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QUALITY MANAGEMENT PRACTICES AND PERFORMANCE OF PHARMACEUTICAL FIRMS IN ENUGU STATE

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Quality, Management, Performances, Planning, Profitability, Control

Abstract
The study evaluated Quality management practices and performances of pharmaceutical firms in Enugu state. The main objectives of the study were to: examine the relationship between quality planning and the profitability; ascertain the relationship between quality continuous improvement and the sales volume and evaluate the relationship between quality control and the productivity of pharmaceutical firms in Enugu state. The area of the study was pharmaceutical firms in Enugu state. The study used the descriptive survey design approach. The primary source of data was the administration of questionnaire. A total population of 308 staff was used. The whole population was used due to small number. Two hundred and forty eight (248) staff returned the questionnaire and accurately filled. Data was presented and analyzed using Likert Scale and the hypotheses using Pearson correlation coefficient (r). The findings indicated Quality planning had relationship with the profitability, r(95, n = 248) = .588 <.983, p<.05. Quality continuous improvement had relationship with the sales volume, r(95, n = 248) = .458 <.840, p<.05 and Quality control had relationship with the productivity of pharmaceutical firms in Enugu State, r(95, n = 248) = .370 <.675, p<.05. The study concluded that the study concluded that Quality planning, Quality continuous improvement and Quality control had relationship with the profitability, the sales volume and productivity of pharmaceutical firms in Enugu State. The study recommended amongst others that the management of the pharmaceutical firms should endeavour to have quality plan to enable them structure document that includes the essentials of a project, from resources to workforce, and technologies to deadline

1.1 Introduction

In every manufacturing firm, quality plays a vital role in terms of customer satisfaction and financial profit. And this is not an easy to tackle. Managers are responsible of finding ways to improve performance through upgrading facilities and

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processes. Management needs to stay on their toes by providing proper procedures, defining quality-related issues, and issuing instructions to fix quality management problems once found. In the new globalisation era a management is changing because new needs, preasures for higher quality, agility, efficiency, effectiveness, resilience etc (Nowicki, & Sikora, 2012). Quality management is a managerial approach geared towards in cooperating inherent managerial tendencies of planning, control and improvement. It depends on the accompanying standards: quality integration, quality first, consumer loyalty, constant change, continuous improvement, factual-based decision and workforce involvement (Milanoi, 2016). Quality management, as the name suggests, is the overall monitoring of the product, services, or internal processes of any organization for its overall betterment. It ensures that there is consistency in the product or service delivered so that every single time the customer experience is of premier quality. Quality management planning is not only limited to the product or service but also to the processes and goals of the organization. Maintaining uniformity in the organization's objectives, products or services is the core function of quality management planning, (Shethna,2022). In the case of defective products, quality management must quickly get to the root cause of the situation. Different manufacturing industries require specific process management strategies that define the set strategies and select what works to improve quality, (Barone,2022). To face profound changes from decreasing funding, growing patient expectations and increasing competition in the health-care market, public hospitals began to implement effective quality management (QM) practices following manufacturing and other service industries (Xiong, He, Deng, Zhang and Zhang, 2017). Quality management is the act of overseeing all activities and tasks needed to maintain a desired level of excellence (Adam and Mansa, 2020). Establishing an effective team is critical in quality management strategy. Teamwork enables solving quality problems through brainstorming. Some essential aspects of teamwork include cross-training and sharing of tasks. While they learn from each other, the manufacturing process improves. Working together as a team allows employees to draw from each other's skills, experiences and knowledge and encourages communication and support within the shop. (Olah,2022). Based on this, the study aimed to evaluate Quality management practices and performances of Pharmaceutical firms in Enugu state.

1.1 Statement of the problem

Quality management is the total monitoring of the product, services, or internal processes of any firm for its entire betterment. It ensures that there is consistency in the product or service delivered so that every single time the customer experience is of premier quality. Quality management is not only limited to the product or service but also to the processes and goals of the organization. Maintaining uniformity in the organization's objectives, products or services is the core function of quality management planning. Quality management in manufacturing significantly contributes to a manufacturer's brand and bottom line.

However, persistent challenges to quality management continue to trouble small and medium-sized manufacturing companies alike. The issues, of course, vary depending on the existing management culture of the company. Any existing corporate culture that was built over the years is often difficult to break up. Even in modern day manufacturing, quality management is still widely viewed as the responsibility of the department that is tasked to

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implement it, such as the quality control department or the quality assurance department. As such there exist the challenges of quality planning, quality continuous improvement and quality control of pharmaceutical firms in Enugu state.

As a result of this, there is need to tackle the problems to avoid lack of profitability, sales volume and productivity of pharmaceutical firms in Enugu state. People are not perfect and make mistakes. Issues like inverting a number or missing a step in the manufacturing process impact the quality of the finished product. Maintaining tools used for quality checking is vital to quality. Using worn or out-of-calibration tools will cause incorrect results. This has necessitated the study Quality management practices and performances of Pharmaceutical firms in Enugu state.

1.2 Objectives of the study

The main objective of the study was to evaluate Quality management practices and performances of Pharmaceutical firms in Enugu state. The main objectives of the study were to:

i. Examine the relationship between quality planning and the profitability of pharmaceutical firms in Enugu State.
ii. Ascertain the relationship between quality continuous improvement and the sales volume in pharmaceutical firms in Enugu state.
iii. Evaluate the relationship between quality control and the productivity of pharmaceutical firms in Enugu state.

1.3 Research Questions

The following research questions guided the study

i. What is the relationship between quality planning and the profitability of pharmaceutical firms in Enugu State?
ii. What is the relationship between quality continuous improvement and the sales volume in pharmaceutical firms in Enugu state?
iii. What is the relationship between quality control and the productivity of pharmaceutical firms in Enugu state?

1.4 Statement of the Hypotheses

The following hypotheses guided the study

i. Quality planning has relationship with the profitability of pharmaceutical firms in Enugu state.
ii. Quality continuous improvement has relationship with the sales volume of pharmaceutical firms in Enugu state.
iii. Quality control has relationship with the productivity of pharmaceutical firms in Enugu State.

1.5 Scope of the study

The scope of the study was to evaluate the Quality management practices and performances of Pharmaceutical firms in Enugu state. The management issues include: quality planning and the profitability; quality continuous improvement and the sales volume; quality control and the productivity of pharmaceutical firms in Enugu state.

