

A Model for Predicting Employee Productivity in Nigeria

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ABSTRACT

Employee productivity is a key determinant of business success. When comparing the level of advancement in productivity between the private and government organization in Nigeria, it is quite obvious that the government establishment is behind. Thus, identifying the productivity factors relevant to government employee and establishing the relationship between the various productivity factors and government employee productivity will present an opportunity for enhancement. In this study, the factors affecting government staff productivity in Nigeria were assessed through a cross-sectional survey design using ELDI Awka as a case study. A random sampling technique was adopted and 98 ELDI employees were enrolled into the study. The quantitative approach used was regression analysis and statistical package for social sciences [SPSS] software window version 22 was used to process the large volume of data gathered. Literature review of the classical management theories, contemporary research and field work on employee productivity led to the identification of eight factors affecting the productivity of government employee in Nigeria as Staff Training (X_1), Time Management (X_2), Use of modern Equipment (X_3), Employees' Attitude towards work (X_4), Leadership Style (X_5), Orientation/Duty Awareness (X_6), Staff Welfare (X_7), and Academic/Professional Qualification (X_8). All the factors significantly affect employee productivity when considered together with 0.001 significant level of confidence. A model of the relationship between the Employees' productivity (dependent variable) and the Productivity factors (independent variables) was derived as: $Y = 7.921 + 0.793X_1 + 0.232X_2 + 0.274X_3 + 0.307X_4 + 0.756X_5 + 0.379X_6 + 0.451X_7 + 0.103X_8$.

Keywords: Leadership; productivity; employee; factors; government

1. Introduction

Every organization has a goal which is either to manufacture goods or render services. To attain this goal, such an organization must have the required factors of production and one of the most critical factors of production is human resources. Sultana et al. [1] defines productivity as the capacity to accomplish certain tasks base on specified accuracy standards and time. Thus, employee productivity can be assessed in terms of the efficiency of employees in doing their tasks by comparing their output which could be the quality of goods or services produced by the organizations [3] to input over a specific period [2]. Also, Mathis and Jackson [4] stated that employee productivity is a function of the quantity and quality of work done by an employee taking into consideration the costs of resources being used to accomplish such task. According to Kien [5], increasing employee's productivity gives competitive advantage and boost organization's income level in addition to fulfilling stakeholders' value propositions. The major concern of management in any organization is exploring the possible ways of enhancing employee productivity. Chebet [6] argues that investigating and understanding those factors that influence the employee performance and productivity is of enormous concern in every economy. Despite the important of this topic, very few studies have been carried out to determine the factors affecting employee productivity and the relationship between these factors and employee production in Nigerian context.

1.1. Objective of Study

The broad objective of the research is to assess the factors affecting employee productivity in Nigeria.

The specific objectives include:

- i. Identification of factors affecting staff productivity in Nigeria
- ii. Assessing collective effect of these factors on staff productivity
- iii. Establishing a relationship model between employee productivity and the various factors affecting productivity

1.2. Research Questions

The researcher posed the following questions to himself based on the statement of problem and objectives of the study,

What are the factors that affect employee productivity in Nigeria?

- i. To what extent do all the factors collectively affect staff productivity?
- ii. What is the relationship between employee productivity and the productivity factors?

The above questions will be answered based on facts and figures gathered while conducting this study

1.3. Statement of Hypothesis

On the basis of the statement of problem, objective and research questions of the study, the researcher also formulated the following hypothesis to be tested:

Ho1 There is no significant effect of the collective factors on staff productivity

1.4. Significance of study

The findings of this research work will be very useful to the Ministry of Labour and Productivity as it will help in resource allocation for optimum performance. Also, it will guide the heads of government establishment in Nigeria in formulating human resource policies that will enhance productivity and boost revenue generation. Finally, the study will give other researchers in related field insight on the factors affecting government employee productivity in Nigeria and serve as a bench mark for future work.

