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MANPOWER PLANNING AND UNEMPLOYMENT IN NIGERIA

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Abstract: *This paper examined the impact of manpower planning on unemployment in Nigeria from 1995-2019. To achieve the above objective, secondary data on unemployment rate, total government spending on education and gross school enrolment were sourced from Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics and World Bank national accounts. The econometric techniques of cointegration and error correction mechanism were used to analyze the data collected for the study. The result revealed that 62% total variation in unemployment rate was explained by total government spending on education and gross school enrolment. It also revealed that total government expenditure on education and gross school enrolment have positive and insignificant relationship with unemployment rate. Furthermore, it was observed that the failure of manpower planning in Nigeria to meaningfully reduce unemployment is because the educational sector is facing funding deficit, leading to deterioration in quality, uncontrolled growth in educational institutions, etc. Based on these findings, the study suggested that government should ensure adequate funding of education in Nigeria. Moreover, government should provide appropriate policies that will increase and sustain manpower development. Such policies should include; compulsory primary and vocational education for all citizens - commitment to mass education at all levels without compromising on quality, strengthen and modernize the national skill development/training system (Industrial Training Fund -ITF, and National Directorate of Employment - NDE) to increase the quantity of employable youths in the country.*

Keywords: *Manpower Planning, Unemployment, Government Expenditure and ECM.*

I. INTRODUCTION

Manpower planning, also known as human resources planning, is an important factor in the development of a nation's human resources. According to Angaye (1994), manpower planning is the study of manpower requirements for socio-economic growth and development. Anyanwu, Oyefusi, Oaikhenam and Dimowo (1997) argued that manpower planning aims at projecting the manpower requirements of a nation for a given period and the composition therefore, developing suitable educational programmes to developing the needed labour skills, and efficient allocative labour resources so as to eliminate labour shortages or surpluses. According to Gbosi (2014), "manpower planning is a process of ensuring that the organization has the right kinds of people in the right place at the right time". Gbosi further stated that, the underlying philosophy of manpower planning is to put the right people in the right place at the correct time in order to make them more efficient in the process of producing goods and services in the economy. Specifically, manpower planning examines the available human resources in order to determine present and future manpower needs and provides policy guidelines on investments in human resources.

Moreover, educated or skilled manpower is necessary for economic development (increase in

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economic growth, reduction of unemployment, reduction of poverty, etc.) and a shortage of educated or skilled manpower can be a serious setback to a country's struggles to achieve economic development. To avoid shortages or surpluses of manpower, manpower planners have sought to identify future requirements of skilled manpower and to design education systems that will produce necessary workforce (Wafula, 2018).

Therefore, the reason for manpower planning is to avoid shortages or surpluses of manpower in the labour market, considered as an obstacle to economic development. It also aims at forecasting manpower requirements in the country. The output of educational system is planned to meet future manpower needs. Planning the manpower of a country enables such country to divert resources from programmes in the educational system whose skills are in little demand to those whose skills are in small supply in the labour market. It offers sound educational and training programmes in order to achieve the required manpower needs and avoid the production of residual and irrelevant labour force.

In addition, the educational industry is one where market failures abound. These include the mismatch of available skills and job requirements in the labour market; the mismatch between quality and quantity of education, the mismatch of technical intermediate manpower with available high level technical manpower, the gender mismatch in access to formal education (between boys and girls and men and women) at all school levels, and the geographical imbalance in educational access and the associated equity and affordability implications (Umo, 2012).

Furthermore, the paradox of unemployment and underemployment existing side by side with surplus educated labour in Nigeria can partly be explained by shortage of critical skills in areas of need, especially at the intermediate and junior levels. To address this problem, manpower planning system - a national skill development system emphasizing technical and vocational training was designed. Manpower planning in Nigeria dates back to 1959 with the appointment of the Ashby commission. This was precipitated on the need to fill an existing gap between the supply and demand for high-level manpower to staff the top echelons of the expanding administrative systems of regional governments. The commission's report established minimum high level manpower needs in Nigeria for the period 1960 to 1970 based on the pre-independence national growth rate. It further recommended that inter-regional machinery be started to assess on a continuous basis the manpower needs of the nation and formulate effective manpower programmes (Anyanwu, Oyefusi, Oaikhenam & Dimowo, 1997).

