



Human Capital Investment and Productivity of Pharmaceutical Firms in Nigeria

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*This study examined the relationship between human capital investment and productivity of pharmaceutical firms in Nigeria. The study specifically examined the relationship of: staff education/training, pension contributions, staff salaries and wages to cost of sales of pharmaceutical firms in Nigeria. Data of the study were sourced from annual reports of the five (5) sampled pharmaceutical firms. Hypotheses raised were analysed using Correlation Coefficient, result of the hypotheses shows that staff training expenses of pharmaceutical firms in Nigeria positively and significantly relate with the firms cost of sales with Pearson Correlation result of .723** and P value of 0.000. This implies that staff training cost has a positive influence on the return on investment of the selected firms under study. It was discovered from the study that pension contributions of pharmaceutical firms in Nigeria positively and significantly relate with the firms return on investment with Pearson Correlation result of .567** and P value of 0.000. This implies that pension contributions have a positive influence on cost of sales of pharmaceutical firms in Nigeria. Finally, the findings showed that staff salaries and wages of pharmaceutical firms in Nigeria positively and significantly relate with the firms cost of sales with Pears on Correlation result of .665** and P value of 0.000. This implies that Staff salaries and wages does significantly relate with cost of sales of pharmaceutical firms in Nigeria. Based on the findings, the study recommends among others that firms should implement more of on-the-job training in order to reduce expenses on staff training. On the job training should be augmented with other forms of staff training.*

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ABSTRACT

Keywords: Human Capital Investment; Pharmaceutical Firms in Nigeria; Productivity

Introduction

For an organization to be able to accomplish anything some level of human knowledge, skills and satisfaction is necessary. In this present-day business environment, an organization faces a high level of competition. As such organizations must strive to get things right through appropriate strategies in managing their available resources (capital) so as to achieve their goals. According to Olaitan (2013), capital is no longer used to describe only physical resources of an organization like plants, tools, buildings, and vehicles that are used in the production process. Overtime, various scholars have affirmed the role of investment in human capital on economic growth. Human capital is considered as the most valuable asset and needs to be mobilized Awopegba (2013). Human capital as an economic term encompasses health, education and other human capacities that can raise productivity. Succinctly, human capital is the term economists often use for education, health, and other human capacities that can raise productivity when increased (Todaro and Smith, 2015). Human capital can therefore be regarded as those skills and expertise acquired through training to improve and increase production capacities of the economy, and in terms of health, it can be regarded as energy that enhances labour productivity. The concept of human capital also refers to the abilities and skills of human resources of a country, while human capital formation refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are crucial for economic growth and development of a country.

Human capital refers to the acquired and useful abilities of all the inhabitants or members of the society and Human capital has been recognized globally as one major factor that is responsible for the wealth of nations (Folloni and Vittadini, 2016). The definition of a nation 's wealth has widened to accommodate not only physical capital but also human capital as an independent factor of production required to achieve high and sustainable economic growth rates. In recognition of this relationship, however, developing nations have, in varying degrees, attempted to stimulate the accumulation of human capital through public education expenditure as well as government spending on health and related social services (Adebiyi, 2006).

Human capital is essential for boosting productivity, crucial for economic growth and also necessary with regard to the resilience of economies. However, Amah (2006) asserted that: "change in the environment has resulted in skills becoming obsolete, so that competent employees don't remain competent forever". Skills, knowledge and abilities deteriorate and can become obsolete if not nurtured (Robbins, 2001). It is all about recruiting, supporting and investing in people (labour) engaged in organizations using a variety of means which includes education, training, coaching, mentoring, internship in order for organizations to perform effectively and efficiently (Obasi, 2007). In order to achieve their goals, organizations deliberately employ various techniques to increase and improve the potentials of their workforce. It is in the light of the above that most firms in the western world views human capital development as strategic investment rather than a mere budgeted cost and reserves a good percentage of their annual budget for employees training and development.

In pharmaceutical industries in Nigeria, there is low human resources and local technical capacity development through relevant education and training, proper health care and personal development initiative. The employees have failed to know their primary nature because of low income and job satisfaction. The ability to understand and respond to the needs of different employees is vital; it is assumed that the only reason someone might leave a company is for money, even in the pharmaceutical sector, where the nobility of the purpose is so important a motivation.