2.1 Conceptual Review

2.1.1 Quality

The word 'quality' is derived from the Latin word ‘qualis’. It is a difficult term to define as the word means different things to different people (Feigenbaum, 2014). Indeed, Warwood and Roberts (2014) concluded that the concept of quality is not revolutionary but rather has evolved over the last few decades. Quality is defined as a process that "should be aimed at the needs of the customer, present and future" (Demirbag, Tatoglu, Tekinkus & Zaim 2016). Furthermore, Philip (2015) defined quality as, "conformance to requirements, not as

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goodness" quality means "meeting the customer's requirements", which may include availability, delivery, reliability, maintainability and cost effectiveness Most of the definitions are categorised into five principal groups, which are: the transcendent, product-based, user-based, manufacturing-based, and value-based.

2.1.2 Management

Management is a social process which is designed to ensure the cooperation, participation, intervention and involvement of others in the effective achievement of a given or pre-determined goal or objective. The term management is derived from an Italian word “maneggiare” which means to “train horses” or literally “to handle”. Etymologically therefore, it means to handle, direct, economically guide and lead (Amadi, 2018). Management is an integrating process by which authorized individuals create, maintain and operate an organization in the selection and accomplishment of its aims. It is the direction or guidance of people towards organizational goals and objectives, (Sapre, 2014). Management is art of getting things done through resources. Management includes the activities of setting the strategy of an organization and coordinating the efforts of its employees to accomplish its objectives through the application of available resources, such as financial, natural, technological, and human resources (Connolly, James & Fertig, 2017).

2.1.3 Quality management practices

Quality management is a managerial approach geared towards in cooperating inherent managerial tendencies of planning, control and improvement. It depends on the accompanying standards: quality integration, quality first, consumer loyalty, constant change, continuous improvement, factual-based decision and workforce involvement (Milanoi, 2016). To face profound changes from decreasing funding, growing patient expectations and increasing competition in the health-care market, public hospitals began to implement effective quality management (QM) practices following manufacturing and other service industries (Xiong, He, Deng, Zhang and Zhang, 2017). Quality management practices have received much attention in recent years due to its product quality is necessary to satisfy customers, increase profit, and sustain the business. Indeed, substantial effort has been exerted to ensure the quality of products, but it remains insufficient without consideration of sustainable product development, which has economic, environment, and social elements (Hemming, Pugh, Williams, and Clackburn, 2014). Quality management is the act of overseeing all activities and tasks that must be accomplished to maintain a desired level of excellence, (Adam and Mansa, 2020). Quality management is the act of overseeing all activities and tasks needed to maintain a desired level of excellence (Adam and Mansa, 2020).

2.1.4 Components of quality management practices used in the study.

2.1.4.1Quality Planning

Quality planning is the method of deciding what’s most important to the project during the planning stage, so we can make sure that everything goes according to plan. That includes allocating resources needed to deliver the project, determining what you must take steps, and specifying requirements that need to be met. As organizational objectives and strategies are deployed throughout the organization, each function fashions its best way of contributing to top-level goals and objectives, (Simplilearn, 2023). Quality planning is one of the most critical aspects of project management. It helps ensure that projects are done correctly and on time, meeting the needs and expectations of the customer.

2.1.4.2 Quality Continuous Improvement

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Continuous Improvement is an ongoing, long-term approach to improving processes, products and services. It is also called Continual Improvement or CI, and is one of those terms which we often think we fully understand, but can actually mean many different things to many different people (Harris, 2021). Continuous improvement aims to increase efficiency, quality and reduce costs. Organisations which implement continuous improvement achieve this by making small, gradual improvements over time (Harris, 2021). Continuous improvement is about making things better by identifying opportunities for improvement and striving to achieve a set goal. Continual improvement is a concept that is central to quality management theories and programs (Hawks and Harrington, 2021). Continuous improvement is an ongoing effort to improve something. These efforts can look like small improvements but over time these small changes have a big impact. Continuous improvement strategy is any policy or process within a workplace that helps keep the focus on improving the way things are done on a regular basis. This could be through regular incremental improvements or by focusing on achieving larger process improvements (Cullen, 2018).

2.1.4.3 Quality Control

Quality control (QC) is a process through which a business seeks to ensure that product quality is maintained or improved. Quality control requires the company to create an environment where management and employees strive for perfection. A significant aspect of quality control is the establishment of well-defined controls. These controls help standardize both production and reactions to quality issues. Limiting room for error by specifying which production activities are to be completed by which personnel reduces the chance that employees will be involved in tasks for which they do not have adequate training. Quality control is the set of measures and procedures to follow in order to ensure that the quality of a product is maintained and improved against a set of benchmarks and that any errors encountered are either eliminated or reduced, (Rouse, 2015).

2.1.5 Performance

Performance could be defined simply in terms of the achievement of quantified objectives. But performance is not only a matter of what people achieves but also how they are achieving it. A high performance result comes from appropriate behavior and the effective use of required knowledge, skills and competencies (Tutorialpoint, 2021). Performance is all about the core values of the organization. Performance is associated with an approach to creating a particular vision of purpose and aims of the organization, which will be helping each employee to understand and recognize their part of responsibilities by the help of which they will manage and enhance the performance of both individuals and the organization (Tutorialpoint, 2021).

2.1.6 Components of Performance used in the study

2.1.6.1Profitability

Profitability is ability of a company to use its resources to generate revenues in excess of its expenses. In other words, this is a company's capability of generating profits from its operations. (My Accounting course, 2022). Profitability is the degree to which the value of a farm's production exceeds the cost of the resources used to produce it. An absolute measure of profitability is net farm income. If the opportunity costs for the farmer's own labor and capital are subtracted, the remainder is profit and return to management. A positive profit

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means that the farm has produced crops and livestock that have a greater value than the seed, fertilizer, fuel, labor, feed, and other inputs that were used up in their production, (Edwards, and Duffy, 2014).

