

EFFECT OF APPRENTICESHIP, INTERNSHIP AND MENTORSHIP PROGRAMS ON EMPLOYMENT OF YOUNG WOMEN IN KENYA

PRIMARY OUTCOME: INCREASE EXPOSURE OF YOUNG WOMEN TO WORK READINESS PROGRAM TO 20% BY 2025 TO ENHANCE THEIR EMPLOYABILITY

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ABSTRACT

The study assessed the effect of work readiness programs, specifically apprenticeship, internship and mentorship (AIM) in increasing women's employment probability or employability. Kenyan employers have raised concerns on work relevance of the skills possessed by young men and women joining the job market. Data in Kenya shows that women are the most affected in this regard where female participation in the job market is 29.5% compared to their male counterparts at 36%. AIM programs have been introduced in Kenya to bridge the gap since they are meant to solve the challenge of non-readiness and unpreparedness for the labor market. By the time the study commenced, data was lacking to show the impact of AIM programs for women's economic empowerment (WEE). The main objective of the study was to evaluate the effect of targeted work readiness programs in securing formal and non-formal income generating activities and career progression from a gender perspective. It also assessed the mentorship program designed to encourage female students to pursue STEM fields and to facilitate school to work transitions (SWT) for young women. Public Service Internship Policy (2016) was evaluated to establish its impact on young women's SWT and employment with a view to ensure WEE in Kenya. This study was anchored on the premises that there was hardly any empirical evidence in Kenya to show what works for WEE through AIM programs and this is what this study envisaged to establish. The study was grounded on Social Relations Framework for Gender Analysis (Adapted from: ILO. 2010) This framework was used alongside the Theory of Change which focused on explaining the methods that needed to be used for the envisaged project to yield the desired results as conceptualized in this study and to generate knowledge as to whether a program is effective or not. The study was conducted through a non-experimental approach where both descriptive and inferential statistics were used to generate evidence. Both primary and secondary data were used. Cross sectional research design was adopted. Data collection instruments included, questionnaires, interview schedules and focus group discussions. The study sample comprised of a group of young women (69) and men (70) that were exposed to work readiness programs and another group which was not so as to act as the control group. Snowballing method was used to reach out to the targeted respondents. The data collected from three counties in Kenya namely Nairobi, Mombasa and Kisumu cities established the effect of work readiness programs on women employment, income levels and career progression. Quantitative data was analyzed using STATA while qualitative data was analyzed thematically. Although the study revealed a positive correlation between participation in the AIM programs and employment, career progression and income,

unemployment still remains a major challenge in Kenya. Young men had a better probability of being employed compared to young women. For the internship program it emerged that there is a mismatch between areas of specialization and placement. For both apprenticeship and internship programs those who participated had a higher probability of being absorbed in the job market. Despite the unemployment challenges, the programs should be up scaled and include the profit and non-profit agencies to accommodate more beneficiaries. Additionally, the program needs to build their entrepreneurial capacities and provide resource support. Learning institutions should equip students with skills and knowledge to enable them to identify and create job opportunities for themselves and others. To achieve this the students need to be facilitated by state and non-state actors with financial and material support. There is need to follow up success stories from the programs for visibility and mindset transformation. The study also recommends that a policy on STEM mentorship would make it easier to implement programs in a structured manner thus leading to positive outcomes

Key words: Skills, Employment, Career progression, work readiness, income

ABBREVIATIONS AND ACRONYMS

AIM-Apprenticeship, Internship and Mentorship,

AMP- Assessment and Mentoring Program

EBK -Engineers Board of Kenya

GDP-Gross Domestic Product

ICT-Information, Communication and Technology

ILO-International Labour Organization

IV- Instrumental Variable

KARM-Kenya Association of Records Management

KISM- Kenya Institute of Supply Chain Management

KNASW-Kenya National Association of Social Workers

KNSS-Kenya National Statistical Society

KYEOP-Kenya Youth Empowerment Opportunities Program

LPM- Linear Probability Model

MCK-Media Council of Kenya

PSIP Public Service Internship Program

STEM- Science, Technology, Engineering and Mathematics

SWT- School to Work Transition

TSC- Teachers Service Commission

WEE- Women Economic Empowerment

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1.1. INTRODUCTION

Work readiness includes knowledge, fundamental skills and right attitudes required to perform a specific job. Apprenticeship, Internship and Mentorship (AIM) programs are pathways through which individuals enhance their work readiness and chances of employment. These programs have the potential to impart practical skills, foster right work attitudes, and help new graduates affirm their career choices.

Most of the studies done globally on work- readiness's show that there is need for and development of employable skills or work readiness for graduates as they are unable to explore their career due to skills deficiencies (Bilal, Rohani, Mumtaz and Haryanni, 2015). However, different countries adopt different methods to address the problem. According to Becker (1964), a strong proponent of human capital theory states that the knowledge, skills and capabilities implanted in graduates are key drivers of competitiveness and success of any nation. In most of the countries, internships have been found to yield positive results (Slamet and Rochmad, 2020; Rocio, Herrera, Lurier, Regan and Riege, 2013 & Kate, Jenkinson & Amanda and Benson, 2016).

Internships are fast gaining popularity in institutions of higher learning across the globe. This is also applicable to Africa with many universities and colleges making it a requirement for certain courses, especially those that require practical knowledge (Roots, 2020). They are not only viewed as a means of transforming the theoretical knowledge possessed by students into practical work experience but also as an opportunity to explore different places, cultures, as well as sectors (Roots, 2020). In other cases, internship is applicable when a graduate puts what he or she has learnt in theory into practice in a related organization after graduation which is the focus of this study. Internship programs are viewed as an opportunity to empower the country's youth by imparting them with both practical and employable skills thereby increasing their chances of securing meaningful employment after demonstrating readiness for work. The programs enable students to acquire practical skills and to anticipate employers' work expectations (Kapareliotis *et al.*, 2019).

The Kenya National Employment Authority Act 2016 acknowledges the need for the learners to engage in internships. It is for this reason that the National Employment Authority Act of 2016 mandates students in tertiary learning institutions to be placed in internship programs after the completion of their studies (National Employment Authority, 2020). The authority partners with stakeholders such as universities, colleges, as well as public and private sector players to ensure that internship programs offered in Kenya are well coordinated and take place in accordance to applicable standards (National Employment Authority, 2020). There is also provision for the implementation, evaluation, and monitoring of internship programs in the country. However, most students graduating from Kenyan colleges and universities do not participate in internship programs or practicums due to limited opportunities. Consequently, employers have raised concerns on work relevance of the skills they possess (Ministry of Education, 2019). This study has evaluated the Kenya's Public Service Internship Program that was launched in 2016. This program started with 400 Information Communication Technology (ICT) interns and later admitted graduates from all fields. The male and female interns (3,600 targeted annually) are placed in public institutions for one year. It targets fresh male and female unemployed degree and diploma holders to equip them with relevant skills. There is need to increase women in these programs because their participation in the labour market is 29.5 percent compared males who are at 36 percent (Owino *et al.*, 2016). Internship is closely associated with apprenticeship.

Apprenticeships are structured training programs that give trainees skills and the knowledge needed to succeed in a chosen industry. They are key to reducing the mismatch between the jobs available and the skills possessed by young people graduating from schools, colleges and

universities. Apprenticeship enables the trainee to acquire practical skills as they pursue formal trainings (Wolter & Ryan, 2011). It involves a total of four parties namely; the student or the trainee, the employer, the educator and the government

In Kenya, different AIM programs have been in existence both in the informal and formal sectors. Further, they are found in both private and government sector. For example, to solve the challenge of the increasing number of unemployment of the unskilled youths without the requisite skills, World Bank initiated an apprenticeship program called Kenya Youth Employment Opportunities Project (KYEOP) in Kenya which this study evaluated. It has been in existence since 2016 and aimed to reach over 280,000 male and female youths (18-29 years) by 2021. It covers 17 counties in Kenya among them; Nairobi, Mombasa, Kisumu and Kiambu counties. This project is housed under the Ministry of information, communication and technology (ICT) and Youth Affairs. While undertaking apprenticeships, students also benefit from mentorship from the supervisors.

Mentorship is a relationship whereby a more knowledgeable experienced person guides a less knowledgeable and less experienced individual (Clutterbuck *et al.*, 2017). Usually, the mentor must be in the same profession or area of expertise as the mentee for a mentorship relationship to be said to occur. This is achieved through formal and informal career guidance and role modelling. For example, Science, Technology, Engineering and Mathematics (STEM) subjects are essential to technological innovations, job creation and national economic growth. Furthermore, STEM has the potential to enhance innovative entrepreneurial capacities and opportunities for young women. Various interventions have resulted in increased proportion of young women participating in science and technology at secondary school level (UNESCO, 2007). However, there have been limited gains at tertiary levels as fewer women than men enroll in the more lucrative careers such as engineering and computing. These gender disparities have implications on the future of work for women. This phenomenon, commonly referred to as the ‘leaking pipe’, is reflected in School to Work Transition (SWT) for women in STEM. The study has evaluated STEM Kenya program for secondary school girls.

The Public Service Internship Policy, developed in 2016, aimed at enhancing the employability of Kenyan men and women. This is in line with the Technical and Vocational Education and Training Act, 2013 and the Constitution of Kenya, 2010, Article 55. However, this has not been achieved. Secondly, the secondary school examination results released by the Ministry of Education for the year 2019 indicated that more than 693,263 students sat their final secondary exam. However, universities could only absorb 145,341 candidates who attained grade C+ and above whereas the Technical, Vocational and Educational Training (TVET) institutions could only absorb 430,598 candidates that year (KNBS, 2020). Thus, the big question is: what happens to the other 120,000 students who may not secure post-secondary education? With the pressing demand created by a growing youthful population hungry for opportunities for economic success, the government is increasingly concerned about the employment of those who do not go to university. Girls are even more disadvantage due social cultural expectations which view them as ripe for marriage at that age. The problem is compounded by poverty where the parents view the girls as sources of wealth emanating from dowry which is paid for them when they get married.

Therefore, internship policy should be transformed to capture skills development from primary to secondary school and university. There is need to rethink about the category of interns being absorbed in the program given that the supply of students graduating from the universities and tertiary colleges outnumber those absorbed in the labour market annually. According to Nalugala (2020) there is a need to develop a model of inculcating the culture of work from an early age. The study further states that Kenya is in dire need of a more reflective education syllabus that will help students find solutions to social problems around them rather than banking on knowledge. The internship policy will be in order to establish if it's designed to take care of young women's economic empowerment.

The Ministry of Education (MoE) Sessional paper 2019 is committed to enhance post training skills development to enhance access, equity, quality and relevance of youths joining the job market from tertiary institutions and Universities. The Government seeks to adopt the policy on promoting post training skills in development. Sessional Paper no.1 of 2019 which proposes implementation of a number of strategies such as establishing a framework for post training skill development, strengthening of the national internship and apprenticeship program, enhancing industrial and partnership linkages between industries and the education sector, provision of a knowledge management system on graduates and potential employers (Republic of Kenya, 2019). The findings of this study will help in the development of a framework that can be used to enhance post skills development among the youth especially young women who are in dire need of job opportunities given their low absorption in the job market as shown in this study. Otherwise if work unpreparedness among the youths is not addressed, levels of unemployment will increase, hence leading to negative mental health, drug and substance and criminal cases among them.

Apprenticeship, internship and mentorship work readiness programs in formal or non-formal setups are meant to solve the challenge of non-readiness and unpreparedness for the labour market. Therefore, this study has evaluated the impact of these work readiness programs in promoting young women's employment. Further, the effectiveness of the design of the Public Service Internship Policy (2016) has been assessed.

1.2. Statement of the Problem

Despite the benefits that students gain from work readiness programs like apprenticeship, internship, and mentorship program (AIM), many students' especially female students still lag behind as far as up taking these program is concerned. Apart from imparting an individual with the practical skills needed to excel in a particular field or profession, they also help foster the right attitude needed to excel in their work. A host of social, cultural and economic factors have in the past limited the exposure of girls and women to AIM programs. The result is that women and girls continue to be left behind by their male counterparts in work readiness and competitiveness in the job market. Further, Kenyan employers have raised concerns on work relevance of the skills possessed by young men and women. Data in Kenya shows that women are the most affected in this regard. Female participation in the Kenyan job market is 29.5 per cent compared to males at 36 per cent (Owino *et al.*, 2016). This gender disparity is more apparent in STEM related fields. Despite the fact that AIM programs have been implemented

in Kenya, currently, there is limited empirical evidence to show whether they work or not for women's economic empowerment. This study therefore aimed at evaluating the effectiveness of AIM programs in enhancing young women's employment. Since AIM programs are meant to solve the challenge of non-readiness for absorption to the labour market, the study evaluated the effect of these programs in promoting young women's employment by securing formal and non-formal career opportunities. Internship Policy (2016) was evaluated to establish its effect on women's school to work transition (SWT) and employment with a view to ensure women economic empowerment (WEE) in Kenya. There is hardly any empirical evidence in Kenya to show what works for women economic empowerment through AIM work readiness programs. The paucity of data of what works in the AIM work readiness programs and career progression, is what this project sought to undertake so as to provide policy direction in reviewing the policy by the concerned actors.

1.3. Objectives of the study

The general objective of the study was to evaluate the effect of apprenticeship, internship and mentorship programs in enhancing young women's employment.

1.3.1 Specific Objectives are to:

- i) Evaluate the impact of the Public Service Internship Policy (2016) on employment of young women
- ii) Assess the effect of KYEOP apprenticeship program on employment of young women.
- iii) Determine the effect of UNESCO-STEM Government of Kenya mentorship program on employment of young women.
- iv) Depending on the evidence, upscale the programs that work for WEE

1.4. Specific Questions

- i) What is the impact of the Public Service Internship Policy (2016) on employment of young women?
- ii) What is the effect of KYEOP apprenticeship program on employment of young women?
- iii) What is the effect of UNESCO-STEM Government of Kenya mentorship program on employment of young women?
- iv) Which programs are working for upscaling?

2.0 LITERATURE REVIEW

2.1 Effect of the Public Service Internship Policy on employment of young women

Despite 5.6 per cent Kenya's average annual GDP growth rate for the last five years, the Kenya National Employment Authority Act 2015 acknowledges that during or after successful completion of a person's learning and training, the learner should engage in internship. University and diploma graduates are granted a one year internship opportunity to gain work experience where they are attached to various government sectors where their skills are relevant. This experience improves professionalism and technical aspect of the intern, and is expected to increase employability. Public Service internship Policy (2016) was put in place to

address shortages in graduate internships. Public service internship program is as a result of this policy.

According to a pilot study conducted in Kisumu, Mombasa, and Nairobi counties on youth employment in Kenya, an internship program was found to have a positive effect on earnings among youth aged 15-29 years in the ratio of 2:3 for males and females respectively (Zepeda *et al.*, 2014). However, there exists a gap on youths who are not vulnerable yet placed in internship program in public service. Studies globally and regionally have been conducted and have shown that a positive relationship exists between work readiness and employment. However, empirical evidence showing whether the Kenya government policy internship program prepares young women for the world of work has not been done.