Importantly, the approval of the report of the Ashby Commission led to the establishment of the National Universities Commission (NUC), National Manpower Board (NMB) in 1962 and its secretariat, and the Regional (State) Manpower Committees. Its secretariat was changed to a division of the Ministry of Budget and Planning (later National Planning Commission) (Anyanwu, Oyefusi, Oaikhenam & Dimowo, 1997). Since 1960 till date, the governments have continued to put in place manpower planning programmes to enhance the quality of manpower and reduce unemployment in Nigeria but these programmes have not achieved their desired objectives. The country continues to experience double digit unemployment rates amidst difficulties in meeting human resource requirements in the fields of science and technology. Subsequently, a balance is yet to be achieved between manpower production and manpower demand due to poor manpower planning in the country (Ike, 2007; Adeniyi, 2008; Agab & Ogah, 2010).

Manpower planning and its machinery in Nigeria had been bedeviled by lack of research on planning and manpower utilization, lack of current and comprehensive

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information on the stock of skills available in Nigeria, inability to evaluate manpower contents of development projects, little evidence of coordination in matters relating to employment, education and manpower planning; inability to attract and retain competent professional staff, use of inadequate estimation techniques, lack of data, absence of coordination between manpower planners and the educational system, funding deficit in the educational sector, and absence of coordination amongst the agencies charged with the responsibility of manpower planning. Therefore, it is essential to systematically examine investment in human resources development which according to Umo (2012) plays a key role in reducing unemployment. Thus, the main objective of this study was to examine the impact of manpower planning on unemployment in Nigeria. The remaining parts of this paper were structured into review of related literature, methodology, results and discussion, conclusion and recommendations.

II. REVIEW OF RELATED LITERATURE

Attempts to explain how the manpower of a country can be planned to avoid shortages or surpluses of manpower in the labour market, considered as an obstacle to economic growth and development are sometime referred to as approaches to manpower planning. The approaches to manpower planning include the rule of the thumb approach and manpower population ratio approach. The rule of the thumb approach was first adopted in Nigeria by the Ashby Commission to project the country's manpower requirements for the period 1960-1970. According to Wafula (2018), the rule of the thumb approach is also known as the historical approach and it involves a careful examination of data on past trends to explain the direction of association between aggregate and per capita output; and the usage of manpower. The existence of a firm association permits the projection of such trends into the future. The method is used to determine output and employment in various sectors of the economy. Importantly, this approach is based on ground that third level educated manpower should grow twice as fast as gross national product and second level educated manpower should grow three times as fast as gross national product. By third level educated manpower, we mean those who have completed higher education. On the contrary, second level educated manpower refers to those who have completed secondary education (Gbosi, 2014). In Nigeria, the demand for education is on the increase.

MacLeans (1990) argued that the demand for education in Nigeria is high and growing while employment opportunity is evidently scarce and growing at a noticeably slower pace. The reason for the increase in the demand for education is because youths think that with extra years of education, their possibility of earning extra or more income through future employment in the modern sector will increase. But the economy has not been able to generate enough employment for the teaming youths in the country.

Furthermore, manpower population ratio focuses on the ratio between one type of manpower and a specific population parameter. Following this approach, projections for the teachers demand based on teacher: ratio of pupils and projections for doctors based on doctor: population ratios rely on demographic forecasts and the staffing norms (Wafula, 2018).

Empirically, only a handful of scholars have explained the relationship between manpower planning and unemployment/employment both in developed and developing economies. In Nigeria, Udeorah and Obayori (2020) investigated manpower planning and unemployment from 1995-2017. Specifically, their study ascertained the impact of government education spending on unemployment; as well examine the impact of gross school enrolment on unemployment in Nigeria using Generalized Method of Moments - GMM. The result revealed that government expenditure in education has

positive and significant relationship with unemployment rate. However, gross school enrolment has negative and significant relationship with unemployment rate.

Adiele and Ibietan (2017) examined manpower training and productivity in the Nigerian public sector using political economy method. Findings from the study revealed that inadequate funding, miserable coordination of training activities and inappropriate methodology for delivering training programmes are main hindrances to public sector productivity.

Ding (2014) used a panel of 34 OECD countries for the time 1980 to 2010 and a two-way fixed effect model for panel data subjected to endogeneity test and perseverance test to examine the association between welfare expenditure by government and unemployment outcomes. The result revealed that wellbeing spending as a percentage of GDP has a positive significant impact on unemployment outcomes. Spending on health care has slightly positive significant impact on unemployment rate, public social spending on other social services offered by government has insignificant impact on unemployment.

