 75 percentage points holding other factors constant. Several studies support the same findings such

as Dissarojana (1982) where female heads were more likely to participate in labor since they are tasked with providing for the whole family. Dissarojana (1982) also argued that female offspring from a female headed household were more likely to participate in labor than male headed households.

Infrastructure as represented by distance to the nearest health center predicted female participation in labor positively. The marginal effects results revealed that holding other factors constant, the probability of female participating in the labor increased by 0.2 percentage points on average if the distance to the nearest health center increased by 1 unit. This could be explained by the fact that as distance increased a female is motivated to work hard so that she can get enough income to take the children to hospital. Since the hospital is far away, the female may be required to spend much on transport.

The female's age was found to be positive and important in determining female labor force participation. The marginal effects results revealed that holding other factors constant, the probability of female to participate in the labor increased by 2.1 percentage points on average if the female's age increased by 1 year. This is in line with previous findings such as Besamusca et al (2015) whose findings suggest that, labor participation increased with increase in age (due to improved level of skills and experience) until around 65 years where labor participation declines due to retirement, chronic illnesses or death.

In addition, the results revealed a negative relationship between female labor force participation and disability. Specifically, the marginal effects results revealed that compared to a hindu, unmarried, postgraduate, not disabled female who is also not household head, the probability of disabled female participating in the labor decreased by 35.5 percentage points *ceteris paribus*. This agreed with (Stern, 1989) who found similar results, attributed to by the fact that the affected individuals felt uncomfortable interacting with new people daily due to low esteem. Many of the work places also do not have the infrastructure or capacity to support disabled persons and, some of the disabled persons are not in a position to participate in any kind of work health-wise (BLS, 2021).

Further, the results revealed that being a graduate negatively influenced female participation in the labor force. The marginal effects results showed that compared to a Hindu, unmarried, postgraduate, not disabled female who is also not household head, the probability of disabled female participating in the labor force decreases by 154.8 percentage points. This was attributed to the fact that majority of the job opportunities are in the informal sector and therefore may not require one to be a holder of a degree. In fact employers in the informal sector may shun away from employing graduates who demand higher wages. For example, Republic of Kenya (2020) indicated that the informal sector created 767 900 jobs in 2019 while the formal sector created 78 400 jobs the same year.

On one hand the results showed negative and insignificant coefficients of household size, area of residence, non-labor income and religion. On the other hand, the results revealed a positive and insignificant coefficient of access to credit. This implied that these variables are not important determinant of female participation in the labor force.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the key findings, the conclusion of the study and policy implications, areas on which this study could be extended and the study limitations.

5.1 Summary of the key findings

Through the guidance of the three pillars in the Vision 2030 namely economic, social and political, Kenya is aimed at becoming middle income country by 2030. In addition, the country is also aimed achieving its SDGs. What will aid in the achievement of both the Kenya Vision 2030 and SDGs is labor inclusion, where the females are given equal job opportunities as their male counterparts. However, FLFP has had minimal growth rates since 1990 despite policies like the Third gender rule and NGO support such as USAID programs on gender based violence reduction and empowering women to be self-reliant. Therefore, this study aimed at investigating the determinants of FLFP in Kenya, to contribute up to date information into the knowledge of FLFP determinants to encourage informed policies.

Findings suggested that education (secondary, graduate), age, being married, infrastructure, being the household head and disability are important determinants of FLFP in Kenya. Specifically, the coefficients of education (secondary), age, being married, infrastructure and being the household head were found to be positive and significant. The coefficients of education (graduate) and disability were found to be negative and significant.

5.2 Conclusion

This study was inspired by the need to improve FLFP in Kenya through an inclusive and productive integration of females in the labor force. The study argues that improved infrastructure, being married, education (secondary), age, being the head of a family influence FLFP in Kenya. The results also revealed that education (graduate) and disability negatively influenced FLFP in Kenya. These are the core areas to concentrate on when making policy decisions aimed at improving FLFP further.

5.3 Policy recommendations

The study recommends that the Kenyan government with other stakeholders in the education sector to put more effort to ensure the girl child remain in school up to secondary level since at this level, the female will have gained the basic skills needed in job market and therefore can easily be absorbed into the job market. Manda et. al. (2020) on using Kenya Integrated Household Budget Survey (KIHBS) dataset for 2015/16 alludes that inequality and poverty still exists in Kenya. The study recommended the need to further increase cash transfer to existing beneficiaries in order to reduce income inequality and poverty. Such increase would therefore mean that more female in the society will be educated thus increasing their chance of being employed.

It also suggests organizations and religious groups to encourage legal marriages as married females were found to have higher chances of employment. This could be attributed to presence of children that would require them to be more responsible. As they secure job opportunities they would contribute positively to country's economic performance.

In addition, there is need for organizations concerned with people with disability for instance National Council for People with Disabilities (NCPWD) to sensitize the society on the ability of females abled differently. This study's results revealed that there may be a perception that such females may not be productive at work and therefore were not hired. The government ought also to invest heavily in special education that will make disabled females that lack jobs attain skills and be competitive in the job market.

Lastly, the government should reduce the size of the informal sector. This can be through adopting appropriate tax rate that were theoretically revealed to be the main cause of the informal sector. This will make it possible for graduate female to get more jobs since the current high informal sector as revealed by the Republic of Kenya (2020) was not hiring graduate females.

5.4 Areas of further research

There was need for further research on the ability of home electronics like washing and cleaning machines to save time to allow females to participate in income earning activities outside the homestead.

The data used in this study was cross-section data which has limitations on non-responses; there is need for further study using other data types.

5.5 Limitation of the Study

The study was not able to account the effect of wages on FLFP as suggested by the neo-classical model used in the study as limited by the data. The data also lacked proxies that could represent the females or households' income hence the variable was not captured in the study.

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