DETERMINANTS OF YOUTH UNEMPLOYMENT IN AGANANG MUNICIPALITY, LIMPOPO PROVINCE

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By

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PLAGIARISM DECLARATION

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ABSTRACT

Employment is one of the most significant determinants of the welfare of any nation. Any significant changes in employment (i.e. increase/decrease) will subsequently affect the wellbeing of the household. The unemployment rates in South Africa are among the highest in the world, currently standing at 25.2 per cent (i.e. by the narrow definition of unemployment) based on figures released by Statistics South Africa. Limpopo tends to have the highest proportion of rural dwellers in the South Africa, hence it is expected that socioeconomic conditions in the province are inferior to the national average; with the consequence of a high youth unemployment rate. This study seeks to find the determinants of youth unemployment in the Aganang municipality of the Limpopo province using census 2011, complemented by QLFs 2007-2010.

This study used the same approach that Kyei and Gyekye followed by employing Regression, Principal, Component and Cluster analyses. Three variables, gender, training and education were categorised into twelve as independent variables. The study concluded that in the Aganang municipality, no education (that is no schooling or primary schooling) particularly for females, caused the level of Youth unemployment to rise, while a bachelor's degree and / or training, brought about a reduction in Youth unemployment.

Key Words: Youth unemployment, Cluster, PCA, Capricorn district, Aganang municipality, model, determinant

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GLOSSARY OF TERMS

Unemployment	• Baker (1999) defines an unemployed person as the one who is without work although is currently available for work and is seeking or wanting to work. • Unemployment (strict definition) includes only those people who desire employment but cannot find a job (South African Reserve Bank). • Unemployment (expanded definition) includes everyone who desires employment, regardless of whether or not they actively tried to obtain a job (South African Reserve Bank).
Unemployment rate	The number of unemployed persons taken as a percentage of the economically active population which includes both the employed and unemployed.
Youth unemployment	The unemployed youth, whether male or female who is currently available for work and/or seeking for a job
Youth	Youth is any person between the age of 15 and 35 years (Burns, 2008)
Passive labour policies	Passive labour market policies are policies that indirectly affect the employment prospects of the unemployed by either altering some aspect of the labour market environment indirectly e.g. provision of unemployment insurance fund (UIF) (Burns, 2008)
Active labour market policies	Active labour market policies are policies that directly affect the employment prospects of the unemployed by either altering some aspect of the labour market environment directly (e.g. lowering wage costs, or reducing regulatory conditions), or by altering the characteristics of the unemployed workers in some way, e.g. altering their skills through re-training programmes, or improving job search via job search assistance programmes (Burns, 2008).

ACRONYMS

STATS SA	Statistics South Africa
UIF	Unemployment Insurance Fund
GEAR	Growth, Employment and Redistribution strategy
RDP	Reconstruction and Development Program
Asgisa	Accelerated and Shared Growth Initiative for South Africa
LFS	Labour Force Survey
SMART	Specific, Measurable, Accurate, Reliable and Timely
OECD	Organisation for Economic Co-operation and Development
NAFTA	
PCA	Principal Component Analysis
UN	United Nations
ILC	International Labour Conference
ILO	International Labour Office
QLFS	Quarterly Labour Force Survey
NAFTA	North American Free Trade Agreement
WCED	Western Cape Education Department
FET	Further Education and Training
OHS	October Households Survey
DPRU	Development Policy Research Unit
CSR	Corporate Social Responsibility

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1 INTRODUCTION

1.1 Research Area

The research wants to consider development and youth empowerment by concentrating on the determinants of employment and/or causes of unemployment.The unemployment rates in South Africa are among the highest in the world, currently standing at 25.2 per cent (i.e. by the narrow definition of unemployment) based on figures released by Statistics South Africa (Stats SA, 2008). Thus a quarter of economically active people are unemployed and that poses danger because it can yield devastating effects on economic welfare, crime, economic production, erosion of human capital, social exclusion, misery and social instability (Kingdon and Knight, 2004). Unemployment is a real matter of concern as the incidence of employment determines the distribution of income and poverty across different groups (Bhorat, Murray, Muzi, Van Der Berg and Ingrid; 2001). Due to these undesirable effects the government has initiated well-meaning programmes such as skills training, job creation and public works programme but their effects have been minimal as high unemployment rates continue unabated (Akinyemi, 2010).

Employment is one of the most significant determinants of the welfare of any nation. Any significant changes in employment (i.e. increase/decrease) will subsequently affect the wellbeing of the household. However, South Africa has been a victim of high unemployment, with the official rate rising from 15.6 per cent in 1995 to a peak of 30.3 per cent in 2001 and minimally declining to 26.7 per cent in 2005 recording a differential of 11 per cent since 1995. Limpopo tends to have the highest proportion of rural dwellers in the South Africa, hence it is expected that socioeconomic conditions in the province are inferior to the national average; with the consequence of high youth unemployment rate. The focal point of the study is investigating the main determinants of these high rates of unemployment, with particular focus to youth unemployment in the Aganang local municipality in Limpopo province.

The South African government has since 1994, introduced different policies and strategies to deal with socio-economic problems faced by the country. Policies such as the Reconstruction and Development Programme (RDP); Growth, Employment and Redistribution (GEAR) strategy; and Accelerated and Shared Growth Initiative for South Africa (Asgisa) have had

their successes and failures. Acknowledging that the government policies succeeded in restoring the macroeconomic foundations and increased economic growth, they however failed in increasing the level of employment in the country. According to Streak, (2004) and Nattrass (2001) formal employment declined every year over the GEAR period. During the GEAR period unemployment kept on increasing. According to Maree (2007), the rate of unemployment (strict definition) increased from 19.3 per cent to 25.8 per cent over the period 1996 to 2000. As mentioned earlier, Akinyemi (2010), argued that the government initiated programmes such as skills trainings; job creation and public works programmes have not succeeded in curbing unemployment since unemployment rates continue to rise.

The supply of labour increased greatly after the new dispensation in South Africa. This in turn created massive lay-offs prompting analyst to reach a consensus that South Africa's unemployment is structural in nature (Pauw, Oosthuizen, and van der Westhuizen (2006). Contrary, Standing, Sender, and Weekes (2000:119), were very reticent in opinion, asserting that the outcome of the selective process does not necessarily imply that a lack of schooling is the cause of unemployment. This is substantiated by the fact that on average new entrants into the labour market tend to be more educated than the older cohorts but the youth face higher unemployment rates.

According to Kyei and Gyekye (2011) unemployment distribution tends to be skewed in terms of race. Africans are usually victims of the high rates of unemployment experiencing nearly 7 times the rate of whites. Aganang municipality is a predominantly African community therefore if the unemployment rates for Africans, women and youth are higher than average, one can imagine that the unemployment rate in Aganang will be high.

Youth unemployment is one phenomenon that is well documented in literature not only because of its economic effects but also, its impact on the general wellbeing of society. South Africa is among the top countries in the world that is faced with the problem of unemployment, particularly youth unemployment. Unemployment has increased during South Africa's post-apartheid era, from 13.6 per cent in 1993 to 23.4 per cent in 2008 (Leibbrandt, Woolard, McEwan, and Koep, (2009)[1]. However, unemployment amongst youth (individuals aged 15-35), is substantially higher, in the order of 50 per cent, with younger cohorts aged 15-24 being particularly hard hit (Burns, 2008). According to Historical

[1] Banerjee et al, 2006 has recorded an increase from 15.6 per cent in 1995 to 30.3 per cent in 2002

Revision of Labour Force Surveys (LFSs) 2000 to 2007 a revised average rate of unemployment in South Africa was 23.8[2] per cent. Since the South African post-apartheid era, unemployment, particularly youth unemployment has been a thorny issue because of its lifetime effect on youth and individuals. Levinsohn, (2008) shows, for instance, that once someone finds a job in the formal sector, retention in formal employment is likely. Furthermore, given that overall unemployment levels in South Africa are high a reduction in youth unemployment will reduce aggregate unemployment rates. Blanchflower, (1999) pointed out that youth unemployment has been shown to have severe effects for the individuals as unemployment early in someone's career may permanently impair their future productive capacity.

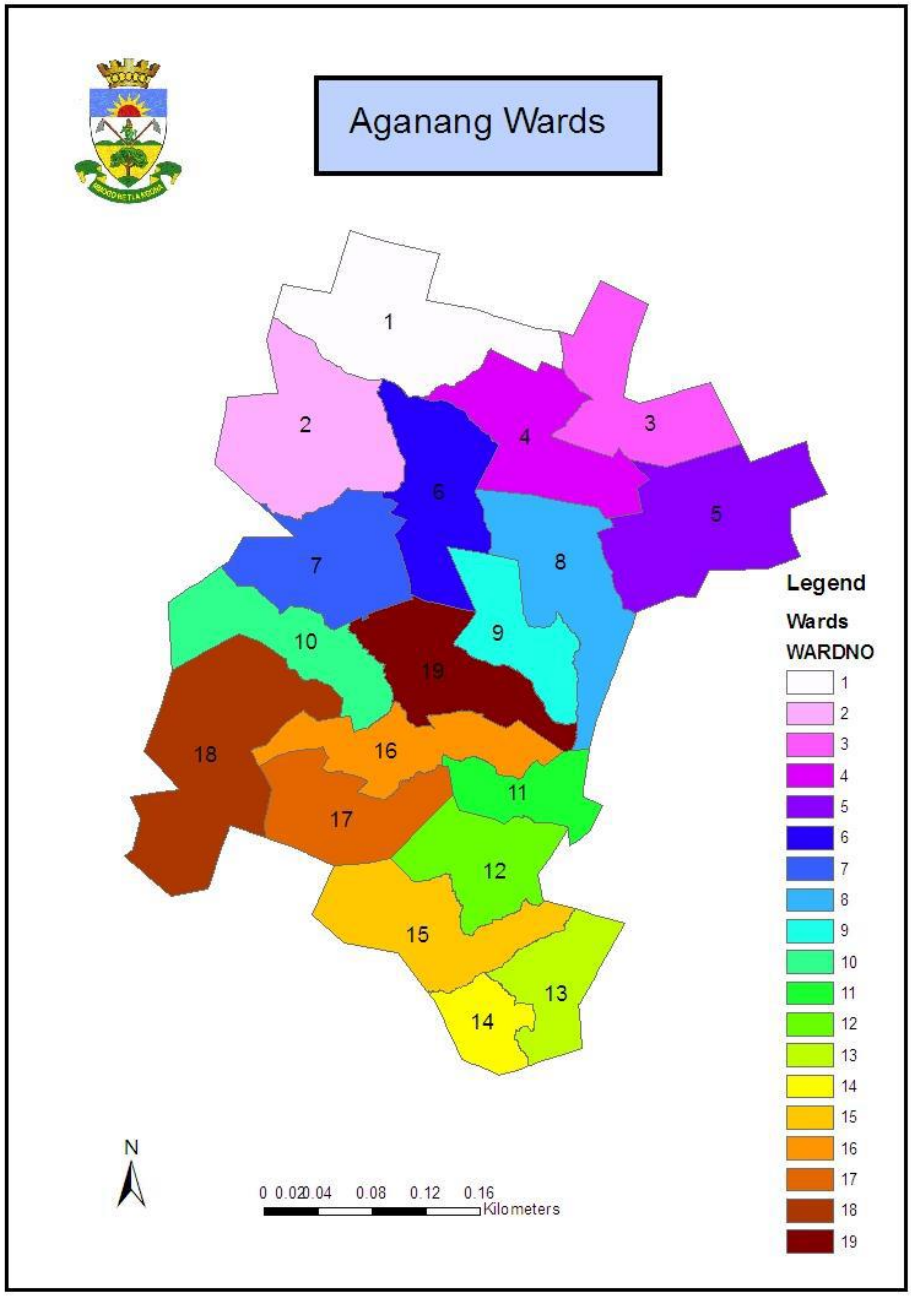
While more recent labour statistics suggest that unemployment levels have declined slightly, Banerjee, Galiani, Levinsohn and Woolard (2006) argue that there is enough evidence to suggest that unemployment will remain high, since the factors driving increased unemployment reflect structural changes in the economy as opposed to temporary shocks. As the number and share of unemployed youth is projected to remain essentially unchanged in 2012, and as the share of young people withdrawing from the labour market altogether continues to rise, on the present course there is little hope for a substantial improvement in near-term employment prospects for young people (International Labour Office (ILO), 2012). Evidence from LFS suggests that employment over time has been fairly stable. What has changed dramatically are labour force participation rates, particularly amongst younger cohorts (Branson, 2006) and African women. According to the recent survey commissioned by Centre for Development and Enterprise (2012), a young black woman has an 88 per cent chance of being unemployed in Polokwane. According to the recent report released by the International Labour Conference (ILC) 101st session, 2012, both youth labour force participation rates and youth employment-to-population ratios have been on a declining path. The youth labour force participation rate decreased globally from 52.9 to 48.7 per cent between 2000 and 2011.

In the first quarter of 2012 the employment-to-population ratio in South Africa was reported to be 40.9 per cent, the labour force participation rate 54.7 per cent and the unemployment rate 25.2 per cent. An analysis of the employment-to-population ratio for persons aged 15-24

[2] On the same period Limpopo province as recoded a revised average figure of 28.1

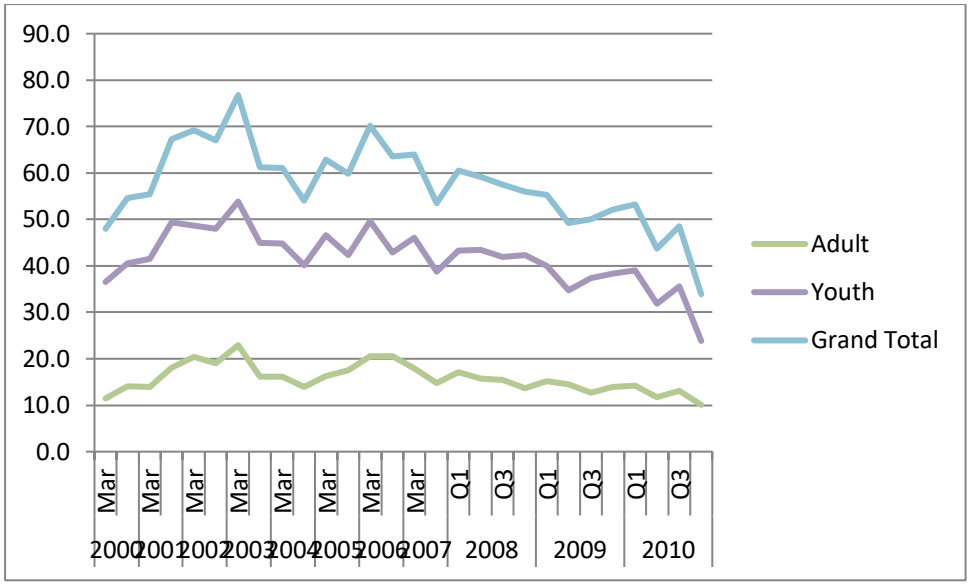
years (the "youth" population) between 2000 and 2009 reveals that the percentage of the youth population employed dropped from 16.2 per cent in 2000 to 14.6 per cent in 2008, with 71 per cent of the unemployed being under the age of 34.

The figure below shows the comparison of unemployment rate of youth (15-35) and adult (36-64) in Limpopo province between 2000 and 2010. Even in the Limpopo context the table lends support to the recent global studies that the youth unemployment is generally two or three or four times than that of adult unemployment (ILO, 2006; Lam, Leibbrandt, and Mlatsheni, 2007).



(Community Survey, 2007)

Figure 1: Comparison of youth (15-35) and adult (36-64) unemployment in Limpopo province (2000-2010)



Source: LFS, 2000-2007, QLFS 2008-2010

1.2 Problem Statement

According to Welman, Kruger and Mitchell (2005:14), a statement of the problem refers to some difficulty that the researcher experienced in the context of either a theoretical or practical situation and to which he or she wants to obtain a solution. Limpopo tends to have the highest proportion of rural dwellers in South Africa, hence it is expected that economic conditions in the province are inferior to the national average; with the consequence of a high unemployment rate.

