

QUALITY PLANNING AND PROFITABILITY OF TABLE WATER PRODUCING COMPANIES IN RIVERS STATE

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ABSTRACT

The research examined quality planning and profitability of listed table water producing companies in Rivers State. Ten research questions and ten hypotheses guided the study. Cross sectional survey design was used for the study. The accessible population derived was 9 listed public agencies which give total respondents of 176 through the census and purposive technique. However instrument used for data collection was a structured questionnaire after validated by the supervisors, and the instrument was reliable through the test of Cronbach alpha at 0.70. Univariate and bivariate analysis were carried out using the Spearman Rank Order Correlation coefficient at a 0.05 level of significance. The data retrieved was analyzed. Results shown that dimensions of quality control practices (quality planning, improvement and resources) have a positive significant correlation with measures of organizational effectiveness (profitability, productivity and standard equipment). Therefore, the study concluded that quality planning enhances profitability. Thus, the researcher recommended that Management of the table water producing companies should establish clear production plans that integrate quality standards at every stage.

Keywords: Quality planning, Profitability, Table water producing companies

INTRODUCTION

Over the years, achieving organizational effectiveness has become more complex due to technological advancement, increased customer expectations, and dynamic business environments. Organizations now place greater emphasis on strategic planning, workforce training, and resource optimization to enhance efficiency and drive performance. As a result, several performance indicators are used to assess organizational effectiveness, among which profitability, productivity level, and the availability of standard equipment stand out. Profitability refers to the ability of an organization to generate financial gain from its operations; productivity level focuses on the efficiency with which resources are utilized to create outputs; and standard equipment represents the tools and technologies that support high-quality and efficient operations. Together, these concepts contribute significantly to how effectively an organization performs in achieving its objectives.

Organizational profitability refers to the capacity of an organization to generate surplus income after all expenses have been deducted from total revenue. It is one of the most important indicators of organizational performance because it shows how effectively resources are being managed to achieve financial success. Profitability is influenced by several internal factors such as management efficiency, cost control, employee performance, and product quality, as well as external factors like market competition, economic conditions, and regulatory policies. For many organizations, maintaining strong profitability is crucial for long-term survival, expansion, and the ability to invest in new projects and innovations.

According to Okeke (2024) opined that profitability is critical due to intense competition and regulatory pressures. Okeke emphasizes that maintaining profitability enables companies to reinvest in technology and infrastructure, ensuring sustainability and market growth. Profitability also reflects the company's ability to manage costs while meeting consumer demand for safe and affordable drinking water.

In recent years, organizations have increasingly focused on strategies that enhance their profitability by improving operational efficiency and reducing waste. Productivity levels are a key determinant of organizational effectiveness in table water production. Adeyemi (2025) noted that productivity in Nigerian water bottling firms depends on efficient production processes, skilled labor, and effective supply chain management. Adeyemi argues that improving productivity not only reduces operational costs but also enhances the capacity to meet increasing market demand. This is particularly important in Nigeria, where access to clean drinking water is a growing concern, and companies must scale operations without compromising quality. Higher productivity leads to lower costs and increased output, ultimately boosting profitability. This has brought attention to the importance of productivity level, which refers to how efficiently an organization converts input resources such as labor and materials into valuable outputs.

Research Hypothesis

H₀₁: There is no significant relationship between quality planning and profitability of table water producing companies in Rivers State

Quality Planning

Quality planning is the systematic process of identifying quality standards relevant to a project and determining how to meet them effectively. Ahaotu (2019) observed that quality planning integrates organizational goals with customer expectations to ensure project success. According to Okeke (2020), quality planning involves the development of detailed procedures and resource allocation to achieve desired quality levels in construction projects. Eze and Nwankwo (2021) opined that quality planning is a proactive approach that sets the foundation for quality assurance and control activities throughout the project lifecycle. Quality planning is described by Musa (2022) as the strategic identification of quality requirements and the design of processes to fulfill these requirements efficiently. Ojo (2019) noted that quality planning is essential for aligning project deliverables with regulatory standards and client specifications in Nigerian manufacturing firms. According to Adesina and Bello (2023), quality planning encompasses the establishment of quality objectives, resource planning, and risk assessment to mitigate quality failures. Quality planning is the phase where quality policies are translated into actionable plans, as observed by Chukwu (2020), ensuring continuous improvement in service delivery.

