

**ANALYSIS ON RETURNS TO LEVELS OF EDUCATION AND  
CHALLENGES FACED BY THE URBAN SELF EMPLOYED IN  
KISII COUNTY, KENYA**

**ELIUD NYAKUNDI**

**A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF  
PHILOSOPHY IN PLANNING AND ECONOMICS OF EDUCATION**

**DEPARTMENT OF EDUCATIONAL MANAGEMENT AND  
FOUNDATIONS**

**MASENO UNIVERSITY**

**© 2018**

**DECLARATION**

**DECLARATION BY THE CANDIDATE**

I declare that this thesis is my original work and has not been presented elsewhere for a degree award.

Signature.....

Date.....

**ELIUD NYAKUNDI**

**PG/PhD/068/2010**

**DECLARATION BY THE SUPERVISORS**

This thesis has been submitted with our approval as university supervisors

Signature.....

Date.....

**PROF. ENOSE M.W. SIMATWA**

Department of Educational Management and Foundations,

Maseno University.

**PROF. T. M. O. AYODO (DECEASED)**

Faculty of Education, Theology and Arts

Kabarak University.

## **ACKNOWLEDGEMENT**

Special appreciation goes to Prof. Enose M.W. Simatwa and the late Prof. Theodore M.O. Ayodo (Posthumous) for their tireless patience and endurance as they guided me through the project. Thanks to brothers Assa and Titus Nyakundi for encouragement. To my wife Elizabeth and daughters who stood by my side through this long journey you were my strength.

My appreciation to the members of the department of Education Management and Foundations for their contribution. Thanks to Dr. Julius O. Gogo and Dr. Maureen Olel.

I thank the respondents of Computer and Motor Spare parts self employed activities for their cooperation in providing the relevant data. Lastly, my appreciation to the persons who typed and proofread the work; specifically Martha Wandera.

## **DEDICATION**

I dedicate this thesis to my late parents Rev. Michael. O. Nyakundi and Sarah Nyakundi for their inspiration and support for me in pursuit of higher education. My father had insisted I pursue my education to the highest level while mum was always available to comfort me when things were hard.

## ABSTRACT

The self-employment sector provides an avenue for workers to earn a living. The returns to the self-employed remains unexplained. Studies in Britain, United States of America, Tunisia Tanzania, Ghana and Tanzania among others studies cited mixed findings on the relationship between returns to education and levels of education. In Kenya studies indicate the increasing entry of school graduates of all levels of education entering the self-employment whose returns remains unpredictable. In Kisii County there are worker entering into employment in computer and motor spare parts with various levels of education whose returns have not been adequately investigated. The purpose of the study was to determine education returns to computer and spare parts self-employment activities in urban Kisii County. The study objectives were to; analyze the returns to levels of education of the self-employed in computer industry, analyze the returns to education of levels of education of the self-employed in spare parts industry, analyze the challenges facing the self-employed in computer service and motor spare industries, analyze effectiveness of intervention measures by Kenya government to support the self-employed in their work. The study used descriptive and correlation design. The study used human capital theory as advanced by Becker which states that earnings rise with additional years of schooling. The population of the study was 11,240. That is in computer service industry 6,400 and spare parts 4840 workers. The study used Glen model to derive a sample of 384 respondents with 218 computer services and 166 spare parts self-employed workers. Questionnaire and interview schedules were used to collect data for the study. Validation of the instruments was done by consultation with supervisors of this study and other researchers to ensure they complied with universal standard of proposal and research finding reporting. Reliability of instruments was established at 0.7. Quantitative data was analyzed using descriptive statistics and inferential statistics. Qualitative data was transcribed and analyzed in emergent themes and sub-themes and reported verbatim. The study found out that; on average in computer service industry self-employed respondents with KCPE, K.C.S.E and diploma had similar amount of returns while bachelor's degree and masters earnings were higher with certificate recording lower earnings. The Pearson's  $r$  results were' KCPE 0.643, KCSE 0.104, certificate 0.128, diploma 0.195 and bachelor's degree 0.045. Respondents with K.C.P.E level of education had higher returns than those with K.C.S.E and diploma. The  $r^2$  analysis was: KCPE category the  $r^2$  was 0.0413, KCSE was 0.011, certificate 0.016, and diploma was 0.038 for bachelors. The adjusted R results were: KCPE 0.373, KCSE 0.02, certificate 0.002, diploma 0.001 and bachelors 0.075. The ANOVA indicated KCPE (F (1,15) 10.572, P = 0.005), while other levels were moderate at KCSE was (F (1,70) 0.761, P=0.386), certificate was (F (1,52,) = 0.868, P = 0.356), diploma was (F (1,28)=1.031, P=0.319 and bachelor results were (F (1,13)=0.006, P = 0.874). The combined levels of education explained 22.6% of the returns in education. The result therefore indicated that education levels marginally explain the returns to education in computer service industry. In spare parts the results showed that on average; respondents with KCPE, KCSE and certificate earned nearly similar amount of money. Diploma graduates earnings bachelor's degree and masters graduates recorded higher earnings. Analysis of Pearson's  $r$  indicated that; KCPE was 0.617, KCSE 0.009, certificate 0.130, diploma 0.129 and bachelors 0.297. The Pearson's  $r^2$  results were: KCPE as 0.413, KCSE 0.011, certificate 0.016, diploma 0.038 and degree 0.002. The adjusted R results were: KCPE 0.373. KCSE 0.002, certificate 0.002, diploma 0.001 and degree 0.075. The ANOVA results were: for KCPE (F (1,20)=12.282, P=0.002), while the rest were moderate at KCSE (F (1,84)=0.007, P=0.935), certificate was (F (25,)=0.428, P=0.519), diploma was (F (1,17)=1.290, P=0.597) and bachelor's degree was (F (1,10)=0.0964, P=0.349). The combined effects of all levels of education explained 31.8% while 68.2% remained unexplained. Education levels therefore significantly explained the returns to education. Government intervention were not effective in the provision of: market stalls, loans and market for finished products, but effective in provision of: security, electricity and infrastructure. The study conclude that K.C.P.E level of education had positive returns and other levels of education could not be relied upon to explain the returns to education. The study recommended curriculum review in other levels of education apart from K.C.P.E to make them relevant to the needs of the self-employed in computer and motor spare part. The study is important in formulation of education programmes relevant to the self-employed and government intervention in support of the self-employed.

## TABLE OF CONTENTS

<b>Content</b>	<b>Page</b>
Title.....	i
Declaration.....	ii
Acknowledgement.....	iii
Dedication.....	iv
Abstract.....	v
Table of Contents.....	vi
Abbreviations and Acronyms.....	ix
List of Tables.....	x
List of Appendices.....	xi
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background to the Study .....	1
1.2 Statement of the Problem .....	15
1.3 Purpose of the Study.....	16
1.4 Objectives of the study.....	17
1.5 Research Questions.....	17
1.6 Significance of the Study .....	18
1.7 Scope of the Study.....	18
1.8 Limitations of the Study .....	18
1.9 Assumptions of the study .....	19
1.10 Theoretical Framework .....	19
1.11 Operational Definition of Terms .....	21

<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	23
2.1 Introduction.....	23
2.2 Returns to various levels of Education of the Self-Employed in Computer Industry .....	23
2.3 Returns to various levels of education of the self-employed in Motor Spare parts industry .....	35
2.4 Challenges facing the self-employed .....	42
2.5 Kenya Government Intervention in the Self-Employment Sector .....	49
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b> .....	55
3.1 Introduction.....	55
3.2 Research Design.....	55
3.3 Area of Study .....	56
3.4 Study Population.....	57
3.5 Sample and Sampling Techniques .....	58
3.6 Data Collection Instruments .....	59
3.7 Validity and Reliability.....	61
3.8 Administration of Research Instruments .....	63
3.9 Data Analysis Procedures .....	64
3.10 Ethical Consideration.....	64
<b>CHAPTER FOUR: RESULTS AND DISCUSSIONS</b> .....	65
4.1 Introduction.....	65
4.2. Questionnaire Return Rate .....	65
4.3 Returns to various levels of education of the self-employed in Computer Service Industry .....	70

4.4 Effect of the level of education Onaverage Earnings of the Self-Employed in the Motor Spare Parts Industry .....	83
4.5 Challenges facing them in their Self-employment activities. ....	90
4.6 Intervention Measures to support the Self-employed in their work .....	99
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>	<b>109</b>
5.1 Introduction.....	109
5.2 Summary of Findings.....	109
5.3 Conclusion .....	114
5.4 Recommendations.....	115
5.5 Suggestions For Further Research .....	115
<b>REFERENCES.....</b>	<b>116</b>
<b>APPENDICES.....</b>	<b>135</b>

## LIST OF ABBREVIATIONS AND ACRONYMS

<b>F.S.D.</b>	Financial Sector Deepening
<b>C.E.P.A.L.</b>	<i>Panorama Social de América Latina</i>
<b>C.M.A.</b>	Capital market authority
<b>E.F.A.</b>	Education for all
<b>I.E.A.</b>	Institute of Economic Affairs
<b>I.R.D.C.</b>	International Research Development Centre
<b>I.P.A.R.</b>	Institute of Policy Analysis and Research
<b>I.L.O.</b>	International Labour Organization
<b>K.I.M.</b>	Kenya Institute of Management
<b>O.E.C.D</b>	Organization of European cooperation and development
<b>R.E.C.O.U.P.</b>	Research Consortium on Educational and Poverty.
<b>S.M.E.</b>	Small medium enterprises
<b>U.N.D.P.</b>	United Nations Development Programme

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
3.1: Population of the Study-----	57
3.2: Sample Frame-----	58
3.3: Cronbach Alpha for Reliability-----	62
4.1: Questionnaire Return Rate-----	65
4.2: Gender distribution-----	66
4.3: Age profile in computer service industry-----	67
4.4: Average mean and Standard deviation levels of education for respondents-----	68
4.5: Analysis on the cost of levels of education-----	69
4.6: Analysis of the returns to levels of education and average returns per month in computer industry from 2012 to 2016-----	70
4.7: Average Returns and levels of Education-----	75
4.8: Model Summary- Regressed analysis of all levels of education and returns-----	79
4.9: Education Level and Average Returns Per Month in Motor Spare parts Industry	
4.10: Average earnings and levels of education in motor spare parts industry-----	83
4.11: Model Summary. Regressed Analysis of all levels of Education-----	88
4.12: Challenges facing the self-employed in computer service industry-----	90
4.13: Challenges facing the self-employed in motor spare parts industry-----	95
4.14: Intervention measures in computer service industry-----	100
4.15: Intervention Measures by the Government to Support the Self-employed in Motor spare part industry-----	103

## LIST OF APPENDICES

<b>Appendix</b>	<b>Page</b>
I: Questionnaire for the Self-Employed in Computer Service Industry-----	134
II: Questionnaire for the Self-Employed In Motor Spare Parts Service Industry-----	138
III: Interview schedule for Self Employed in Computer Service Industry-----	141
IV: Interview Schedule for Self Employed In Motor Spare Parts Service Industry----	143
V: Research Authorization Letters-----	144
VI: Map of Kisii County-----	147
VII: Respondents Education Levels and Returns-----	148
VIII: Returns and Education Grades in Spare Parts Industry-----	155
IX: The Cost per Level of Education-----	162
X: Government Intervention to Assist the Self-Employed-----	173
XI: Challenges Facing the Self-Employed-----	174
XII: Correlation Analysis for All Levels of Education for Computer Service Industry--	175
XIII: Informed Consent from Respondents-----	183

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Investment in human capital is considered a crucial factor that contributes to economic growth (Idrus & Cameron, 2000). Returns to education have a significant impact in individual earnings. Returns to education in the formal sector can be measured from earnings accruing from monthly wages (Psacharopoulos, 2004, & Soon, 1987). Results from the relationship between education and earnings in self-employment have contradictory findings. The contradictory findings arise from the nature of self-employment activities which have no wage structure and are subject to different earnings dependent on varied working variables (You & Giseung, 2008; Donald, 2002).

The returns to the self-employed have attracted studies because of the critical role of the sector in employment creation (Samir & Barry, 2013). The relationship between educational background on the one hand and entry to and success in self-employment on the other hand is complex and contradictory. Returns within levels of education even within same self-employment activity can hardly be predicted. Meagre and Martin (2011) observed that the relationship also varies between occupation and sectors. Thus in some sectors and occupations for example skilled trades like construction self-employment is more than a norm than in teaching. Studies suggest that self-employment has tangible positive economic impacts not only on wage and salary employment but also on per capita income growth and poverty reduction. Thus, the need for studies to find the dynamics that determine earnings differentials in the self-employment sector within levels of education (Stepham, Goetz &

David, 2012). Education is often given the throne in the pantheon of development because of the extensive evidence for high returns at the individual level (Psacharopoulos & Patrinos, 2004; Case, 2006). However return to the self-employed sector draws concern because of the unpredictable returns in the sector.

Donald (2002) on returns to education and experience in self-employment modern computer sector in Germany found that the estimated returns to additional work experience measured in months also differ according to sector of employment. The results suggested significantly higher returns to self-employment experience in the self-employment sector than in the wage employment sector. The study observed that role of human capital acquisition, particularly educational attainment, is less clear-cut for the self-employed. Earnings in wage employment are determined by the employer while in self-employment earning is a function of variety of factors. The study did not examine returns according to levels of education and challenges facing the self-employed.

Stephan, David and Anil (2012) in their findings on the state of self-employment in U.S.A observed that contrary to the perception of self-employment declining the sector was growing and likely to stay, and it behooves policymakers to pay attention to this new work force reality. Results suggested that policy and educational programs should be directed at improving the productivity and earnings of the self-employed so as have high payoffs in terms of local economic growth and employment opportunity. The self-employment sector in the U.S.A is mainly computer driven in contrast with the developing countries where the sector is manually driven.

Returns to education for the U.S. suggest that the returns are higher in the self-employment sector than the formal sector. Using years of educational attainment, Evans and Leighton (1989) found a rate of return of 10 percent per year among the self-employed, compared with 7 percent per year among the wage-employed, for males in the U.S.A. Using dummy variables for High School completion or College attendance and or completion, Clain (2000) and Fairly and Meyer (1996) found higher rates of return to college attendance or completion in self-employment, also for males in the U.S.A. Clain finds lower returns to education in self-employment for females, however although the return is positive and statistically significant.

According to Emery's (2005) survey of the literature in Canada, rates of return to education increased steadily from the 1960s to the early 1990s, where they peaked at 16 percent (women) and 12 percent (men) before dropping off only slightly. Belzil and Hansen (2006) examined rates of return using census data, finding an increase during the 1990s, from 9 percent in 1991 to 11 percent in 2001, although it tended to vary by discipline, gender and region. The rate of return to post-secondary education increased significantly. Similarly, Jorgen Hansen (2007), using census data from 1991, 1996 and 2001; found that the rate of return increased during the 1990s for most fields of study. Demers (2008) used 2006 census data to examine the returns to education in Quebec. He identifies a rate of return to individuals who receive a bachelor's degree of 10.6 percent, as well as a public rate of return of 8.5 percent. Demers also describe how unemployment levels decrease with educational attainment. Boothby and Drewes (2006) report stated that the college earnings premium increased between 1980 and 2000. Ferrer and Riddell (2002) also identify a small earnings

premium to non university post-secondary education compared to those with a high school education. The studies examined studies in the formal sector in a developed country. A study of the self-employed in computer and motor spare parts may reveal the relationship between levels of education and returns.

Bowles, Gintis and Osborn (2001) propose alternative view that education gives an indication of whether potential employees match the employee's incentives-enhancing preference, traits that assists in exercise of employees' authority. In the self-employment sector there exists no clear cut structure determining earning differentials. Even analysis of earnings in specific self-employment has hardly been examined. Carlos and Herman (2011) did not find clear reasons on the role of education on earning of the self-employed. Collins (1979) suggested that there was no productivity arguments involved as education was just used as a legitimized means for social closure and exclusion.

Psacharopoulos and Patrinos (2004) found that the returns to schooling in developing countries are higher than in developed countries. These results also emphasize the faith that education determines the earnings equalization. Because of increasing productivity through the individual's human capital accumulation, higher education normally leads to higher earnings level. Many previous studies using cross-section data for many countries had shown evidence that the positive correlation has-been going on between the education and income across the life cycle, However, there is a problem that increasing earnings of people who received higher education have occurred due to additional education, for example some of the high income earners are not due to education, but to their ability because highly educated

workers have higher ability than less educated workers. Education increases a worker's productivity and that this increase in productivity raises earnings. However, an alternative argument (Marshall, 1980) is that education need not increase the worker's productivity at all, according to Signaling theory; rather this is a role that screens the competent workers who can increase their performance through on-the-Job training. Education can play this signaling role only when it is difficult for potential employers to observe the worker's ability directly.

You and GiSeung (2009) estimating the returns to Schooling in the Self-employment urban sector in South Korea when using the education level found out that the higher education for the self-employed have higher returns. It is different to the returns to schooling estimates for self-employed in Portugal and Spain in Maculada and Victor (2005) where self-employed posted lower returns. In Portugal and Spain, the returns to schooling of secondary education workers in formal sector were higher than higher education workers in the self-employment sector. The studies cited were carried in urban centres of developed countries with better infrastructure and support facilities. A similar study in an urban centre of a developing country on returns to levels of education may indicate whether levels of education determine the returns.

George (2007) discusses the significant difference between different countries when it comes to quality of education in certain areas. A higher percentage of Indian students study computer science than American students; therefore, using specific human capital theory, this would suggest that Indians would be more successful in starting a business in the technology field compared to Americans, simply because they have more related educational attainment.

Computer service self-employment activities are among the growing self-employment activities in urban centres of Kenya.

Paul and George (2005) in their study on self-employment in garages Accra Ghana noted that unemployment is a major challenge in Ghana worsened by rapid urbanization experienced by the country but without substantial expansion of job opportunities. The youth are the hardest hit by the unemployment challenge and yet the cities continue to be a major attraction for migrants, especially the youth in search of employment there. Most of the youth end up operating within the informal economy either working for others or setting up and operating their own enterprises. The results of the analysis of the data showed that there are positive signs for youth entrepreneurship in the motor garage sector of the urban economy and these positive signs ought to be enhanced and translated into action for supporting youth entrepreneurship by addressing the challenges confronting operators in the sector. In Kenya the motor spare parts sector is a major employer of young people in urban centres.

Namirembe (2014) on Private returns to Education for the Wage-employees and Self-employed in Uganda found that; for both sectors an individual's extra year of schooling is associated with an increase in earnings of 15 percent. Kingdon and Söderbom (2007) found similar returns to education for the agricultural workers, wage-earner and the self-employed among the older cohort in Pakistan. However this results contrast with findings for Ghana (Kingdon & Söderbom, 2007) where the returns to education for wage employment are higher than self employment. The results found low returns to primary education for both types of workers. Perhaps to employers, primary education does not signal adequate levels of

productivity and thus attracts low remuneration. This casts doubt on the impact of primary education on an individual's productivity and employability especially in self-employment.

Samir and Barry (2013) found little evidence of human capital effects in the earnings determination process in the self-employment sector in Tanzania. The potential confounding role of school quality effects and parental background for rate of return analysis was observed. Failure to control for such background variables potentially led to an overstatement in the estimated returns to education. A comparison of evidence from other countries in East Africa shows that despite an extremely small secondary and university education system the private rates of return to education in the Tanzanian wage employment sector are relatively low. The study is a contradiction of the human capital theory which associates education with increased returns (Samir, 2013).

The Small and Micro Enterprises (SMEs) play an important role in the Kenyan Economy. According to the Economic Survey (2006), the sector contributed over 50 percent of new jobs created in the year 2005. Despite their significance, past statistics indicate that three out of five businesses fail within the first few months of operation (Kenya National Bureau of Statistics, 2007). According to Amyx (2005), one of the most significant challenges is the negative perception towards SMEs. Potential clients perceive small businesses as lacking the ability to provide quality services and are unable to satisfy more than one critical project simultaneously. Often larger companies are selected and given business for their clout in the industry and name recognition alone.

Wanjohi and Mugure, (2008) examined the factors affecting the growth of SMSEs in rural areas of Kenya a case of ICT firms in Kiserian Township, Kajiado District of Kenya. The study analyzed the growth and factors affecting the firms in Kajiado Township. The findings were that; the youths with various levels of education were gainfully getting into computer service Self-employment activities, there was frequent electricity blackout and financial constraints faced those in I.C.T self-employment activity. The study did not analyze the returns to the various levels of education

Mogambo and Omwenga (2015) sought to find out challenges affecting growth and performance of the SMEs with particular reference to the Jua Kali Motor Garages in Shauri Moyo, Nairobi, and City County. The study identified the role played by small and medium size enterprises due to their ability to create employment at low cost, contribute to Gross domestic Product, alleviation of poverty, equitable distribution of income, utilization and conservation of local resources, earning and conserving foreign exchange, provision of goods and services at reasonable cost. However, despite their immense contribution to the economies they are faced with a myriad of challenges including; unfavorable Legal and regulatory Framework and lack of finances. The study did not examine the returns of the self-employed based on their levels of education and the current study sought to found out the returns by levels of education.

The motor spare parts self-employed continue applying inadequate and inappropriate technology which according to Wanjohi and Mugure (2008) pose a great challenge to small business by slowing their work and offering poor quality service which leads to them loosing

and not attracting more clients. They continue struggling to acquire and retain new clients due to the slow and low quality service that they offer to their clients. The motor spare parts lack finance resources to finance their operations which according to (Magambo & Omwenga, 2015) is one of the most difficult problems in the small business sector. The garage owners demand payment for parts upfront rather than offering the service and asking for payment later. This discourages some clients to seek their services hence affecting their growth. The study didn't examine the returns to the levels of education of the self-employed.

A study carried out by the Financial Sector Deepening Kenya (FSD, 2008), showed that SMEs face numerous hurdles in accessing finance, denying them an important growth line at best or accessing it at a very high cost. The Small and Micro Enterprises' (SMEs) access to finance is being constrained by exacting legal requirements by banks and other finance institutions, lack of a standardized and shared information registry and expensive and time consuming enforcement mechanisms.

Mogambo and Omwenga (2015) carried a study on the challenges facing garages in Nairobi. It was noted that lack of finance was the highest factor affecting business growth as it had a correlation values of 0.757 and a significant value of  $0.0003 < 0.05$ , followed by Legal and regulatory framework which had a significant correlation of 0.59. The study established that business registration in Kenya was not a major impediment to business growth due to the digitization of the system.

Mbugu, Njeru and Tirimba (2014) on factors affecting growth of Micro-Small Enterprises: a case Study of Tailoring and Dress Making Enterprises in Eldoret found out that; the S.M.E's had been a source of employment and raise the standard of living. The challenges facing

them included lack of access of infrastructure and finances. The challenges faced by the self-employed in the developing countries were different from those faced their counter parts in the developed countries. The study did not examine returns and levels of education of respondents.

The capital market authority (2010) in a study on challenges facing the SME'S found that the sector is characterized by a number of challenges related to access to financial resources which translate to impediments in enterprise growth. The Capital Markets Authority (2010) found out in their study that SMEs in Kenya suffer from constraints that lower their resilience to risk and prevent them from growing and attaining economies of scale. Challenges associated with access to financial resources are constrained by both internal and external factors. Internally, most SMEs lack creditworthiness and management capacity, so they have difficulties securing finances from finance institutions because such institutions or banks are reluctant to lend to small business due to the perceived high credit risk.

Although the informal sector has been characterized by several attributes, on compliance with the legal and administrative regulations is often regarded as its most important characteristic. Castells and Portes (1989) state that the most central feature of informal sector activities is that they are unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated. Carlo and Herman (2011) emphasize that it is noncompliance with the legal and administrative regulations rather than with social regulations that is important. The early development literature assumed that in the developing countries the informal sector would disappear over time as it did in the developed countries. Stepham, Goertz and David (2012) estimated the proportion of informal employment for

groups of countries at different levels of development and found that the share of informal employment declines as the level of development rises.

The informal economy in Africa has witnessed dramatic renewal interest from 1980 to present day (Onganga, 1999). It is expected that the sector will absorb many of the graduates being churned from all levels of education specifically formal and informal education. The informal sector is seen as dynamic as it is estimated to provide half of the total employment and has recorded expansion in the last two decades. The value of the skills in an economy depends in part on the quality and quantity of the supply and in part on the demand for skills. In Kenya the pattern of job creation over the last decade has been one where non-farm self-employment and jobs in small firms have exploded in importance relative to jobs in the formal sector (Republic of Kenya, 2013). The graduates of all levels of education require skills relevant to the self-employment sector. Formal education has been accused of preparing recipients for job in the formal sector whose capacity to absorb the ever increasing graduates is declining. Education and training are keys to solving the unemployment problem. In the three decades after independence, the Kenyan government has tried to develop a technological skill base by expanding existing technical institutions, building new ones, and supporting those institutions that were set up through public initiatives. More vocational subjects were introduced into the primary and secondary school curriculum to teach work- and self-employment skills to aid those students who will terminate their education at these levels (Rathgeber, 1988).

The Economic Survey of Kenya (Government of Kenya, 2013) indicated a decline in job creation in the formal sector. In the same period 90% of the jobs created were in the informal sector thus underscoring the critical role of the sector in employment creation. Graduates of all levels of education find the self-employment sector an avenue of employment. The challenge is whether such workers are prepared for the jobs in the informal sector in terms of training. The economic survey of Kenya (Government of Kenya, 2014) credited the informal sector of creating 799,700 jobs as compared to 69,000 jobs in the formal sector in 2013. The public sector only created 17,000 jobs in 2013. This underscores the important role played by the self-employment sector in employment creation.

Through various reports and Sessional Papers the Government of Kenya has emphasized the link between education and self-employment sector. The educational reports of 1976 and 1988 (Republic of Kenya, 1976 & 1988) had recommended the link between education sector and self-employment in terms of skill endowment. The Sessional Paper No. 1 of 1986 on economic management for renewed growth (Republic of Kenya 1986), Sessional Paper No. 2 of 1982 (Republic of Kenya, 1982) on small enterprise and Jua kali development in Kenya, and Sessional Paper No. 2 of 1996 (Republic of Kenya, 1996) on industrial transformation to year 2020 consider Kenya's informal sector as a means of economic development and employment creation. Kenya's sixth development plan 1989-1993 (Republic of Kenya, 1989) integrated new employment creation in the informal sector. Sessional Paper No. 2 of 1996 on industrial transformation to the year 2020 states the path to be followed to achieve industrialization in the year 2020. The report states in part "The informal sector is an entry

point for the self-employed as a testing ground for development of low cost products, the sector is well distributed in all parts of Kenya in both urban and rural areas.

Education is a major consumer of national income. Governments spend colossal sums of money to extend education services to their people. In Kenya between 2008-2009, the expenditure for education rose by 13.5 percent indicating the importance of education in national development (Government of Kenya, 2010). In the year 2011/2012 education took the largest share of the national budget (Republic of Kenya, 2013). In the previous year (2009-2011) the sector received the biggest share of Ksh995 billion budgets, by getting Ksh 170 billion which 17% of the total budget. In the 2011/2012 budget the sector received Ksh 203 billion which was 25% of the budget. The rising expenditure is because of free primary and subsidized secondary education. There have been also rising enrolments at all levels of learning. That underscores the need to identify and harness avenues of employment for school graduates.