Limpopo is pre-dominantly 80 per cent rural province and many of its inhabitants live in abject poverty. The province is faced with many socioeconomic ills such as high poverty and unemployment. According to Statistics SA's Quarterly Labour Force Survey (QLFS) of 2012, Limpopo had an unemployment rate of 26, 9 per cent compared to the national rate of 24, 3 per cent. This result confirms the findings by Kyei and Gyekye (2011), that conditions in the province are inferior to the national average; implying high unemployment rate.

The Limpopo Province being one of the most under privileged and poorest is a victim of these high rates of unemployment. Therefore it is essential to investigate the factors causing the prevalence of unemployment in this region so as to positively alter future empowerment strategies. It should be indicated that one particular feature of youth unemployment in South Africa is that it is unevenly spread between segments of the population and within the same age cohorts (Mlatsheni and Rospabe, 2002; Burns, 2008). Most studies treat the age cohorts of 15-35 as a homogeneous group. The needs and experiences of the 15-19 year old cohort

are quite distinct from those aged 20-24 or 25-29, and hence, policies need to be carefully targeted in this regard. Youth unemployment seems to be more sensitive to changes in aggregate demand than adult unemployment.

Sub problems

- High youth unemployment importantly reflects the fact that youth is not acquiring the skills and experience needed to drive the economy of the country forward. This bears a burden on the state social spending. Youth lack appropriate skills/education demanded by the labour market.
- Many studies indicated that often the causes of youth unemployment are structural and might come from either the demand side[3] or supply side[4] (Burns, Edwards and Pauw, 2010). Many young people in the Limpopo province do not have access to the information required to improve their skills, and prepare for employment.
- The Job Advisory Centres are ineffective in the province and mostly not well marketed.
- Some commentators have argued that rising wage costs and labour market rigidities in the form of bargaining councils have prevented employment creation in the context of an expanding labour force (Fedderke, 2006; Nattrass and Seekings, 2003).
- Youth, especially recent graduates, are at a distinct disadvantage relative to older cohorts, not only due to lack of work experience, but also because employers may stereotype younger workers when faced with imperfect information about individual characteristics.

1.3 Purpose and Significance of the Research

According to Gray (2009:52), aims are general statements on the intent and direction of the research. The aim of this research study is to find the factors that contribute to unemployment of youth by focusing on knowledge of the causes and solution. The study will investigate the factors (determinants) of youth unemployment in the Aganang municipality in Limpopo province and identify some of the causes of unemployment in order to infer some policy implications.

[3] High labour cost and labour market rigidities, technological change economic growth and structural shift in the composition of national production

[4] Changing composition of the labour force, lack of job experience, lack of entrepreneurship, health status of youth and skill mismatch

The findings of this study could shed light on how to deal with these factors that contribute to youth unemployment, how to achieve equal employment opportunity and also remove the obstacles and barriers to youth participation in the workplace. Propose policy intervention such as improving information flows about labour market opportunities and access to the labour market[5], skills training for young people, improving labour market regulations and reducing labour costs to the benefit of young people[6] and improving chances for young entrepreneurs[7].

1.4 Research Questions and Scope

The study seeks to understand the determinants of youth unemployment in the Aganang municipality of the Limpopo province. The study intends to answer the following key questions:

- Does educational level play a significant role on youth unemployment in the Aganang municipality Limpopo province?
- Does gender play a significant role on youth unemployment in the Aganang municipality in Limpopo province?
- Does GDP have a significant impact on youth unemployment in the Aganang municipality Limpopo province?
- Does training have a significant impact on youth unemployment in the Aganang municipality Limpopo province?
- What kind of youth unemployment is most prevalent in the Aganang municipality Limpopo province?

According to Creswell (2005:379), an objective is a statement of intent for the study that specifies goals the investigator plans to achieve in a study. The above mentioned key questions will seek to provide conclusion on the following objectives:

- To find out which variables have the greatest influence on the probability of the youth being unemployed and / or finding employment in Aganang municipality.
- To assume policy directives and intervention of reducing youth unemployment.
- To influence By laws in the Aganang municipality.

[5] Counseling and job search assistance programmes public works programmes etc.
[6] Wage and employment subsidies
[7] Provision of credit and mentorship programmes

- To look into the question of skills development and experience of youth in the province.
- To find the relationship between the educational level and youth unemployment.
- To evaluate the impact of training on youth unemployment.

The above objectives and key questions shall provide an overview of the youth unemployment in the Aganang municipality, Limpopo province. Thus the hypothesis to be concluded upon in this study is that unemployment in the Aganang municipality is significantly as a result of unemployed youth as determined by variables such as education, gender, training and GDP.

The study will not investigate the total unemployment of all age groups but will focus on the narrow and broad definition of youth, which is any person from the age of 15 and 35 years old. The study will only be limited to investigate the youth unemployment in the Aganang municipality in the Limpopo province.

1.5 Research Assumptions

The study is based on the secondary data, i.e. 2011 census data from STATSA SA. The recent LFSs and QLFSs will also be used where applicable. The following will be assumed with regard to the study and the data used:

- The information contained in the 2011 census will be assumed to be fairly correct and representing all the fact regarding the Aganang municipality in the Limpopo province.
- Prior consultation and clarity was obtained from the officials of STATSA SA.
- The statistical models used to analysis data are deemed relevant and correctly applied in this study. These models are often used by various authors[8] because of their compliance with the SMART[9] principle.

[8] Kyei K.A and Gyekye K.B (2011)
[9] Specific, Measurable, Accurate, Reliable and timely

2 LITERATURE REVIEW

2.1 Introduction

According to De Vos, Strydom, Fouche, and Delport (2005:263), literature review is defined as a review of the existing available body of knowledge that helps the researcher to see how other scholars have investigated the topic related to that. This review reveals literature relevant to the study. It starts with unemployment focusing on the types of unemployment in particular. Several factors that are associated with and that contribute towards youth unemployment are also reviewed

2.2 Unemployment

Unemployment is caused when someone is laid off, fired or made to quit the job and is still looking for a job. This type of natural unemployment always occurs even in a healthy economy. If someone retires, goes back to school or leaves the work force to take care of children or other family members that is not unemployment. Also, if someone gives up looking for work, they are also not counted as unemployed by federal government. Sometimes unemployment is a result of advanced technology, such as computers or robots, which replace a worker's tasks with machines. If workers are not retrained, they may not have the skills needed to get the job. This is known as structural unemployment. Unemployment can also be caused by job outsourcing, when a company moves its manufacturing or call centres to another country where labour costs are cheaper. This occurred in many states after the North American Free Trade Agreement (NAFTA) was signed in 1994. It also occurred when workers in China and India gained the skills needed by American companies. Large scale unemployment is caused when consumer demand slows down affecting businesses to lose too much profit. If the companies do not expect sales to pick up soon, they lay off workers. This usually happens during the recession phase of business cycle (http://www.almanar.job).

With the coming generation, the skilled and educated population is rising at a higher rate when compared to the rate at which job opportunities are being created thus creating unemployment. Poor planning by government has caused unemployment in that the government rejects sensitive sector like agriculture which employs many people. People are unemployed because of over population, there's not enough jobs for people (http://www.almanar.job).

Types of unemployment

In order to address the problem of unemployment successfully, a distinction should be drawn between different types of unemployment (Marifi, 2002). This gives an indication of the possible reasons for unemployment and therefore some idea of how the problem should be addressed (McConnel and Brue, 1995).

- **Frictional unemployment**

Frictional unemployment arises because of normal labour turnover that occurs in any dynamic economy and the time lags involved in the employment of labour. There are people moving between jobs and new entrants in the labour market at any given time. There are also unemployed persons and vacancies which can be filled by these movers or new entrants in the labour market, and usually takes time for those seeking work to find and fill these positions. Frictional unemployment also refers to an economically rational process of job search where people voluntarily remain unemployed while they seek out and weigh up suitable job vacancies (Mc Connell and Brue, 1995).

- **Cyclical unemployment**

Cyclical unemployment arises during recessionary periods when the aggregate demand and the demand for labour are low. During recessionary periods, few or no jobs are created for new entrants to the labour market and even the existing workers might lose their jobs through retrenchments. Once the economy recovers the cyclically unemployed are taken up again. In South Africa, cyclical unemployment has a dimension that makes it uneasy to address successfully. It is superimposed on large-scale structural unemployment; as a result the unemployment problem is severe, complex and difficult to alleviate (Mafiri, 2002).

- **Structural unemployment**

This type of unemployment is more difficult to define but generally it refers to the overall inability of the economy, due to structural imbalances, to provide employment for the total labour force even at the peak of the business cycle. This type of unemployment is not sensitive to changes in aggregate demand. Hence structural unemployment is the unemployment that exists when the economy is at full employment (Mafiri, 2002).

- **Seasonal unemployment**

Seasonal unemployment occurs due to normal and expected changes in the economic activities during the course of a single year. It is found in many sectors, with agriculture probably being the best example. Persons employed during peak periods and unemployed in off-peak periods are described as seasonal workers or seasonally employed. This unemployment occurs on regular and predictable basis (Mafiri, 2002).

Economists distinguish types of unemployment, however: cyclical unemployment is brought by the vagaries of the business cycle; structural unemployment is brought about by changes in the economy or labour market, when the jobs available do not fit the workforce's skills; frictional unemployment is the phenomenon of people being "between jobs"; seasonal unemployment is linked to certain types of seasonal jobs such as farm work and construction.

2.3 Factors affecting youth unemployment

Younger people are more able to afford unemployed job-search because they have fewer financial commitments than older persons do. However, they may be more ignorant about what their skills can command in the labour market, that is, they may have higher reservation wages. It is more difficult to explain this phenomenon among the older age groups. According to a study carried by Kryger (1999) on unemployment, for the females, the probability of being unemployed initially decreases with the age but then increases as the women become older. For a 20 year old woman, her probability of being unemployed decreases by 0.7 of a percentage point each additional year. At 40 years, it decreases by 0.1 of a percentage point and at 45 years, the probability of unemployment starts to increase by a small amount with age (Kryger, 1999).

Unemployment does not occur openly in all occupations or sectors of society. Workers under 25 years of age are far more likely to be unemployed than older workers are. The jobs held by younger workers are often more marginal and younger workers leave their jobs more often than older women do. During 2005, for example, in a study done by the U.S. Department of labour (2006), the unemployment rate among those aged between sixteen and nineteen years old was greatest at 16.6 per cent of those in the labour force. It was higher for men in that age group (18.6 per cent) than it was for women (14.5 per cent).

Younger women who entered the labour market recently experience higher levels of unemployment than middle-aged women, who are better established in employment. Amongst men, the relationship between age and unemployment remains relatively steady until their early 50s when it begins to rise, peaking at age 59. The age effects for women are considerably different with the employment rate continuing to decline after the age of 50. The sharp drop in unemployment rates among both men and women close to age 60 may be attributed to worker retiring from the labour market (Kryger, 1999).

Gender gap

According to a recent ILO report, the gap between female and male employment worldwide is still significant. The report estimates that the share of employed people in the world's working age population (the employment-to-population ratio) was 49.1 per cent for women and 74.3 per cent for men in 2007 (ILO, 2008). The difference in the female and male share of employed people in the working age population is above 40 percentage points in South Asia, the Middle East and North Africa. At the other end of the spectrum, the gaps are below 20 percentage point in East Asia. As documented in a recent cross-country study of 18 sub-Saharan countries, countries with the highest male employment ratio also tend to have the lowest gender gap (Kolev and Sirven, 2007).

The general gender gap is explained by multiple factors. The most important among these factors are social and cultural patterns keeping women out of the labour market as well as a tendency of government authorities to invest too little attention and resources in the promotion of women's employment: Women are "time poor". Due to the gender division of labour in the family prevailing in many countries, women's responsibility for unpaid household labour leaves only few hours daily for engaging in work outside the household (UNIFEM, 2005). The situation is further aggravated in cases where women are the sole head of the household. Women's ability to free up time depends to a great extent on the availability of services and infrastructure such as water, good access roads etc.

Cultural beliefs and norms may keep women out of the labour market. In many cultures there is little or no acceptance of women taking up employment - in society, in families, among employers and even among women themselves. In many rural areas of Afghanistan for

example, women do not have permission to leave their house, let alone take a job outside the household (IRIN, 2007). In sub-Saharan Africa early marriage is common and often seen as a key factor why women fail to access the labour market. The Organisation for Economic Co-operation and Development (OECD) database on Gender, Institutions and Development confirms this by looking at a broader set of factors related to discrimination against women (OECD, 2008a). Using a combined measure for family code, physical integrity, civil liberties and ownership right, the OECD finds that discriminatory institutions have a direct impact on women's economic development (OECD, 2006). Finally, it should be noted that customary norms and lack of access to information often prevent women from claiming their rights and exploiting opportunities.

Educational level

The more education a person possesses, the less likely he/she will be unemployed. For instance, a U.S Bureau of Labour Statistics (2006) study revealed that about 76 per cent of those with less than a high school diploma were unemployed, but only 2.3 per cent of college graduates were unable to find a job. Employment status is usually determined by education level, whereby youth with high education level can access employment more than those with low education level. However, it must be noted that there are some jobs where education is not essential.

Girls are still more often excluded from secondary education, vocational and tertiary education than boys, particularly in West and South Asia (United Nations, 2007). This education gap has implications for the ability of girls and women to access economic opportunities later in life. The rapid increase in women's labour force participation rate noted in the Middle East over the past decade has coincided with massive investments in education (ILO, 2008).

Guluza and Hodley, (1998) highlighted that the South African youth tend to stay in school for longer period beyond their normal age. This can well be attributed to the strategy pursued by the government in order to reduce the large number of over age learners in South African schools. Learners that were more than two years older than the normal age for their grades were restricted from attending that grade for another year (Western Cape Education Department (WCED), 2003). This was intended to lessen the burden of high repetition rates at school, particularly in the context of high pupil-teacher ratio in disadvantaged schools.

This strategy might have pushed the youth into the labour market. Burger and Von Fintel, (2009) shows that the strategy that was adopted by the government through the department of education of ensuring that the brunt of education for learner-teacher ratio is reduced might possibly cause the youngest cohort to be severely affected by unemployment. This is mainly because the strategy failed to achieve its intended objectives of ensuring that the overage group will be absorbed by the alternative Further Education and Training (FET) colleges operating outside schooling systems. This overage cohort was supposed to gain skills offered by the FET to be able to function competitively in the labour market. Burger and Von Fintel (2009) put forward that by the time the strategy was implemented, the FET was inaccessible, both in terms of remoteness and travelling cost. Asmal (2003) argue that the intake of learners into the FET did not meet the government objective because the numbers were low, colleges were also poor structured to provide proper learner support and the quality of the education in the colleges remained a question. The problem escalated because while it was necessary to introduce the overage strategy to improve the functioning of the schools, the alternative was not sufficient to absorb overage learners. The result is that the Department of Education had, by 1998, not yet implemented officially the over-age policy that was allowed by the South African Schools Act (Guluza and Hadley, 1998). By 2003 however, the provinces had already adopted this strategy as a way to promote the FET system (WCED, 2003).

Due to high repetition rates in historically disadvantages black schools, the strategy should by implication have affected black learners more directly than white learners. Repetition is the greatest factor contributing to learners being overage, and repetition is also related to drop out and late starting (Guluza and Hoadley, 1998).

The recent results by Burger and Von Fintel (2009) using 1999 to 2007 data shows that much of the decline in net enrolment is a result of a reduction in the proportion of the 20-27 age cohorts still in school in later years. These large flows out of the schooling system are not matched by similar increases in (non-university) college enrolments, though mild improvements are evident. This leaves a large age cohort of youth that would by the historical trend have remained in school, but which has now been forced into the labour market without the quality education required to attain success in the workplace. Therefore low and inferior skills attainment by this age cohort hinders absorption in a skill-biased economy. Burger and Von Fintel (2009) therefore postulate that this impact may partly explain why the brunt of

recent youth unemployment growth has affected the younger generations most severely. In contrast, Branson (2006) argues that the influx of youth is explained by increased schooling throughput rates of Black South Africans over time; such that the amount of time spent in the schooling system by these youth is beginning to converge to that of youth from other race groups. The result is that Black youth in particular are now entering the labour market both at an earlier age and with higher educational attainment than in previous cohorts.