Studies have demonstrated the benefits acquired by students in internship programs (Gault, Leach, & Duey, 2010). However, other findings have showed that the internship experience has potential to negatively influence students' intent to enter the labor market (Cunningham, Sagas, Dixon, Kent, & Turner, 2005). Nevertheless, AIM programs may help beneficiaries gain clarity on their career paths. There is evidence that students have been used as sources of cheap labor rather than be trained for their career growth and progression (King, 2009). These concerns involve the notion that interns are often used as cheap labor, completing routinized tasks rather than being trained and developed as students earning academic credit (Cunningham, Sagas, Dixon, Kent, & Turner, 2005).

In some cases, these substandard internship arrangements may even be in violation of federal labor laws (Schoepfer & Dodds, 2010). Students desire a challenging yet fair experience with clear responsibilities (Stratta, 2004). If this is missing, they are likely to lose commitment and interest in the internship, as well as pursuit in their career (Dixon, Cunningham, Sagas, Turner, & Kent, 2005). It is in this context that this study was envisaged to address the above mentioned challenges. It is expected that the internship program will help the youth to acquire and develop valuable technical and professional skills that helps one to gain related work experiential opportunities. Sessional Paper no.1 of 2019 proposes implementation of a number of strategies such as establishing a framework for post training skills in development strengthening of the national, internship and apprenticeship program, enhancing industrial and partnership linkages between industries and the education sector, provision of a knowledge management system on graduates and potential employers (Republic of Kenya, 2019). This study hoped to help in the development of a framework that can be used to increase young women's participation in internships, hence employment opportunities.

2.2 KYEOP APPRENTICESHIP PROGRAM AND EMPLOYMENT OF YOUNG WOMEN

Apprenticeships enable trainees acquire skills and knowledge required in different industries. They are key to reducing the mismatch between the jobs available and the skills possessed by young people graduating from schools, colleges and universities. Further, students who have gone through apprenticeship training get jobs faster compared to those who have not (Ryan, 2001). Apprenticeships play a key role in work readiness by equipping trainees with skills needed for employment, however different genders have variations in apprenticeships. Women

may not benefit much due to other compounding factors such as cultural and sectoral discrimination (Ryan, 2001).

There is a high unemployment rate among the youth in Kenya, more to this; most youths have no access to education due to poverty levels. Women are more affected due to family responsibilities whereby most are married when young or their parents give them responsibilities to do household chores and take care of younger siblings as the parent look for menial jobs to feed the family (NEET, 2015). Through apprenticeships, trainees acquire the needed knowledge and skills to be able to participate in a relevant industry. This helps to reduce the skills mismatch between the skills taught at schools, colleges and universities and those needed in the labour market.

Most males are in better professional and technical paying jobs as compared to women (Barro and Lee, 2010). Research has shown that literacy levels for women compared to men in sub-Saharan Africa are at 65.8 percent and 76.3 percent respectively (World Bank, 2015). There are several factors that hinder women from acquiring education which include culture; for example when girls are married off, hence low completing rates (Chakravarty *et al.*, 2017). This study has evaluated the impact of KYEOP to establish if it works or not for women economic empowerment. The program was started in 2016 targeting young men and women between 18-29 years though it has recently been extended to 35 years. The implementer is the Kenyan government in partnership with World Bank. Some of the counties where the project has been implemented include: Kiambu, Nairobi, Mombasa and Kisumu among others

2.3 STEM MENTORSHIP PROGRAM AND THE EMPLOYMENT OF YOUNG WOMEN

Globally, formal mentoring is increasingly becoming an area of focus as a major tool in capacity building (Webb, 2008), especially in regard to marginalized groups including women (Goh *et al.*, 2008). Willemsen, (2016) opines that mentorship is key in career progression particularly for women in STEM. Through building the technical capacity of women, they can become more confident and visible and enable them to be networked. Further, it can enhance their leadership and research skills, thereby using mentoring as a bridge to close the gender gap in STEM. Additionally, informal mentoring has been found to be useful in providing an avenue to information and resources that are effective in enhancing career growth especially for women (Hymowitz, 2007; Willemsen, 2016).

It is acknowledged that mentors have the ability to impart significant knowledge and expertise which can lead to career progression of the learners (Kram, 1985). Furthermore, mentors can be instrumental in enabling mentees to network with experts within academia and organizations, (Kram, 1985; Tennenbaum *et al.*, 2001). This can enable mentees to attain success in terms of salary, promotion and job offers. Mentoring, whether formal or informal, is an avenue of accessing information, building networks and acquisition of resources, Research has shown that there is a significant relationship between workplace mentoring, career attitudes, work attitudes and employability (Allen *et al.*, 2004 and Underhill, 2006). It has also been established that there is a link among young men and women in regard to academic and workplace mentoring and psychological outcomes as elements which enhance their positive self-image (Underhill, 2006).

One key concern that this study envisioned to address is how effective mentorship programs are, in terms of, encouraging female students to pursue STEM fields. STEM is key to technological innovations, job creation and national economic growth. Furthermore, STEM has the potential to enhance innovative entrepreneurial capacities and opportunities for women and girls. It has been observed that despite the increase of the number of young girls and women participating in science and technology, they have been confined to in the lower scales of these the disciples (UNESCO, 2007; Hoobler, *et al.*, 2014; Willemsen, 2016). Besides, women participation has dwindled with career advancement in the systems – a phenomenon termed as “leaking pipeline” (Huyer and Westholm (2007).

Disappearance of women in careers in science at higher ranks has been established through many studies (Goh *et al.*, 2008). These gender disparities are reflected in SWT for women in STEM related careers. Equally affected are the entrepreneurial innovativeness of young women and girls especially in business start-ups and subsequent commercialization of science. Observably, women remain underrepresented in the STEM courses offering the best career prospects, greatest impacts and highest salaries. The underlying causes for underrepresentation of women in science include factors that operate at the individual, family, school, and societal/cultural levels. Hence, it is important to provide women with multiple incentives and avenues to succeed (Meinzen-Dick *et al.*, 2011). However, clear cause-effect correlations between mentoring and outcomes on attitudes, leadership etc. has not been demonstrated. It was therefore imperative to conduct in-depth interrogation of existing mentorship initiatives to provide evidence-based data on their effectiveness. Further, the outcomes of mentoring depend on the areas of mentoring scholarship. Despite the fact that some work has been done regarding career attitudes at work place, the relationship between, mentoring done in schools and colleges and subsequent career attitude, progression and employability has not been done which was the focus of this study.

Specifically, the study evaluated UNESCO Nairobi’s scientific camps of excellence. UNESCO STEM Government of Kenya mentorship program was initiated by the UNESCO Eastern Africa Regional Office with a view to reduce the gender gap in STEM. Various activities are undertaken like talks and demonstrations among others through scientific Camps of Excellence. The program targets girls in year 1, 2 and 3 of their secondary level education. The program involves pairing the girls to mentors drawn from Universities and Industry. The mentors work very closely with the teachers to implement the program and track its effectiveness in terms of girls’ interest in STEM, their performance and admission to STEM courses in the tertiary institutions. The program was launched in Kenya in 2014 and is implemented by UNESCO in partnership with the Ministry of Education, and Universities among other several bodies.

2.4 Theoretical Framework

This study was guided by Social Relations Framework for Gender Analysis which was developed by Naila Kabeer in early 1990s in collaboration with policy-makers, academics, and activists. The framework is firmly anchored on the structural feminist thinking which focuses on the interchange between social relations and patriarchy (Weedon, 1997). The framework is based upon various theoretical notions. The first one is the concept of development, considered

as the process of increasing human well-being. The second concept refers to social relations. According to Kabeer, social relations are structural relationships that create and reproduce systemic differences in the positioning of groups of people. Thirdly, the framework relies on institutional analysis. The causes of gender inequality are not confined to the micro-level (household and family) but are reproduced across a range of institutions at all levels. Institutions are defined here as a framework of rules for achieving certain social or economic goals. They exist at macro (international community), meso (the state, the marketplace) and micro-level (community, household). Regarding institutions, Kabeer challenges the ideological neutrality and the independence of institutions. Institutions produce, reinforce and reproduce social difference and inequalities. In addition, institutions are connected to each other and do not operate independently; a change at the national institutional level can affect institutions at other levels. Institutions vary across contexts and cultures, but Kabeer identifies some important common aspects that they share. They all possess the following five aspects of social relationships: rules, resources, people, activities and power. These dimensions are significant to the analysis of social inequality in general, and gender inequality in particular. Examining institutions on the basis of their rules, practices, people, distribution of resources, and their authority and control structures, helps one understand who does what, who gains, who loses (which men and which women).

A fourth notion on which Kabeer builds this framework are gender policies and the different ways they can be categorized: Gender-Blind Gender-Neutral and Gender-Sensitive and Gender-Positive. Gender-blind policies consider men and women not to be equals. They use gender norms, roles and stereotypes that reinforce gender inequalities. Gender-neutral policies work within the existing gender division of resources and responsibilities, and do not challenge them. The framework addresses strategic gender-needs; transforms unequal gender relations to promote shared power control over resources, decision-making and support for women empowerment (ILO., 2010; Goulding, K., 2013; March, Smyth, & Mukhopadhyay, 1999). This framework was used as a tool to analyze the gender inequalities within institutionalized distribution of resources, responsibilities and power relationship alongside the theory of change.

1.8 Theory of Change

The Theory of Change (ToC) seeks to identify the overall /long term goal that the intervention needs to achieve. Once this goal has been identified, ToC seeks to consider what conditions must be put in place to achieve the desired goal. The long-term outcome of our research was to improve exposure by 20% for women and girls to apprenticeship, internship and mentorship (AIM) programs to enhance their work readiness by 2025. The study include considered socio demographic characteristics of the women, effectiveness and efficiency of the programs in preparing women for work readiness and economic empowerment, effectiveness of government policies on AIM that influence more women being economically empower through AIM programs among other considerations. The study envisaged that achievement of the long term goal would greatly be influenced by the extent to which women were aware of AIM programs

that were available to support them. The figure 1.1 briefly illustrates this study's conceptualization of theory of change.

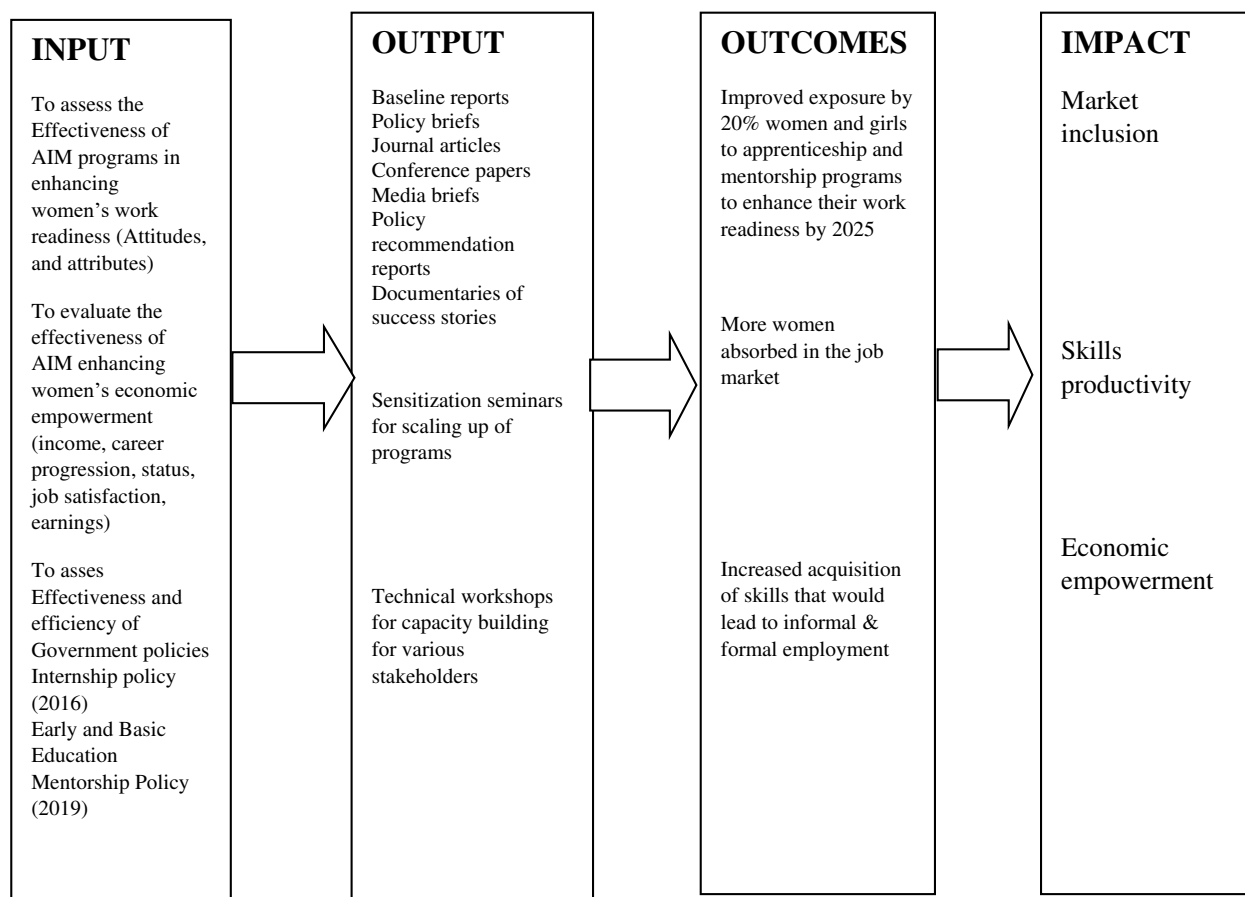


Figure 1.1: Study's conceptualization of theory of change

3.0 METHODOLOGY

3.1. Data

The study employed the cross-sectional research design. In the use of this approach, the study ensured that a sample of respondents who share essential characteristics, e.g., the specific time the prospective candidates joined the program, current residence and age bracket, was considered. The data collected was used to estimate the effect of the programs on employment outcome, income levels and career choice of graduates. The study primarily relied on primary data. Data collection instruments included questionnaires, interview schedules and focus group discussions.

Data for this study was derived from a survey that was conducted on three empowerment program in Kenya that the study evaluated, that is, Public Service Internship Program, Kenya Youth Employment Opportunities Program and UNESCO STEM Government of Kenya mentorship program. The total estimated population considered for the three programs was 20,000.

The Yamane (1967) sample size formula was used to derive the sample size for the survey:

$$n = \frac{N}{1+N(e)^2}$$

Where n is the sample size, N is the population size, and e is the level of precision (level of confidence). Given that our estimated population size was 20,000; at 95 percent level of confidence, our sample size was estimated as follows:

$$\frac{20,000}{1+20,000(0.05)^2}$$

$$= 392$$

This sample was divided into the three programs where the minimum sample size for each program was 131; Policy makers, implementers and supervisors were interviewed in all the programs. Further, focus group discussions were held in each of the site for all the programs.

