The Causality Between Youth Unemployment, Education Attainment and Labour Force Participation: Evidence from South Africa

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30 November 2018

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Abstract

In times of increasing unemployment, South Africa has the highest youth unemployment in the world followed by Palestine, Greece, Nigeria and Spain. In that context, the study attempts to investigate causal relationship between youth unemployment and the economic indicators (education attainment and labour force participation) that ought to show important signals to trends of unemployment. The paper will paper will make use of the Autoregressive Distributed Lags model (ARDL) as it is the most recommended to comparable time series models. The causality relationship among the variables is analyzed using Pair-wise Granger-causality technique. The study implication shows there is no efficient policies in South Africa to effectively reduce increasing youth unemployment given that education attainment study outcomes is insufficient.

Keywords: Youth Unemployment; Education Attainment; Labour force rate; Causality; South Africa

Introduction

Over the past decades, South African unemployment rate has been extremely high compared to other countries. While labour force participation and education enrollment had increased gradually after the democracy transition. Burger and Fintel (2009) argued that the racial separation, education system, inequality and discrimination policies led to poor education system and very low labour force participation in the past decades. Nonetheless, the effects of high

unemployment continued to results to high human depression, erosion of human capital, social exclusion, poverty, crime and social impact (Kingdon and Knight, 2001).

In South Africa the most job seekers are regarded as youth. However, youth unemployment can be defined when young people will be searching for work that pays but cannot find one. The reduction of youth unemployment will positively contribute on economy, drug abuse, alleviate crime, skills development and social problem. According to Stats SA (2018) youth unemployment has been regarded as the world phenomenon such that there is approximately 71 million unemployed youth over the world.

An increasing youth unemployment has brought attention to policy makers, researchers and government organization. In order to address unemployment government had previously adopted the following initiatives; Growth, Employment and Redistribution (GEAR[1]), Broad Based Black Economic Empowerment (BBBEE[2]), Expanded Public Works Programme (EPWP[3]), Accelerated Shared Growth Initiative of South Africa (ASGISA[4]), New Growth Path (NGP[5]), Industrial Policy Action Plan (IPAP[6]) (Ferreira & Rossouw, 2013; DTI, 2017; Brynard, 2011). Recently, President Cyril Ramaposa announced the new initiative named Youth Employment Service (YES) aimed at creating opportunities for young job seekers in order for them to participate in the economy.

These policies mentioned above shared common goal of creating unemployment to South African citizens who were previously disadvantage and excluded in the economy. The GEAR policy aimed at creating employment for South African citizen through stringent strategic macroeconomic objectives. Nevertheless, during the period of its implementation the South African economic growth suffered from the negative growth which resulted to slow progress of reducing unemployment. The BBBEE policy was designed to redistribute the issue of the skewed racially employment which merely target Blacks, colored's and Indians those who previously disadvantaged. By doing so, South African labour market would have seen an increase those races joining employment.

[1] Adopted in 1996 by the Department of Finance
[2] Implemented in 2003 Department of trade and Industry
[3] Initiated in 2004
[4] Announced in 2006 by Presidency Department
[5] Introduced in 2010 by the Department of Economic Development
[6] Implemented in 2013 by the Department of trade and Industry

Moving to the EPWP, this progamme target to create “more jobs” more specifically in previously under developed places such as rural areas, townships and semi-developed areas. Nevertheless, the minimum wage received by the workers was expected to contribute towards the society basic needs. In addition, many parents would use such income in assisting their children’s in schooling activities such as tuitions, lunch boxes and transport towards achieving their education obligations. The popular NGP or NDP strategic policy was initiated in 2010 to alleviate the structural challenges of unemployment, poverty and inequality among South African citizens. Despite, the persistence of these challenges the policy impact has showed slight changes regardless of the global financial crisis and increasing population such that some structural challenges increased an others remain unchanged. This policy was mandated to create working opportunities and focus on developmental sectors that participate on reducing unemployment, but youth unemployment continued to increase from year to year. The YES, is the only known policy that focus directly to young individual without jobs but obtained tertiary education.