Youth unemployment and training

Training is pivotal in employment as a trained youth is more likely to be equipped, skilled and access jobs than the untrained (Grubb, 1995).

Labour Force Participation of age cohort

In the work of Burns (2008), using the October Households Survey (OHS) 1995 and LFS 2000, employment overtime has been stable. What had changed change are labour force participation rates, mostly among young cohort. Bhorat and Leibbrandt (1999), using the OHS 1995 data, ran probit regressions and two step Heckprobit regressions on labour force participation and employment likelihood respectively. Their analysis was under both the narrow and broad definitions and only focusing on black population. The results showed that blacks in the young age cohort, 16-25 years, were associated with the lowest likelihood of participation. This is after controlling for differences in other demographic, educational attainment and household characteristics.

The Development Policy Research Unit (DPRU) undertook three studies and analysed the characteristics of the labour force, employed and unemployed using the broad definition. Bhorat and Oosthuizen (2005) compared the two surveys, OHS 1995 the September LFS 2002 and result show that the increase in labour force was the greatest by 30 per cent in 25-34 years cohort between two surveys. This was followed by the 15-24 years cohort by the 25.2 per cent. The total population of these two young age cohort accounted for almost 53.7 per cent of labour force in 1995 and the share increased to 60 per cent in 2002. Although employment in all cohorts between the two surveys, such increase was the lowest in the abovementioned two young cohorts, as their share of employed decreased from 45.3 per cent to 42.5 per cent between the two surveys (Yu, 2013). The unemployment rate increased in all the age cohorts between 1995 and 2002; however the increase was the greatest in the two

young age cohorts. This confirm to the studies that reveal that youth unemployment was double that of adult in South Africa.

Oosthuizen (2006) used the same approached as Bhorat and Oosthuizen (2005) when comparing OHS 1995 and September LFS 2004, and the findings were very similar. In addition, Oosthuizen conducted multivariate analyses by running the probit and heckprobit regressions on labour force participation and employment likelihood respectively. The result showed that he 15-24 years cohort remained the group with the lowest probability of participating in the labour market, followed by those aged 55-56 years.

Yu (2008) adopted the same approach as the three DPRU studies, except that all 1995-1999 OHSs and 2000-2006 LFSs were mainly used to drive labour market trends under the broad definition over the 12 year period. The result showed that although the increase of labour force participation rate was the greatest in the 15-24 year cohort, this rate remained the lowest when compared with the rates of other cohorts. In contrast, employment increased in all cohorts throughout the years, but the increase was the lowest in the younger age cohorts (Yu, 2013). This therefore implies that the extent of increase of youth employment was not rapid enough to absorb the net labour force entrants, thereby causing the number of unemployed and unemployment rates in the younger age cohorts to increase between 1995 and 2006. For instance, the broad For instance, the broad unemployment rates of the 15-24 years and 25-34 years cohorts increased by 10.6 percentage points (from 53.1 per cent in 1995 to 63.7 per cent in 2006) and 6.2 percentage points (from 34.1per cent to 40.3 per cent between 1995 and 2006) respectively; youth aged 15-34 years accounted for 70 per cent of unemployed in 1995 but this share increased to about 75 per cent in 2006. Altman (2007) define youth as those people aged 15-34 years and divided them in to three cohorts (15-19, 20-24, and 25-34). Her study used both the OHS 1997 and 1999 and September LFS 2001, 2003 and 2005 data, to reveal that the narrow labour force participation rate and the narrow unemployment rate were the highest for those aged 25.34 years and 15 -19 years respectively

The conclusion of the studies briefly examined the youth labour force participation and the general conclusion was that the pace of employment increase was not sufficient to keep up with the relative greater increase of labour force, thereby causing the youth unemployment to worsen. Yu (2013) recent paper applied the revised QLFSs methodology consistently in on all the LFSs and QLFSs to derive the comparable labour markets estimates, and after the

application of a consistent labour market status derivation in all surveys, it was found that the unemployment rate was the highest among youths

2.4 Conclusion

The literature above highlighted important aspects of unemployment. The causes and types of unemployment have been explained in brief. The literature focused on the factors that may determine youth unemployment in the Aganang municipality. Training and education seem to be positively related to youth employment. Labour force participation rates seem to have changed considerably as compared to employment, which at some period remained stable.

3 RESEARCH METHODOLOGY

3.1 Introduction

The aim of the study was to find the determinants of youth's unemployment in the Aganang municipality. This chapter presents the research design, research methodology and limitations of the data/study. It equally entails the appropriate method of analysis (i.e. detailed description of the applicable model and also method of estimation). This chapter also provides information on the source and type of data and different types of statistical analysis followed. The chapter begins with definitions of some concepts.

3.2 Research Approach, Strategy and Limitation of Data

The research focuses on youths in the Aganang municipality who are without jobs and cannot find jobs though they are healthy and capable of doing (any) jobs offered to them. The approach was to conduct a survey in the municipality among the youthful population, by sampling a significant size to interview and get their opinions about development, empowerment and job opportunities. Unfortunately attempts to collect data were not successful because of financial and logistic challenges. It was strategically wise then to use secondary data from Statistics South Africa. The study therefore was limited by the data quality and quantity with respect to the objectives of the study. Statistics South Africa data at the municipality do not have information on household income and GDP, for example.

3.2.1 Research Methodology

3.2.1.1 Material / data source

According to Hess-Biber *et al* (2006:38), research methodology is a tool that the researcher uses in order to gather data; or a technique for gathering and showing evidence. The study depended on secondary data from Statistics South Africa. Data from census 2011 form the main source of information for this analysis.

3.2.2 Location of the Study

According to Brown (1993:420), location of the study refers to a place or settlement in natural place. The Aganang municipality in the Capricorn district in the Limpopo Province constitutes the study location.

3.3 Data Analysis

3.3.1 Regression Analysis

Regression analysis was employed to determine the impact of gender, the level of education and training on the unemployment of youth in Aganang. The primary essence of regression analysis is to analyze the relationship between the dependent and independent variable. This technique of analysis then exploits this association between these two variables to predict the values of the dependent variable from the independent variables. Unemployed youth which is the dependent variable is expressed as a function of the independent variables and its corresponding parameters plus a stochastic error term. This stochastic error term accounts for all unobserved independent variables that would have had a significant impact on the dependent variable. There is a variety of regression methods but this study intends to employ the ordinary least square method. The choice of the ordinary least square method is due to its primary purpose to evaluate the relationship between a set of independent variables and a dependent variable.

Descriptive statistics such as cross tabulation, charts and percentages will be employed to "paint a picture" of the factors causing the unemployment of youth in the Aganang municipality. SPSS package is used for the collation, analysis and interpretation of results.

The Regression model was verified by two other methods of analysis: Principal Component analysis and Cluster analysis.

3.4 Principal Component Analysis (PCA)

Principal Component analysis explains the correlation structure of a set of predictor variables using a smaller set of linear combinations of these variables (Larose, 2006). Thus they are used primarily as dimensionality reduction techniques in situations where a large number of closely related variables are used and where the purpose is to allow for the most important influences from all these variables at the same time (Brooks, 2008).

Factor models decompose the structure of a set of series into factors that are common to all series and a proportion that are specific to each series.

PCA is a useful technique where explanatory variables are closely related (i.e. multicollinearity is present). If there are k explanatory variables in the regression model, PCA will transform them into k uncorrelated variables (Botha, 2010).

The original explanatory variables can be denoted as $x_1,x_2,.....x_k$ and the principal components as $p_1,p_2,.....p_k$. these principal components are independent linear combinations of the original data:

$P_1=\alpha_{11}x_1 + \alpha_{12}x_2 +.....+ \alpha_{1k}x_k$

$P_2=\alpha_{21}x_1 + \alpha_{22}x_2 +.....+ \alpha_{2k}x_k$

$P_k= \alpha_{k1}x_1 + \alpha_{k2}x_2 +.....+ \alpha_{kk}x_k$

Where α_{ij} are the coefficients to be calculated, representing the coefficient of the j^{th} explanatory variable in the i^{th} principal component. These coefficients are known as factor loadings (Botha, 2010). The sum of squares of the coefficients for each component is required to be one (Brooks, 2008). No assumption is made about the structure, distribution or other properties of the variable since the components are constructed by a mathematical process of constrained optimisations. The principal components are derived in descending order of importance. If there is multicollinearity between the original explanatory variables, it is likely that the last few principal components will account for little of the variation and can therefore be discarded. However, if the explanatory variables are uncorrelated, all the components will be required, and then using PCA will not be useful.

The principal components can also be expressed as the eigenvalues of (X'X), where X is the matrix of observations on the original variables. If the ordered eigenvalues are denoted by λ_i (i = 1,.....k), the ratio:

$Ø = \lambda_i/\Sigma\lambda_i$

give the proportion of the total variation in the original data explained by the principal component i. If only the first r ($0<r<k$) principal component is sufficient to explain the variation, then k-r components are discarded (Brooks, 2008). Factors with eigenvalues greater than one are retained; therefore if a factor does not extract the equivalent of one variable , it is excluded (Statsoft, 2008).

3.5 Cluster Analysis

Cluster Analysis identifies and classifies objects, individuals or variables on the basis of the similarity of the characteristics they possess (Sclove, 2001). These groups in which the variables are classified into are not known in advance. Moreover, it seeks to minimize within-group variance and maximize between-group variance (Sclove, 2001). In simple terms, cluster analysis partitions the set of observations into mutually exclusive groupings in-order to best represent distinct set of observations within the sample. The main objectives of cluster analysis are congruent with principal component analysis;

- Discovering types
- Reducing the number of variables or cases by enabling consideration of several types instead of numerous variables or cases.

Most commonly used cluster analysis procedure is Hierarchical. Hierarchical cluster analysis is a way to investigate grouping your data by creating a cluster tree. The tree is a multi-level hierarchy, where clusters at one level are joined as clusters at the next high level.

3.6 Model Specification

The model constructed below is to assess the efficacy of the determinants of youth's unemployment in the Aganang municipality;

Where M represents males and F represents females;

Primary means 'graduates' that have completed Grade 0 – 7;

Matric means 'graduates' that have completed Grade 8 – 12;

Degree means 'graduates' that have completed bachelor's program;

PGD means 'graduates' that have completed post-bachelor's program;

Training means 'graduates' that have completed NCT, NVT, etc. programs with or without matric qualification.

$$\text{Youth Unemployment} = \beta_o + \beta_1 \text{No SchoolingM} + \beta_2 \text{No SchoolingF} + \beta_3 \text{PrimaryM} + \beta_4 \text{PrimaryF} + \beta_5 \text{MatricM} + \beta_6 \text{MatricF} + \beta_7 \text{DegreeM} + \beta_8 \text{DegreeF} + \beta_9 \text{PGDM} + \beta_{10} \text{PGDF} + \beta_{11} \text{TrainingM} + \beta_{12} \text{TrainingF} + \xi$$

3.7 Operational Definitions of Variables

Variables	Description
Youth	People within the age group (15-35 years)
PrimaryM	Male youths with first six years of education
PrimaryF	Female youths with first six years of education
MatricM	Males youths who have completed twelve years of education
MatricF	Female youths who have completed twelve years of education
DegreeM	Male youths who are in possession of a degree
DegreeF	Female youths who are in possession of a degree
PGDM	Male youths who have completed higher than honors degree

PGDF	Female youths who have completed higher than honors degree
TrainingM	Male youths who have done vocational courses with or without matric
TrainingF	Female youths who have done vocational courses with or without matric
No SchoolingM	Male youths with no access to education
No SchoolingF	Female youths with no access to education

3.8 Research Reliability and Validity

The data used in this study can be relied upon as the data were extracted directly from the 2011 Census data published by Statistics South Africa. They are valid because they are data collected based on the United Nations Fundamental Principles of Official Statistics by the National Government.

3.9 Limitations

The limitations for the study are as follows: (1) the information relates to 2011 financial and fiscal year and might not give the true picture of the current or other years. (2) The study focuses on one local municipality and the findings might only be relevant to the municipality.

3.10 Conclusion

This chapter outlined the research design and methodology that the study followed. Different methods of statistical analyses done have been mentioned. The location of the study and operational definitions of variables have also been explained.

4 RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of results and the estimated equations through the use of frequency tables and simple graphs. The analysis was generated through various statistical techniques using SPSS. The report outlines the findings in terms of determinants of youth unemployment in Aganang.

4.2 Descriptive Statistics

Table 4.1 shows that the mean age of the unemployed youths in Aganang is 27.5 years with a standard deviation of 4.76 years. The mean number of male youths in Grades 0 – 7 is 10240, and the mean number of female in the same grades is 8576. The mean number of females in grades 8 – 12 is 95027 while that of males is 77701. The mean number of youths with degrees is 770 for males and 1126 for the females; and the mean numbers for post-graduates are 161 for males and 221 for females. The mean number of youth males with no schooling is 2352 and that of female youths is 2476. As expected, majority of the youths are in Grades 8 – 12.

Table 4.1 Descriptive Statistics

	Mean	Std. Deviation	N
Unemploy Youths	27.50	4.761	16
Grade 0 - 7 M	10240.31	924.521	16
Grade 0 - 7 F	8576.25	938.742	16
Grade 8 - 12 M	77700.75	23845.425	16
Grade 8 - 12 F	95027.44	23155.649	16
BSc M	770.25	328.286	16
BSc F	1125.56	468.604	16
PG M	160.88	42.987	16
PG F	221.25	55.798	16
Training M	1620.38	714.202	16
Training F	1819.13	730.083	16
No Schooling M	2352.19	230.337	16
No Schooling F	2475.56	355.085	16

Source: Own calculation

Intercensal growth rate among Municipalities in Capricorn district.

Table 4.2 gives the average annual population growth rate of Aganang municipality compared with other municipalities in the Capricorn district between 2001 and 2011.

Table 4.2: Average Annual Growth Rate of Aganang Municipality compared with other municipalities in Capricorn district

	Municipality	**Average annual growth rate (r) – whole population (%)**	**Average annual growth rate (r) – youth (%)**
1	Blouberg	- 0.56	- 0.37
2	Aganang	- 1.15	- 1.02
3	Molemole	- 0.13	- 0.04
4	Polokwane	2.11	2.83
5	Lepele-Nkumpi	0.10	0.25

Source: Own calculation

Within the ten years (2001 and 2011), three of the five municipalities in the Capricorn district in Limpopo, namely, Blouberg, Aganang and Molemole grew negatively (decreased in the annual growth rate), while two municipalities, viz. Polokwane and Lepele-Nkumpi grew positively. Molemole decreased marginally (-0.13 per cent) while Lepele-Nkumpi, on the other hand, increased marginally (0.10 per cent). Blouberg decreased fairly significantly (-0.56 per cent) but Aganang decreased greatly (-1.15 per cent). On the contrary, Polokwane increased very greatly (2.11 per cent).

Changes in population growth (annual growth rate) are caused by changes in fertility, mortality and migration. The decrease in growth rate in Blouberg, Aganang and Molemole could be as a result of a decline in births and a rise in deaths ensuing in the natural growth rate being negative, or could be due to out-migration. Looking at the three factors of population change, that is, births, deaths and migration, it is more likely to believe that the decreases in population growth in these municipalities are caused by out-migration, rather than fertility or mortality. People are moving from their homes to other places mostly in search for jobs. The movement of the youths is though lower compared with the movement of the (whole) population, (e.g. 1.15 per cent Aganang population compared with 1.02 per cent Aganang youths) the increase in the average growth rates for the youths in the receiving ends, Polokwane and Lepele-Nkumpi are relatively higher compared to the growth rates of the

departing ends, (i.e. 2.83 per cent compared with 2.11 per cent; or 0.25 per cent compared with 0.10 per cent respectively). Thus, if the theory of out-migration is accepted at this point, then one can conclude that the youths, especially those from Aganang, are fleeing to Polokwane, and mostly to search for jobs.

4.3 Unemployment index

Table 4.3 shows the ratio of unemployed to employed of the youth population in Aganang municipality classified by level of education and sex.

