Human Resource Expenditure and Productivity of Universities in Nigeria

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Abstract

This study examined the relationship between human resource expenditure and productivity of Universities in Nigeria. It investigated the effect of salaries and wages, training and development costs (used as proxy for human resource expenditure) on the productivity of universities. Secondary data was collected for a period of ten years from 2002 to 2011. Multiple regression analysis was used to test the hypotheses, using productivity of universities (as the dependent variable) and salaries and wages, and training and development costs (as independent variables). An investigation was undertaken into the possible relationship between productivity of universities (PRODU) and two components of human resource expenditure: salaries and wages (SAWAS), and training and development cost (TADEC). The findings of this study showed positive correlation between human resource expenditure and productivity of universities. The study recommended that the management of universities in Nigeria should adopt staff welfare and incentive schemes to motivate their workforce to improve productivity in the university system.

Keywords: Human resource, Expenditure, Productivity, Salaries and wages, Training, Development, Incentives.

INTRODUCTION

Even though the accounting profession has not made it imperative for every financial reporting entity to reflect their expenditure in human resources on their statement of affairs as it is the case with other physical assets and liabilities, human resource occupies the centre stage in the productive process of every organization. This is because human resource capital handles the organizational functions of planning, directing, managing, coordinating and controlling thereby manipulating the other productive assets of the firm such as land, buildings, plants and machines to produce value added goods and services. Unfortunately, as important as human

capital is to an organization, it is not treated like other assets since it has no stated value in the accounting records of the firm.

Proponents of human resource accounting have therefore argued for the treatment of human resource capital just like other assets. According to Flamholtz, Bullen and Hua, (2002) human resource accounting requires the treatment of workers as other capital assets to be given value in the financial records of the firm. In this way expenditure on human resource which can be seen to create a stream of future values to a firm should be capitalized; and expenditure on human resource deemed to create only current value should be expensed. Managers in every organization will view human resource capital implications in decision making with more importance if human resource accounting can show that investment in human resource will enhance the organization's performance (Flamholtz et al, 2002).

The development of human resources is fundamentally pivotal to the take-off of any economy in the world. Modern economic trend placed high emphasis on the conscious and deliberate enhancement of human resources with a view to harnessing full employment, increase productivity, reduction in poverty and achieve a broad economic growth and development. Underdeveloped and untapped human capital has been the bone of sub-Saharan Africa economic take-off and the basis for our high level of poverty. Human capital or knowledge-based technology is considered as an engine of growth and economic transformation. Nigeria's dream to be among the twenty most developed countries in the world by the year 2020 would not realized if priority attention is not given to human capital development. The University system occupies an important position to produce the needed human capital for the development and economic take-off of Nigeria. Productivity of Universities is measured by the number of graduates turned out annually by the system (output). This is in line with the more generally accepted definition that productivity is a quantitative relationship between output and input, as posited by Iyaniwura and Osoba (1983), and Antle and Capalbo (1988).

The National Policy on Education (NPE) of 1988, as cited in Lawanson (2009), enunciated the importance of higher education in national development in Nigeria. But despite the perceived importance of educational training as a factor in human resource development, and heightened demand for University autonomy and increase government funding no study has been carried out in Nigeria to investigate the influence of human resource expenditure on the productivity of Universities.

Furthermore, the lack of consensus in the research findings of previous studies showed the existence of a research gap. This study attempted to fill that gap. Therefore, the extent to which human resource expenditure influence productivity was determined by some variables, such as salaries and wages, and training and development costs. The influence of these variables on productivity, represented here by the number of graduates produced by the University system was examined in this study.

The main objective of this study was to examine whether there is any significant relationship between human resource expenditure and productivity of Universities in Nigeria. More specifically, this study examined the relationship between salaries and wages; training and development and productivity of universities in Nigeria. This formed the basis of the hypotheses tested.

The rest of the paper is structured as follows: Section two deals with the review of related literature; while section three presents the methodology adopted for the study. The findings

and discussions are presented in section four, while section five provides the conclusion and recommendations.

REVIEW OF RELATED LITERATURE

This section provides the review of related literature which gave the background foundation for the study to examine the relationship between human resource expenditure and productivity of universities in Nigeria. The review covered the theoretical framework and empirical literature.