The South African education system has improved following the post-apartheid era in 1994. The alignment of the education system was considered as the long term strategic initiated. With that being said, government strived to implement policies to move the racial imbalance and skewness of labour market and education system in short term period. The education attainment responded gradually along with the initiated such that there was an increase in South African graduates in labour force from 463 thousand in period 1995 to approximately 1.1 million in period 2012 (Broekhuizen & Van der Berg, 2013). In addition, education attainment describes the changes in labour supply. Following the political transition, South African government implement education policy led to increase the labour market (Burger & Fintel, 2009).

In South Africa, labour force is regarded as people aged from 15 to 64 years. According to Stats SA (2018) labour force participation has gained momentum after the abolishment of the apartheid era in 1994.

The paper will be structured as follows: section 2 reviews the relevant literature. This is followed by the model specification to be utilized in the study. Section 4 provides the detailed insights of the econometric techniques and sections 5 contains the empirical results. Finally, the last section provides conclusion remarks, study recommendations and vital policy implications.

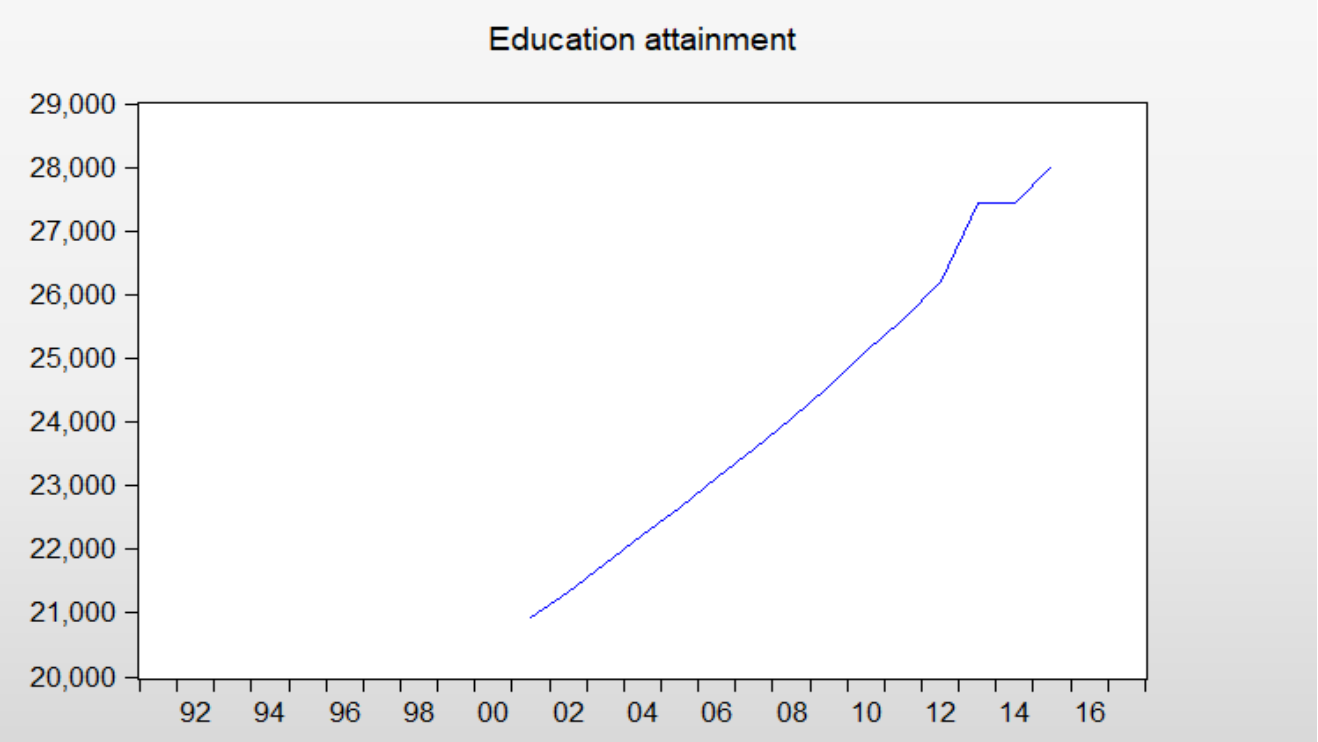
Historical Background and trends

Figure 1 Youth unemployment rate from period 1991 to 2017

Sourced: FRED (2018)

Figure 1 presents the plot of the youth unemployment rate in South Africa from period 1991 to 1997. The trend exhibits fluctuation from time to time. From year 1991 the trend decease sharply reaching the lowest rate during the post-democracy years. The implementation of the GEAR policy could have played a positive impact by significantly stimulating employment. Then from 1995 the trend began to increase in an accelerated rate until approximately period 1999 where the LFPR began to fluctuate around 45 percent. Notably, in 2000 the Youth unemployment increased again sharply reaching the highest value of 57 percent in period 2005. Then, the Youth unemployment to 45 percent in period 2008 then increase slowly to 52 percent in period 2017.