In this regard, Public Service Internship Program had a sample of 139 respondents consisting of 69 females and 70 males. Some had gone through the Public Service Internship Program (PSIP) while others had not. The same case applied to the KYEOP apprenticeship program which however had more respondents (211) consisting of 129 females and 82 males. Those who had participated in the KYEOP Program were 57% while those who did not participate were 43%. Finally the study considered the UNESCO STEM Government of Kenya mentorship program. A sample of 182 respondents was used where all were female since the UNESCO STEM Government of Kenya mentorship program was meant for girls. Those who had participated in the UNESCO STEM Kenya Mentorship Program were 46% while those who did not go through the program were 54%.

3.2. Data Collection

The data was collected from three counties in Kenya; that is, Nairobi City, Mombasa and Kisumu. Selection of counties was based on the respondents' information that was sourced from the programs' office in Nairobi. The tracer approach was used to identify those who received the intervention and those of similar characteristics that had not received it. Both quantitative and qualitative data was collected using questionnaires, interview schedules and focus group discussions. The study sample therefore comprised a group of young women and men that was exposed to the programs and another that was not. This approach was necessary since the study needed to compare the outcomes for young women vis-à-vis those of young men especially for PSIP and KYEOP programs that enrolled both young men and women unlike UNESCO STEM Government of Kenya mentorship program that is meant for young women only. For a proper impact evaluation, it was also necessary to check the difference in outcome between those that had participated in the programs and those that had not.

3.3. Data Analysis

Each of the program was analyzed as follows:

The study first employed a regression model to analyze the effect of PSIP on women economic empowerment where the dependent variable was the employment status of the respondents. The variable took the value 1 if it was reported that the individual held an employment position; and 0 otherwise. We estimated the following model;

$$y_i = \alpha_i + \phi D + \delta X_i + \gamma Z_i + \varepsilon_i \quad (1)$$

Where i denoted the individual (young woman/young man), y_i is the dependent variable capturing the employment status of the sampled individual. α_i is the intercept, D is a dummy with 1 if the individual is enrolled in the program and 0 otherwise; X_i is a vector of control variables, Z_i is a vector of peer characteristics while ε_i are i.i.d., mean 0 innovations. Necessary diagnostic tests were conducted to ensure the validity of the results. The coefficient of the D variable indicated the empowerment effect of the internship/mentorship/apprenticeship program. Quantitative and qualitative data analysis was conducted using STATA. Cross-sectional analytical approaches were used in this study.

4.0 FINDINGS

4.1. Public Service Internship Program

For a better understanding of our data, a summary of the study's quantitative data for the Public Service Internship Program (PSIP) was computed and presented in Table 1.

Table 1: Sample Statistics for Key Variables (N=139)

Variable	Number	Relative Frequency (%)
Participation in PSIP		
Yes	81	58%
No	58	42%
Gender		
Female	69	50%
Male	70	50%
Employment Status		
Employed	69	50%
Not Employed	69	50%
Age		
20 – 30 Years	114	82%
30 – 40 Years	25	18%
Marital Status		
Single	95	68%
Married	44	32%
Highest Level of Education		
Diploma	7	5%
Degree	132	95%
Course Taken at College		
Humanities	37	27%
Business	36	26%

STEM	65	47%
Grade Achieved		
First Class (Equivalent)	2	1%
Second Class Upper (Equivalent)	101	73%
Second Lower (Equivalent)	32	23%
Pass	4	3%
Promotion		
Promoted	4	7%
Not Promoted	55	93%
Income		
Below 5,000	79	57%
5,001 - 20,000	18	13%
20,001 - 50,000	26	19%
Above 50,000	16	11%
Sector of Employment		
Education	5	4%
Productive	17	12%
Services	36	26%
Trade	2	1%
None	79	57%

Source: Authors Computations

The data presented in Table 1 captures a sample of 139 young women (50%) and men (50%); some of whom went through the public service internship program (58%) and others who did not (42%). A majority of the respondents (70%) learnt about the internship opportunity through digital platforms (social media and website) while 30 percent through other means (print media, friends and others). For the sampled respondents, a half of them (50%) were employed while the other half were not. For the age bracket, 82% were in the 20 – 30 years bracket, while 18% were aged between 30 and 40 years indicating that a majority of persons in this age bracket were settled in life and therefore the program was not of essence to them. A majority of the respondents in the study were single (68%). In terms of the highest level of education, those with a Diploma were 7 (5%) while 132 (95%) had a degree. This shows the competitive nature of the program where those with a degree have a natural advantage over those with a diploma.

For those who had post-secondary school qualification (certificate, diploma or degree), 37 (27%) had taken a course in humanities, 36 (26%) undertook a course in business while 65 (47%) undertook a course in STEM. This shows that those with STEM related courses had higher advantage of joining the program compared to the other disciplines. In their highest level of education, 2 respondents (1%) scored a first class (or its equivalent), 101 respondents (73%) achieved a second upper (or its equivalent), 32 respondents (23%) achieved a second lower (or its equivalent), while 4 respondents (3%) scored a pass (or its equivalent). The fact that there were few respondents who had a first class (or equivalent) underscores the fact that high scoring students may have progressed to higher learning or had secured better opportunities. Seven percent (7%) of the working respondents had been promoted at the time of the survey while 93% had not been promoted. This implies that a majority of the respondents may not have acquired the requirements for promotion. In terms of income, 57% of the respondents had an income of less than Ksh. 5,000,

32% had an income of between Ksh. 5,001 and Ksh. 50,000 while 11% had an income of above Ksh. 50,000. For those who were working, 5 (4%) were in the education sector, 17 (12%) were in the productive sector, 36 (26%) were in the services sector, 2 (1%) were in the trade sector while 79 (57%) were mostly not in employment and thus not engaged in any sector.

4.1.a) Estimation Results

In this study, the key objective was to ascertain whether participation in an internship program influenced the employment outcome of young women in Kenya. It is important to note that the reasons that will cause a participant to hold an employment position are similar to the ones that will make a participant to be admitted to an internship program. In this regard, we observed that **participation** to an internship program was an endogenous variable. To address the endogeneity problem, this study used a reduced form model. The dependent variable (employment status) is binary and therefore a probit /logit model can be applied. However, for robustness check, we also estimated a linear probability model (LPM). The estimation results are presented in Table 2.

Table 2: Regression Results: Dependent Variable is Probability of Accessing Employment

	The LPM Model	Logit Model Marginal Effects	Probit Model Marginal Effects
Employment Status	Coefficient (t-statistic)	Coefficient (z-statistic)	Coefficient (z-statistic)
Participation (cluster/county mean)	0.772** (2.13)	0.787** (2.12)	0.805** (2.21)
Gender (f=1; m=0)	-0.145 (-1.63)	-0.142* (-1.73)	-0.145* (-1.79)
Age dummy (1= 20-29; 2=30-40)	-0.011 (-0.09)	-0.011 (-0.10)	-0.009 (-0.08)
Marital Status (m=1; 0 otherwise)	0.007 (0.07)	-0.004 (-0.05)	-0.004 (-0.04)
Highest Edu. Level (1 = degree; 2 = Postgrad)	0.001 (0.00)	0.032 (0.12)	0.028 (0.12)
Grade Achieved (1=C or below; 2=B; 3=A)	0.202* (1.96)	0.196** (2.02)	0.196* (2.04)
Extracurricular Activity (1=yes; 0 otherwise)	-0.088 (-0.86)	-0.088 (-0.91)	-0.089 (-0.94)
Course Name: (Business =the base category)			
Humanities	0.116 (0.94)	0.113 (0.95)	0.118 (1.03)

STEM	0.143 (1.48)	0.143 (1.55)	0.146 (1.55)
Distance (km) from a participant's county to Nairobi)	-0.034** (-2.23)	-0.033** (-2.34)	-0.033* (-2.38)
Constant	0.126 (0.45)	-	-
	Number of obs = 137 F(10, 126) = 3.39 Prob> F = 0.0006 R-squared = 0.1439 Root MSE = 0.48239	Number of obs= 137 Wald chi2(10) = 20.35 Prob> chi2 = 0.0261 Logpseudo- likelihood = - 84.34998 Pseudo R2 = 0.1117	Number of obs = 137 Wald chi2(10) = 22.28 Prob> chi2 = 0.0137 Log pseudo- likelihood = - 84.2397 Pseudo R2 = 0.1129

Source: Author computations from research data

***, **, * significant at 1%, 5% and 10% respectively

To address endogeneity, the variable '*participation*' was transformed to '*mean participation*' ratio, where respondents were categorized in clusters (on the basis of their home counties) and the participation ratio generated by considering the number of respondents in the region that participated in an internship program divided by the total number of respondents in that county. Thus mean participation ratio varies by county so that all individuals in a given county have the same average participation ratio. However, individuals in a county have their own participation probabilities (1 for participation and 0 otherwise). In that regard, these individual level participation rates are not used because they are correlated with the error term for the employment equation. In contrast, the error term associated with an individual's probability of employment is by construction unrelated to the average participation rate, as it is exogenous to an individual. The link between the instrument (cluster level average participation), the raw participation variable and employment is presented in appendix II.

Predictions of employment status based on LPM, Logit and Probit Models

These are shown in Table 4. Where is table 3 that you refer to at end of the paper?

Table 4: Sum employmentstatushat1 employmentstatushat2 employmentstatushat3

Variable	Obs	Mean	Std. Dev	Min	Max
Employmentsttushat1	137	0.50365	0.16220	0.05233	0.86001
Employmentsttushat2	137	0.50360	0.16422	0.09928	0.84402
Employmentsttushat3	137	0.50365	0.16257	0.11026	0.83408

Source: Author computations from research data

The three models are stable and the coefficient well predicted. Predictive values presented in Table 4 for the three models (LPM, Logit and Probit) have their mean values close to each other, and the

maximum values less than 1, indicating that the LPM predicted values for employment status are within the unit interval as expected. From the estimations presented in table 2, the probit model gives us the best results; we therefore select this model for interpretation.

From the probit model estimations, it is evident that participation in the internship program, gender and grade achieved are significant factors that influence the employment outcome of young people in Kenya. Specifically, the results of the gender variable indicate that young men have a 14.5% higher probability of being employed than young women. It therefore implies that in Kenya, young men are more likely to get job placement than young women. This is a finding that requires further interrogation in future research. The other finding is that, there is a positive association between participating in the internship program and the likelihood of holding a job. This result is consistent with the result of the Instrumental Variable (IV) model presented in the Appendix I. The internship program therefore contributes positively to placement of young people in employment positions in Kenya and therefore should be up scaled.

The effect of the grade achieved in the highest institution of learning was also found to be statistically significant; those that attained better grades had a 19.6 % better chance of employment than those with lower grades. Young people in Kenya, especially young women, are encouraged to aim for better grades at the tertiary level to improve their probability of being employed. It was also revealed that 74.3% had second class honors upper division compared to 1.4 % who had first class honors among those interviewed. It can then be deduced that most of them go for further studies. Women aspiring for the job market need to work hard to acquire higher grades to make them competitive for the job market.

Additionally, taking a Science, Technology, Engineering and Mathematics (STEM) course, at a tertiary institution of learning also matters, but is marginally not-significant, probably due to the small sample size in our study. Young women should be encouraged to pursue courses in the STEM field since employers favor these skills in the market compared to skills in business studies and humanities. The distance from the participant's town of 'residence' to Nairobi where the internship program is managed from, was integrated into the model as a control variable and its estimated coefficient was found to be statistically significant. The implication of this finding is that young people living far away from Nairobi have a lesser chance of holding an employment position than those living in Nairobi County. Nairobi County is the economic hub for Kenya and therefore it is highly probable that it avails more employment opportunities for young people than other counties.

Further analysis shows that individual participation increases employment prospects. The negative sign for the coefficient on individual participation rate in the first stage of the IV model is due to automatic negative correlation between it and the cluster level participation level. That is, as the average participation ration increases, an individual's chance of enrolling in the internship program declines because the internship places are fixed. Thus the greater the number of youth is enrolling, the smaller the probability that each of the youths will enroll. Indeed, the youths whose home counties are far from Nairobi have a lower chance of getting into the program. Since distance is a price-like variable, the demand curve for the internship is downward sloping, as expected.

4.1. b) Qualitative Results of the Public Service Internship Program

The relationship between career choice, income level and the public service internship program, specifically for young women, was analyzed using the qualitative approach.

a) Career Choice

To understand career choice in a profound way, the study first considered the course taken at college. Figure 2 presents the career path chosen by young women who went through the PSIP program.

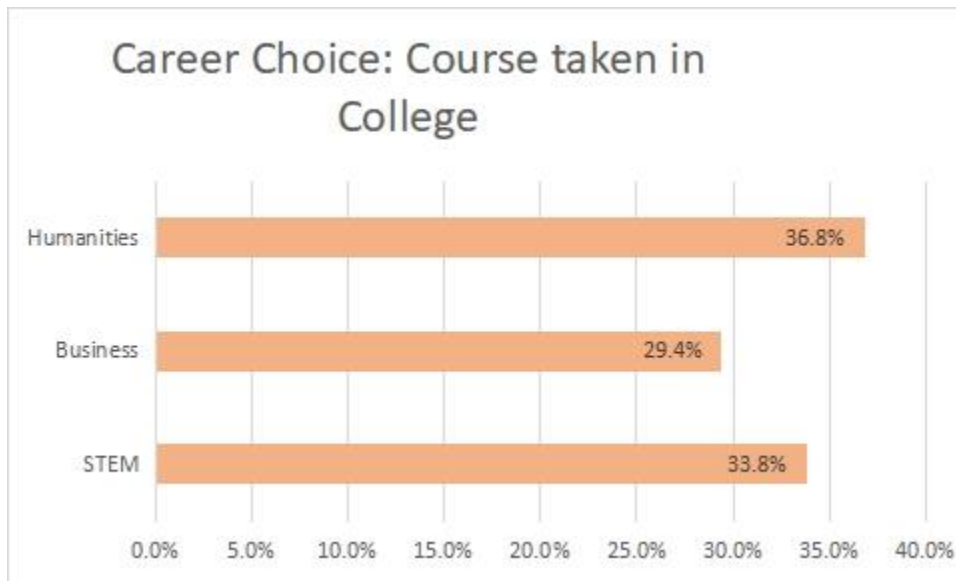


Figure 2: Career Choice

Data Source: Study Survey Data.

For the young women who went through the PSIP program, 29.4% chose to pursue a business related course, 33.8% chose a STEM course while 36.8% pursued a humanities course in college. From the findings, there is some evidence to indicate that the PSIP program attracted young women from STEM related fields. However, the highest percentage of the women were in the humanities field. We chose to explore further by considering career placement of the young women who had gone through the PSIP as demonstrated in table 4.

