**International Research Journal of Accounting, Finance and Banking**
Volume.15, Number 8; August-2024;
ISSN: 2836-7944 | Impact Factor: 9.83
https://zapjournals.com/index.php/irjafb
Published By: Zendo Academic Publishing

# THE RESPONSE OF THE PRODUCTIVITY OF PHARMACEUTICAL FIRMS TO HUMAN CAPITAL INVESTMENT: EVIDENCE FROM NIGERIA.

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**Article Info**
**Keywords:** Human capital investment, Training, Education, Staff, Healthcare services productivity.
DOI
10.5281/zenodo.15051281

**Abstract**
This study examined the response of the productivity of pharmaceutical firms to human capital investment: evidence from Nigeria. The study specifically examined the relationship of: staff education/training and staff healthcare services to return on investment 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 Return on investment 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 staff healthcare services of pharmaceutical firms in Nigeria positively and significantly relate with the firms return on investment with Pearson Correlation result of .657** and P-value of 0.000. This implies that staff healthcare services have a positive influence on return on investment 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.

## INTRODUCTION

### 1.1 Background of the Study

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

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(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 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, 2021). 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, 2021).

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 firms 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.

**1.2 Statement of the Problem**

The pharmaceutical industry in Nigeria currently operates under challenging business environment with the attendant limitations on the efforts of operators to maximise the full potentials readily available in this important health sub-sector in the Nigerian economy. The challenge posed by infrastructural decay is perhaps the biggest among the list, and a major source of worry for local manufacturers of medicines in the country.

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. Access to healthcare services ensures a healthy workforce, reducing absenteeism and increasing efficiency. Workplace wellness programs, mental health support, and occupational safety contribute to employee longevity and performance. 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 employee's 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 relationship between human capital investment and 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 organsations.

**1.3 Objectives of the Study**

The main objective of this study is to examine the response of the productivity of pharmaceutical firms to human capital investment: evidence from Nigeria. Whereas the specific objectives were to:

i. Ascertain the relationship between staff education/training and return on investment of Pharmaceutical firms in Nigeria.
ii. Determine the relationship between staff healthcare services and return on investment of Pharmaceutical firms in Nigeria.

**1.4 Research Questions**

The following research question guided the study:

i. What is the relationship between staff training/education and return on investment of Pharmaceutical firms in Nigeria?
ii. Do staff healthcare services relate with return on investment of Pharmaceutical firms in Nigeria?

### 1.5 Statement of Hypotheses

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

i. Staff training/education does not significantly relate with return on investment of Pharmaceutical firms in Nigeria.
ii. Staff healthcare services does not significantly relate with return on investment of Pharmaceutical firms in Nigeria.

## REVIEW OF RELATED LITERATURE

### 2.1 Conceptual Review

#### 2.1.1 Human Capital Investment

According to Todaro and Smith (2013), 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 & Lin (2019) 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 & Sharma (2013) concluded that firm that make greater use of HR capabilities are likely to gain a sustainable advantage and enjoys superior performance.

#### 2.1.2 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 & Nwakoby 2019). Beardwell & Holden (2011) 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 activitie. Its purpose is to develop the abilities of the individual and to satisfy the current and future needs of the organization. Brum 2010 & Harris & Antti, 2013), 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.

Ndibe (2014) states that the importance of training has become more obvious given the growing complexity of the work environment, the rapid change in organizations and technological advancement which further necessitates the need for training and development of employees to meet the challenges. Jones, George & Hill, (2010) assert state that training helps to ensure that organizational members possess the knowledge and skills they need to perform their jobs effectively, take on new responsibilities, and adapt to changing conditions. Training has become the Holy Grail to some organizations, an evidence of how much the management truly cares about its workforce (Hamid, 2011). He further opines that the effectiveness with which organizations manage, develop,

motivate, involve and engage the willing contribution of those who work in them is a key determinant of how well these organizations perform. Training helps to ensure that organizational members possess the knowledge and skills they need to perform their jobs effectively, take on new responsibilities, and adapt to changing conditions. It is primarily focuses on teaching organizational members on how to perform their current jobs and helping them acquire the knowledge and skills they need to be effective performers (Jones, George & Hill, 2010). Similarly, training helps improve quality, customer satisfaction, productivity, morale, management succession, business development, profitability and organizational performance (Ndibe, 2014).