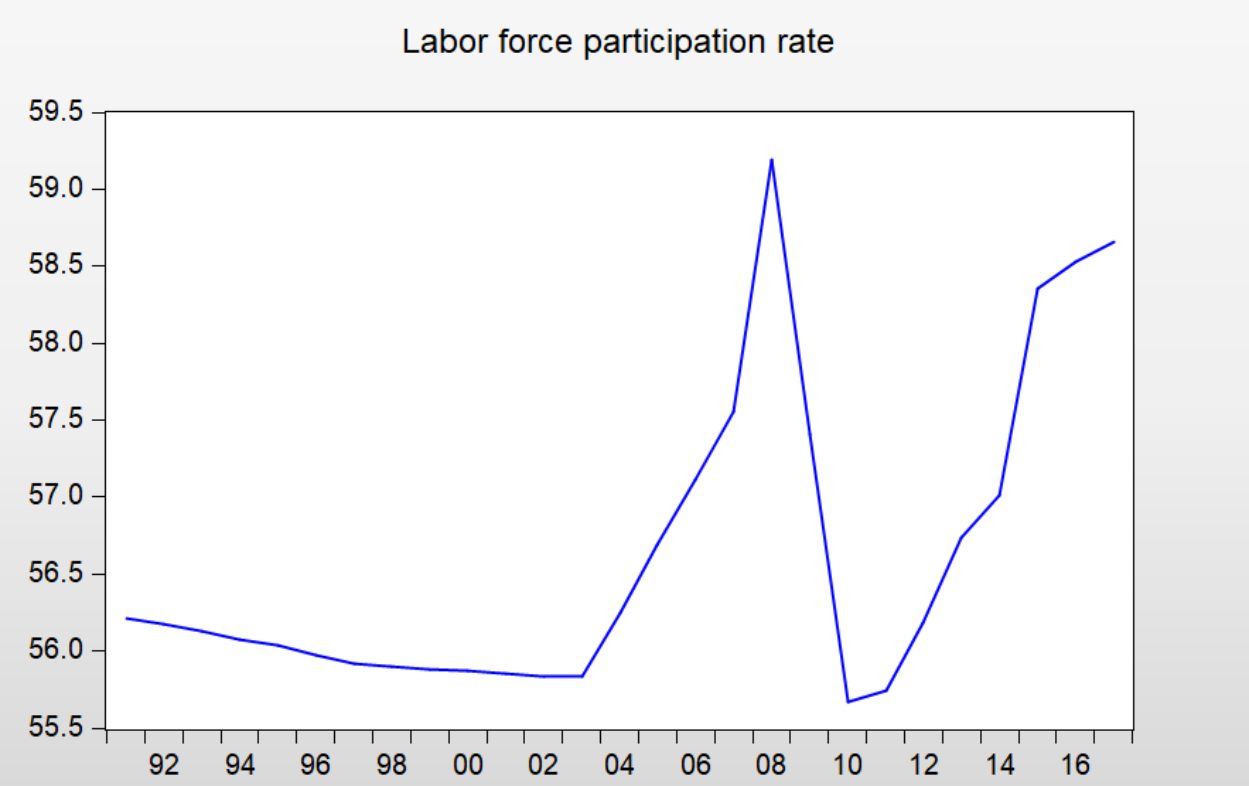
Figure 2 Education attainment from period 2001 to 2015



Sourced: UNESCO (2018)

Figure 2 shows the graphical illustration of education attainment. Due to the unavailability of data the education attainment data begins from 2001 to 2015. The Education attainment trend clearly shows a positive growth rate from time to time. Moreover, the trend exhibits the increasing linear line which do not vary on a fixed level suggesting the non-stationarity in the mean but not in the variance. Nevertheless, the unit root test will be carried out to confirm the non-stationary series in the data section.