Table 4: Career Choice

Sector of Employment			Row Total
	Services	Productive	
Humanities	11 (18%)	4 (7%)	15
Business	5 (8%)	7 (12%)	12
STEM	25 (42%)	8 (13%)	33
Column Total	41	19	60

Source: Author Computations from Study Survey Data

Of 60 respondents that were in employment, 19 were in the productive sector, which is a STEM related field. It is important to note that in this study, the services sector comprised of Financial, Advisory, Hygiene, Human Resource and Security Services. Productive encompassed energy, tourism, agriculture, extractives and related sectors. Looking at table 4, eleven (11) of the respondents (18% of total) who pursued courses in humanities were employed in the services sector while 4 (7% of total) was in productive. The remaining respondents who were employed and had pursued Business (5) and STEM (25) courses were working in the services sector. It is therefore clear that even after participating in a STEM course in their highest level of education, a majority of the respondents did not pursue a career in STEM but were rather in the services sector. This finding is in tandem with the findings of Wernick and Ledley (2020), who established that only 27.1% of students graduating with STEM degrees enter the STEM workforce.

As far as accreditation to professional bodies is concerned, the interns gave diverse reasons for not having joined professional bodies. 29.5 % indicated that they were not aware of any professional body while 15.8 % indicated that they were not aware of the procedure and key requirements. Another 20 % indicated financial constraints. Further, it is noted with concern that most of the interns have not joined professional bodies associated with their professions. This is due to lack of awareness and procedures as well as key requirements for registration. They are also constrained by the fees charged for accreditation. They focused on their studies and others felt that their priority is getting a job, others felt they can join later in life.

Further, as far as co-curricular activities are concerned those who participated in the internship program, the study revealed that they had a higher opportunity and chances of being absorbed in both internship and job market. It is therefore important to encourage children to get involved in co-curricular activities. Currently the new CBC curriculum aims at achieving the same.

Data from the interview schedules indicated that, both policy makers and implementers felt that the entire program design should emphasize on the women and youth empowerment. They felt that there is need to avail more internship /attachment opportunities since the program is in high demand among the youth especially to enable them to access and be competitive in the job market.

There are several benefits of the program to the young men and women. 42.6 % of the young women and men indicated that they got information about other job opportunities and networking with different professionals and exposure to different careers, which was at 18.5%.

A respondent said that, “the program helped me make a decision of my future career choice”

Besides 45.5 % indicated that there was an expansion of employment possibilities”. For example a respondent confessed that, “the program has made me to move out of the box” and “I was able to take up space by creating a business that gives opportunities to other women”

Further, there was an enhancement of young women economic empowerment. 37.6 felt that the program enhanced their skills which enabled them to be employed or self-employed. For example a given case is where a respondent said, “ a women who have gone through the program has helped

me to acquire skills to make proper decisions that I have been unable to make ” Otherwise, women who went through the program felt motivated and appreciated, which is a recipe of self-esteem.

Among the challenges expressed by the young men and women respondents were that they were concerned that there was delay of stipends /grants where they were not paid on time, hence this interfered with their program participation. It was noted that once the interns have been dispatched, rarely is there any monitoring and evaluation done by supervisors and implementers as follow-up. Further, they felt there is need for psycho-social support being offered to them.

To improve the internship program, young men and women observed that most interns were deployed in areas that did not match their expertise and recommended that skills matching to be considered during internship placement. Further, it was noted by both interns and those who were not successful that there is need for them to collaborate with government and public sector for more internship and job placement opportunities. Interns requested for certification after completion of the program to enable them get job opportunities.

b)Income Levels

We then proceeded to look at the impact of participating in the Public Service Internship Program on income levels. We first considered the income levels of respondents who had participated in the PSIP program (both genders) and were employed.

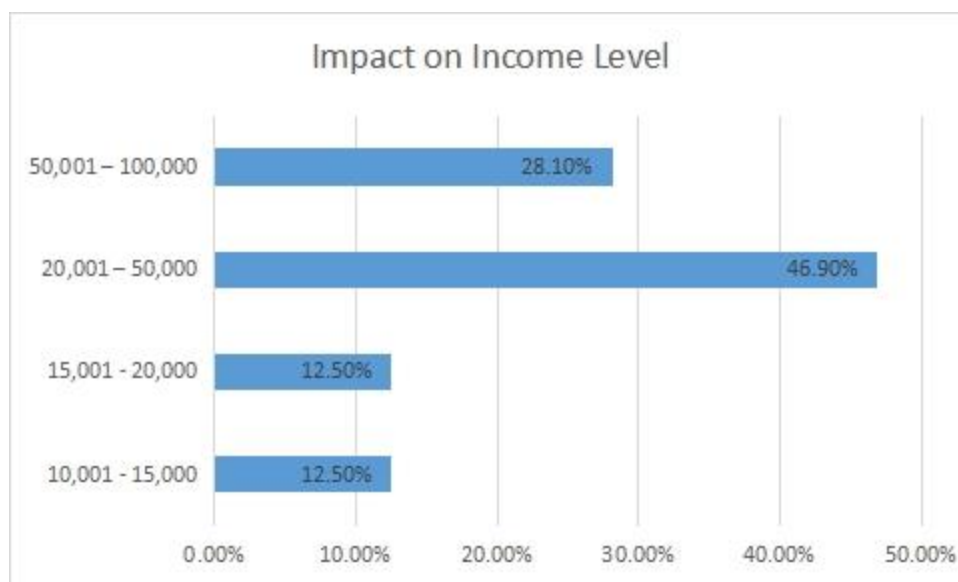


Figure 3: Impact of PSIP Program on Income Level

Data Source: Study Survey Data.

Figure 3 demonstrates that a majority (46.9%) of those who participated in the PSIP program and had gotten jobs had moderate income levels of between Ksh. 20,000 and Ksh. 50, 000 while 28.1% of them had income levels of between Ksh. 50,000 and Ksh. 100, 000. Only 25% had a lower income. Specifying the analysis to young women, Figure 4 presents the results.

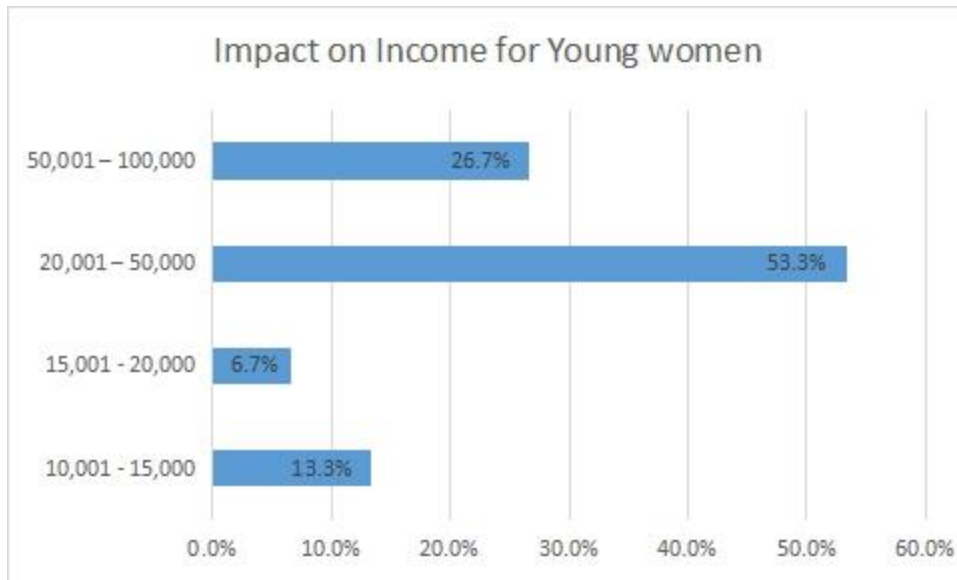


Figure 4: Impact of PSIP Program on Income Level for Young Women

Data Source: Study Survey Data.

For young women who had participated in the PSIP program, Figure 4 demonstrates that a majority (53.3%) of those who participated in the program and had gotten jobs had moderate income levels of between Ksh. 20,000 and Ksh. 50, 000 while 26.7% of them had income levels of between Ksh. 50,000 and Ksh. 100, 000. Only 20% had a lower income. This implies that the program was beneficial in empowering young women.

4.2. Kenya Youth Employment and Opportunities Program (KYEOP)

4.2.1 Quantitative Results

Descriptive Statistics

To better understand the effect of the Kenya Youth Employment and Opportunities Program on the employment of the youth in Kenya, the researcher first computed a summary of the study's quantitative data as presented in table 1.

Table 1: Sample Statistics for Key Variables (N=211)

	Number	Relative Frequency (%)
Participation in KYEOP		
Yes	121	57%
No	90	43%
Employment Status		
Employed	73	35%
Not Employed	138	65%

	Number	Relative Frequency (%)
Age		
Below 20 Years	8	4%
20 – 30 Years	189	90%
30 – 40 Years	14	6%
Marital Status		
Single	151	72%
Married	60	28%
Highest Level of Education		
Primary School	40	19%
Secondary School	138	65%
Diploma and Certificate	21	10%
Degree	12	6%
Grade Achieved		
Distinction (Grade A)	3	2%
Credit (Grade B)	24	11%
Pass (Grade C)	85	40%
Fail (Grade D and below)	99	47%

Source: Study Survey Data.

The data presented in table 1 captures a sample of 211 young women (129) and men (82); some of whom went through the KYEOP apprenticeship program (57%) and others who did not (43%). For the sampled respondents, 65% were not employed while 35% were employed. For the age bracket, 290% were in the 20 – 30 years bracket, 7% were aged between 30 and 40 years while 4% were below 20 years. A majority of the respondents in the study were single (72%). In terms of the highest level of education, those with primary school level of education were 40 (19%), those with secondary school level of education were 138 (65%), those with a diploma or tertiary level certificate were 21 (10%) while 12 (6%) had a degree. In their highest level of education, 99 respondents (47%) scored grade D (or its equivalent) and below, 85 respondents (40%) scored grade C (or its equivalent), 24 respondents (11%) achieved grade B (or its equivalent), while 3 respondents (2%) scored grade A (or its equivalent).

Regression Results

Further analysis of the data was carried out to establish relationships between the variables and assess the impact of participation in an apprenticeship program (KYEOP) on employment for young people (specifically young women) in Kenya. Table 2 presents regression results.

Table 2: Regression Results for the Apprenticeship Program Model

**The Linear
Probability Model**

Probit Model
Margins, dydx

Logit Model
Margins, dydx

Employment Status	Coefficient (t-statistic)	Coefficient (z-statistic)	Coefficient (z-statistic)
Gender (<i>f</i> = 1; <i>m</i> = 0)	-0.187*** (-2.84)	-0.177*** (-2.97)	-0.179*** (-3.07)
Participation (<i>Yes</i> = 1; <i>No</i> = 0)	0.465** (good) (2.59)	0.449*?? (2.23)	0.428**fine (2.23)
Highest Edu. Level	0.129 (1.43)	0.114 (1.43)	0.114 (1.46)
Primary Edu	0.278** (2.31)	0.266** (2.27)	0.262** (2.34)
Secondary Edu	0.165 (1.10)	0.144 (1.02)	0.147 (1.09)
Tertiary			
Marital Status (<i>m</i> =1, 0 <i>otherwise</i>)	0.137*** (3.55)	0.127*** (3.81)	0.126*** (3.91)
Participation*Age 20 – 30 yrs	-0.522*** (-2.97)	-0.427*** (-3.85)	-0.416*** (-3.86)
30 yrs and above	-0.399* (-1.68)	-0.347** (-1.95)	-0.332** (-2.01)
Constant	0.145 (1.11)	-	-
	Number of obs = 211	Number of obs = 211	Number of obs = 211
	F(8, 202) = 4.97	Wald chi2(10) = 26.60	Wald chi2(10) = 25.25
	Prob > F = 0.0000	Prob > chi2 = 0.0008	Prob > chi2 = 0.0014
	R-squared = 0.1297	Log pseudo-likelihood = -	Log pseudo-likelihood = -
	Root MSE = 0.45363	122.386	122.168
		Pseudo R2 = 0.1006	Pseudo R2 = 0.1022

Source: Study Survey Data.

***, **, * significant at 1%, 5% and 10% respectively.

Due to the nature of the dependent variable, a binary choice model was most applicable. However, for robustness in estimation, the study also estimated a linear probability model that confirmed the validity of the binary choice models. Results for the logit model (model with the best fit) demonstrate that gender is a significant factor that influences the employment status of young people in Kenya. Young men had a higher probability of being employed or being in self-employment than young women. This implies that young men have a higher probability of getting employment or creating an income generating activity than young women, as backed up by report

findings on “Global Employment Trends for Youth 2020” (International Labour Office, 2020) by International Labor Organizations.

Further, the results indicate that those who participated in the KYEOP program had a higher probability of getting employed or starting an income generating activity than those who did not. Although the specification does not yield an absolute finding on this variable, the result implies that participation in the apprenticeship program enables the youth to acquire technical skills and other advantages, such as networking and acquisition of soft skills (such as honesty, resilience, product presentations) which help them to be placed in an income generating activity relative to their counterparts who did not participate.

The results also show that the participants who were married had a better chance of being employed than those that were not married. This could imply that those who are married whether men or women are more committed to seek for employment so as to meet their family obligations compared with their counterparts.

For the level of education, those that had a secondary school certificate had better chances of being employed relative to those that did not complete primary level education. The interaction variable for participation and age indicate that those who participated in the apprenticeship program and were older than 20 years had a lower chance of being employed or engaging in an income generating activity than those that were aged less than 20 years. This being an apprenticeship program, participants are equipped with vocational skills, an aspect that younger persons embrace better and are motivated to utilize the acquired skills than those who are older. It is worth noting that the society is more receptive to releasing young men for apprenticeship programs compared to young women. This mindset is slowly changing and it needs to be accelerated to give young women opportunities in apprenticeship sector so as to expand their space in the job market.

4.2.2 Qualitative Analysis

a) Employment Outcomes

Figure 1 shows the employment outcome for all respondents in the study. The respondents were young women and men.