The available evidence for the pattern of returns to education along the education profile in Kenya is mixed and this study sought to provide more evidence using most recent data; the 2012-2016. The study identified the role played by computer and motor spare services due to their ability to create employment at low cost.

The motor spare parts self-employed continue applying inadequate and inappropriate technology which according to (Wanjohi & Mugure, 2008) pose a great challenge to small business by slowing their work and offering poor quality service which leads to them loosing and not attracting more clients. They continue struggling to acquire and retain new clients due to the slow and low quality service that they offer to their clients.

The value of the skills in an economy depends in part on the quality and quantity of the supply and in part on the demand for skills. In Kenya the pattern of job creation over the last decade has been one where non-farm self-employment and jobs in small firms have exploded in importance relative to jobs in the formal sector (Republic of Kenya, 2013). The graduates of all levels of education require skills relevant to the self-employment sector. The study examined levels of education as; K.C.P.E, certificate, diploma, bachelors degree and masters degree. The levels were considered on the basis of exit point based on examinations.

Momanyi (2008) on benefits of non-formal education to jua kali artisans found that jua kali artisan with training exhibited higher levels of performance than those with less or no training. Barasa and Kabwe (2001) on fallacies in policy and strategies of skills training for the informal sector concluded that the sector was attracting high qualification and 70% of the respondents had passed well in school subjects such as mathematics, science and English. The study by Maundu and Twoli (1996) on the skills required in operations of Jua Kali recognized the importance of cognitive business operation such as; craft, process skills, marketing and sales techniques and artisan as important in determining the success of Jua Kali enterprises. Ombati (2006) in a study conducted among rural farmers found out that they were willing to embrace modern communication but the farmers were hindered by poor infrastructure, lack of government initiative and bureaucracy. Ondieki (2006) found that artisans with secondary education produced a higher product quality than those with primary education. Mogambo and Omwenga (2015) on challenges faced by garages in Shauri Moyo in Nairobi found out finances was the biggest challenges. The available literature reviewed in Kenya relating levels of education in self-employment is inadequate and many of the studies

cited were focusing on the challenges facing the self-employed and few have related levels of education and returns to education in computer and motor spare industries.

Kisii County has literacy preference of 87% (Republic of Kenya, 2009). The high literacy levels in Kisii County imply there are many graduates leaving school who require jobs to earn a living. There is evidence that an increasing number of people getting into self-employment activities. Comparative analysis of workers entering self-employment in Nyamira and Kisii Counties indicate that Kisii County has more people entering into self-employment in urban centers. Nyamira county development plan shows that by 2018 there will be an estimated 5000 people engaged in self-employment (Republic of Kenya, 2013 a) whereas in Kisii county the self-employment sector is estimated to increase to about 20,000 workers by 2018 (Republic of Kenya, 2013 b). Major urban centers in Kisii county such as; Kisii town, Keroka and Suneka are per-urban and connect Kisii county to the neighboring counties in terms of supply of goods and services exchanged in self-employment.

The study focused on the computer services and motor spare parts self-employment sector. These are predominant self-employment activities in the areas targeted in the study. Out of about 15,000 workers in the urban centre about 11,000 were in computer and spare parts industries according the trade licensing office in Kisii County. There is evidence that returns to education are rewarded differently across occupations Baum and Payea (2004). The study examined returns to education on the two self-employment activities.

## **1.2 Statement of the Problem**

Studies in returns to education in the self-employment sector have posted contradictory findings. In the developed countries such as Britain, Denmark, United States and Finland the self-employed sector posted mixed findings when analyzed in relation to returns and levels of education. In the developed countries returns to education varied between professions and sectors. In the developing world studies indicated the critical role of the self-employment in employment creation. However the returns to education posted mixed findings as some studies indicate a positive relationship between levels of education and returns in the self-employment sector. In Ghana the self-employed sector in motor garages had higher returns while in others as in Tanzania and Nigeria there was a negative relationship between returns to education and levels of education. Studies in Kenya on computer and motor spare service have not been conclusive on the returns to education in the self-employment sector. The study examined the computer and motor spare parts service industry self-employment activities in urban in urban Kisii County. Kisii County is heavily populated according to Kenya's last population census. The region has few industries to absorb many of the graduates coming out educational institutions in the region. It is for this reason that the study analyzed the returns to education of the self-employed in computer and motor spare parts service industry.

## **1.3 Purpose of the Study**

The purpose of the study was to analyze the returns to levels of education of the self-employed in computer and motor spare parts urban Kisii county of Kenya.

## **1.4 Objectives of the Study**

The objectives of the study were to:

- i. Analyze the returns to levels of education of the self-employed in computer service industry.
- ii. Analyze the returns to levels of education of the self-employed in motor spare part service industry.
- iii. Analyze the challenges facing the self-employed in computer and spare service industry in their work.
- iv. Analyze effectiveness of intervention measures by the Government of Kenya to support the self-employed in computer and spare parts industries in their work.

## **1.5 Research Questions**

The study was guided by the following questions

- i. What are the returns to levels of education of the self-employed in computer services industry?
- ii. What are the returns to levels education of the self-employed in motor spare parts industry?
- iii. What are the challenges facing the self-employed in computer and spare part service industry?
- iv. What are the intervention measures used by Kenya government to support the self-employed in computer and motor spare parts in their work?

## **1.6 Significance of the Study**

- i. Curriculum developers to enrich the school curriculum to include skills necessary for self-employment.
- ii. The findings of this study may be used for development of appropriate intervention measures by the government of Kenya to address challenges facing the self-employed.
- iii. To add to existing body of knowledge on returns to levels of education and challenges faced by the self-employed.

## **1.7 Scope of the Study**

The study was conducted in three urban centres in Kisii County namely; Kisii, Suneka and Keroka. The self-employed in computer and motor spare service industries were the target of the study. The study was narrowed to levels of education and returns of the self-employed in computer and motor service industries from 2012-2016.

## **1.8 Limitation of the Study**

The study was limited in the following ways.

- i. Some respondents did not return the questionnaires. This did not affect the overall result as the return rate for computer was 88% (190) and spare parts 100% (166).
- ii. Some questionnaires were not fully filled but contained sufficient information for analysis.
- iii. This study recognized the sample size and research sites to be a limitation. A relatively small sample population and a restricted research sites narrowed the participation of the target demography. The sample and sites may have narrowed the

interpretations and conclusions concerning the returns to the self-employed in computer and motor spare parts industry

- iv. The study is focus-specific, and therefore, attributing findings to other self-employment activities or other phenomenon, and other targeted demographics is not appropriate. A condition of this kind suggests that the role and contributions of the education to return of the self-employed remain a fertile area for multi-disciplinary studies and diverse approaches to reveal the underlining issues.

However, despite the identified limitations, the typically dominant characteristic of the self-employment economic sector's activities in Kenya remains a valid discovery. However, arguably the views of this study's population sufficiently relay the phenomenon as occurring in other urban centers in Kenya.

### **1.9 Assumption of the Study**

The study was guided by the following assumptions,

- i. Respondents gave accurate information on their levels of education and earnings
- ii. Returns are measured by level of earnings

### **1.10 Theoretical Framework**

The contemporary theory of human capital has its origins in the work of Schultz (1960) and Denison (1962) who postulate that the positive correlation between education and economic growth due to productivity enhancing effect of education. Better trained workers are considered to be more skilled and productive than less trained workers justifying their higher wages.

The human capital theory posits that education is an investment which improves a worker's productivity and influences future income by raising a worker's lifetime earnings (Becker, 1962). The theory relates the worker's knowledge levels to their formal schooling levels implying that more schooling would lead to higher productivity and wages. In this theory, workers acquire education to maximize the present value of lifetime earnings and the private returns are used to explain the demand for different levels of education. Using U.S Census data, Becker (1964) applied the theory to explain the increasing level of economic growth in United States of America. The study concluded that worker's productivity rose with increasing levels of education, on-job training and good health. Since the study was on the relevance of education in economic growth, it provides a foundation to study the relevance of education in the productivity of those in self-employment.

The theory of human capital was used to establish whether levels of education determine the returns of those in self-employment in computer and motor spare parts service industries. In self-employment the role of human capital in terms of educational attainment and earnings is less clear-cut. In formal sector attainment of higher education and training may translate to higher earnings. The earning of the self-employed can be influenced by entrepreneurial skill or other abilities not captured in formal education. Therefore the returns to education among the self-employed with same or similar level of education could be lower or higher.

The study used Becker (1962 and 1964) to measure average earning per month and levels of education of the self-employed in computer and motor spare parts industry. The theory allowed the measuring of the magnitude of the effects of levels of education to the returns of the self-employed in computer and motor spare parts industry.

## 1.11 Operational Definition of Terms

The following terms were used in the study with the definitions as below.

**Apprenticeship:** -Serving under a master for a number of years in order to learn, trade or skill.

**Computer Services:** Activities will include; internet services, computer typesetting, computer printing, computer photocopying and computer repair.

**Challenges to the Self-Employed:** Obstacles to the growth of the self-employment activities

**Formal education:** -the hierarchically structured, chronologically graded 'education system', running from primary school through the university and including, in addition to general academic studies.

**Informal education:** is a lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment.

**Formal Sector:** A term used interchangeably with wage employment to refer to workers employed on monthly income. The economic activities answer to regulation formulated by various bodies.

**Informal Sector:** Large group of enterprises characterized by un-obstruction, easy to enter and exit, uses local material; family owned, uses high labour and is unregulated.

**Informal workers:** Are defined as non-wage workers, own account workers, working employers, unpaid family workers, apprentices, and self-employed workers.

**Jua kali:** This is trading activities usually carried under scorching sun or temporal structures. These activities include; computer services, engine spare part sells, smelting, vehicle repair, and second and first hand cloth selling.

**Levels of education:** Levels of education in this study were defined in terms of academic qualifications attained after sitting for nationally and international examinations.

**Motor Spare parts Self-Employed:** This are self-employed workers selling new and second hand motor spare parts. They are located in shops and motor repair garages

**Non-formal education:** -any organized educational activity outside the established formal system - whether operating separately or as an important feature of some broader activity - that is intended to serve identifiable learning clientele and learning objectives

**Returns to Education:** These are the proceeds arising from the investment in education. Returns are measured by income per month

**Self-Employment:** People who are not salaried but earn a living by carrying own income generating activities.

**Skill Training:** Education that exposes recipient with specific predisposition that enables practical use of the skill learned.

**Spare parts industry:** This is self-employment activities which sell machine parts.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The study reviewed literature addressing the role of education in development. The emphasis was on education and productivity of those in self-employment. The review was intended for research gap identification. The chapter also credited previous studies that have added to the body of knowledge in associating education and productivity.

#### **2.2 Returns to Various Levels of Education of the Self-Employed in Computer Industry**

The theory of human capital was extensively developed by Becker and Shultz (Shultz, 1961; Becker, 1962 & Mincer, 1974). The theory advances the view that expenditure in education and training is undertaken with a view to increase personal income. Education is assumed to equip recipients with skills and experience that increases their productivity which is rewarded by returns in terms of earnings. The theory of human capital has been used to explain income differential (Nyakundi, 2008). You and Giseung (2009) observed that; the returns of investment in education can be calculated from the earnings of the recipients of education. Psacharopoulos and Patrinos (2004) found out that the returns to schooling in developing countries are higher than in developed countries. Schultz (2004), Kingdon, Sandefur and Teal (2005), show that in general the return to an extra year of education increases with the level of education; while returns do not increase monotonically with level of education in some countries.

Education is also associated with other benefits. Gavan and Pietro (2011) in a report prepared by London school of economics observed that there are a number of other benefits associated

with higher education qualification attainment; such as improved health outcomes and the reduced likelihood of requiring public sector assistance in relation to healthcare or the negative relationship between qualification attainment and criminal activity. There is also some economic literature on the existence of education-related spillovers, whereby the labour market outcomes of those with lower levels of qualification attainment is augmented by the presence of a greater proportion of more highly qualified workers. Card (1999) avers that optimal schooling level equates the marginal rate of return to additional schooling. Additional schooling is assumed to translate into more earnings.

Since the internet boom, new technology has provided opportunities to start a small business in U.S.A, be it one large enough to have employees or just for an individual (Brixy, 2010). People who are self-employed or who start small businesses have significant influence on the economy. For example, according to data available, small businesses accounted for the employment of 52 percent of the U.S.A workforce in 2001, and were responsible for 75 percent of jobs created from 1990 to 1995 (Brixy, 2010). Starting a business has also allowed for innovation and increased competition in the markets .The computer technology is a major employer in the U.S.A.

Dolinky (1993) did a study in Denmark on women's entrepreneurs entering, staying and re-entering self-employment by level of educational attachment .A sample of women aged 30-44 year was obtained through multistage sampling procedure and the study traced long- term female entrepreneurship patterns over an eleven year period. The study investigated whether the education had any role in the entry and exit of female entrepreneur into and out of self-employment. The study in part concluded that; the incidence of initial entry, birth continues

staying, several and re-entry status increased with level of education attachment .Another study by Evans and Leighted (1989) found out the like hood entering into self-employment increased with increasing level of educational attachment. The studies above underscored the critical role of self-employment in absorbing graduates of education. The comparative studies by Dolinky (1993) and Evans and Leighted (1989) showed that those with higher levels of education were likely to stay longer in self-employment than those with less. The present study intends to compare how various levels of education attainment enter into self-employment and the range of self-employment activities they engage in.

A study carried by price water house coopers (2005) showed that a first University degree in the United States yield higher returns than lower qualification. This study pooled information from the quarterly labour force survey between 2002 and 2004. The analysis involved the calculation of the economic costs and benefits associated with education to the first degree standard. The study also analyzed other factor assumed to influence earnings such as age, gender and religion of respondents. However the study examined both those in formal employment. The present study is narrowed to urban self-employed. In developing countries the self-employment sector is formal and regulated while in Kenya the sector has minimal formal structures. The return to education in the computer service industry has been scarcely investigated.

The provision of education also creates spill -over benefits to the society (Brux & Cowen, 2001). Spill over benefits are the positive economic activity that accrue to society as a whole from the investment in education. Educated people are likely to earn more and pay more

taxes. An educated person will not require state support and the likely hood of being involved in crime is minimal. Therefore society benefits from the spill -overs of education.

Aki and Sari (2002) did a study on the role of education in self-employment success in Finland. The study main objective was to find the role of education in the success of business firms. The study examined the levels of education of the respondents and earning of firms. The study concluded that firms ran by highly educated entrepreneurs had higher growth rates than those firms whose entrepreneurs had lower levels of education. There was a strong correlation between the level of education and success of business firms. A similar study by Walsh and Anderson (1995) in Irish firms enterprises in the republic of Ireland found out that business founders with high level of formal education were successful than those with less education. Whoever business firms in developed countries are formal and better regulated as compared to developing countries where the self-employment sector is largely informal.

Psacharopoulos (2009) on returns to investment in higher education in European countries found out that; returns varied between countries. The returns were higher in newly established countries such Czech Republic, Poland, Hungary and Turkey and lowest in Scandinavian countries such as Denmark and Sweden. On average university graduates had 61% advantage over secondary school leavers. Higher education investment for individuals and society was found to be profitable. However Carlo and Herman (2011) observed that there is no productivity argument involved, education is just legitimizes means for social closure and exclusion. Similarly Bowles and Gintis (2001) viewed education as a tool determining where an employer places an employee to perform certain tasks.

Card (1999) provides a review of international studies on returns to education among individuals in employee jobs. He concluded that the research evidence for investing in education appears decisive: better educated individuals in the labour force earn higher wages and experience less unemployment than their less well educated counterparts thus demonstrating strong financial returns to investing in education. Investment in education is rewarded as the level of education.

Canadian researchers have confirmed that the returns to post-secondary education have risen over the past decades. According to Emery's survey of the literature in Canada (2005), rates of return increased steadily from the 1960s to the early 1990s, where they peaked at 16 percent (women) and 12 percent (men) before dropping off only slightly. Belzil and Hansen (2006) examined rates of return using census data, finding an increase during the 1990s, from 9 percent in 1991 to 11 percent in 2001, although they tend to vary by discipline, gender and region. Notably, the authors demonstrated that the rate of return to post-secondary education increased significantly despite the large tuition increases of the 1990s. Similarly, Jorgen Hansen (2007), using census data from 1991, 1996 and 2001, finds that the rate of return increased during the 1990s for most fields of study. Additionally, he identifies a rate of return to individuals who receive a bachelor's degree of 10.6 percent, as well as a public rate of return of 8.5 percent. Emer's also describes how unemployment levels decrease with educational attainment.

Gary (2008) report on Australian occupation of earnings of young Australians examined the occupational status of jobs and weekly earnings by type of post-school education and training. Occupational status provides a convenient summary measure of occupations based

on job status or prestige, while earnings measure the financial reward from work. The report examined the occupational status of jobs and weekly earnings by type of post-school education and training. The workers in computer industry were the main respondents. Occupational status provides a convenient summary measure of occupations based on job status or prestige, while earnings measure the financial reward from work. The main results of the multivariate analyses were as follows: A bachelor degree qualification had the largest impact, increasing earnings by about 30 per cent. The effects of bachelor degrees were slightly stronger among women than among men. Apprenticeships also had a major impact on earnings, and on average increased weekly earnings by about 20 per cent. This effect was stronger among young men than among young women, diploma qualification increased earnings by about 14 per cent; and a university diploma by nearly 20 per cent.

Boothby and Drewes (2006) examined the diploma earnings in Canada. The report findings were that the college earnings premium increased between 1980 and 2000. Ferrer and Riddell (2002) also identify a small earnings premium to non-university post-secondary education (compared to those with a high school education). While college graduates enjoy a more modest earnings premium than university graduates, they still benefit from a substantial rate of return for two reasons. First, college is typically cheaper than university in Canada. Also, college programs tend to be shorter. Studies on returns to diploma education to the self-employed in Kenya have hardly been examined.

The importance of returns to education is seen in their adoption as a key indicator by the O.E.C.D in their annual Education at a Glance series and other policy documents (O.E.C.D, 1997, 2001). Increasingly, governments other agencies are funding studies of returns to

education along with other research, to guide macro-policy decisions about the organization and financing of education reforms. This was done in the case in the United Kingdom's higher education reforms as well as the Australian higher education financing reforms. Innovative use of rate of return studies is being used to both set overall policy guidelines and to evaluate specific programs. Examples include the Indonesia school-building program (Duflo, 2001), India's blackboard project (Chin, 2001) and Ethiopia's major sector investment program (World Bank, 1998). Above all, returns to schooling are a useful indicator of the productivity of education and incentive for individuals to invest in their own human capital. Public policy needs to heed this evidence in the design of policies and crafting of incentives that both promote investment and ensure that low-income families make those investments.

George (2007) discusses the significant difference between different countries when it comes to quality of education in certain areas. Borjas states that a higher percentage of Indian students study computer science than American students; therefore, using specific human capital theory, this would suggest that Indians would be more successful in starting a business in the technology field compared to Americans, simply because they have more related educational attainment. Computer service self-employment activities are among the growing self-employment activities in urban centers of Kenya.

Hyder (2007) undertook to examine the magnitude of public and private wage differentials in Pakistan. Using cross-section data drawn from the nationality representative labour force survey of Pakistan for 2001 and 2002, the role of human capital in wage gap was examined. Results showed that primary and University levels reported higher rates of return than

secondary level of education in Pakistan. This findings were in agreement with an earlier study by Psacharopoulos (1994) which reported that rate of returns to educational level in Pakistan were highest for University 21 percent, 11 percent for secondary and 20 percent for primary levels of education. However Psacharopoulos and Patrinos (2002), in a global update for the rate of returns to level of education, showed that in the case of Pakistan the order were 8.4 percent, 13.7 and 31.2 percent primary, secondary and university. The studies reviewed were focused on the formal sector.

Albert and Xiaobo (2013) analyses the nature of informal employment and estimate the returns to education in the formal and informal labour markets in China. It is estimated that 25.4 per cent of the urban workers are informally employed and 22.2 per cent of them work in the informal sector. The results show that the returns to education are lower for those working informally as compared to formal workers and that the gap in returns is even larger for those working in the informal and formal sectors (4.2 percent versus 11.1 percent per year of schooling according to a switching regression model). The quartile regression results reveal that the returns to education increase at higher quintiles for informal employment but not for formal employment. The results suggest that the formal and informal sectors are characterized by labour market segmentation.

Patrick et al (2012) examined the effectiveness of entrepreneur training on performance of university graduates in Tunisia. The training was found to have created in the graduate's optimism for the future. The entrepreneurship training enabled the graduates create their own jobs, as well as align their skill with the needs of the market. In a country where youth

unemployment is high self-employment will be productive to many university graduates without jobs. The present study seeks to determine the returns to education of the self-employed.

Formal education has been accused of preparing recipients for white collar jobs whose opportunities are declining (U.N.D.P, 1996). In the 1960s those who received formal education were absorbed to the roles of departing expatriates, the situation quickly changed in the 1970s when unemployment trends picked up. This created the need to identify alternative sources of employment for increasing labour force. Self-employment has been identified as an avenue of employment creation (IEA, 2010). The skills required to carry self-employment has been of interest owing to initial aims of education in the post-independence period which was to prepare African to replace the expatriates in the white collar jobs. The self-employment sector has brought into fore the skills for jobs training as a way of equipping learners with skills relevant to the job market. The 2013 world development report and 2012 E.FA global monitoring report identify expanding and improving youth skill as critical in addressing the issue of unemployment in developing countries (World Bank 2012a, UNESCO, 2012).

The millennium development goals (Republic of Kenya, 2005) noted that in Kenya education was dominated by examination oriented teaching where passing examinations is the only benchmark for performance because there is no internal system of monitoring leaving achievement at other levels within an education circle. The report recommended that; information and communication technology education should be made the natural platform

for equipping the nation with ICT skills in order to support a dynamic and sustainable economic growth. The report observed also that 50% of Kenyans were absolutely poor and 34% lived in urban areas. The self-employment sector employed 3.7 million people. The sector is an important avenue for creating employment opportunities for ever increasing graduates from all levels of education. Investment in education continues to be the largest consumer of public funds in many countries.

Chad (2009) argues that it is essential to harness the greatest talent, ensuring that sufficient human capital exists to raise productivity, output and incomes of the people. There is a link between new enterprises and increased living standards of people. Higher training ensures that workers are able to utilize the highest level of training for increased productivity. Bosire (1999) had found a strong correlation between possession of business skills and success of the self-employed. Possession of relevant skills in type of self-employment activity engaged in is vital for the success of the activity. However there exist no regulations over the self-employment activity and level of education resulting into workers entering into self-employment activities in areas that they may not have necessary training

The study carried in Bolivia by World Bank (2003) was aimed at examining which characteristics and factors cause informal and self-employed to perform better. The study respondents were drawn from the computer service industry. The variable of the study were; earnings, sex representation in self-employment, level of education and experience .the study founded out that; about 478 of self-employed had either basic or primary education while 17% of the formal do so ,formal and informal sectors had similar percentages of individuals

of with secondary education at 27% while self-employed 19% and finally 52% of the formal works had either college or technical education in contrast with only 8% of the formal and self-employed.

In Kenya there has been an increase of all level of learning institutions since independence. In the 2011-2012 budgets, education sector budgetary allocation was 204 billion out 1.4 trillion (Republic of Kenya, 2010). This was the largest allocation to any sector underscoring the importance of education in social economic development. There has been an increased unemployment trends in the last three decades. Questions have been raised about the relevance of education in Kenya versus the needs of the economy. Whether formal education is relevant to the needs of employment depends on skill endowment and availability of job opportunities (UNESCO, 2004). Studies in the United Kingdom and United States of America (Baum & Payea, 2004; day & Newburger, 2002: Price water house coopers, 2002) assessed the relative profitability of degrees and individual subjects at University level. However, studies in developing countries analyzed profitability at three levels of education namely: primary, secondary and University. These studies relied on official databases.

Wanjohi and Mugure, (2008) examined the factors affecting the growth of SMSEs in rural areas of Kenya a case of ICT firms in Kiserian Township, Kajiado District of Kenya. The study analyzed the growth and factors affecting the firms in Kajiado Township. The findings were that; the youths with various levels of education were gainfully getting into computer service Self-employment activities, there was frequent electricity blackout and financial constraints faced those in I.C.T self-employment activity. The study did not analyze the returns to the various levels of education which was the focus of current study.

Rugar (2010) study on private rate of return to University schooling among lecturers in public Universities in Kenya revealed that; a significant relationship existed between the level of University schooling and earnings. The study concluded that direct costs of doctoral programmes were higher than direct private costs of Master's Degree and investing in University schooling was highly profitable. Lecturer's promotions were based on education attainment. The study whoever looked at formal employment at the University while the current study is on the self-employment sector.

The focus of the present study was on the urban self-employed as an alternative to formal employment. The sector is known in Kenya as jua-kali. This are enterprises operating outside the industrial sector, employ an average of up to 10 people and concern themselves with activities such as; woodwork tailoring and dress making, metal work, blacksmith, basket making, hotel, eateries, fruits, computer, cybercafés, transport and taxi. The study will focus on computer service and spare parts sectors. The two activities are predominant in the urban centers. Demographic studies indicate that much of the population of developing countries will be living in urban areas. Presently urbanization is on the increase in developing countries as even the formal sector is slow or dwindling in job creation. The informal economy in Africa has witnessed dramatic renewal interest from 1980 to present day (Onganga, 1999). It is expected that the sector will absorb many of the graduates being churned from all levels of education specifically formal and informal education. The informal sector is seen as dynamic as it is estimated to provide half of the total employment and has recorded expansion in the last two decades.

## **2.3 Returns to Various Levels Education of the Self-employed in Motor Spare Parts**

### **Industry**

Blundell and Sianei (2001) give an analysis of vocational education of selected countries of the world. In Australia vocational education and training is most post- secondary and is provided through the vocational education and training. The training followed to suit industrial needs. In Finland, secondary school students make a choice between tertiary or vocational education school. Both forms of education last three years and those who choose vocational education join polytechnics .The curriculum is vocational and is adapted to the needs of those joining self-employment. Spare parts industry is practical and those engaged in it require practical skills in dealing with every day activity

The role of vocational education and training has gained prominence in the recent years as critical in human capital formation. Vocational education and training is also called career and technical education. This type of education prepares learners for jobs that are based in manual or practical activities. Traditionally vocational education was non-academic but recent education expansion has led to its development as an academic discipline (Baum & Payea, 2004). Vocational training is important because it improves the skills of the self-employed and inculcates appropriate attitude and predisposition (Ndua & Ngethe, 1992). Training also allows participants to share ideas and experience which are likely to be applied in problem solving within the work environment. The spare industry is more experience and market based.

Specific human capital suggests that individuals possess skills that are directly relevant to their occupation (Brixy & Hessels, 2010). For example, an education and work experience in

the auto mechanic field should result in higher economic success for an individual starting an auto shop compared to an education and experience in music for an individual trying to start the same auto shop.

Studies by Lin (2001) focused on education, technical progress and economic growth of Taiwan 1965-2000 periods. The study revealed that education had a positive and significant effect on economic growth. There was also no markedly significant relationship existing between capital and education or between education and technical progress. Ayodo (1990) focused on vocational rehabilitation programs in Kenya. The study examined the economic viability of training and resettling disabled persons in self-employment. The study (Ayodo, 1990) found out that; it was remunerating both economically and society for Kenya government to train the disabled in self-employment skills. The self-employment sector requires skills for increased productivity (Yaz, 2006).