Nnamani (2021) defined quality planning as the deliberate effort to forecast potential quality challenges and design preventive measures within educational institutions. According to Ibe (2022), quality planning involves collaboration among stakeholders to develop quality benchmarks that guide production and operational processes. Okafor and Eze (2024) emphasized that quality planning is a dynamic process that adapts to changing market demands while maintaining compliance with national quality standards. Martin (2025) observed that quality planning involves identifying and defining quality standards and processes to align organizational goals with customer expectations.

Rocha (2023) defined quality planning as the systematic application of quality management practices to ensure project deliverables meet predefined standards. Busse (2019) opined that quality planning is the process of preparing healthcare services to meet quality goals by

designing effective systems and protocols. Pribadi (2024) described quality planning as the phase in project management where quality requirements are identified and quality assurance processes are established. Russ (2022) noted that quality planning is the preparatory step in quality improvement, focusing on designing services and processes to meet quality objectives. Fundin (2025) emphasized that quality planning is a forward-looking activity that integrates emerging quality themes to future-proof organizational quality management. Young (2022) defined quality planning as the strategic use of quality tools and interprofessional collaboration to set quality standards and ensure safety in healthcare. Mouratidis (2021) viewed quality planning as the process of integrating quality considerations into urban planning to enhance residents' quality of life. The Institute for Healthcare Improvement (IHI) (2020) described quality planning as a holistic approach that aligns system-wide processes to close gaps between expected and actual quality. The American Society for Quality (ASQ) (2023) defined quality planning as the process of identifying relevant quality standards and determining how to meet them effectively through resource allocation and process design.

Profitability

Organizational profitability is the organisation's ability to generate financial returns (net income, margin, or return on assets/equity) above its costs and expenses, reflecting efficient management and resource utilization (Adnan, 2020). Organizational profitability is the financial outcome of a firm's operational, investment, and financing decisions, manifesting in indicators such as net profit margin, return on equity, or return on assets, used as performance metrics to evaluate management effectiveness (Hossain & Ahamed, 2021). Organizational profitability denotes the firm's capacity to earn revenues that not only cover all costs (operating, financial, tax) but also provide surplus returns to owners/shareholders over a period (Subiyanto, Maulidya et al., 2021).

Organizational profitability is the extent to which a firm can convert its sales and assets into net income, signaling its competitive strength and future sustainability (Muhiuddin & Nusrat Jahan, 2020). Organizational profitability refers to the financial result measured after all operating, financing, and other costs have been subtracted from total revenue, which is important for measuring firm performance and stakeholder returns. Organizational profitability is a key component of organisational performance; it captures the financial dimension of performance, i.e., whether the organisation's resources are managed well enough to produce returns over cost (Emerald, 2023). Organizational profitability represents the extent of profit growth relative to firm size, growth opportunities, leverage, and industry norms, reflecting both internal managerial actions and external market conditions (Bolarinwa et al. 2021).

Organizational profitability is the financial gain a firm achieves that justifies its choice of business model, capital structure and operational strategy, measured over time for sustainability rather than short-term gains (Bolivar et al. 2024). Organizational profitability refers to a firm's ability to maintain a positive and growing net income margin over time, in spite of cost pressures and competitive forces, as a result of efficiency, innovation, and strategic resource deployment (Springer, 2021). Organizational profitability is the ratio of returns (on assets, equity, or sales) that indicates how effectively a management team is accomplishing the organization's financial goals, balancing revenue generation, cost control, and investment decisions." — combining multiple studies (Bangladesh banks, Indonesian listed firms, etc.) where ROA, ROE, net profit margin are used. (Various authors 2019-2022).

Profitability is considered as the amount of revenue derived by the firm through effective utilization of its resources. It can also be seen as the profit generated by a firm. Firms that are capable of generating adequate profit for their investors as well as their shareholders are profit oriented. Amirthalingamet et al. (2003) stated that success is determined by how much profit

it generates. The main goals of every firm are the generation of profit for its stakeholders. Through the profit of these firms, other ventures can be embarked upon indicating the growth and development of the firm.