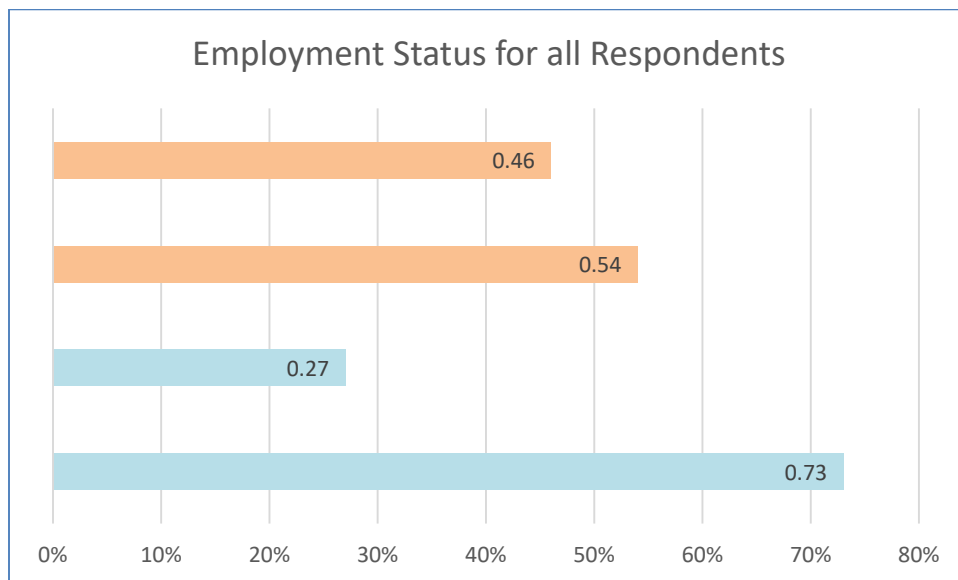


Figure 1: Employment Status for all Respondents

Data Source: Study Survey Data.

Figure 1 compares the employment status of young women and young men who participated in the survey. The figure includes those who went through KYEOP and those who did not. Generally, more young men (46%) were employed than young women (27%). This may be an indication of the fact that young men may be more aggressive in seeking for earning opportunities than the young women. Qian & Qian (2015) associates such aggression to the fact that young men socially seen to be breadwinners in their families.

The study further explored the impact of KYEOP on the employment outcome of young women and young men as demonstrated in figure 2.

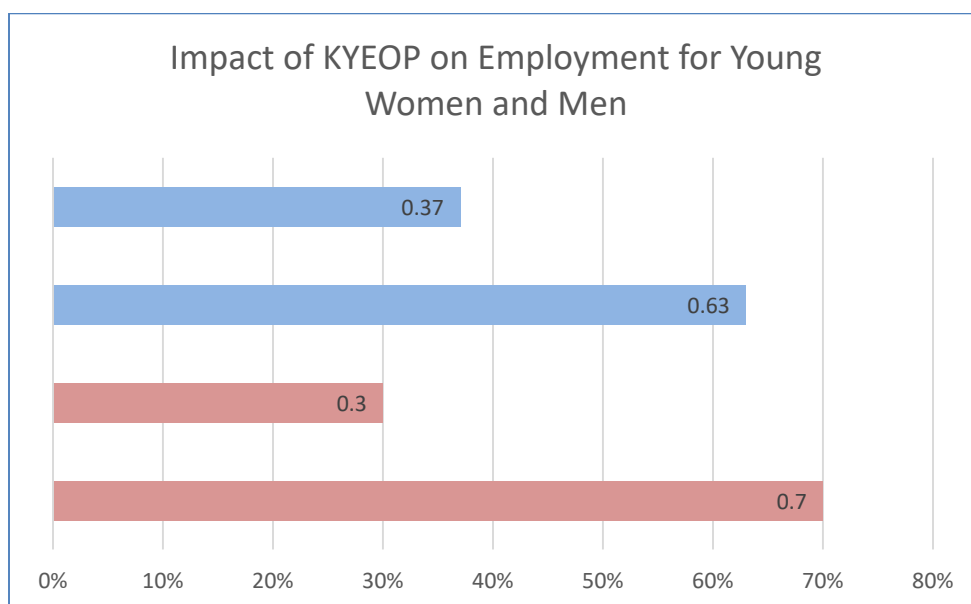


Figure 2: Employment Status for KYEOP Graduates

Data Source: Study Survey Data.

As depicted in figure 2, for the respondents who went through KYEOP, more young men (37%) are employed compared to young women (30%). These results compare favorably with those presented in figure 1. It is therefore evident that regardless of participation in the KYEOP program, young men perform better than young women in securing employment. Looking at figure 1 and figure 2, it is evident that KYEOP reduces the proportion of young women who are unemployed from 73% to 70%.

Table 3: Relationship between the Highest Level of Education Attained and Employment Outcome

	Employed	Not Employed	Row Total
Primary	8 28.6 22.9	20 71.4 21.3	28
Secondary	23 27.4 65.7	61 72.6 72.6	84
Certificate and Diploma	3 27.3 8.6	8 72.7 8.5	11
Degree	1 16.7 2.8	5 83.3 5.3	6
Column Total	35	94	129

Source: Notes: Study Survey Data.

The first value in a cell indicates the actual number of young women. The second value in a cell gives row percentages while the third value in a cell gives column percentages.

From table 3, a majority of the respondents in all education levels were not employed. For those who had primary level education, 71.4% were not employed, 72.6% of those with secondary education, 72.7% with certificate and diploma and 83.3% of those with a degree were not employed.

The study further sought to analyze the impact of education levels on employment outcome. This is presented in table 4.

Table 4: Relationship between Grade Achieved and Employment Outcome

	Employed	Not Employed	Row Total
Mean Grade A (Equivalent)	1 50 2.9	1 50 1.1	2
Mean Grade B (Equivalent)	4 33.3 11.4	8 66.7 8.5	12
Mean Grade C (Equivalent)	12 26.7 34.3	33 73.3 35.1	45
Mean Grade D (Equivalent)	18 25.7 51.4	52 74.3 55.3	70
Column Total	35	94	129

Source: Survey Data (2022)

Notes: The first value in a cell indicates the actual number of young women. The second value in a cell gives row percentages while the third value in a cell gives column percentages.

Table 4 demonstrates that higher grades have a better chance of yielding better employment outcomes. For those who had a mean grade of A (or its equivalent), 50% were employed, 33.3% of those with grade B (or its equivalent) were employed, 26.7% of those with grade C (or its equivalent) were employed while 25.7% of those with grade D were employed. It therefore means that the better the mean grade, the better the chance of being employed. In his analysis, Salas-Velasco (2007), notes that, the quality of education, highest grades achieved and socioeconomic background bear a critical relationship to the probability of securing a job.

b) Income Levels

In this sub-section, the study sought to analyze the impact of participating in the KYEOP apprenticeship program on income levels.

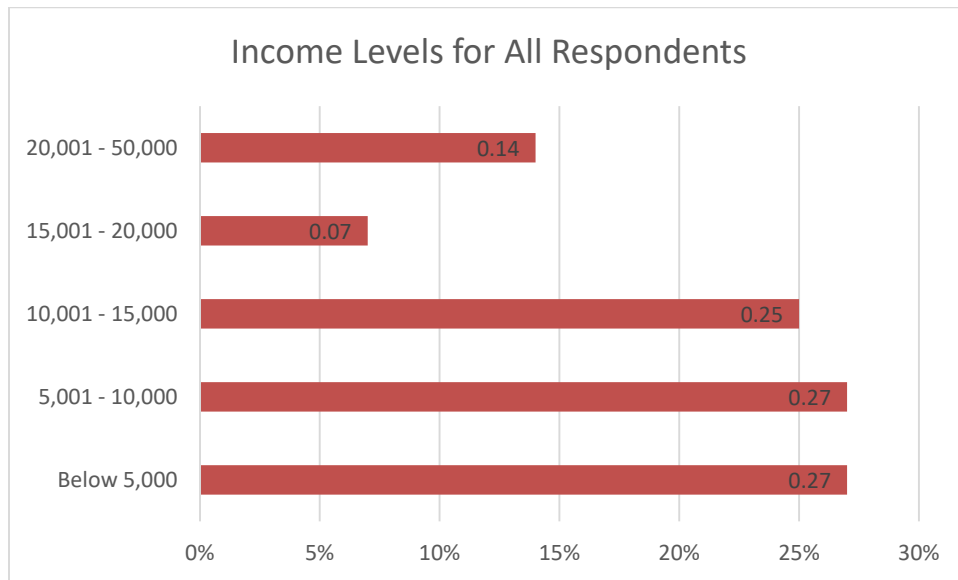


Figure 3: Income levels for all respondents

We first considered the income levels for all respondents as presented in figure 3. No respondent earned more than Ksh.50,000 per month, fourteen percent (14%) earned between Ksh.20,000 and Ksh.50,000, seven percent (7%) earned between Ksh.15,000 and Ksh.20,000, twenty five percent (25%) earned between Ksh.10,000 and Ksh.15,000, twenty seven percent (27%) earned between Ksh.5,000 and Ksh.10,000 while twenty seven percent (27%) earned below Ksh.5,000. This analysis reveals that more than half of the respondents earned less than Kshs. 10,000.

Income Levels for those who went through KYEOP

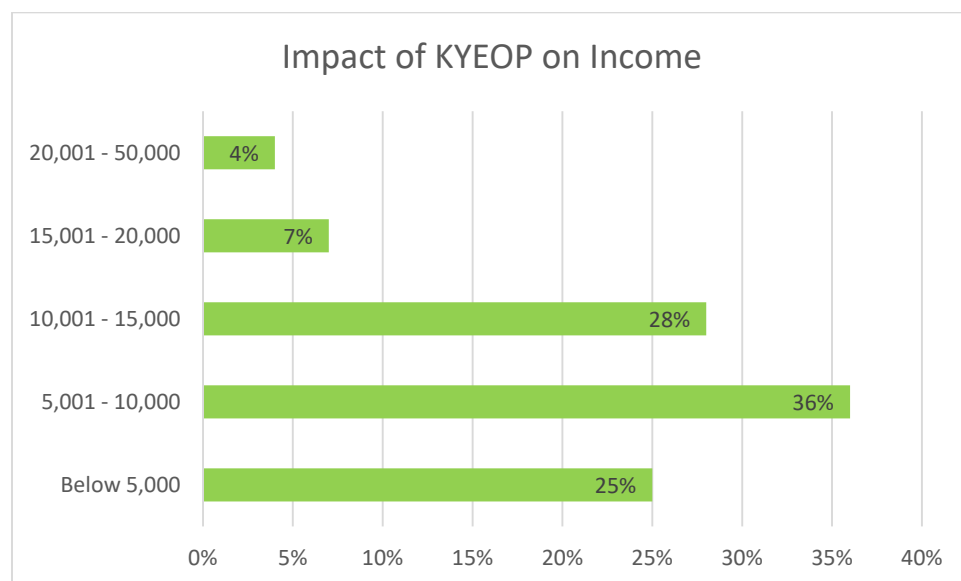


Figure 4: Income levels for respondents who went through KYEOP

For those who went through KYEOP, four percent (4%) earned between Ksh.20,001 and Ksh.50,000, seven percent (7%) earned between Ksh.15,001 and Ksh.20,000, twenty eight percent (28%) earned between Ksh.10,001 and Ksh.15,000, thirty six percent (36%) earned between Ksh.5,001 and Ksh.10,000 while twenty five percent (25%) earned below Ksh.5,000. This analysis reveals that 61% of the respondents who had gone through KYEOP earned less than Kshs. 10,000, compared to 54% of all respondents.

Table 5: Gender Comparisons for Income Levels for respondents who went through KYEOP

	Young Women	Young Men	Row Total
Below Ksh. 5,000	3 43 21	4 57 29	7
Ksh. 5,001 – Ksh. 10,000	4 40 29	6 60 43	10
Ksh. 10,001 – Ksh. 15,000	6 75 43	2 25 14	8
Ksh. 15,001 – Ksh. 20,000	1 50	1 50	2

	7	7	
Ksh. 20,001 – Ksh. 50,000	0 0 0	1 100 7	1
Column Total	14	14	28

Source: Study Survey Data.

Notes: The first value in a cell indicates the actual number of young women/men. The second value in a cell gives row percentages while the third value in a cell gives column percentages.

Table 5 demonstrates that young men have a higher probability of earning higher levels of income than young women. The table shows that none of the young women earned more than Ksh. 20,000 while one young man earned it. However, a majority of the young women earned between Ksh.10, 001 and Ksh.15, 000 while a majority of the young men earned between Ksh.5, 001 and Ksh.10, 000. Only 1(100%) male beneficiary reported to be earning a salary of between Ksh. 20,001 and Ksh. 50,000. Upon further interrogation, it was established that the respondent had attained a University degree by the time he was joining KYEOP. He managed this by concealing his rightful education status. This is a demonstration of the level of desperation and frustration facing the young people. The same scenario was also noted among the other 3-degree holders. They argued that they were generally attracted by the stipend given in the program.

Table 6: Relationship between the Highest Level of Education Attained and Income Level

	Below 5,000	5,000 - 10,001	10,001 - 15,000	15,001 - 20,000	Row Total
Primary and below	2 100 67	0 - -	0 - -	0 - -	2
Secondary	1 12 33	4 44 100	4 44 67	0 - -	9
Certificate and Diploma	0 - -	0 - -	2 67 33	1 33 0	3
Degree	0 - -	0 - -	0 - -	0 - -	0
Column Total	3	4	6	1	14 (few)

Source: Study Survey Data.

Notes: The first value in a cell indicates the actual number of young women/men. The second value in a cell gives row percentages while the third value in a cell gives column percentages.

Table 6 demonstrates that education level is a determinant of the income level for young women who have gone through the KYEOP apprenticeship program. Evidence by Adeosun & Owolabi (2021), agrees that, tertiary level of education provides a better chance of higher returns as compared to lower levels of education for women. All the sampled young women whose highest level of education was primary school were earning a monthly income of below Ksh. 5,000. For those whose highest level of education was secondary school, 44% were earning between Ksh. 10,001 and Ksh. 15,000; similarly, 44% were earning between Ksh. 5,001 and Ksh. 10,000, while 12% were earning below Ksh. 5,000. For the holders of certificate and diploma, 67.7% were earning a monthly income of between Ksh. 10,001 and Ksh. 15,000 while 33.3% were earning a monthly income of between Ksh. 15,001 and Ksh. 20,000. There were no sampled young women who were holders of a degree. This demonstrates that higher levels of education attracted higher monthly incomes for the young women who had gone through the KYEOP apprenticeship program. This a significant finding which can be used to encourage more women to aspire to join an apprenticeship program; especially those with degree certificates, for this would enhance the chance for better incomes.

Table 7: Grade Achieved and Income Level

	Below 5,000	5,001 10,000	10,001 15,000	15,001 – 20,000	Row Total
Mean Grade A (Equivalent)	0 -	0 -	1 100	0 -	1
Mean Grade B (Equivalent)	0 -	0 -	1 50	1 50	2
Mean Grade C (Equivalent)	1 25	1 25	2 50	0 -	4
Mean Grade D (Equivalent) and below	1 17	3 50	2 33	0 -	6
Column Total	2	4	6	1	13 (too few)

Source: Study Survey Data.