There is a need for high level of human capital investment in pharmaceutical firms that serves as motivation to employees and which in turn expand firm's productivity. It is becoming more and more difficult for pharmaceutical companies to stay at the forefront of learning and development given the speed at which knowledge is growing. Where new sciences and technologies are transforming the R&D process, and where greater competition is accelerating the speed at which products are launched, therefore increasing the pressure on sales and marketing.

Statement of the Problem

A challenging business climate now constrains efforts made by business owners to fully realize the potentials already present in this substantial health sub-sector of the Nigerian economy. This is because the pharmaceutical industry in Nigeria currently works in that country. The deterioration of the country's infrastructure, which is a major source of worry for nearby pharmaceutical manufacturers, is possibly the biggest problem on the list. Due to the lack of consistent electricity, manufacturing companies have been forced to invest significant sums of money in alternative energy sources, such as generators, solar energy, and inverters, among others. The high maintenance costs associated with each of these choices drive up the cost of production as a whole.

A major obstacle to increasing and improving the capacity of pharmaceutical companies to operate effectively and to compete favorably with their counterparts in other parts of the world is access to low-interest financing, which is another major obstacle faced by operators. The majority of lending institutions in Nigeria are adamant about pegging their lending rates to as high as 20%, while lending to the industry is said to hover around the single digit rate in most countries outside of Nigeria.

Countries stand to gain tremendously from active and thriving local industries. For example, if Nigeria has a robust pharmaceutical industry that produces a wide range of products, Local production will provide employment for Nigerians; and the capacity to export will not only earn foreign exchange for the country, but save millions of foreign currencies that would have gone into importation and medical tourism.

Drug makers in Nigeria also lack investing in acquisition of science and technology and other relevant skills. Though a pharmacist is a skilled person, there are other relevant skill sets to make a difference in our highly-competitive world. They must invest in research and development aggressively in order to be able to come out with what is required to compete effectively. They must collaborate with one another, including through mergers, to be able to build facilities that will compete globally.

Staff training increases employees' performance which in turn improves organizations productivity positively. Training enables employees in organization to enhance the potential contribution to the performance of organization. Adequate remuneration and benefit are other forms of human capital investment. Wages are very important for the industry because it reflects the industry's efforts to defend human resources in order to have a high loyalty and commitment to the industry. Employees' benefits on the other hand include mandatory and fringe benefits which are becoming essential for increased productivity in firms.

Despite the important role that human capital investment plays in promoting employees performance and productivity, some pharmaceutical firms in Nigeria neglect this important incentives mentioned above that stimulate productivity in industries. Evidence shows that some of those organizations that neglect employee training and human capital investment do so because of the huge cost of training and the fear of losing those employees after training them. This development has led to poor productivity and performance in many pharmaceutical firms in Nigeria. This development instigated this study which aims at examining the relevance of human capital investment to productivity of pharmaceutical firms in Nigeria thereby solving the problem of negligence towards investing in human capital and giving a new idea of approach to organizations.

Objectives of the Study

The main objective of this study is to examine the relevance of human capital investment to productivity of pharmaceutical firms in Nigeria. Whereas the specific objectives are to:

- i. Ascertain the relevance of staff education/training to cost of sales of pharmaceutical firms in Nigeria.
- ii. Examine the relevance of pension contribution to cost of sales of pharmaceutical firms in Nigeria.
- iii. Evaluate the relevance of staff salaries and wages to cost of sales of pharmaceutical firms in Nigeria.

Research Questions

The following research question guided the study:

- i. What is the relationship between staff training/education and cost of sales of pharmaceutical firms in Nigeria?
- ii. To what extent does pension contribution relate with cost of sales of pharmaceutical firms in Nigeria?
- iii. In what way do staff salaries & wages influence cost of sales of pharmaceutical firms in Nigeria?

Statement of Hypotheses

The following null hypotheses were formulated for the purpose of this study:

- i. Staff training/education does not significantly relate with cost of sales of pharmaceutical firms in Nigeria.
- ii. Pension contribution does not significantly relate with cost of sales of pharmaceutical firms in Nigeria.
- iii. Staff salaries and wages does not significantly relate with cost of sales of pharmaceutical firms in Nigeria.

Conceptual Review

Under the conceptual review, the study reviews human capital investment as well as the independent and the dependent variables of the study.