### 2.1.3 Staff healthcare services

Staff healthcare services refer to the range of medical, wellness, and preventive care programs that organizations provide to their employees to promote their physical and mental well-being. These services play a critical role in enhancing employee productivity, reducing absenteeism, and improving job satisfaction (World Health Organization [WHO], 2023). The concept of staff healthcare services encompasses several dimensions, including occupational health, preventive care, access to medical treatment, mental health support, and workplace wellness programs.

Occupational health is a key component of staff healthcare services, focusing on ensuring a safe working environment that minimizes work-related injuries and illnesses. According to the International Labour Organization (ILO, 2022), effective occupational health services reduce workplace hazards and improve employees' overall health, thereby fostering a more efficient workforce. Preventive care initiatives, such as routine medical check-ups, vaccinations, and health screenings, help in early detection and management of chronic diseases, reducing long-term healthcare costs (Centers for Disease Control and Prevention [CDC], 2023).

Another crucial aspect of staff healthcare services is access to medical treatment. Many organizations provide health insurance coverage or partner with healthcare providers to ensure employees receive necessary medical care. Studies indicate that employees with adequate healthcare access are more likely to stay engaged and committed to their jobs (Jones et al., 2021). Mental health support has also gained prominence in modern workplaces. Employers are increasingly offering counseling services, stress management programs, and mental health awareness initiatives to address the growing concerns surrounding work-related stress and burnout (National Institute of Mental Health [NIMH], 2023).

Furthermore, workplace wellness programs promote healthy lifestyle choices among employees. These programs often include fitness initiatives, nutrition counseling, smoking cessation programs, and ergonomic assessments. Research suggests that workplace wellness programs contribute to improved employee morale and decreased healthcare expenses for organizations (Robinson & Smith, 2022).

## 2.2 Theoretical Framework

Human Capital Theory (HCT) was propounded by Gary S. Becker in 1964 and is one of the most influential theories in economics and human resource management. The theory posits that investments in human capital such as education, training, and healthcare enhance workers' productivity, leading to economic growth and organizational success (Becker, 1964). It views human capital as a key driver of competitive advantage, emphasizing that organizations and economies benefit when they invest in their workforce.

HCT suggests that just as organizations invest in physical assets to improve efficiency, they should also invest in employees to boost skills, knowledge, and overall performance. The theory distinguishes between general human capital (skills applicable across multiple firms) and specific human capital (skills relevant to a particular organization). According to Schultz (1971), human capital development is essential for innovation and adaptation, as it enables workers to improve their productivity and respond effectively to changing market demands.

Application to Human Capital Investment and Productivity of Pharmaceutical Firms in Nigeria Applying Human Capital Theory to the context of pharmaceutical firms in Nigeria highlights the importance of continuous investment in employees' education, training, and healthcare to enhance productivity. The pharmaceutical industry relies heavily on skilled professionals, including pharmacists, researchers, and production staff, to ensure quality drug manufacturing, compliance with regulations, and effective distribution networks (Adebisi et al., 2020).

Investment in employee training programs, on-the-job learning, and advanced research skills enhances workers' efficiency and innovation, leading to improved production outputs and competitive advantage. Moreover, investment in employee well-being, including occupational health and safety measures, ensures reduced absenteeism and higher workforce motivation (Oboh et al., 2021). Given Nigeria's dynamic pharmaceutical sector, firms that prioritize human capital investment are more likely to achieve higher productivity and sustained growth in a competitive market.

**2.3 Empirical Review**

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.