Notes: The first value in a cell indicates the actual number of young women. The second value in a cell gives row percentages

The grade achieved at the highest institution of learning was also a factor that influenced the income level for young women (Rose, 2006). Those who had a mean grade of B (or its equivalent) and above earned a monthly income of more than Ksh. 10,000. A majority of those who scored a mean grade of C (or its equivalent) and below earned less than Ksh. 10,000

Despite the challenges associated with the program a section of the focus group agreed that the skills gained under KYEOP are already giving them an income, this was especially for the ones who took technical courses like plumbing and electrical wiring. Further, 81percent attested that the program helped them achieve their goals and career path as well as realize their hidden potential that assists them in expanding and enriching their lives. Additionally, the study revealed that

majority 10(23.3%) of the respondents in KYEOP program were working in business sector, 8(18.6%) in hairdressing & beauty, 6(14.0%) Hospitality whereas 4(9.3%) were in agriculture and training while others were in sales marketing, plumbing, Energy, Juakali, manufacturing among others. However, 17(23.6%) of them were business owner especially in (manufacturer, Mpesa service provider, photographer, saloons, green grocery, fruit vendor, agribusiness, hairdresser, beautician.

In this regard, the KYEOP young men and women respondents felt that more women need to be sensitized to take up technical courses and that youth employment should not be politicized. Besides, many of them expressed their frustrations and said that they never got certificates. They suggested that there is need to collaborate with certification bodies for example, TVET, Vocational training centers program, recognition of prior learning and sensitization of the public on prior learning policy actualization. They suggested that there is a need of an app to link graduates with job market. They expressed the need for provision for seed money/capital to start businesses.

For the KYEOP policy makers, implementers and supervisors they agreed with what the young men and women said during the FGDs and view that the young women needed to be sensitized to take up technical courses. Moreover, they attested that there is need to ensure accreditation for graduates' recognition. Additionally, they also felt that there is need for monitoring and evaluation of the program to establish if it meets the intended objectives. They alluded that the development of a program is essential to make visible performance for showcasing exceptional talents in all the programs e.g. best mechanic of the year is important, and to ensure youth and gender mainstreaming in all spaces of training and employment.

Through the focus group discussions, respondents highlighted several challenges that they encountered. Among them they felt that the program was very competitive with about 12,000 applicants. Certification was an issue since majority of them didn't get and attrition of the participants existed. There are still gender stereotypes that prevail in KYEOP industry for placing women. In this regards, some respondents felt that women in plumbing are disadvantaged because they have no physical strengths, while men in hairdressings are said to be in the wrong occupation. Hence stereotyping need to be deconstructed. Further, respondents felt that there is need for a follow up after KYEOP internship which was missing. There was no coordination between the service providers and certifying body. The FGDs recommended graduation ceremony as a way of improving the program. There are malpractices in recruitment and employment which are disadvantaging the youth depending on the factors in play e.g. ethnicity, religion, gender among others. They also unanimously agreed that lack of seed capital for businesses startup was a challenge. Gender discrimination in employment, abuse and misuse of women was reported as well as communication breakdown and information gap. This needs to be addressed to protect women as they pursue their career goals

To express their frustrations, a respondent said that, "no one cares for us". It is observed that the participants are not conversant with the model that they are undertaking since it is aimed at employing themselves and not to join the formal employment. Another section of FGDs agreed that the timeline provided for the curriculum content to be covered is not in tandem. This is because it was too loaded. Both providers and recipients felt that the content needed more time to be adequately covered. It was noted with concern that some centers didn't have adequate infrastructure and therefore, they felt that they didn't acquire the desired skills. Apprentices

expressed dissatisfaction with trainers who didn't have adequate skills to deliver the desired skills. Given the fact that some organizations were below the expected standards. To some, the course was not related to the introduction courses. Others confessed that the communication span after admission to the program was too short; it was opined that a message was sent a night before one was expected to report the following day.

Despite the fact that application is online, those with the digital knowledge and purporting to help the needy are exploiting those without the skills. This is because some participants do not have the required digital literacy. Cases of lack of sufficient skills and confidence in handling technical business such mechanics and electrical wiring also came out as a hindrance to self-employment among KYEOP graduates. In addition, government policies such as high taxation also came up as a hindrances to self-employment while some youth fail to engage in self-employment due to fear and lack of self-confidence.

4.2. UNESCO STEM Government of Kenya Program Results and Discussion

For a better understanding of our data, a summary of the study's quantitative data was computed and presented in table 1.

Table 1: Sample Statistics for Key Variables (N=177)

Variable	Number	Relative Frequency (%)
Participated in STEM		
Yes	81	46%
No	96	54%
Employment Status		
Employed	25	14%
Not Employed	148	86%
Age		
Below 25 Years	154	87%
26 - 35 Years	22	12%
Above 36 Years	1	1%
Marital Status		
Single	163	92%
Married	14	8%
Highest Level of Education		
Secondary Education	103	59%
Certificate	28	16%
Diploma	13	8%
Degree	30	17%
Course Taken at College		
Humanities	17	10%
Business	20	11%
STEM	44	25%

None	96	54%
Grade Achieved		
Grade A (Equivalent)	22	13%
Grade B (Equivalent)	80	49%
Grade C (Equivalent)	45	28%
Grade D (Equivalent)	17	10%
Promotion		
Promoted	9	36%
Not Promoted	16	64%
Income		
5,000 - 10,000	3	17%
10,001 - 15,000	3	17%
15,001 – 20,000	2	11%
20,001 – 50,000	6	33%
50,001 – 100,000	3	17%
100,001 – 200,000	1	5%
Sector of Employment		
In STEM	9	53%
Not in STEM	8	47%

Source: Author Computations

The data presented in table 1 captures a sample of 177 respondents (all females), who went through the STEM Kenya Mentorship Program (46%) and some who did not go through the program (54%). For the sampled respondents, 14% were employed while 86% were not. For the age bracket, 87% were below 25 years, 12% were in the 26 – 35 years bracket while 1% were above 36 years. Ninety two percent (92%) of the respondents in the study were single while 8% were married. In terms of the highest level of education, those with secondary level education were 103 (59%), those who had a Certificate or Diploma were 41 (24%) while 30 (17%) had a degree. Considering all the respondents, 17 (10%) had taken a course in humanities, 20 (11%) undertook a course in business while 44 (25%) undertook a course in STEM; however, 96 (54%) respondents were holders of a secondary school certificate with no post-secondary school qualification. In their highest level of education, 22 respondents (13%) had a mean grade of A (or its equivalent), 80 respondents (49%) achieved a mean grade of B (or its equivalent), 45 respondent (28%) achieved a mean grade of A (or its equivalent), while 17 respondent (10%) scored a D (or its equivalent). Of the 25 respondents who were holding an employment position, 9 (36%) had been promoted at the time of the survey while 16 (64%) had not been promoted. In terms of income, 17% of the respondents had an income of less than Ksh. 10,000, 61% had an income of between Ksh. 10,001 and Ksh. 50,000 while 22% had an income of above Ksh. 50,000. For those who were working, 53% were in a STEM related sector, while 47% were not in a STEM related sector. However, it should be noted that most of the STEM beneficiaries were still in college and hence, their income levels were not applicable

Career Choice

The study first considered the course taken at college. Figure 2 presents the career path chosen by all the respondents who went through tertiary level education.

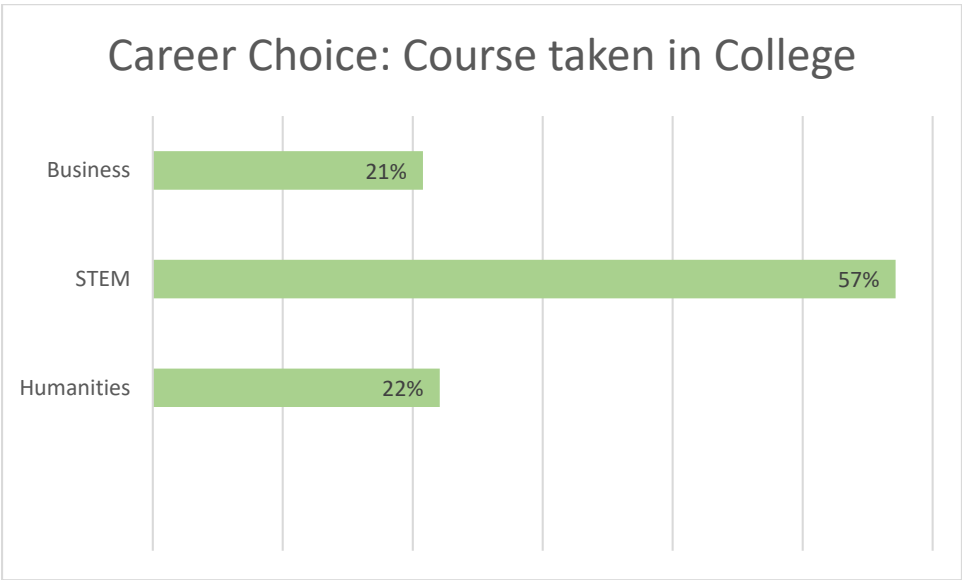


Figure 2: Career Choice
Data Source: Study Survey Data.
N = 77

From figure 2, ten percent (21%) chose to pursue a business related course, 57% chose a STEM course while 22% pursued a humanities course in college. Those who had not yet enrolled for college were not captured in this analysis. We then proceeded to ascertain career choice for the 81 respondents who had gone through the STEM Kenya mentorship program. Figure 3 presents the outcome.

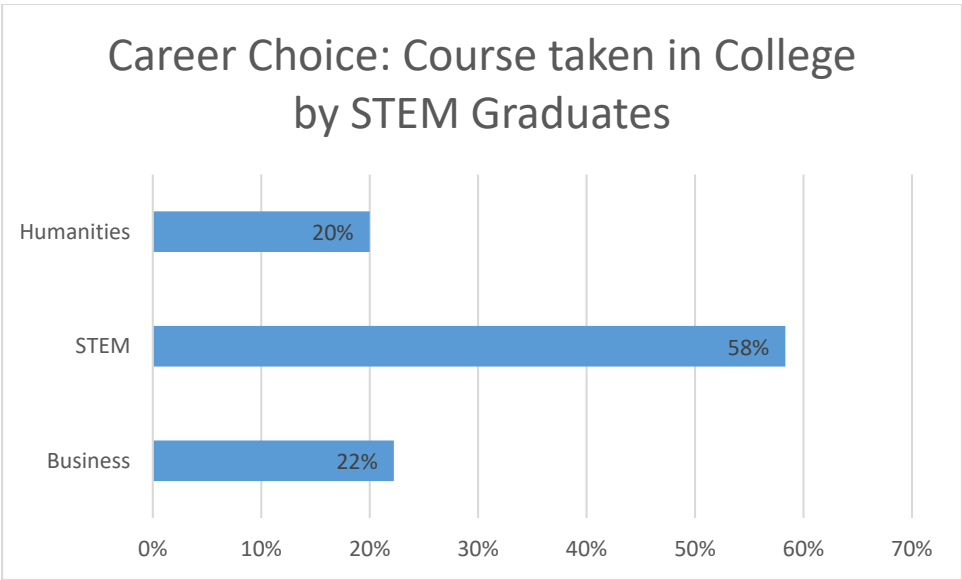


Figure 3: Career Choice for STEM Graduates
Data Source: Study Survey Data.

N = 36

The results presented in figure 3 (career choice for STEM graduates) are largely similar to the results in figure 2 (career choice for all graduates). For a clearer picture, we compared these results with the analysis done for those who did not go through the STEM Kenya mentorship program as presented in figure 4.

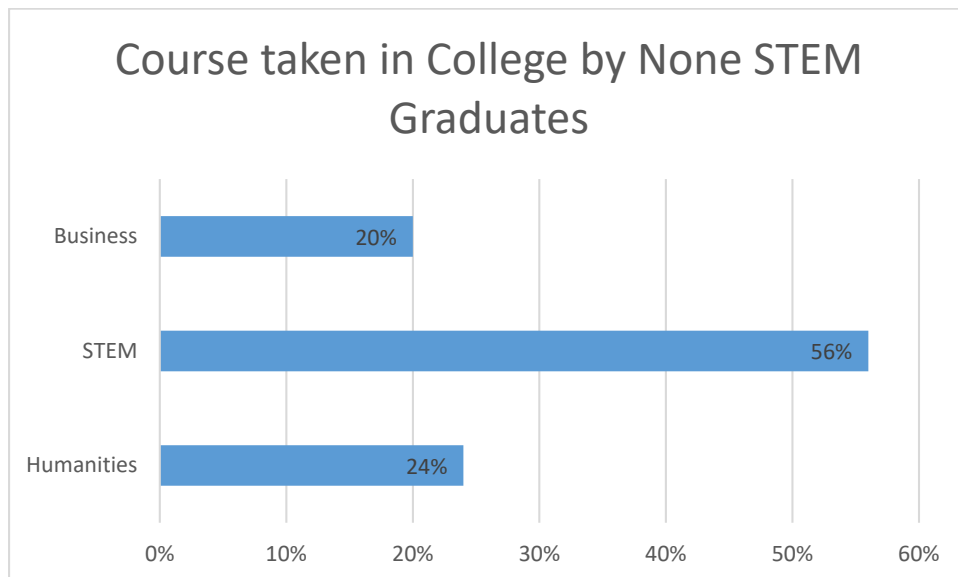


Figure 4: Career Choice for None-STEM Graduates

Data Source: Study Survey Data.

N = 41

Results presented in figure 4 are also similar to the results presented in figure 3. From the findings in figure 2, figure 3 and figure 4, there is little evidence to indicate that the STEM Kenya mentorship program influences career choice in favour of STEM related fields for young women in Kenya.

Respondents were asked to mention how the STEM program has influenced their career choices and the responses were analyzed as shown in table 2.

Table 2: How has the STEM program influenced career choices.

	n	%
Gain self-confidence to pursue STEM courses	9	20.5
Gives great exposure to role model other women excelling in STEM careers	7	15.9
Gives young women platform to make informed decisions	6	13.6
Increased interested and created positive attitude towards STEM courses among young women	6	13.6
visits gave insights on practical applications of science gave insights on opportunities for employment	6	13.6
information on career choices and how to match with my abilities and passion	4	9.1

Information provided was useful in identification of career paths and matching with my interests and capabilities	3	6.8
Gives great exposure to role model & other women excelling in STEM careers	2	4.5
STEM has increased the chance of bringing a third gender rule	1	2.3
Total	44	100.0

Majority of the respondents 20.5% reported that they had gained self-confidence to pursue STEM courses; i.e that young women were now courageous to pursue male dominated courses. 15.9% of them said that it gives great exposure to role model other women excelling in STEM careers i.e. the program exposed young women to interact with other women who were excelling well in STEM careers also exposed young women to employment opportunities/job market. It was worth noting that 13.6% of the respondents felt that STEM program gives young women platform to make informed decisions i.e. in major activities like education, economics, and provision of health care among others. The program gave them a guide, exposure and options that would help them in decision making. Another 13.6% of the respondents reported that the visits they made through the STEM program gave them insights on practical applications of science subjects that gave insights on opportunities for employment; that these visit to institution of higher learning ad industry gave them exposure to job market and application of science. It was clear that a further 13.6% of the respondents positively felt that the STEM program increased interest and created positive attitude towards STEM courses among young women. The mentorship STEM program has sensitized the girls have a change of attitude especially to girls who always believe STEM is reserved for men or the boy child. Others felt that STEM program gave them information on career choices and how to match them with their abilities and passion. Finally STEM had increased the chances of bringing a third gender rule to fulfillment.