When a firm is successful, investors will like to associate with such firm. It is through its statement of account that indicate whether the firm is successful or not and so this serves as image of the firm (Nimalathasan, 2009). Profitability is measured by the amount of sales made by the firms. This means that when the sales are high there is possibility that the profit is high. On the contrary when the sales are low, there is a possibility that the profit is low. Sales volume is vital in the measurement of profit as it also indicate an increase in the returns for sales, investment, equity and asset.

In the accounting point of view, profit also measures how far the firm has achieved its objectives and how its product attained success in the market place. Profit is calculated by deducting total cost from the total revenue. The survival of the firm therefore is tied on the amount of profit it makes annually. Most firms that make little or no profit do not survive markets that is full of competitors. In the long run, most of this firms that do not make provide vacate the market and only those that make profit retain the market. This points to the fact that profit determines how strong the firm can be and how it can be effectively managed (Nishanthini & Nimalathasan, 2013). Profitability comes from two separate concepts which are profit and ability. The term profit is looked upon differently depending on the nature of the firm. When an organisation makes profit out of every business it carries out, then the business is profit oriented. Profitability indicates the level of efficiency of an organisation. It also shows how effective the management is in managing its material, financial and human resources.

This term is very important to organisations such as banks, shareholders, government, creditors and investors. No investor can invest in an organisation that is not profit oriented. Again, no bank can invest or lend money to an investor that is not making profit. The government on its own part will want to support mostly investors who utilise their resources effectively for the attainment of profit-oriented goals. In the manufacturing firms, the growth and sustainability is also a factor of profitability. This means that through profits the future of current and potential shareholders is guaranteed. The idea of vibrant growing returns posited that fall in the cost of production and increase in production are dependent on the knowledge achieved through fast growth, which assists the firm to enhance its profitability by mounting the gap between itself and its rivals (Yoo & Kim, 2015). Furthermore, a hostile growth strategy can have a very optimistic result on firm profitability in a relatively steady economic condition. It is likely to reduce managerial wastefulness by expanding the business away from the core business areas and expanding production and work competence by permuting workers to experience a diversity of projects. Thus, it is pleasing to pursue both strategies depending on the condition of the market instead of sticking to the conventionally established path of attaining development and profitability (Yoo & Kim, 2015).

Net Profit represents the residual income remaining after all expenses, taxes, and costs have been deducted from total revenue. It is often called the "bottom line" and serves as a fundamental indicator of a company's financial health. As a profitability measure, net profit margin evaluates efficiency and allows comparison of performance over time or against competitors. When calculated as a percentage of revenue, it shows how much of each sales dollar ultimately translates into profit for the business.

Total Quality Management (TQM) Theory - Edwards Deming (1986), Joseph Juran (1951, 1988), and Philip Crosby (1979)

Total Quality Management (TQM) assumes that quality is the responsibility of everyone in the organization and not just the quality control department. This means that every employee, from top management to frontline workers, must be involved in planning, monitoring, and improving processes. TQM further assumes that continuous improvement (Kaizen) is necessary for organizations to remain effective, as customer expectations, technology, and competition are constantly changing. By embedding quality in all activities, errors can be prevented rather than corrected, thereby reducing costs and improving customer satisfaction.

Another key assumption of TQM is that quality directly determines organizational effectiveness. TQM holds that when processes are standardized, monitored, and continuously improved, productivity increases, waste is minimized, and profitability rises. It assumes that effective quality control practices such as benchmarking, employee training, and corrective actions ensure that goods and services meet or exceed customer expectations. Therefore, an organization that adopts TQM principles will achieve long-term competitiveness, operational efficiency, and sustained growth.

The relevance of TQM to quality control practices and organizational effectiveness lies in its holistic approach. By treating quality as a strategic priority, TQM provides guidelines for implementing systematic quality control methods such as inspections, statistical process control, and feedback systems. These practices ensure consistency in production, reliability in service delivery, and alignment with customer needs. As a result, TQM contributes to organizational effectiveness by fostering higher productivity, reducing costs of poor quality, strengthening customer loyalty, and enabling the organization to adapt to environmental changes.