Table 4.3: The Ratio of Unemployed youth to Employed youth in Aganang.

Level of education	Employed youth, E	Unemployed youth, Un	Ratio=Un/E, (%)
Primary, Male	338592	210396	62.1
Primary, Female	141801	167946	**118.4**
Matric, Male	2691210	1432479	53.2
Matric, Female	1861650	1744503	**93.7**
Graduate, Male	166557	14250	8.6
Graduate, Female	193200	18015	9.3
Post-Grad, Male	36129	3306	9.2
Post-Grad, Female	35634	3552	10.0
Training, Male	90330	27225	30.1
Training, Female	48888	30573	62.5
No Schooling, M	87447	41619	47.6
No Schooling, F	40602	43320	**106.7**
Total (youths)	5732040	3736984	**65.2**

The problem of unemployment in Aganang cannot be overemphasized. Table 4.3 shows that unemployment index among the youths in Aganang is 65.2 per cent. Even among the graduates and post-graduates, the ratio of the unemployed to employed, among the youths, is about 10 per cent. The females are worst affected. For matric graduates, the female ratio is 93.7 per cent and for the young women with only primary education or with no schooling, the ratio exceeds 100 per cent, being 118.4 per cent for primary education and 106.7 per cent for no schooling. These figures predict that young women with only primary education or no education (no schooling) will have very hard times securing jobs; they will end up remaining unemployed.

4.4 Correlation Coefficients

Correlation coefficients measure the strength of the degree of relationship between variables. Table 4.7 gives the correlation coefficients among the variables. From the table it is seen that Unemployed youths is strongly negatively correlated with Matric male, Matric female, Training male, Training female and positively correlated with No Schooling female. It is fairly negatively correlated with Primary male. There are strong correlations between other variables also; between Matric male and the following, Matric female, Training male and Training female; Degree male versus the following, Degree female, Post-graduate male and Post-graduate female, for example.

4.5 Regression Analysis

Table 4.4: Model Summary

Equation parameters and variables	**Value**
Dependent variable	Unemployed youths
Independent variable	12
R	.998
R-squared	.996
Adjusted R-squared	.986
Std. Error of the Estimate	.557

b. Predictors: (Constant), No Schooling F, Degree M, Primary M, Post-grad F, No Schooling M, Training M, Post-grad M, Primary F, Degree F, Matric F, Training F

a. Dependent Variable: Unemployed youths

R represents the multiple correlation coefficient which measures the efficacy of regression by establishing the Pearson correlation between the true values of the target variable y and the estimates y' obtained by substituting the corresponding values of x into the regression equation. The correlation between y and y' is known as the **multiple correlation coefficients R.** The multiple correlation coefficients can only take values within the range -1 to 1; $-1 \leq \mathbf{R} \leq 1$.

A multiple correlation coefficient of zero represents no correlation between y and y' while a coefficient of closer to 1 represents a (strong) perfect correlation. Therefore the **multiple R** is 0.998 which represents a strong correlation between y and y'.

The R-squared (R^2), the coefficient of determination is the proportion of the variance of the dependent variable that is accounted for by the linear regression of the independent variable. Thus, it is an indication of the goodness of fit of the model. The R-square is positively biased; however in order to correct the biasedness an Adjusted R-square is applied which is

obviously less than **R**. The Adjusted R-square for this multiple regression is 0.986 indicating that the fitted regression line explains 98.6 per cent of the variation in the dependent variable and only 1.4 per cent is explained by the error term. This implies that the model is very good.

Table 4.5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	338.760	11	30.796	99.367	.000[b]
	Residual	1.240	4	.310		
	Total	340.000	15			

b. Predictors: (Constant), No Schooling F, Degree M, Primary M, Post-grad F, No Schooling M, Training M, Post-grad M, Primary F, Degree F, Matric F, Training F

a. Dependent Variable: Unemployed youths

Table 4.5 gives the results of ANOVA tests for a linear relationship between the variables. The F statistic is the ratio of the mean square for regression to the residual mean square. In this multiple regression the value of F is significant beyond 0.01. The results confirm that the independent variables really predict youth unemployment (dependent variable).

Table 4.6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
1		B *2*	Std. Error *3*	Beta *4*	*5*	*6*
1	(Constant)	33.509	3.988		8.402	.001
	Primary M	-5.281E-005	.001	-.010	- .053	.961
	Primary F	.001	.001	.195	.765	.487
	Matric F	.000	.000	-1.062	-2.127	.101
	Degree M	-.002	.004	-.171	-.623	.567
	Degree F	.004	.003	.371	1.080	.341
	Post-grad M	.003	.019	.025	.143	.894
	Post-grad F	-.005	.016	-.057	-.314	.769
	Training M	.004	.003	.595	1.254	.278
	Training F	-.003	.004	-.464	-.807	.465
	No Schooling M	-.001	.004	-.026	-.130	.903
	No Schooling F	.002	.003	.164	.778	.480

a. Dependent Variable: Unemployed Youths

4.5.1 Estimated Linear Model (Unstandardized)

The model based on the unstandardized coefficients shows that Youth Unemployment is almost a constant variable, relates hardly to either sex or the level of education. The Matric M (male) variable was excluded by the SPSS program and the coefficient of Matric Female was also zero.

Youth Unemployment = 33.5 - 5.281E-005PrimaryM + 0.001PrimaryF – 0.002DegreeM 0.004DegreeF + 003Post-gradM - 0.005Post-gradF + 0.004TrainingM 0.003TrainingF -0.001No SchoolingM + 0.002No SchoolingF ….. (1)

From this model, none of the levels of education by sex taken individually has any significant relationship with youth unemployment as seen from the regression coefficients in column 6, which is also confirmed by Figures A1 – A12 in the appendix. This means that different levels of education, i.e. Degree, Training or No Schooling as individuals do not change the status of Youth Unemployment sinificantly. However, at the aggregate level of education, i.e. taken all the different levels of education collectively, the predictors have a perfect relationship with youth unemployment as seen in the ANOVA table (Table 4.5 and Figure A12). We now look at the standardized model which gives a different result from the standardized model.

4.5.2 Estimated Linear Model (standardized)

From the standardized coefficients (beta), the Youth Unemployment is negatively related to Matric female, Training female, Degree male, No Schooling male and Primary male, (the two latter variables being very weak, -0.026 and 0.010 respectively), and positively related to Male Training, Degree female, Primary female and No Schooling female.

Youth Unemployment = -0.010PrimaryM + 0.195PrimaryF – 1.062MatricF – 0.171DegreeM+0.371DegreeF +0.025Post-gradM - 0.057Post-gradF + 0.595TrainingM-0.464 TrainingF -0.026No SchoolingM + 0.164No SchoolingF …… (2)

The model shows the best predictors of Youth unemployment are Matric female, Training female, Degree male, (all of which are negatively related), and Training male, Degree female, Primary female and No Schooling female. Females tend to vary directly with youth

unemployment. The model reveals that females are more prone to youth unemployment than their male counterparts, supporting the observation made earlier in section 4.3. The implication from here poses a big challenge since females make up the majority of the population, and if they cannot find jobs policy makers need to consider this issue very seriously, especially if they want to bring down the level of unemployment.

Youth unemployment in Aganang is concentrated among Training male and Degree female. An increase in the number of Training male and Degree female categories will consequently increase the youth unemployment by 0.595 and 0.371 respectively, whereas an increase in Matric female, Degree male and post-graduate male will reduce the level of unemployment among youths in the Aganang municipality. One expected that males with vocational training and female with degrees would rather find job more easily, but the model is proving otherwise. This observation requires further research.

The model does not appear to have a convincing and consistent trend in that while matric female is negatively related to youth unemployment, degree female is positively related but post-graduate female is negatively related to youth unemployment. On the other hand, while post-graduate male and training male are positively related to youth unemployment in Aganang, degree male, primary male, and no schooling male are all negatively related to youth unemployment. This is not consistent because how can uneducated male get jobs but postgraduate male cannot? Or how can matric female find jobs but graduate female cannot? Or how come training male cannot jobs but uneducated male?

Unemployment rates for the youth are high for several reasons. Standing *et al (*2000:128) argue that, 'it could simply be that the labour market growth is not commensurate with an increase in the new labour entrants, thus creating a mismatch. Therefore labour entrants have to wait in a queue as fewer jobs are created.

4.6 Principal Component Analysis

4.6.1 Appropriateness of Principal Component Analysis

Principal component analysis requires that there should be some correlations greater than 0.3 between the variables included in the analysis (Larose, 2006; Kyei and Gyekye, 2011). For this set of variables there are 64 correlations (in red colour) greater than 0.3, satisfying the requirement.

Table 4.7: Correlation Matrix

Correlation	Unmp Youth	Pry M	Pry F	Mat M	Mat F	Deg M	Deg F	PG M	PG F	Trg M	TrgF	NS M	NS F
Unemp Y	1	-.678	.480	-.97	-.94	-.45	-.49	-.15	-.17	-.94	-.93	.499	.830
Primary M	-.678	1.00	.292	.774	.835	.709	.712	.645	.653	.741	.778	.239	-.20
Primary F	.480	.292	1.00	-.34	-.21	.335	.271	.640	.616	-.32	-.25	.943	.845
Matric M	-.973	.774	-.34	1.00	.990	.602	.648	.315	.324	.988	.983	-.34	-.70
Matric F	-.944	.835	-.21	.990	1.00	.689	.727	.432	.444	.981	.987	-.22	-.62
Degree M	-.451	.709	.335	.602	.996	1.	.979	.900	.889	.663	.708	.345	.009
Degree F	-.494	.712	.271	.648	.727	.979	1	.852	.850	.710	.757	.319	-.04
Post-Gr M	-.151	.645	.640	.315	.432	.900	.852	1	.931	.367	.427	.647	.319
Post-Gr F	-.174	.653	.616	.324	.444	.889	.850	.931	1	.372	.426	.561	.281
Training M	-.940	.741	-.32	.988	.981	.663	.710	.367	.372	1	.993	-.30	-.66
Training F	-.925	.778	-.25	.983	.987	.708	.757	.427	.426	.993	1	-.23	-.60
No Sch M	.499	.239	.943	-.34	-.22	.345	.319	.647	.561	-.30	-.23	1	.860
No Sch F	.830	-.202	.845	-.70	-.62	.009	-.04	.319	.281	-.66	-.60	.860	1

Some levels of correlations among predictors are required in order for PCA analysis to function appropriately. Tests have been developed to assess whether the correlations are adequate to proceed with principal component analysis.

The *Kaiser-Meyer-Olkin measure of sampling adequacy* measures the proportion of variability within the standardized predictor which is shared in common. Values of the KMO less than 0.5 signify that PCA may not be appropriate (Larose 2006: 5). Thus, principal component analysis requires that the Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) be greater than 0.5 for each individual variable as well as the set of variables. From Table 4.8, the MSA for each individual variable included in the analysis is not greater than 0.5, however Bartlett's test of sphericity supports the use of PCA.

Table 4.8: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.458
Bartlett's Test of Sphericity	Approx. Chi-Square	466.560
	Df	78
	Sig.	.000

Bartlett's test of sphericity tests the null hypothesis that the correlation matrix is an identity matrix; the variables are uncorrelated (Larose, 2006: 2 – 10). The statistic for this test is the p-value; which explains that a small value would indicate evidence against the null hypothesis (i.e. the variables are correlated). For p-values greater than 0.1 there is evidence that the variables are not correlated. The p-value for the *Bartlett's test of sphericity* here is approximately zero, therefore the null hypothesis that the variables are uncorrelated is rejected, and so principal component analysis is suitable.

4.7 Communalities

Communality explains the proportion of variance of a particular variable that is shared with other variables.

Table 4.9: Communalities

	Initial	**Extraction**
Unemployed youth	1.000	.977
PrimaryM	1.000	.796
PrimaryF	1.000	.913
MatricM	1.000	.986
MatricF	1.000	.987
DegreeM	1.000	.916
DegreeF	1.000	.907
PGM	1.000	.934
PGF	1.000	.893
TrainingM	1.000	.979
TrainingF	1.000	.980
No SchoolingM	1.000	.910
No SchoolingF	1.000	.951

The communality denotes the significance of each variable in the PCA. For instance, a variable with a communality much smaller (communality < 0.5) than the other variables

indicates this variable shares less common variability among the variable and thereby contributes little to the PCA solution. On the contrary, large communality values indicate that the PCA extracted a large proportion of the variability in the original variables. Table 4.9 depicts variables with high communality values, which means that the principal components have extracted a large proportion of variability in the data.

Table 4.10: Principal Components

Component	Initial Eigenvalues		
	Total	**Per cent of Variance**	**Cumulative per cent**
1	7.565	58.195	58.195
2	4.564	35.110	93.305
3	.525	4.040	97.345

The proportion of the total variability is explained by the *ith* principal component (i.e. λ_i/m); the ratio of the *ith* eigenvalue to the number of variables. From Table 4.10, the first eigenvalue is 7.565 constituting 58 per cent of the variability; and the second eigenvalue is 4.564 constituting 35 per cent of the variability. The two components account for 93 per cent of the variability in the predictors. The third and subsequent principal components are not considered as they failed to meet the eigenvalue criterion. The eigenvalue criterion requires that the component should explain at least "one's variables worth" of the variability (i.e. only component with eigenvalue of 1 or greater should be retained).

4.8 Scree Plot

A scree plot is a graphical plot of the eigenvalues against the component numbers.

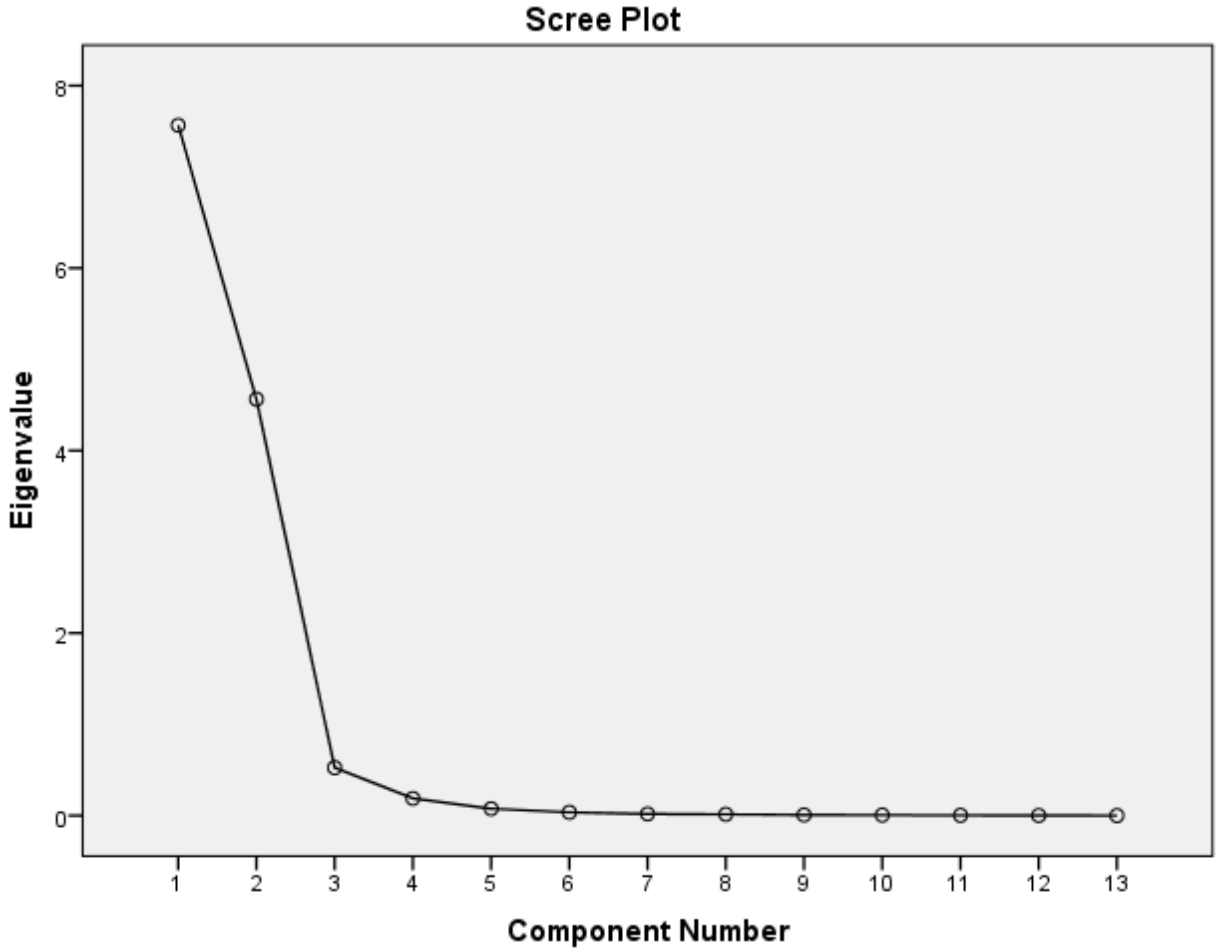


Figure 4.2: Scree Plot

Scree plots are used for finding how many components should be retained. The maximum number of components that should be extracted is just before the plot begins to straighten out into a horizontal line. Therefore only two eigenvalues being the level of education and gender are extracted from the components, consistent with our data input.