Human Capital Investment

Igun (2006) defines human capital as the total stock of knowledge, skills, competencies, innovative abilities possessed by the population'. These obviously have education (training) as their bedrock. Aigbokhan, Imahe and Ailemen (2007), describe human capital investment as the transformation of the total man to enhance his productivity. According to Todaro and Smith (2003), human capital must be given direct attention in its own right, even in economies that are growing rapidly. This point to the fact that importance of this key concept centres not on just developing countries who wish to break free of their vicious cycle, but also developed countries that aspire to achieve sustainable growth and development. Human capital development can be achieved by investing in staff training and development, health care, staff remuneration and compensation packages. According to Weisbrod (1962) the principal forms of direct investment in the productivity and well-being of people are: health, learning (both in school and on the job), and location (immigration). Chen and Lin (2005) define investment in human capital as input made by company in talents and technology that benefit competitive advantages, are valuable and unique, and should be kept out of reach of other companies. In other words, only employees possessing these qualities are qualified as human capital. Khandekar and Sharma (2003) concluded that firm that make greater use of HR capabilities are likely to gain a sustainable advantage and enjoys superior performance.

Staff Training/Education

That many graduates of Nigeria Universities and other higher institutions of learning fall short of employers or industry standard is no longer news. Therefore, training is the process of developing employees' skills and learning new concepts, rules or attitudes in order to increase effectiveness on a particular job (Ofobruku and Nwakoby 2015). Beardwell and Holden (2001) also affirm that training is a planned process to modify attitude, knowledge or skill behaviour through learning experience to achieve effective performance in any activity or range of activities. Its purpose is to develop the abilities of the individual and to satisfy the current and future needs of the organization. Brum (2010) and Harris and Antti (2003), argued that training increases employees' performance which in turn improve organizations productivity positively, and will further check and arrest the several human and financial costs involved with employees' turnover. Furthermore, they argued that training enable employees in organisation to enhance the potential contribution to the performance of organization.

Pension Contribution

Kotun, Adeoye and Alaka (2016) refers to pension as a form of income that employees or their beneficiaries receive after retirement, become disabled or die. Ako (2006) also views pension system as essentially an income security program which provides benefits to beneficiaries who may be retirees, pensioners or the destitute. Rabelo (2002), asserts that pension as a scheme is designed to cater for the welfare of the pensionable retired workers both in the public and private sectors. Ideally, governments and organizations need to identify a way of accommodating and adequately rewarding employees' past efforts through organized pension plans, so that it can achieve the goals of their existence

Kotun, Adeoye and Alaka, (2016) opine that the issue of pension management is a tool that affects employment decision in a given organization, for it refers to as a form of income that employees or their beneficiaries receive after retirement, become disabled or die. Cascio, (2003) suggests that compensation packages such as severance pay (pension and gratuity), vacations and sabbatical, holidays and workers' compensation are legally mandated to be enjoyed by employees. However, these compensation packages are often designed by organizations to enhance employees' job performance

Staff Salaries and Wages

One purpose of a person as an employee of a company is to earn income in the form of wages or compensation. Employees received wages and salaries to meet basic needs such as food, clothing and housing. In support of this, Gunawan and Amalia (2015) state that one of the purposes of someone being the employee or a labor of a company is to earn an income in the form of wages or compensation. Wages are earned to fulfill the basic necessities such as food, clothing and housing.

Wages become an important aspect of being effective if linked to the performance significantly (Umar, 2012). Granting wages remuneration is the most complex task for the industry, is also the most significant aspects for workers, because of the amount of wages reflects the size of the value of their work among the workers themselves, their families and communities. Every company in determining the amount of wages paid to the employee must be feasible, so that the lowest wage that is given will meet the needs of their life (Kanzunudin, 2007). Wages are very important for the industry because it reflects the industry's efforts to defend human resources in order to have a high loyalty and commitment to the industry. Effective wages strategy is expected to contribute to maintaining the viability of the work force, the realization of the vision and mission, as well as for the achievement of work objectives (Umar, 2012).

Firm Productivity

Jahchan (2017) define productivity as the efficient use of resources, labour, capital, land, materials, energy, information, in the production of various goods and services. According to him, higher productivity means accomplishing more with the same amount of resources or achieving higher output in terms of volume and quality from the same input. Productivity is usually expressed as $\text{output} / \text{Input} = \text{productivity}$.

