



**QUALITY MANAGEMENT AND PROFITABILITY OF SELECTED MANUFACTURING SMES IN PORT HARCOURT
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ABSTRACT

Quality management practices are essential for improving the quality of goods and services provided by manufacturing firms. SMEs contribute to the growth of Nigeria economy, yet their performance decline from 15% in 2017 to 13% in 2018. The adduced reason was the failure to implement quality management practices. The study examined the effect of quality management on profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. The study employed cross sectional survey research design where eight hundred and forty-four copies of the research instruments were administered to selected respondents who were top-level senior officers, supervisors and managers from selected indigenous SMEs manufacturing companies located in Port Harcourt, Rivers and Aba in Abia states, Nigeria. The result of multiple regression analysis revealed that employee commitment ($\beta = 0.422$, $t = 12.389$, $p = 0.000$) have positive and significant effects on profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. But leadership commitment ($\beta = 0.012$, $t = 0.263$, $p = 0.793$) and research and development ($\beta = 0.052$, $t = 1.459$, $p = 0.145$) have a positive but insignificant effect on profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. While continuous improvement ($\beta = -0.036$, $t = -1.079$, $p = 0.281 < 0.05$) and customer focus ($\beta = -0.039$, $t = -1.311$, $p = 0.190 < 0.05$) have negative and insignificant effect on profitability of the selected manufacturing SMEs in Port Harcourt and Aba. The study concluded that quality management practices affect profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. It was recommended that manufacturing SMEs and owners managers should key on to the enormous benefits associated with implementation of quality management practices as it was discovered that full utilization of quality management practices improve firm profitability inflow.

Keywords: Quality management, Continuous improvement, Customer focus, Leadership commitment, Employee commitment, Research and development, Profitability

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INTRODUCTION

In Nigeria, Small and Medium Enterprises (SMEs) have contributed tremendously to the national GDP, according to small and medium enterprises development agency of Nigeria SMEDAN 2017 (Emmanuel, Isioma, & Charles, 2018). They contribute to improvement in income distribution, a stimulant to economic advancement, provide most of the employment opportunities, reduction in extreme poverty, and are identified as key indicator of the overall performance of any economy. Similarly, in emerging markets, small and medium scale enterprises account for the majority of businesses worldwide and are important contributors to job creation and global economic development. Despite this, about 5 out of every 10 SMEs go into extinction before 10 years of operations (Compare, 2019).

In Port Harcourt and Aba, which is the domain of this study, manufacturing SMEs have been contributing tremendously to strengthen the states' economies by producing intermediate product for consumption (Yusuf, & Saffu, 2015). Small and Medium Enterprises (SMEs) have however been confronted with enormous of challenges ranging from pitiable profitability outlay, poor sales growth, and limited market share owing to failure to implement quality management dimensions such as continuous improvement customer focus and poor research and development (Mac-Kingsley, 2019). According to Adeoye and Adebayo (2017), and Yinka (2019), failure to implement quality management practice such as continuous improvement, employee's commitment, and customer focus is responsible for the poor performance of manufacturing SMEs limiting the profitability. Makinde and Agu (2018) further stressed that SMEs in Aba metropolis have not invested adequate resources on the utilization of modern technologies that will enhance their performance contrariwise affecting expansion in firm size, market share, teamwork and designing and development of new products. The trend of shrinkage performance, consequentially restricted

SMEs capacity to compete proficiently (Yinka, 2019).

According to Giogio, Verbane, and Kasren (2015), quality management has been recognized as a successful management philosophy in manufacturing and service industries. Baird, Hu and Reev (2017) and Dauglas, Smith and Ralph (2017) noted that the success of any business is a function of its quality adoption. Teriyama (2016) observed that organizations that adopt quality management as a way of life end up being relatively more successful than those that do not incorporate quality management into their system. Organizations that learn to adopt creativity for the future can transform themselves into an advantageous position when they confront changes in a competitive environment. However, a sound quality management system often takes years to implement, and that occurs only after significant planning, time, long-term resource allocation and unwavering management commitment. Most of the manufacturing SMEs failed consequences on the inability to implement quality management dimensions such as continuous improvement, customer focus, leadership commitment, employee's commitment and research and development restricting profitability inflow. This study therefore examines the effect of quality management on profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria.