As noted by Grimaccia and Lima (2013) who investigated the causal relation between employment rates and public expenditure in education. Considering the 27 European Union countries, the model showed that – in countries where investments in education have been higher–in average of the last 10 years – also the employment rate has been higher.

Mayer, Moyen and Stähler (2010) submitted that in a New Keynesian DSGE model with frictions and liquidity in the labour market constrained consumers total unemployment is likely to rise because of non-persistent government expenditure shock. Moreover, the collection of asset-holding families react in a different way from the group of liquidity constrained consumers meaning that the rate of unemployment is likely to reduce for asset-holding families, while it increases among liquidity constrained consumers. The major driver of their outcome is the marginal utility of consumption which moves in opposite directions for the two types. Regarding the model's parameters, they discovered that the size of the fiscal multiplier increases with (i) extremely sticky prices, (ii) great degrees of risk aversion, (iii) low convexity in labour disutility (iv) great replacement rates, and (v) debt-financed expenditures.

Biagi and Lucifora (2008) collected data on labour force from 10 European countries to examine how education has impacted on unemployment. The researchers argued that, holding other factors (e.g., demographic variables or the business cycle), higher education attainment will reduce unemployment rates.

Boarini and Strauss (2007) estimated private Internal Rates of Return (IRR) to third degree (tertiary) education for men and women in twenty one OECD countries from 1991 to 2005. The researchers computed the IRR by estimating labour market premia on cross-country similar data individual-level data. Then they adjusted the Labour market premia for fiscal factors and education cost. The result revealed that returns to an extra year of third degree education are, on average, above 8 percent and during the period of study, vary in a range from 4 to 15%. Also, across gender, the IRR are relatively homogenous and generally, a slightly increasing trend was observed.

In Sweden, Meghir and Palme (2005) investigated the impact of a school reform, which took place in the 1950s, on educational achievement and incomes. They discovered that educational achievement and incomes of people whose fathers had just compulsory education increased during the reform

Furthermore, according to Blondal, Field and Girouard (2002), in most countries, years of schooling minimizes the risk of unemployment, and hence the employment rate among those with tertiary education

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attainment is higher than among groups with lower levels of attainment.

III. METHODOLOGY

Secondary data from 1995 to 2019 were obtained from statistical bulletin of Nigeria's apex bank, National Bureau of Statistics and World Bank national accounts data to investigate the impact of manpower planning on unemployment in Nigeria. The data consist of unemployment rate in Nigeria to measure unemployment. Also, total government spending on education and gross school enrolment were used to measure manpower planning. This study employed the econometric methods of unit root test, co-integration test, and the Error Correction Mechanism. The study adopted the model of Udeorah and Obayori (2020). That is, the model was cast in agreement with that of Udeorah and Obayori (2020) whose model is in the form UEP= f (GSX, GSE), where; UEP is unemployment rate, GSX is aggregate government spending on education, and GSE is gross school enrolment. Specifically, in this study, the functional relationship between manpower planning and unemployment in Nigeria was established as; UNR = f(TGE, GSE) (i)

The linear form of the model was stated thus;

$$UNR = \psi_o + \psi_1 TGE + \psi_2 GSE + \varepsilon \quad (ii)$$

Where; UNR is unemployment rate, TGE is total government spending on education, GSE is gross school enrolment, ψ_o is intercept parameter, ψ_1- ψ_2 are slope parameters and ε is the error term. The parameter estimates are expected to behave in line with $\psi_1 - \psi_2 < 0$.

Model Estimation Procedure

Augmented Dickey-Fuller (ADF) unit root test proposed by Dickey and Fuller (1979) was used to check for the stationarity properties of each variable. Generally, the ADF test consists of estimating the following regression:

$$\Delta Y_t = \lambda_1 + \lambda_{2t} + \delta Y_{t-1} + \Sigma \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (iii)$$

Where; Y is a time series, t is a linear time trend, Δ is the first difference operator, ε is a pure white noise error term, λ_1 is a constant, λ_2 and δ are parameters and $\Delta Y_{t-I} = (Y_{t-1} - Y_{t-2})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$, etc. The number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term in (ii) is serially uncorrelated. In ADF, we test whether $\delta = 0$ (Gujarati & Sangeetha, 2007).

