British Journal of Management Research and Review | ISSN: 2854-4178
Volume 7; No 3; July – September, 2022; Impact Factor: 5.3

IMPACT OF VALUE MANAGEMENT IN ENHANCING WORKERS' PRODUCTIVITY OF SELECTED MANUFACTURING FIRMS IN SOUTH EAST, NIGERIA

[1]Nweze, Austin Uche PhD. (Nig), [2]Ejim, Emeka Patrick PhD. (Nig),

[3]Onah, Sylvester Chukwuma, PhD and [4]Nweke, Benedict Okafor

1. Department of Accountancy, Faculty of Management Sciences,
Enugu University of Science and Technology, Enugu
Email: profaunweze@yahoo.com

2. Department of Business Administration and Management, School of Business Studies
Institute of Management and Technology, Enugu
Email: ejimemeka18@gmail.com

3. Department of Business Administration and Management, School of Business Studies
Institute of Management and Technology, Enugu
Email : sylveonah@gmail.com

4. Department of Purchasing and Supplys, School of Business Studies
Institute of Management and Technology, Enugu
Emai: nwekecollins64@gmail.com

Abstract: Many enterprises suffer low productivity because of poor management that lead to huge overhead cost and the resultant inability to take on new projects or products. This phenomenon has continued to send organizations to early liquidation. Without good cost and quality management organizations face the risk that operating expenses may exceed revenues such that they are unable to survive on the long-run and ultimately may be faced with failure. The study focused on impact of value management in enhancing workers productivity of selected pharmaceutical firms in South East Nigeria. The specific objectives were to: Examine the impact of quality management on output of selected manufacturing firms in South East, Nigeria and evaluate the impact of cost management on the waste reduction of selected manufacturing. The total population for the study was seven thousand, one hundred and twenty two (7,122). The study used the survey approach. The primary source of data was the administration of questionnaire to the management and staff of the pharmaceutical firms in South East, Nigeria. Out of a population of 7,122 staff, the sample size of 375 was chosen after applying the Freund and William's formula for the determination of adequate sample size. Out of staff sample, 365 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 tested using tested descriptive statistics and Chi-Square, with the aid of Special Package for Statistical Software (SPSS). The result of the analysis indicated that quality management significantly impacts on the output and cost management significantly impacted on the waste reduction of selected manufacturing firms in South East, Nigeria. The study concluded that value management has a significant impact on enhancing productivity of selected manufacturing firms in South East, Nigeria. It was recommended among others that manufacturing firms should seek to gain and maintain competitive edge and articulate improvement programs, primarily through conformance to specifications and by defining quality in terms of value for price paid.

1.0 Introduction

1.1 Background of the Study

Business executives are constantly under pressure to defend investments and validate financial results. Executives only discover they lack the in-house competence to create the degree of quantitative results needed when they are asked to describe the value generated by their team, department, or firm. Discovering, recognizing, and optimizing value is a crucial organizational competence, as progressive executives are aware of. Value management has been used for years to raise project standards and quality (Tanko, Abdullah, Ramly, Enegbuma, 2018). VM is one of the feasible ways to solve inefficiency dilemmas in the whole life of projects, balancing time, costs, and quality in a way that solves and maximizes the functional value of the construction project with the lowest possible cost (Rangelova, Traykova, 2014). Optimal value management is achieved when every stage of project is reviewed to improve functionality, performance, and quality, which helps to reduce more unnecessary costs (Wandahl, 2015). Therefore, minimizing costs is one of the goals of VM in the industry, and its ultimate goal is to achieve the best value for investment.

Productivity is alluded to being tied in with taking the necessary steps, just as being concerned about the outcomes accomplished. The productivity of a firm is the result of work, since they give the most robust linkage to the key objectives of the manufacturing firms. Businesses are dependable over the period of time spent organizing and re-building while attempting to respond to the exercises1012 that will enable manufacturing firms to perform continuously. Therefore, businesses must purposefully develop the most effective and adaptable strategy that will enable them to employ and amplify their resources and eventually achieve organizational goals without compromising quality (Akindele, 2012).