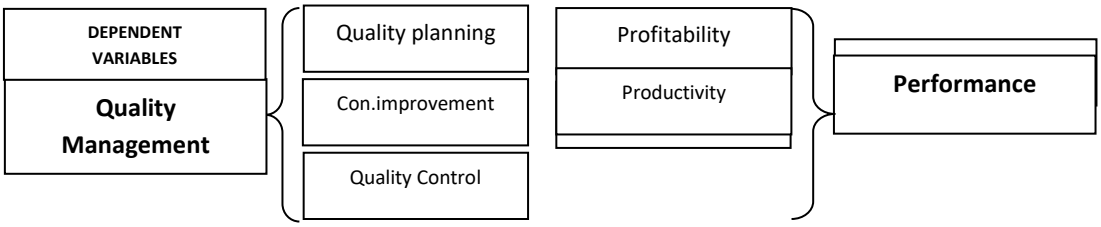
2.1.6.2 Sales Volume

Sales volume is the number of units that are sold in a given time period. This is not to be confused with total sales, which are usually quantified as a monetary value. Sales volume can be broken down even further to analyze performance in certain retailers, territories, or individual stores. This can help you optimize territory management and routing for your reps, making everyone's lives easier. Sales volume is just one of a collection of metrics that are important to business growth. Calculating and tracking your company's sales volume should feed into a data-driven approach to retail execution, empowering you to identify and execute on the highest impact activities in the field, (Repsly, 2023).

2.1.6.3 Productivity

Productivity is the efficiency of production of goods or services. To boost performance, many businesses have embraced the concept of workplace productivity. By focusing on efficiency and speed, a company can develop relevant key performance indicators that help employees understand how their individual contributions impact the organization's goals. Workplace productivity relates to the amount of work that your staff can produce over a certain period. In other words, it's the measure of the total output (goods and services) versus the total input (labor and costs) (Aternity 2021). The specific approach that a company takes to improve workplace productivity will largely depend on the current corporate goals, work procedures, and workplace culture. Improved communication and collaboration, automation of everyday tasks, and better reporting capabilities will all be invaluable to upping your productivity, but potentially the biggest boon is centralization; having all your information will be in one place (Aldler, 2019).

2.1.7 Conceptual Framework Model of the study



Source: Researcher's Field Compilation, 2023

2.2 Theoretical Framework

Contingency Theory of Leadership

A contingency theory was developed by the Austrian psychologist Fred Edward Fiedler in his landmark 1964. A contingency theory is an organizational theory that claims that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation. Contingent leaders are flexible in choosing and adapting to succinct strategies to suit change in situation at a particular

period in time in the running of the organization (Fiedler, 1993). Contingency theory suggests the best way to organise and lead an organisation, or to make decisions, depends upon internal and external situational factors, e.g. organisational size, operational scope and environmental uncertainty. The purpose of this theory is to advance on the understanding of process improvement techniques, with a focus on standards of the organization (Paul and Cyril, 2018). Applying the contingency theory of management requires managers to stay alert and avoid relying on rules, policies and tradition as the only guides for their choices. To improve productivity and employee morale, managers must understand the importance of contingency theory and its positive implications at the workplace (Sampson, 2018).

The theory is in line with objectives of the study, the theory suggests that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation.

2.3 Empirical Review

2.3.1 Quality planning and the profitability of pharmaceutical firms in Enugu State.

Ejike and Agha (2018) conducted a study on the Impact of Operating Liquidity on Profitability of Pharmaceutical Firms in Nigeria. Operating liquidity involves the most liquid resources of the firm which includes cash and cash equivalents, inventories, trade debtors and other receivables. Most firms do not ensure optimal level of operating liquidity and this has been a major obstacle to their overall profitability. The study examined the impact of operating liquidity on the profitability of Pharmaceutical firms listed on the Nigerian Stock Exchange. Correlation and ex-post facto research design were used in a sample of 5 Pharmaceutical firms. Secondary data for a period of 10 years (2002-2011) was used, and Ordinary Least Squares (OLS) multiple regression was employed in data analysis. The study found that operating liquidity (account receivables collection, accounts payables management) has a significant impact on the profitability of listed pharmaceutical firms in Nigeria. It is therefore recommended among others that managers should, collect receivable as soon as possible because it is better to receive inflows sooner than later, and delay payment of creditors in order to invest the money in short-term securities which are profitable.

Okeke-Ezeanyanwu and Iwuchukwu (2019) conducted a study on the Effect of Quality Management on the Performance of Small and Medium Scale Enterprises in Anambra State of Nigeria. This study examined on the effect of quality management on the performance of Small and Medium Scale Enterprises in Anambra State. The study had three objectives, three research questions and three null hypotheses. Literature related to the study were reviewed. The study adopted survey research design. The population of the study was 425 employees of five SMEs which were selected from the three senatorial zones of Anambra State. The entire population was used, hence there was no sampling. Questionnaire was the instrument of data collection. Cronbach Alpha reliability method was used to test the reliability of the instrument. Simple percentage was used to analyze the research questions while One Way Analysis of Variance was used to test the null hypotheses. The findings of the study revealed among others that quality management is now a watchword for every entrepreneur because this will broaden the scope of entrepreneurial activities which will enhance productivity, maintain competitive advantage not

only in local market but globally. Three recommendations were made among which was that government should encourage financial institutions to give loans to SMEs at reduced interest rate and also eliminate the rigorous time taking procedure to help them have easy access to finance and plan to achieve quality management goals.

Udonwa (2022) carried out a study on Corporate Culture Promotion and Performance of Pharmaceutical Manufacturing Firms. The study evaluated the corporate culture promotion and performance of pharmaceutical manufacturing firms in Enugu State. The specific objectives were to; evaluate the relationship between social responsibility and quality of service and determine the relationship between employee training program and the output of pharmaceutical manufacturing firms in Enugu State. A total population of one thousand, five hundred and forty two (542), staff was used. The sample size of 308, using Freund and William's statistic formula at 5 percent margin of error. 266 staff returned the questionnaire and accurately filled. Data was presented and analyzed with mean score and Pearson correlation (r) was used to test the hypotheses. The findings showed that There was positive significant relationship between social responsibility and the quality of service of Pharmaceutical manufacturing firms in Enugu State, ($r= .703 <.861$, $p<.05$). There was positive significant relationship between employee training program and the output of Pharmaceutical manufacturing firms in Enugu State, ($r= .455 <.900$, $p<.05$). The study on corporate Culture Promotion and Performance of Pharmaceutical manufacturing firms in Enugu State concluded that social responsibility and employee training had a positive significant relationship with the quality of service and output of Small and medium Enterprises (SMEs). The study recommended among others that Management of organizations should ensure that its culture has clearly defined and measured service goals that motivates employees while the quality in service delivery can be boosted by adding more value-added extra services to customers.