Michael (2011) estimated the on-farm and off-farm (labour market) returns to education and qualifications for a sample of farm operators in Northern Ireland. The modeling analysis examined years of schooling to estimate the marginal gain in earnings associated with additional schooling. The analysis also explored the returns to specific qualifications for example degree level and agricultural qualification. The results were that; investment in education pays substantial dividends in terms of higher wage rates.

A study by Zafar and Hina (2003) on education and earnings in Pakistan confirmed the positive role of education as each year of education brought about 7% returns for wage earners. The survey found out that the returns are 15% higher for those who have all skills as

compared to those who did not possess any of these skills. The impact of technical training and private schools was found to be positive and significant. The study noted that basic skills were important and led to higher wages. This suggested enhancing literacy and numeracy skills through formal and informal education. The study advocated emphasis to be placed on market oriented approach in education.

Mohammad (2005) in a study on returns to education of the self-employed in Bangladesh found that substantial non-linearity in returns to education in Bangladesh: returns increased across levels of education. Primary education had the lowest returns. The finding that primary education had the lowest return does not imply that investment in primary schooling is necessarily inefficient. The suggestion was to equip graduates of primary education with skills necessary for the world of work.

Duraisamy (2000) on returns to education in India across all levels of education in urban and rural areas found that the private rate of return per year of education increases as the level of education increases up to the secondary level. The returns to primary education were rather low while in general, returns per year at the secondary level are the highest. The wage premium for technical diploma is notably high. Second, male-female comparison of returns reveal that the returns to women's education exceed that to men's at the middle, secondary and higher secondary levels. Third, the younger age cohorts (15-29 and 30-44) receive higher returns to additional year of education at the primary, middle and secondary levels, while those in the 45-85 age cohorts receive higher returns to college education than the younger age groups. Fourth, on the variation in returns by rural-urban residence is the higher returns to education in rural than in urban areas for primary and secondary levels and also for

technical diploma. The rewards for higher secondary and college education were higher for the urban compared to the rural residents. Last, there is evidence of considerable change in the reward for education, especially for women, between 1983 and 1993/4. The returns to women's education for primary and middle levels had declined while those for secondary and college levels have increased during the decade 1983-94. This was however a general study focusing on urban and rural workers in both formal and informal sectors. The current study focused on two self-employment areas in urban centers.

Studies in Africa have focused on estimating external benefits of education in agriculture using the education of neighboring farmers. A 1-year rise in the average primary schooling of neighboring farmers is associated with a 4.3% rise in output compared with a 2.8% effect of own farmer primary education in Uganda (Appleton & Balihuta, 1996; reported in Appleton,2000). Another study finds 56% and 2% figures for Ethiopia, but seems rather too high (Weir, 1999; reported in Appleton, 2000). The results overall are inconclusive

Paul and George (2015) examined auto spare self employment in Ghana. The results of the analysis of the data showed that there are positive signs for youth entrepreneurship in the auto sector of the urban economy and these positive signs ought to be enhanced and translated into action for supporting youth entrepreneurship by addressing the challenges confronting operators in the sector. It is also recommended that further studies need to be carried out on each of the areas of key challenges identified in this study paper for the formulation and implementation of appropriate policies and programmes to support youth entrepreneurship in the auto and related economic sectors of Ghana.

Many studies provide evidence of the positive impact of education on earnings (Schultz, 2003; Psacharopoulos & Patrinos, 2004) with returns increasing with level of education in many developing countries (Söderbom et al, 2005, Patrinos et al, 2006; Kingdon and Söderbom, 2007). Thus the available evidence suggests that investment in education enhances an individual's income and can be instrumental in reducing poverty and promoting income equality. The extent of impact of education on the self-employment sector remains subject of research because of the varied factors determining the returns to those engaged in the self-employment sector. Kenya has a higher education rate than any other East African country, but faced with a very high rate of unemployment. This has resulted in a high number of higher educated entrepreneurs with a high education and expectations in the market. These people then ventured into the informal sector (Wanjohi, 2010).

Jerome (2014) was a comparative study, conducted in the capital cities, Nairobi, Kenya and Kampala, Uganda, and focusing on youths' informal learning, transiting to adulthood, and seeking employment. The research explored Jua Kali youths with informal skills accessing employment opportunities in the informal economic sector. In the conceptual framework, youths exit school early before acquiring skills, and consequently become involved in informal work or in activities that are not official or regulated by government. While engaging in these activities, youth attain life skills. The study notes: First, the youth lacked skills for their work. Secondly, lack of guiding rules and inadequate experience prior to employment. Third, accessing employment in Jua Kali by the youthful population reveals desired impact on their wellbeing: Youths feel fulfilled, happy and economically empowered. The study concluded that jua kali was giving gainful employment to the youth.

Momanyi (2008) examined the benefits of non-formal education to jua kali artisans. The study investigated to what extent non formal education provided by the informal sector institute (I.S.B.I) benefited the jua kali artisans in business development services. The study found that jua kali artisan with training exhibited higher levels of performance than those with less or no training. The study recommended inclusion of entrepreneurial skills in formal training. Entrepreneurial skills are critical in the success of those in the jua kali industry.

Barasa and Kabwe (2001) researched on fallacies in policy and strategies of skills training for the informal sector. They concluded that the sector was attracting high qualification and 70% of the respondents had passed well in school subjects such as mathematics, science and English. In the study; 62% of respondents had primary education, 36% secondary and 2% formal college education. However the study did not look at earning differentials between various self-employment activities.

The Kamunge report 1988 (Republic of Kenya, 1998) emphasized the role of informal education in provision of skills relevant to workers in the informal sector. The report did recommend provision of entrepreneurial skills to the self-employed. The Kenya national development plan 2003-2008 had noted that the informal sector had overshadowed the formal sector in employment creation (Republic of Kenya, 2002). However, the plan noted inadequate technical skills of those in self-employment. The report further observed declining quality of education and relevance to market needs in Kenya. The standard newspaper, Monday July 8 2014 noted “universities in Kenya were offering academic programmes that are useless in the job market” (The Standard 8<sup>th</sup> July, 2013). The relevance of Kenya’s education system to market needs is a subject of debate. Over time Kenyan

education system has been accused of being out of touch with market needs. A study of present self-employment activities and skills relevant to sector will give information as whether there has been curriculum changes to meet market needs in the self-employment sector.

The Kenya Government has emphasized that education should develop skills that are relevant to the national economy (Republic of Kenya, 1997). Various attempts have been made to link the skills of informal sector workers to their level of informal training. Digolo (1990) concluded that informal apprenticeship in welding workshop did not impart trainees with all necessary skills of trade. The study noted the inadequacy of formal education to equip those in self-employment with skills necessary for work.

The study by Maundu and Twoli (1996) was aimed at describing the environmental dynamics of Jua kali metal as basic informal sector in Kenya. The study was aimed at finding out the skills required in operations of Jua Kali. The study recognized the importance of cognitive business operation such as; craft, process skills, marketing and sales techniques and artisan as important in determining the success of Jua Kali enterprises. With concern on the quality of graduates from local institutions of learning there is concern over the relevance of education to the requirements of the self-employed. The study did not examine the earning differentials in the self-employment activities rather the skills required for the Jua kali sector

Ombati (2006) in a study conducted among rural farmers were willing to embrace modern communication. The farmers were hindered by poor infrastructure, lack of government initiative and bureaucracy. Ondieki (2006) found that artisans with secondary education

produced a higher product quality than those with primary education. The study concluded that higher education had more returns than lower education attainment.

#### **2.4 Challenges Facing the Self-Employed**

The self-employed sector also known as the informal sector by its nature is unregulated and operates in varied circumstances. Some of the constraints in literature are related to inability to access funds to cater for their needs (Binks, 1979), managerial and business skills deficiencies (Townroe & Mallalieu, 1990). This limitation affects the growth of the self-employed. In Kenya the self-employment sector is beset with constraints such lack of access to credit, absence of clear regulations on operation, harassment by urban centre authorities marketing and related challenges (IPAR, 2000). This factors affect the progress of the self-employed.

Becker (2004) views the informal economy as too constrained by non-competitiveness, limited access to finance, cumbersome bureaucratic procedures in setting up, operating and growing a business, poor state of infrastructure and lack of effective institutional structures. The elimination of these constraints is a huge task that, calls for holistic support from institutions such as government, financial institutions, Non-Governmental Organization (NGOs), and the private sector so as to create an enabling environment for the development of the informal economy. Entrepreneurs in the informal economy must be in a position to respond quickly and efficiently to international market signals in order to take advantage of trade and investment opportunities and reap the benefits of the international trading system. This implies that, they need to be competitive and productive (Becker, 2004). Huysmans

(2004) concurs that development of an effective business support system is also a key condition for the success of both trade and investment capacity building. It requires business support agencies which are customer-oriented and which have a demonstrated capability of penetrating this segment of the economy.

Colm (2000) reviewed returns to education. The analysis noted returns to education being higher to those in higher education bracket than those in the lower education bracket. Similarly social rate of rate are more to those in the higher income bracket. However the study did not analyze earning differential between various levels of education in the same business activity.

Strengthening the 8-4-4 curriculum especially at the primary school level, would have a direct impact on the quality of trainees in the *Jua Kali* sector. A World Bank study of vocational education by Psacharopoulos and Loxley (1985) revealed that higher levels of general education are not necessary, but a good general education provides a good foundation for vocational education. The World Bank policy paper on vocational and technical education and training made the same recommendations (Middleton1991). In India, many of the successful micro entrepreneurs being developed are university graduates. There is a paradox about the role of the informal sector in Chile: at one level, the informal sector is clearly an important part of the economy as it is in many other Latin American countries. At another level, the informal sector is almost invisible as far as government policy is concerned (Messina, 1993). Levels of formal education amongst trainees within the informal sector appear to have been increasing for a long time already (McLaughlin, 1979). It seems to be the case that a good basic education facilitates access to traditional apprenticeship, and

enhances subsequent performance as an entrepreneur (Utria & Salomé, 1994). Although the primary route to the establishment of an artisanal enterprise in the informal sector is perhaps through the various forms of traditional apprenticeship system, there are a sizeable number of artisans that have entered the sector from formal sector industries (Mead & Kunjeku, 1993; Oketch, 1993) employees to engage in further activities in the informal sector (King, 1993) You and Giseung (2009) estimated the returns to schooling in the self-Employment sector. The study empirically analyzed the return rates to schooling for self-employment workers in Korea. Education was represented alternatively by a time continuous variable, years of schooling, and by dummies of qualification levels, middle school, high school, college, University and graduate school. The study findings were that the higher education groups were getting higher earnings.

R.E.C.O.U.P (2009) did research on education, training and labour market outcomes in Ghana. The informal sector comprised 86% of the total labour force. The findings pointed to the importance of basic education to the incomes of workers in rural and urban areas. However there was low return to primary education. The returns in the study were lower with respondents of primary school education

Mogambo and Omwenga (2015) carried a study on the challenges facing garages in Nairobi. It was noted that lack of finance was the highest factor affecting business growth as it had a correlation values of 0.757 and a significant value of  $0.0003 < 0.05$ , followed by Legal and regulatory framework which had a significant correlation of 0.59. The study established that business registration in Kenya was not a major impediment to business growth due to the digitization of the systems. The study also concluded that the stringent requirements to access

finances are the main reason why most SMEs cannot access finances. The study also concluded that lack of technology did not affect the service quality of the garages though it had an effect on customer focus. The study recommends that for the expected return from investing in the Jua Kali sector to increase, there should be an improved outlook which is associated with a swing in government policy to encourage business formation and development through; the flexibility of tax regime to make it more user-friendly. The study also recommends that all financial organizations/schemes should be adequately published to enable networking among agencies and institutions. As a result, clients approaching one institution will be made aware of the best option for their requirements. Since most of the respondents have a bad loan repayment history which is the major impediment of loan accessibility hence lack of finance.

Access to finance has been identified as a dominant constraint facing SMEs (Lader, 1996). A World Bank study found out that about 90% of small enterprises surveyed stated that credit was major constraint to new investments (Parker et al, 1995). Levy (1993) also found out that, there is limited access to financial resources available to small enterprises compared to big enterprises which lead to their low growth and development. This stems from the fact that SMEs have limited access to capital markets partly due to the perception of higher risk, informal barriers and the high cost of intermediation for small firms (Boeke, 2004).

A study carried out by the Financial Sector Deepening Kenya (FSD, 2008), showed that SMEs face numerous hurdles in accessing finance, denying them an important growth line at best or accessing it at a very high cost. The Small and Micro Enterprises' (SMEs) access to finance is being constrained by exacting legal requirements by banks and other finance

institutions, lack of a standardized and shared information registry and expensive and time consuming enforcement mechanisms.

In Kenya banks regard business regulation as an important impediment to SME lending. The most common complaint has been cited as the Know Your Customer (KYC) aspect process imposed by most central banks is seen as too stringent for SMEs. The documentation required in most instances is to a large extent akin to that required for large organizations and therefore considered excessive for SMEs. Kenya does not have a simplified business company registration process for SMEs, which is any different from the process for larger corporations, which result into the documentation required prove to be excessively burdensome for SMEs (ADBG, 2012). This acts as barrier for SMEs to access finance.

Training in the self-employment sector is carried out through traditional apprenticeship system, particularly in spare parts and computer industry. Apprenticeship is the largest source of skill training in the informal sector (Yambo, 1991). A study carried out by World Bank in 1992 estimated that 40% of all trainees acquire their skills through apprenticeship. The popularity of apprenticeship method of learning skills is its cost effectiveness (King, 1996).

A study by Barasa and Kaabwe (2001) on fallacies in policy and strategies of skills training for the informal sector, noted that the informal *Jua Kali* sector is known to suffer from a negative public image due to the perception that the sector consists of people who are school dropouts with low academic qualifications and who only resort to joining the sector after failing to qualify for the formal academic or vocational route. The research found out that 77% of the trainees had qualified for admission to the next levels of formal education and had passed in all subjects including mathematics, science and languages; 62% were primary

school leavers, 36% had attained secondary school education and 2% had formal college level education. Momanyi (2008) established that those who enter the self-employed required relevant skills in the areas they were engaged. Refresher courses are recommended to those in the self-employment.

A study by Nyangori and Nyonje (2010) examined the influence of entrepreneur's level of education and training on the performance of micro and small enterprises. The study sampled respondents from urban centres. The study revealed that education and training influenced the success of business enterprise. Those with higher education were exhibited higher performance than those with less. From the study it was recommended to equip those with less education with skills necessary for the world of work.

Okungu (2012) on factors influencing youth group micro and small enterprises in Kisumu west district, Kisumu county found the following challenges; insecurity, competition, lack of capital and managerial deficiency. The study recommended workshops to equip the self-employed with skills relevant to their work. The study did not look at the returns to education of the respondents of the study which the current study examined.

Mbugua, Njeru and Tirimba (2014) analyzed factors affecting the performance of small and micro enterprises in Limuru town market of Kiambu county, Kenya. The study identified the following challenges; lack of managerial experience, lack of access to finance and poor infrastructure. Whoever the study did not examine the returns and levels of education of the self-employed of the respondents of the study.

Magambo and Omwenga (2015) had cited harassment from county enforcement officer as an impediment to growth of garages. The study revealed that the main regulatory impediment that affected business growth was the tax regime and harassment by national/county enforcement officers. Magambo and Omwenga (2015) study on revealed that the entrepreneurs were not comfortable with the interest rate and felt that this was the main financial impediment for business growth with the highest mean score of 4.9310 in a five point Likert Scale. The respondents also felt that financial information and time consuming loan enforcement mechanism affected business growth as this parameters had high mean scores of 4.7 in each case. Another parameter that affected business growth was the lack of collateral for loans as this parameter had a high mean score of 4.6321. Most respondents also felt that the transaction costs for loans was very high as this parameter had a high mean score of 4.1 in a five point Likert Scale.

The failure by various stakeholders to participate in the informal economy could partly be explained by Amenity (2007) who found that the Kenyan government was at pains to convince the donors to avail funds for the promotion of the Jua Kali sector but there were issues of governance which had to be tackled before the funds were availed to the economy. This reduced the trust of the donors on government performance on provision of infrastructural structures for the development of the economy. Moreover, the traders' voice and opinion was not put into consideration when making any decisions.

## **2.5 Kenya Government Intervention in the Self-Employment Sector**

Education is widely considered as a facilitator of development. It is hypothesized to increase efficiency in market production by enabling access to information, improves ability to adopt and innovate broadens attitudes and enhance individual ability to obtained critical inputs and apply appropriate technology (Herrin, 1995). The earliest attempts to link education to productivity was done by Ashcroft, Barnes and Gorst (1971) among farmers .The study found educated farmers in Kisii more productive and progressive than their counterparts without schooling .A similar study by Jamison and mock in Asia found that primary education increases the productivity of the agricultural work force significantly. In recognition of the vital role self-employment was to play in Kenya, the I.L.O commissioned a report in (I.L.O, 1972). The report recommended the adoption of policies that promoted the advancement of the self-employment sector.

The problem of unemployment in formal sector was highlighted by the Gachathi Report (Republic of Kenya, 1976) the reported observed that, the largest problem confronting the country was that of un-employment. The number of unemployed school leavers was growing rapidly, they came out of school oriented to white collar jobs and poorly equipped towards playing of effective role in social and economic development of Kenya (Republic of Kenya, 1976).Recommendation was made to tailor education to prepare school leavers for work in self-employment sector. However the there was bias by graduates to seek jobs in the formal employment sector.

The Kenya government second attempt to link education to self-employment was through the Kamunge report (Republic of Kenya, 1988). The report recommended that education and training should develop skills which promote self-reliance and self-employment. In the development plans 1989-1993, 1994-1996, 1997-2001, self-employment is credited with employment creation (Republic of Kenya, 1997, 2001 & 2002). Education and training are likely to equip an individual with a base for identifying, acquiring and utilizing information on such aspects as the legal basis of operation (Bosire, 1999).

The information of the sector was highlighted by the Sessional Paper No. 1 of 1986 on economic management for renewed growth and the sixth national development plan (1989-93) as a sector that was to transform Kenya's economy (Republic of Kenya, 1986). The sector has grown over years employ millions of Kenyans (Republic of Kenya, 2014).

Twenty years after the ILO report (Republic of Kenya, 1972) the Government of Kenya in her Sessional Paper No. 2 of 1992, on small enterprise and Jua kali Development in Kenya set out a comprehensive policy framework meant to enhance the following: direct assistance to individual entrepreneurs and small scale enterprises, access to credit to small scale enterprises, access to financial and management information and removal of tax, licensing and other regulations hindering small scale enterprises (Republic of Kenya, 1992).

The Kenyan Government Sessional Paper No.2 of 1996 on industrial transformation to the year 2020 highlighted the role of informal sector in employment creation. It was noted that constraints existed that impeded the growth of sector such as: access to credit, access to land, lack of training and technical support, access to information and infrastructure. The removal

of such constraints will have seen the sector grow and create employment opportunities. The paper stated that the informal sector in Kenya was dynamic and provided half employment opportunities and it had recorded expansion in the last four years (1992-1996). The paper concluded in part “the importance of the informal sector extend beyond employment, for it provides a point of entry for many Kenyan entrepreneurs into the manufacturing and service sectors and as a testing ground for development of low cost products. It is also a sector that is geographically well distributed throughout Kenya in both urban and rural areas.”

Through various reports development plans and Sessional papers the Kenya Government had laid a lot of emphasis on the self-employment sector: The Mackay report (Republic of Kenya, 1982) had given a recommendation that the second university should produce graduates that have the potential for self-employment. The Kamunge Report (republic of Kenya, 1988) too recommended that education and training should develop skills which promote self-employment. In the development plans of 1989-1993, 1994-1996, 1997-2001 self-employment sector had been credited with job creation considerably reducing unemployment (Republic of Kenya, 1997; 2001 & 2002). Sessional Papers 1992, 1996 and 1997 on industrial transformation to year 2000 recognizes the importance of self-employment and recommended a linkage between education and needs of the self-employment sector (Republic of Kenya, 2002).

Reports from annual government survey point to the critical role of the self-employment sector in employment creation. Government of Kenya economic survey (Republic of Kenya, 1994) indicated that the informal sector had a huge potential for accelerated job creation. For

instance, the number of people in informal sector occupation has proportion of labor force grow from 4 to 5% between 1992 and 1996 respectively (Republic of Kenya, 1997). Similarly projection for the year 2001 (Republic of Kenya, 1994 & 1997) show that self-employment sector was expected to have the highest rates of increase in job creation.

The government and economic survey of 1995 (Republic of Kenya, 1995) had indicated a decline in public sector employment due to retrenchment and divesting in some non-strategic companies. However, employment in the informal sector grew by 68.6% during the last four years, from an estimated 1,063,218 persons in 1991 to 1,792,373 persons in 1994 underscoring the importance of the sector in employment creation (Republic of Kenya, 2005). In the 1998 economic survey (Republic of Kenya, 1998) the informal sector recorded a growth rate of 4.0% while there was a shift of labour to informal sector which expanded from 1,792.4 in 1994 to 2,986.7 in 1997. This was attributed to multiplicity of informal sector activities, the use of simple technology entrance.

The economic survey in 2002 and 2005 continued to show an increase employment in the informal sector. The 2002 Economic Survey (Republic of Kenya, 2002) showed a decline in formal employment. Employment in public sector went down due to retrenchment. However; the informal provided the greatest opportunities for employment. The sector created 473,500 additional jobs in the year 2001, representing a rise of 11.4% from 4,150,900 in 2000 to 4,624,400 in 2001 the 2005; government of Kenya indicated an increase in number of persons in the informal sector (Republic of Kenya, 2006). There have been efforts by the Kenyan government to provide shades for the various Juakali artisans in the different urban

centers of Kenya. However, the project has been a total failure since it is provided in piecemeal. The donor funding extended to the informal sector in Kenya has been mismanaged. The Jua kali workers remain isolated and marginalized at the end while the funds benefit a few in the government. The availability of operating space for the SMEs workers especially the hawkers and street vendors in Kenya is a big problem. The hawkers have been encroaching every available space on the pavements of the urban centers where they display their wares to the population and passerby (Wanjohi, 2014).

Ombati (2006) had found minimal government support of artisans in their work. There was poor infrastructure and lack of financial support for the artisan workers. The study recommended improvement in the infrastructure and access to loans to the artisans for them to improve sustainability and progress.

Wanjohi and Mugure (2000) found that the I.C.T sector was beset by financial challenges and frequent electricity blackouts. The study recommended government intervention to provide reliable electricity to enable the workers provides services the whole day. Loans too should be affordable and available to the self-employed.

Mogambo and Omwenga (2015) in a study on challenges facing garage operators in Nairobi city recommended that for the expected return from investing in the Jua Kali sector to increase, there should be an improved outlook which is associated with a swing in government policy to encourage business formation and development through; the flexibility of tax regime to make it more user friendly. The study also recommends that all financial organizations/schemes should be adequately published to enable networking among agencies

and institutions. As a result, clients approaching one institution will be made aware of the best option for their requirements. Since most of the respondents have a bad loan repayment history which is the major impediment of loan accessibility hence lack of finance. Further study can be conducted on the effects of Loan loss also in the determination of the interest rates level. The Jua kali artisans in Nairobi City County will benefit from the study as it will contribute to the knowledge of the small business sector and assist in streamlining their operations.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter covers the following areas: research design, location of the study, population of the study, sample and sampling techniques, data collection instruments, validity and reliability, administration of research instruments and data analysis procedures.

#### **3.2 Research Design**

The study used correlation research design (Gall & Borg, 1996; Kisilu, Kombo & Tromp, 2006). The design enabled an assessment of the degree of relationship between two or more variables. Correlation enabled the testing of the strength of the cause-effect relationship (Kenya Institute of Management, 2009). Correlation allowed the study to analyze the impact of levels of education on the returns to education across various self-employment activities. Correlation coefficient ( $r$ ) was used to show the magnitude of relationship while multiple regression coefficients ( $R$ ) allowed the prediction of earnings according to various levels of education. The study also used descriptive survey. Descriptive is designed to depict the participants in accurate way (Mugenda & Mugenda, 2009). Descriptive allows the researcher to have a brief interview or discussion with an individual about a specific topic. A descriptive survey allowed the researcher to gather information, summarize, present and interpret for purpose of clarification (Orodho, 2003). The information obtained was analyzed using means, averages, frequencies and percentage.

### **3.3 Area of Study**

Kisii County is one of the forty seven Counties in Kenya. It shares common borders with Nyamira County to the North East, Narok County to the South and Homa bay and Migori Counties to the West. The County lies between latitude 0 degrees 30' and 1 degrees South and longitude 34 degrees 38' and 35 degrees East. The County covers a total area of 1,317.5 km<sup>2</sup> and is divided into nine constituencies namely: Kitutu Chache North, Kitutu Chache South, Nyaribari Masaba, Nyaribari Chache, Bomachoge Borabu, Bomachoge Chache, Bobasi, South Mogirango and Bonchari. It has 9 Sub-Counties, 24 divisions, 75 Locations and 190 sub-locations respectively (Republic of Kenya, 2013). The county has latitude of 0° 30'S and 1°; 34°30'E and 35°E. The County has an estimated population of 1,236,966 (Republic of Kenya, 2013). This represents 597,934 and 639,032 males and females respectively. By 2017 this population is expected to rise to 1,367,049 persons (660,810 males and 706,239 females). Population distribution in the County is influenced by such factors as physical, historical, and economic development policies pertaining to land settlement. Population densities are high in areas with large proportions of arable land such as Kitutu Chache South (1,344), Nyaribari Chache (1,124), Bomachoge Borabu (989), and Bomachoge Chache (934), hectares. The County is characterized by a hilly topography with several ridges and valleys and is endowed with several permanent rivers which flow from East to West into Lake Victoria. Soils in the County are generally good and fertile allowing for agricultural activities (Republic of Kenya, 2013).

The self-employment sector provides about 70% of all jobs in the county. Unemployment is estimated to be about 60% of the total population. Many of the unemployed in the county are

the youth. The self-employment sector is important in employment creation (Republic of Kenya, 2013).

### 3.4 Study Population

The study focused on the self-employed in key urban centers: Kisii town, Suneka, and Ogembo. The centers selected are key commercial hubs in Kisii county with increasing number of people getting into self-employment activities. The target population in these centers was estimated to be 11,240 with computer service industry having 6400 and motor spare parts 4840 respondents respectively. They were identified by the type of self-employment activities they are engaged in and levels of education. Records from the trade office estimate the self-employed in spare part and computer services in Kisii town as 10020, Suneka 650 and Ogembo 570. The urban centers selected for the study have high population due to rural urban migration (Government of Kenya, 2009).

The population of the study is represented in Table 3.1.

**Table 3.1: Population of the Study**

<b>Activities</b>	<b>Kisi</b>	<b>Suneka</b>	<b>Ogembo</b>	<b>Totals</b>
Computer services	5780	300	320	6400
Motor spare parts	4240	350	250	4840
<b>Total</b>	<b>10,020</b>	<b>650</b>	<b>570</b>	<b>11,240</b>

**Source: Records from Kisii County Licensing Trade Offices (2016)**

### 3.5 Sample and Sampling Techniques

The sample size in this study was obtained using Fishers formulae (Glenn Israel, 1992)

$$\begin{aligned}n &= \frac{Z^2 pq}{d^2} \\ &= \frac{(1.96)^2(0.5)(0.5)}{(.05)^2} \\ &= 384\end{aligned}$$

$n$  =desired sample size when the desired sample size is greater than 10000

$Z$  = the standard normal deviate at the required confidence level (in our case 95%).