Value management centers on constantly increasing the value given to the consumer and enhancing productivity (Kelly et al. 2014). It establishes a foundation for increasing value for money in manufacturing companies (Ashworth and Hogg 2007). It also places an emphasis on value rather than money and aims to achieve the best possible balance between time, cost, and quality (Kelly et al. 2014). Unfortunately, the application of value management appears different in the manufacturing firms in Nigeria. Till date, the use of value management in Nigeria has been limited. Value management is yet to be widely practiced in most manufacturing firms in south-east Nigeria. The study there examines the impact of value management in enhancing workers productivity of selected pharmaceutical firms in South East, Nigeria.

1.2 Statement of the Problem

Many enterprises suffer low productivity because of poor management that lead to huge overhead cost and the resultant inability to take on new projects or products. This phenomenon has continued to send organizations to early liquidation. Without good cost and quality management organizations face the risk that operating expenses may exceed revenues such that they are unable to survive on the long-run and ultimately may be faced with failure.

Many times, there is low productivity due to improper or inadequate operating procedures, inadequate internal controls, audits, checks and balances, poor culture of accountability and internal transparency, frauds and abuse of discretionary expenditure processes and limits, ambiguous lines of authority and responsibility. The purpose of value management is the efficient application of human and material resources so as to maximize profit and wealth for the shareholders. The study would therefore evaluate the impact of value management in enhancing productivity of selected manufacturing firms in South East, Nigeria.

1.3 Objectives of the Study

The main objective of the study was to evaluate the impact of value management in enhancing productivity of selected manufacturing firms in South East, Nigeria. The specific objectives were to:

i. Examine the impact of quality management on output of selected manufacturing firms in South East, Nigeria.
ii. Evaluate the impact of cost management on the waste reduction of selected manufacturing.

1.4 Research Questions

The following research questions guided the study;

i. What is the impact quality management on output of selected manufacturing firms in South East, Nigeria?
ii. What is the impact of cost management on the waste reduction of selected manufacturing firms in South East, Nigeria?

1.5 Statement of Hypotheses

The following null hypotheses guided the study;

i. Quality management has no positive impact on output of selected manufacturing firms in South East, Nigeria.
ii. Cost management has no positive impact on the waste reduction of selected manufacturing firms in South East, Nigeria.

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Value Management

Value Management, in accordance with BS EN12973:2020, is an underlining concept applied within existing management systems and approaches based on value and function-orientated thinking, behaviours and methods, particularly dedicated to motivating people, developing skills, promoting synergies and innovation, with the aim of maximising the overall performance of an organisation. Value Management can reap huge rewards if it is applied robustly. Value Management is concerned with the creation of sustainable value, either at project, product, process, organisational or social level. It is concerned with improving and sustaining a desirable balance between the needs and wants of stakeholders and the resources needed to satisfy them. Stakeholder value judgements vary, and Value Management reconciles differing priorities to deliver optimum value for all stakeholders. Value Management is based on defining and adding measurable value, focusing on functional drivers and objectives before finding solutions, with the aim of enhancing overall innovation. It has four principles being; strengthening value orientation; applying function thinking; applying a structured holistic approach; and managing complexity, risk and uncertainty. These principles are supported by four drivers (levers) being; a collaborative style of managing; motivating positive human dynamics; considering both internal and external environments; and applying proven methods and tools (Daniel, 2010).

Value management is a combination of planning tools and methods to find the optimum balance of project benefits in relation to project costs and risks. It is the process of planning, assessing and developing the project in order to make the right decisions about the optimized balance of the benefits, risks and costs. Project value management allows increasing the likelihood of producing the deliverables and creating the benefits. Following the given *value management definition*, a project manager needs to know how to critically appraise and analyze all tasks, activities and processes involved in the project in order to determine whether better value alternatives or solutions are available and to apply right decisions. The main idea is to ensure the number of wasteful processes is reduced and inefficiency in specific aspects of project implementation is avoided (Daniel, 2010).