Afterwards, the Johansen co-integration test was applied to establish whether there is a long-run relationship among the variables. The general form of co-integration is given by

$$y_t = \mu + \Delta_1 y_{t-1} + - - - + \Delta P\, y_{t-p} + U_t \quad (iv)$$

Where; Y_t is an nx1 vector of variables that are integrated of order commonly denoted (1) and U_t is an nx1 vector of innovations. The procedure is that, if co-integration is established to exist, then the next step is the construction of Error Correction Mechanism (ECM) to model dynamic relationship. The ECM indicates the speed of adjustment from short-run equilibrium to long-run equilibrium state. The ECM can be formulated as follows:

$$\Delta Q_t = \psi 1_0 + \Sigma \psi 1_{1t} \Delta Q_{t-1} + \Sigma \psi 1_{2t} \Delta Y_{t-1} + \Sigma \psi 1_{3t} \Delta Z_{t-1} + \delta_1 ECM_{t-1} + \mu_{1-t} \quad (v)$$

Where; Q is the dependent variable, $\psi_1 - \psi_3$ are the slope parameters, Y and Z are the set of explanatory variables, $\delta_1 ECM_{t-1}$ is the coefficient of ECM, Δ is change and μ is the disturbance term. Based on our model in ii, the dynamic (error correction) representation is given below:

$$\Delta UNR_t = \psi_0 + \Sigma \psi_1 \Delta UNR_{t-1} + \Sigma \psi_2 \Delta TGE_{t-1} + \Sigma \psi_3 \Delta GSE_{t-1} + \delta_1 ECM_{t-1} + \mu_{1-t} \quad (vi)$$

Note the variables as earlier defined. In addition, the ECM was exposed to some post - estimation tests in order to affirm the validity of the model. Thus, Wald and normality tests were conducted.

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IV RESULTS AND DISCUSSION

Table 1: Augmented Dickey-Fuller Unit Root Test (1995-2019)

Variables	ADF Test Statistic @ Level	ADF Test Critical Value @ 5% (level)	Order of Integration	ADF Test Statistic @ 1st Difference	ADF Test Critical Value @ 5% (1st Diff.)	Order of Integration
UNR	-1.175460	-2.998064	Not Stationary	-8.965337	-3.004861	1(1)
TGE	-0.076777	-2.998064	Not Stationary	-3.289858	-3.004861	1(1)
GSE	-2.464601	-2.998064	Not stationary	-4.018814	-3.004861	1(1)

Note: UNR, TGE and GSE as earlier defined
Source: *Computed Result from (E-views 9.0)*

The stationarity test result presented in Table 1 revealed that all the variables were stationary at level 1(0). This means that, the variables were differenced once and they became stationary at first difference 1(1). The result of the variables being stationary at first difference 1(1) makes it inappropriate for the application of the Ordinary Least Square (OLS) method, therefore the tests to determine the long run relationship can be achieved with the aid of the Johansen Co-integration test which is presented in Table 2.

Table 2: Johansen Test for Co-integration Test Result

Eigen value	Trace Statistic	5% critical value	Prob. **	Hypothesis of CE(s)
0.660342	37.71025	35.19275	0.0262	None *
0.332821	13.95430	20.26184	0.2926	At most 1
0.205141	5.050979	9.164546	0.2779	At most 2

Source: *Computed Result from (E-Views)*

The Table 2 showed that there is one cointegrating equation because one of the Trace Statistic(s) is larger than critical value at 5%. Therefore, there is a long-run relationship among UNR, TGE and GSE, which prevent them from wandering apart without bound. Given that there is one cointegrating equation, the requirement for fitting in an Error Correction Model is satisfied.

Table 3: Parsimonious Error Correction Model

Dependent Variable: UNR				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.807415	0.276641	2.918638	0.0100
D(UNR(-1))	-0.583635	0.229754	-2.540257	0.0218
D(UNR(-2))	-0.630495	0.183224	-3.441112	0.0034
DLOG(GSE)	0.179543	0.157296	1.141437	0.2705
DLOG(TGE)	0.069458	0.486680	0.142717	0.8883
ECM(-1)	-0.163855	0.234437	-0.698933	0.4946
R^2 = 0.620842. Durbin-Watson stat = 1.873762. F-statistic = 5.239754. Prob(F-statistic) = 0.004881.				