$p$  = the proportion in the target population estimated to have characteristics being measured (in our case 0.5)

$$q = 1 - p .$$

$d$  = the level of statistical significance set (in our case 0.05 since the confidence level is 95%).

The sample of the study is represented in Table 3.2

**Table 3.2: Sample Frame**

Activities	Target Population	Sample
Computer services	5780	218
Motor spare parts	4240	166
Total	11240	384

**Source: Records from Kisii and Licensing Trade Office**

Snowball was used to identify the respondents by levels of education and self-employment activity. Stratified sampling was used get the number of respondents per urban centre to

ensure equitable distribution. In computer service industry the sample collected was 218 and motor spare service industry was 166 respondents. Further the sample for each urban centre was: In computer; Kisii was 197, Suneka 10 and Ogembo 11. In spare parts the sample for each urban centre was; Kisii town 145, Suneka and Ogembo 9.

### **3.6 Data Collection Instruments**

This study used questionnaires, interview schedules and observation schedule as data collection research instruments.

#### **3.6.1 Questionnaires**

A questionnaire is a set of questions for respondents to complete on their own. It is precise, detailed and ordered leaving little discretion for the respondent (Kothari, 1990). Questionnaires are preferable where data is not directly observable (Gall & Borg, 1996).

The questionnaires that were used in this research consisted of; structured questions which are easier to analyze, easier to administer because each item is followed by alternative answers. They were also economical to use in terms of time and money (Mugenda & Mugenda, 1999). The questionnaire items covered : levels of education, cost of last level of education, grade scored in last level of education, type of self-employment activity, motivation for joining self-employment, challenges and intervention measures to support the self-employed. The questionnaires were used by the researcher to collect data from the self-employed in computer and motor spare parts service industries.

### **3.6.2 Interview Schedules**

The study used interview schedules to collect data. Interview schedule is among the best methods in that it involves direct verbal interaction between individuals. It allows for greater depth than the case of other methods of data collection. The researcher interacts with the respondents face to face and can observe nonverbal expressions, which would not be observed in other techniques (Cohen & Manion, 1995). The interview schedules permits the researcher to obtain greater clarity of the information being sought. For instance, questions might be modified if it appears that they are being misunderstood. Control over the research is also provided through judicious use of probes. The interview schedule is not restricted to a literate population, it was the most suitable instrument for data collection because the informal sector comprises people who are at different levels of education, the language of the interview can be adapted to the ability or educational level of the person being interviewed and misinterpretations of questions can be avoided. The interviewer can collect supplementary information about the respondent's personal characteristics and environment, which is often of great value in interpreting results. The researcher by his own skill can overcome the resistance, if any of the respondents; the interview method can be used to get a perfect sample of the general population. Personal information can be obtained easily under this method and non response remains low. The interviewer may catch the informant off-guard and thus secure the most spontaneous reactions that would not be the case if a mailed questionnaire were used (Kothari, 2004).

In this research structured interview schedules was used. The interview method can be prone to subjectivity and bias on the part of the interviewer. The interviewer may be inclined to

lead the responded to expected answers (Cohen & Manion, 1995). In order to overcome the above limitations, the researcher probed or paused to give the interviewees time to think and respond to questions. The self-employed were interviewed at their work place. It was not possible to set up specific times for interviews because the self-employed were only available for interviews when they had no work to do. Work in the informal sector occurred every day of the week including Sunday and often continued as late as 6.30 p.m. attempting to arrange interviews averaging about two hours were difficult for the self-employed sector. The interview schedule items consisted of; type of self-employment, last level of education, motivation for joining self-employment, recommendation to assist self-employment, average earnings per month, challenges and intervention measures to assist the self.

### **3.6.3 Observation guide**

Observation is direct in data collection whereby the researcher watches and listens to what the respondents do and say respectively (Mugenda & Mugenda, 1999). It was used to observe how the self-employed in computer and motor spares carried out their activities.

## **3.7 Validity and Reliability**

### **3.7.1. Validity**

This is the degree to which the results obtained are a true reflection of the correct picture of the data collected from the field (Mugenda, 1999). Validity of the instruments was done by consultation with supervisors of this study and other researchers to ensure they complied with universal standard of proposal and research finding reporting. Their advice and counsel was incorporated in the final research instruments for this study. A pilot study involving 20

self-employed respondents was carried to ascertain validity. The respondents in the pilot study were not included in the final sample for the study.

### 3.7.2 Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results after repeated trials (Mugenda & Mugenda, 2003). Test-retest was used to confirm the reliability of research instruments. The questionnaires were administered to the same respondents twice within an interval of 2 weeks. The scores from the respondents were computed using Cronbach’s Coefficient Alpha. The K-R 20 formula is as follows.

$$KR_{20} = \frac{(K)(S^2 - \sum s^2)}{(s^2)(K - 1)}$$

Where:

$KR_{20}$  = Reliability coefficient of internal consistency

$K$  = Number of items used to measure the concept

$S^2$  = Variance of all scores

$s^2$  = Variance of individual items

**Table 3.3: Cronbach Alpha for Reliability**

Scale	No. of Items	Cronbach alpha	Standardized Cronbach Alpha
Government Intervention	7	.774	.755
Challenges facing self-employment	6	.943	.967

The instruments were piloted, data analyzed using SPSS software and the Cronbach’s Coefficient Alpha obtained from the questionnaire on Government Intervention and Challenges facing self-employment were 0.774 and .943 respectively. This was well above

0.7 on a scale of -1 to +1, indicating a positive correlation. Hence, the items in the questionnaires were highly correlated amongst themselves.

### **3.8 Administration of Research Instruments**

The researcher obtained letter of authority from the post graduate school of Maseno University and a Research Permit from the National Commission for Science and Technology and Innovation to collect data. Permission was granted by the County Director of Education, Kisii County. A visit was made to the Office of the Director of trade of Kisii County government where the study was to be carried out in the three urban centres of Kisii, Suneka and Ogembo. The researcher visited the sites for familiarization tour and identification of sites from where data was to be collected. The researcher inducted two research assistants who together visited the sites where trading or commercial activities were taking place and administered the research instruments. Besides also administering the instruments the researcher ensured proper administering of the instruments and that the assistants understood the kind of data required for the study. The respondents were requested to fill the questionnaires within one week. The researcher and assistants collected filled up questionnaire after two weeks. The interview schedules were administered during collection of questionnaires. The study administered at total of 384 questionnaires with computer service 281 and motor spare parts 166. Computer self-employment had 190 and motor spare parts 166 questionnaires returned respectively. The study administered 50 interview schedules to check the accuracy of information given in the interview schedules. The interview schedules were randomly administered inline, to those who had filled questionnaires. The schedule guide covered; relationship between training and self-

employment, motivations to start self-employment, challenges facing self-employment and state intervention measures to assist self-employed in their work.

### **3.9 Data Analysis Procedures**

Data collected from the field was first coded into research questions and objectives. Qualitative data was reported verbatim. Quantitative data was analyzed using inferential statistics. The study sought to determine how various levels of education determine the returns of those in self-employment activities. The study used Pearson  $r$  and  $r^2$  to determine the magnitude of the effects of levels of education on the returns of the self-employed in computer and motor spare parts industry. ANOVA analysis was used to determine the significance of relationship between levels of education and returns of the self-employed. Descriptive statistics were used to determine the challenges facing the self-employed and intervention measures to address the challenges.

### **3.10 Ethical Consideration**

Research should stay within the realm of sound ethical study (Nephat, & Douglas, 1993). The researcher should remain impartial and keep the respondents and their responses confidential. The researcher should obtain informed consent from respondents. The respondents should be treated humanely (Denzin & Lincoln, 2011). The respondents should be free to give honest information (Oso & Onen, 2011). To mitigate against ethical issues the researcher took the following measures ; explained the respondents the goal of the study was purely academic, the information given was to be treated with outmost confidentiality and respondents signed consent form to accept or reject to take part in the research. The consent form is attached as appendix.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents the results and discussion of the findings of the study under objective driven themes. The objectives of the study were to;

- i. Determine the returns to levels of education of the self-employed in computer service industry.
- ii. Determine the returns to levels of education of the self-employed in motor spare part industry.
- iii. Establish the challenges facing the self-employed in computer and spare part industries.
- iv. Determine effectiveness of intervention measures to support the self-employed in their work.

#### 4.2. Questionnaire Return Rate

The questionnaire returns rate was as shown in Table 4.1.

**Table 4.1: Questionnaire Return Rate**

<b>Respondents</b>	<b>Issued</b>	<b>Returned</b>	<b>Percentage %</b>
Computer	218	190	88
Spare parts	166	166	100

The questionnaire return rate for computer service industry self-employment was 88% while in the spare parts industry the return rate was 100%.The overall return rate was 93%.

#### 4.2.1 Gender Distribution

The respondents were asked to indicate their gender so that participation according to gender is analyzed and discussed as shown in Table 4.2.

**Table 4.2: Gender Distribution**

		<b>Percent</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Female	159	45.00	45.00	45.
Male	198	55.00	55.00	55.00
Total	357	100.00	100.00	100.00

Table 4.2 shows that 159 (45%) were male while 198 (55%) were female all-inclusive approach.

#### 4.2.2 Age of Respondents

The respondents were asked to indicate their Age so that participation according to Age is analyzed and discussed in Table 4.3.

**Table 4.3: Age profile in computer service industry**

<b>Range of years of respondents</b>	<b>Frequency</b>	<b>Valid Percent</b>
15-19 years	10	5.2
20-24 year	27	14.1
25-29 years	40	22.0
30-34years	32	16.8
35-39 years	27	14.1
40-44 years	23	12.0
45 -49years	17	8.9
50-54 years	5	2.6
55-59 years	4	2.1
60-64years	2	1.0
65-69years	1	.5
70-74	1	.5
Total	190	100.0

From Table 4.3 the respondents between ages 24 to 44 were the majority, with age bracket 25-29 representing 21% of the total respondent being the leading followed by 24-29 age bracket at 14%. The age profiles indicate that respondent who are from various levels of education are finding the self-employment sector attractive to join.

The study calculated the respondent's levels of education based on the grades and marks scored as indicated in Table 4.4.

**Table 4.4: Average mean and standard deviation levels of education for respondents**

	<b>Respondents</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
KCPE	17	218.00	300.00	275.7647	24.15711
KCSE	72	1.00	5.00	3.4583	.91832
Certificate	55	1.00	3.00	2.0364	.81567
Diploma	28	1.00	3.00	1.7857	.83254
Bachelor's degree	15	2.00	4.00	3.0667	.79881

**Key**

1. **KCPE Range of marks** 50- 500 Marks
2. **KCSE range of grades for the study** C+=5, C=4, C-=3, D+=2, D =1
3. **Diploma and certificate grades** Distinction=3, Credit=2, Pass=1
4. **Bachelors degree** First Class=4, Second Upper=3, Second Lower=2, Pass=1

Respondents' average levels of education were as; The KCPE graduates mean average marks was minimum 218, maximum 300, mean 276 and STD of 24.2 marks. For KCSE minimum was 1.00, maximum was 5.00, mean 3.5 and STD deviation was 0.91832. The certificate minimum was 1.00, maximum 3.00, mean 2.0364 and STD 0.81567. The diploma minimum 1.00, maximum 3.00, mean 2.0364 and std of 0.83254 and bachelor degree minimum was 2.00, maximum 4.00, mean of 3.0667 and deviation of 0.79881. The implication was that the self-employment sector of computer was attracting school graduates with good grades.

Paul and Owusu (2015) in a study in Ghana found that about 61% of operators had completed basic education (up to 10 years), 25 %of them had had secondary level of

education and 5% had no education or up to primary level of education. This segment was populated largely by youth in apprenticeship in the auto-repairs. In addition to education, acquisition of skill through training or experience on the job is an equally important consideration for the youth operating in this sector. The results of our study show that 68 % of all the respondents had acquired skills for their work. Of this proportion, 42 % were in auto repair service (24% were master craftsmen and 18% apprentices). Dealers in used spare parts (21%) and shop operators of both used and new spare parts (21%) and shops dealing in new spare parts (20%). It took 67 % of those who said they had had some training or had acquired skills for their work between one and three years to go through their training or learning on the job.

The study calculated average cost of education per level of education as shown in Table 4.5

**Table 4.5: Analysis on the cost of Levels of Education**

	<b>Respondents</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
KCPE	39	2.045	39,632	15,656	13,016
K.C.S.E	155	4,093	79,994	54,653.	23,555
Cert	83	40.123	119567	63.229	21,425
Diploma	47	11678	170,581	100,185	38,416
Bachelors degree	28	457.431	75,0624	586,357	78,704
Masters degree	4	332.985	605,261	478,07	120,477

Table 4.5 gives the mean and standard deviation of the cost of education. For K.C.P.E the average cost of education was ksh 15.656 with deviation of ksh13.017, K.C.S.E had a mean of Ksh54.663 with deviation of ksh23.555, certificate had mean of Ksh 63.229.72 and

deviation of Ksh, 21.425. diploma had a mean of Ksh100.186 with deviation Ksh38.416 bachelor's had a mean of Ksh586.357 with deviation of Ksh78704. Master's had mean of478.207 and deviation of 120.477 Through the interview schedule it was established that the deviation arose from the respondents studying at different times in years and the differences arising from the costing of education from different schools. The study analyzed monthly returns to levels of education as indicated in Table 4.6.

### 4.3 Returns to Various Levels of Education of the Self-Employed in Computer Service Industry

In order to determine the returns to various levels of education of the self-employed in computer service industry the levels of education and respective earnings were computed as shown in Table 4.6.

**Table 4.6**

**Analysis of the returns to levels of education and average returns per month in computer industry from 2012 to 2016 (n=190)**

<b>Level of Education</b>	<b>Respondents</b>	<b>Minimum Returns in kshs</b>	<b>Maximum Returns</b>	<b>Mean Returns</b>	<b>Std. Deviation</b>
<b>K.C.P.E/C.P.E</b>	17	4,500	29,400	15,571	7,149
<b>K.C.S.E/K.C.E</b>	72	4,000	29,900	14,857	7,249
<b>Certificate</b>	54	4,300.	19,80.	9,364	4,405
<b>Diploma</b>	28	3,000	9,600.	15,335	17,034
<b>Bachelors degree</b>	15	22,000	39,800	30,293	5,822
<b>Masters degree</b>	4	35,000	38,000	37,250	1,500

The results showed that on average; respondents with K.C.P.E earned an average Ksh15,571, KCE earned an average 14,857. Certificate earned 9,364 and diploma earned an average of 15,335 amount of money. Those with a bachelor's degree earned 30,293 which were higher than their counterparts with K.C.P.E, K.C.S.E and diploma qualifications. Master's degree earned Ksh 37,250 which was higher than all levels of education. Diploma graduates earned less than K.C.P.E, K.C.S.E and certificate levels of education. Master's graduates who earned 37,250 seemed to earn more than the rest in this industry. Through the interview schedule respondent reported that 'the returns did not match the levels of education.' It was noted that holders of K.C.P.E graduates earned more than other higher levels of education. It was difficult to understand why higher education was not translating into higher earnings but there were indications that K.C.P.E school leavers were committed to their work and spent more hours and time in their work. Curriculum developers can tailor education skills to meet the needs of the self-employed in the diploma programmes which recorded the lowest returns. Further given the positive effects of primary school graduates, it is important to tailor primary education to meet the requirements and challenges of the self-employed.

Namirembe (2014) found returns are high in Uganda self-employment but compared with returns in other African countries, for example Girma and Kedir (2005) document an average return to education of 15 percent in Ethiopia and Leyaro (2010) estimate the average return to education at 13 percent in Tanzania. Kingdon and Söderbom (2007) find similar returns to education for the agricultural workers, wage-earner and the self-employed among the older cohort in Pakistan. Findings for Ghana (Kingdon & Söderbom, 2007) the returns to education

for wage employment are higher than self-employment. Compared with the current study, the analysis indicate positive results for K.C.P.E level of education.

Donald (2002) on returns to self-employment indicated contradictory results. The return to education in Germany is higher in the wage-employed sector than self-employment, and that self-employment work experience is less rewarded in the wage sector than is wage-employment work experience. One hypothesis of particular interest is that the return to self-employment experience is occupation-specific, and that occupational changes are the source of the observed difference in returns between wage and self-employment experience. The returns to self-employment were found to be occupation oriented. Some sectors posted higher returns than others

In developing countries as noted by Psacharopoulos (1995) the priority was to invest in primary education. This was evidenced by the fact that the rate of return for primary education graduates was higher than other levels of education. Psacharopoulos (2004) had noted that the previous 12 years, average returns to schooling had declined by 0.6 percentage points. At the same time, average schooling levels had increased. Therefore, and according to the study, everything else being the same, an increase in the supply of education had led to a slight decrease in the returns to schooling. A comparison of studies between men and women found the returns to primary education were much higher for men (20% than for women (13%). Women, however, experience higher returns to secondary education (18% versus 14%). Earnings in the self-employment sector aren't regulated by clearly stated salary scale and thus making those with K.C.P.E, K.C.S.E, diploma bachelors and masters have higher

returns than certificate. Whoever other studies indicate education returns increase with increasing levels of education.

Khatete (2002) had found those with higher education had higher average earnings than those with little or no formal education and had trained in the activities they were engaged in. Higher education therefore in the self-employment sector resulted in higher returns except with those with certificate qualifications who seemed to earn less. Psacharopoulos (2009) on returns to education found that on average, university graduates have a 61% earnings advantage over secondary school graduates. Such differential helps explain the unabated demand for university entry in developing countries. Higher education is considered as gateway to higher earning , however lower earnings noted in the current study on those with diploma and marginal differences between those with K.C.P.E, K.C.S.E and bachelors degree qualification is an indication that in self-employment there are factors other than education which determines the earnings of the self-employed. On lower return in certificate, Glewwe (1996) suggests that investments are most desperately required where returns are lower. There are also other benefits associated with education that makes investment in all levels of education necessary (Palmer, 2005).

Generally, the standard deviations of earnings for all the respondents were noted to be high. This means that there were high discrepancies in the average earnings across all categories of the respondents. This finding indicates the unpredictable nature of the self-employment sector. However a study by Idrus and Cameron (2000) had found that there were no significant differences in returns between the self-employment and the formal employment

sector in Malaysia. Namirembe (2014) found similar marginal returns to an additional year of schooling for self-employed and workers in the formal sectors. The study found the marginal returns to education have decreased over time. The findings differ with the current findings which have indicated varied earning differentials between levels of education.

Canadian researchers had confirmed that the returns to post-secondary education had risen over the past decades. According to Emery's (2005) survey of the literature in Canada, rates of return increased steadily from the 1960s to the early 1990s, where they peaked at 16 percent (women) and 12 percent (men) before dropping off only slightly. Belzil and Hansen (2006) examined rates of return using census data, finding an increase during the 1990s, from 9 percent in 1991 to 11 percent in 2001, although they tend to vary by discipline, gender and region. Notably, the authors demonstrated that the rate of return to post-secondary education increased significantly despite the large tuition increases of the 1990s. Similarly, Jorgen (2007), using census data from 1991, 1996 and 2001, finds that the rate of return increased during the 1990s for most fields of study. Additionally, he identifies a rate of return to individuals who receive a bachelor's degree of 10.6 percent, as well as a public rate of return of 8.5 percent. Emer's (2005) also describes how unemployment levels decrease with educational attainment. This study targeted developed country whose employment is more formal as compared to developing countries where self-employment is critical in the employment sector.

Zafar and Hina (2003) on education and earnings in Pakistan confirmed the positive role of education as each year of education brought about 7% returns for wage inners. The survey

found out that the returns are 15% higher for those who have all skills as compared to those who did not possess any of these skills. The current study shows an increase in return as the education increases. This indicates that investment in education has a positive relationship with returns. Therefore education levels have an effect on the returns of the self-employed as the higher the education the higher the returns.

#### **4.3.1 Coefficient of Determination Pearson’s r Correlation between Average Earnings and Levels of Education in Computer Service Industry**

The study further sought to establish the relationship between the levels of education and returns using Pearson’s product moment correlation, coefficient of determination and ANOVA. The results were as shown in Table 4.7.

**Table 4.7: Average Returns and levels of Education**

<b>Level of education</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>Adjusted R squared</b>	<b>ANOVA test</b>
KCPE/C.P.E	0.643	0.413	0.373	(F(1,15)=10.572,P=0.005)
KCSE/K.C.E	0.104	0.011	0.002	(F(1,70)=0,761,P=0.386)
Certificate	0.128	0.016	0.002	(F(1,52,)=0.868,P=0.356)
Diploma	0.195	0.038	0.001	(F(1,28)=1.031,P=0.319)
Degree	0.045	0,002	0,075	(F(1,13)=0.006,P=0.874)

The analysis in Table 4.7 for K.C.P.E showed a Pearson correlation coefficient of 0.643. This indicated moderate relationship between KCPE level of education and average earnings and that the relationship was significant ( $r=.643$ ,  $N=17$  and  $P=.005$ ). This means that the returns to

education at K.C.P.E level were moderate. The returns were commensurate to the level of education and can be a motivating factor for KCPE graduates to enter into computer service industry. This is more so in view of the cost of education for K.C.P.E graduates. The interview finding indicated that the respondents were acceptable to the returns they received. The curriculum for K.C.P.E examination should be enhanced computer skills to allow increased returns. This findings do not concur with Appleton (2001) in a study done in Uganda for primary level of education found conflicting results; for the 1992 data he found returns at secondary higher than at primary and the reverse for the 1999/2000. The influence of K.C.P.E on returns of the self-employed determined using coefficient of determination and the (adjusted R squared =0.373). This means K.C.P.E accounted for 37.3% of the earnings and 63.7% were due to other factors which were not the subject of this study. The returns of 37.3% are not sufficient for K.C.P.E graduates to optimize their earnings. ANOVA was computed to determine as to whether K.C.P.E level of education was significant predictor of earnings in computer industry. The result indicate KCPE was a significant predictor of the returns in computer industry  $F(1, 15) = 10.572, P = 0.005$ . This means K.C.P.E can be relied in estimating the earning of the self-employed in computer earning. The findings indicate that the K.C.P.E level of education can be enhanced by equipping the recipients with skills necessary for work. The quality of primary school education can be improved. Further he found an increase in returns to education over time, though it was only the returns to primary that were statistically significant. For the case of K.C.S.E, the Pearson correlation coefficient was 0.104. This indicated a weak relationship between K.C.S.E level of education and average earnings and the data was not significant. For the case of certificate, the Pearson correlation coefficient was 0.128. This also indicated a very weak relationship between

certificate level of education and average earnings and that the data was not significant. The findings imply that in computer service industry only K.C.P.E level of education had significant impact to the returns of the self-employment.

These findings agree with earlier findings which had found returns to primary level of education with higher returns than all other higher levels of education (Psacharopoulos, 1988, 1994 and 2002). Similarly Palmer (2010) had found returns to primary school graduates in sub-Saharan Africa at 37.6% higher than secondary at 24.6% and 27.5% for higher education. Investment should be directed more to primary education for it forms the basis of further learning and feeds higher levels of schooling (Kingdon, 2005). However, Canagarajah and Portner (2003) found low return from their analysis for primary education as compared to the other higher levels of education, the suggestion being the low quality of primary education and the teaching of an irrelevant curriculum. A World Bank report in Ghana (2004) had also found low returns to primary education. The moderate return is an indication that in Kenya primary school education has more returns than other levels of education. This can lead to direct of more resources to primary school education relative to other levels of education. Psacharopoulos (1985, 1995 and World Bank, 1986) had recommended primary school education as priority for investment.

For the case of diploma, the Pearson correlation coefficient was 0.195. This indicated a weak relationship between diploma level of education and average earnings and that the data was not significant. For the case of bachelor, the Pearson correlation coefficient was 0.045. This still indicated a negative relationship between undergraduate level of education and average

earnings and that the data was not significant. These findings indicate it is not profitable for bachelor's degree graduates to venture into computer service industry. Alternatively curriculum for bachelor's degree should include practical courses in computer service industry. Through the interview schedules the respondents reported minimal relationship between the computer service self-employment activity and their levels of education.

A World Bank report in Ghana (2004) had found the returns low returns to primary education. The moderate return is an indication that in Kenya primary school education has more returns than other levels of education. This can lead to direction of more resources to primary school education relative to other levels of education. Psacharopoulos (1985, 1995 & World Bank, 1986) had recommended primary school education as priority for investment.

The Pearson's r results were' KCPE 0.643, KCSE 0.104, certificate 0.128, diploma 0.195 and bachelors degree 0.045. The study calculated  $r^2$  the returns to education. The results were: KCPE category the  $r^2$  was 0.0413, KCSE was 0.011, certificate 0.016, and diploma was 0.038, bachelors. Except KCPE all other levels of education recorded weak relationship between education and returns. Emphasis therefore should be more in primary education by making I more it more relevant to the needs of the self-employed.

The ANOVA results were computed as: KCPE ( $F(1,15)=10.572$ ,  $P=0.005$ ), KCSE was ( $F(1,70)=0.761$ ,  $P=0.386$ ), certificate was ( $F(1,52,)=0.868$ ,  $P=0.356$ ), diploma was ( $F(1,28)=1.031$ ,  $P=0.319$  and bachelor results were ( $F(1,13)=0.006$ ,  $P=0.874$ ). The findings indicate K.C.P.E had a positive relationship with the returns of the self-employed in

computer while the other levels of education recorded moderate results. The other levels of education had minimal effects on returns to the self-employed in computer service industry. To test the goodness of fit of the model coefficient of multiple regressions was used and the results are shown in Table 4.8.

**Table 4.8: Model Summary- Regressed analysis of all levels of education and returns**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.566 <sup>a</sup>	.320	105	7440.34726

a. Predictors: (Constant), BACHELOR'S, CERTIFICATE, KCPE, DIPLOMA, KCSE

The results indicate that a multiple coefficient of determination of 0.320 was obtained. This indicated that the independent variables (KCPE, KCSE, and Certificate, diploma and bachelor's degree levels of education) explained up to 32.0% of the variation of average earnings. 68.0% remained unexplained. Combined levels of education cannot explain the returns to education in the spare part industry. The existence of substantial returns to education in self-employment is a welcome idea to graduates leaving school at all levels of learning because it suggests employment alternatives from dwindling formal education sector (Geeeta et al, 2008). Psacharopoulos (2009) found higher education in Europe a profitable investment opportunity both privately and social returns.

The estimation of the return to year of schooling both for individual and society more generally, has been the focus of considerable debate in literature. The role of education is expected to be manifested in earning returns. Colm and Walker (2000) had found that in United Kingdom returns to year of schooling was 0.0057 for male and 0.0069 for female using schooling and experience as independent factors and earnings as dependent factor. A

comparison with other European factors indicates United Kingdom was the highest where Nordic countries had the lowest average returns to schooling at 0.0229. However the comparison is based on formal sector in European countries while the current study examines the self-employment sector and is further limited to returns within single self-employment activity. The return of 32.0% is considerably lower to encourage individuals in the self-employment sector to pursue further education while in self-employment. It is not motivating for individuals in the sector to pursue further education. With higher returns in computer service of the self-employment with undergraduate level of education, the sector will be attractive to school leavers (Donald, 2002). Policy makers need to encourage school graduates to venture into self-employment as opposed to formal sector. Additional variables that affect the earnings of the self-employed in computer services need to be examined.