Theoretical framework

Three theories such as human capital theory, resource based theory and productivity theory were identified as the theoretical backbone upon which this study is anchored. These theories are reviewed below:

According to Becker (1964) under the human capital theory, people constitute the organization's human capital. Human capital just like every other asset owned by a firm has value in the market place given conditions of stable employment. However, unlike other assets, the potential value of human capital can only be fully realized with the co-operation of the person. Extending the argument, Becker (1964) posited that human capital in management literature refers to the productive capabilities of people. Skills, experience, and knowledge have economic value to organization because they enable it to be productive and adaptable (Becker, 1964). Mathis and Jackson (2006) agreed with this view when they defined human capital as the collective value of the capabilities, knowledge, skills, life experiences, and motivation of the workforce in an organization. Flamhotz and Lacey (1981) argued that all costs related to eliciting productive behavior from employees in the form of incentives related to motivating, monitoring and retaining them constitute human capital investments made in anticipation of future output.

Wright and McMahan (1992) in making a case for resource-based theory contended that human resources can provide a source of sustained competitive advantage when four basic requirements are met. First, they must add value to the firm's production processes. Second, the skills that the firm seeks must be rare. Third, the combined human capital investments a firm's employees represent cannot be easily imitated. The belief that individual employee performance has implications for firm-level outcomes has been prevalent among academics and practitioners for many years. However, as scholars have begun to agree that collectively, a firm's employees can also provide a unique source of competitive advantage that is difficult for its competitors to replicate. The resource base theory of human resource management looks at human capital just like every other assets of the firm. In the RBV approach expenditure in human resource is seen as an investment rather than a cost to be expensed (Beardwell & Holden, 2003).

Eatwell and Newman (1991) defined productivity as a ratio of some measure of output to some index of input used. Put differently, productivity is nothing more than the arithmetic ratio between the amount produced and the amount of any resources used in the course of production. Samuelson and Nordhaus (1995) argued that this conception of productivity goes to imply that it can indeed be perceived as the output per unit or the efficiency with which resources are utilized. In effect, productivity becomes the attainment of the highest level of performance with the lowest possible expenditure of resources. It represents the ratio of the quality and quantity of products to the resources utilized.

Public Sector Productivity

The concern for productivity in the public sector has increased with intensity, culminating in the establishment of the National Productivity Center under the Federal Ministry of Employment, Labour and Productivity posited (Osoba, 1999), (Umeh & Usman, 2000). The primary duty of the National Productivity Center, as spelt out by Decree No. 7 of 1987, is to stimulate productivity consciousness among Nigerian workers and to develop and supply the right technical solutions to productivity problems across all sectors of the national economy. According to Eghe (2001) and Choudhary (2004) it was against this background that the federal government of Nigeria resorted to the introduction of welfare packages as a motivation strategy for higher performance, productivity and improvement in government establishments.

Review of empirical studies

Oluwatobi and Ogunrinola (2011) studied the impact of government expenditure in education and health (human capital development) on economic growth in Nigeria. The study used secondary data collected from the Central Bank of Nigeria (CBN) annual report and Statistical Bulletin in 2009 for the period 1970 to 2008. They employed the augmented Solow model to determine the linearity link between human capital development and economic growth, using statistical tests such as: Unit Root test; Johansen co-integration technique; error correction model; the Augmented Dickey Fuller (ADF) and Philip-Peron (PP) test to analyze data. The findings revealed that recurrent expenditure was positively related to real output; while capital expenditure was negatively related to real output.

Pirzada, Hayat, Ikram, Ayub, and Waheed (2013) studied the effect of human resource mgt practices and labor turnover, productivity and corporate financial performance in Pakistan. Data collected by questionnaire, was analyzed using Statpro Software and descriptive statistics. The findings revealed that organizations in Pakistan, among others, lacked performance management systems, benefit and compensation programs, and human resources information management systems.

Adetoso, Akesinro and Oladejo (2012) studied the effect of human capital development on economic growth and development in Nigeria. Secondary data for the period 2000 – 2009, collected from CBN annual reports Statistical Bulletin was analyzed with techniques such as correlation and descriptive statistics. Their findings revealed that investment in education and health positively related to economic growth and development in Nigeria.