Figure 3 Labour force participation rate from period 1991 to 2017



Sourced: FRED (2018)

The labour force participation rate from period 1991 to 2017 is illustrated in Figure 3. As shown, the trend slowly decreases from period 1991 to 2003 then began to as accelerated rate reaching the maximum value almost 59.3 in period 2008. According to Baxter (2009) the global financial crisis had led to many employees being laid-off for survival purposes regardless of the previous boom. In this case, South African mining industries where the mostly affected.

Literature review

There are many empirical studies that have been conducted between unemployment, education attainment and labour force participation. Baharom and Kanapathy (2013) reviewed the unemployment and labor force participation rate (Sweden, United States and China). The study finding indicated that there is an existence of long run relationship between unemployment and labour force participation rate. Yasemin (2013) paper examined the relationship between unemployment and labour force participation rate in Europeans countries to discover the degree of discouraged employees. The study results indicated that there is a long run relationship between the variables and such that both genders are affect.

Using the cointegration analysis, Yildirim (2014) investigated the nexus between unemployment and labour force participation rate for urban women in Turkey. The paper finding showed that there is a long run co-movement between the variables for educated women, but not less educated. The study further provided the evidence of both short and long run unidirectional causality between the variables, but not the other way around. In another study, Apergis and Arisoy (2017) analyzed the relationship between unemployment and labor force participation in US labour market. They found that there is a negative significant relationship between the variables such that the study confirmed the impact of discouraged workers.

Carmona, Congregado, Golpe and Van Stell (2014) assessed the nexus between labour force participation and the business cycle structures for both male and female genders labour market. The paper results pointed out that the evidence of discouraged male workers while the opposite happen with female workers (add worker effect) during the recession. Feng, Hu and Moffitt (2015) examined the long run trends between unemployment and labour force participation rate in China for over period 1988 to 2009. One of their study outcome indicated that there is a cointegration between unemployment rate and labour force participation rate. The study further indicated that this also can be derived using different demographics such as level of education and gender based results.

The following section presents the review of the unemployment and education attainment. Mang'unyi and Mpendulo (2018) explored the connection between education level and unemployment in the context of the youth in the Eastern Cape municipalities. The study concludes that the is a positive relationship between education level and unemployment.

Lavrinovicha *et al* (2014) investigated the effects of education on unemployment and income levels in Latvia for over period 2002 to 2013. The estimated results of the univariate linear regression model show evidence of positive relationship between unemployment on education level and income levels.

Riddell and Song (2011) examined link between education and unemployment in U.S labour market from period 1980 to 2005. The study results concluded that education significantly increases re-employment rates of the unemployment. Ashenfelter and Ham (2013) assessed the determinants and the relationship between education, unemployment and earnings. Their study results suggested that the impact of additional schooling and working experience has effects on income earned in reducing measured unemployment.

Another study done by Yongqiu and Zhongchang (2007) found that there is a positive significant link between education and employment while primary education exhibits negative relationship. They further reveal that there is no sufficient evidence of the correlation between working individuals with tertiary education and unemployment rate. Daly *et al* investigated the relationship between education attainment on wage inflation and unemployment in United States. The study finding indicated that there is a trade-off between education attainment and unemployment.

Data and Model Specification

Data

This paper will try to figure out the main determinants of youth unemployment which is regarded as one of the socio-economic problem into welfare. The study will employ the following three variables: Youth unemployment (dependent variable), Education attainment and labour force participation (Independent variables) in order to verify the short run, long run and the causality impacts. This study makes use of secondary time-series data for South Africa covering the sample period from 1991 to 2017. The data has been collected from the Federal Reserve Economic Data and United Nations, Educational, Scientific and Cultural Organization (UNESCO).

Unit root Test

To check whether the employed series is stationary or non-stationary or avoid running spurious estimations the study will conduct a unit root test. The paper will make use of the three unit root test namely; Phillips Perron (PP), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), Ng-Perron (NP) and conventional Augmented Dickey Fuller (ADF) unit root tests.