Table 4.11: Component Matrix[a]

	Component	
	1	2
Grade 8 - 12 F	**.976**	-.186
Training F	**.971**	-.193
Training M	**.953**	-.265
Grade 8 - 12 M	**.942**	-.313
Unemploy Youths	**-.864**	.481
Grade 0 - 7 M	**.859**	.242
BSc F	**.852**	.425
BSc M	**.827**	.481
Grade 0 - 7 F		**.953**
No Schooling M		**.951**
No Schooling F	-.478	**.850**
PG M	.605	**.754**
PG F	.613	**.719**

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Table 4.12: Rotated Component Matrix[a]

	Component	
	1	2
Grade 8 - 12 M	**.993**	
Training M	**.989**	
Grade 8 - 12 F	**.985**	.126
Training F	**.983**	.118
Unemploy Youths	**-.970**	.189
Grade 0 - 7 M	**.741**	.497
No Schooling F	**-.718**	.660
BSc F	**.678**	.669
PG M	.341	**.904**
Grade 0 - 7 F	-.359	**.886**
No Schooling M	-.360	**.883**
PG F	.360	**.874**
BSc M	.637	**.714**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

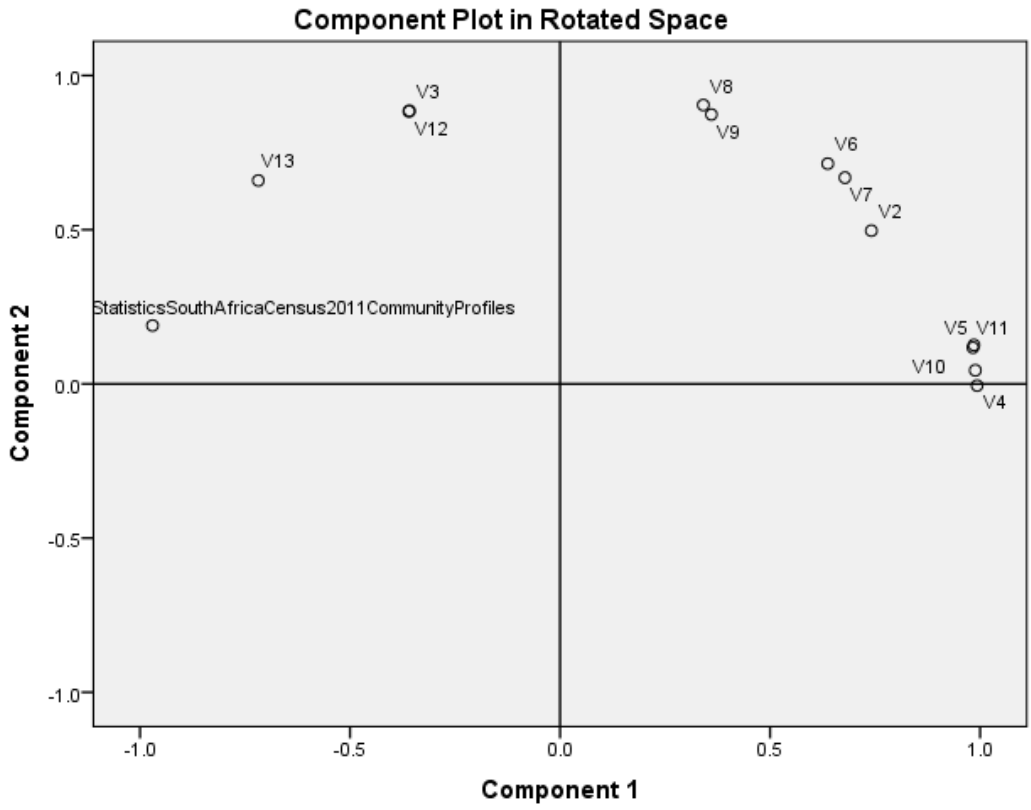


Figure 4.3 PCA

Table 4.13: Component Score Coefficient Matrix

Definition of variables/ letters		Component	
		1	2
StatsSA Community profiles … =Unemp Youth	Unemploy Youths	-.141	.065
V2 = Grade 0 – 7 M	Grade 0 - 7 M	.091	.086
V3 = Grade 0 – 7 F	Grade 0 - 7 F	-.073	.196
V4 = Grade 8 – 12 M	Grade 8 - 12 M	.140	-.027
V5 = Grade 8 – 12 F	Grade 8 - 12 F	.135	.001
V6 = BSc M	BSc M	.071	.134
V7= BSc F	BSc F	.078	.124
V8 = PGM	PG M	.025	.182
V9 = PGF	PG F	.028	.175
V10 = Training M	Training M	.138	-.016
V11 = Training F	Training F	.135	.000
V12 = No Schooling M	No Schooling M	-.073	.195
V13 = No Schooling F	No Schooling F	-.118	.157

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

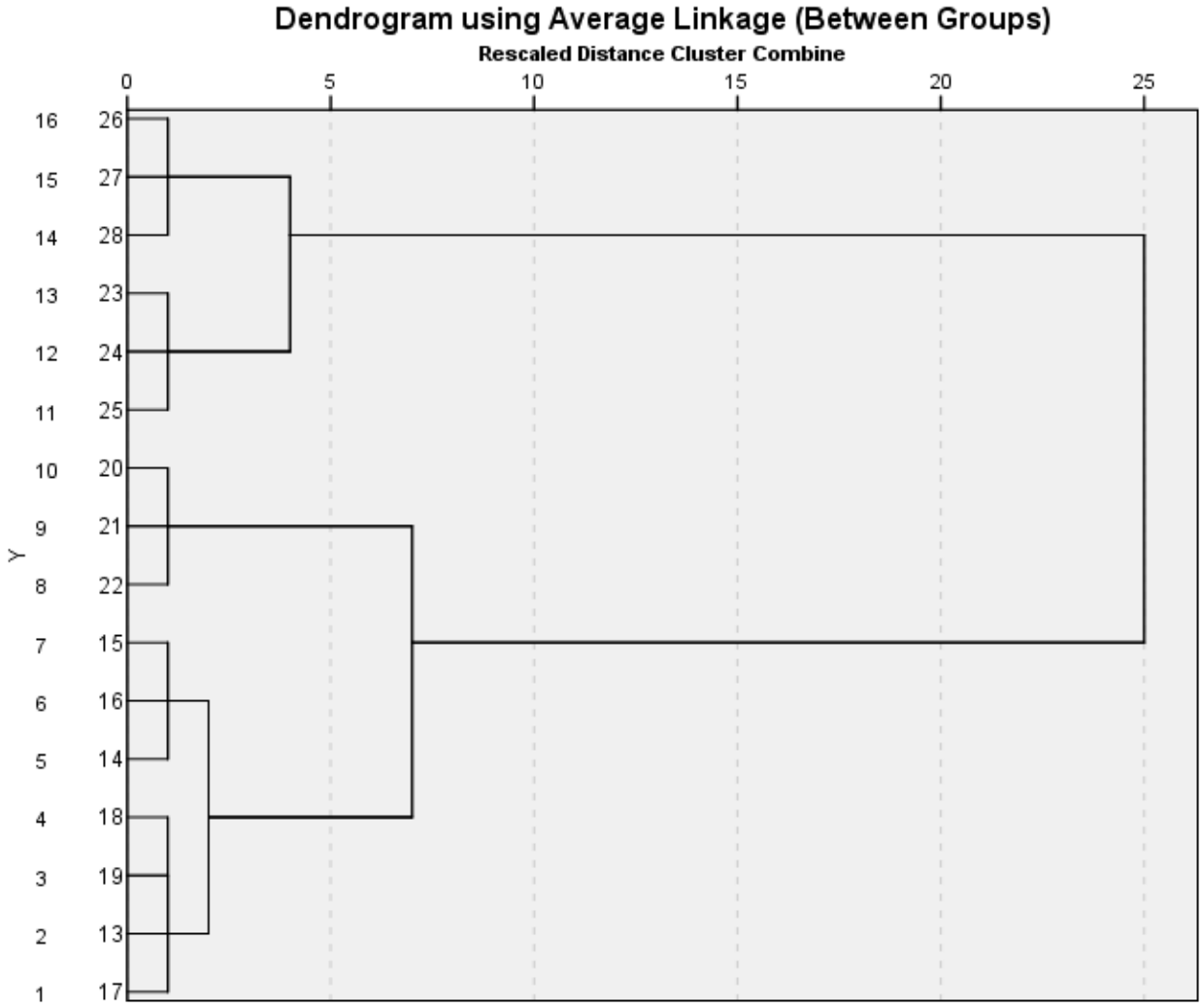
Principal component analysis was carried out on the 12 assumed predictors of youth unemployment in the Aganang municipality. About 10 predictor variables were considered for the PCA analysis. This was because they were free of complex structure. Complex structure occurs when one factor has high loadings on more than one component. The cell entries referred to as component weights; represent the partial correlations between the variable and the component. The component weights are correlations, therefore they range between -1 and 1.

From Figure 4.2 youth unemployment lies in the same quadrant (the first quadrant) as primary female, no schooling male, and no schooling female. Thus these three variables have some influence or association with youth unemployment.

The predictors of youth unemployment in the Aganang municipality can be explained by two underlying principal components. The first principal component is usually viewed as the best explanation of the correlations among the predictors, as it accounts for more variability than any other component. Table 4.11 and Table 4.12 show that the first principal component

containing Unemployed youth equally contains Matric female, Training female, Training male, Matric male, Primary male, Degree female and Degree male. The second component comprises Primary female, No Schooling male and No Schooling female, Post-grad male and Post-grad female. Predictors in the second components are those that promote increase in the level of Youth Unemployment, while variables in the first components bring about reduction in the level of Youth Unemployment. The Principal Component Analysis confirms some of the findings in the Youth Unemployment model from the regression analysis (OLS model).

4.9 Hierarchical Cluster Analysis



Source: Own calculation

Figure 4.4: Dendrogram

The dendrogram above (i.e. Figure 4.4), places variables into clusters depending on their similarities. The diagram depicts that youth unemployment (1 – 17) is significantly correlated with primary female (2 – 13) and matric male (3 – 19). Youth unemployment is also correlated with matric female (5 – 14) and degree female (7 – 15). This implies that being a young female connotes very little chance of finding a job in Aganang municipality. This result also lends support to the Youth unemployment model (OLS) seen earlier.

4.10 Conclusion

The results from three different statistical methods concerning the determinants of youth unemployment have been presented in this chapter. Tables and figures have been produced. Based on the results from the different analyses, it can be concluded that the determinants of Youth unemployment in the Aganang municipality were no education (no schooling and primary education) particularly for the females which cause the level of Youth unemployment to rise, and conversely an increase in the number of youth with bachelor's degree, as well as youth with training, bring about a reduction of the level of Youth unemployment.

5 RESEARCH CONCLUSIONS

5.1 Introduction

This chapter seeks to present the summary of the findings of the determinants of youth unemployment in Aganang by looking at the aim, objectives, hypotheses, etc. cited above. Conclusions are drawn based on the findings; after which recommendations for remedial measures and policy implications are made.

5.2 Summary

The study attempted to analyse the main determinants of youth unemployment in the Aganang municipality and find reasons why youth unemployment is distributed unevenly according to the level of education and gender. It was hypothesized that since Aganang is predominantly an African community in the Limpopo province, unemployment rate would be high; the study has found that indeed unemployment ratios, especially for female youths in the municipality are high. Females with insufficient education (No Schooling and Primary education) are worst affected, with ratios exceeding 100 per cent.

The study revealed that the probability of unemployment varied inversely with Matric female, Degree male, Post-graduate female and Training female. Thus an increase of "graduates" at these levels of education definitely reduces youth unemployment in Aganang. Furthermore, possession of a degree and some training significantly enhanced the probability of finding employment in Aganang. On the contrary, no form of formal schooling or deficient education (i.e. below secondary) tends to increase one's chance of being unemployed. The shocking result of the study was youth unemployment tending to vary significantly within Post-graduate males, Post-graduate females and trained males. This result comes as a surprise because one expects post-graduate youth/people to be able to get jobs much easier than graduates and matriculants. Thus this observation can be related to the small number of postgraduate holders which in turn had an insignificant impact on the model.

The prevalence of youth unemployment in Limpopo can be related to structural reasons, thus people's qualifications are substandard to the job requirements.

As mentioned earlier the gender analysis revealed that females tend to suffer higher rates of youth unemployment than their male counterparts. For instance, the youth unemployment ratios for Degree females were 10 per cent compared to 9.2 per cent for Degree males; and those of Training females were 62.5 compared with 30.1 for Training males.

According to Kyei and Gyekye (2011), the distribution of unemployment by race in Limpopo was tremendously skewed such that the Africans experienced the highest rate of unemployment, followed by Whites, Coloured and then Asians. Since the Aganang municipality comprises only African population (over 99 per cent Africans) this study could confidently conclude that unemployment in Aganang would be very high though the study did not consider race in the analysis. Likewise, this study could neither consider GDP nor household income because the data at municipality level did not have GDP or household income.

5.3 Limitations of the Study

The study wanted to consider development and youth empowerment by concentrating on the determinants of employment, but the quality and quantity of the data limited the study. Data on GDP, household income and different employment sectors were all not available at the municipality level.

The model, especially from the regression analysis gives difficult and convincing explanation because how can one accept that insufficient education (no schooling and primary schooling) negatively affects unemployment of youths but postgraduate male is positively related? Or how can one understand that degree male can find jobs but degree female cannot find? Or how can one accept that no education male find jobs but no education female cannot? Worst still how can one explain that training male cannot get jobs but no schooling male can find jobs? The fact that postgraduate male cannot find job is equally startling, but that may be explained by the fact that the proportion of youth with postgraduate qualifications is quite small to influence unemployment.

5.4 Conclusion

Though the data at the municipality level was not comprehensive enough to permit certain independent variables to be considered in the study, one could say in conclusion that, the main determinants of youth unemployment in Aganang were insufficient schooling (no schooling and primary schooling), training and degree. Insufficient schooling, particularly for the females increases the level of unemployment. On the contrary, youths with bachelor's degree, and male youths with training, affect unemployment of youth by reducing its levels.

6 RECOMMENDATIONS FOR FUTURE RESEARCH

As mentioned earlier, the model, especially from the regression analysis provided difficult and convincing explanations; therefore the study wants to suggest that further research be done in the area.

The data quality limited the study; therefore it is being recommended that data quality for future study be better and comprehensive.

The results from this study were limited to only Aganang; further research could consider more municipalities.

Conditions are changing every time . The results here are referred to conditions in Aganang as at the 2011. Future research could help to make us see whether drastic changes have occurred since 2011 or not. Again, the study wants to recommend that all efforts be directed towards promoting learners to go beyond secondary education so that prospects for job securement can be guaranteed in the Aganang municipality.