2. Literature Review

2.1. Research Frameworks

The theories applicable to this research are Classical Approach and Motivation Theory. The Classical Approach theory emphasizes training on the job and the provision of monetary incentives as a means of raising employee performance. Using this method, workers are made to believe that they will get compensation commensurate with their input. Employee's compensation will be maximum when the peak performance is reached.

Motivation theory states that motivation is the driving force behind human behaviour. Hatch [7] describes Motivation as a managerial process of engaging employees into behaviour whose objective is to drive the organization to effectively achieve its goals. They explained that the management needs to know how best to elicit the cooperation of staff and direct their efforts to achieving the goals and objectives of the organization. According to the authors, people have to be interested enough in what they are set out to do in the organization if they are to perform in the way they are expected to. Motivation could be extrinsic or intrinsic. A tangible reward (such as salary and fringe benefits, security, promotion, contract or service) leads to External Motivation whereas Intrinsic Motivation is the result of psychological rewards which include appreciation, recognition and training to boost employees' capacity. For any organization to become competitive, it must possess the skills needed for its sector. This means that organizations whose leaders go out of their way to have their employees acquire the necessary skills will ultimately do better than others.

Gandolfi and Stone [8] stated that there is no explicit definition of leadership style. Nevertheless, there is a common agreement of the great effect of leadership style on staff productivity. Leadership style has become a global topic [9] and researchers have settled on five main styles which are Autocratic Leadership, Democratic Leadership, Laissez-faire Leadership, Transactional Leadership, and Transformational Leadership style [10].

The Autocratic Leadership style lays less emphasis on worker's welfare. In this case, the top managers make all the decisions [11]. They structure the work path and develop ways of accomplishing the organization's goal without the employees' involvement. This kind of leadership is the direct opposite of Democratic Leadership Style. It leads to employees' dissatisfaction and disloyalty since they were not given room to participate in the decision making process [12].

The concept of Transactional Leadership Style is based on rendering service for remuneration and focus on the benefit of giving incentives or punishments as a means of motivating employees [13].

The Laissez-faire Leadership approach gives priority to the freedom of employees. Here, the leader depends on the employee to take decisions and establish objectives. This has some

negative impact in productivity as some employee have low level of intelligence, abilities, competence and commitment which could lead to wrong decision [13].

The transformational Leadership Style focus on ways to boost the moral and motivate subordinates to achieve the organizational goals. It also makes employee proactive and enhance their problem-solving skills by teaching them base on expected future challenges and threats. A transformational leader believes in giving support and inspiration to employees which leads to increase in productivity.

A close look at the available literature reveals that there are many factors affecting employee productivity and several theories have been put forth to explain this phenomena. However, not one scholar has determined the collective impact of the various factors on the productivity of government employee in Nigeria and establish a relationship model between them.

2.1.1.Factors that influence government employees' productivity in Nigeria

The employees' productivity is affected by many factors. Generally, employers attract and retain highly productive staff by paying good salary. However, most managers presently focus on how to increase employee productivity without incurring additional costs. Literature review of the classical management theories, contemporary studies and field work led to the identification of eight factors which have both individual and collective impact on the productivity of government employees-

Staff Training:

Organizational activity with the aim of improving employee competency levels in order to boost their efficiency and effectiveness.

Leadership Style:

Manager's or supervisor's style of providing direction to the team they supervise or implementing plans and decision making processes in their day to day job roles.

Staff Welfare:

Welfare scheme refers to the organization's plan aimed at ensuring the wellbeing of its employee. The level of commitment of a staff towards achieving the organization's goal is affected by the organization's ability to meets the worker's need.

Time management:

This refers to the ability of the employee to discharge on time and satisfactorily the assigned task. Time is a crucial asset and when it is not properly utilize, productivity is adversely affected.

Employee attitude towards work:

This focus on the employee's mind-set as they discharge their duty. Most government staff in Nigeria lack commitment since salary does not depend on employees' output.

Orientation/Duty Awareness:

This deal with the provision of a clear job definition and the necessary information in line with the management expectation as it concerns the activity of each staff. Research has shown that employees who have a comprehensive knowledge of the task to be carried out and the scope of activity; tend to be more focus and as such, more productive than others.