The FGDs who were successful to join the internship program also admitted that there were varied skills which were helpful and were gained in STEM. Some of the skills mentioned were: to be organized, team playing and self-discipline skills. Additionally women who trained them also impacted on their career lives. Nevertheless, the groups indicated that most ladies have an impostor syndrome where they tend to have a feeling of inadequacy as compared to men. That they also give up easily and most they lack patience and end up withdrawing in these courses leaving the boy child to dominate. They suggested that there should be a consolidation of STEM mentees and those pursuing science related courses to make it more impactful as well as the formation of Stem mentorship groups where they can meet and encourage one another It is possible that the observations made about young women could be based on stereotypes rather than empirical data. This is an area which requires further research

Employment Outcome

It is important to note that the STEM mentorship program focused on young women only and thus excluded older women. All the respondents were unemployed before undertaking the STEM Kenya mentorship program, which is an advantage to the study as it acts as a control.

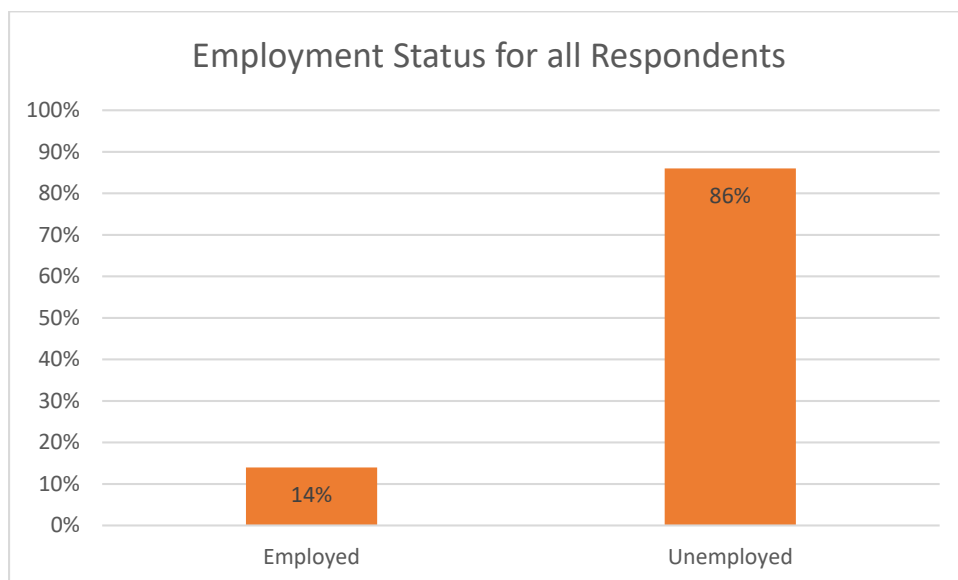


Figure 5: Employment Status for all Respondents

Data Source: Study Survey Data.

N = 177

The analysis in figure 5 demonstrates that 14 percent of all the respondents were employed while 86 percent were unemployed. This result is not surprising since a majority of the respondents (59%), as demonstrated in table 1, had no tertiary level qualification. Figure 6 presents results for respondents who had tertiary level education.

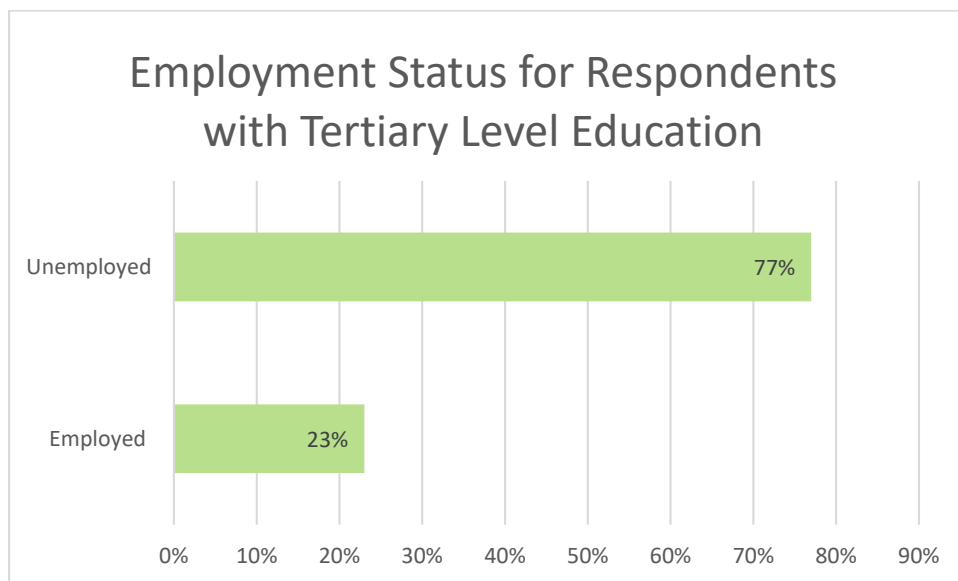


Figure 6: Employment Status for Respondents with Tertiary Level Education

Data Source: Study Survey Data.

N = 69

As indicated in figure 6, the result for those with tertiary level education is marginally better than the result for all respondents. This implies that tertiary level education had a marginal effect on

the employment outcome of young women in Kenya. Further the analysis considered the employment status of those that went through the STEM mentorship program and had tertiary level education as presented in figure 7.

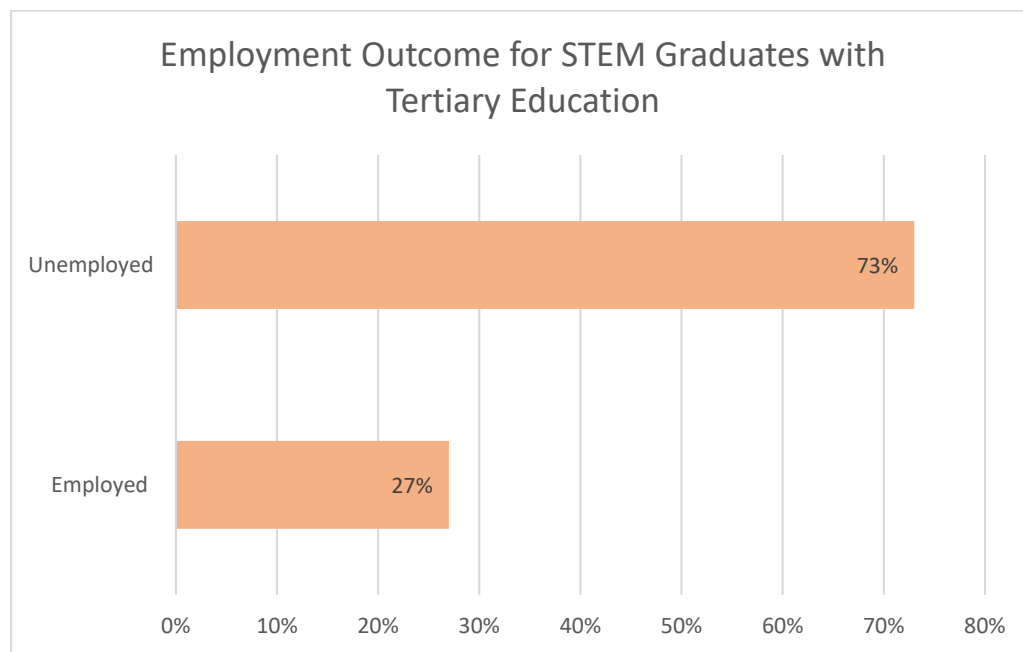


Figure 7: Employment Status for STEM Graduates with Tertiary Level Education

Data Source: Study Survey Data.

N = 30

Figure 7 shows that 27 percent of STEM graduates who had tertiary level education were employed while 73 percent were unemployed. Comparing the results in figure 6 and 7, it can be deduced that the contribution of the STEM mentorship program to the employment status of young women in Kenya is minimal.

Income Level

The study sought to analyze the impact of participating in the STEM apprenticeship program on income levels. The study first considered the income level for all the sampled young women who declared their monthly income. The income levels were analyzed after the participants had undertaken the STEM mentorship program.

Table 3: Income Levels for Sampled Young Women (N = 18)

Monthly Gross Salary in Ksh. (Range)	Frequency	Percentage	Cumulative Percentage
5,000 – 10,000	3	16.7%	16.7%
10,001 – 15,000	3	16.7%	33.4%
15,001 – 20,000	2	11.1%	44.5%

20,001 – 50,000	6	33.3%	77.8%
50,001 – 100,000	3	16.7%	94.5%
100,001 – 200,000	1	5.5%	100.0%

Data Source: Study Survey Data.

Table 3 demonstrates that 44.5 percent of the respondents with an income had an income of between Kshs. 5,000 and Ksh. 20,000. Interestingly, 33.3 percent of the respondents had an income of between Ksh. 20,001 and Ksh. 50,000 (largest income group) while 22.2 percent were in the Ksh. 50,001 – Ksh. 200,000 range. This table therefore demonstrates that a majority of the respondents who were earning had an income of more than Ksh. 20,000. A comparison was then done for the income levels of all the respondents who reported their income and those that went through the STEM programme.

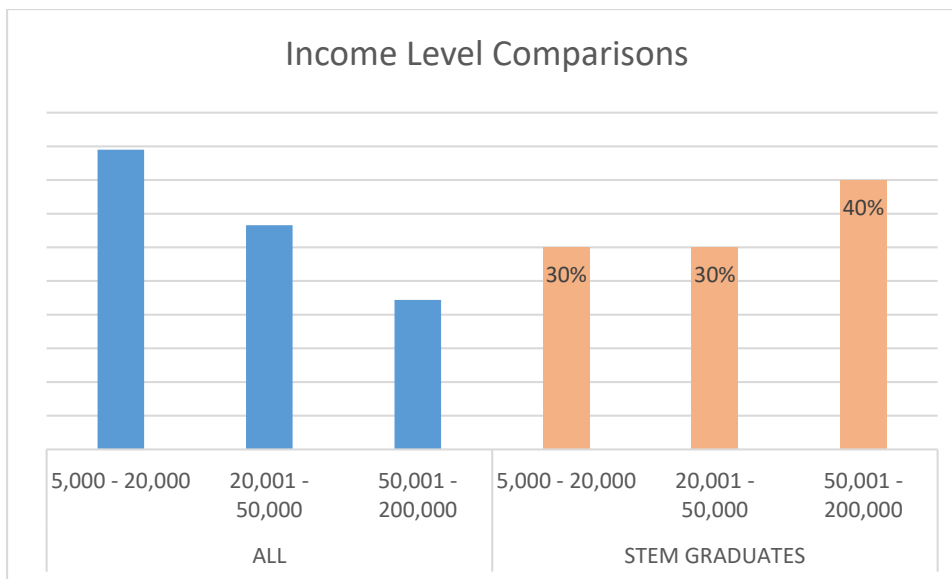


Figure 8: Income Level Comparisons

Data Source: Study Survey Data.

N (ALL) = 18

N (STEM GRADUATES) = 10

Figure 8 demonstrates that respondents who went through the STEM program had their income levels skewed to the right (had higher income levels) than in the general scenario where all respondents are considered. Moreover, STEM graduates with income levels between Ksh. 5,000 and Ksh. 20,000 (lower income) were 30 percent compared to 44.5% when all are considered. It is therefore evident from this analysis that the STEM program has a positive impact on the income level of young women.

Finally, the study explored the relationship between highest level of education attained by the respondents and the level of income as presented in table 3.

Table 4: Relationship between the Highest Level of Education Attained and Income Level

	5,000 - 10,001	10,001 - 15,000	15,001 - 20,000	20,001 – 50,000	50,001 – 200,000	Row Total
Secondary	1 20 33	2 40 67	0 - -	1 20 16.5	1 20 25	5
Certificate	0 - -	1 50 33	1 50 50	0 - -	0 - -	2
Diploma	2 40 67	0 - -	1 20 50	1 20 16.5	1 20 25	5
Degree	0 - -	0 - -	0 - -	4 67 67	2 33 50	6
Column Total	3	3	2	6	4	18(few)

Source: Authors Computations from Study Survey Data

Notes: The first value in a cell indicates the actual number of young women/men. The second value in a cell gives row percentages while the third value in a cell gives column percentages.

Table 4 demonstrates that education level is a determinant of the income level for the sampled young women. Sixty percent (60%) of the sampled young women whose highest level of education was secondary school were earning a monthly income of less than Ksh. 15,000. For those whose highest level of education was certificate, 50% were earning between Ksh. 10,001 and Ksh. 15,000; similarly 50% were earning between Ksh.15, 001 and Ksh. 20,000. For the holders of a diploma, 40% were earning a monthly income of between Ksh. 15,001 and Ksh. 50,000 while 20% were earning a monthly income of between Ksh. 5,001 and Ksh. 200,000. All the sampled young women who were holders of a degree were earning between Ksh. 20,001 and Ksh. 200,000. This demonstrates that higher levels of education attracted higher monthly incomes for the young women in Kenya.

Table 5: How scope has broadened respondent's employment opportunities

	n	%
STEM helped me choose a course that is marketable thus enhanced my employability opportunities	42	68.9
STEM gave us exposure to career paths and employment opportunities	9	14.8
I gained confidence, experience, leadership & life skills through the programme	6	9.8
It gave me a chance for internship	2	3.3

It has given me the motivation to mentor other scholars to be the best in the society	1	1.6
The mentorship experience helped me to identify how I can give back to my county especially in disease prevention gave them a chance for internship	1	1.6
Total	61	100.0

Table 5 shows that out of 77.8% of the respondents who reported that the scope had broadened their employment opportunities 42(68.9%) of them reported that STEM program helped them to choose a course that was marketable thus enhancing their employability opportunities especially in the following ways; that through STEM program they were able to select a career in medicine and surgery which is marketable in Kenya, that the program exposed them to diverse opportunities, that the exposure broadened their thinking and made them be inclined to STEM courses, that STEM enabled them to pursue a career in science that will increase their chances in the competitive science industry,

Further, 14.8% of the respondents reported that the STEM program gave them exposure to career paths and employment opportunities; for example the exposure made them more aware about self-employment and enabled them to network. Other respondents reported that the STEM program helped them to gain confidence, experience, leadership & life skills; it helped them motivate and mentor other learners to be the best in the society, gave them a chance for internship and helped them to identify how they could give back to their county especially in disease prevention.

However, another section 31.1% of the respondents who had attended STEM program said that it did not broadened their employment opportunities because; they had not gotten a job related to the course they took (analytical chemistry), they were not yet employed, and they had no connection with any STEM mentors who could help in them securing employment opportunities, they were not offered certificate to show they had attended the program and therefore it did not directly impacted on employment possibilities and that more information about employment opportunities should be given. Others said that the program helped them in career choice when they were joining campus.