Donald (2000) on returns to education and experience in self-employment in West Germany found that returns to education in the self-employment relative to formal sector were lower. Further research was recommended to ascertain the cause of the difference. One of the observations was that the self-employment was occupation oriented and that was the source of differences in returns between various occupations.

The returns to education examined by Olivier, Sumon, Manisha and Zhong (2007) had indicated that returns increased with education level. The current study indicated that primary education had positive return to education while other levels had mixed results.. The conclusion is that those in self-employment with lower qualification are likely to have less return to education. This contradicts other studies that had shown the returns to education

being higher in primary education (Psacharopoulos, 1985 and Psachapoulos and Patrinos, 2002, Bennel, 1996). Psacharopoulos (2002) had found in Ghana returns to education higher in primary school (37.6%) as compared to 24.6% for secondary and 27.8% for higher education in both formal and informal sector. However a similar study (Robert, 2009) found return to primary education lower than all other levels. Primary education had 0.0074 returns as compared to 0.1311 for post-secondary. However World Bank evaluation of basic education in Ghana (World Bank, 2004) noted that positive returns to primary education no longer was evident and was negative. The weakness of primary education is pointed to declining quality of basic education which in turn led to decreased benefit to lower levels of education (Robert, 2009). The solution to lower returns in primary education is to increase funding to basic education and equip instructors at lower level of education (Psacharopoulos, 1994). Another suggestion is to increase funding at tertiary levels where returns are high (Kingdon et al, 2005). However Glewe (1996) argues that low rates of return to certain types of education do not necessarily imply that future investments should be directed toward other types rather it could be an indication that investments are most desperately needed there. Therefore, the suggestion is to redirect investments to lower level of education to make it more profitable.

The implication of lower returns in secondary education may not imply that lower education shouldn't be invested in (Kingdon et al, 2005). There is evidence that shows that there are non-income benefits of secondary education. Furthermore secondary education forms the basis of further learning and since basic education feeds higher levels of schooling, a good

quality basic education is essential to maintain quality outcome of higher levels (Palmer, 2006). However focus of investments should target all levels of education.

Increased returns in higher levels of education raises policy implications as to whether more resources should be directed to higher education which attracts a small percentage of the population in poor countries (Danso-Manu, 2004). Public investments should be directed to lower levels of education where the majority benefits. Lower returns to education may not be motivating for workers in the self-employment sector to pursue further education. The conditions of work in the self-employment sector could be an inhibition to the returns of those working in the sector. The suggestion is to equip those with lower levels of education with skills necessary in enhancing their earnings.

The service industry is critical in creation of employment (Olivier et al, 2007). India and China economies have been propelled by the service industry specifically computer service. The economies expanded by workers moving from agricultural activities to mainly computer industry. Computer service is modern technology based and attracts workers with higher education. In the United States of America, Baum and Payea (2004) outlined the benefits of higher education, the study found an association between higher education and higher earnings. The study pointed that completion of bachelor of education could result in higher earnings than higher school education.

Policy issues in education should be linked to its potential to raise earnings and reduce poverty (Geeta & Mans, 2008). Education affects people's economic status by raising their earnings in the labour market. The type of education that leads to increased returns in the

self-employment sector has hardly been investigated. The formal employment sector has been the object of most existing literature on education and returns in employment sector. The formal sector of employment is shrinking more so in developing countries and therefore need to explore the type of education that can provide maximum returns to those in self-employment sector. Aslam (2007) had found substantial returns to education in the self-employment sector in Pakistan suggesting that education plays poverty –reduction and productivity-enhancing role in self-employment.

#### **4.4 Effect of the Level of Education on Average Earnings of the Self-Employed in the Motor Spare Parts Industry**

A cross tabulation of the analysis is given in Table 4.9

**Table 4.9: Education Level and Average Returns Per Month in Motor Spare parts Industry Between 2012 and 2016 (N=166)**

	<b>Respondents</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Earnings</b>					
<b>K.C.P.E/C.P.E</b>	21	7,700	29,500	16,786	7,683
<b>Earnings K.C.S.E/C.P.E</b>	86	5,000	11,500	16,855	13,669
<b>Earning Certificate</b>	27	8,000	39,000	16,445	9,721
<b>Earnings Diploma</b>	19	12,500	39,000	22,584	8,387
<b>Earnings bachelor's degree</b>	12	16,800	38,000	29,150	7,324

Source: Field data

The results showed that on average; respondents with KC.P.E earned Ksh16.786, K.C.S.E earned Ksh16, 855; certificate earned Ksh 16,445 qualifications earned nearly similar amount

of money. Diploma graduates earnings were Ksh 22,584 and bachelor's degree earned 29,150. Those with diploma and bachelors earned more than their counterparts with KCPE, KCSE and certificate qualifications. Earnings in the self-employment sector isn't regulated by clearly stated salary scale though this findings indicate that the higher the level of education, the higher the returns Through the interview schedule respondent reported that 'there was no relationship between returns and levels of education'. The K.C.P.E level of education posted higher returns than other levels of education. There was no plausible examination as to why levels of education had no positive relationship with returns. The Khatete (2002) found average income varying with the level of schooling among the self-employed in informal sector. Psacharopoulos (2009) provides evidence that the returns to higher education have been rising while other countries that the returns had been falling. Such trend means that the returns to education may vary even between counties.

The self-employment sector had mainly attracted primary school and drop outs from secondary school in the 1960's and 1970's (Owano, 1987). However, this has changed in the recent years with more graduates of secondary school and tertiary institutions joining the sector making it an avenue for employment. Yaz (2006) avers that there has been an increased number of college educated self-employed households in United States getting into self-employment. This study indicates that respondents with primary school certificate were 20.1% while over 79.9 were of secondary school training and above. An analysis of the returns of these school graduates will give a picture as to whether the return to various levels of education can sustain them in self-employment. In human capital theory education is an investments of current resources in exchange for future returns (Colm *et al.*, 2000).

Policy interest in education should be linked with potential to raise earnings and reduce poverty (Geeta *et al.*, 2008). With 47% of respondents of the study having post-secondary training in self-employment there is need to tailor education with skills necessary for self-employment.

Psacharopoulos (2004) had noted that the previous 12 years, average returns to schooling had declined by 0.6 percentage points. At the same time, average schooling levels had increased. Therefore, and according to the study, everything else being the same, an increase in the supply of education had led to a slight decrease in the returns to schooling. A comparison of studies between men and women found the returns to primary education were much higher for men (20%) than for women (13%). Women, however, experience higher returns to secondary education (18% versus 14%).

Generally, the standard deviations of earnings for all the respondents were noted to be high. This means that there were high discrepancies in the average earnings across most of the categories of the respondents. This finding indicates the unpredictable nature of the self-employment sector. However a study by Idrus and Cameron (2000) had found that there were no significant differences in returns between the self-employment and the formal employment sector in Malaysia. The finding differs with the current findings.

#### 4.4.1 Pearson's Correlation between Average Earnings and Levels of Education in Motor Spare Parts Industry

To determine the nature and strength of the association between the average earnings and levels of education, the Pearson's correlation coefficients were used and the results are shown in Table 4.10.

**Table 4.10: Average earnings and levels of education in motor spare parts industry**

Level of education	R	R <sup>2</sup>	R adjusted	ANOVA test
<b>KCPE</b>	0.617	0.380	0.349	(F(1,20)12.282,P=0.002)
<b>KCSE</b>	0.009	0.000	0.012	(F(1,84)0.007,P=0.935)
<b>Cert</b>	0.130	0.017	0.022	(F(1,25,)0.428,P=0.519)
<b>Diploma</b>	0.129	0.017	0.041	(F(1,17)1.290,P=0.597)
<b>Degree</b>	0.297	0.088	0.003	(F(1,10)0.0964,P=0.349)

The analysis on Table 4.10 showed a Pearson correlation coefficient of 0.617 for KCPE. This indicated moderate relationship between KCPE level of education and average earnings and that the data was not significant. For the case of KCSE, the Pearson correlation coefficient was 0.009. This indicated a weak relationship between KCSE level of education and average earnings and the data was significant. Similarly palmer (2010) had found returns to in Ghana for primary at 24.5%, secondary at 17.0% and higher education at 37.0%. The factors making secondary education have less return remain unexplained. The plausible explanation could be the large number of graduates leaving at secondary school graduation not matched with available jobs in the market and declining quality of secondary school education (Palmer, 2010).

For the case of certificate, the Pearson correlation coefficient was 0.130. This also indicated a weak relationship between certificate level of education and average earnings and that the data was not significant. For the case of diploma, the Pearson correlation coefficient was 0.129. This indicated a weak relationship between diploma level of education and average earnings and that the data was significant.

For the case of bachelors, the Pearson correlation coefficient was 0.297. This still indicated a weak relationship between undergraduate level of education and average earnings and that the data was highly significant. Through the interview schedules it was observed that 43. % of respondents entered self-employment because of lack of employment in the formal sector. This means that self-employment wasn't the first choice for the graduates coming from school. The study found out that 23.8% of respondent entered self-employment as passion. This significant because passion makes persons pursue careers they like most 14% of respondents entered into family business where they were working. The self-employment has continued to attract graduates unable to get work in formal sector (2007). In Ghana, the informal sector has done a remarkable part in absorbing the rapid growth in the labour force. In Kenya with declining absorptive capacity of the formal sector, 43% of the respondents joined self-employment because of lack of jobs in the formal sector.

The Pearson's  $r^2$  results were: KCPE was 0.380, KCSE 0.000, certificate 0.017, diploma 0.0017 and bachelor's degree 0.088. The  $r$  adjusted results were: KCPE 0.349. KCSE 0.012, certificate 0.022, diploma 0.041 and degree 0.003. The ANOVA results were: for KCPE ( $F(1,20)=12.282$ ,  $P=0.002$ ), KCSE ( $F(1,84)=0,007$ ,  $P=0.935$ ), certificate was

(F(1,25,)=0.428, P=0.519), diploma was (F(1,17)=1.290, P=0.597) and bachelors degree was (F(1,10)=0.0964,P=0.349) .

Through the interview schedules respondents were asked to provide information on their views as whether education had influence on return of their income, An analysis done indicated that 20% of respondents believed that education had influence over returns to their earnings, while 59% of respondent said there was no relationship between their earnings and education and another 20% said in part education influenced return from their self-employment activity. The percentage of respondents (59%) who said that there was no relationship between education and returns means the education system in Kenya has minimal relationship with the returns of those in self-employment.

To determine the amount of variation in average earnings explained by the independent variables, the coefficient of multiple regressions was used and the result is shown in Table 4.11.

**Table 4.11: Model Summary. Regressed Analysis of all levels of Education**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.475 <sup>a</sup>	.226	-.419	27534.51828

a. Predictors: (Constant), Grade bachelor, Grade certificate, Grade Diploma, Grade KCPE, Grade KCSE

The results in Table 4.11 indicated that a multiple coefficient of determination of 0.226 was obtained. This indicated that the independent variables (KCPE, K.C.S.E, Certificate, Diploma and Undergraduate levels of education) explained up to 22.6% of the variation of average earnings 77.4% remained unexplained. There the combined levels of education are weak to determine the returns of the self-employed, other factors other than education

account for 77.4% of the returns to the self-employed. These findings agree with earlier findings which had found returns to primary level of education with higher returns than all other higher levels of education (Psacharopoulos 1988, 1994 and 2002). Similar Palmer (2010) had found returns to primary school graduates in sub-Saharan Africa at 37.6 higher than secondary at 24.6 and 27.5 for higher education. Investment should be directed more to primary education for it forms the basis of further learning and feeds higher levels of schooling (Kingdon, 2005).

However, Canagarajah and Portner (2003) found low return from their analysis for primary education as compared to the other higher levels of education, the suggestion being the low quality of primary education and the teaching of an irrelevant curriculum. A World Bank report in Ghana (2004) had also found the returns low returns to primary education. The moderate return is an indication that in Kenya primary school education has more returns than other levels of education. This can lead to direct of more resources to primary school education relative to other levels of education. Psacharopoulos (1985, 1995 and World Bank 1986) had recommended primary school education as priority for investment.

Kingdon (2007) had recommended allocation of resources between all schooling levels to address the inadequacies in higher levels of education. More investment are recommended to raise the return for those with certificate level of education according to the findings of this study.

#### 4.5 Challenges facing them in their Self-employment Activities

Respondents gave the challenges facing the computer service industry in Table 4.12

**Table 4.12: Challenges facing the self-employed in computer service industry**

Challenges in computer	N	SD	Average mean rate
Bank interest	190	.22333	4.9476
Harassment	190	.38021	3.8848
License fee	190	.38546	3.8796
Skills	190	.48765	2.8586
Structures	190	.26972	4.9215
Weather	190	.75247	4.7068
Blackouts	190	.21452	4.9634
Competition	190	.60370	2.9372
Electricity charges	190	.31365	4.8901

#### Key

1.00-1.44 -Very small challenge

1.45-2.44 -Small challenge

2.45-3.44 -Challenge

3.45-4.44- Big challenge

4.45-5.00-Very big challenge

The greatest challenge facing the self-employed was electricity blackouts. Respondents reported at rating of 4.9634. The respondents reported that ‘blackouts disrupted business rendering them idle’. In the contemporary modern sector it is the knowledge sector that needs support but often it isn’t the case in developing countries (David, 2003). There is no policy to

ensure regular supply of electricity which is important in the computer service sector. The Kenya power and lighting company should make electricity supply dependable to the self-employed. The respondents were outraged by regular blackouts.

The second challenge facing the self-employed was high bank loan charges. Respondents reported a rating of 4.9476 as a challenge in procuring loans. In response to loan challenge the respondents reported that 'High bank loan charges reduced profit margin and growth of the self-employed activities'. Past bank record statements are reviewed in terms of profitability and capacity to repay. The financial constraints are related to inability of existing financial institutions to cater for the needs of small scale self-employed (Binks, 1979). Through interview schedules many of this self-employed were startups and had limited financial capacity to make profits attractable to banks to advance them loans (Robert, Michael & Dean, 2009).

Access to finance has been identified as a dominant constraint facing self-employed (Lader, 1996). A World Bank study found that about 90% of small enterprises surveyed stated that credit was a major constraint to new investment (Parker et al., 1995). Levy (1993) also found that, there is limited access to financial resources available to smaller enterprises compared to larger organizations and the consequences for their low growth and development. This stems from the fact that small scale has limited access to capital markets partly due to the perception of higher risk, informational barriers, and the higher costs of intermediation for smaller firms. (Biekpe, 2004). Kanyua (2014) found that effect of lending terms and conditions on performance was that 62.6% of the respondents reported that to a great extent

lack of financial records made it difficult for self-employed to access lending proposals, 35.5% reported to some extent while 1.9% reported not at all. 86.6% of the respondents reported that most financial institutions were reluctant to provide long-term credit to SMEs while 13.4% reported to some extent. 63.3% of the respondents reported that high interest rates, premium cost and other loan processing cost made SMEs unable to obtain funds from banks, whereas 36.7% reported to some extent. Wanjohi (2010) cited; lack of access to credit, high cost of credit and bank fees as an impediment to the progress of small medium enterprises. Wanjohi (2010) recommended set up of revolving fund to provide low interest loans to small scale and medium enterprises Muthusany (2016) recommended great facilities to be made available to make initial investment and for further expansion.

Previous studies have identified a growing gap in the financial support offered to Ghanaian small scale. The high interest rates, collateral requirements and the cumbersome processes have often been mentioned as the main impediments to SMEs access to bank loans in Ghana (Sowa et al, 1992; Aryeetey et al, 1994; Bigsten et al, 2000; Buatsi, 2002).

The third challenge was lack of structures for business at rating of 4.9215. The computer self-employment activities were located in tiny rooms which were inconvenient to customers and those running the business. The respondents were of the view that county and national governments should set aside and build designate area for them. Many of the locations they operated from were tiny with no sitting space for customers. Muthusany (2016) had suggested allocation of space and land and improved conditions in terms of safety. The lack

of permanent structures may lead to; constant fires and poor working environment (Indimuli, Mukami, Lambet & Mwangi 2007).

The fourth challenge was high electricity charges rate 4.8901. High electricity charges reduce the profitability level and makes goods expensive. By interview schedules respondents requested that ‘the government lowers the electricity charges to make their business activities profitable’. The weather challenge was rated at 4.7068. Respondents cited rain as an impediment to their operations. Low business inflow was reported during rain seasons. To address the challenge of weather especially rain; respondents were of the view that; ‘the Kisii county government construct drainage and permanent stalls especially for spare parts self-employment activities’.

Harassment by county reinforcement officers was reported at 3.8848. The officers were mainly from the business licensing department. The respondents were uncomfortable with regular harassment from Kisii county reinforcement officers. The enforcement lacked basic public relations skills. License fee challenge was reported at 3.8796. High fees discourage startups self-employment activities and educe profit margins. It also makes goods produced by electricity expensive for customers. Respondents were of the view that the Kisii county government should lower the license fee to make it possible for the self-employed to make profits. Robert, Michael and Dean (2010) observed that in many countries the emphasis on taxation is to reduce taxation of the self-employed, this is intended to encourage more people to enter the self-employed sector. Competition as a challenge was rated at 2.9372. The

respondent cited as a challenge to the progress of their business. The competition is assigned that the self-employment sector has become a destination.

Lack of skills had a rating of 2.8586. The capacity to successfully run a self-employment activity is a skill that is valued highly (Nandan, 2011). Selling ideas and their products is an entrepreneurial skill that is valued. Appealing presentations, direct selling whenever there is a need and determining sales quotas accurately are tasks that entrepreneurs must be able to achieve. Enhance your marketing skills by acquiring knowledge and practice. Being customer oriented is an entrepreneurial skill that helps them to satisfy the needs of their customers. An entrepreneur must be customer focused. Ultimately, it is they who decide if the business will boom or go bust. Ability to adapt and change to a new environment is an entrepreneurial skill that decides the outcome of success or failure in a dynamic environment. The lack of skills limits the capacity of the self-employed to create linkages and network (Townroe & Mallieu, 1991). Wanjohi (2010) identified lack of skills as an obstacle to the growth of small scale enterprises and suggested that they be equipped with entrepreneurial skills and business skills. Magambo and Omwenga (2015) averred that due to the lack of managerial skills, the study recommended basic management training on SMEs owners and employees so as to increase the growth capabilities among SMEs. The training to give keen consideration include; business management strategies which could be in form of expansion, products/market differentiation and formation of alliances or joint venture. The study recommends that entrepreneurs should boost.

#### 4.5.1 Challenges facing the self-employed in Spare parts industry

Respondents gave challenges facing the spare parts industry as shown in Table 4.13

**Table 4.13: Challenges facing the self-employed in motor spare parts industry**

Challenges in spare parts	Respondents	Sd	Average mean
Bank rates	166	.71837	3.6450
Harassment	166	.66118	2.6686
Trade License	166	.67013	3.6686
Training	166	.52749	1.6805
Structures	166	.76409	2.1065
Weather	166	.68231	4.4852
Blackout	166	.40730	4.8639
Electricity rates	166	.60929	4.7160
Infrastructure	166	.63377	3.7278
Security	166	.80178	2.4615

#### Key

1.00-1.44 -Very small challenge

1.45-2.44 -Small challenge

2.45-3.44 -Challenge

3.45-4.44 -Big challenge

4.45-5.00 -Very big challenge

The greatest challenge in the spare parts industry was blackout which was rate at 4.8639.

Blackouts limit the capacity of the self-employed to neither test electronic materials nor repair the work they do.

Increased electricity rates were cited as the second challenge was rated at 4.7166. The charges reduced profitability level of the self-employed. Through interview schedules the respondents were of the view that; 'the rates needed to be reduced'. Weather challenge was rated at 4.4852. Rain was cited as hindrance more so because the spare parts industry is carried in open air or repairs of machines is done in open fields. To militate against weather the respondents recommended making of drainage and market stalls.

Lack of infrastructure was rated 3.7278. This was centered on poor roads and drainage systems. The self-employment activities were located in areas that were difficult to access and for the spare industry in muddy areas near motor garages. The government needs to invest in roads and drainage systems in urban centers. In infrastructure planning, Ombura (1997) points that infrastructure networks are useful instruments within network economies. Infrastructure and related services help to make things happen, it feeds and it is fed by trade, it fuels foreign direct investment, it backs up the creation and sustainability of industrial clusters, it cuts costs and raises competitiveness. A spatial planning approach ensures the most efficient use of land by balancing competing demands within the context of sustainable development (Rozee, 2003). It becomes an ongoing, enduring process of managing change by a range of actors, in the interests of sustainable development (Tewdwr, 2004). This makes efforts to promote industrial development extremely urgent and rural focused. Becker (2004) found the informal sector as beset by poor state of infrastructure and lack of effective institutional structures. Informal sectors operate mainly from; insecure and congested places, spaces they operate from lack adequate infrastructure and are inadequate to accommodate their activities (Ouma, 2010).

High license fee was rated at 3.6686. The license fee was for operating the business. The fees discouraged entry to the self-employed in the spare parts industry. Through interview schedules respondents were of the opinion that; 'the fee should be lowered'. Becker (2004) viewed the informal economy a cumbersome bureaucratic procedures in setting up, and operating and growing a business, poor state of infrastructure and lack of effective institutional structures.

Bank loan rate were rated at 3.6450 as challenge to the self-employed in the spare parts industry. This reduced the profit margins because of high interest rates. The bank rates reduced profitability and were difficult to repay. Respondents recommended reduction of bank rates. Banks operate on the ability to repay the loans based on the scale of business (Licht, 1986). Small scale self-employment is considered risk to lend to. There low earnings and profitability are not attractive to financial institutions to lend funds The self-employed have challenges securing loans from banks because of collateral security requirements (Robert, Michael & Dean, 2010). Banks are cautious when lending money particularly to unpredictable business ventures. Becker (2004) viewed the informal economy as too constrained by limited access to finance. Through interview schedules the respondents were of the view that that the government should revolving fund to assist them easily access fund. Banks should improve access to finances by better lending terms (Wanjohi, 2014). Magambo and Omwenga (2015) revealed that the entrepreneurs in the garage industry were not comfortable with the interest rate and felt that this was the main financial impediment for business growth Scale. From the correlation analysis it was clear that all the tested variables were significant as all of them had a p value of less than 0.05. It can be noted that lack of

finance was the highest factor affecting business growth as it had a correlation values of 0.757 and a significant value of  $0.0003 < 0.05$ , followed by Legal and regulatory framework which had a significant correlation of 0.59. The study established that business registration in Kenya was not a major impediment to business growth due to the digitization of the systems. The respondents also felt that financial information and time consuming loan enforcement

Harassment was rated at 2.6686 as hindrance to the growth of the self-employed in spare parts industry. The county reinforcement and licensing officers harassed those in self-employment. The respondents asked for Kisii county reinforcement officer to cease harassing the self-employed.

Lack of security was rate at 2.4615 as a challenge. The property of the self-employed was exposed to burglary. The national government should beef up security to reduce instances of burglary and break-in. Through interview schedules respondents reported keeping less merchandize in store for fear of burglary.

Lack of structures was rated at 2.1065. The self-employed mainly operated from temporal structures. There is need to operate from more durable and permanent structures. Through interview schedules respondent wanted the national and county government to construct durable market stalls. . The respondents were faced with exposure to both dust and rain. In some instance the self-employed operated from point that was on sidewalks and road reserve exposing them to accidents. The buildings and communication available are inflexible and cannot be expanded in response to growth .Kinyua (2014 recommended construction of structures for those in the jua kali sector.

Last the lack of skills was rated at 1.6805. This was attributed to the labour intensive nature of the self-employed in the spare parts industry. Robert (2009) in Ghana had concluded that return to education were higher as the level of education increased. Formal education does not suit the needs of informal workers, and it is not flexible enough. However, vocational and other types of education aimed at the informal sector enhance the skills of those in self-employment (Adams, 2007). Governments need to help change that attitude. Specifically, leaders should push for more literacy programs including training vouchers. Informal education programs should provide instruction in the evenings and weekends. Programs should stress entrepreneurship and strengthen apprenticeships with subsidies. Management skills were key to the growth of the self-employment). Mogambo and Omwenga (2015) concluded that lack of technology did not affect the service quality of the garages though it had an effect on customer focus.

#### **4.6 Intervention Measures to Support the Self-employed in their Work**

Respondents were asked to provide information on government support for challenges facing them. This was provided in Table 4.14 and 4.15.

##### **4.6.1 Government Intervention Measure to support the self-employed in Computer Services industry**

Respondents in computer industry gave information in Table 4.14.

**Table 4.14: Intervention measures in computer service industry**

<b>Intervention on computer service</b>	<b>Respondents</b>	<b>Sd</b>	<b>Average mean</b>
Loans	190	.36026	1.0838
Taxation	190	.57100	1.1780
Market stalls	190	.17489	1.0314
Refresher Courses	190	.16008	1.0262
Market	190	.00000	1.0000
Infrastructure	190	.26632	2.9476
Electricity	190	.19014	2.9738
Security	190	.31827	2.9372

**Key**

1.00-1.44- Least effective

1.45-2.44- less effective

2.45-3.44 -Effective

3.45-4.44 -More effective

4.45-5.00 -Most effective

The least intervention was provision of market rated at 1.0000. That means the self-employed have to find ways of selling their products. The national and county government needs to create awareness of market opportunities for the products sold by computer service industry. The self-employed have little information of the market beyond their daily customers. They have no networks available to them. This can be possible if government agencies worked closely with the self-employed.

The second least intervention was provision of refresher course rated at 1.0262. Respondents reported minimal government support in equipping them with skills necessary for their work. Refresher courses are important in inculcating new methods of production. Marwanga (2015) found components of skill diversity which enabled its heightened impact included learning and skill development opportunities, accumulation of skills over time, no need for basic qualifications to join the industry, numerous options in the industry to take up, and easy diversification into other skill fields. The self-employed needed refresher courses to upgrade their skills.

The provision of market stalls was least rated third at 1.0262. Respondents indicated that 'many of self-employed in computer service operated from small squeezed cubicles'. The rooms were not suitable for conducting business. The premises used had little room for expansion and operation. Through interview schedules the respondents cited small space as discouraging to their customers. The government should identify possible market places where the self-employed can trade from. Building of shades and stalls should also be done

The provision of loans was rated at 1.0838. The respondents reported little government intervention to provide loans to the self-employed in the computer service industry. The county and national government should allocate soft loans facilities for the self-employed.

The provision of security were rated at 2.9372. There was significant agreement that the government provided security. An interview schedule indicated instances of break-in and stealing of merchandize. The national government should provide security to the self-employed property.

The respondents rated infrastructure at 2.9476. There was agreement of evidence that government had provided infrastructure in form of road. But the respondents through interview schedules complained of; 'lack of accessibility to their locations because of poor drainage'. The provision of the very basic necessities for the entrepreneurs is lacking. The lack of piped water, sanitary and waste disposal facilities, tarmacked roads, electricity and access to public facilities such as schools are all a hindrance to the establishment and development of the self-employed. The people are poor and have no access to credit; have no bank accounts and don't get loans from banks (World Bank, 2006).