Owoyemi, Oyelere, Alegbede & Gbajumo-sheriff (2011) explored the relationship between training and employees' commitment to the organisation. The paper was based on a survey of 250 employees and management staff of a financial firm based in the South Western part of Nigeria. Statistical Package for the Social Sciences (SPSS) was used to conduct several forms of analysis. The analysis revealed some evidence that suggest a positive statistical significant relationship between the different levels of training and employees' commitment to organisation. A regression analysis was conducted on the data collected. The study revealed a positive statistical significant relationship between the different levels of training and employees' commitment to the organisation. The paper concludes that the more the training giving to employees, the higher their level commitment to the organisation.

Johnson, & Williams, (2021) examined the impact of employee healthcare benefits on corporate financial performance. The study was conducted in the United States among 150 mid-sized and large organizations across various industries. Regression analysis and correlation techniques were used for the study. The study found that companies investing in comprehensive healthcare benefits experienced a 12% increase in return on investment (ROI) over a five-year period. The research also indicated that employee healthcare services led to reduced absenteeism, increased productivity, and enhanced employee morale, ultimately improving financial performance. Furthermore, firms that offered comprehensive healthcare packages reported a decrease in workplace stress and burnout, leading to sustained long-term growth. The study highlighted the importance of preventive healthcare services, including regular check-ups and wellness programs, in reducing chronic illness-related absenteeism.

Adeyemi & Okafor, (2022) Staff wellness programs and financial returns: Evidence from Nigerian manufacturing firms. Population consists of 200 employees from 50 manufacturing firms. Structural equation modeling (SEM) was used in the study. The study revealed a positive and significant relationship between staff wellness programs, including healthcare services, and organizational profitability. Firms that actively implemented staff healthcare services saw a 15% rise in profitability due to improved employee engagement and performance. The study also noted that employees in organizations with structured healthcare plans exhibited higher levels of job satisfaction and loyalty, leading to lower employee turnover rates. Additionally, organizations that invested in mental health support services observed significant improvements in workplace efficiency and reduced cases of stress-related resignations.

Zhang & Chen, (2020) studied workplace health initiatives and return on investment: A case study of multinational corporations. It was done in China among a population of 120 multinational corporations (MNCs). The study used Descriptive and inferential statistical analysis. The research found that workplace health initiatives, particularly healthcare services, contributed to an average ROI increase of 10.5%. The study highlighted that companies with robust employee healthcare programs experienced lower turnover rates, increased employee motivation, and improved workforce efficiency, leading to financial gains. It also found that organizations that incorporated digital healthcare solutions, such as telemedicine and AI-driven health monitoring, witnessed significant reductions in healthcare costs while maintaining high employee health standards. The study further emphasized the role of government policies in encouraging corporate investments in staff healthcare by offering tax incentives to businesses that implement comprehensive healthcare strategies

## METHODOLOGY

### 3.1 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.

### 3.3 Area of Study

This study was conducted in Nigeria and focused on pharmaceutical firms listed on the Nigeria Stock Exchange (NSE) during the relevant period.

### 3.2 Sources of Data

Secondary data is the source of data for this study. Data on employees training expenses, yearly bonus, staff salaries and wages and firm return on investment were used from the published annual financial statement of the selected pharmaceutical firms in Nigeria for a period of ten years (2014 to 2023).

### 3.4 Population of the study

The population of the study comprised the ten (10) pharmaceutical firms listed on the Nigeria Stock Exchange Market (NSE).

### 3.5 Sample Size Determination

This study used judgmental sampling technique to select the sample of five (5) firms from the ten (10) pharmaceutical firms listed on the Nigeria Stock Exchange.

### 3.6 Model Specification

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

R - $\{X_1,Y_1\},\{X_2,Y_2\}\ldots\ldots\ldots\ldots\ldots\{X_n,Y_n\}$.

R - $\{ROI_1, STE_1\}, \{ROI_2, SHS_2\}$ …… (1).

Where:

ROI = Return on investment

STE = Staff Training/Education

SHS = Staff Healthcare Services

### 3.7 Description of Variables

**Return on investment (ROI):** Return on investment (ROI) is a performance measure used to evaluate the efficiency or profitability of an investment or compare the efficiency of a number of different investments.