Model Specification

The study will try to figure out the relationship between dependent LLYU variable and independent variables (LEA & LLFPR). This paper will make use of similar methodology taken out from the paper by Sebastian & Larsson (2016). The specified function which is as follows;

$$YU = f(EA, LFPR) \quad (1)$$

All the series are expressed in log-linear form as below

$$LYU_{i,t} = \alpha_1 + \alpha_{EA} LEA + \alpha_{LFPR} LLFPR + \varepsilon_t \quad (2)$$

The ARDL method procedure introduced by Pesaran et *al.* (2001) will be carries out to capture the relationship between variables in *f* (LEA, LLFPR). This will be followed by the method by Pesaran & Shin (1998) and the Pesaran et *al* (2001) present as ARDL (*q,p*). However, the equation in can be written as follows:

$$\Delta y_t = \beta_0 + C_0 t \sum_{i=1}^{q} \mu_i \Delta x_{t-i} + \sum_{j=1}^{p} \alpha_j \Delta x_{t-j} + \gamma_1 y_{t-1} + \gamma_2 x_{t-1} + \varepsilon_t \quad (3)$$

β_0 and $C_0$are the coefficients drift an trend, respectively while ε_t is the white noise error. For the short-run relationship, the coefficients μ_i and α_j all correspond to j while $\gamma_j, j = 1,2$ corresponds to long run equilibrium.

The ARDL bounds test for cointegration hypothesis will be performed as follows;

H_0 : $\gamma_1 = \gamma_2 = 0$: (Existence of the long run relationship)

H_1 : $\gamma_1 \neq \gamma_2 \neq 0$: (No existence of the long run relationship)

Given that there is existence of the long run relationship then the next step is to perform the another test by Banerjee et *al* (1998) and Kremers et *al* (1992) to if the previous test appears to produce inconclusive results. The Error correction model term to capture the speed of adjustment back towards equilibrium.

The ECM can be derived from the simple linear OLS

$$y_t = \beta_0 + \beta_1 x_t + \varepsilon_t \tag{4}$$

Where,

$$ECM_{t-1} = y_{t-1} - \hat{\beta}_0 - \hat{\beta}_1 x_{t-1} + \tag{5}$$

Both $\hat{\beta}_0$ and $\hat{\beta}_1$ are estimators of the equation such that the final ECM_{t-1} for the short run equation can be expressed as below

$$\Delta y_t = \beta_0 + C_0 t \sum_{i=1}^{q} \mu_i \Delta x_{t-i} + \sum_{j=1}^{p} \alpha_j \Delta x_{t-j} + \gamma_1 y_{t-1} + \gamma_2 x_{t-1} + \lambda ECM_{t-1} + \varepsilon_t \tag{6}$$

Given the above, λ denotes the magnitude (speed of adjustment). In order for the model to satisfy the requirements, λ has to be negative and statistically significant.

The Granger-causality based on the Vector Error Correction (VAR) model can only be used if the variables are co-integrated. In this study, the pair-wise granger-causality technique will be applied to examine the causal relationship between youth unemployment, education attainment and labour force participation rate.

The following VAR model is used to test for the existence of Granger-causality:

$$Y_t = \alpha_0 + \propto_1 Y_{t-1} + \cdots + \alpha_p Y_{t-p} + \varphi_1 X_{t-1} + \cdots + \varphi_p X_{t-p} + U_t \tag{7}$$

$$X_t = \theta_0 + \theta_1 X_{t-1} + \cdots + \theta_p Y_{t-p} + \gamma_1 X_{t-1} + \cdots + \gamma_p X_{t-p} + V_t \quad (8)$$

Using equation (7) and (8), the below hypothesis is tested for Granger-causality.

The null hypothesis that X does not Granger-cause Y is given as follows

$$H_0 = \varphi_1 = \varphi_2 = \varphi_p = 0$$

$$H_1 \neq \varphi_1 \neq \varphi_2 \neq \varphi_p \neq 0$$

Similarly, the null hypothesis that Y does not Granger-cause X can be presented as follows:

$$H_0 = \gamma_1 = \gamma_2 = \gamma_p = 0$$

$$H_1 \neq \gamma_1 \neq \gamma_2 \neq \gamma_p \neq 0$$

However, given that the null hypothesis H_0 is rejected, then there should be existence of Granger-causality between the variables.

To ensure the model adequacy and efficiency the paper will conduct the Breusch-Godfrey test (Godfrey 1978) for serial correlation, Whites test for heteroscedasticity (residual have constant variance) by White (1980), Misspecification error test Ramsey (1969) and Jarque-Bera test for normality in the residuals Brooks (2014).