Taiwo (2010) studied the impact of work environment on workers' productivity. Primary data from four oil and gas companies in Lagos were collected through a structured questionnaire. The hypotheses of the study were tested using descriptive statistics and T-test. The study found that the work environment in oil and gas companies in Lagos was unfavorable to workers' productivity.

Adelakun (2011) examined the relationship between human capital development and economic growth in Nigeria. The study employed Ordinary Least Squares (OLS) technique to analyze the study data, and found that human capital development had a strong positive relationship with economic growth. In a similar study, Jaiyeoba (2015) investigated the relationship between human capital investment (proxy by investment in education and health) and economic growth in Nigeria. The study employed trend analysis, Johansen co-integration and OLS techniques to test time series panel data collected for period from 1982 – 2011. The findings revealed that there was a long-run relationship between government expenditure on

education and health and economic growth. In a study linking human resource development and performance in the banking industry of Ogun State in Nigeria, Sowunmi, Eleyowo, Salako and Oketokun (2015) found significant positive correlation between expenditure on human development and financial performance. The study used primary data collected from sampled commercial banks' staff, and secondary data from the published financial statements of commercial banks. OLS technique and Chi-square were used to analyze data.

Siebers, et al (2008) carried out a literature review of research findings of past studies conducted on human resource management practices and productivity. Their study revealed that research findings on this subject by scholars were mixed. This means that: some studies in past had found a positive relationship between human resource management practices and productivity; while some found a negative relationship; yet some other studies found that no relationship exists between human resource management practices and corporate productivity. This lack of consensus among the study findings of researchers in the past led them to recommend further researches in this field.

METHODOLOGY
This study adopted a longitudinal research design by making use of secondary time series panel data. The study methodology is presented in this section.

Variables of the study
The primary purpose of this study was to investigate the relationship between human resource expenditure and the productivity of Universities in Nigeria. Two components of human resources expenditure identified as the independent variables are salaries and wages, (SAWAS) and training and development costs (TADEC). The productivity (PRODU) of universities is measured by number of graduates turned out by the university (output).

The study involved ten Universities in Nigeria. First, six Universities were selected; one each from the six geo-political zones of Nigeria and among them are two first generation, two second generation and two third generation Universities in Nigeria, according to a categorization by (Ajayi & Ekundayo, 2008). Secondly, four Universities were randomly selected to be included in the study, among them are, two state and two private Universities.

This study used annual data for the period 2002 to 2011, collected from the University System Annual Review Meetings (USARM) reports of the National Universities Commission. However, these ten universities qualified for inclusion in this study because these universities had data on the independent variables as well as the dependant variable, relevant and fitting for the model employed in the study.

A multiple regression analysis was therefore conducted with productivity (PRODU) as the dependent variable, while the independent variables are salaries and wages (SAWAS), and training and development cost (TADEC).

Model Specification
A regression model was developed to capture the relationship between human resources expenditure and productivity as follows:

PRODU = f (SAWAS, TADEC).

The above regression model was translated into a regression equation as stated below:

PRODU = b0 + b1SAWAS + b2TADEC + U

Where PRODU – is productivity; output of graduates from Nigerian Universities

This is the dependent variable.

SAWAS – is annual salaries and wages

TADEC – is annual training and development cost

b^0 – is the unknown constant of the equation to be estimated

B^1 and b^2 - are the unknown coefficients of the independent variables to be estimated

U – Is the error term of the regression equation?

Analysis Technique

The Multiple Regression Technique was used for the analysis of data. The technique possesses the unique property of Best Linear Unbiased Estimator (BLUE) when compared to other estimating techniques. The Multiple Regression Estimator also possesses the desirable qualities of un-biasness, consistency and efficiency. The statistics tested for the variables in the regression equation include coefficient of determination ($R2$), T- test, F-test and Durbin Watson (DW) statistics. The Statistics Package for Social Sciences (SPSS) 19 for windows is the statistical computer software used to run the analysis.

Where: Coefficient of Determination ($R2$) measures the explanatory power of the independent variables on the dependent variable; Student T-Test measures the individual significance of the estimated coefficients of the independent variables; F-test tests for the overall statistical significance of the models, which was used to generalize the hypotheses; and the Durbin Watson (DW) Statistics test tests for the auto correlation in the regression equation.