Suganya (2011) gives tips to improve productivity by training and manpower development includes, making the employees know and properly understand the productivity evaluation methods, providing incentives and appraisals to efficient workers, enhancing discipline measures in the work place, identifying the skills of each employees, giving appropriate feedback to the employees without discouraging them, emphasizing on the positive points to develop productive work and providing continuous training to the employees on multidimensional work. Behnam (2014) also asserts that firms can improve and enhance employee's performance and productivity by providing training and development. The study further indicates that investments in training employees in problem solving, decision-making, teamwork, and interpersonal relations result in beneficial firm level outcome.

Cost of sales as a Productivity Indicator

Cost of Sales is a crucial indicator of productivity. Consider all of the costs associated with your sales force when calculating this, including not only salaries and commissions but also associated benefits and incentives. The total income that your sales force creates next. In ratio form, divide the entire revenue your sales team makes by the expenses directly attributable to their work to obtain the cost of sales. Measurement should take into account both hard and soft costs to help you find ways to lower and control expenses.

Cost of sales is used in this study to measure productivity because there is a substantial demand for pharmaceutical products in Nigeria. Falling ill is a common occurrence, so there is a high demand for pharmaceutical products. As a result, pharmaceutical companies aim to sell all of their available inventory at any given time.

Theoretical Framework

McGregor Theory X and Y Theory

McGregor propounded Theory X and Y Theory in 1960. Constructed a philosophy based on differing managerial practice and presented a sharp contrast between two different sets of managerial assumptions about people and identified them as theory X and theory Y which represents two extreme ends of a continuum of beliefs.

Theory X set of assumptions about human behaviour suggest that people act to realize basic needs and, hence, do not voluntarily contribute to organizational aims (Bloisi et al., 2003). McGregor made an assumption that individuals are indolent, self-centered, resistant to change, lack ambition, dislike responsibility and are naive (McCaffer and Harris, 2005). Managers are, therefore, to direct and modify worker behaviour to meet organizational needs by persuading; rewarding, punishing and controlling those who do not naturally strive to learn and grow. **Herzberg's hygiene theory** – argues that factors causing job satisfaction are different from those causing dissatisfaction and the two feelings cannot merely be treated as opposite to one another. Individuals are not content with the lower-order needs at work – hygiene factors; for example, those needs associated with minimum salary levels or safe and pleasant working conditions. Rather, individuals look for the gratification of higher-level psychological needs having to do with achievement, recognition, responsibility, advancement and the nature of the work itself motivators.

The basic premise of the theory is that the presence of hygiene factors is a precondition for performance and is not a determinant of performance. Managers must not only ensure the presence of hygiene factors to avoid dissatisfaction, but must also provide factors intrinsic to the work itself in order for employees to be motivated or satisfied.

Anchor Theory

McGregor theory X and Y and the theory of backer 1962 are the anchor theory of this study because it is the most relevant to the primary objective of the study, that is, the relevance of human capital investment in firm productivity.

Empirical Review

Studies relating to this work were reviewed in this sub-section and results presented below:

Staff Training/Education and Firm Productivity

Nassazi (2013) examined the effect of training on employee performance using Mobile telecommunications services providers in Uganda. A sample of 120 respondents was taken from the staff of 3 telecommunication companies in Uganda. The Mobile telecommunication firms are MTN (54), Warid (57) and TeleCom (UTL) (9). These three firms were purposely chosen because they are among the biggest and popular telecommunication companies in Uganda. Simple random sampling was then applied when selecting respondents from the three telecommunication companies and this was done to eliminate bias. A structured questionnaire is designed and administered to the respondents in public relations units of the firms. Data collected through the questionnaire were analyzed using tables and charts. The findings suggest that training and development have an impact on the performance of employees with regards to their job.

Ndibe (2014) investigated the effect of employees training on organizational performance in soft drinks bottling companies in Enugu State, Nigeria. A sample of 254 staff was selected from a population of 694 staff of Nigeria Bottling Company (394) and 7UP Bottling Company (300). Primary data were collected using questionnaire administered to 254 staff of the selected firms. Personnel records and annual reports of the selected firms were used for secondary data. Person product moment correlation coefficient was used to analyze the data while one-sample test was used to test the hypotheses formulated. Findings reveal that the extent to which unsystematic approach of employee training affected organizational productivity was high. Again, the extent of effect of training design on employee productivity was high. Furthermore, the extent to which training delivery style affected employee productivity was high. Similarly, there was a very strong positive relationship between employee perception of training and organizational performance. The extent to which employee training alone affected organizational performance was low, however, when other variables like training design, training delivery style were considered, its effect became significant.