Empirical Results

Table 1 Pair-wise correlation between Education attainment, Labour force participation rate and youth unemployment

	LEA	LLFPR	LYU
Education attainment	1	0.34	-0.03
Labor Force Participation	0.34	1	-0.66
Youth Unemployment	-0.03	-0.66	1

Notes: LEA Education Attainment, LLFPR Labour Force Participation Rate and LYU Youth Unemployment. Missing observations are found in Education attainment series notably from (1991-2000).

Source: Authors computation and Eviews 9

Table 1 presents the correlation coefficient results which confirms that the variables appeared to be comparable. The results also suggest the absence of the multicollinearity due to the degree of relationship present above. Moreover, the expected correlation signs between youth unemployment with education attainment and labour force participation rate is shown as negative, respectively. While on the other hand, the correction between labour force participation and education attainment is expected to be positive. The next phase is to assess the summary statistics among the variables.

Table 2 Descriptive Summary for the variables

	LEA	LLFPR	LYU
Maximum	10.24	4.08	4.05
Minimum	9.95	4.02	3.53
Mean	10.09	4.04	3.87
Median	10.09	4.02	3.90
Std.Dev	0.13	0.008	0.28
Observation	15	27	27

Notes: LEA Education Attainment, LLFPR Labour Force Participation Rate and LYU Youth Unemployment. Missing observations are found in Education attainment series notably from (1991-2000).

Source: Authors computation and Eviews 9

Table 2 reports the summary statistics of the for above variables. The findings showed that LEA has been averaging at 10.09 from year 2001 to 2015 while LLFPR and LYU averaged at 4.04 and 3.87 percent from period 1991 to 2017. However, the LLFPR standard of deviation results appear to be a less disperse series at the value of 0.008 compared to LEA and LYU series which disperse at values of 0.13 and 0.28, respectively. Moreover, the maximum, minimum and median values of the series are also reported on each row, respectively.

Table 3 Unit root results

Variables	**Level**		**First Difference**	
	I	**I.T**	**I**	**I.T**
PP Phillips Perron test				
LEA	0.597357	-9.019747***	-3.055346	-10.12635***
LLFPR	-1.173452	-3.837656***	-2.086447	-3.824896**
LYU	-2.297395	-7.077866***	-3.123973	-6.333785***
KPSS Kwiatkowski-Phillips-Schmidt-Shin test				
LEA	0.605551	0.500000	0.135137	0.500000
LLFPR	0.459096*	0.103345	0.070099	0.049756
LYU	0.394751*	0.167560	0.055923	0.117776
NP Ng-Perron (MZt) test				

LEA	0.97375	-2.50**	-0.29448	-0.24435
LLFPR	-2.46039**	-2.45026**	-3.29786**	-2.46137
LYU	-1.84064*	-2.45840**	-2.12169	-2.47694
ADF Augmented Dickey Fuller test				
LEA	1.518049	2.549551	-0.178837	1.409826
LLFPR	-1.173452	-3.946811***	-3.098303**	-3.946794**
LYU	-2.173942	-4.995088***	-3.186355	-4.901390***

Notes: I denote constant and IT denotes constant and trend. For PP, KPSS, NP and ADF *, ** and *** means the rejection of the null hypothesis of the unit root at 10%, 5% and 1% level of significance, respectively. The Schwartz Information Criterion (SIC) is used to select the optimal lag for all unit root tests.

Source: Authors computation and Eviews 9

Table 3 presents the Phillips Perron (PP), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), Ng-Perron (NP) and conventional Augmented Dickey Fuller (ADF) unit root tests. The use of more than one unit root test is to ensure robustness of the results. The PP results shows that all the variables contain unit root intercept at both level and first difference. However, it is evident that all variables become stationary for both constant and trend at 5% and 1% level of significance. The KPSS unit root results series contains unit root meaning they are non-stationary except LLFPR series which is stationary only at level with constant at 10% level of significance. The NP unit root test outcomes indicate that the series are either stationary at level or integrated order expect for first difference at intercept and trend. Lastly, the convention ADF results suggest that the series are either stationary at level or first difference expect for the notably LEA series which shows the existence of the unit root for all levels. The next step to select the appropriate optimal lag length to be applied for the Autoregressive Distributed Lag model (ARDL).