Academic/Professional Qualification:

This is the level of education and specialized skill attained by an employee. Although academic qualification is important in employee's performance, it is not always a decisive factor on the productivity of employee as experience together with accumulated training affect the competence of an individual.

Use of modern Equipment:

Advancement in Technology has led to the manufacturing of modern tools and machines which have more capacity to do work than the dated ones. Availability and efficient use of such tools will enhance production. One of the major challenges facing most government establishment in Nigeria is poor funding which made it difficult to purchase modern tools and train staff on how to operate them.

2.1.2. Conceptual framework

Research framework is a framework that builds from a combination of wide range of ideas and theories and helps studies identify problems, develop questions and search for relevant literature [14]. Figure 1 presents the conceptual framework of this research. The model included nine variables, eight of which are independent (Staff Training, Use of modern Equipment, Employees' Attitude towards work, Time Management, Leadership Style, Orientation/Duty Awareness, Staff Welfare, and Academic/Professional Qualification) and one dependent, namely Employee productivity. Conceivably, these eight variables affect the government employee productivity in Nigeria and have been presented in the hypotheses developed.

The first three factors (Use of modern Equipment, Staff training and Orientation/Duty Awareness) were affirmed in similar work by Alinaitwe et al. [15] whereas the next five; Leadership Style, Time management, Academic/profession Qualification and Employees' welfare were employed by Enshassi [17]. It is expected that this research will put the correlation between Employees' productivity and the factors above.

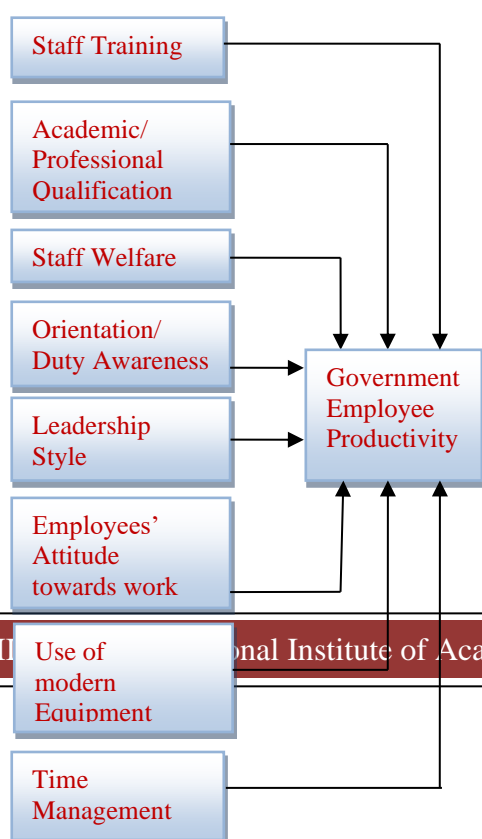


Figure 1: Conceptual framework

2.2 Contribution of Related Works and Research Gap

A significant amount of research has been carried out to assess the factors that affect the employee productivity. Studies carried out by the Centre for Construction Industry Studies (1970-1998) by Haas C T et al. [19] indicated that technological advances appear to have a big role in increasing productivity rates. The studies tackled historical comparison of technological innovation in manufacturing and construction and its impact on productivity. The outcome is that productivity in the construction industry is enhanced by more effectively leveraging technology.

Alinaitwe et al. [15] conducted a survey of building projects in Uganda and ranked the major factors affecting productivity according to the weight of their impact as; lack of skills, breakdown of tools / equipment and incompetent supervision.

Also, Enshassi [17] in his study of the factors that affects labour productivity in Gaza, grouped factors that have negative impact on productivity and ranked them in order of their importance as: Materials and Tools, Supervision and Leadership, Quality and Time Factors. However, the impact on Employee productivity of the individual Employee productivity factors was studied in isolation. Also none of the existing literature established a relationship model between employee productivity and the identified employee productivity factors. From the literature reviewed, it is quite obvious that there is need for the development of assessment approach that gives an objective measurement of the Government \employee productivity in Nigeria. The aim of this work is to proffer solution to this challenge.