2.1.2 Productivity

The entire output of the inputs used in production is measured as productivity (Jreisat, Hassan, and Shankar, 2018). Productivity evaluates an organization's efficiency as well as a single department's or an individual's efficiency and level of competitiveness. Productivity, according to Mali (2008), is a gauge of how effectively resources are gathered and used inside a company to achieve a set of goals. With the least amount of resources or expenditure, productivity is at its highest level of performance. It is sometimes viewed as the ratio of total output to total inputs. The effectiveness of the use of the factors of production to produce goods, and services is commonly referred to as productivity. It is defined as the degree to which outputs are efficiently achieved through maximizing inputs. Productivity tests the way available functional inputs can be leveraged by an economic system or enterprise to produce useful outputs. This idea pushes economies towards higher degrees of production efficiency and therefore higher economic growth and living standards. As a consequence, improving

efficiency is a crucial goal for communities to increase their relative income (Kyra, 2017). In improving efficiency, and hence the standard of living in a system, technological advances play a crucial role. Productivity refers to the per unit of labor, capital, or equipment (input) amount of production. In different ways, we can calculate it. We may calculate a factory's output according to how long it takes to manufacture a particular good. On the other hand, in the service industry, where units of products do not exist, the calculation is more complicated. Some service providers base their calculations on the amount of revenue produced by each employee. They then divide their salary by that number. It is important to look at productivity over a certain period, preferably monthly. The consistent output is what drives results (Darius, 2020).

2.1.3 Quality Management

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. The global marketplace compels organizations to broaden their perspectives of customer satisfaction. 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. This includes the determination of a quality policy, creating and implementing quality planning and assurance, and quality control and quality improvement (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 Cost Management

Cost relates to the total value of enterprise resources used up in the conception, design, production, and marketing of a product, service or in discharging a function, responsibility or activity. It is a multiplication function of many factors, which must be understood and operationalized. In terms of decision making to optimize returns, cost should also include the value of benefits foregone in providing the service or product, or what economists call opportunity cost.

Cost management is essential for enterprise success because among the most important objectives of any company is to maximize its profit. Also, an important goal of an enterprise is its own survival and to this extent it strives to minimize cost, hence the purpose of good management is the efficient application of resources so as to maximize profit and wealth for the shareholders (Uwazie, 2007). Cost management comprises of all those actions taken by management to reduce expenditure cost without necessarily impairing efficiency and adversely affecting customer satisfaction. The focus in activity cost management is on the elimination of wastes, non-value adding activities, effective pricing and strategic improvement in efficiency. Effective cost management requires a good understanding of the drivers of cost to be able to control or manage cost successfully. It must also be understood that cost reduction is different from costcutting, because cost cutting is often arbitrary and can lead to longer term cost increases if it is not controlled. In its broadest sense, cost management relates to the fundamental management principle which emphasizes the maximization of revenue in-flow and the minimization of its outflow or expenses. Many organizations try to improve their bottom-line by increasing productivity. While many are succeeding, others are yet to find their feet, for many reasons including the problems of weak cost management, leading to wastages that result to low profitability and productivity.

2.1.5 Output

Output is defined as the amount of energy, labor, products, or services generated in a period by a machine, factory, business, or person. In general, production refers to the items generated. In terms of output, the

production unit implies the total number of goods produced for a given time and the different costs associated with production (Essays, 2018). Outputs often apply to the number of visited customers during a given duration. The organization needs to become accustomed if there is a decline in the output of the organization due to alteration in the external or internal environment (Kotler, 2012).

2.1.6 Waste Reduction

Waste is defined as any residue of a process of production, processing or use of any substance, material, product or more generally, any personal property abandoned or which its holder intends to abandon(Sankoh, Yan & Yen, 2013). Waste reduction is a set of processes and practices intended to reduce the amount of waste produced. By reducing or eliminating the generation of harmful and persistent wastes, waste minimisation supports efforts to promote a more sustainable society. Waste reduction involves redesigning products and processes and/or changing societal patterns of consumption and production (Davidson, 2011). Waste reduction is broader in scope than recycling and incorporates ways to prevent materials from ending up as waste before they reach the recycling stage (James, 2018). Waste reduction includes reusing products such as plastic and glass containers, purchasing more durable products, and using reusable products, such as dishrags instead of paper towels. Donating products, from office equipment to eyeglasses and clothing, reduces the amount of material manufactured overall. Purchasing products that replace hazardous materials with biodegradable ingredients reduces pollution as well as waste. In general, waste reduction offers several environmental benefits (James, 2018). Greater efficiency in the production and use of products means less energy consumption, resulting in less pollution. More natural resources are preserved. Products using less hazardous materials are used. Finally, less solid waste ends up in landfills.