Table 4 Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	71.36061	NA	5.44e-09	-10.51702	10.38664	-10.54381
1	103.9226	45.08582*	1.54e-10*	-14.14194	-13.62045*	-14.24913
2	113.1449	8.512892	2.05e-10	-14.176614*	-13.26353	-14.36372*

Note: * indicates lag order selected by the criterion

Table 4 reports the appropriate optimal lag length outcomes. The results are based on the unrestricted Vector Autoregressive (VAR) in use of Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SC) and Hannan-Quinn Criterion (HQ). However, it apparent that

both SC and HQ optimal lag selected is 2 while AIC chose 1. The use of determining the appropriate is to ensure the problem of over-identification is minimized. After discovering the optimal lag length, is to check whether the variables move together in long run using the popular ARDL Bound test for cointegration.

Table 5 ARDL bounds test for cointegration

Equation	SIC lags	F-statistic	Decision
F_{LYU} (LYU\LEA,LLFPR)	1	0.930771	No Cointegration
F_{LEA} (LEA\LYULLFPR)	1	0.075370	No Cointegration
F_{LLFPR} (LLFPR\LEA,LYU)	1	0.893302	No Cointegration

Bounds tests critical value					
1% Significance		5% Significance		10% Significance	
I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
5.15	6.36	4.41	5.52	3.17	4.14

Notes: The bound F-statistic critical values were obtained from Pesaran and Pesaran

Source: Authors computation and Eviews 9

Table 5 reports the ARDL bounds test results for equation F_{LYU}, F_{LEA} and F_{LLFPR}. The results confirmed that there is no co-movement among the variables estimated hence the null hypothesis cannot be rejected at 1%, 5% and 10% level of significance. In short, this means that youth unemployment, education attainment and labour force participation rate do not move together in the long run. After discovering that there is no cointegration between the variables therefore the short and long run model can de estimated.

Table 6 Short and long run coefficient using ARDL approach

Variables	Coefficients	s.e	t-Stat	Probability	Significance levels
Short run Model LYU_t					
LYU(-1)	0.318686	0.184583	1.726513	0.1122	Insignificant
LEA_t	0.066395	0.133675	0.496693	0.6292	Insignificant
$LLFPR_t$	-1.883389	0.446796	-4.215319	0.0014***	1% Significance
Long run Model LYU_t					
LEA_t	0.097452	0.177455	0.549165	0.5939	Insignificant
$LLFPR_t$	-2.766347	0.909424	-3.039669	0.0113**	5% Significance

Constant	14.096906	4.760933	2.960954	0.0130**	5% Significance
ECM_{t-1}	-0.681314	0.184583	-3.691092	0.0036***	1% Significance

Diagnostic Test: χ^2 Normality(a) = [0.39], χ^2 Serial correlation (b) = [0.61], χ^2 Heteroscedasticity (b) ARCH = [0.94], RESET (b) = [0.93].

Notes: (a) alphabet in parentheses denotes the p-values of F-statistics. (b) alphabet represents the p-values of chi-square (χ^2).

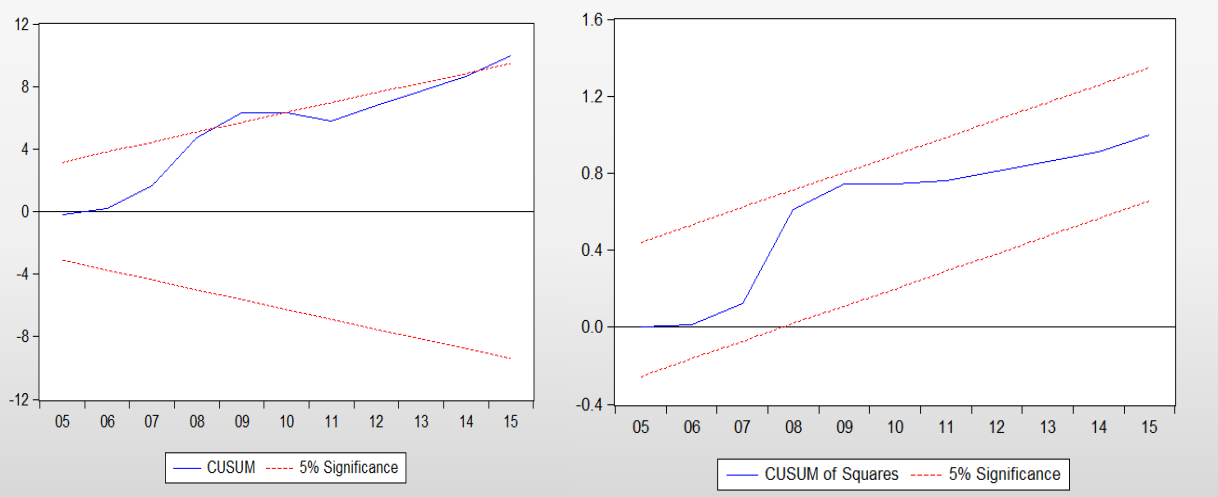
Source: Authors computation and Eviews 9