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APPENDICES

Table A1: Variables Entered/Removed[a] in the regression analysis

Model	Variables Entered	Variables Removed	Method
1	No Schooling F, BSc M, Grade 0 - 7 M, PG F, No Schooling M, Training M, PG M, Grade 0 - 7 F, BSc F, Grade 8 - 12 F, Training F[b]	.	Enter

a. Dependent Variable: Unemploy Youths

Figures

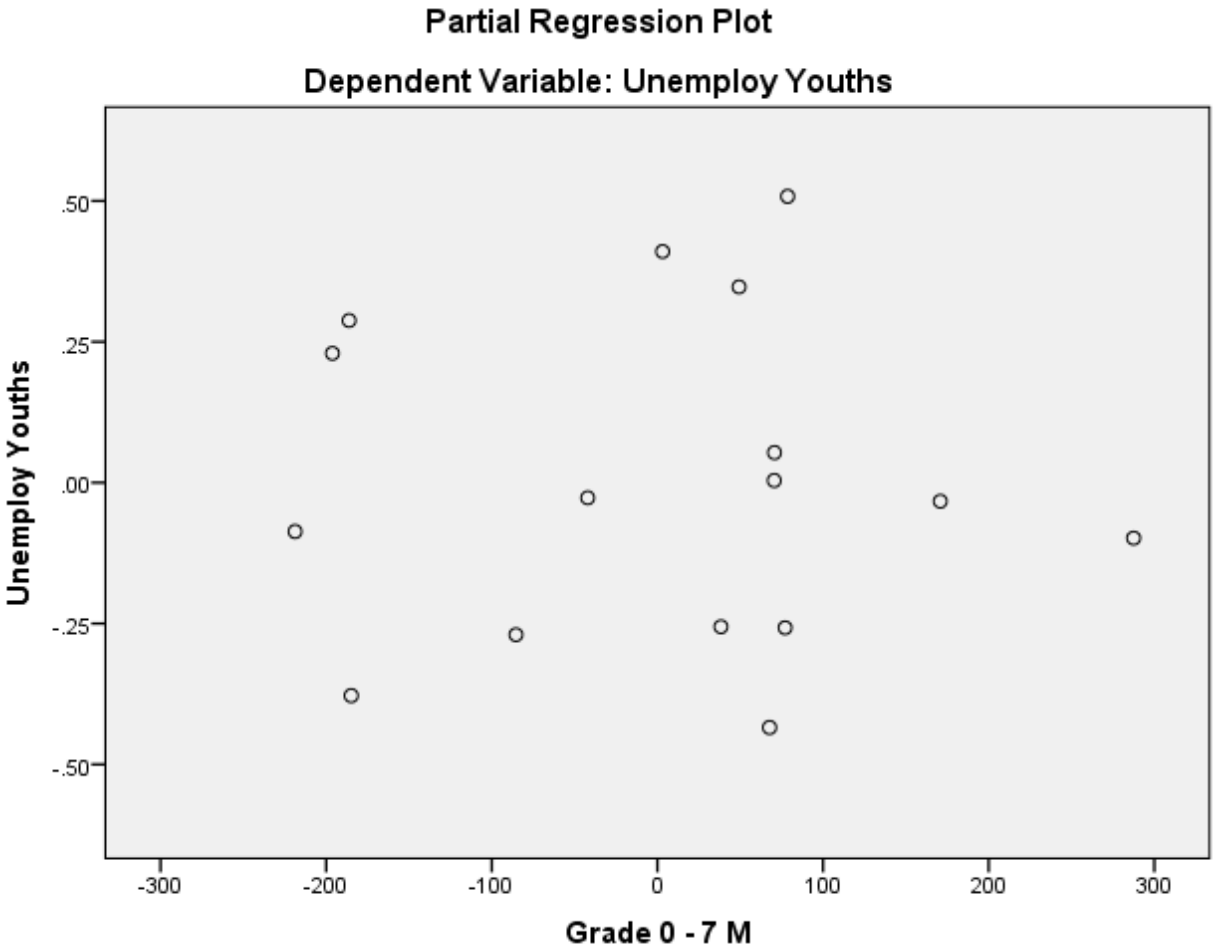

Figure A1: Youth Unemployment against Primary male

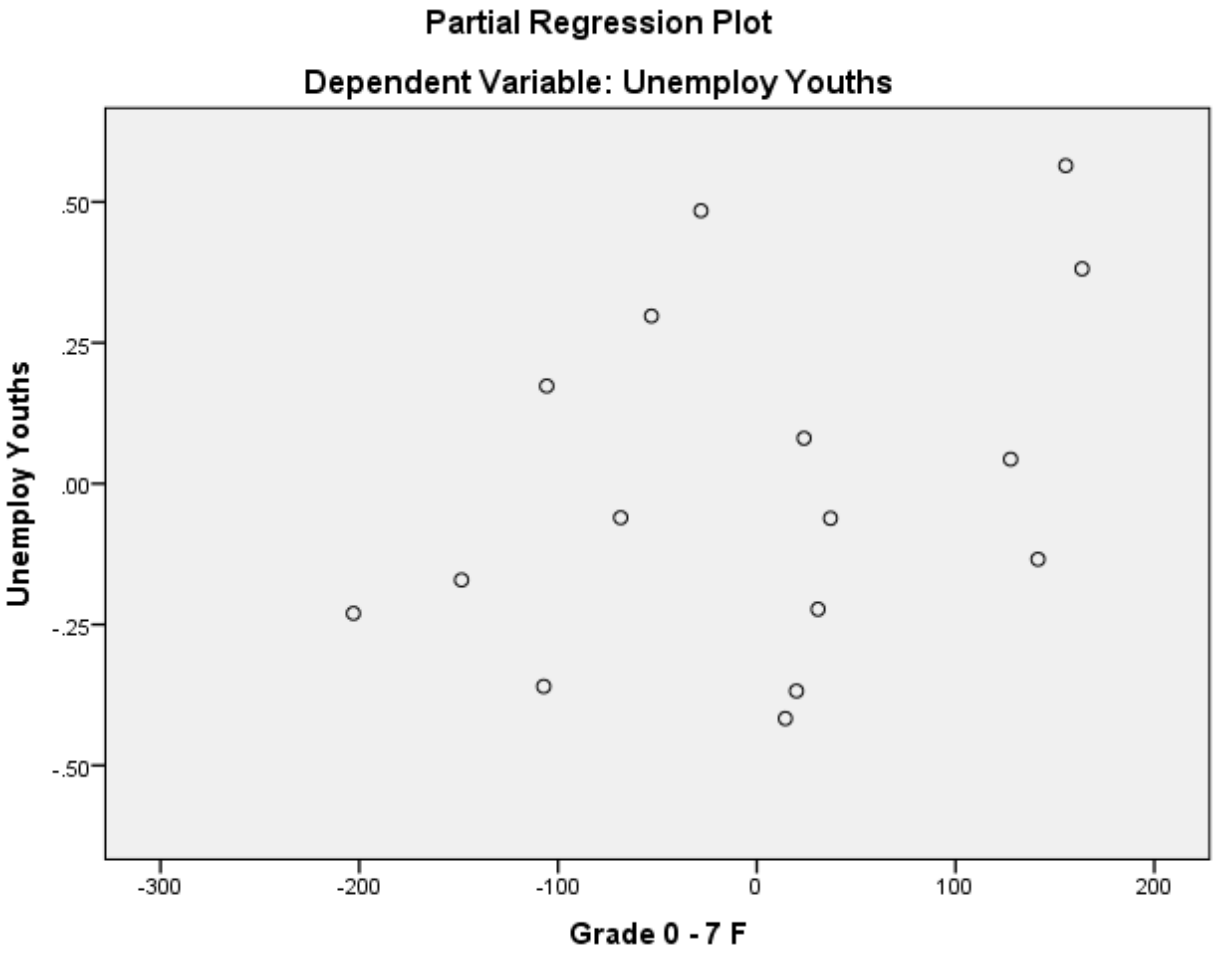

Figure A2: Youth Unemployment against Primary female