Asked whether they had joined professional bodies, the respondents said that lack of awareness of professional accreditation bodies and the fact that most respondents had not finished school were reported as the main reasons as to here most respondents were not members of professional accreditation bodies. For example those who were not aware of any professional body were 62(41.6%) and those who promised to join after school were 51(34.2%)

Policy makers and Policy Implementers felt that more science women teachers should be trained to train the young high school women and also act as their role model. Additionally, the program is expensive and difficult to mount due inadequate funding. This implication is that, fewer number of young women are taken into the program. Besides, they had opinion on sustainability that due to the nature of the program requirement, there is need for the government to adopt the program for sustainable implementation beyond the donor funding. The finding agreed with the other programs respondents that provision for seed money to start businesses would be a solution to

unemployment while both trainees and policy implementers attested that there is need to ensure accreditation for graduates for recognition

The policy implementers' highlighted some of the challenges as shortage of trainers and unmet needs of targeted beneficiaries. They observed that there are eight thematic areas that focus on STEM and having them attended to in the training is not easy. The time is too short and therefore there was need to extend the training period. Culture religion and gender stereotypes are still key in having negative key impact on promotion of women in STEM.

4.3 What Works?

The study observed that all the programs are meeting their intended objectives of enhancing employment among the youths, however, there is a lot of high unemployment in the country. Respondents gave several reasons of causes of unemployment as lack of capital to start businesses, corruption, poor economic performance of the country and lack of proper networking skills by these youths. Further, there exists high level of corruption, tribalism, nepotism during recruitment and lack of experience. Most of the university graduates in the FGDs recommended that students should be prepared and be equipped with self-employment skills as opposed to formal employment expectations. They said that the effects, there are high cases of depression, alcoholism, and drug abuse coupled with hopelessness among other psychosocial problems. However, according to the respondents, some of the most possible solutions are: introduction of policies and friendly mechanisms that ensure that the youth get starting capital to start businesses and training can improve their lives. Both national and county governments are urged to provide guidance and mentorship systems and to initiate youth entrepreneurship training programs and provide capital support to the graduates of the programs to enable them to start businesses.

5. 0. Conclusion

5.1 Public Service Internship Program (PSIP)

The study sought to establish the effect of the Public Service Internship Program on employment of young women in Kenya. To achieve this, the study used both qualitative and quantitative analytical approaches. Despite the fact that the program is working, the results indicate that young men had a higher probability of being employed than young women. The study also found that participants in the internship program were more likely to get a job placement than those who did not participate in the internship program. The study also found that the grade attained at the highest level of education had a significant impact on the employment status of young men and women in Kenya; those with better grades had a higher chance of being employed than those with lower grades. The analysis further demonstrated that more young people were placed in the services sector than any other sector; the highest number being those that took a STEM course. This reveals the limited nature of the productive sector to absorb STEM graduates. Finally, the study found that a majority of the young women who had participated in the public service internship program and

had gotten jobs, had moderate to high income levels. This reveals the economic empowerment attribute of the program.

5.2 KYEOP Conclusion

In evaluating the effect of the KYEOP work readiness program in combating the high rate of youth unemployment from a gender perspective, the following conclusions were made; the program is working however, young men have a higher probability of being employed or being in self-employment than young women. Those who completed their academic studies in earlier years had a higher probability of being in an employment position than those that completed in recent years. Higher grades have a better chance of yielding better employment outcomes and young men have a higher probability of earning higher levels of income than young women. It also emerged that the participants who were married had a better chance of being employed than those that were not married.

5.3 UNESCO STEM Government of Kenya Mentorship Program Conclusion

The current study analyzed the impact of STEM mentorship program on women's employment, income levels and career progression. Snowballing method was used to identify the respondents who were then taken through a questionnaire. Quantitative data was analyzed using STATA while NVIVO software was used in qualitative data analysis. Most of the respondents were aged below 25 years and majority of them were still in college. Majority of the respondents who went through program confirmed that it was an eye opener and broadened their scope of career opportunities as well as enabled them to have more confidence in the STEM fields which are mainly male dominated. For those who did not go through the mentorship program they felt that it would have enabled them make better and informed career choices.

6.0 Recommendations and Further Studies

Based on the study findings, the following recommendations are made:

6.1 PSIP Recommendations

- i. Policy intervention to support young women in Kenya in securing job placements. This would include reserving a given percentage of the workforce in an establishment to women.
- ii. A restructuring of the PSIP to ensure placement and follow-up of the interns to ensure that it meets its aim of enhancing job placements for participants. Measures to be considered in this endeavor include: To ensure that internship placement is aligned to the course taken by the students at university. The purpose is to ensure that the internship will contribute to enabling students to be absorbed in sectors of their specialization; the interns should be facilitated to acquire sector specific certification after successful completion of their internship program to ensure compliance with the requirements of the job market and that there should collaboration between the public and private sector to enhance the rate of job placement for participants who have gone through the program.
- iii. Young women in universities should be encouraged to work hard as better grades can enhance their chances of being employed.

- iv. Recommends empowerment of young women, both at the university and internship spaces to report and take measures to protect themselves from gender-based violence.

6.2 KYEOP Recommendations for both the National and County Government

6.2.1 National Government

- i. Ministry of ICT and Youth Affairs through KYEOP office to ensure that accreditation for graduate's recognition is done. This is by streamlining the harmonization for service providers so that all those who go through the program are certified or to get certificates
- ii. Government to improve the issue of tax relief to encourage the youths participate in self-employment.
- iii. Affirmative action be instituted to enable more young women to have access to job opportunities since they are currently under represented in employment.

6.2.1 County Government

- i. Capacity building of supervisors and trainers to be done, there is need for policy implementers to do mapping and vet institutions offering services as respondents felt they didn't
- ii. Students internship placement should be done in relation to the courses taught
- iv. Need to carry out marketing or public awareness of the KYEOP program to ensure unskilled youths acquire foundational skills
- v. To improve on the linkage of school to work transition.
- vi. Gender sensitivity programs where women in small businesses need to be provided with care givers or child care centers so that they can help look at their children at places of work as well as Sensitizing employers and stakeholders to observe the maternity leave policy
- vii. There is need to develop a capacity building module on self-esteem, confidence building and mentorship plan to walk with them. This can be enhanced through a mentorship program and observing the policy on maternity leave

6.3 UNESCO STEM Government of Kenya recommendations

- i) The Ministry of Education to develop a STEM policy on mentorship that would make it easier for stakeholders in STEM to implement programs in a structured manner thus leading to positive outcomes.
- ii) A tracer study is recommended since it will help to track the outcome of the program. An alumni database by the Ministry should be maintained since it will help in maintaining a strong network of the program beneficiaries.
- iii) There is need to redesign the implementation of the STEM Kenya Mentoring program to extend the mentorship over a period of an year as opposed to the once off one week program.

- iv) STEM teachers and Trainers of Teachers (T.O.Ts) need to be trained to act as supporters of STEM graduates once the database is in place
- v) STEM mentors to be issued with certificates for motivation.
- vi) Develop an evaluation tool for assessing the impact of the program.
- vii) For continuity, there is need for a post-secondary mentorship as well as elementary school mentorship.
- viii) Provision for seed money for the youths to start businesses
- ix) Create a platform to link them with employers
- x) Both trainees and policy implementers attest that there is need to ensure accreditation for graduates for recognition
- xi) Ensure youth and gender mainstreaming in all spaces of training and employment
- xii) Training of science teachers
- xiii) Due to the nature of the program requirement, there is need for the government to adopt the program for sustainable implementation beyond the donor funding.
- xiv) Sensitization of stakeholders to transform mindset regarding women participation in STEM
- xv) Psychosocial support due to youth unemployment
- xvi) Further studies
 - Investigate why a large number of students didn't take up STEM courses in college even after going through the mentorship program.
 - To conduct a follow up tracer study career paths of STEM graduates to establish the strengths and areas of improvement for intervention]
 - Sensitization of stakeholders to transform mindset regarding women participation in STEM

6.4 Recommendations Common to all the Programs (PSIP, KYEOP & STEM)

- i. Provision for seed money to start businesses to the young men and women
- ii. Create a platform or an app to link graduates with employers/marketers
- iii. Official appointment of supervisors of interns for motivation and quality outcomes
- iv. Need to develop a framework to enhance monitoring and evaluation of all the programs
- v. The affirmation action needs to be actualized to address challenge of gender disparity in the programs and ensure youth and gender mainstreaming in all spaces of training and employment.
- vi. It is recommended that AIM programs to focus on entrepreneurship, business planning, training infrastructural environment that can accommodate technological growth including artificial intelligence
- vii. Government to provide psycho-social services to the youths
- viii. Capacity building of the supervisors on the intended outcome of the program
- ix. Program for all sector players and create stakeholders network and mapping mentorship supervisors
- x. Need to sensitize young men and women the importance of joining professional bodies both in the university and internship spaces

I saw summary statistics but not qualitative analysis (what participants and employers said)**

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Appendix 1

Table A1: Instrumental Variable (IV) Model

	First-stage Regression	Two-step Probit same	IV Probit Model Marginal Effects smae
Employment Status	Coefficient (t-statistic)	Coefficient (z-statistic)	Coefficient (z-statistic)
Participation (<i>cluster/county mean</i>)	-0.841** (-2.25)	-2.971*same (-1.72)	-2.971*same (do one only) (-1.72)
Gender (<i>f=1; m=0</i>)	0.158* (1.91)	0.887** (2.18)	0.887** (2.18)
Age dummy (<i>1= 20-29; 2=30- 40</i>)	0.350*** (3.19)	1.271 (1.73)	1.271 (1.73)
Marital Status (<i>m=1; 0 otherwise</i>)	0.028 (0.31)	0.090 (0.26)	0.090 (0.26)
Highest Edu. Level	-0.397*** (-3.43)	-1.504 (-1.89)	-1.504 (-1.89)

(1 = degree; 2 = Postgrad)			
Course Name: (Business =the base category)			
Humanities	-0.142 (-1.30)	-0.185 (-0.39)	-0.185 (-0.39)
STEM	-0.103 (-1.05)	-0.050 (-0.12)	-0.050 (-0.12)
Constant	0.762 (2.35)	0.455 (0.35)	-
	Number of obs = 137 F(7, 129) = 3.95 Prob> F = 0.0006 R-squared = 0.1764 Root MSE = 0.46097	Number of obs = 137 Wald chi2(7) = 6.36 Prob> chi2 = 0.4984	Number of obs = 137

Note: dy/dx for factor levels is the discrete change from the base level.

Instrument: Participation = Mean Average Participation

Wald test of exogeneity: $\chi^2(1) = 3.57$ Prob > $\chi^2 = 0.0587$

Interpretation

*Individual participation is a demand function where the price proxy is the amount paid (spent) by the government on participants as they take part in the program. Increasing the opportunities for internship reduces the strain (competition among applicants) for being selected to an internship placement, thus shifting the labor supply curve to the right. This exogenous factor also has an impact on the labor demand curve since increasing the opportunities causes the government to spend more on the internship program thus shifting the labor demand curve to the left (inward tilt). The negative sign on the participation coefficient is therefore not a surprise since it captures the change in the demand curve due to the increase in the opportunities for internship. However, the net effect is enhanced employment prospects. **I do not see enhancement in the results*

Appendix II

The following illustrates parametrically the connection between the instruments (cluster level average participation) an individual's probability of participating in an internship program and employment status

Regressing a youth's employment status on the predicted value for participating in internship (as the only independent variable) in an LPM, the coefficient on predicted participation (predicted by average participation for each county) is -1.380129. However, regressing '*participation*' on its instrument (*mean participation*). The coefficient on the instrument -0.6922189. This is the reduction in an individual participation probability that is induced by a unit increase in the average participation ratio (*mean participation*), the only regressor in the model. Multiplying the coefficient on predicted participation in the employment (-1.380129 with the magnitude individual level participation induced by the instrument (-0.6922189) yields 0.955351.

Interestingly, the coefficient for the instrument (*mean participation*) in the employment equation is also 0.955351 (see Table 3). Why is this?

Table A1: Coefficient for Mean Participation in an Employment Model

Employment status	Coefficient	Std. Error	t	p> t
Mean Participation				
in...	0.955351**	0.39478	2.42	0.017
Constant	0.093686	0.17457	0.54	0.592

Source: Author computations from research data

The above analysis indicates that the raw variable for participation is the channel through which mean participation affects youth employment.

Team Composition and Roles

Serial No.	Name & Affiliation	Expertise	Role(s) in the project
1	Purity Muthima	Economics of Education and Educational Planning.	- Leading and Overall Coordinating the team

	Kenyatta University	-A STEP Trainer and a staff Mentor -Consultant-TSC -TVET research experience e.g. apprenticeship	- Mapping out of respondents - Cohort flow -Data collection and management -Logistics -Link between the University and the respondents institutions -Financial Accounting -Monitoring the progress
2	Joseph M. Muniu Kenyatta University	Applied Economics -Consultant –KNBS, KIPPRA, AfDB & AERC	-Co-lead: -Econometric modelling -Database development -Designing data collection instruments -Data analysis
3	Mary Mwangi Kenyatta University	-Biochemistry, microbiology & Biotechnology -Science Communication trainer - Gender and STEM -STEM mentor & Trainer -Secretary –Association of women in Science and Engineering	-Evaluate STEM mentorship programs - Capacity building for research assistants -Tracking mentees - Data Collection -Conducting interviews
4	Winifred Mutuku Kenyatta university	Mathematics and Actuarial Science locally and international STEM programs	-Scientific writing -Proposal development -Manuscripts for publication - Final report Skills -Evaluation of STEM programs and Mentorship -Data analysis of the data collected using R or SPSS or both depending on the data available and the required results.
5	EbbyGlorian Nekesa Wamalwa Kenyatta university	Post –Graduate Student Masters Student - Educational Planning Department of Educational Management, Policy And Curriculum Studies	Student Mentee Data Collection Administration Assistant Prepare documents
6	Wilson Muna Kenyatta University	Public Policy Development and Management.	Development of policy and scientific academic papers. Proposal Development Policy Monitoring and Evaluation Tools Development and quality assurance
7	Ruth Wanjau Kenyatta University	-Chemistry -STEM and KUFESST mentor	-Proposal development -Evaluate STEM and KUFESST mentorship programs

		-Kenyatta University Peer Counselors Coordinator - Kenyatta University students mentor and growing Leaders Program facilitator -Chairman –Kiambu County Education Board	-Evaluate internship programs -Data Collection -Conducting interviews -Capacity building research assistants - Sensitizing women final report
8	Prof Cathrene Ndungo	Professor of Kiswahili	Engendering the study Editorial and Publications Coordinator
10	Ruth Ngina Kenya Institute for Curriculum Development	-Curriculum Development and instructions -Mentor to Apprentices	- Assessment of the relevance of curriculum used in internship, mentoring and apprenticeship programs -Identify skills gap -Quantitative and qualitative data collecting skills -Report writing and - Editorial skills -Data analysis using SPSS -Dissemination skills