Table 6 presents the short and long run equilibrium results using the ARDL approach. The short run results confirm the negative and significant LLFPR coefficient. Therefore, this suggest that 1 percent increase in labour force participation rate will results to 1.88 percent decrease in youth employment in short run at 1 percent level of significance. In terms of the long run results, the negative and significant LLFPR coefficient is obtained. This means that 1 percent increase in labour force participation rate would result into approximately 2.8 percent decline in youth unemployment rate in long run. Thus youth unemployment and education attainment show no significant relationship.

From the error correction term (ECM_{t-1}) results, the coefficient of the error correction term has a negative value confirm the theoretical expectations that in the long run the youth unemployment rate (LYU_t) converges to its equilibrium. Based on the results, this indicate that 68% of the shock to the youth unemployment rate is adjusted back to its long run equilibrium significant at 1 % level of significance. The next phase is to verity the model LYU_t adequacy using the diagnostics and stability tests.

The three diagnostic test were conducted to check the problem of serial correlation, misspecification, heteroscedasticity and the distribution of the errors. The normality test for the residuals series is carried out using the Jarque-Bera (JB) statistic. The p-values (0.36) results are greater than 0.05, there is evidence that the model LYU_t error terms are normally distributed. Using the Breusch-Godfrey test to check serial correlation, the p-values of chi-square results (0.61) confirm that the model does not suffer from the problem of serially independent residuals term. The Heteroscedasticity test is carried out using Autoregressive Conditional Heteroscedasticity (ARCH) LM test. The results obtained shows that the chi-squared probability value is 0.94 which is greater than the 10 % level of significance. Therefore, there is no evidence of the existence of heteroscedasticity in the residuals terms of the model, hence, the null hypothesis cannot be rejected.

Figure 1 Plot of cumulative sum of recursive residuals



Source: Authors computation and Eviews 9

Figure 1 presents the CUSUM and CUSUMSQ recursive residual tests. The results from the CUSUM illustrate that the model slightly falls beyond the asymptotic critical value lines which suggest that the model might be instability. On the other hand, the CUSUMSQ does not wander from the critical lines and stays within the bands at 5% level of significance implying the stability of the model.

Table 7 Granger causality estimated results

Null Hypothesis	Obs	F-statistic	Prob.	Granger causality
LEA does not Granger cause LYU	13	0.06888	0.9340	NO
LYU does not Granger cause LYE		0.11717	0.8909	NO
LLFPR does not Granger cause LYU	25	0.41414	0.6664	NO
LYU does not Granger cause LLFPR		1.20973	0.3192	NO
LLFPR does not Granger cause LEA	13	0.21889	0.8081	NO
LEA does not Granger cause LLFPR		0.92586	0.4349	NO

The results of Table 7 are reported above. As can be seen, the results indicate that there is no evidence of Granger causality among variables LEA, LYU and LLFPR. Hence, the null hypothesis cannot be rejected. As the results the p-values obtained are all above 10% significance level

Conclusion and recommendations

The current study attempts to explore the causal relationship between youth unemployment, education attainment and labor force participation rate in South Africa during the period 1991 to 2017. The study results provided that youth unemployment is negatively related with labour force participation while positively related with education attainment. In other words, this shows that as the more people join labour force market the youth unemployment rate is expected to decrease accordingly. Also more young adults complete their desired studies youth unemployment is expected to increase. Using the ARDL approach bound testing for cointegration, short and long run relationship the study results found that only youth unemployment and labour force participation showed negative significant results. The study further examined the Granger causality test between the variables and the results were all insignificant. The study implication shows there is no efficient policies in South Africa to effectively reduce increasing youth unemployment given that education attainment results are insufficient.

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