Madhavi and Dhwani (2022) carried out a study on a Review of Total Quality Management in Pharmaceutical Industries. Pharmaceutical product quality has always been a major source of worry for regulatory organisations around the world. Maintaining medication quality is critical since drugs and pharmaceutical items are provided directly to customers, and poor medicine quality is not only a health threat, but also a waste of money for both the government and individuals. As a result, the pharmaceutical industry's most significant goal is to adopt an effective quality policy. Total quality management (TQM) can efficiently attain quality. TQM plays an important role in the pharmaceutical sector, from the inception of the industry through the safety of the marketed drug till it is consumed. Total quality management is a multifaceted approach that entails adhering to quality standards in all aspects of pharmaceutical manufacturing. The purpose of this review is to provide a broad overview of the TQM concept and the many management strategies that contribute to pharmaceutical quality improvement. This review paper presents a quick overview of how various techniques and practices, such as the numerous regulatory criteria that lead to the practical application of this concept include quality by design, quality risk management. This review study will assist new researchers in gaining an understanding of overall Quality Management, since it discusses QMS, cGMP, Regulatory Guidelines, TQM, and ICH Guidelines. In addition, this article provides a brief overview of current TQM industrial practices as well as the various opportunities for technical breakthroughs in real-

time quality management to improve TQM outcomes.

2.3.2 Quality continuous improvement and the sales volume in pharmaceutical firms in Enugu state.

Sanjay and Sachin (2019) conducted a study on the TQM, SCM and operational performance: an empirical study of Indian pharmaceutical industry. The purpose of this paper is to investigate the impact of total quality management (TQM) and supply chain management (SCM) practices on operational performance, and their interlinkage between each other. Constructs those are critical to pharmaceutical quality and supply chain have been identified with the help of literature and experts from industry. The impact of TQM practices on supply chain practices and on operational performance has been evaluated. Similarly, the impact of supply chain practices on operational performance has been evaluated. Further, alternate models are tested and evaluated through structural equation modeling. It was observed during testing of alternate models that TQM practices have a direct impact on operational performance. However, TQM practices also directly impact supply chain components, which, in turn, influence overall operational performance. In comparison of alternate models, the model in which TQM practices affect supply chain practices and supply chain practices further affect the operational performance is found most appropriate. This study provides some useful implications from industry point of view. TQM practices are critical to pharmaceutical industry. TQM practices are the core of attaining a smooth supply chain, which will have greater impact to achieve operational performance. Strategic supplier partnership, procurement management, information sharing, and quality and inventory management practices are driven by TQM practices. This tri-linkage helps to achieve the desired operational performance. Originality/value There are very limited studies that have considered both the areas together to achieve better operational performance. In pharmaceutical industry, both TQM and SCM are the critical areas for any organization to drive its growth.

Al-Serhan (2019) conducted a study on the Impact Assessment of Total Quality Management on Firm Performance: Evidence from Pharmaceutical Companies of Jordan. Total Quality Management (TQM) is the continual process of detecting and reducing or eliminating errors in manufacturing, streamlining supply chain management, improving the customer experience, and ensuring that employees are up to speed with training. The focus of TQM is to improve the quality of an organization's outputs, including goods and services, through continual improvement of internal practices. TQM aims to hold all parties involved in the production process accountable for the overall quality of the final product or service. TQM is a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the organization. The present research investigates the impact of TQM practices on firm's performance in selected pharmaceutical companies of Jordan. Data has been collected through a field survey and interviews conducted in the year 2018. A total of 400 questionnaires designed on five point likert scale were distributed among the employees wherein 112 were rejected and 388 were accepted for analysis. The sample size of the study has been 388 employees. Linear regression has been used as the statistical tool for analysis. The findings highlighted that there is a significant impact of TQM practices on firm performance in companies under study.

Quadri, (2022) conducted a study on the Organizational Reward Strategy and Employee Performance in Pharmaceutical Companies in Rivers State, Nigeria. This study investigated organizational reward strategy and employee performance in pharmaceutical companies in Rivers State. The study employed the survey research design. The target population is the two hundred and forty-four (244) pharmaceutical companies in Rivers State as contained in the official latest edition of Rivers State Yellow Pages Directory (2013/2014 ed.). However, due to convenience, proximity and time frame for this study, the researcher was only able to reach out to ninety-seven (97) pharmaceutical companies. From the researcher's field work, the ninety-seven pharmaceutical companies had a combined total of two hundred and nine-one (291) sales representatives, which constituted the population size for the study. The sample size was obtained via Krejcie and Morgan's sample size determination table, which gave a minimum sample size of a one hundred and sixty- five (165) from a population size of two hundred and ninety-one (291). The simple random sampling technique was employed to allow every employee a fair chance of possible selection. The Spearman Rank Order Correlation Coefficient was also applied to test the stated hypotheses at 0.05 level of significance. The outcome of the study revealed that a significant positive relations exist between reward strategy and employee performance in pharmaceutical companies in Rivers State. Given the results and discussion, the study establishes that a robust reward strategy will lead to improved performances of sales representatives of pharmaceutical companies in Rivers state. Consequently, the study recommended that pharmaceutical firms should: periodically train and acquaint their sales representatives with new knowledge of their products, for effective communication of product benefits to customers; and target incentives programmes to all workers, not only to management or employees who are the best performers.

2.3.3 Quality control and the productivity of pharmaceutical firms in Enugu state.

Tajamma and Attia (2015) established a study on the Quality Management Practices and Organizational Performance: Moderating Role of Leadership. This paper is intended to explore the synergic impact of leadership in cultivating the organizational performance outcomes of quality management practices. The main purpose of this research study is to investigate the impact of quality management practices on organizational performance through moderating role of leadership in pharmaceutical industry of Pakistan. A survey was conducted using a structured questionnaire to collect data. The population of study was comprised of pharmaceutical firms located in Lahore, Punjab those were listed on the Pakistan Pharmaceutical Manufacturers Association. The results show that implementation of quality management practices plays an important role among pharmaceutical firms' performance. Direct multiple regression model of organizational performance identified three quality management practices, customer focus, continuous improvement, and benchmarking, as significant predictors of organizational performance. Further, a moderation analysis between three significant predictors and an organizational performance revealed that leadership has strong and significant moderating role. It is inferred that the success of quality management programs is actually stimulated with enthusiastic involvement of leadership.