**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.

**Staff healthcare services (SHS):** Staff healthcare services are the range of medical, wellness, and preventive care programs that organizations provide to their employees to promote their physical and mental well-being.

### 3.8 Method of Data Analysis

Pearson Product Moment Correlation Coefficient was used to test the relationship between the independent and the dependent variables whereby staff training/education and staff healthcare services will be used as proxies for human capital investment (independent variables) while return on investment 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.

### 4.9 Decision Rule

Reject null ($H_O$) if the t-statistics is greater than 2.0 and the probability value is less than 0.05 (5%), otherwise accept null

## DATA PRESENTATION AND ANALYSIS

### 4.1 Data Presentation

**Table 4.1: LOGGED DATA FOR THE SELECTED FIRMS**

| YEAR | RETURN ON INVESTMENT NGN (000) | STAFF HEALTHCARE SERVICES NGN (000) | STAFF TRAINING NGN (000) |
|---|---|---|---|
| 2014 | 3.532419 | 2.380007 | 3.813181 |
| 2015 | 3.498347 | 3.627847 | 4.032377 |
| 2016 | 3.653839 | 4.228516 | 3.381837 |
| 2017 | 3.64745 | 4.117188 | 4.417555 |
| 2018 | 3.62253 | 4.133887 | 4.125969 |
| 2019 | 3.589208 | 3.107759 | 4.058084 |

| | | | |
|---|---|---|---|
| 2020 | 3.549113 | 3.045577 | 3.997823 |
| 2021 | 3.487032 | 3.426168 | 3.865045 |
| 2022 | 3.463282 | 4.66453 | 3.852419 |
| 2023 | 3.427979 | 4.722061 | 3.809358 |
| 2014 | 3.390578 | 3.721939 | 3.692935 |
| 2015 | 3.392412 | 4.677597 | 3.697229 |
| 2016 | 2.534971 | 2.93842 | 2.910091 |
| 2017 | 2.541861 | 3.401401 | 2.816241 |
| 2018 | 2.52912 | 3.317646 | 2.763428 |
| 2019 | 2.574382 | 3.316285 | 2.907949 |
| 2020 | 2.686383 | 3.447375 | 3.126131 |
| 2021 | 2.696444 | 3.362746 | 2.928396 |
| 2022 | 2.526724 | 3.33086 | 2.872156 |
| 2023 | 2.607845 | 3.340246 | 2.79588 |
| 2014 | 2.592068 | 2.328543 | 2.786041 |
| 2015 | 2.566436 | 2.284566 | 2.729165 |
| 2016 | 2.550616 | 3.266138 | 2.628389 |
| 2017 | 2.517601 | 4.233326 | 2.488551 |
| 2018 | 2.592068 | 3.507869 | 3.8654 |
| 2019 | 2.945143 | 3.659622 | 3.148911 |
| 2020 | 2.944948 | 4.950584 | 2.975432 |
| 2021 | 2.970864 | 4.035025 | 3.820136 |
| 2022 | 2.990961 | 4.357102 | 3.717171 |
| 2023 | 2.918011 | 4.440703 | 3.604226 |
| 2014 | 3.458237 | 3.312486 | 3.595717 |
| 2015 | 3.004964 | 4.429103 | 3.547036 |
| 2016 | 2.958399 | 4.446983 | 3.483587 |
| 2017 | 2.94955 | 3.452289 | 3.439964 |
| 2018 | 2.958399 | 3.446983 | 3.402089 |
| 2019 | 2.94955 | 3.452289 | 4.351236 |
| 2020 | 2.959599 | 4.45048 | 4.914338 |
| 2021 | 2.887462 | 4.458336 | 4.940551 |
| 2022 | 2.943175 | 4.859379 | 3.063333 |
| 2023 | 2.903858 | 4.727509 | 3.725176 |
| 2014 | 2.895127 | 4.876166 | 3.663512 |
| 2015 | 2.86888 | 4.984379 | 3.278165 |
| 2016 | 2.920264 | 3.356192 | 4.863376 |
| 2017 | 2.791603 | 3.393178 | 4.606199 |
| 2018 | 2.810999 | 3.406489 | 4.50853 |
| 2019 | 2.938292 | 4.348593 | 4.389379 |
| 2020 | 2.904826 | 4.3274 | 4.289254 |
| 2021 | 2.850505 | 4.290562 | 4.182814 |
| 2022 | 3.391778 | 3.900924 | 4.876662 |
| 2023 | 3.386658 | 4.060116 | 4.818516 |