Waste reduction also means economic savings. Fewer materials and less energy is used when waste-reduction practices are applied. Rather than using the traditional cradle-to-grave approach, a cradle-to-cradle system is adopted. In this cradle-to-cradle system, also called industrial ecology, products are not used for a finite length of time. Instead of disposing of materials, or the components of a product after a single use, products are passed on for further uses. This is considered a flow of materials. This can be applied within an organization, or between organizations that may be considered unrelated, on a cooperative basis. For example, a cotton manufacturer sends its unwanted scraps to an upholsterer, who uses the scraps as stuffing in chairs. When the life span of the chair is reached, the materials are returned to the manufacturer, who reuses the parts with endurance. The damaged upholstery, which was originally created using nonhazardous materials, is sold to a local farmer who uses it in composting. Money is also saved through reduced purchasing. Waste-disposal costs are decreased because fewer materials end up as waste. Waste can be reduced by individuals, businesses, institutions such as hospitals or educational facilities, organizations, municipalities, or government agencies.

There are several ways individuals can practice waste reduction: (1) Reusing products. This could mean reusing file folders rather than throwing them away after one use, or refilling water bottles; (2) Using products more efficiently. This could mean using both sides of paper in photocopying; and (3) Donating or exchanging products or materials that may seem useless, but that another party may find valuable. For example, the chair manufacturer mentioned above had no internal use for the scrap upholstery leftover after recycling the more durable parts of the used chairs. However, a cooperative agreement with a local farmer allowed the scraps to be used once again, benefiting the farmer by adding to his compost (Underwood, 2018).

2.2. Theoretical Review

2.2.1 Contingency Theory

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 theory is in line with the study as it advances 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 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.

2.2.2 Resource Base View Theory

Resource base view theory was developed by (Barney, J. B., 1991). Resource-based theory contends that the possession of strategic resource provides an organization with a golden opportunity to develop competitive advantages over its rivals. The resource-based view (RBV) is a managerial framework used to determine the strategic resource with the potential to deliver comparative advantage to a firm. These resources can be exploited by the firm in order to achieve sustainable competitive advantage. This study is based on the resource-based view (RBV) as the basis for the sustainable competitive advantage which lies primarily in the application of a bundle of valuable tangible or intangible resource at the firm's disposal. To transform a short-run competitive advantage into a sustained competitive advantage requires that these resources are heterogeneous in nature and not perfectly mobile. Effectively, this translates into valuable resource that is neither perfectly imitable nor substitutable without great effort. If these conditions hold, the bundle of resource can sustain the firm's above average returns (Barney, 1991). This theory, a competitive advantage can be attained if the current strategy is value-creating, and not currently being implemented by present or possible future competitors. Although a competitive advantage has the ability to become sustained, this is not necessarily the case. A competing firm can enter the market with a resource that has the ability to invalidate the prior firm's competitive advantage, which results in reduced. Sustainability in the context of a sustainable competitive advantage is independent with regard to the time frame. Rather, a competitive advantage is sustainable when the efforts by competitors to render the competitive advantage redundant have ceased. When the imitative actions have come to an end without disrupting the firm’s competitive advantage, the firm’s strategy can be called sustainable. This is in contrast to views of others (Porter, 1990) that a competitive advantage is sustained when it provides above-average returns in the long run. Resource Based View perspective stresses that the resource of the company whether tangible or intangible like Brand name, assets, cash, customer loyalty, behaviour capabilities are an important firm resource that hold the potential for sustained competitive advantage (Barney, 1991).