The provision of electricity was rated at 2.9738. Though there was effort to provide electricity respondents through interview schedules complained of blackouts and high electricity charges. Electricity is critical in everyday activity. Lack of electricity or blackouts bring work to a standstill.

#### **4.6.2 Intervention measures to support the self-employed in spare part industry**

The respondents gave the information as indicated in Table 4.15.

**Table 4.15: Intervention Measures by the Government to Support the Self-employed in Motor spare part industry**

<b>Intervention in spare parts</b>	<b>Respondents</b>	<b>Sd</b>	<b>Average mean</b>
<b>Loans</b>	166	.00000	1.0000
<b>Taxation</b>	166	.24742	1.9349
<b>Stalls</b>	166	.24742	1.0651
<b>Courses</b>	166	.54522	1.1893
<b>Security</b>	166	.54522	1.1893
<b>Market</b>	166	.30168	1.1006
<b>Roads</b>	166	.52273	1.9763
<b>Electricity</b>	166	.59543	3.7515

**Key**

1.00-1.44- Least effective

1.45-2.44 -Less effective

2.45-3.44 -Effective

3.45-4.44 -More effective

4.45-5.00 -Most effective

The respondents rated provision of loans at 1.000 as a challenge. Effectively the respondents said there was very minimal government intervention to provide them with loans. Growth of self-employment is dependent on the level of capital investment. Marwanga (2015) indicated that 37.5%, constituting the majority of the targeted study groups had not directly benefited from any dedicated State-driven initiatives that would be attributed to informal employment creation while 15% of the artisans had accessed subsidized enterprise funding through

programmes such as Women Enterprise Fund (WEF) and Youth Enterprise Fund (YEP). Moreover, there were 6.3% apiece of artisans who had benefitted from negotiated loan facilities, and product marketing thanks to State intervention. The impact of input subsidies was felt by only 5% of the informal economy investors, leaving a smaller group of 2.5% deriving State support through sponsored exhibitions. These findings suggested that the national government was partly a player, albeit at a low level,

Interview schedules information indicated that the business license rate were high. Rates should be lowered, and the Kisii county government should minimize regulations and provide space for the artisans to operate their businesses from. Import duty should be abolished on machines imported by *Jua Kali* artisans to make them cheaper for the artisans. Marwanga (2015) noted that for the sake of stabilizing the informal economy as an alternative source of employment and subsequently alleviating poverty, much more policy effort by the State was required especially in technical and financial capacity building. Magambo and Omwenga (2015) had recommended that for the expected return from investing in the *Jua Kali* sector to increase, there should be an improved outlook which is associated with a swing in government policy to encourage business formation and development through; the flexibility of tax regime to make it more users friendly. The study also recommends that all financial organizations/schemes should be adequately published to enable networking among agencies and institutions. As a result, clients approaching one institution will be made aware of the best option for their requirements. Since most of the respondents have a bad loan repayment history which is the major impediment of loan accessibility hence lack of finance.

Lack of market stall was the second highest challenge rated at 1.0651. The self-employed operated from makeshift stalls and open air. This exposed them to vagaries of nature. There was minimal government intervention to provide them with market stalls. Government should facilitate construction of storied shades as the ones that are there are too few, the artisans end up constructing temporary shades which the county government demolishes as they are built on road reserves. Marwanga (2015) had suggested that government should gear towards providing land and build Jua Kali sheds for their artisans to ensure that, businesses run uninterrupted.

Provision of market for the spare part industry was rated at 1.1006. This meant that largely the self-employed had to seek for the market. The government should fund research on new innovations so that the artisans can produce quality products besides assisting in the marketing of *Jua Kali* artisan's products. The government should create a *Jua kali* information centre to advertise the self-employed artisan's products as most people nowadays prefer buying imported products even if they are of poor quality. Government protection of the self-employed and coordinated action. The governments should protect the self-employed from external competition especially the cheap Asian and Chinese imports. Extension of low interest capital loans and raw materials will lead to these cheap domestic products, a prerequisite which the government should strive to attain.

On provision of courses the respondents rated government intervention at 1.01893. This meant that the government wasn't supporting the self-employed with relevant refresher courses to enhance their business skills. In response to skill needs (Monk & Francis, 2007)

have suggested that apprenticeship training was critical in equipping the self-employed with skills necessary for their own work. Apprenticeship had been applied in Ghana resulting to increased returns for those in self-employment. Only 13% of respondents said the government had provided refresher courses to equip the self-employment with skills for their work. Apprenticeship was found to be more relevant to those with lower levels of education. Marshall (1980) argues that education need not increase the workers' productivity at all; rather education screens competent workers who increase productivity through on the job training. Glewwe (1996) calculated the private rate of return for additional years of schooling cognitive skills found that it is cognitive skills not years of schooling which determine wages in self-employment. (Momanyi, 2008) noted a serious neglect of training *Jua Kali* artisans in skills relevant to their work within the informal sector through apprenticeship and in the vocational institution training system. The assumption is that the informal sector doesn't require any skills or had already acquired the skills. As a result of this assumption *Jua Kali* artisans have practical skills which they have acquired either by apprenticeship training in the *Jua Kali* sector or by attending vocational training institutions but the self-employed needs skills in the activities they carry. Marwanga (2015) found that the highest beneficiary proportion of 27.5% had been hosted at least once by a State agency for entrepreneurial skill upgrading. Therefore it is imperative for curriculum developers to come up with curriculum necessary to equip learners with skills relevant to the self-employment sector

Training policies should be developed to help the workers in the self-employed advance technologically and improve their skills without discrimination from the government. Technology should be renewed and skill advanced for better and improved quality goods

which will be able to compete in the world markets. Focus should be on the specific skill needed by the self-employed. The jua kali entrepreneurs have different and varied levels of skill. Each level should be trained separately to improve and upgrade their skill. The incorporation of the local expertise should be used to the training programmes aimed at upgrading the jua kali skills. The governments can also help the self-employed by providing them with the technical and foreign expertise they need just as it does with the formal sector. Foreign expertise should be imported to train the local producers and entrepreneurs and if possible set up demonstration centers which will be run for some time by these expertise and self-employed entrepreneurs can visit to acquaint themselves technologically. Provision of security was rated at 1.1893. An interview schedule indicted that there were incidents of break-ins and loss of property. The government should improve security as there is a lot of insecurity, most self-employed fear installing expensive items as they may be stolen.

The respondents' response for government intervention in reduced taxes was rated at 1.9763. This indicted minimal government intervention to cushion the self-employed in reduced taxes. High taxes made the cost of spares unreachable for majority of their customers. An interview schedules indicate that customers did prefer original spares which were more expensive than second and generic. The measures adopted in establishing impact of government policy approach were all rated below the moderate mark, cumulatively resulting to an average score of 2.09. Further, there was noticeable response uniformity by the artisans which demonstrated inadequacy of meaningful policy interventions from the side of Government. The highest ranked measure of government policy approach at 2.28 mean score and 0.914 $\sigma$  was conducive for business environment due to State intervention, followed by

inter-economy dependability at 2.24 mean score and 0.799 $\sigma$ . Capacity building sponsorships by State was ranked third with 2.31 mean score (0.894 $\sigma$ ), while financial support was fourth with 2.24 mean score and 0.770 $\sigma$ . Government policy on taxing informal economy was least attractive to the artisans with a mean score of 1.60 and having the highest degree of agreement (0.587 $\sigma$ ). In view of these findings (minimal scoring and high response agreement), it was inferred that government policy approach to informal economy in Kenya was not popular among the economy investors and would significantly compromise informal employment creation for the majority formally unemployed citizens. These findings concur with the Africa Development Bank (ADB, 2013) report that despite the informal sector contributing about 55 per cent of Saharan Africa's GDP and 80 per cent of the labour force, most government and affiliated agencies pay little attention to the role of informal economy in economic development.

The respondents rated provision of infrastructure at 1.9763. This was lowly rated and meant poor roads and drainage affected their operations. Interview schedules report indicated that there were no provisions for disposals of waste from the spare parts industry.

The provision of electricity was rated at 3.7515. This indicated that the government had made an attempt to make electricity available to the self-employed in spare part industry.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary, conclusion and recommendation of the study under the objectives of the study.

#### **5.2 Summary of Findings**

The summary were according to the research objectives

##### **5.2.1 Returns to Various Levels of Education of the Self-employed in Computer Service**

The study established that:

On average; respondents with KCPE, KCSE and diploma qualifications earned nearly similar amounts of money. Those with certificate and bachelors earned lower incomes. However, Masters graduates seemed to earn more income than the rest in this industry. Whereas the relationship between levels of education and average earnings was found to be significant for K.C.P.E; it was generally weak for all the other levels of education. The average earnings had a positive relationship with the independent variables of KCPE, KCSE diploma and bachelors level of education while this relationship was negative for certificate level of education. The negative relationship between average earnings and the certificate level of education was statistically insignificant. Certificate level of education had the least significant effect on average earnings.

This indicated that the independent variables KCPE, K.C.S.E, Certificate, Diploma and Undergraduate levels of education explained up to 22.6% of the variation of average earnings 77.4% remained unexplained.

The Pearson's r results were' KCPE 0.643, KCSE 0.104, certificate 0.128, diploma 0.195 and bachelors degree 0.045.

The Pearson's  $r^2$  results were: KCPE was 0.413, KCSE 0.011, certificate 0.016, diploma 0.038 and degree 0.002. The r adjusted results were: KCPE 0.373, K.C.S.E 0.002, certificate 0.002, diploma 0.001 and degree 0.075.

The ANOVA results were computed as: For KCPE (F(1,15)10.572, P=0.005), KCSE was (F(1,70)0,761, P=0.386), certificate was (F(1,52,) 0.868, P=0.356), diploma was (F(1,28)1.031, P=0.319 and bachelor results were (F(1,13)0.006, P=0.874).

The model summary indicated that the independent variables (KCPE, K.C.S.E, Certificate, Diploma and Undergraduate levels of education) explained up to 22.6% of the variation of average earnings 77.4% remained unexplained.

### **5.2.2 Returns to Various Levels of Education of the Self-employed in Spare Parts Industry**

The study established that:

On average; respondents with KCPE, KCSE and certificate qualifications earned nearly similar amounts of money. Those with diploma, undergraduate and graduate earned more incomes with graduates earning the highest in this industry. Whereas the relationship between levels of education and average earnings was found to be significant for KCPE, it was generally weak for all the other levels of education.

The Pearson's correlation analysis (r) for KCPE showed a Pearson correlation coefficient of 0.617. This indicated moderate relationship between KCPE level of education and average earnings and that the data was not significant. For the case of KCSE, the Pearson correlation

coefficient was 0.009. This indicated a weak relationship between KCSE level of education and average earnings and the data was significant. For the case of certificate, the Pearson correlation coefficient was 0.585 with a corresponding p-value of 0.130.

Excluding the graduate level of education, the rest of the independent variables accounted for 30.8% of the variation in the dependent variable with 68.2% of the variation in the average earnings remaining unexplained.

Analysis for persons ( $r$ ) indicated that: for KCPE showed a Pearson correlation coefficient of 0.617 with corresponding p-value of 0.002. KCSE was 0.009 with a corresponding p-value of 0.935, certificate was 0.009 with a corresponding p-value of 0.925, bachelors, the Pearson correlation coefficient was -0.297 with a corresponding p-value of 0.349, masters was 0.277 with a corresponding p-value of 0.821. For the case of diploma, the Pearson correlation coefficient was 0.303. For the case of bachelors, the Pearson correlation coefficient was 0.129.

The Pearson's  $r^2$  results were: KCPE was 0.413, KCSE 0.011, certificate 0.016, diploma 0.038 and degree 0.002. The  $r$  adjusted results were: KCPE 0.373, K.C.S.E 0.002, certificate 0.002, diploma 0.001 and degree 0.075.

The ANOVA results were: KCPE ( $F(1,20)12.282$ ,  $P=0.002$ ), KCSE ( $F(1,84) 0,007$ ,  $P=0.935$ ), certificate was ( $F(1,25,) 0.428$ ,  $P=0.519$ ), diploma was ( $1,17)1.290,P=0.597$ ) and bachelors degree was ( $F(1,10)0.0.964$ ,  $P=0.349$ ).

Excluding master's level of education the study found out that other levels of education explain 22.6 Of the returns of the self-employed.77.4% remained unexplained.

### **5.2.3 Challenges Facing the Self-employed in computer and motor spare part industries**

#### **5.2.3.1 Computer industry**

The greatest challenge facing the self-employed in computer service industry was electricity blackouts. Respondents reported at rating of 4.9634. The second challenge facing the self-employed was the self-employed was high bank loan charges. The third challenge was lack of structures for business at rating of 4.9215. The fourth challenge was high electricity charges rate 4.8901. The weather challenge was rated at 4.7068. Harassment by county reinforcement officers was reported at 3.8848. License fee challenge was reported at 3.8796. Competition as a challenge was rated at 2.9372. Lack of skills had a rating of 2.8586.

#### **5.2.3.2 Spare parts industry**

The greatest challenge in the spare parts industry was blackout which was rate at 4.8639. Increased electricity rates were cited as the second challenge was rated at 4.7166. Weather challenge was rated at 4.4852 as machine work is done in open fields. Lack of infrastructure was rated 3.7278. High license fee was rated at 3.6686. Bank loan rate were rated at 3.6450 as challenge to the self-employed in the spare parts industry. Harassment was rated at 2.6686 as hindrance to the growth of the self-employed in spare parts industry. Lack of security was rate at 2.4615 as a challenge. Lack of structure was rated at 2.1065. Last the lack of skills was rated at 1.6805.

### **5.2.4 Intervention Measures to Support the Self-employed in their Work.**

#### **5.2.4.1 Intervention measures in computer industry**

The least intervention was provision of market rated at 1.0000. The second least intervention was provision of refresher course rated at 1.0262. The provision of market stalls was least rated third at 1.0262. The provision of loans was rated at 1.0838. The provision of security

was rated at 2.9372. The respondents rated infrastructure at 2.9476. The provision of electricity was rated at 2.9738.

The self-employed should have the relevant information on the markets and their operation. Availability of information on foreign markets should be made available to the self-employed. A level playing field to all entrepreneurs should be maintained irrespective of the level of education or the stage of operation of the self-employed. The study calculated  $r^2$  the returns to education. The results were: KCPE category the  $r^2$  was 0.0617, KCSE was 0.009, certificate 0.009, diploma was -0.130, bachelors -0.297 and masters degree 0.0277. In the spare parts the KCPE respondents had the most significant results, with diploma and bachelors degree recording negative return while K.C.S.E, diploma and masters degree respondents had marginal results indicating the unpredictable returns to education in the self-employment sector.

#### **5.2.4.2 Intervention measures in spare parts industry**

The respondents rated provision of loans at 1.000 as a challenge. Lack of market stall was the second highest challenge rated at 1.0651. Provision of market for the spare part industry was rated at 1.1006. On provision of courses the respondents rated government intervention at 1.01893. Provision of security was rated at 1.1893. The respondents responses for government intervention in reduced taxes was rated at 1.9763. The provision of electricity was rated at 3.7515.

The government should devise ways of providing credit to the self-employed to start operating. The various banks should lower the interest rates on the loans as well as remove the requirements for securing a loan to levels which the Jua kali artisans and hawkers can

access funds. The repayment of the loans can be done in piece meal where the entrepreneur pays a small amount each month at very low interest rates. Fund schemes for the small scale artisans and business entrepreneurs should be established to avail funds to them especially the youth who find themselves unemployed after many years in school. The government should also allocate in the annual budget finances for the Jua kali sector. These funds should be used wisely and any misappropriations be punished severely. The red tape policies should be removed to enable the informal sector entrepreneurs access the services and finances needed for the establishment and running of the self-employed. The government needs to change its policy on the informal sector. Harassment of the hawkers, street vendors and denial of operating licenses should be dealt away with. The government harassment leads to market failure for the self-employed.

### **5.3 Conclusion**

Based on the findings of the study, the following conclusions were made:

- i. There were return differential among self-employed in computer and spare parts industry.
- ii. Basic education yield higher returns than higher education
- iii. Change in level of education does not translate to higher returns
- iv. K.C.P.E level of education had the most positive significance impact on the returns of the self-employed in computer and motor spare parts service industries.
- v. The self-employed in computer and spare parts industry had no financial support from the government.
- vi. Electricity charges were high and there were regular blackouts.

## **5.4 Recommendations**

From the findings and conclusion the study made the following recommendations

- i. Tailor education particularly post primary level to meet the needs of the self-employed to enhance their earnings
- ii. The government and financial institution increase loans to those in self-employment sector to enable them increase level of operations.
- iii. Those in self-employment needed refresher courses to equip them with skills necessary for self-employment.
- iv. The provision of electricity is critical in the computer and spare industry
- v. Reduction of bank interest rate and electricity charges.

## **5.5 Suggestions for Further Research**

The study suggested the following areas for further study

- i. An investigation into the skills necessary for self-employment sector.
- ii. A study as to why post primary education had minimal positive effects on returns to education.

## REFERENCES

- Abba, R. A., & Segundo, S. J. (1995). "The Returns to Education in Spain," *Economics of Education Review*, 14: 155-166.
- Adams, A. V. (2007). "The Role of Youth Skills Development in the Transition from School to Work: A Global Review", HDNCY Discussion Paper No. 5, Washington, DC: World Bank.
- Aki, K., & Sari, P. (2002). *Growth and Change*. Volume 33 (Spring 2002): Pp 216-237.
- Albert, P. & Xiaobo, Q. (2013). Informality, Returns to Education, and labour Market Integration in China. *The Indian Journal of Labour Economics*, Vol. 56, No. 4
- Amenya, G. N. (2007). The informal sector in Kenya, presentation at Youth Micro Finance Forum Held at University of Nairobi, Nairobi.
- Appleton, S., Hoddinot, J. & Krishnan, D. (1999). Gender Wage in Three African Countries. *Economic Development and Cultural Change* 47 (2), 289-312.
- Appleton, S. (2000). "Education and Health at Household Level in sub-Saharan Africa", *Centre for International Development at Harvard University (CID) Working Paper*, No.33, January 2000.
- Appleton, S. (2000) (2001). 'Education, Incomes and Poverty in Uganda in the 1990s', *University of Nottingham, School of Economics CREDIT Research Paper*, No. 01/22.
- Aslam, M. (2007). Rates of Returns to Education by Gender in Pakistan 'CSAE Working Paper Series ,GPRG-WPS -064.Department of Economics, Oxford University.
- Bates, T. (1990). An Analysis of Survival Rates a Among Franchise and Independent Small Business Start ups. *Journal of Small Business Management* pp84.

- Barasa, S.F., & Kabwe, S.M. (2001). Fallacies in Policy and Strategies of Skills Training for the Informal Sector ; Evidence from Jua Kali Sector in Kenya. *Journal of Education and work, Volume 14 No 3, 330342.*
- Barro, R. (1999). Human Capital and growth in Cross country Regression. *Swedish Economic Policy Review 6(2): 237-77*
- Baum, S. & Payea, K. (2004). Education Pays: The Benefit of Higher Education for Individual and Society, Washington D.C. College Board.
- Becker, G. S. (1962). Investment in Human capital: A theoretical Analysis with special, *journal of political economy volume ii, University of Chicago.*
- Becker, G. S. (1962). 'Investment in Human Capital: A Theoretical Analysis', *The Journal of Political Economy*, Vol.70, Issue 5 Part 2, Investment in Human Beings , pp. 9-49
- Becker, G.S. (2004). The Informal Economy: Fact Finding Study. SIDA, Stockholm. Bell, J.
- Becker, G. S. (1964). Human capital: A theoretical Analysis with Special References to Education: Chicago: University of Chicago Presses.
- Becker, G.S. (1975). *Human Capital*. New York: National Bureau of Economic Research.
- Becker, G. S. (2007). *Human Capital*. The Concise Encyclopedia of Economics.
- Bennel, P. (1996). Rates of Return Education: Does the Conventional Pattern Prevail in Sub-Saharan Africa ? *World Development 24 (1): 183-199.*
- Binks, M. (1979). Finance for expansion of Small firms, *Lloyds Bank, Review, 157, 32-43*
- Bloom, A.L., Holm-Molsen & Verner, D. (2007). Education, and Earnings and inequality in Brazil , 1982-1988. Policy Research Working Paper no 2686. Washington DC: World Bank.

- Blundell, R., Dearden, L., & Sianei, B. (2001). Estimating the Returns to Education: Models, Method and Results. London: Centre for economics of Education.
- Boothby, D., & Rowe, G. (2002). Rates of Return to Education: Distribution Analysis using the lifelong life paths Model, Hull: Applied Research Branch.
- Bosire, J.N. (1991). Secondary School Economics and Self-employment in Kenya: Unpublished Master of Education Thesis Kenyatta University.
- Bosire, J.N. (1999). The Effects of Education on Business Skill Cognition among the informal Sector Entrepreneurs. Doctor of Philosophy Thesis, Kenyatta University.
- Bowles, S., Gintis, H.S. & Osborn, M. (2001). Incentive –enhancing Preference :Personality, Behaviour and Earnings. *American Economic Association Papers and Proceedings* 91: 155-158.
- Braun, I & Clarke,V.(2006) Using Thematic Analysis in Psychology ; Qualitative Research, 2, 77-101.
- Brixy, U., & Jolanda, H. (2010). “Human Capital and the Success of Nascent Entrepreneurs” *EIM Research Papers*. pp. 1-25.Chiswick.
- Bruce & Cowen (2001). Economic Issues and Policy. Second Edition. ISBN 0-324-10856-7. Wisconsin: South western Publishing.
- Canagarajah, S., & Portner, C. (2003). Evolution of Poverty and Welfare in Ghana in 1990s. Achievement and Challenge. Africa region Working Paper series no 61. Washington DC. The World Bank
- Chiswick, B.R. (2005). “High Skilled Immigration in the International Arena” IZA Discussion Paper No. 178. <http://ssrn.com/abstract=826389>.

- C.M.A (2010). Capital raising opportunities for SMEs: The Development of micro-cap securities in Kenya
- Carlo. B., & Herman, G.V.W. (2011). Education, Cognitive Skills and Earnings in Comparative Perspective. *International Sociology* 26 (4): 483-502.
- Card, D. (1999).” Education and earnings’ ..*Handbook of labour economics*, North Holland : Amsterdam and New York.
- Card, D. (2001). Estimating the Return to Schooling: Progress on Some Persistent Econometric Problems." *Econometrica*, 69(5): 1127-1160.
- Case, A. (2006). Understanding Poverty, chap.The Primacy of Education. Oxford: Oxford University Press, 269–285.
- Castells, M. &Portes, A. (1989). “World Underneath: The Origins, Dynamic and Effects of Informal Economy”. Baltimore: The John Hopkins University Press.
- C.E.P.A.L. (2002). *Panorama Social de América Latina 2001–2002*, Comisión Económica Para América Latina (CEPAL), Santiago, Chile
- Chad, M. (2009). Educational Attainment “Brain Drain “ and Self-employment : Examining the Interstate Mobility of Baccalaureate Graduates ,1993-2003. A working Paper.
- Clain, S. H. (2000). Gender Difference in Full-time Self-Employment. *Journal of Economic and Business Review* 52: 499-513.
- Cohen L., & Manion, L. (1995). Research and the Teacher: Qualitative introduction to School Based Research, London, Croom Helm.
- Collins, R. (1979). The Credential Society; An Historical Sociology of Education and Stratification. New York Academic Press.

- Colm, H., Hessel, O. & Ian, W. (2000). Returns to Education a Review of Evidence, Issues and Deficiencies in the Literature. London: Centre for Economics of Education, London School of Economics.
- David, A. K. (2003). Entrepreneurship. London: McGraw Hill.
- Daniel, F. & Dafna, S. (1993). Constraints to Small Development across the Life Cycle: Some Evidence from Peripheral in Israel. *Entrepreneurship and Regional Development*, 5:227-245.
- Danso-Manu, K. (2004). Education, Poverty and Public Expenditure in Ghana 2003, Accra: GSS.
- David, B. (2012). Youth skills development, Informal Employment and the enabling Environment in Kenya: Trends and Tensions. *Journal of International Co-operation, Volume in Education, Volume 15 No 2: 69-90.*
- Denison, F.E. (1962). Measuring the Contribution of Education and Residual to Economic Growth: Readings in economics of education, Paris: UNESCO.
- Denzin, K.N. & Lincoln, S.Y. (2011). Confidently connect students to the depth and breadth of qualitative research 4 (edition). ISBN-10: 141129741178: 123-145
- Dessing, M. (1990). Support for Micro-enterprises, Lessons for Sub-Saharan Africa. World Bank Technical Paper No 122. Washington D.C: World Bank.
- Dolinsky, A.L. (1993). The effects of Education on Business Ownership Entrepreneurship Theory and Practice. Helsinki: Government Press
- Donald, L.S. (2010). *International business and economic research journal*. Volume 9, NO. 5

- Donald, R.W. (2002). Returns to Education and Experience in Self-Employment Computer Sector: Evidence from Germany. Paper prepared for Presentation at 5<sup>th</sup> GOESP Users Conference, DIW-Berlin, Berlin, Germany, July 3-4 2002.
- Duflo, E. (2001). Schooling and labor market consequences of school construction in Indonesia: evidence from an unusual policy experiment, *American Economic Review*, 91(4): 795–813.
- Duraisamy, P. (2000). Changes in Returns to Education in India, 1983-94: by Gender, Age-Cohort and Location University of Madras.
- Earl, B., & Lucia, B. (1998). Fundamentals of Social Research .Fifth Edition.ISBN-13:978-0.17-616838-4. Ontario: Wards worth Thomson Learning.
- Evans, D.S., & Leighton, L.S. (1989). “Some Empirical Aspects of Entrepreneurship” *American Economic Review*, 79 (3): 519-535.
- Fairlie, R.W., & Meyer, B. D. (1996). Ethnic and Racial Self-Employment Differences and Possible explanations. *Journal of Human Resource* 31: 757-793.
- F.S.D. (2008). Small Medium enterprises in Kenya .Financial sector deepening Kenya
- Fiszbein, A., & Vencatachellum (2005). Estimating the Returns to Education in Argentina Using Quantile Regression Analysis: 1992-2002. *Economica* 53 (1-2): 53-57
- Gall, M.D., & Borg, W.R. (1996). Educational Research: An Introduction, 6<sup>th</sup> Edition London: Edward Longman.
- Gary, N.M. (2008). The occupation of Earnings of young Austrarians. The role of Education and Training. The Austrarian Council for Education and Research: Australian Council of Education Research.