FINDINGS AND DISCUSSION

Table 1: Average aggregate value of human resource expenditure and productivity in 10 selected Universities for the period 2002-2011

Dependent Variable (productivity)		Independent Variables (human resource expenditure)	
Year	PRODU (000)	SAWAS ₦ '0 millions	TADEC ₦ '0 millions
2002	24	40	18
2003	21	49	24
2004	18	52	30
2005	20	64	36
2006	26	70	42
2007	30	73	36
2008	34	76	40
2009	36	79	42
2010	38	82	44
2011	40	85	46

Source: University System Annual Review Meeting (USARM) Reports of various Universities for the year 2002-2011, collected from NUC.

Interpretation

The table above depicts the average aggregate value of human resource expenditure in tens of millions of Nigerian Naira (N) for salaries and wages (SAWAS), and Training and Development Cost (TADEC). These variables are matched against the movement in productivity (PRODU) expressed in thousands for the 10 Universities selected for the study for the years 2002-2011.

Table 2: Regression of Results of PRODU on SAWAS and TADEC in 10 selected Universities 2002-2011

Variable	Estimated Coefficients	Standard Error	T – Statistic	P - Value
constant	19.580	.604	32.416	.000
SAWAS	.697	.008	2.832	.005
TADEC	.227	.025	9.035	.000

Dependent variable: Productivity (PRODU)
R^2 = 0.810
R^2 (adj.) = 0.805
F-Statistic = 45.765
DW = 2.004
Source: Windows SPSS 19.

Interpretation of results
Result of multiple regression analysis (Table 2)
Table 2 above shows the summary of the regression results, that is, the correlation between human resource expenditure and productivity. From the result it is found that all the independent variables are significantly related to the dependent variable. The findings of this study agrees with the research findings of (Adetoso, Akesinro & Oladejo, 2012); (Adelakun, 2011); and (Sowunmi, Eleyowo, Salako & Oketokun, 2015).

- The explanatory power of the model as informed by the R^2 0.810 or 81% is statistically significant given the high value of the F – statistic (i.e. 45.765). The Durbin Watson (DW) value is 2.004, which fall within the region of autocorrelation. This is understandable given the nature of the independent variables, but this unlikely to have any adverse effect on the results of the regression.
- The regression model demonstrates a good fit given that about 81% of the variation in the dependent variable (PRODU) is jointly explained by changes in the behavior of SAWAS and TADEC. The relatively high adjusted R^2 of 0.805 or 80.5% shows that the model is a good fit.
- Salaries and wages have statistically positive significant relationship with productivity. A unit change in Salaries and wages leads to .697 units change in the productivity a University.
- Also, Training and development cost has statistically positive significant relationship with productivity. A unit change in Training and development Cost leads to .227 units change in productivity of a University.

CONCLUSION AND RECOMMENDATIONS
This study examined the relationship between human resource expenditure and the productivity of Universities in Nigeria. Following the statistical analysis of the data, the findings revealed that human resource expenditure has a positive significant relationship with productivity of Universities n Nigeria. This means that through the effective and efficient planning and management of human resource expenditure, the productivity of Universities in Nigeria can be controlled, determined and enhanced.

Thus, salaries and wages, and training and development cost as components of human resource expenditure have significantly influenced the productivity of Universities in Nigeria. Therefore the productivity of Universities in Nigeria can be improved through the adoption of good workers compensation system, welfare and incentive packages, as well as human resources management practices by the management of Universities.

Based on the findings of this study, the researchers made the following recommendations:

I.   Management of Universities should adopt good compensation systems, welfare, and incentive packages as this would positively motivate workers and consequently improve productivity.

II. Management of Universities should use human resource management programs to assist their employees in career planning. This would encourage employees to take more responsibility for their own personal development. This would in turn enhance productivity.

III. Management of Universities should see job security as an important part of human resource management practices. Employees who perceive that their jobs are secure are also more motivated, show higher level of commitment and by themselves would suggest ways to improve productivity.

CONTRIBUTION

This is one of very few studies which have investigated the causality link between human resource expenditure and the productivity of universities (public sector non-profit agencies) in Nigeria The findings of this study are important to academics in their unending enquiry into the social and management sciences; to the management of universities in Nigeria for the planning and control of output as well as planning and managing the human resources. This study is also useful to government in determining investment on higher education.

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