2.3 Empirical Review

Kevin, Hendricks, Vinod & Singhal(2011) carried out a study on Firm characteristics, total quality management, and financial performance. The study used a sample of quality award winners to empirically test hypotheses that relate changes in operating income associated with effective implementation of total quality management (TQM) to various firm characteristics. The characteristics examined are firm size, the degree of capital intensity, the degree of diversification, the timing of TQM implementation, and the maturity of the program. It was found that smaller firms do significantly better than larger firms. Firms that have won awards from independent award (a proxy for more mature TQM implementation) do significantly better than just supplier award winners. The evidence weakly supports the hypotheses that less capital-intensive firms do better than more capital-intensive firms, and more focused firms do better than more diversified firms. Finally, we do not observe any significant differences between the performance of earlier and later implementers of effective TQM.

Lawal (2017) examined and evaluated the application of cost control and cost reduction in organizational performance and also to review the budget as an effective tool of cost control and cost reduction. A descriptive survey research was adopted. A total number of 50 questionnaires were administered and used for the study. The analysis of data collected was undertaken by applying appropriate statistical tools. Regression analysis was used to test the hypothesis with the use of SPSS. Based on the findings, it was evident that cost control has a

positive impact on organizational performance and also the style of management has a positive impact on organizational performance.

Vitalis, Agbeaze, Obamen & Omonona, (2019) investigated the impact of value management on the performance of production firms in southeast Nigeria. The investigation embraced the survey design overview plan. The investigation had a populace size of 9038, out of which an example size of 563 was acknowledged utilizing Cochran's equation at 5 percent mistake resilience and 95 percent dimension of certainty. The survey research design was adopted for the study. The review research configuration was received for the investigation. The hypothesis were tested utilizing the Pearson product moment connection coefficient and simple linear regression statistical tools. The findings indicated that there was a significant relationship between value engineering and product quality in the selected manufacturing firms in southeast Nigeria. Function analysis had a significant positive effect on the productivity of manufacturing firms in southeast Nigeria. The study concluded that value management offers a method for stakeholders to achieve organizational performance.

Nkeobuna &Ugoani, (2019) investigated the relationship between activity cost management and its effect on enterprise productivity using the exploratory research design. It focused on critical factors that lead to cost-effectiveness. A sample of 113 respondents participated in the study, and data collected from secondary and primary sources were analyzed through descriptive and regression statistical techniques. The result showed that activity cost management has significant positive effect on enterprise productivity. The new result is important because an enterprise is effective when it attains its goals, but productive only when such goals are achieved efficiently. Through the exploration and result, the study clearly highlighted that factors such as activity-based cost management, cost-benefit-analysis, internal control, ratio analysis, zero-base budgeting, internal accountability, and transparency, as well as cost leadership form the basis for enterprise productivity. An effective board of directors is imperative in any enterprise to provide necessary cost leadership for cost-effectiveness and enterprise productivity. The study was limited by insufficient current academic literature, therefore, further study could examine the relationship between activity cost management and enterprise failure. Based on the result, it was recommended that activity cost management practices must be intensified in public enterprises as a measure to reduce the heap of fraud prevalent in such enterprises.

Peter, SohalChih, & TengChih (2021) examined Quality management approaches and their impact on firms' financial performance - An Australian Study. This research utilises the work of several authors to develop quality orientations for small Australian manufacturing firms (SAMFs) to purposefully bridge the gaps in the business literature, and enable the evaluation of various performance outcomes. Specifically, this study investigates whether a firm′s stated quality orientation is useful in differentiating firm performance. The research utilises longitudinal panel data gathered by the Australian Bureau of Statistics growth and performance survey over four years from financial year 1995 to 1998. The study- demonstrate that firm quality management orientation does provide a statistically significant financial performance advantage (and by inference survival advantage) over those SAMFs who do not engage in quality management. The research is a significant addition to the quality – financial performance literature, and provides a pathway forward for the use of two new financial (productivity) ratios as performance measures.