- Gavan, C. & Pietro, P. (2011). Returns to Higher Education qualification. Report Prepared by London Economics on Behalf of the Department for Business, Innovation and Skills.
- Girma, S. & Abbi, K. (2005). 'Is education more beneficial to the less able?' Econometric evidence from Ethiopia.
- Glewwe, P. (1996). The relevance of standard Estimates of Rate of return to schooling for education Policy: A critical Assessment. *Journal of Development Economics*, 51, 267-290.
- Hansen, L.W. (1963). 'Total and Private Rates of Returns to Investment in Schooling' In united Nation Education, Social and Cultural organization (1971). Readings in Economics. Paris .U.N.E.S.C.
- Harmon, C., & Walker, I. (1995). Estimates of the economic return to schooling for the United Kingdom, *American Economic Review*, 85(5): 1278–1286.
- Harmon, C. & Walker, I. (1999). The marginal and average returns to schooling in the UK, *European Economic Review*, 43: 879–887.
- Husmanns, R. (2004). Measuring the Informal Economy: From Employment in the informal Sector to Informal Employment. ILO Working Paper No. 53, ILO Bureau of Statistics, Geneva.
- IEA. (2010). The dynamics and Trends of Employment in Kenya, research paper No. 2010
- Hyder, A. (2007). Wage Differentials, Rate of Return to Education and Occupational Wage Share in the Labour Market of Pakistan. Islamabad: Pakistan institute of Development economics.
- ILO (1972). Employment, Incomes and Equality: *A Strategy for Increasing Productive Employment in Kenya*: Geneva, ILO.

- I.L.O (2005). Vocational Training and skills development in the Poverty Reduction Strategy Papers: a preliminary review, Skills and Employability Department, Geneva, ILO.
- I.L.O (2002). Workshop on Decent Work and Poverty Reduction, Iteiro, Turin.
- I.L.O. (2002). Women and Men in the Informal Economy: A Statistical Picture. Geneva:ILO.
- Indimuli, O.S., Mukami, J., Lambert, S., & Mwangi, N. (2007). Jua Kali in Kisumu. Accessed July 4.org2017, [http: // Macleki. Org/items/Show/33](http://Macleki.Org/items/Show/33)
- I.P.A.R. (2000). Redressing Institutional Impediment to Micro and Small Scale Enterprises access to Credit in Kenya, Real Sector: No 1, 2000.
- Jerome, A. (2014). Jua Kali” Youths and how they Negotiate Work in the Informal Economic Sector in Kenya and Uganda. A dissertation in adult education and comparative and international education submitted in partial fulfillment of the requirements for the degree of doctor of philosophy. The Pennsylvania State University, The Department of Learning and Performance Systems
- K.I.M. (2009). Fundamentals of Management Research Methods. Nairobi: Mac millian Kenya (Publishers) Limited.
- Kingdon, G. & Mans, S. (2007). ‘Education Skills and Labour Market Outcomes: Evidence from Ghana’.
- Kingdon, G. & Mans, S. (2007). ‘Education Skills and Labour Market Outcomes: Evidence from Pakistan’.
- Kinyua, N.A. (2014). Factors Affecting the Performance of Small Scale and Medium Enterprises in the Jua Kali Sector in Nakuru Town, Kenya. *Journal of Business and Management (IOSR-JBM).Volume 16.Issue 1(January 2014): 80-93*

- King, K. (1996). *Jua Kali Kenya: change and development in an informal economy (1970-1995)*. Nairobi, East African Educational Publishers.
- Kingdon, G., Sandefur, J. & Teal, F. (2005). *Patterns of Labour Demand .Africa Region Employment Issues –Regional Stock Taking Review*. Centre for the Study of African Economies, Department of Economics, University of Oxford
- Kisilu, K.D. & Tromp, D.L.A. (2006). *Proposal and Thesis and Writing*. Nairobi: Pauline Publications Africa.
- Knight, J., Saboat, R. & Hovey, D. (1992). Is the Rate of return for primary Schooling Really 26% .*Journal of African Economies 13(2): 95-148*
- Kren, S. (2012). *Connections between Education, Income, Inequality and Unemployment*. U.S.A Census Bureau
- Krueger, A. B. (1993). How computers have changed the wage structure: evidence from microdata, 1984–89, *Quarterly Journal of Economics*, 108(1): 33–60.
- Lee, K. (2002). Analysis on the Rate of Return to Education. Focus on the Commercial High School Education. *The journal of Economic Education*, 9: 101-12
- Licht, R.A. (1986). Small Capital Formation .In *living on the lending Edge*. State Policy issues for Education and Economic development in Global Economy, 19-25.
- Lin, T.C. (2001). Education, Technical Progress and Economic Growth. The Case of Town. *Economics of Education Review 22 (2001) 213-220*.
- Marshall, F.R., King, A.G. & Briggs, Y.M. (1980). *Labour Economics: Wages, Employment and Trade Unionism*, 4<sup>th</sup> Ed., pp. 263

- Marwanga, J.O. (2015). *International Journal of Economics, Commerce and Management* United. Kingdom Vol. III, Issue 6, June 2015 Licensed under Creative Common Page853http://ijecm.co.uk/ISSN 2348 0386.
- Mbugua, J.K., Mbugua, S.N, Wangoi, M., Oganda, J.O. & Kariuki, N.J. (2013). Factors affecting growth of Micro-Small Enterprises: A case Study of Tailoring and Dress Making Enterprises in Eldoret, Kenya. *International Journal of business and social sciences* Vol. 4 No. 5, May 2013
- McLaughlin, S.D. (1979). *The Wayside Mechanic*, Centre for International Education, Massachusetts, University of Massachusetts.
- Mead, D.C. (1993). 'The contribution of Small Enterprises to Employment Growth in Southern Africa' Mimeo.
- Mead, D.C. & Kunjeku, P. (1993). *Business Linkages and Enterprise Development in Zimbabwe*, Harare, CZI.
- Meager, N., & Martin, R. C. (2011). *Skills For Self-Employment. Evidence Report 31*, UK Commission for Employment and Skills (UKCES),
- McLaughlin, S.D. (1979). *The Wayside Mechanic*, Centre for International Education, Massachusetts, University of Massachusetts.
- Michael, T. W. (2011). *School of Agriculture, Food Science and Veterinary Medicine* University College Dublin Belfield Dublin 4.
- Mincer, J. (1962). "On the job training" Costs; Returns and some Implication ' in : UNESCO (1971). *Readings in Economics of Education*. Paris: UNESCO
- Mincer, J. (1974). *Schooling, Experience and earnings*. New York: National Bureau of Economic Research.

- Merriam, S.B. (1991). *Case study in education: A qualitative approach*, San Francisco: Jossey – Bass. National Art Education Association. *Art Education, Middle/Junior High School*. Reston, VA: Author.
- Messina, G. (1993). *Education and training needs of the informal sector: Chile*, paper for ODA research project on education and training for the informal sector. Middleton.
- Mogambo, E.N. & Omwenga, J. (2015). Factors Affecting Growth of smes: a Case of Jua Kali Motor Garages in Shauri Moyo, Nairobi, city county. *Strategic Journals. Vol. 2, Iss. 2 (118): 1915 – 1930, Nov 9, 2015, [www.strategicjournals.com](http://www.strategicjournals.com)*
- Mohammad, N .A. (2005). Returns to Education Bangladesh in Working Paper Number 130.
- Momanyi, C. (2008). Benefits of Non Formal Education to jua Kali Artisan. A study of the informal Sector Business Institute. Nairobi.
- Mugenda, O. & Mugenda, A. (2003). *Research Methods: .Qualitative and Quantitative Methods*. Nairobi: Acts Press.
- Mugenda, O.M. & Mugenda, A. G. (1999). *Research Methods :Qualitative and Quantitative Approaches*. Nairobi: Acts Press.
- Mwangi, T. (2012). The Contribution of Entrepreneurship Education Course Offered in Technical Colleges. *International Journal of Business and Public Management Vol 2* Mount Kenya University. Thika.
- Nadir, A. & Male, J. (1999). Education and Earnings, a Multi level Analysis. A case Study of Manufacturing Sector in Iran *.Journal of Education Review, p 40-55I*
- Nafziger, E.W., & Terrel, D. (1996). Entrepreneurial Human Capital and Long Run Survival of Firms in India, *World Development, 24:4: 689-696*. Carpentry and Metal Work in

the East of Nairobi, Kenya. *Sessional paper No 55: Institute of Development, University of Nairobi*

Namirembe, S.K. (2014). Private Returns to Education for the Wage-employees and Self-employed in Uganda. Masters Thesis. Makerere University

Nandan, H. (2011). Fundamentals of Entrepreneurship. Second Edition. New Delhi: PHI Learning Private Limited

Ndua, G. & Ngethe, N. (1992). Jua kali: Education Training and Welfare Study of Carpentry and metal Work East of Nairobi. Kenya Sessional Paper No 55: Institute of Development., University of Nairobi.

Nyakundi, E. (2008). *The influence of formal Education on the earnings of the Self-employed in Kisii Municipality*: Maseno University.

Nyangori, R. & Nyonje, R. (2010). Factors Influencing Performance of Micro and Small enterprises .Case of Kisumu City Bus Park ,Kenya. Research Project. University of Nairobi.

Nzomo, N. (1978). Education for Executive Jobs : A study in occupational Kenyanization-indigenization. Nairobi: Kenya Literature Bureau.

O.E.C.D. (1997). Human Capital Investment: An International Comparison (Paris, OECD).

O.E.C.D. (2001a). Education at a Glance: OECD Indicators 2001 (Paris, OECD).

O.E.C.D. (2001b). Education Policy Analysis 2001 (Paris, OECD)

Okungu, K.O. (2012). Factors Influencing Performance of Youth Group Micro and Small Enterprises in Kisumu West District, Kisumu County. Thesis Submitted to Kenyatta. Kenyatta University.

- Ombati, J.M., Ngesa, F.U. & Githeko, J.M. (2006). Factors Influencing Farmers adoption of Information and Communication and Technologies in Accessing Agricultural Information. The case of Nakuru Distict, Kenya. Proceedings of the first Research week 17-21 July, 2006.Njoro, Kenya: Egerton University.
- Ondieki, C.M.M., Nyaanga, D.M, Nassiuma, D.K. & Asher, M. (2006). Impact of Education Levels on Product Quality. The case Study of ARC Welding in small scale Metal working Enterprise in Kenya. Proceedings of the First Research Week 17-21, July, 2006.Njoro, Kenya: Egerton University
- Onyango, F.W. (2010). Regularizing the Informal Sector. Jua Kali Activities in Nairobi for sustainable Development.46 ISOCARP Congress
- Ouma. S., Njeru, J., Khainga, D.,& Kinga, B. (2014). Factors Affecting the Performance of Small and Medium Enterprises in the Jua Kali Sector [www.iosrjournals.org](http://www.iosrjournals.org) 92.
- Oreopoulos, P. (2007). Do dropouts drop out too soon? Wealth, health and happiness from compulsory schooling. *Journal of Public Economics*, 91 (11-12): 2213–2229.
- Oreopoulos, P. & Salvanes, K.G. (2011). Priceless: The No pecuniary Benefits of Schooling. *Journal of Economic Perspectives*, 25 (1), 159–84.
- Oso, Y. & Onen, D. (2009). Writing Research proposal and Report. Nairobi : Jomo Kenyatta Foundation.
- Owano, A. (1987). Education for Employment: The contribution of Youth programme to youth Employment in Kenya, research report. Nairobi: I.D.R.C.
- Palme, M.O., & Wright, R. E. (1998). Changes in Rate of Return to Education in Sweden: 1968-1991. *Applied Economics*, 1998, 30: 1653-1663.

- Palmer, R. (2005). *Beyond the Basics: The Need for Balanced Education and Training System in Developing Countries*. Paper Presented at the USAID Education conference, *Moving From access to Relevance: Improving the Quality of August-11,20 Education*; August 2005, Washington D.C, U.S.A.
- Patrick, P., Stefanie, B. & Mahdi, B. (2012). *Entrepreneurship Training and Self-Employment among University graduates; Evidence from randomized trial in Tunisia*: World Bank.
- Patrinos, H.A., Ridao,C. & Sakellariou, C. (2006). *Heterogeneity in Ability and Returns to Education: Multi-Country evidence From Latin America and East Asia*. World Bank Research paper. Washington DC: World Bank.
- Paul, Y. & George, O. (2015). *Youth Entrepreneurship in Auto Spare Parts Sales and Repair Service in Accra, Ghana*.
- Price Waterhouse Coopers, L.L.P. (2005). *The Economic Benefit of Higher Education Qualification: A report produced for royal Society of Chemistry and the Institute of Physics*. London: Price water House coopers.
- Psacharopoulos, G. (1975). *Earnings and Education in O.E.C.D. Countries*. Paris
- Psacharopoulos, G. (1994). *Return to Education: Global update*. *World Development* 22:9, 1325-1325.
- Psacharopoulos, G. & Patrinos, H. A. (2002). *Return to Investment in Education, The World Bank (Policy Research Working Paper No. 2881)*. Washington D.C.; World Ban.
- Psacharopoulos, G. & Patrinos, H.A. (2004). *Returns to Investment in Education: A Further Update*. *Education Economics*, 12: 111-134.

Psacharopoulos, G. (2009). Returns to investment in higher education .A European survey .A contribution to higher education funding reform project C.H.E.P.S-led consortium for European commission.

Rathgeber, E.M. (1988). Education and employment in the informal sector: A review of some recent African research. *Canadian Journal of African Studies*, 2(2): 270-186.

R.E.C.O.U.P (2009). Research Consortium on Educational Outcomes and Poverty. Centre of African Studies. University of Edinburg.

Republic of Kenya (1995). Economic Survey: Government printer.

Republic of Kenya (1997). Nyamira district Development Plan :Government printer

Republic of Kenya (2002). Gucha district Development plan.

Republic of Kenya (2002). Economic Survey :Government Printer.

Republic of Kenya (2002). Gucha 2002-2007. Government Printer

Republic of Kenya(2003). Economic Survey : Government of Kenya.

Republic of Kenya (2004). Economic Survey : Government Survey.

Republic of Kenya ( 2005). Millennium development goals. Government printer.

Republic of Kenya (2005). Sessional Paper No. 2 of 2005 on small Enterprise and Jua Kali Development in Kenya, Nairobi: Government Printer.

Republic of Kenya (2005). A policy Framework for Education, Training and Research : Meeting the challenges of Education, Training, and Research in Kenya in the 21<sup>st</sup> century. Sessional Paper No. 1 Of 2005, Nairobi: Government printer

Republic of Kenya (2008). Nyamira development Plan 2008-2012.Government Printer.

Republic of Kenya (2008). Manga District Development Plan 2008-2012. Government printer.

- Republic of Kenya (2008). Kisii Central development Plan 2008-2012.
- Republic of Kenya (2008). Demographic and Health Survey. Government Printer
- Republic of Kenya (2009). Kenya Population Census 2009. Government Printer
- Republic of Kenya (2010). Statistical Abstract 2010. Government Printer.
- Republic of Kenya (2013). Economic Survey : Government of Kenya.
- Republic of Kenya (2014) . Economic Survey: Government of Kenya
- Richard, B, Lorraine, D. & Barbara, S. (2004). Evaluating the impact of Education on earnings in the UK: Models, Methods, and Results from the NCDS. Centre for Economics of Education. London schools of Economics. London. ISBN 075301730
- Robert, D.H, Michael,P.P. & Dean, A.S. (2010). Entrepreneurship. Glasgow: Bell and Bain limited.
- Robert, P. (2010). Economic Training and labour market Outcomes in Ghana. Review of the Evidence. Centre of African studies ,University of Edinburg.
- Rumberg, R. & Thomas,S.(1993). The Economic Returns to College, Major Quality and Performance Multi-level Analysis of Graduate .Economics of Graduate. Economics of Education Review 12(1): 1-19.
- Rugar, O.T. (2010). Private Rate of Return to University Schooling Among Lecturers in Public Universities in Kenya. Unpublished PhD Theses, Maseno University Kenya.
- Samir, A. & Barry, R. (2013). Education, Employment and Earnings of Secondary School-school leavers in Tanzania. Evidence from a tracer Study PRUS Working Paper no
- Scott, D.J., & Ahmed, K.F. (1997). Apprenticeship Training as Preparation For self-Employment.
- Shultz,W.T. (1961). "Investment in Man: An Economist's View. UNESCO.

- Shultz, W.T. (1961). *Readings in the Economics of Education*. Paris: UNESCO.
- Shultz, T.P. (2004). Evidence of Return to schooling in Africa from Household Survey: Monitoring and Restructuring the Market for Education. *Journal of African Economies* 13(2):95-148
- Sianesi, B. & Van Reenan, J. (2003). 'The Social Returns to Education: a Review of the Empirical Macro-Economic Literature', IFS Working Paper 02/05, forthcoming, *Journal of Economic Surveys*
- Söderbom, M., Francis, T., Wambugu, A., & Kahyarara, G. (2005). 'The Dynamics of Returns to Education in Kenyan and Tanzanian Manufacturing', *Global Poverty Research Group—Working Paper Series-017*.
- Soderborn, M.T., Wambugu, A., & Kahyarara, G. (2006). The dynamics of Returns to Education in Kenya and Tanzanian Manufacturing. *Oxford Bullett in of Economics and Statistics*, 68 (3): 261- 288
- Soon, L.Y. (1987). Self-Employment vs Wage Employment: Estimation of Earnings Function in LDC's. *Economics of Education Review* 6:2 pp 81-89.
- Stepham, J., Goetz, D. & David, F. (2012). The Economic Impact of Self-Employment *Journal of Agricultural and Applied Economics* 44, 3 (August 2012) 315-321
- Tansel, A. (1996). "Self-Employment, Wage Employment and Returns to education of Urban Men and Women in Turkey". *Economics of Education Review* , 13 (4) :305-330.
- Thias, H. H. & Carnoy, M. (1972). *Cost-Benefit Analysis in Education. A case study of Kenya*. Baltimore: John Hopkins Press.

- Townroe, P. & Mallalieu, K. (1990). Entrepreneurial Roles and Entrepreneurial Competence in Regional Economic Development. Small Business Research Programme (London: ESCR Small Business Research Initiative).
- Trostel, P., Walker, I. & Woolley, P. (2002). "Estimates of the economic return to schooling for 28 countries", *Labor Economics*, 9(1): 1-16 .
- U.N.D.P (1996). Human Capital Development Report. New York. U.N.
- UNESCO (2004). *Education for all: The Quality Imperative*. Education for all Global Monitoring Report. Paris: UNESCO
- Vasudera-Dutta, P. (2006). Returns to Education: New Evidence for India, 1983-1999. *Education Economics* 14 (4) PP 431- 451.
- Walsh, S. J. & Anderson, P.H. (1995). Owner/Innovation Preference and Employment Performance. A comparison of Founders and non Founders in Irish Small Scale Firms Sector. *Journal of Small Business Management* pp 1-8
- Wanjohi, M. A. & Mugure, A. (2008). Factors affecting the growth of MSEs in rural areas of Kenya: A case of ICT firms in Kiserian Township, Kajiado District of Kenya. Unpublished Thesis.
- Wanjohi, M.A. (2010). Challenges Facing S.M.E in Kenya and Efforts in Progress. K.E.N.P.R.O. Papers Portal.
- Wanjohi, M.A. (2012). Challenges Facing SMEs in Kenya and the efforts in progress. Nairobi: Acts Press.
- World Bank. (2006 ). World Development Report 2007: Development and Next Generation. Washington, D. C: World Bank.
- World Bank (2009). Doing business. Washington D.C: World Bank.

- World Bank. (2012a). World Development Report 2013: Jobs .Washington, D.C: World Bank.
- World Bank. (2012b). Improving skills Development in the informal Sector: Strategies Sub-Saharan Africa. Washington, D.C: Human Development Department, Social Protection Unit
- World Bank. (2012 c).*Improving Skills Development in the Informal Sector: Strategies for Sub-Saharan Africa*. Washington, D.C: Human Development Department, Social Protection Unit.
- Wu, D. (1999). Education, Earnings and Rates of Return. The case of Taiwan. Mimeo: Florida International University.
- Yamada, G. (1996).Urban Informal Employment and Self Employment in Developing Countries: Theory and Evidence. *Economic Development and Cultural Change*, 44(2): 291-314.
- Yambo, M. (1991). *Training needs assessment of the Kenyan informal sector*, Research Paper No.12, Nairobi: Kenya Rural Enterprise Programme.
- Yaz, T. (2006). Education and self-employment: Changes in earnings and a wealth Inequality: World Bank.
- You, W. (2009). Estimating the Returns to Schooling in Self-Employment Sector in Korea. Seoul: Pusan National University
- Zafar ,M.N. & Hina, N. (2003). Education and earnings in Pakistan.

**APPENDICES**

**APPENDIX I**

**QUESTIONNAIRE FOR THE SELF-EMPLOYED IN COMPUTER SERVICE  
INDUSTRY**

Respondents with K.C.P.E, K.C.S.E, Certificate. Diploma and Masters Levels of education. This research is intended to find out the contribution of all forms of education to the returns of the self-employed. Returns are measured in terms of earnings and business expansion. Any information given will be not being shared to third parties.

Type of self-employment activity\_\_\_\_\_

1. What was your last level of education and grade? \_\_\_\_\_

a. Formal education e.g. KCPE, K.C.S.E, DEGREE etc\_\_\_\_\_

b. Informal education i.e. masonry\_\_\_\_\_

c. State the estimate cost of your last level of education\_\_\_\_\_

d. What is your gender\_\_\_\_\_?

e. What was your grade in last exams\_\_\_\_\_

f. which year were you born?\_\_\_\_\_

2. What skills did you train in? \_\_\_\_\_

3. State the relevance of your level of education to your self-employment activity?  
\_\_\_\_\_

4. Is there a relationship between your skill training and your self-employment activity?  
\_\_\_\_\_

5. Suggest subject content to be included in formal education relevant to your self-employment activities \_\_\_\_\_

6. What was the motivation to enter into self-employment?. Tick the most applicable

a) Lack of employment

b) joined family business

c) Better payment

d) Any other-----

7. Below are some suggestions to the Government efforts to support the self-employment sector. Tick the applicable answer Five Point Rating Scale

1= Least effective

2=Less effective

3= Effective

4=More effective

5= Most effective

Suggestions	Ratings					Total
	1	2	3	4	5	
Provision of loans						
Reduced taxation						
Provision of stalls						
Refresher courses on self employed						
Provision of security						
Provision of market						

8. Tick some of the challenges facing the self-employment Five Point Rating Scale

1. Very small challenge

2. Small Challenge

3= Challenge

4=Big Challenge

5= Very Big Challenge

Challenges	Ratings					Total
	1	2	3	4	5	
Harassment by council askaris						
High license fee						
Lack of skills for self employed						
Lack of structures for business						
Hostile weather conditions						
High interest rate to the self employed						
Lack of structures for business						
Any other						

9. State your average earnings per month-----

10. How long have you been in self-employment?

1-5 years

10-15 years

15-20 years

20 and above

11. What is the location of your business activity from the town centre?

---

12. What was your starting capital?

1000-10000 shillings

10,000- 20,000 shillings

20,000-30,000 shillings

30,000 and above

13. Will you encourage your dependants to join self-employment? and if so cite the reasons for this

---

14. What other factors have contributed to your earnings?

a) Level of education

b) Skill training

c) Location of business

d) Type of skills

15. Are you full or partially self-employed?

---

**APPENDIX II: QUESTIONNAIRE FOR THE SELF-EMPLOYED IN MOTOR  
SPARE PARTS SERVICE INDUSTRY**

Respondents with K.C.PE, K.C.S.E, Certificate. Diploma Undergraduate, and Masters levels of education.

This research is intended to find out the contribution of all forms of education to the returns of the self-employed. Returns are measured in terms of earnings and business expansion.

Any information given will be not be shared to third parties.

Type of self-employment activity\_\_\_\_\_

1. What was your last level of education and grade? \_\_\_\_\_
  - a. Formal education e.g. KCPE, K..C.S.E, DEGREE etc\_\_\_\_\_
  - b. Informal education i.e. masonry\_\_\_\_\_
  - c. State the estimate cost of your last level of education\_\_\_\_\_
  - d. What is your gender\_\_\_\_\_?
  - e. What was your grade in last exams\_\_\_\_\_?
  - f. which year were you born?\_\_\_\_\_
2. What skills did you train in? \_\_\_\_\_
3. State the relevance of your level of education to your self-employment activity?  
\_\_\_\_\_
4. Is there a relationship between your skill training and your self-employment activity?  
\_\_\_\_\_
5. Suggest subject content to be included in formal education relevant to your self-employment activities \_\_\_\_\_
6. What was the motivation to enter into self-employment?. Tick the most applicable
  - Lack of employment
  - joined family business
  - Better payment
  - Any other

7. Below are some suggestions to the Government efforts to support the self-employment sector. Tick the applicable answer Five Point Rating Scale

1= Least effective    2=Less effective

3= Effective            4=More effective

5= Most effective

Suggestions	Ratings					Total
	1	2	3	4	5	
Provision of loans						
Reduced taxation						
Provision of stalls						
Refresher courses on self employed						
Provision of security						
Provision of market						
Any other						

8. Tick some of the challenges facing the self-employment Five Point Rating Scale

1.Very small challenge

2. Small Challenge

3= Challenge

4=Big Challenge

5= Very Big Challenge

Challenges	Ratings					Total
	1	2	3	4	5	
Harassment by council askaris						
High license fee						
Lack of skills for self employed						
Lack of structures for business						
Hostile weather conditions						
High interest rate to the self employed						
Lack of structures for business						
Any other						

9. State your average earnings per month-----

10. How long have you been in self-employment?

1-5 years

10-15 years

15-20 years

20 and above

11. What is the location of your business activity from the town centre?

---

12. What was your starting capital?

1000-10000 shillings

10,000- 20,000 shillings

20,000-30,000 shillings

30,000 and above

13. Will you encourage your dependants to join self-employment? and if so cite the reasons for this

---

14. What other factors have contributed to your earnings?

Level of education

Skill training

Location of business

Type of skills

15. Are you full or partially self-employed?

---

**APPENDIX III: INTERVIEW SCHEDULE FOR SELF EMPLOYED IN COMPUTER SERVICE INDUSTRY**

**This question will help to collect data on the self-employed level of education and skill straining**

Type of self-employment activity\_\_\_\_\_

---

---

1. What was your last level of education and training?

---

---

2. Is there a relationship between the curriculum you covered in school or training and the self-employment activity that you are engaged in?

---

---

3 What motivated you to join self-employment?

---

---

4. What are the challenges the self-employment face in relation to the education and skills for self-employment?

---

---

5. Is there any recommendation you can suggest over training of those in self-employment?

---

---

6 State some of the efforts the Kenya Government is making to improve working of those in self-employment.

---

---

7. Is the earning of the self-employed determined by level of education or training?

---

---

8. What is your average income per month?

---

---

9. What are the challenges facing the self-employed in their work

---

---

10. State the intervention measures to assist the self-employed in their work?

---

---

---

**APPENDIX IV: INTERVIEW SCHEDULE FOR SELF EMPLOYED IN MOTOR  
SPARE PARTS SERVICE INDUSTRY**

This question will help to collect data on the self-employed level of education and skill training

Type of self-employment activity\_\_\_\_\_

\_\_\_\_\_

1. What was your last level of education and training?

\_\_\_\_\_

\_\_\_\_\_

2. Is there a relationship between the curriculum you covered in school or training and the self-employment activity that you are engaged in?