3. Research Methodology

The primary source of data used in this research work was questionnaire while the secondary source of data includes data from the Human Resources Department as well as data from the researchers in related topical issues. The questionnaire consisted of 3 sections. Section A elicited respondents' demographic characteristics such as age, gender, educational qualification and category (i.e. Technical or Non-Technical). Section B and Section C contain questions asked to determine the employees' view of the factors affecting staff productivity in Nigeria.

To obtain the sample size of the targeted population, Yamani's formula (1967) expressed as; $n = \frac{N}{1 + N(e)^2}$ was used. Where "n" represent the sample size, "N" is the size of population (the number of Staff in ELDI), and "e" is the allowable error (0.05). The total number of Staff is 130. Applying these values to the equation, the sample size is calculated as; $n = \frac{130}{1 + 130(0.05)^2} = 98$

In all, 98 questionnaires were distributed to the personnel but 60 (61.2%) copies were retrieved and used for the analysis. The variables used to measure the influencing factors using the 5-point Likert scale were coded as: Strongly Disagree(SD)-1, Disagree(D)-2, Neither Agree nor Disagree(N)-3, Agree(A)-4 and Strongly Agree(SA)-5. Data collected were subjected to multiple regression analysis using the SPSS 22 (Statistical package for Social Sciences) software. The relationship model is expressed as:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + e \quad (1)$$

Where X_1 = Staff Training

X_2 = Time Management

X_3 = Use of Modern Equipment

X_4 = Employees' Attitude towards work

X_5 = Leadership Style

X_6 = Orientation/Duty Awareness.

X_7 = Staff Welfare

X_8 = Academic and Professional Qualification

3.1. Data Presentation and Description

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.552 _a	.649	.481	3.140

Source: FIELD WORK

Table 2: ANOVA of Sample Data

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	309.355	8	38.669	3.921	.001 ^b
Residual	424.088	43	9.863		
Total	733.442	51			

Source: FIELD WORK

Table 3: Model Coefficients matrix

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.921	7.782		1.018	.314
Staff Training	.793	.304	.379	2.612	.000
Time_Management	.232	.338	.095	.686	.046
Use_of_Modern_Equipment	.274	.273	.164	1.002	.322
Employees' Attitude_Towards_Work	.307	.422	.110	.728	.027
Leadership_Style	.756	.433	.294	1.746	.000
Orientation_and_Duty_Awareness	.379	.365	.173	1.036	.306
Staff Welfare	.451	.267	.275	1.691	.008
Academic_and_Professional Qualification	.103	.129	.514	3.894	.058

Model	95.0% Confidence Interval for B	
	Lower Bound	Upper Bound
1 (Constant)	-7.772	23.614
Staff Training	-1.406	-.181
Time_Management	-.450	.915
Use_of_Modern_Equipment	-.278	.826
Employees' Attitude_Towards_Work	-.543	1.157
Leadership_Style	-.117	1.629
Orientation_Duty_Awareness	-.358	1.115
Staff_Welfare	-.990	.087
Academic_Professional Qualification	.242	.763

a. Dependent Variable: Staff Productivity.

Source: FIELD WORK

3.1 Relationship Model Estimation

In estimating the model, the data gathered were subjected to multiple regression analysis. The result obtained from the multiple regression analysis is as follows: $R=0.552$, $R^2 =0.649$, adjusted $R^2 =0.481$, Standard error of the Estimate = 3.140, $F = 3.921$ and $Sig=0.001$. Using the Model Coefficient Matrix in Table 3, we obtain the equation (2)-the relationship model:

$$Y= 7.921 + 0.793X_1 + 0.232X_2 + 0.274X_3 + 0.307X_4 + 0.756X_5 + 0.379X_6 + 0.451X_7 + 0.103X_8 \quad (2)$$