Summary of the Review

Productivity cannot only be achieved but also sustained through Reducing cost and increasing efficiency of manufacturing firms in South-East, Nigeria. The study reviewed the resource based view theory and contingency theory. The study reviewed related studies. Most of the empirical studies used were done outside South East, Nigeria while some were outside Nigeria and out of manufacturing firms. The study therefore is carried out to bridge the gap.

3.0 Methodology

The study focused on impact of value management in enhancing workers productivity of selected pharmaceutical firms in South East Nigeria. The total population for the study was seven thousand, one hundred and twenty two (7,122). The population for the study included all management staff of the pharmaceutical firms in South East, Nigeria, which were members of the Manufacturers Association of Nigeria (MAN). The study

used the survey approach. The primary source of data was the administration of questionnaire to the management and staff of the pharmaceutical firms in South East, Nigeria. Out of a population of 7,122 staff, the sample size of 375 was chosen after applying the Freund and William's formula for the determination of adequate sample size. Out of staff sample, 365 staff returned the questionnaire and accurately filled. That gave 85 percent response rate. The validity of the instrument was tested using content analysis and the result was good. The reliability was tested using the Pearson correlation coefficient (r). It gave a reliability co-efficient of 0.83 which was also good. 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 tested using tested descriptive statistics and Chi-Square, with the aid of Special Package for Satistical Software (SPSS).

DESCRIPTIVE STATISTICS

Research Question One: What is the impact quality management on output of selected manufacturing firms in South East, Nigeria?

In order to analyze the first objective of the study, the frequencies of the questionnaires administered was obtained and explained below.

Q1. My organization sets quality targets to be met for its products and services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	150	41.1	41.1	41.1
	Agree	147	40.3	40.3	81.4
	Undecided	48	13.2	13.2	94.5
	Disagree	13	3.6	3.6	98.1
	Strongly Disagree	7	1.9	1.9	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

From the table above, and answering the question, 150 respondents, which is 41.1% of the total sample strongly agreed that their organizations set quality targets for products and services. Also, 147, representing 40.3% of respondents agreed, 48 respondents (13.2%) were undecided, 13 respondents (3.6%) disagreed, while 7 (1.9%) strongly disagreed.

Q2. My firm identifies any quality issues that arise and initiates improvements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	184	50.4	50.4	50.4
	Agree	107	29.3	29.3	79.7
	Undecided	38	10.4	10.4	90.1
	Disagree	28	7.7	7.7	97.8
	Strongly Disagree	8	2.2	2.2	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question two, 184 respondents, which is 50.4% of the total sample strongly agreed that their firms identifies any quality issues that arise and initiates improvements. Also, 107, representing 29.3% of respondents agreed, 38 respondents (10.4%) were undecided, 28 respondents (7.7%) disagreed, while 8 (2.2%) strongly disagreed.

Q3. There is Greater efficiency and less waste.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	140	38.4	38.4	38.4
	Agree	80	21.9	21.9	60.3
	Undecided	62	17.0	17.0	77.3
	Disagree	56	15.3	15.3	92.6
	Strongly Disagree	27	7.4	7.4	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question three, 140 respondents, which is 38.4% of the total respondents strongly agreed that there is greater efficiency and less waste. Also, 80, representing 21.9% of respondents agreed, 62 respondents (17.0%) were undecided, 56 respondents (15.3%) disagreed, while 27 (7.4%) strongly disagreed. This shows that majority of the respondents are in agreement that there is less waste and greater efficiency.

Q4. We ensure products and services are of the right standards and fit for its specified purpose

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	209	57.3	57.3	57.3
	Agree	79	21.6	21.6	78.9
	Undecided	37	10.1	10.1	89.0
	Disagree	38	10.4	10.4	99.5
	Strongly Disagree	2	.5	.5	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question four of the questionnaire, 209 respondents, which is 57.3% of the total respondents strongly agreed that they ensure product and services are of the right standards and fit for its specified purpose. Then, 79, representing 21.6% of respondents agreed, 37 respondents (10.1%) were undecided, 38 respondents (10.4%) disagreed, while 2 (0.5%) strongly disagreed. This shows that majority of the respondents are in agreement that their organizations ensures products and services are of the right standards and fit for its specified purpose.