\_\_\_\_\_

3 What motivated you to join self-employment?

\_\_\_\_\_

4. What are the challenges the self-employment face in relation to the education and skills for self-employment?

\_\_\_\_\_

\_\_\_\_\_

5. Is there any recommendation you can suggest over training of those in self-employment?

6 State some of the efforts the Kenya Government is making to improve working of those in self-employment.

\_\_\_\_\_

7. Is the earning of the self-employed determined by level of education or training?

\_\_\_\_\_

8. What is your average income per month?

\_\_\_\_\_

9. What are the challenges facing the self-employed in their work\_\_\_\_\_

10. State the intervention measures to assist the self-employed in their work?

\_\_\_\_\_

\_\_\_\_\_

## APPENDIX V: RESEARCH AUTHORIZATION LETTERS



**MASENO UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**

*Office of the Dean*

**Our Ref:** PG/PHD/00068/2010

Private Bag, MASENO, KENYA  
Tel:(057)351 22/351008/351011  
FAX: 254-057-351153/351221  
Email: [sgs@maseno.ac.ke](mailto:sgs@maseno.ac.ke)

Date: 23<sup>rd</sup> November, 2016

**TO WHOM IT MAY CONCERN**

**RE: PROPOSAL APPROVAL FOR ELIUD NYAKUNDI—  
PG/PHD/00068/2010**

The above named is registered in the Doctor of Philosophy Programme of the School of Education, Maseno University. This is to confirm that his research proposal titled "Analysis on Education Returns and Challenges Faced by the Urban Self Employed in Kisii County, Kenya" has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

  
Prof. J.O. Agure  
**DEAN, SCHOOL OF GRADUATE STUDIES**





**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471.  
2241349,3310571,2219420  
Fax: +254-20-318245,318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utali House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No **NACOSTI/P/17/47320/17071**

Date: **12<sup>th</sup> May, 2017**

Eliud Nyakundi  
Kisii University  
P.O. Box 402-40800  
**KISII.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Analysis on Education returns and challenges faced by the urban self employed in Kisii County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Kisii County** for the period ending **11<sup>th</sup> May, 2018.**

You are advised to report to **the County Commissioners and the County Directors of Education, Kisii County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

**BONIFACE WANYAMA  
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Kisii County.

The County Director of Education  
Kisii County.

**THIS IS TO CERTIFY THAT:**  
**MR. ELIUD NYAKUNDI**  
**of MASENO UNIVERSITY, 0-40200**  
**KISII, has been permitted to conduct**  
**research in Kisii County**

**Permit No : NACOSTI/P/17/47320/17071**  
**Date Of Issue : 12th May,2017**  
**Fee Recieved :Ksh 2000**

**on the topic: "ANALYSIS ON EDUCATION**  
**RETURNS AND CHALLENGES FACED BY**  
**THE URBAN SELF EMPLOYED IN KISII**  
**COUNTY, KENYA"**

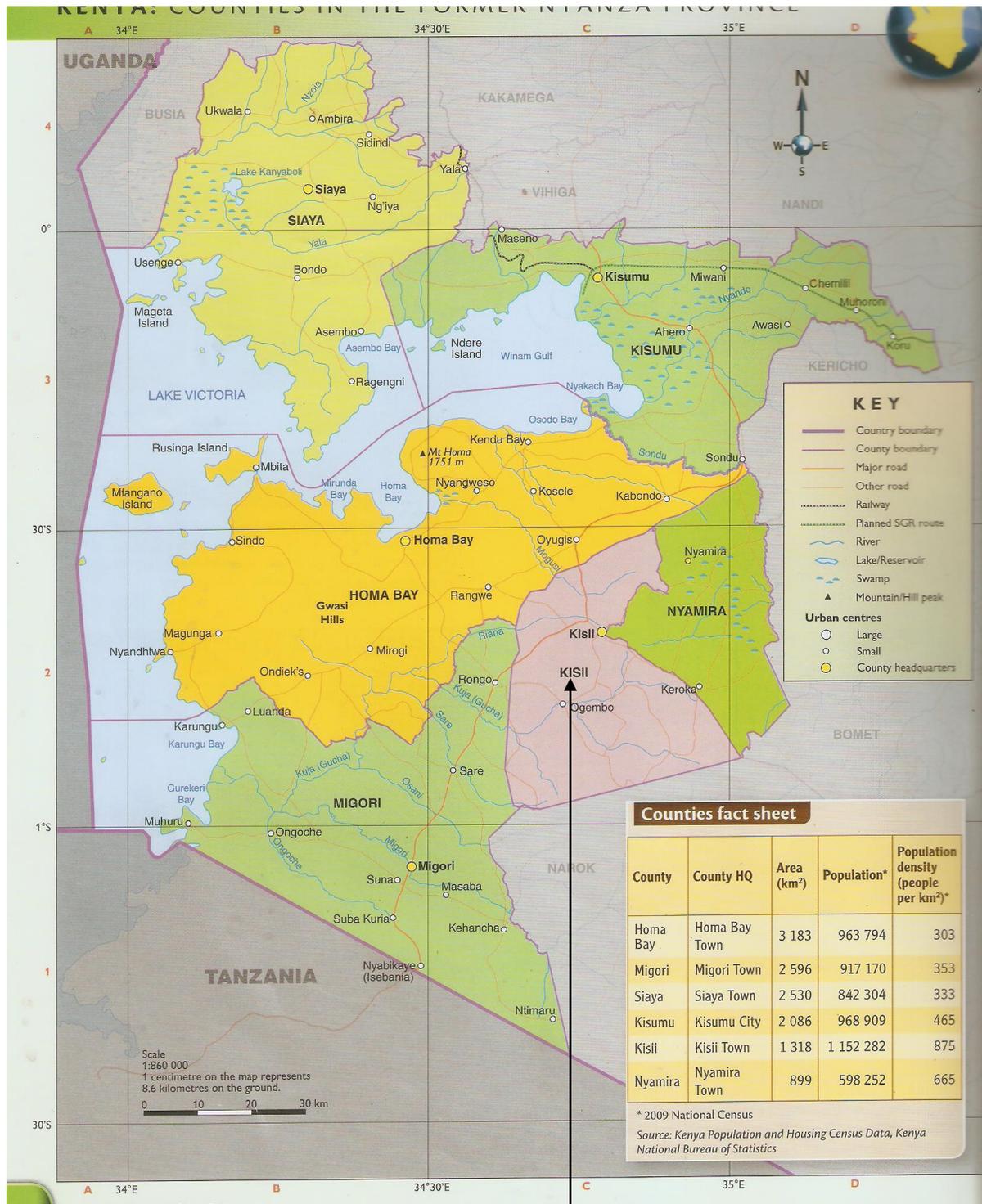
**for the period ending:**  
**11th May,2018**



.....  
**Applicant's**  
**Signature**

  
**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

## APPENDIX VI: MAP OF KISII COUNTY



**Kisii County**

**APPENDIX VII: RESPONDENTS EDUCATION LEVELS AND RETURNS**

KCPE grades and returns of education in computer sector

<b>SN</b>	<b>KCPE marks</b>	<b>Returns in kshs per month</b>
1	281	4500
2	270	6900
3	250	8100
4	280	9400
5	300	9350
6	260	5600
7	270	9910
8	245	12250
9	300	18500
10	290	19400
11	275	15900
12	265	17700
13	248	13200
14	300	24450
15	287	29400
16	295	25200
17	300	22400

### KCSEGRADE AND RETURNS

SN	KCSE grades	Returns in ksh to KCSE in computer
1	D +	5000
2	D+	6000
3	D	8000
4	C-	5000
5	C	5500
6	D+	8700
7	C	6000
8	C-	7000
9	D+	7400
10	C	8000
11	C	6500
12	C	5000
13	D	6000
14	C	7000
15	C	8300
16	C	9000
17	C	9500
18	C-	8100
19	C-	7000
20	D+	6000
21	C	7000
22	C	7700
23	D+	5500
24	C	4000
25	C	5000
26	C	6200
27	C	11000
28	C	11500
29	C-	13000
30	D+	14000
31	C	19000
32	C-	18000
33	C-	16300
34	C	15400
35	D+	11000

36	C	19500
37	C	18600
38	C-	17400
39	D+	14000
40	C+	13800
41	C-	16500
42	C	17800
43	C	18000
44	C	17300
45	C+	19700
46	C	17000
47	C+	19000
48	C	18000
49	C	16000
50	C-	17000
51	C-	17000
52	C-	18000
53	C-	12000
54	C-	14000
55	C+	15000
56	C+	16000
57	C+	18500
58	C	12200
59	C	13700
60	C	15600
61	C	17700
62	C	18000
63	C-	21000
64	C	22300
65	C-	24400
66	C	25400
67	D+	25500
68	D+	26600
69	C-	27000
70	C	28700
71	C	29300
72	D+	29700

### CERTIFICATE GRADES AND RETURNS

<b>SN</b>	<b>Certificate grade</b>	<b>Return in ksh to certificate</b>
1	Distinction	5000
2	Credit	6000
3	Distinction	67000
4	Credit	8000
5	Distinction	9300
6	Credit	9100
7	Distinction	9200
8	Pass	4400
9	Distinction	5500
10	Credit	6600
11	Pass	7700
12	Distinction	8000
13	Credit	9000
14	Pass	9800
15	Distinction	9700
16	Distinction	9300
17	Credit	9500
18	Pass	4500
19	Distinction	4300
20	Credit	4400
21	Credit	5500
22	Pass	6600
23	Pass	6700
24	Pass	6800
25	Credit	6900
26	Distinction	7700
27	Distinction	8000
28	Credit	9100
29	Pass	8500
30	Pass	9300
31	Pass	4500
32	Credit	6500
33	Distinction	7700
34	Pass	8800
35	Credit	5000
36	Distinction	8300
37	Credit	9300

38	Distinction	9000
39	Credit	5000
40	Pass	6200
41	Credit	8100
42	Pass	8600
43	Distinction	7700
44	Credit	9600
45	Distinction	7800
46	Credit	5800
47	Pass	11000
48	Pass	11500
49	Credit	12800
50	Distinction	17000
51	Pass	15300
52	Credit	19000
53	Pass	19800
54	Pass	18700
55	Pass	17700

**DIPLOMA GRADES AND RERURNS**

<b>SN</b>	<b>Diploma grade</b>	<b>Returns in kshs to diploma</b>
1	Distinction	9800
2	Distinction	9600
3	Distinction	7700
4	Distinction	5800
5	Distinction	4300
6	Credit	3000
7	Credit	8000
8	Pass	9000
9	Pass	7000
10	Pass	8000
11	Distinction	9000
12	Distinction	6700
13	Pass	8900
14	Credit	6300
15	Pass	1100
16	Credit	13500
17	Distinction	18600
18	Pass	19200
19	Distinction	18700
20	Credit	19800
21	Credit	12000
22	Pass	15500
23	Credit	16800
24	Distinction	17000
25	Pass	18000
26	Credit	18000
27	Distinction	12000
28	Credit	15000

### BACHELOR DEGREE GRADES AND RETURNS

SN	Bachelor degree grade	Returns in ksh to bachelor degree
1	Second lower	22000
2	Second lower	24000
3	Second lower	25000
4	Second upper	29700
5	Second upper	29600
6	Second upper	26000
7	Second upper	27000
8	Second lower	28800
9	Pass	26300
10	Pass	25500
11	Second upper	33000
12	Second upper	38000
13	Second lower	37000
14	Pass	39700
15	Pass	39800

### Master's Degree returns

SN	Master's degree grade	Returns in ksh to master's degree
1	n/a	38000
2	n/a	38000
3	n/a	35000
4	n/a	38000

**APPENDIX VIII**  
**RETURNS AND EDUCATION GRADES IN SPARE PARTS INDUSTRY**  
**KCPEGRADES AND RETURNS**

SN	KCPE marks in spare parts industry	Returns in Ksh to KCPE grades in spare parts
1	200	8000
2	250	8700
3	231	9000
4	240	7700
5	231	8300
6	241	8800
7	280	8000
8	228	11000
9	228	12500
10	280	13500
11	295	15800
12	287	18300
13	292	19700
14	272	19000
15	285	17400
16	280	23000
17	291	24500
18	261	28000
19	272	29400
20	284	27300
21	294	26700

**KCSE GRADES AND RETURNS IN SPARE PARTS**

<b>SN</b>	<b>KCSE grades</b>	<b>Returns in Ksh to KCSE grades</b>
1	D	9000
2	D+	87000
3	C-	92000
4	C	6900
5	C+	9000
6	C	8700
7	C	6700
8	D	7200
9	C-	7800
10	D	6800
11	C	5400
12	C	5700
13	C	6700
14	C	8800
15	C	9500
16	C	9800
17	D+	8800
18	C-	8700
19	D	7900
20	C+	6800
21	C	5500
22	C	6700
23	C	6800
24	C	9600
25	C	5000
26	C	6200
27	C	6600
28	D	7800
29	D+	8000
30	D+	6200
31	D+	7800
32	C-	9500
33	C	11500
34	D+	19500
35	C	18300
36	C	17500

37	C-	16000
38	D+	15300
39	C	16200
40	C	15700
41	D+	18700
42	C+	19000
43	C	19800
44	C-	17200
45	C+	16500
46	C	14600
47	C-	17300
48	C+	1400
49	C+	18000
50	C-	15000
51	C-	17800
52	C-	19200
53	C+	16200
54	C	15500
55	C	17500
56	C-	19500
57	C-	19100
58	C-	14300
59	C+	16800
60	C	17500
61	C	18000
62	C	12000
63	D	26000
64	C	25000
65	C	12000
66	C	12800
67	D	11500
68	C+	12500
69	C	13500
70	C+	16500
71	C	17500
72	C	23000
73	C-	23500
74	C+	25500

75	C+	27000
76	C	24000
77	C	21000
78	C	24000
79	D+	26700
80	D+	28500
81	C	33000
82	C	35500
83	C+	37800
84	C	35500
85	C	37500
86	C	34800

**CERTIFICATE GRADE AND RETURNS IN SPARE PARTS INDUSTRY**

<b>SN</b>	<b>Grade certificate in spare parts</b>	<b>Returns in Ksh for certificate in spare parts</b>
1	Distinction	8000
2	Credit	8700
3	Credit	68000
4	Credit	7700
5	Distinction	6200
6	Pass	6800
7	Credit	8000
8	Pass	9700
9	Credit	9000
10	Distinction	9700
11	Pass	17800
12	Credit	17000
13	Credit	18000
14	Credit	18300
15	Credit	13800
16	Pass	12700
17	Distinction	19700
18	Credit	18000
19	Pass	22000
20	Credit	25000
21	Credit	23400
22	Credit	25500
23	Distinction	27000
24	Pass	29000
25	Credit	29800
26	Distinction	38000

**DIPLOMA GRADE IN SPAR INDUSTRYE PARTSS AND RETURNS AND GRADES**

<b>SN</b>	<b>Diploma grade</b>	<b>Return in ksh for diploma in spare parts</b>
1	Pass	15500
2	Credit	16700
3	Pass	18400
4	Distinction	17000
5	Distinction	15000
6	Pass	14000
7	Credit	12500
8	Pass	13400
9	Credit	17300
10	Credit	19800
11	Credit	22700
12	Credit	25000
13	Distinction	28000
14	Pass	29500
15	Credit	28000
16	Pass	25000
17	Credit	38000
18	Credit	39500

### BACHELORS DEGREE AND RETURNS

<b>SN</b>	<b>Bachelor degree grade</b>	<b>Returns in Ksh to Bachelor degree grade</b>
1	Second upper	18000
2	Second upper	19500
3	Second lower	16800
4	Second lower	31000
5	Second upper	31500
6	Pass	38000
7	Second lower	36000
8	Second upper	35000
9	Second upper	31500

### MASTERS GRADES AND RETURNS IN SPARE PARTS INDUSTRY

<b>SN</b>	<b>Masters grade</b>	<b>Return in ksh to Masters degree in spare parts industry</b>
1	n/a	35000
2	n/a	38000
3	n/a	3900

## APPENDIX IX: THE COST PER LEVEL OF EDUCATION

### Cost of education for KCPE

SN	Cost in ksh of KCPE Education
1	2045
2	2050
3	2077
4	2080
5	2085
6	2090
7	3000
8	3000
9	3064
10	3073
11	4310
12	4075
13	5000
14	6001
15	6019
16	6035
17	7088
18	7461
19	8451
20	9024
21	11436
22	15634
23	17521
24	18671
25	20345
26	22942
27	25821

28	26951
29	27841
30	28345
31	29857
32	30657
33	31582
34	32856
35	33521
36	34761
37	36851
38	37551
39	39632

<b>SN</b>	<b>Cost in Ksh of KCSE education</b>
1	4093
2	5075
3	6027
4	6053
5	7032
6	7095
7	8045
8	8061
9	9035
10	9065
11	9067
12	10031
13	10071
14	12900
15	13300
16	13075
17	14620
18	15732
19	16731
20	17830
21	18564
22	18556
23	21457
24	22354\
25	23891
26	24856
27	25751
28	26941
29	27641
30	28000
31	29821
32	30872
33	31567
34	32745
35	33651
36	34921
37	35721
38	36532
39	36624
40	37532
41	38675
42	39874
43	40675

44	41645
45	42376
46	43541
47	44871
48	45874
49	45800
50	47563
51	46654
52	49832
53	50952
54	51900
55	52000
56	53000
57	54450
58	55377
59	56423
60	57423
61	57867
62	57835
63	57945
64	60000
65	60143
66	60362
67	60472
68	60587
69	60777
70	61387
72	61582
73	61745
74	61853
75	61964
76	62435
77	62555
78	62677
79	63000
80	64673
81	64852
82	64431
83	64431
84	65543
85	65654
86	65764
87	65842
88	65867

89	65943
90	64951
91	65984
92	65994
93	67342
94	67457
95	67653
96	67782
97	67884
98	68432
99	68561
100	69256
101	69445
102	70276
103	70347
104	70567
105	70000
106	71000
107	71236
108	72432
109	72654
110	73123
111	74655
112	75345
113	75543
114	75642
115	75782
116	75952
117	75957
118	75963
119	75980
120	75985
121	75986
122	75990
123	75997
124	76000
125	76345
126	76452
127	75421
128	76134
129	76345
130	76381
131	76487
132	76754

133	76865
134	77000
135	77126
136	77345
137	77500
138	77654
139	77658
140	77773
141	77853
142	77976
143	77861
144	78000
145	78741
146	78741
147	78862
148	79345
149	79542
150	79783
151	79865
152	79968
153	79968
154	79775
155	79994

<b>SN</b>	<b>Cost in Ksh of education for certificate</b>
1	40123
2	40134
3	40145
4	40643
5	40651
6	40668
7	40721
8	40826
9	40835
10	40877
11	40893
12	40897
13	40900
14	40931
15	40934
16	40945
17	40950

18	40967
19	40971
20	40996
21	41783
22	41785
23	45900
24	45930
25	45950
26	45970
27	50300
28	50400
29	50540
30	50500
31	50550
32	50570
33	55600
34	50774
35	50800
36	60765
37	60750
38	60865
39	60870
40	60900
41	60950
42	60950
43	60950
44	60965
45	60965
46	60975
47	60980
48	60985
49	60990
50	70108
51	70478
52	70500
53	70550
54	70600
55	70650

56	70700
57	70750
58	70800
59	70850
60	70870
61	70900
62	70940
63	70940
64	75000
65	75467
66	75500
67	75789
68	75864
69	80145
70	80456
71	80563
72	85134
73	80365
74	90684
75	95678
76	100245
77	100345
78	10584
79	11174
80	11195
81	11576
82	11956
83	11956

<b>SN</b>	<b>Cost in Ksh of Diploma education</b>
1	70000
2	70000
3	70000
4	70000
5	70000
6	75000
7	75000
8	75000
9	75000
10	7500
11	75000
12	75000
13	75000
14	75000
15	75000
16	80000
17	80165
18	80277
19	8354
20	8460
21	90543
22	90654
23	90734
24	97500
25	90843
26	100452
27	100578
28	100753
29	100801

30	10091
31	111543
32	116780
33	120231
34	124517
35	130542
36	130652
37	140176
38	140254
39	150564
40	150700
41	150854
42	160900
43	160950
44	160963
45	170234
46	170355
47	170581

<b>SN</b>	<b>Cost in Ksh of bachelors degree of education</b>
1	500245
2	520456
3	535700
4	540367
5	545321
6	557431
7	548564
8	548564
9	548976
10	549532
11	550000
12	557543
13	558000
14	558678
15	559432
16	559500
17	558700
18	559800
19	559865
20	559976
21	600376
22	623764
23	630426
24	710567
25	734994
26	740781
27	750523

**APPENDIX X: GOVERNMENT INTERVENTION TO ASSIST THE SELF-EMPLOYED**

**Case Processing Summary**

		N	%
<b>Cases</b>	Valid	191	95.5
	Excluded <sup>a</sup>	9	4.5
	Total	200	100.0
a. Listwise deletion based on all variables in the procedure.			

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.774	.755	7

		N	%
<b>Cases</b>	Valid	186	93.0
	Excluded <sup>a</sup>	14	7.0
	Total	200	100.0

## APPENDIX XI: CHALLENGES FACING THE SELF-EMPLOYED

### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.774	.755	7

### Case Processing Summary

		N	%
Cases	Valid	186	93.0
	Excluded <sup>a</sup>	14	7.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.943	.967	6

## APPENDIX XII

### CORRELATION ANALYSIS FOR ALL LEVELS OF EDUCATION FOR COMPUTER SERVICE INDUSTRY

#### Correlations

		KCPE	Earnings KCPE
KCPE	Pearson Correlation	1	.643**
	Sig. (2-tailed)		.005
	N	17	17
EarningsKCPE	Pearson Correlation	.643**	1
	Sig. (2-tailed)	.005	
	N	17	17

\*\* . Correlation is significant at the 0.01 level (2-tailed).

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.643 <sup>a</sup>	.413	.374	5654.95458	.413	10.572	1	15	.005

a. Predictors: (Constant), KCPE

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	338069307.496	1	338069307.496	10.572	.005 <sup>b</sup>
	Residual	479677668.974	15	31978511.265		
	Total	817746976.471	16			

a. Dependent Variable: EarningsKCPE

b. Predictors: (Constant), KCPE

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.104 <sup>a</sup>	.011	-.003	7261.360	.011	.761	1	70	.386

a. Predictors: (Constant), KCSE

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40143184.786	1	40143184.786	.761	.386 <sup>b</sup>
	Residual	3690914302.714	70	52727347.182		
	Total	3731057487.500	71			

a. Dependent Variable: EarningsKCSE

b. Predictors: (Constant), KCSE

**Correlations**

		EarningsKCSE	CERTIFICATE
EarningsKCSE	Pearson Correlation	1	-.167
	Sig. (2-tailed)		.222
	N	72	55
CERTIFICATE	Pearson Correlation	-.167	1
	Sig. (2-tailed)	.222	
	N	55	55

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.128 <sup>a</sup>	.016	-.002	4410.60323	.016	.868	1	52	.356

a. Predictors: (Constant), CERTIFICATE

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16885261.550	1	16885261.550	.868	.356 <sup>b</sup>
	Residual	1011577886.598	52	19453420.896		
	Total	1028463148.148	53			

a. Dependent Variable: Earnings CERTIFICATE

b. Predictors: (Constant), CERTIFICATE

**Correlations**

		DIPLOMA	Earnings Diploma
DIPLOMA	Pearson Correlation	1	-.195
	Sig. (2-tailed)		.319
	N	28	28
Earnings Diploma	Pearson Correlation	-.195	1
	Sig. (2-tailed)	.319	
	N	28	28

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.195 <sup>a</sup>	.038	.001	17024.19869	.038	1.031	1	26	.319

a. Predictors: (Constant), DIPLOMA

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	298857415.485	1	298857415.485	1.031	.319 <sup>b</sup>
	Residual	7535406870.229	26	289823341.163		
	Total	7834264285.714	27			

a. Dependent Variable: EarningsDiploma

b. Predictors: (Constant), DIPLOMA

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.045 <sup>a</sup>	.002	-.075	6036.57813	.002	.026	1	13	.874

a. Predictors: (Constant), Bachelors degree

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	945751.244	1	945751.244	.026	.874 <sup>b</sup>
	Residual	473723582.090	13	36440275.545		
	Total	474669333.333	14			

a. Dependent Variable: Earnings Bachelors degree

b. Predictors: (Constant), Bachelors degree

Regression analysis for spare parts industry

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.617 <sup>a</sup>	.380	.349	6197.47623

a. Predictors: (Constant), GradeKCPE

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	471731676.168	1	471731676.168	12.282	.002 <sup>b</sup>
	Residual	768174232.923	20	38408711.646		
	Total	1239905909.091	21			

a. Dependent Variable: EraningsKCPE

b. Predictors: (Constant), GradeKCPE

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.009 <sup>a</sup>	.000	-.012	13750.21450

a. Predictors: (Constant), GradeKCSE

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1266595.317	1	1266595.317	.007	.935 <sup>b</sup>
	Residual	15881745497.706	84	189068398.782		
	Total	15883012093.023	85			

a. Dependent Variable: Earnings KCSE

b. Predictors: (Constant), GradeKCSE

## Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.130 <sup>a</sup>	.017	-.022	9744.38633

a. Predictors: (Constant), Grade CERTIFICATE

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	40645226.852	1	40645226.852	.428	.519 <sup>b</sup>
	Residual	2373826625.000	25	94953065.000		
	Total	2414471851.852	26			

a. Dependent Variable: EarningCertificate

b. Predictors: (Constant), GradeCERTIFICATE

## Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.129 <sup>a</sup>	.017	-.041	8557.69348

a. Predictors: (Constant), GradeDiploma

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21225263.158	1	21225263.158	.290	.597 <sup>b</sup>
	Residual	1244980000.000	17	73234117.647		
	Total	1266205263.158	18			

a. Dependent Variable: EarningsDiploma

b. Predictors: (Constant), GradeDiploma

## Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.297 <sup>a</sup>	.088	-.003	7336.04798

a. Predictors: (Constant), Grade bachelor's degree

ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	51894000.000	1	51894000.000	.964	.349 <sup>b</sup>
	Residual	538176000.000	10	53817600.000		
	Total	590070000.000	11			

a. Dependent Variable: Earning bachelor degree

b. Predictors: (Constant), Grade bachelors

## Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277 <sup>a</sup>	.077	-.846	2828.42712

a. Predictors: (Constant), Master's degree

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	666666.667	1	666666.667	.083	.821 <sup>b</sup>
	Residual	8000000.000	1	8000000.000		
	Total	8666666.667	2			

a. Dependent Variable: Earning master's degree

b. Predictors: (Constant), master's degree

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34000.000	6000.000		5.667	.111
	Master's degree	1000.000	3464.102	.277	.289	.821

a. Dependent Variable: master's degree

### **APPENDIX XIII: INFORMED CONSENT FROM RESPONDENTS**

I freely, voluntarily and without coercion consent to be a participant in the research project entitled Returns to levels by the urban self-employed in Kisii county ,Kenya.

The research is being conducted by ELIUD NYAKUNDI , a Doctorate student in the department of educational management and foundations, faculty of education at Maseno university and will be supervised by Prof E.M.W. SIMATWA and Prof. T.M.O AYODO

I understand the purpose of the research is ti find out the returns to levels of education of the self-employed. My participation is completely voluntarily and I may stop participation any time . All my responses will be kept confidential and my name will not appear in any of the surveys or results

I have read and understand the conditions for participation and I hereby consent/  
do not consent

---

PARTICIPANT SIGNATURE  
ELIUD NYAKUNDI  
**RESARCHER**

SUPERVISORS

PROF. EM.W. SIMATWA PhD

PROF. T.M.O AYODO PhD (Deceased)