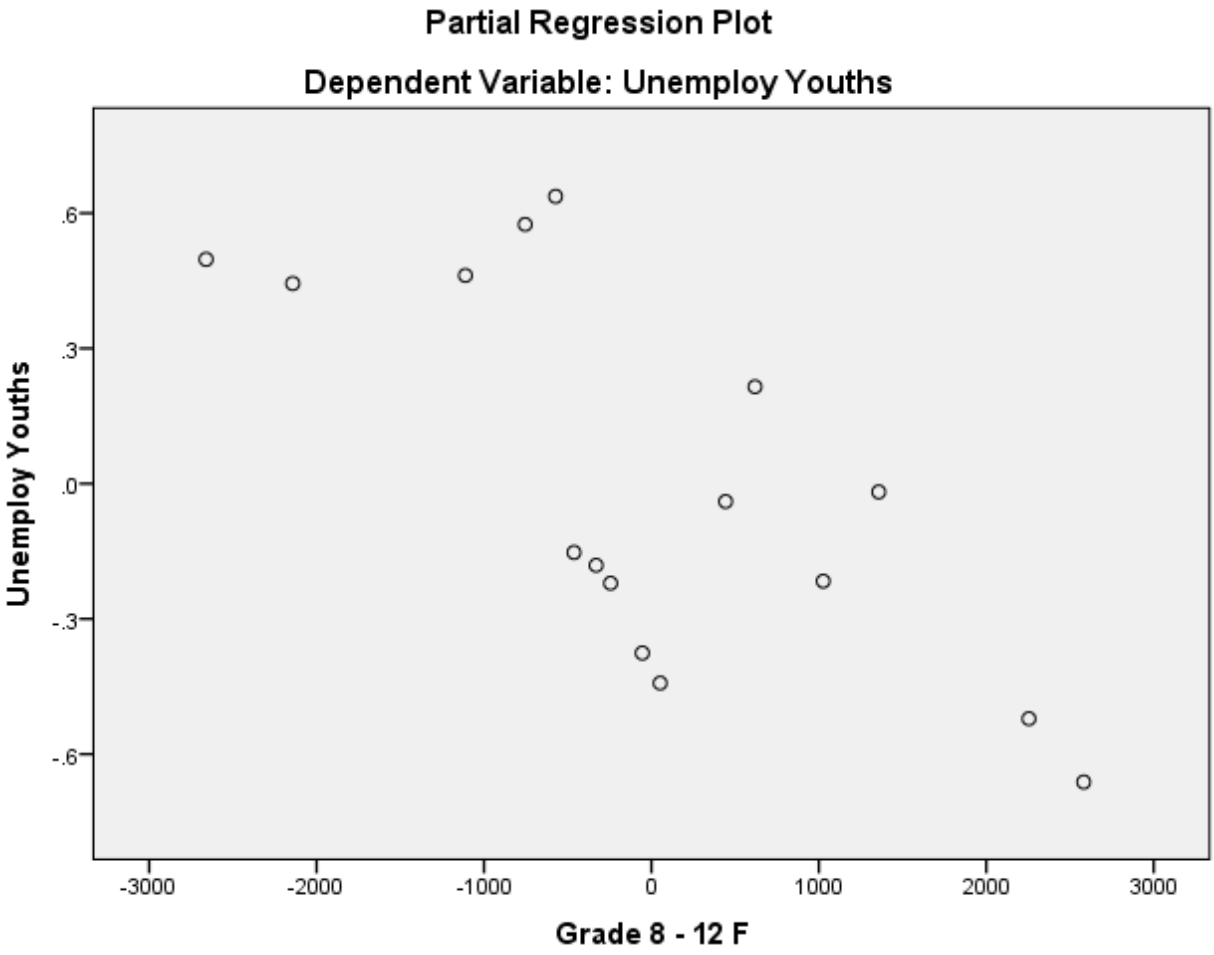

Figure A3: Youth Unemployment against Matric female

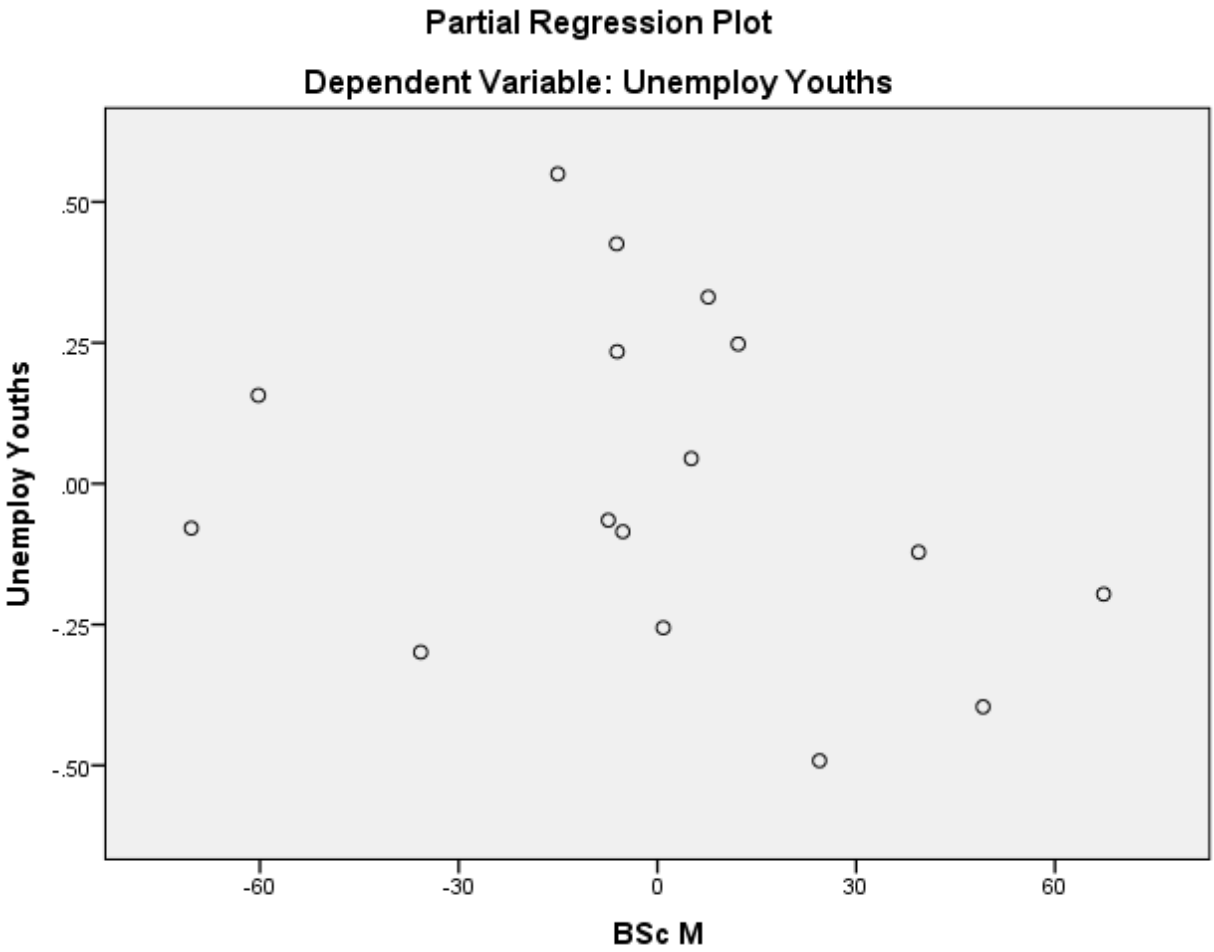

Figure A4: Youth Unemployment against Degree male

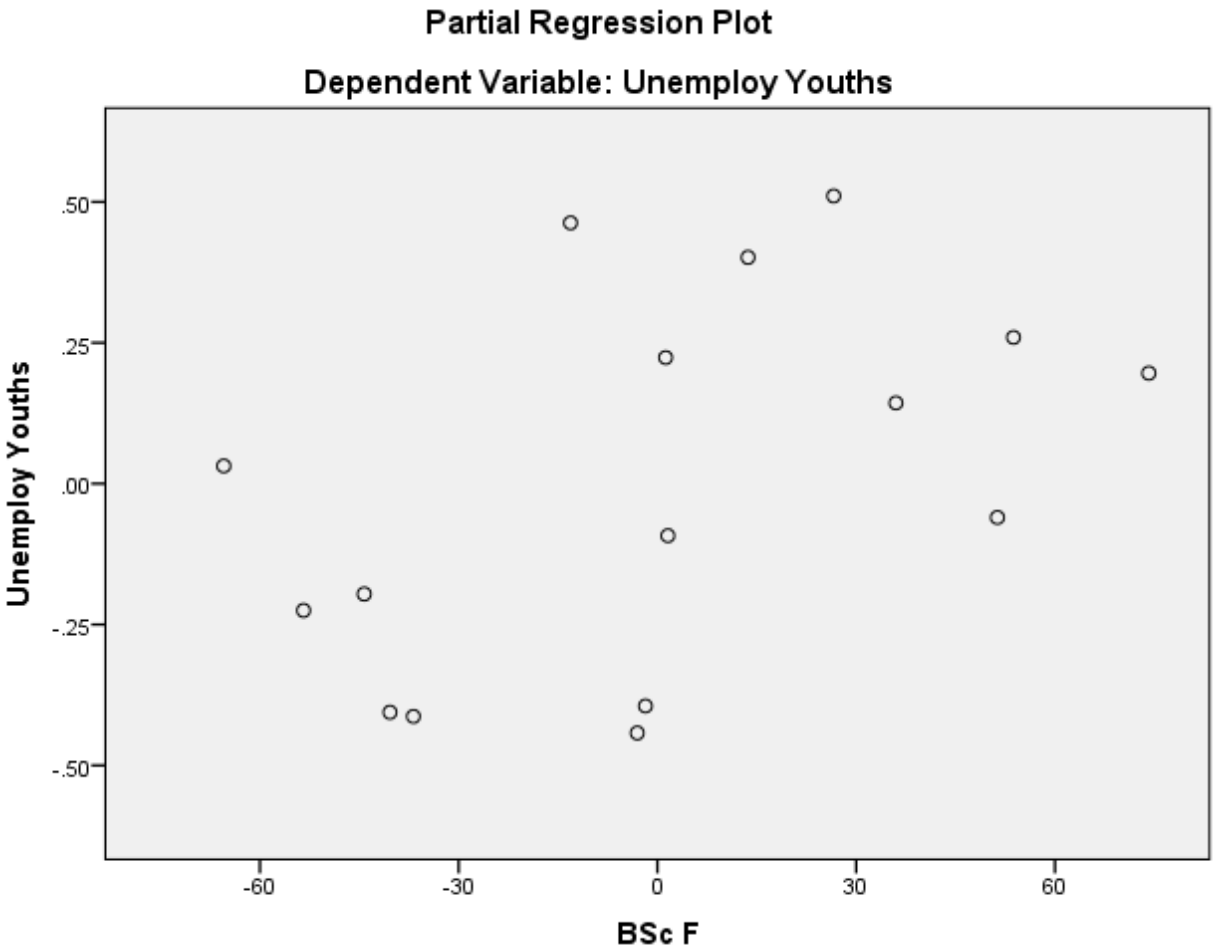

Figure A5: Youth Unemployment against Degree female

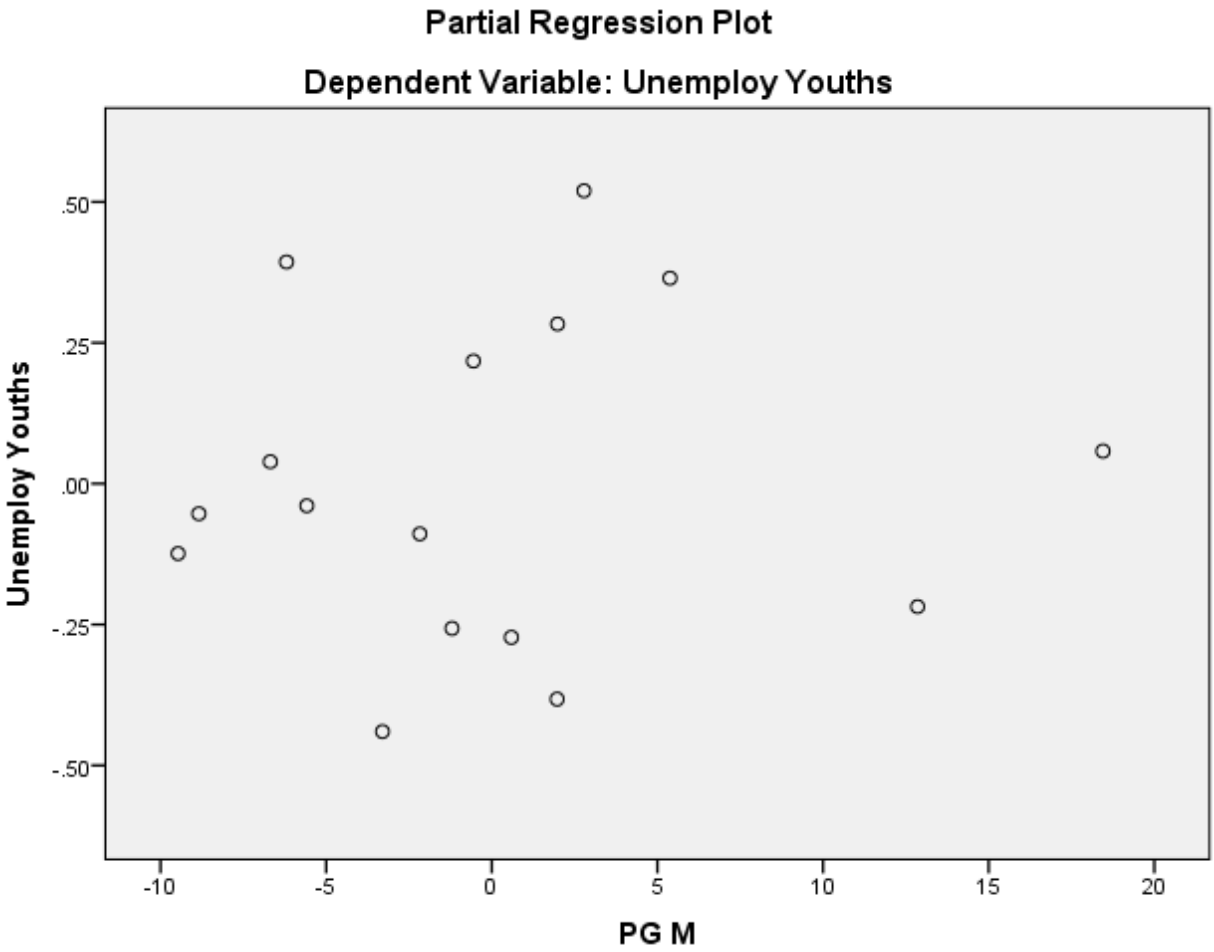

Figure A6: Youth Unemployment against Post-grad male

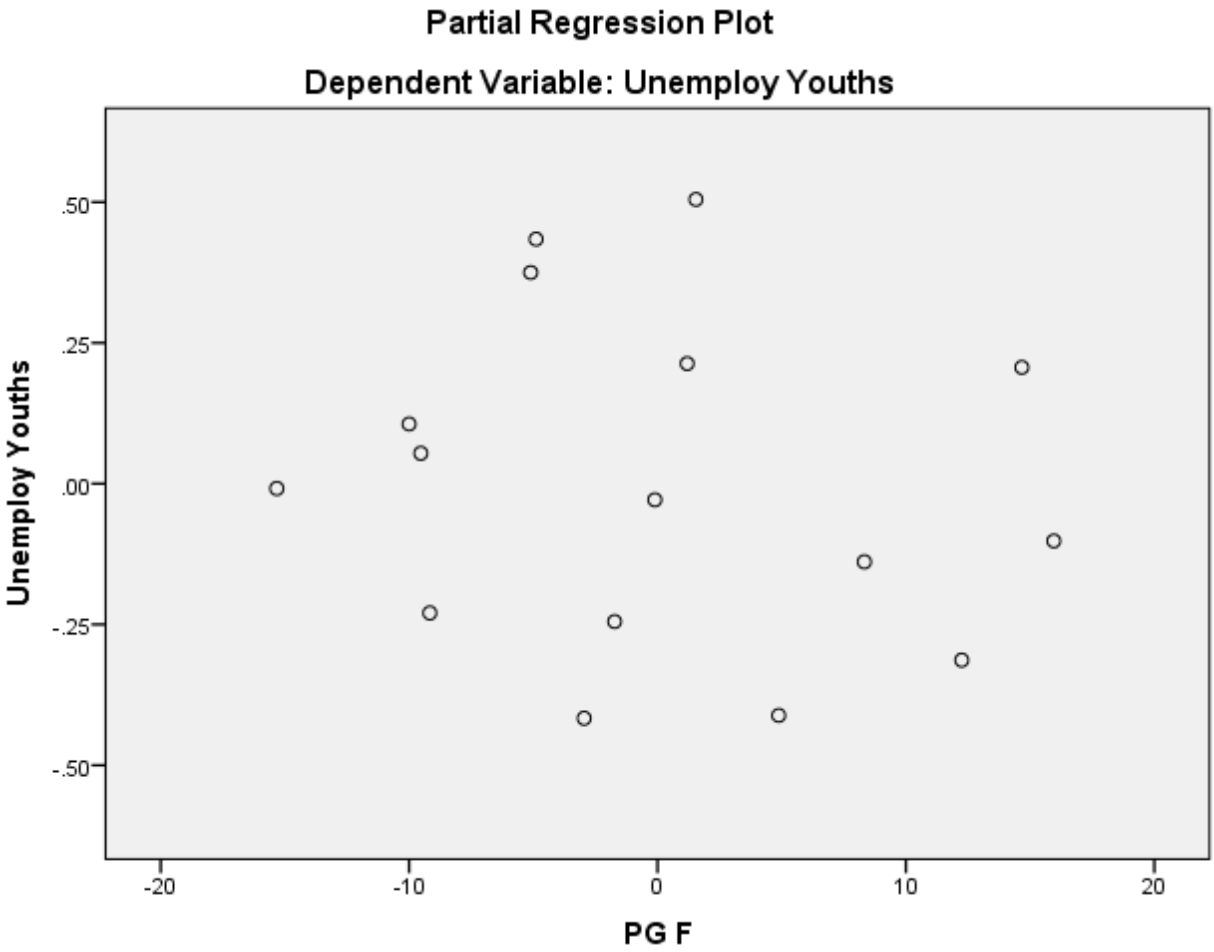

Figure A7: Youth Unemployment against Post-grad female

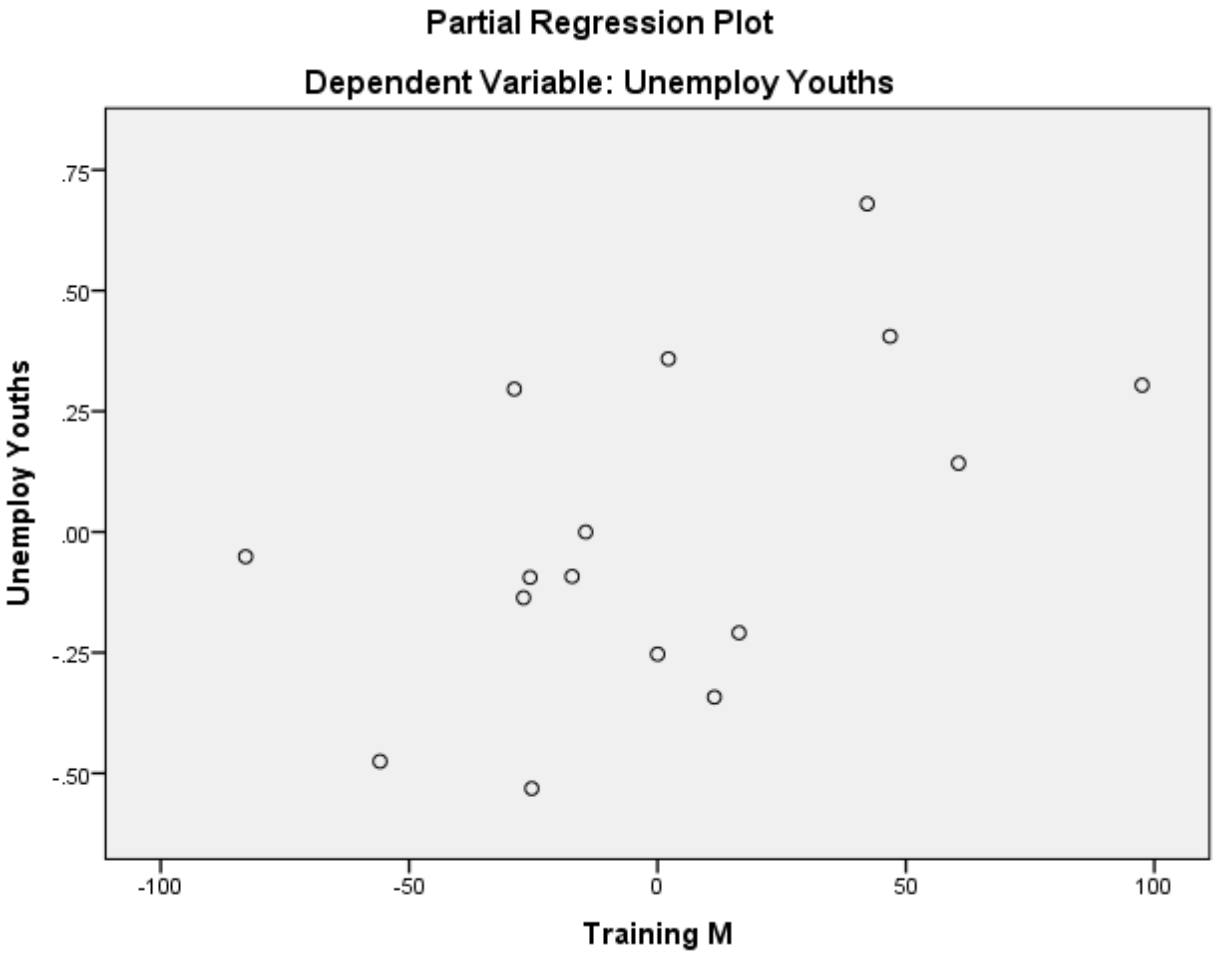

Figure A8: Youth Unemployment against Training male