3.2 Model Interpretation

The coefficient of regression measures the average change in the variable, Y (Employees' productivity) as a result of a unit change in X (Factors affecting employees' productivity) when all other factors are held constant. From the model above we could show that employees' productivity increases (decreases) by:

0.793 for every unit increase (decrease) in Staff Training;

0.232 for every unit increase (decrease) in Time Management;

0.274 for every unit increase (decrease) in Use of Modern Equipment;

0.307 for every unit increase (decrease) in Employees' Attitude towards work;

0.756 for every unit increase (decrease) in Leadership Style;

0.379 for every unit increase (decrease) in Orientation/Duty Awareness;

0.451 for every unit increase (decrease) in Staff Welfare;

0.103 for every unit increase (decrease) in Staff Academic/Professional Qualification.

This implies that if the same amount of resources is committed to both staff training and the purchasing of equipment; the investment on staff training will boost productivity to approximately three times as much as that of equipment purchase when every other factor remain constant.

4. Result Discussion

Results are discussed based on the research questions.

Question One: What are the factors that affect employee productivity in Nigeria?

From the literature review as well as the results of test carried out, several factors were discovered to affect the Staff productivity in Nigeria. The factors identified in this research were as follows: Staff Training, Time Management, Use of Modern Equipment, Employees' Attitude towards work, Leadership Style, Orientation/Duty Awareness, Staff Welfare, Academic/Professional Qualification.

Question Two: To what extent do all the factors collectively affect employee productivity?

The test of hypothesis H_01 on this research question showed that collectively all the factors affect the Staff productivity. The conclusion was drawn from the F-test (Table 2) in which value of 3.921 is significant at 0.001 (implying that testing at 0.05 level of significance, the P value of 0.001 is less than 0.05). This shows that in reality the eight factors of Staff productivity adopted as a whole have a significant impact on the employee productivity in Nigeria.

Also, from the table 3(t-test), it can be deduced that X_1 (Staff Training) and X_5 (Leadership Style) are more significant factors affecting government employee productivity. This is because they have significant values of 0.00 and 0.00 respectively. The conclusion drawn from

here is that while eight factors affect Staff productivity collectively, the bulk or main impact is as a result of X_1 and X_5 .

Furthermore, the R-Square value of 0.649 from the table 1 showed that 64.9% of employee productivity in Nigeria is explainable by the factors captured in this research work.

Question Three: What is the relationship model between Employees' productivity and productivity factor?

According to the Model Coefficient Matrix in Table 3, the relationship model between Employees' productivity and productivity factors is:

$$Y = 7.921 + 0.793X_1 + 0.232X_2 + 0.274X_3 + 0.307X_4 + 0.756X_5 + 0.379X_6 + 0.451X_7 + 0.103X_8$$

Where X_1 = Staff Training

X_2 = Time Management

X_3 = Use of Modern Equipment

X_4 = Employees' Attitude towards work

X_5 = Leadership Style

X_6 = Orientation/Duty Awareness.

X_7 = Staff Welfare

X_8 = Academic and Professional Qualification

5. Conclusion and Recommendation

The factors affecting employee productivity in Nigeria were identified as Staff Training, Time Management, Use of Modern Equipment, Employee Attitude towards work, Leadership Style, Orientation/Duty Awareness, Staff Welfare, and Academic and Professional Qualification of staff.

The result of this research showed that the most important factor affecting government employee productivity in Nigeria is Training. This is followed by Leadership Style, and Staff Welfare. On the other hand, Academic/Professional Qualification of staff have the least impact on staff productivity. The value of R-Square of .649 shows that 64.9% of Staff productivity in Nigeria is explainable by the factors captured in this research work.

Recommendation

In line with the findings of this research work, it is recommended that Staff Training and welfare be given priority in resources allocation to boost productivity. Also, adequate resources be committed to developing the leadership skill of the management staff in government establishment. Finally, all the identified factors have 64.9% impact on employee productivity; this implies that several other factors influence staff productivity, it is recommended that further research be carried out to discover the remaining factors not captured in this work.

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