Q5. Products and services produced by the team match the customers' expectations.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	225	61.6	61.6	61.6
	Agree	94	25.8	25.8	87.4
	Undecided	40	11.0	11.0	98.4
	Strongly Disagree	6	1.6	1.6	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question five of the questionnaire, 225 respondents, which is 61.6% of the total respondents strongly agreed that the product and services produced by the team match the customers expectations. Also, 94, representing 25.8% of respondents agreed, 40 respondents (11.0%) were undecided, 0 respondents (0%) disagreed, while 6 (1.6%) strongly disagreed. This shows that majority of the respondents are in agreement that the products and services produced by the team match the customers' expectations.

Research Question Two: What is the impact of cost management on the waste reduction of selected manufacturing firms in South East, Nigeria?

Q1. Cost control relies heavily on the existence of a sound and effective cost control system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	128	35.1	35.1	35.1
	Agree	113	31.0	31.0	66.0
	Undecided	69	18.9	18.9	84.9
	Disagree	33	9.0	9.0	94.0
	Strongly Disagree	22	6.0	6.0	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

The table above shows the responses of the study respondents. The table above shows that 128 people strongly agreed that cost control relies heavily on the existence of a sound and effective control system. This is about 35.1% of the sample. Also, 113 (31%) people agreed to the question. A further 69 (18.9%) were indifferent, 33 (9%) disagreed while 22 (6%) strongly disagreed.

Q2. Our activities follows a standard plan ensuring cost consciousness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	184	50.4	50.4	50.4
	Agree	107	29.3	29.3	79.7
	Undecided	38	10.4	10.4	90.1
	Disagree	28	7.7	7.7	97.8
	Strongly Disagree	8	2.2	2.2	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to the second question, the table above shows the responses of the study respondents. The table above shows that 184 people strongly agreed that organizational activities follow a standard plan ensuring cost consciousness. This is about 50.4% of the sample. In addition, 107 (29.3%) people agreed to the question. Furthermore, 38 (10.4%) were undecided, 28 (7.7%) disagreed while 8 (2.2%) strongly disagreed.

Q3. Cost control increases our chances to sale products at a lower rate than our competitors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	198	54.2	54.2	54.2
	Agree	103	28.2	28.2	82.5
	Undecided	34	9.3	9.3	91.8
	Disagree	30	8.2	8.2	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question three, 198 respondents, which is 54.2% of the total respondents strongly agreed that cost control increases chances to sell product at a lower rate than competitors. Also, 103, representing 28.2% of respondents agreed, 34 respondents (9.3%) were undecided, 30 respondents (8.2%) disagreed, while none of the respondents strongly disagreed. This shows that majority of the respondents are in agreement that cost control increases chances of selling products at a lower rate than the competitors.

Q4. Avoidance of wasteful use of valuable resources has encouraged efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	231	63.3	63.3	63.3
	Agree	61	16.7	16.7	80.0
	Undecided	35	9.6	9.6	89.6
	Disagree	36	9.9	9.9	99.5
	Strongly Disagree	2	.5	.5	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question four, 231 respondents, which is 63.3% of the total respondents strongly agreed that avoidance of wasteful use of valuable resources has encouraged efficiency. Also, 61, representing 16.7% of respondents agreed, 35 respondents (9.6%) were undecided, 36 respondents (9.9%) disagreed, while 2 (0.5%) strongly disagreed. This shows that majority of the respondents are in agreement that avoidance of wasteful use of valuable resources has encouraged efficiency.

Q5. Staying within the allocated budget prevents constant breaking and exceeding the allocated budgets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	196	53.7	53.7	53.7
	Agree	99	27.1	27.1	80.8
	Undecided	44	12.1	12.1	92.9
	Disagree	3	.8	.8	93.7
	Strongly Disagree	23	6.3	6.3	100.0
	Total	365	100.0	100.0	

Source: Field Survey, 2022.