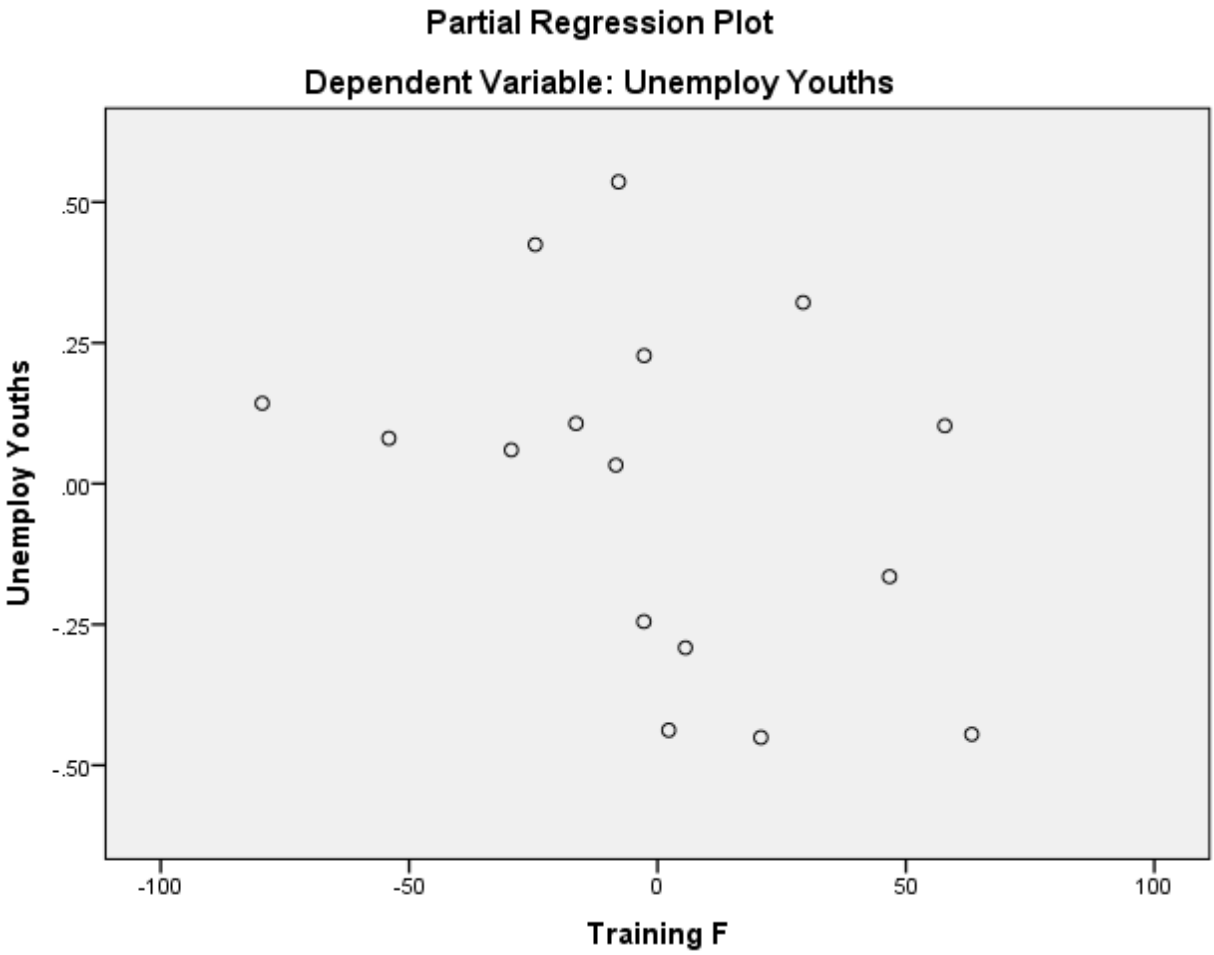

Figure A9: Youth Unemployment against Training female

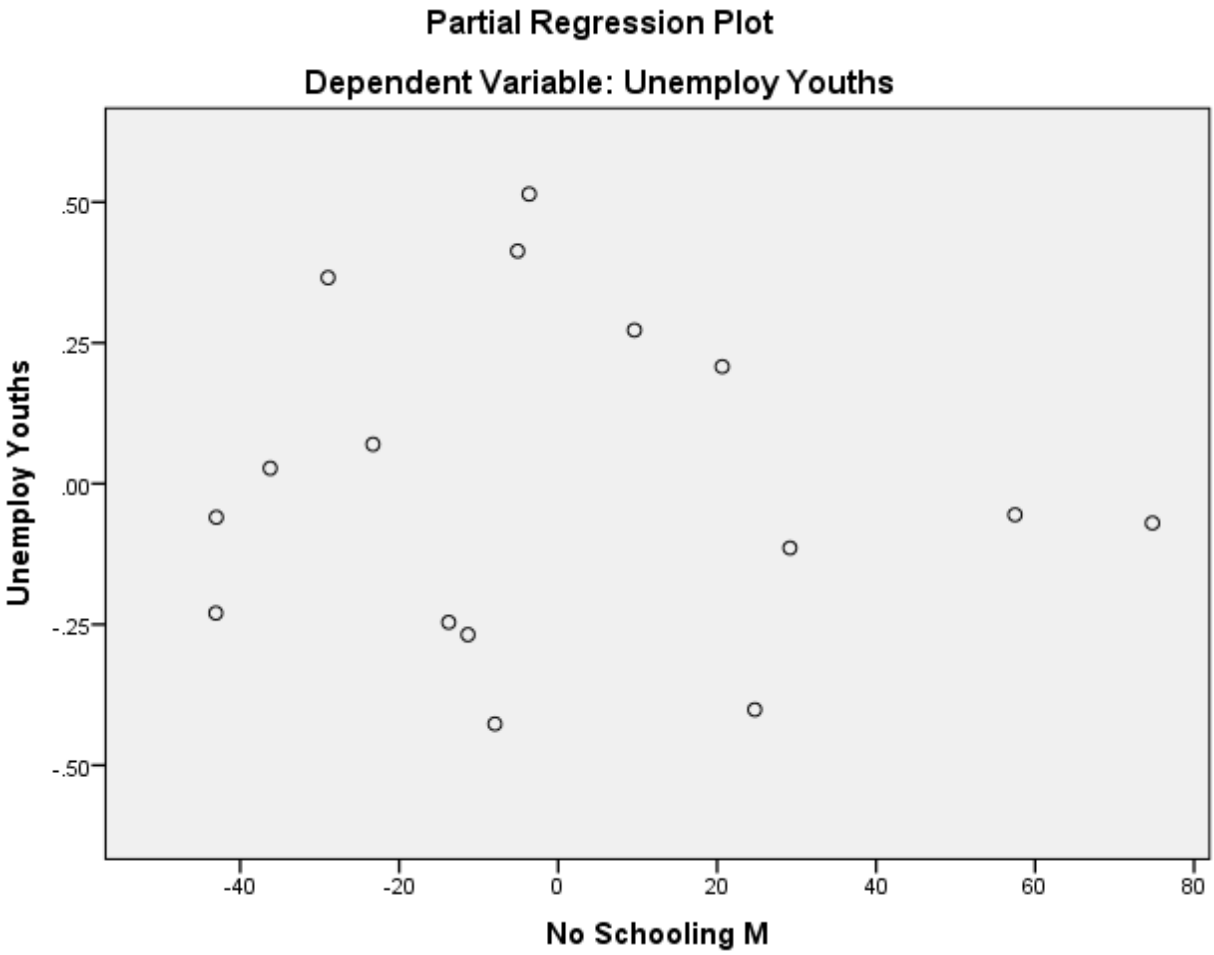

Figure A10: Youth Unemployment against No Schooling male

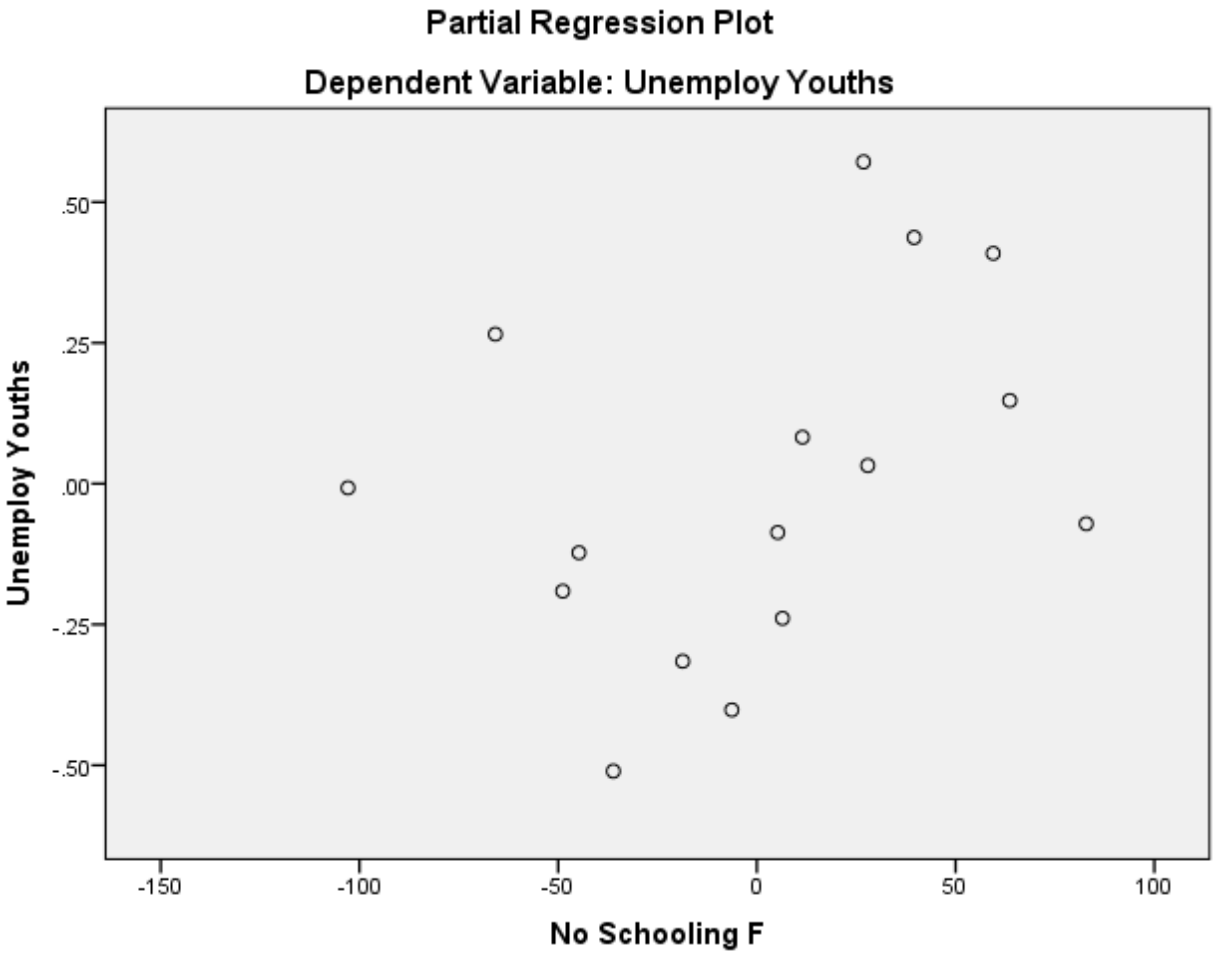

Figure A11: Youth Unemployment against No Schooling female

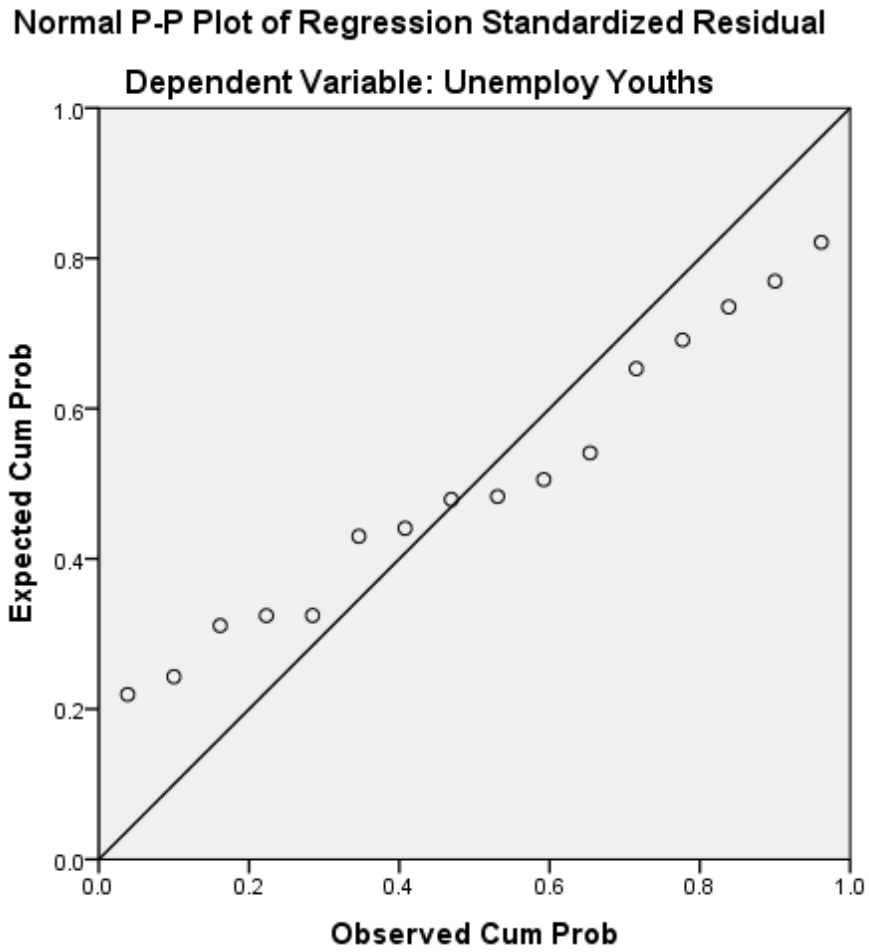

Figure A 12: Expected cumulative probability against Observed cumulative probability

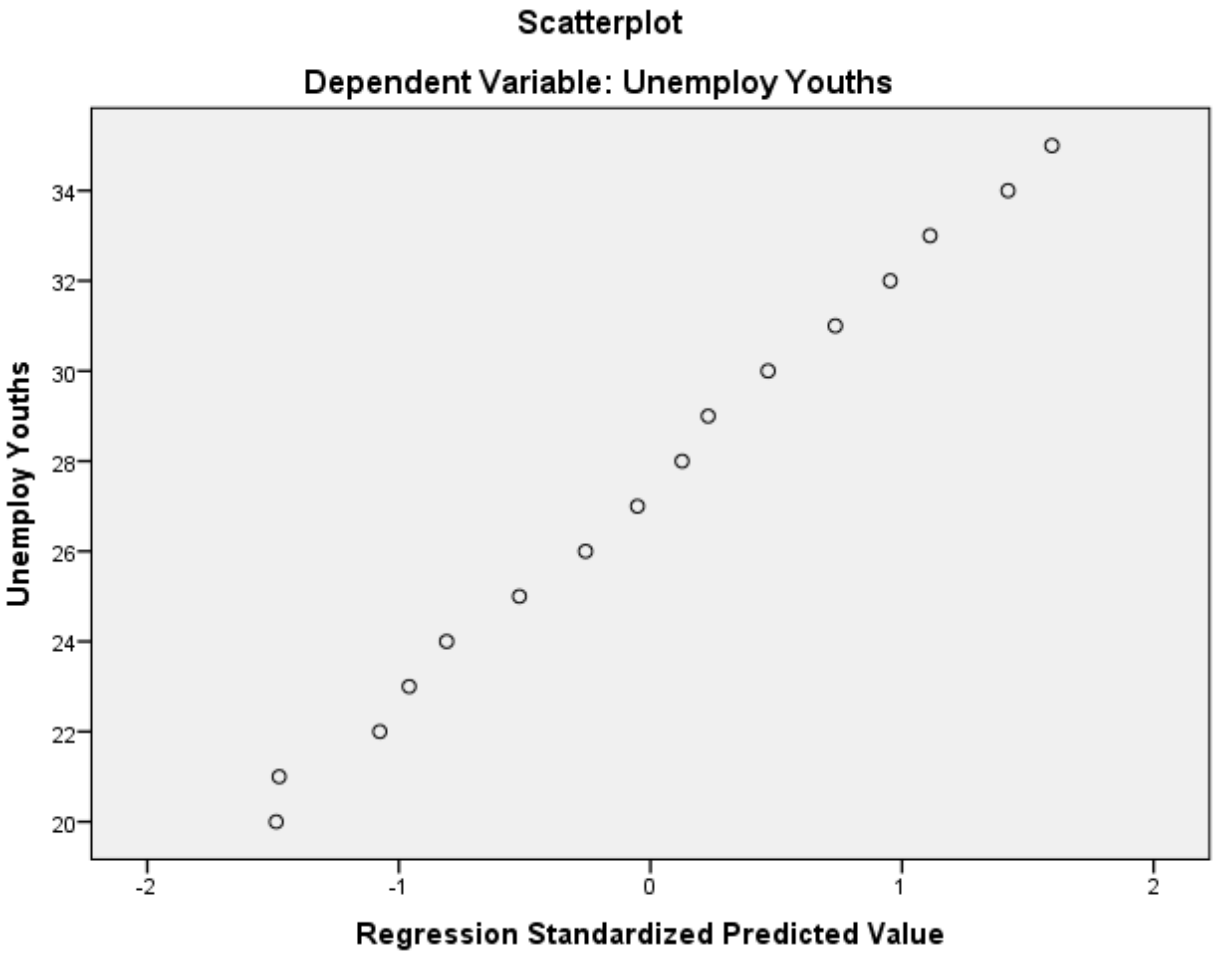

Figure A13: Unemployed youth against Regression standardized predicted value