Pension Contribution and Firm Productivity

Yamoah (2013) examined the relationship between compensation and employee productivity in the banking industry in Ghana. The population consisted of all employees of Ghana Commercial Bank in the Greater Accra Region of Ghana. Structured questionnaire was the instrument used to collect the data. A sample of 60 respondents was selected for the study using convenience sampling technique. Using case study approach, a descriptive survey was carried out to collect data from employees of Ghana Commercial Bank in the Greater Accra Region of Ghana. Data was analysed in terms of descriptive statistics. Pearson chi square was used to test the significance of relationship between employee compensation and productivity. The results indicated a significant relationship between compensation and productivity.

Mphil, Ramzan, Zubair, Ali and Arslan (2014) examine the impact of compensation on employee performance. The population of the study consists of 45 banks which were selected randomly. A Sample of 200 respondents was selected randomly from the staff of the 45 banks. Secondary data were collected from the respondents through questionnaire which was designed to collect the data on the factors related to compensation like salary, rewards, indirect compensation and employee performance. The data collected were analyzed in SPSS 17.0 Version. Different analytical and descriptive techniques were used to analyze the data. Findings: It is founded from different results that Compensation has positive impact on employee performance. It is proved from correlation analysis that all the independent variables have weak or moderate positive relationship to each other. Regression analysis shows that all the independent variables have insignificant and positive impact on employee performance. Descriptive analysis also reveals that all the independent variables have positive impact on employee performance. ANOVA results reveal that education have not same impact on employee performance.

Staff Salaries and Wages and Firm Productivity

Chaudhrya, Sabirb, Rafi and Kalyarc (2013) explored the degree of difference in salary satisfaction and its impact on job satisfaction in public sector organizations and private sector organizations in Pakistani context. Data was collated from 160 employees (total 320) from each sector organizations. Salary satisfaction affects job involvement, work inspiration, employee performance and motivation. The posited hypothesis is if there exists a significant difference in the degree of salary satisfaction in public sector and private sector organization, and the positive influence of salary satisfaction on job satisfaction in both public and private sectors. Z test was used to analyze the degree of difference between salary satisfactions in both sectors, although its relation with job satisfaction was measured by regression analysis. The findings indicate that employees in public sector organizations have little higher salary satisfaction as compared to private sector employees. Moreover, salary satisfaction is also positively related with job satisfaction in both.

Gunawan and Amalia (2015) studied wages and employees' performance: the quality of work life as moderator. Sampling is done by stratified random sampling of 100 employees in a manufacturing company. Primary data were collected through questionnaire instrument. Data analysis was done using linear regression and moderated regression analysis. The result showed a significant negative effect on the wages of employee's performance. Other finding is negative effect of wages which are moderated by the quality of work life is caused by the effect of intrinsic motivation (quality of working life) is more powerful than extrinsic motivation (wages). Quality of work life is quasi moderators that weaken the wages variable. Further research is recommended to expand the research by adding independent variable that affects the performance of employees.

Human Capital

Amassoma and Nwosa (2011) studies the causal nexus between human capital Investment and economic growth in Nigeria for sustainable development in Africa at large between 1970 and 2009 using a Vector Error Correction (VEC) and Pairwise granger causality methodologies. The

findings of the VAR model and pairwise estimate reveal no causality between human capital development and economic growth. The study recommends the need to increase budgetary allocation to the education and health

sector and the establishment of sound and well-functioning vocational institute needed to bring about the needed growth in human capital that can stimulate economic growth. Also, the study identified that labour mismatch is an issue that government needs to reckon with in order to accelerate and sustain economic growth. In this regard, policy-makers in conjunction with employers and individuals needs to update information on the real labour market value of different qualifications, in order to help them navigate through the increasingly complex education system and make the optimal kinds of educational investment decisions needed to propel economic growth.

Johnson (2011) evaluates human capital development and economic growth in Nigeria by adopting conceptual analytical framework that employs the theoretical and ordinary least square (OLS) to analyze the relationship using the GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis confirms that there is strong positive relationship between human capital development and economic growth. Following the findings, it was recommended that stakeholders need to evolve a more pragmatic means of developing the human capabilities, since it is seen as an important tool for economic growth in Nigeria. Also, proper institutional framework should be put in place to look into the manpower needs of the various sectors and implement policies that will lead to the overall growth of the economy.