With regard to question five, 196 respondents, which is 53.7% of the total respondents strongly agreed that staying within the allocated budget prevents constant breaking and exceeding of the allocated budgets. Also, 99, representing 27.1% of respondents agreed, 44 respondents (12.1%) were undecided, 3 respondents (0.8%) disagreed, while 236.3%) strongly disagreed. This shows that majority of the respondents are in agreement that staying within the allocated budget prevents constant breaking and exceeding the allocated budgets.

4.2 Test of Hypotheses

Hypotheses One: Quality management has no positive impact on output of selected manufacturing firms in South East, Nigeria

Chi-Square Analysis

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	100.528[a]	63	.002
Likelihood Ratio	96.771	63	.004
Linear-by-Linear Association	2.592	1	.107
N of Valid Cases	365		

a. 57 cells (71.3%) have expected count less than 5. The minimum expected count is .00.

The table above shows the result of the Chi-square test checking for the impact of quality management on output of selected manufacturing firms in South East Nigeria. The table shows that the assumption of the chi-square test has been violated, which is that there should not be greater than 15% of cells with expected count less than 5. This means that the result of the analysis will be interpreted using the Likelihood Ratio. The

Likelihood Ratio is 0.004, which is less than 0.05. This means that there is a quality management has a significant positive effect on the output of selected manufacturing firms in South East Nigeria.

HYPOTHESES TWO: Cost management has no positive impact on the waste reduction of selected manufacturing firms in South East, Nigeria.

Chi-Square Analysis

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	163.106[a]	70	.000
Likelihood Ratio	131.696	70	.000
Linear-by-Linear Association	16.710	1	.000
N of Valid Cases	365		

a. 61 cells (69.3%) have expected count less than 5. The minimum expected count is .00.

The table above shows the result of the Chi-square test checking for the impact of cost management on waste reduction of selected manufacturing firms in South East Nigeria. The table shows that the assumption of the chi-square test has been violated, which is that there should not be greater than 15% of cells with expected count less than 5. This means that the result of the analysis will be interpreted using the Likelihood Ratio. The Likelihood Ratio is 0.000, which is less than 0.05. This means that there is significant impact of cost management on the waste reduction of selected manufacturing firms in South East Nigeria.

4.3 Discussion of Findings

Result from hypothesis one shows a likelihood ratio of 0.004, which is less than 0.05. This indicates that quality management has significant impact on the output of selected manufacturing firms in South East in Nigeria. This is affirmed by the study of Peter, SohalChih, & TengChih (2021) on Quality management approaches and their impact on firms' financial performance - An Australian Study which revealed that firm quality management orientation does provide a statistically significant financial performance advantage (and by inference survival advantage) over those SAMFs who do not engage in quality management. Quality management focuses on continuous improvement and embraces virtually all activities through which the consumer needs and community expectations as well as organizational objectives are satisfied in the most cost effective and efficient fashion (Bagad, 2018). The underlying premise remains to maximize the potential of all employees and continue to drive improvement across all organizational functions (ISO, 2012).

Hypothesis two revealed a likelihood ratio of 0.000, which is less than 0.05. This indicates that cost management has a significant impact on the waste reduction of selected manufacturing firms in South East, Nigeria. This in line with the findings of Lawal (2017) that cost control has a positive impact on organizational performance and also the style of management has a positive impact on organizational performance.

5.1 Conclusion

The study examined the impact of value management in enhancing productivity of selected manufacturing firms in South East, Nigeria. The study devised two specific objectives to properly capture the impact of value management on productivity of these firms. Questionnaire was distributed to a sample of 365 employees in various manufacturing firm in the region. Descriptive statistics and chi-square, with likelihood ratio were employed on the data gotten from the questionnaires. The result of the analysis indicated that quality management significantly impacts on the output and cost management significantly impacted on the waste reduction of selected manufacturing firms in South East, Nigeria. The study concludes that value management has a significant impact on enhancing productivity of selected manufacturing firms in South East, Nigeria.

5.2 Recommendations

The following is recommended:

i. Manufacturing firms should seek to gain and maintain competitive edge and articulate improvement programs, primarily through conformance to specifications and by defining quality in terms of value for price paid.

ii. Firms need to apply cost control and cost reduction scheme in their operations and workers should be carried along in decision making to achieve the desired goals and objectives.

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