Dadhaniya (2021) conducted a study on the Productivity Measurement: A Study of Selected Pharmaceutical Companies in India. This study aims

to measure, analyze, and compare the productivity performance of selected pharmaceutical companies in India. This study is based on secondary data. In this study, seven pharmaceutical companies are selected as a sample based on paid-up capital of the year 2019-20. The seven companies are selected for their higher paid-up capital, and the study period is seven years from 2013-14 to 2019-20. In this study ratio analysis is used as an accounting tool in which four productivity ratios are employed. The one-way ANOVA technique of parametric test is used as a statistical tool to identify the difference among sample means. The major findings of the study indicate that in all the selected companies the performance of material productivity, labor productivity and overhead productivity show fluctuating trend. The overall productivity performance of all the companies is very close to each other during the study period of seven years. The result of the statistical tests revealed that in all productivity ratios drawn null hypotheses are not accepted. This means there is a significant difference in different productivity ratios among selected pharmaceutical companies during the study period. In this study, productivity analysis is carried out which is helpful to measure the productivity performance. The results would help investors to make the right choice of investment in selected pharmaceutical companies. Given the present situation of COVID-19, productivity analysis will be helpful to identify the existing production capacity in concern with pharmaceutical products and services. The significant contribution of this study is to measure the various productivity performances of pharmaceutical companies. Further, the average productivity performance is compared among the seven selected pharmaceutical companies, which shows that average productivity performance is different among the selected companies.

Agbo, Eze, & Mbah, (2022) carried out a study on the Sustainable Business Practices on the Performance of Aluminum Manufacturing Firms in Enugu State. The study evaluated the effect of sustainable business practices on the performance of Aluminum manufacturing firms in Enugu State. The specific objectives were to: Examine the effect of high quality goods and services on the profitability; evaluate the effect of innovation on sales growth. The population of the study was two hundred and fifteen (215) which consist of the directors, managers and senior staff of the selected Aluminum manufacturing firms in Enugu State. The study used the survey approach and stratified random sampling. The primary source was the administration of questionnaire. The whole population was used due to small number. 182 staff returned the questionnaire and accurately filled. Data was presented and analyzed by mean score (3.0 and above agreed while below 3.0 disagreed) and standard deviation using Sprint Likert Scale. The hypotheses were analyzed using Z-test statistics tool. The findings indicated that High Quality goods had positive significant effect on the profitability of aluminum manufacturing firms in Enugu State $Z(95, n = 182) = 6.041 < 9.043$, $p<.05$. Innovation had positive significant effect on sales growth of aluminum manufacturing firms in Enugu State, $Z(95, n = 182) = 6.560 < 7.227$, $p<05$. The study concluded that sustainability of business practices had positive significant effect on the performance of aluminum manufacturing firms in Enugu State. The study recommended among others that the management should endeavour to pay greater attention to product quality in production for effective customer service to enhance fewer customer complaints in the organisation.

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METHODOLOGY

3.1 Research Design

The study employed descriptive survey design. The survey design was adopted because the study requires a technique of observation such as questionnaire and interview, the population of the study must be carefully chosen, clearly defined and specifically delimited and roles upon observation for the acquisition of data. It is also more economical.

3.2 Source of Data

Data are classified as either primary or secondary data. The classification was based on the two possible sources: primary source and secondary source.

3.2.1 Primary Source

The study made use of data from two different sources namely primary source and secondary sources. A primary data source is the one which the data is collected directly (usually first-hand) by the researcher.

3.2.2 Sources of Secondary Data

Secondary data source is the one which the data is obtained from published materials, internet websites, reports, dailies, text books and so on. Sources of secondary can be split into two parts internal and external sources.

3.3 Area of Study

The area of the study was Enugu state, Nigeria. The major ethnic group had various traditional values which of course could be found in their culture, food, dressing and religion. The selected Pharmaceutical manufacturing firms consisted of the following; CEENEK Phar mind. Nig. Ltd, Plot 219 lbeagwa-Aka St. Nike Community Layout, CINNAMON drugs Ltd, Plot C9, Emene industrial Layout, CLARK Pharm.Co. Ltd, 9th Mile Corner, Ngwo, Enugu; DEZERN Nig. Ltd, 87 Ogui Road, Box 9233, Enugu; NAMEL Pharm. Industries Limited, 4 A &B Medical Road, Phase 6, Trans-Ekulu Enugu.

3.4 Population of the Study

The population of the study consists of five (5) selected out of seventeen (16) Pharmaceutical manufacturing companies registered under Manufacturing Association of Nigeria (MAN) in Enugu state, Nigeria with minimum capital base 10 million and minimum of forty (40) employees and above. Simple random method was adopted. These made up the population of study of three hundred and eight (308) of Junior and senior staff of organizations under study as shown in the table 3.1.

Table 3.1 Population Distribution

	Firms	Staff Categories		
		Senior	**Junior**	**Total**
1.	CEENEK Phar mind. Nig. Ltd.	18	45	63
2.	CINNAMON drugs Ltd	21	32	53
3.	DEZERN Nig. Ltd	15	43	58
4.	NAMEL Pharm. Industries Limited	13	56	69
5.	CLARK Pharm.Co. Ltd.	18	47	65
	Total	**85**	**223**	**308**

Source: Administrative desk office, 2023

Table 3.1 study shows that five (5) firms which were selected from Enugu state, Nigeria which the researcher deemed to be representative of the Pharmaceutical manufacturing companies in the state.

3.5 Sample Size Determination

The whole sample size was used due to small number of staff.

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3.6 Instrument for Data Collection

Questionnaire was used for the study. The secondary data were collected from firms, journals, publication, textbooks and the internet. Fifteen questions (15) in the questionnaire were ranged.

3.7 Validity of the Instrument

The instrument was given to two experts from the industry and academia to measure face and content validity. To make sure that the research instruments applied in the work are valid, the research ensured that the instrument measure the concept they are supposed to measure.

3.8 Reliability of the Research Instrument

A test-retest method was used to test the reliability of the instrument. This was done by administering 20 copies of the prepared questionnaire to the sample of the study, after a while, the same questionnaire was re-administered to the respondents at the end of the exercise the responses from the group were consistent. Cronbah's Alpha was used in determining the extent of consistency of the reliability. The formula is as follows:

$$= \frac{K\,(Cov/Var)}{1-(k-1)\,(Cov/Var)}$$

Where

K = number of items on the survey.

Cov = Average inter item covariance.

Var = Average item variance.

I = Constant.