Summary of Empirical Review

It can be observed that most of the empirical studies on the related topics were conducted outside Nigeria; only few studies were conducted in Nigeria. Additionally, only one study by Odhon'g and Omolo (2015) on effect of human capital investment on organizational performance of pharmaceutical companies in Kenya in 2013 has been conducted in the pharmaceutical sector so far. And none has been conducted in pharmaceutical firms in Nigeria. All these are the research gap which the present study intends to fill.

Methodology

Research Design

This study adopted an *ex post facto* research design which provides an empirical solution to research problems by using data which are already in existence. The study is therefore based on published financial statements of the selected pharmaceutical firms in Nigeria.

Model Specification

The following model was developed based on the variables used in the study:

$$R = f\{X_1, Y_1, X_2, Y_2, \dots, X_n, Y_n\}$$

$$R = f\{COS_1, STE_1, COS_2, PC_2, COS_3, SSW_3\} \dots (1)$$

Where:

COS = Cost of sales

f = Function of

STE = Staff Training/Education

PC = Pension Contribution

SSW = Staff Salaries & Wages

Description of Variables in the Study

Cost of Sales (COS): In pharmaceutical firm, it is the total cost of manufacturing pharmaceutical products plus net inventory. These two items put together represent the total cost of pharmaceutical products produced during the period. Net inventory is opening inventory less closing inventory.

Staff Training/Education (STE): This is the process of developing employees' skills and learning new concepts, rules or attitudes in order to increase effectiveness on a particular job.

Pension Contribution (PC): any form of compensation provided by the organization other than wages or salaries that are paid for in whole or in part by the employer. It is usually paid at the end of the employees services to the organization.

Staff Salaries and Wages (SSW): These are payments received by workers as on the job payment to meet their basic needs such as food, clothing, medical and housing.

Analytical Procedure

Pearson Product Moment Correlation Coefficient was used to test the relevance of the independent to the dependent variables whereby staff training/education, pension contribution and staff salaries and wages will be used as proxies for human capital investment (independent variables) while cost of sales was used as proxy for firm productivity (dependent variable). This test will be done at 5% significant level, which means the higher correlation coefficient; the association level was stronger between two variables. The correlation coefficient can be either positive or negative, is depending on the direction of the relationship between two variables (Hair, Money, Page and Samuel, 2007).

Pearson Correlation analysis is been chose because the correlation can be compared without regarding the amount of variation exhibited by each variable separately. In this study, researcher used this technique to test the changes in human capital investment to productivity of pharmaceutical firms in Nigeria.

Data Presentation

Table 1: Pooled Data for the Selected Firms

YEAR	COST OF SALE NGN (000)	PENSION CONTRIBUTION NGN(000)	STAFF SALARIES & WAGES NGN(000)	STAFF TRAINING NGN (000)
2017	11,610,160	302	1,597,135	6,504
2016	9,924,146	42,447	1,547,808	10,774
2015	20,308,465	169,245	2,935,476	2,409
2014	19,719,655	130,975	2,746,611	26,155
2013	17,581,625	136,109	2,283,942	13,365
2012	15,080,461	128,162	1,981,913	11,431
2011	12,537,935	111,065	1,490,305	9,950
2010	9,420,290	266,789	1,574,587	7,329
2009	8,444,296	461,881	1,220,289	7,119
2008	7,177,239	527,304	1,266,289	6,447
2007	6,041,660	527,156	894,636	4,931
2006	6,092,889	475,989	926,409	4,980
2017	117,474	8,678	48,386	813
2016	121,261	25,200	37,154	655
2015	114,351	20,780	35,677	580
2014	140,852	20,715	47,671	809
2013	235,920	28,014	64,538	1,337
2012	247,108	23,054	52,564	848
2011	113,096	21,422	43,280	745
2010	164,320	21,890	37,340	625
2009	152,804	21,308	39,747	611
2008	135,791	19,256	36,488	536
2007	126,250	18,456	32,455	425
2006	108,443	17,113	29,795	308
2017	604,,670	32,201	461,672	7,335
2016	776,758	45,669	134,512	1,409
2015	776,060	89,245	384,849	945
2014	874,435	108,399	403,820	6,609
2013	959,226	227,563	134,504	5,214
2012	685,522	275,869	177,660	4,020