Source: *Computed Result using E-Views 9*

Table 3 suggested that the dynamic model is a good fit. The reason is that the difference in predictors account for 62 percent of the overall disparity in the model looking at the R^2. Put differently, the R^2 value of 0.620842 revealed that the variation in unemployment rate explained by total government spending on education and gross school enrolment is 62 percent. Therefore, the explanatory power of the model estimated is 62 percent. The Durbin Watson (DW) value of 1.873762 which is approximately 1.9, suggests that the model is free from autocorrelation.

Moreover, in Table 3, it is apparent that the coefficients of total government spending on education (TGE) and gross school enrolment (GSE) are positively related with unemployment rate. This means that a percentage increases in total government spending on education and gross school enrolment will increase unemployment rate in Nigeria. This is not consistent with theoretical expectation in economics. At the same time, the absolute values of the t-statistic for the slope

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coefficients are not significant at conventional level (i.e., 5%). Thus, the study upholds that total government spending on education and gross school enrolment do not have significant relationship with the rate of unemployment in Nigeria during the period of study. This means that schooling does not minimize the risk of unemployment in Nigeria. Also, the wrong sign displayed by total government spending on education may be because, the attention given to educational sector by the governments (i.e., federal, state and local) is low in terms of investment in the sector. Sometimes, funds budgeted for projects in the educational sector including building of class rooms, laboratories, purchase of teaching and learning aids including computers, etc. are mismanaged and misappropriated leading to a deterioration in quality, uncontrolled growth in educational institutions, failure to engineer a match between educational output and national needs, etc. The finding of this study supports the empirical work of Udeorah and Obayori (2020) that analyzed the impact of manpower planning on unemployment in Nigeria using GMM method and affirmed that in Nigeria, total government expenditure on education and gross school enrolment have positive relationship with unemployment.

Post Estimation Test

Wald and normality tests were applied in order to confirm if the estimated model is valid for policy recommendation.

Table 4: Wald Test Result

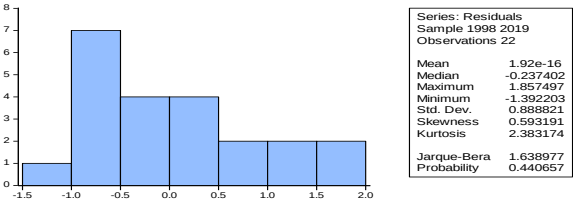
Wald Test:
Equation: Untitled

Test Statistic	Value	Df	Probability
F-statistic	23.95300	(2, 16)	0.0000
Chi-square	47.90600	2	0.0000

Source: *Authors' Computed Result from (E-views 9.0)*

The result in Table 4 revealed that the F-statistic is approximately 24 and the probability value of 0.0000 is less than 0.05 at the conventional 5 per cent level. Therefore, all the explanatory variables included in the estimated model are jointly significant in explaining unemployment rate in Nigeria over the data period.

Normality Test Result



Source: *Authors' Computed Result from (E-views 9.0)*

The post-estimation test result revealed that the residuals are normally distributed because the probability value of the Jarque- Bera statistic of 0.440657 is greater than the 0.05% conventional level.

V. CONCLUSION AND RECOMMENDATIONS

This study examined the impact of manpower planning on unemployment in Nigeria, using cointegration and ECM techniques to analyze the secondary data obtained from the statistical bulletin of Nigeria's apex bank, National Bureau of Statistics and World Bank national accounts on unemployment rate, total government spending on education and gross school enrolment. The result revealed that total government expenditure on education and gross school enrolment have positive and insignificant relationship with unemployment rate. It was also observed that the failure of manpower planning in Nigeria to meaningfully reduce unemployment is because the educational sector is facing funding deficit, leading to deterioration in quality, uncontrolled growth in educational institutions, etc. It is clear that without a good dose of investment in quality education, it would be difficult to sustain growth with employment essential for

poverty reduction in Nigeria. Based on these findings, the study suggested that government should ensure adequate funding of education in Nigeria. Moreover, given that education is complementary to every sector of the economy, and education of the right quality and quantity is expected to catalyze skill sets, technology and innovation in the service of development and in the process of reducing unemployment and poverty; government should take advantage of the high interest of Nigerians in academic skills to expand the economic base. This can be done by providing appropriate policies that will increase and sustain manpower development. Such policies should include; compulsory primary and vocational education for all citizens - commitment to mass education at all levels without compromising on quality, strengthen and modernize the national skill development/training system (Industrial Training Fund-ITF, and National Directorate of Employment - NDE). Therefore, enough funds should be allocated to education for proper utilization of potential productive and social benefits that will help to reduce unemployment and boost the economy.

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