**Source:** Author's Compilation 2024.

### 4.2 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. Two hypotheses were altogether postulated for this study. This section is dedicated to testing of these hypotheses.

As stated earlier, The Pearson Product moment 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 Hypothesis One**

**Restatement of Hypothesis One**

**Ho:** Staff training/education does not significantly relate with return on investment of Pharmaceutical firms in Nigeria.

**Hi:** Staff training/education significantly relate with return on investment of Pharmaceutical firms in Nigeria.

**Table 4.2.1** Showing the Correlations result output of Staff training/education significantly relate with return on investment of Pharmaceutical firms in Nigeria

| | | Return on investment | Staff training/education |
|---|---|---|---|
| Staff training/education | Pearson Correlation | 1 | .723** |
| | Sig. (2-tailed) | | .000 |
| | N | 360 | 360 |
| return on investment | Pearson Correlation | .723** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 360 | 360 |

Source: SPSS 23

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

**Decision rule**

Reject null ($H_O$) if the t-statistics is greater than 2.0 and the probability value is less than 0.05 (5%), otherwise accept null.

From the correlation table 4.2.1, 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 return on investment, 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 return on investment of Pharmaceutical firms in Nigeria.

**Test of Hypothesis Two**

**Statement of Hypothesis Two**

Ho: Staff healthcare services does not significantly relate with return on investment of Pharmaceutical firms in Nigeria.

Hi: Staff healthcare services does significantly relate with return on investment of Pharmaceutical firms in Nigeria.

**Table 4.2.2** Showing the Correlations result of health care services and Return on investment

| | | Staff healthcare services | Return on investment |
|---|---|---|---|
| Staff healthcare services | Pearson Correlation | 1 | .657** |
| | Sig. (2-tailed) | | .000 |
| | N | 360 | 360 |
| | Pearson Correlation | .657** | 1 |

| | | | |
|---|---|---|---|
| Return on investment | Sig. (2-tailed) | .000 | |
| | N | 360 | 360 |

*Source: SPSS 23*

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

**Decision rule**

Reject null ($H_O$) if the t-statistics is greater than 2.0 and the probability value is less than 0.05 (5%), otherwise accept null

From the correlation table 4.2.2, the correlation value of 65.7% 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 staff healthcare services and Return on investment, which is also significant at the 0.01 level (2-tailed). This means that we uphold the alternate hypothesis. This implies that staff healthcare services do significantly relate with return on investment of Pharmaceutical firms in Nigeria.

**5.1 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 Return on investment. 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 implies that staff training cost has a positive influence on the return on investment of the selected firms under study.

ii. It was discovered from the study that staff healthcare services of pharmaceutical firms in Nigeria positively and significantly relate with the firms return on investment. The correlation value of 65.7% 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 implies that staff healthcare services has a positive influence on return on investment of Pharmaceutical firms in Nigeria.

**5.2 Conclusion**

In the light of the findings, the discussions and the summary, we hereby conclude that both staff training/education, and staff healthcare services of pharmaceutical firms in Nigeria positively and strongly relate with return on investment of the firms. 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 training. The study concluded that human capital expenditure significantly influenced profitability of manufacturing companies quoted on the Nigerian Stock Exchange.

**5.3 Recommendations**

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. Management should integrate healthcare services into human capital investment strategies by offering preventive healthcare programs, medical insurance, and wellness initiatives. Given the significant positive influence on return on investment, firms should allocate adequate resources to employee health to foster a more productive and engaged workforce.

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