2011	8,250,365	205,346	212,430	3,942
2010	1,023,123	268,598	232,217	3,524
2009	825,654	279,887	228,414	3,045
2008	792,684	283,328	459,215	2,754
2007	825,654	279,887	382,586	2,524
2006	792,684	283,328	459,215	22,451
2017	830,230	28,215	222,603	82,099
2016	595,558	28,730	228,092	87,207
2015	769,751	72,340	251,630	1,157
2014	642,268	53,396	242,226	5,311
2013	616,954	75,191	200,277	4,608
2012	546,712	96,467	164,159	1,000
2011	692,673	227,087	145,140	73,009
2010	383,006	247,274	119,882	40,383
2009	418,791	254,970	186,450	32,250
2008	752,634	223,148	175,245	24,512
2007	645,135	212,520	165,842	19,465
2006	502,354	195,237	120,350	15,234
2017	6,075,115	79,602	589,061	75,277
2016	5,933,561	114,846	545,518	65,844
2015	5,079,323	202,042	545,976	64,752
2014	4,459,253	142,860	509,237	48,350
2013	4,107,078	142,860	485,066	38,654
2012	3,598,750	137,317	488,369	73,048
2011	2,864,134	101,011	385,749	60,583
2010	3,298,612	98,240	335,446	51,230
2009	2,856,234	84,525	290,585	63,455
2008	2,563,240	80,025	254,645	64,214
2007	2,350,459	75,725	210,527	68,453
2006	1,215,293	66,636	118,682	64,636

Source: Author's Compilation

Test of Hypotheses

A hypothesis is a predicted answer to a research question. It is an a priori statement about the likely outcome of a research effort. This supposition is based on what others have done. Three hypotheses were altogether postulated for this study. This section is dedicated to testing of these hypotheses.

As stated earlier, The Spearman's correlation coefficient was used to measure the strength of the association between the variables used. Two-tailed Pearson correlation test were employed to assess predictive validity of the posited variables.

Test of Hypotheses

Test of Hypothesis One

Restatement of Hypothesis One

Ho: Staff training/education does not significantly relate with cost of sales of pharmaceutical firms in Nigeria.

Hi: Staff training/education significantly relate with cost of sales of pharmaceutical firms in Nigeria.

Table 2: Showing the Correlations result output of Staff training/education significantly relates with cost of sales of Pharmaceutical firms in Nigeria

	<i>cost of sales</i>	<i>Staff training/education</i>
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<i>Staff training/education</i>	Pearson Correlation	1	.723**
	Sig. (2-tailed)		.000
	N	360	360
<i>cost of sales</i>	Pearson Correlation	.723**	1
	Sig. (2-tailed)	.000	
	N	360	360

Source: SPSS 23 Output.

** . Correlation is significant at the 0.01 level (2-tailed).

From the correlation table 2, the correlation value of 72.3% is a relationship that is very strong. The p-value of the variable is greater than the level of significance of 5% ($0.00 > 0.01$). This shows that there is positive and strong correlation between Staff training/education and cost of sales, which is also significant at the 0.01 level (2-tailed). This means that we uphold the alternate hypothesis. This implies that Staff training/education significantly relates with cost of sales of pharmaceutical firms in Nigeria.

Test of Hypothesis Two

Statement of Hypothesis Two

Ho: Pension contribution does not significantly relate with cost of sales of Pharmaceutical firms in Nigeria.

Hi: Pension contribution does significantly relate with cost of sales of Pharmaceutical firms in Nigeria.

Table 3: Showing the Correlations result of Pension Contributions and Cost of Sales

		Pension contribution	Cost of Sales
<i>Pension contribution</i>	Pearson Correlation	1	.567**
	Sig. (2-tailed)		.000
	N	360	360
<i>Cost of Sales</i>	Pearson Correlation	.567**	1
	Sig. (2-tailed)	.000	
	N	360	360

Source: SPSS 23 Output.

** . Correlation is significant at the 0.01 level (2-tailed).

From the correlation table 3, the correlation value of 56.7% is a relationship that is very strong. The p-value of the variable is greater than the level of significance of 5% ($0.00 > 0.01$). This shows that there is positive and strong correlation between Pension Contributions and Cost of Sales, which is also significant at the 0.01 level (2-tailed). This means that we uphold the alternate hypothesis. This implies that Pension contribution does significantly relate with cost of sales of Pharmaceutical firms in Nigeria.