Research Design

Cross sectional survey research design was adopted in this study because it constitutes the blueprint for the measurement and analysis of data (Ernest et al. 2015). The purpose of cross sectional survey design will enable the researcher to collect details and factual information that describes an existing phenomenon. This design deals with incidences of distribution and relationships among variables; it will be deemed the best strategy to fulfill the objectives of this study.

Population of the Study

The population of the study was 44 table water producing companies in Rivers State.

Sample and Sampling Technique

Cooper and Schindler (2003) stated that the size of a sample should be a function of the variation in the population parameter under study and the estimated precision by the researcher. Therefore Census technique and purposive sampling technique was employed in getting the sample based on the studied quality control practices and organizational effectiveness of table water producing companies in Rivers State. Hence 176 respondents via 1 Manager, 1 Head of quality control, 1 Head of quality assurance and 1 Head of Human Resource respectively.

Sources of Data

This study employed primary and secondary data. The primary source of data was on a first-hand basis. This study made use of questionnaire to generate the primary data. Prior to the distribution of the questionnaire, secondary data was used for data collection from relevant literature including journals, books, research papers, conference papers, government reports, and relevant electronic data, which informed the empirical study.

Instruments for Data Collection

The instrument that was employed for data collection was questionnaire construction by the researcher.

Reliability of the Instrument

To establish the reliability of the research instrument, a pilot test was conducted using 30 respondents selected from the study population but outside the main sample to avoid contamination of data. The internal consistency of the instrument was assessed using Cronbach's Alpha, which measures how closely related the items in each construct are. According to the reliability rule, a Cronbach's Alpha value of 0.70 and above indicates that the instrument is reliable for data collection. The result of the reliability test revealed that all variables in the study recorded values above the acceptable threshold, indicating that the items used to measure the constructs were consistent and dependable for the study.

Method of Data Analysis

The data collected from the administered questionnaires were sorted, coded, and analyzed using both descriptive and inferential statistical methods. The Statistical Package for Social Sciences (SPSS) was employed for computation and accuracy. The method of analysis was guided by the research questions and hypotheses of the study. The analysis consisted of four levels, namely: analysis of demographic variables, univariate analysis, bivariate analysis, and multivariate analysis. Data from questionnaire was coded and entered into the computer using Statistical Package for Social Sciences (SPSS Version 23) for analysis. The study employed simple percentage and Spearman rank order correlation coefficient to determine the relationship of each independent variable on the dependent variable.

Results

Hypothesis One.

***H₀₁:* There is no significant relationship between quality planning and profitability.**

This section intends to measure the correlation between quality planning and profitability.

Table 1: Analysis of the effect of Quality planning on profitability

Correlations			Quality planning	Profitability
Spearman's rho	Quality planning	Correlation Coefficient	1.000	.701**
		Sig. (2-tailed)	.	.000
		N	170	170
	Profitability	Correlation Coefficient	.701**	1.000
		Sig. (2-tailed)	.000	.
		N	170	170

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

Table above reveals that the Spearman Correlation coefficient is 0.701 which reflect a strong positive linear relationship between quality planning and profitability. And the Correlation test is highly significance at ($p < 0.001$). Positive relationship means that as Quality planning increases profitability also increases. Hence, the study concludes that there is a relationship between quality planning and profitability. Therefore, null hypothesis was rejected.

CONCLUSION

In conclusion, quality planning serve as powerful drivers of organizational success by positively influencing profitability. Through effective quality planning, companies are able to set clear goals, minimize errors, and allocate resources efficiently, which leads to cost reduction and higher profit margins. The synergy between quality planning, improvement, and resources also strengthens compliance with industry standards, ensuring reliability and long-term customer trust.

RECOMMENDATIONS

Based on the findings in this study, the following recommendations were made regarding quality control practices and organizational effectiveness:

1. Management of the table water producing companies should establish clear production plans that integrate quality standards at every stage, from sourcing raw materials to final finishing, minimizing waste and maximizing profitability.
2. Management of the table water producing companies should implement regular reviews, feedback mechanisms, and training sessions to refine processes, reduce defects, and improve overall productivity.
3. Management of the table water producing companies should ensure that raw materials, skilled manpower, and financial resources meet required standards, as this directly supports durable products and higher customer satisfaction.

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