A Cronbach's alpha value (∞) of greater 0.810 indicated very strong reliability.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	15	100.0
	Excluded	0	.0
	Total	15	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	No. of Items
.810	10

Scale reliabilities were calculated using Cronbach's Alpha; the result obtained was 0.810. This shows that the internal consistency of the scale is good for the purpose of this study because it is greater than 0.810 which was good.

3.9 Method of Data Analyses

Data from the questionnaire were analyzed with the aid of SPSS version 23 using simple, percentages and correlation co-efficient. Data from the questionnaire were further analyzed using simple percentages, mean and standard deviation. For the 5-point likert scale questions, the scale and decision rule stated below were used in analysing the findings.

Scale

Strongly Agree (SA) -5, Agree (A) - 4, Neutral(N) -3, Disagree (D) -2, Strongly Disagree(SD),1

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise rejects the null hypothesis and Pearson Correlation (r) was used to test the hypotheses and analyzed with the aid of SPSS.

Data Presentation and Analyses

4.1 Distribution and returned Questionnaire

The chapter presents and analyzes the data collected for the study. The presentation and interpretation of data were based on the questionnaire administrated to the staff of the selected Pharmaceutical manufacturing companies in Enugu state, Nigeria.

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Table 4.1 Distribution and Return of the Questionnaire

Firms	Distributed	No Returned	percent	No not Returned	Percent
1. CEENEK Phar mind. Nig. Ltd.	63	54	17	9	3
2. CINNAMON drugs Ltd	53	43	14	10	3
3. DEZERN Nig. Ltd	58	48	15	10	3
4. NAMEL Pharm. Industries Limited	69	52	17	17	6
5. CLARK Pharm.Co. Ltd.	65	51	17	14	5
Total	**308**	**248**	**80**	**60**	**20**

Source: From the questionnaire administration, 2023

Three hundred and eight (308) copies of the questionnaire were distributed to the respondents and two hundred and forty eight (248) copies were returned representing eighty (80%) percent, while sixty (60) copies of the questionnaire were not returned representing twenty percent (20 %). This shows a high rate of the respondents.

4.2 Data Analyses

4.2.1 The relationship between Quality planning and profitability of pharmaceutical firms in Enugu State

Table 4.2.1.1: Responses on the relationship between Quality planning and profitability of pharmaceutical firms in Enugu State

		5 SA	4 A	3 N	2 DA	1 SD	∑FX	- X	SD	Decision
1	The firm's attainment to objectives increased their gains.	425 85 34.3	240 60 24.2	81 27 10.9	48 24 9.7	52 52 21.0	846 248 100%	3.41	1.546	Agree
2	The operating practice or procedure of the firm enhanced their income generations.	305 61 24.6	240 60 24.2	90 30 12.1	58 29 11.7	68 68 27.4	761 248 100%	3.07	1.564	Agree
3	Proper allocation of responsibilities and authority improved the firm gross margin.	370 74 29.8	264 66 26.6	117 39 15.7	34 17 6.9	52 52 21.0	837 248 100%	3.38	1.495	Agree
4	The specific documentation standards applied in the products promotes more purchase.	168 86 34.7	264 66 26.6	63 21 8.5	102 51 20.6	24 24 9.7	621 248 100%	3.56	1.393	Agree
5	Suitable testing, inspection and examination attached more customers to patronize the firm.	374 74 29.8	264 66 26.6	117 39 15.7	82 41 16.5	28 28 11.3	865 248 100%	3.47	1.364	Agree
	Total Grand mean and standard deviation							**3.38**	**1.4724**	

Source: Field Survey, 2023

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Table 4.2.1.1, 145 respondents out of 248 representing 58.5 percent agreed that the firm's attainment to objectives increased their gains with mean score 3.41 and standard deviation of 1.546. The operating practice or procedure of the firm enhanced their income generations 121 respondents representing 48.8 percent agreed with mean score of 3.07 and standard deviation of 1.564. Proper allocation of responsibilities and authority improved the firm gross margin 140 respondents representing 56.4 percent agreed with mean score of 3.35 and standard deviation of 1.408. The specific documentation standards applied in the products promotes more purchase 152 respondents representing 61.3 percent agreed with mean score of 3.56 and 1.393. Suitable testing, inspection and examination attached more customers to patronize the firm 140 respondents representing 56.4 percent agreed with a mean score of 3.47 and standard deviation

4.2.2 The relationship between quality continuous improvement and the sales volume of pharmaceutical firms in Enugu State

Table 4.2.2.1: Responses on the relationship between quality continuous improvement and the sales volume of pharmaceutical firms in Enugu State

		5 SA	4 A	3 N	2 DA	1 SD	∑FX	- X	SD	Decision
1	The identification of customers needs increased our sales margin.	325	420	66	88	12	911	3.67	1.181	Agree
		65	105	22	44	12	248			
		26.2	42.3	8.9	17.7	4.8	100%			
2	Able to address the clients needs attracts more new customers	285	420	9	86	40	840	3.39	1.421	Agree
		57	105	3	43	40	248			
		23.0	42.3	1.2	17.3	16.1	100%			
3	Improving the business operations increased the number of units that are sold in a given period.	285	432	57	112	8	894	3.60	1.162	Agree
		57	108	19	56	8	248			
		23.0	43.5	7.7	22.6	3.2	100%			
4	Identification of an opportunities and plan for change improved transaction size.	245	348	156	96	12	857	3.26	1.431	Agree
		49	87	52	48	12	248			
		19.8	35.1	21.0	19.4	4.8	100%			
5	Enhancing the quality of outputs increased the unit sales quantity.	435	240	126	102	8	911	3.67	1.238	Agree
		87	60	42	51	8	248			
		35.1	24.2	16.9	20.6	3.2	100%			
	Total Grand mean and standard deviation							**3.52**	**1.2866**	

Source: Field Survey, 2023

Table 4.2.2.1, 170 respondents out of 248 representing 68.5 percent agreed that the identification of customers needs increased our sales margin with mean score 3.67 and standard deviation of 1.181. Able to address the clients needs attracts more new customers 162 respondents representing

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65.3 percent agreed with mean score of 3.39 and standard deviation of 1.421. Improving the business operations increased the number of units that are sold in a given period 165 respondents representing 66.5 percent agreed with mean score of 3.60 and standard deviation of 1.162. Identification of an opportunities and plan for change improved transaction size 136 respondents representing 54.9 percent agreed with mean score of 3.26 and 1.431. Enhancing the quality of outputs increased the unit sales quantity 147 respondents representing 59.3 percent agreed with a mean score of 3.67 and standard deviation 1.238.