Test of Hypothesis Three

Statement of Hypothesis Three

Ho: Staff salaries and wages does not significantly relate with cost of sales of Pharmaceutical firms in Nigeria.

Hi: Staff salaries and wages does significantly relate with cost of sales of Pharmaceutical firms in Nigeria.

Table 4: Showing the Correlations result of Salaries and Wages and Cost of Sales

		Staff salaries and wages	Cost of Sales
<i>Pension contribution</i>	Pearson Correlation	1.000	.665**
	Sig. (2-tailed)	.	.000
	N	360	360
<i>Cost of Sales</i>	Pearson Correlation	.665**	1.000
	Sig. (2-tailed)	.000	.
	N	360	360

Source: SPSS 23 Output.

** . Correlation is significant at the 0.01 level (2-tailed).

From the correlation table 4, the result of the correlation value of 66.5% is a relationship that is very strong. The p-value of the variable is greater than the level of significance of 1% ($1.00 > 0.01$). This shows that there is positive and strong correlation between cost of sales and salaries and wages, which is also significant at the 0.01 level (2-tailed). This means that we uphold the alternate hypothesis. This implies that Staff salaries and wages does significantly relate with cost of sales of pharmaceutical firms in Nigeria.

Summary of Findings

The following findings were made from the study.

- i. The findings showed that staff training expenses of pharmaceutical firms in Nigeria positively and significantly relate with the firms Cost of Sales. This implies that staff training cost has a positive influence on the cost of sales of the selected firms under study.
- ii. It was discovered from the study that pension Contribution of pharmaceutical firms in Nigeria positively and significantly relate with the firms cost of sales. This implies that Pension contribution has a positive influence on cost of sales of pharmaceutical firms in Nigeria
- iii. Finally, the findings showed that staff salaries and wages of pharmaceutical firms in Nigeria positively and significantly relate with the firms cost of sales. This implies that Staff salaries and wages does significantly relate with cost of sales of pharmaceutical firms in Nigeria.

Conclusion

In the light of the findings, the discussions and the summary, we hereby conclude that both staff training/education, and staff salaries and wages of pharmaceutical firms in Nigeria positively and strongly relate with cost of sales of the firms. We also conclude that pension contribution of the pharmaceutical firms positively and weakly relate with cost of sales of the firms during the period studied. This conclusion is in agreement with the statement of Oluwasesin, (2014) in her study examined the effect of human capital on the profitability of quoted manufacturing companies in Nigeria. The study revealed that all the explanatory variables have positive relationship with profitability; however, expenditure on health contributed more to the profitability of the firms than expenditures on salaries and wages, training and contributory pension. The study concluded that human capital expenditure significantly influenced profitability of manufacturing companies quoted on the Nigerian Stock Exchange.

Recommendation

Based on the findings, discussions and conclusion of this study, we hereby recommend as follows:

- i. In the light of positive and significant relationship between staff training expenses and productivity of the Nigeria pharmaceutical firm in Nigeria, this study hereby recommend that the firms should implement more of on-the-job training in order to reduce expenses on staff training. On the job training should be augmented with other forms of staff training.
- ii. Also, since pension contribution positively relate with cost of productivity of the firms, Nigeria pharmaceutical firms should increase their pension contribution such as pension, gratuity and other staff retirement benefits packages. This study has proved that the presence of such reserves in the income statement of the pharmaceutical firms serve as motivation for the employees of the firms.
- iii. Finally, since staff salaries and wages of the firms positively and strongly related with the firms' productivity, Nigeria pharmaceutical firms should implement an appropriate staff salary and wages scheme that will reward hard working and good performance staff so as to motivate staff to put in their best to improve productivity in the firms.

Contribution to Knowledge

- i. This study has contributed to knowledge by highlighting that staff training improves the productivity of pharmaceutical firms in Nigeria.
- ii. This study has equally contributed to knowledge by indicating that firms' pension contribution is a source of motivation that improves the productivity of the pharmaceutical firms.
- iii. This work has contributed to knowledge by revealing that staff salaries and wages improved pharmaceutical firms' productivity more than other staff motivational measures.

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