4.2 .3 The relationship between quality control and the productivity of pharmaceutical firms in Enugu State

Table 4.2.3.1: Responses on the relationship between quality control and the productivity of pharmaceutical firms in Enugu State

		5 SA	4 A	3 N	2 DA	1 SD	∑FX	- X	SD	Decision
1	A set of measures to monitor service quality increased our output	245 49 19.8	288 72 29.0	108 36 14.5	94 47 19.0	44 44 17.7	714 248 100%	3.14	1.403	Agree
2	Responding to changes in the data as needed aided the right choices in the firm.	405 81 32.7	228 57 23.0	123 41 16.5	42 21 8.5	48 48 19.4	846 248 100%	3.41	1.495	Agree
3	Being customer focused enhanced our ability to plan.	415 83 33.5	336 84 33.9	72 24 9.7	82 41 16.5	16 16 6.5	921 248 100%	3.71	1.264	Agree
4	People involvement gave rise to best practices in the firm.	390 78 31.5	276 69 27.8	63 21 8.5	120 60 24.2	20 20 8.1	869 248 100%	3.50	1.362	Agree
5	The testing of products to measure and ensure meeting standard.	410 82 33.1	264 66 26.6	63 21 8.5	70 35 14.1	44 44 17.7	851 248 100%	3.43	1.504	Agree
	Total Grand mean and standard deviation							**3.44**	**1.6584**	

Source: Field Survey, 2023

Table 4.2.3.1, 121 respondents out of 248 representing 48.8 percent agreed that a set of measures to monitor service quality increased our output with mean score 3.14 and standard deviation of 1.403. Responding to changes in the data as needed aided the right choices in the firm 138 respondents representing 55.7 percent agreed with mean score of 3.41 and standard deviation of 1.495.

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Being customer focused enhanced our ability to plan 167 respondents representing 67.4 percent agreed with mean score of 3.71 and standard deviation of 1.264. People involvement gave rise to best practices in the firm 147 respondents representing 59.3 percent agreed with mean score of 3.50 and 1.362. The testing of products to measure and ensure meeting standard 148 respondents representing 59.7 percent agreed with a mean score of 3.43 and standard deviation 1.504.

4.3 Test of Hypotheses

4.3.1 Hypothesis One: Quality planning has relationship with the profitability of pharmaceutical firms in Enugu state.

Correlations

		The firm's attainment to objectives increased their gains.	The operating practice or procedure of the firm enhanced their income generations.	Proper allocation of responsibilities and authority improved the firm gross margin.	The specific documentation standards applied in the products promotes more purchase.	Suitable testing, inspection and examination attached more customers to patronize the firm.
The firm's attainment to objectives increased their gains.	Pearson Correlation	1	.658**	.650**	.699**	.616**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	248	248	248	248	248
The operating practice or procedure of the firm enhanced their income generations.	Pearson Correlation	.658**	1	.602**	.425**	.588**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	248	248	248	248	248
Proper allocation of responsibilities and authority improved the firm gross margin.	Pearson Correlation	.650**	.602**	1	.791**	.983**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	248	248	248	248	248
The specific documentation standards applied in the products promotes more purchase.	Pearson Correlation	.699**	.425**	.791**	1	.770**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	248	248	248	248	248
Suitable testing, inspection and examination attached more customers to patronize the firm.	Pearson Correlation	.616**	.588**	.983**	.770**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	248	248	248	248	248

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

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Table 4.3.1. Showed the Pearson correlation matrix on quality planning and profitability of pharmaceutical firms in Enugu State showing the correlation coefficients, significant values and the number of cases. The correlation coefficient shows .588 <.983. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that quality planning had relationship with the profitability of pharmaceutical firms in Enugu state. (r= .588 <.983). The computed correlations coefficient is greater than the table value of r = .000 with at alpha level for a two-tailed test (r= .588 <.983, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise reject the null hypothesis.

Decision

Since the computed (r = .588 <.983) is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that Quality planning had positive relationship with profitability of pharmaceutical firms in Enugu State as reported in the probability value of (r= .588 <.983., p<.05).

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4.3.2 Hypothesis Two: Quality continuous improvement has relationship with the sales volume of pharmaceutical firms in Enugu state.

Correlations

		The identification of customers needs increased our sales margin.	Able to address the clients needs attracts more new customers	Improving the business operations increased the number of units that are sold in a given period.	Identification of an opportunities and plan for change improved transaction size.	Enhancing the quality of outputs increased the unit sales quantity.
The identification of customers needs increased our sales margin.	Pearson Correlation	1	.840**	.838**	.458**	.663**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	248	248	248	248	248
Able to address the clients needs attracts more new customers	Pearson Correlation	.840**	1	.969**	.625**	.576**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	248	248	248	248	248
Improving the business operations increased the number of units that are sold in a given period.	Pearson Correlation	.838**	.969**	1	.574**	.594**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	248	248	248	248	248
Identification of an opportunities and plan for change improved transaction size.	Pearson Correlation	.458**	.625**	.574**	1	.384**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	248	248	248	248	248
Enhancing the quality of outputs increased the unit sales quantity.	Pearson Correlation	.663**	.576**	.594**	.384**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	248	248	248	248	248

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

Table 4.3.2. Showed the Pearson correlation matrix on quality continuous improvement and the sales volume of pharmaceutical firms in Enugu State showing the correlation coefficients, significant

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values and the number of cases. The correlation coefficient shows .458 <.840. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that quality continuous improvement had relationship with the sales volume of pharmaceutical firms in Enugu state (r= .458 <.840). The computed correlations coefficient is greater than the table value of r = .000 with at alpha level for a two-tailed test (r= .458 <.840, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise reject the null hypothesis.

Decision

Since the computed (r = .458 <.840) is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that quality continuous improvement had relationship with the sales volume of pharmaceutical firms in Enugu state as reported in the probability value of (r= .458 <.840, p<.05).

4.3.3 Hypothesis Three: Quality control has relationship with the productivity of pharmaceutical firms in Enugu State.

Correlations

		A set of measures to monitor service quality increased our output	Responding to changes in the data as needed aided the right choices in the firm.	Being customer focused enhanced our ability to plan.	People involvement gave rise to best practices in the firm.	The testing of products to measure and ensure meeting standard.
A set of measures to monitor service quality increased our output	Pearson Correlation	1	.416**	.370**	.666**	.608**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	248	248	248	248	248
Responding to changes in the data as needed aided the right choices in the firm.	Pearson Correlation	.416**	1	.487**	.409**	.778**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	248	248	248	248	248
Being customer focused enhanced our ability to plan.	Pearson Correlation	.370**	.487**	1	.675**	.589**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	248	248	248	248	248
People involvement gave rise to best practices in the firm.	Pearson Correlation	.666**	.409**	.675**	1	.530**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	248	248	248	248	248
The testing of products to measure and ensure meeting standard.	Pearson Correlation	.608**	.778**	.589**	.530**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	248	248	248	248	248

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

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Table 4.3.1. Showed the Pearson correlation matrix on quality control and the productivity of pharmaceutical firms in Enugu State showing the correlation coefficients, significant values and the number of cases. The correlation coefficient shows .370 <.675. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that the quality control had relationship with the productivity of pharmaceutical firms in Enugu State (r= .370 <.675). The computed correlations coefficient is greater than the table value of r = .000 with at alpha level for a two-tailed test (r=.370 <.675, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise reject the null hypothesis.

Decision

Since the computed (r =.370 <.675) is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that quality control had relationship with the productivity of pharmaceutical firms in Enugu State as reported in the probability value of (r=.370 <.675, p<.05).

4.4 Discussion of Findings

4.4.1 The relationship between quality planning and the profitability of pharmaceutical firms in Enugu State.

From the result of hypothesis one, the computed (r = .588 <.983) was greater than the table value of .000. Therefore, we concluded that Quality planning had positive relationship with profitability of pharmaceutical firms in Enugu State as reported in the probability value of (r= .588 <.983., p<.05). In the support of the result, Ejike and Agha (2018) conducted a study on the Impact of Operating Liquidity on Profitability of Pharmaceutical Firms in Nigeria. The study found that operating liquidity (account receivables collection, accounts payables management) has a significant impact on the profitability of listed pharmaceutical firms in Nigeria. Okeke-Ezeanyanwu and Iwuchukwu (2019) conducted a study on the Effect of Quality Management on the Performance of Small and Medium Scale Enterprises in Anambra State of Nigeria. The findings of the study revealed among others that quality management is now a watchword for every entrepreneur because this will broaden the scope of entrepreneurial activities which will enhance productivity, maintain competitive advantage not only in local market but globally.

4.4.2 The relationship between quality continuous improvement and the sales volume in pharmaceutical firms in Enugu state.

From the result of hypothesis two, the computed (r = .458 <.840) was greater than the table value of .000. Therefore, we concluded that quality continuous improvement had relationship with the sales volume of pharmaceutical firms in Enugu state as reported in the probability value of (r= .458 <.840, p<.05). In the support of the result, Sanjay and Sachin (2019) conducted a study on the TQM, SCM and operational performance: an empirical study of Indian pharmaceutical industry. The study provides some useful implications from industry point of view. TQM practices are critical to pharmaceutical industry. TQM practices are the core of attaining a smooth supply chain, which will have greater impact to achieve operational performance. Al-Serhan (2019) conducted a study on the Impact Assessment of Total Quality Management on Firm Performance: Evidence from Pharmaceutical Companies of Jordan. The findings highlighted that there is a significant impact of TQM practices on firm performance in companies under study. Quadri,

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(2022) conducted a study on the Organizational Reward Strategy and Employee Performance in Pharmaceutical Companies in Rivers State, Nigeria.

4.4.3 The relationship between quality control and the productivity of pharmaceutical firms in Enugu state.

From the result of hypothesis three, the computed (r =.370 <.675) was greater than the table value of .000. Therefore, we concluded that quality control had relationship with the productivity of pharmaceutical firms in Enugu State as reported in the probability value of (r=.370 <.675, p<.05). In the support of the result, Tajamma and Attia (2015) established a study on the Quality Management Practices and Organizational Performance: Moderating Role of Leadership. The results show that implementation of quality management practices plays an important role among pharmaceutical firms' performance. Dadhaniya (2021) conducted a study on the Productivity Measurement: A Study of Selected Pharmaceutical Companies in India. The results would help investors to make the right choice of investment in selected pharmaceutical companies. Given the present situation of COVID-19, productivity analysis will be helpful to identify the existing production capacity in concern with pharmaceutical products and services. Agbo, Eze, & Mbah, (2022) carried out a study on the Sustainable Business Practices on the Performance of Aluminum Manufacturing Firms in Enugu State. The findings indicated that High Quality goods had positive significant effect on the profitability of aluminum manufacturing firms in Enugu State Z(95, n = 182) = 6.041< 9.043, p<.05.

5.1 Summary of Findings,

i. Quality planning had relationship with the profitability of pharmaceutical firms in Enugu state, r(95, n = 248) = .588 <.983, p<.05.
ii. Quality continuous improvement had relationship with the sales volume of pharmaceutical firms in Enugu state, r(95, n = 248) = .458 <.840, p<.05.
iii. Quality control had relationship with the productivity of pharmaceutical firms in Enugu State, r(95, n = 248) = .370 <.675, p<.05.

5.2 Conclusion

The study concluded that Quality planning, Quality continuous improvement and Quality control had relationship with the profitability, the sales volume and productivity of pharmaceutical firms in Enugu State. Quality management is the act of overseeing all activities and tasks needed to maintain a desired level of excellence. Establishing an effective team is critical in quality management strategy. Teamwork enables solving quality problems through brainstorming. Some essential aspects of teamwork include cross-training and sharing of tasks. While they learn from each other, the manufacturing process improves. Working together as a team allows employees to draw from each other's skills, experiences and knowledge and encourages communication and support within the firms.

5.3 Recommendations

Based on the findings, the following recommendations were made:

1. The management of the pharmaceutical firms should endaevour to have quality plan to enable them structure document that includes the essentials of a project, from resources to workforce, and technologies to deadlines.
2. There is need for Quality continuous improvement to make Employees experience higher job satisfaction levels and engage with the company as powerful agents for change and improvement. Continuous improvement

gives staff the basis they need to solve the problems they encounter in their work themselves.

3. The organizations should have effective Quality control to safeguard the company reputation, prevent products from being unreliable, and increase trust on the side of consumers. Quality control ensures production of quality products which is immensely helpful in attracting more customers for the product thereby increasing sales.

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