LITERATURE REVIEW

This section discusses quality management and its dimension (continuous improvement, customer focus, leadership commitment, employee commitment, and research and development) and profitability.

Quality management

Quality management is an integrated approach which integrates the organizational functions to focus on meeting customer needs and organizational objectives (Abbas, 2018). Cloud (2017) defined quality management as the degree

to which the product or service meets the specifications and the needs of customers. Cloud (2017) added that there are several critical principles for successful quality management practices which among others include top management commitment, customer focus, supplier relationship, teamwork, training, and benchmarking. Jones (2018) defines quality management as an embracing philosophy of management which aims at coordinating all functions of organizations that aligned to meet customer expectations and the organization's objectives. However, the definition of Jones (2018) is more robust as it incorporates and coordinates all segments of the organizational activities. Ohikere and Chukwumeka (2018) see quality management as a philosophy and methodology for managing companies' operations by utilizing the resources available to enhance performance. According to Zhang (2017), quality management has turned out to be a key source of maximizing firms' value in the long run. Quality management dimensions to be discussed are: continuous improvement, customer focus, leadership commitment, employee commitment, and research and development.

Continuous improvement according to Chang (2018), is the process that aims to optimize information, physical flows and products to control production costs and quality. It is a culture of improvement premised on the elimination of waste in all systems and processes of an organization (Michelle, 2014). Alex (2018) defined continuous improvement as a systematic effort to seek out and apply a new way of doing work. Fabiane and Toledo (2016) conceived continuous improvement (CI) as a collection of activities that constitute a process intended to achieve performance improvement. Continuous improvement is the most important part of organizational services that involved searching for never-ending improvements and developing processes to find new or improved methods in the process of converting inputs into useful outputs (Mile, 2013). Neale (2016) outline a shift from the above definition by looking at the

continuous improvement from the perspective of three fundamental principles, customer focus, employee involvement and process involvement. Saurabh (2015) observed that for successful implementation of continuous improvement in manufacturing businesses in line with customer focus and employee involvement management commitment is essential for product improvement practice.

Customer focus is the orientation of an organization towards serving its clients' needs (Zulnaidi, 2014). Organizations should be quality conscious since quality is what initiate customer's expectation. Rhonda (2019) defined customer focus as the organizational approach to evaluate the customer needs and take action to meet the needs and resolve them. Added that how well we treat customers is quickly taking precedence over how great the product or service is. Moreover, having a great quality product is important to customers, but it is just not the most important thing as it is a bonus point to companies that excel in customer-focused culture and offer a great service which invariably result to high business success. Mercel (2018) emphasized that enhancing and improving the customer experience continues to be a top management priority in both big and small organization as customers today want to feel special and be appreciated first and foremost as they desire the company to have a customer-focused culture. customer focus help to promote improved quality of the product, which is said to positively increase firm performance (Mokhtar, 2013).

Leadership commitment is the capabilities to motivate and inspire individuals or group of individuals to make a willing and voluntary obligation for the purposes of fulfilling or surpassing the organizational goals (Nascimento, 2016). According to Jonathan (2017), defined leadership commitment is the degree to which the leaders feel devoted to their organization. Javed (2015) refer to leadership commitment as the most important factors that facilitate the successful implementation

of quality management principles. Leaders had to create and maintain an enabling environment that required the involvement of all employees to achieve the quality objectives of the organization. Sabahatti, Faruk and Tastan (2014) suggest that leadership commitment has been put at the apex of the list by most quality models for the purposes of effective quality management implementation. The majority of QM literature has highlighted the important role leadership commitment play in the manufacturing of product quality in an organization as they are critical factors for organizational competitiveness.

Employee commitment to quality has been defined and measured in different ways. In fact, the lack of consensus in defining this term greatly contributed to its treatment as a multidimensional construct. Dixit and Bhati (2012) defined employee commitment to quality as employees who faithfully labor with his total emotional attachment to the organization by performing their jobs independently. Evaluating effective commitment to quality, sluggishness in reporting to work and the level of absenteeism must be avoided. The chances that employees will remain committed to quality; the organization must be prepared to support them in term of remuneration benefit. Danica (2016) defined employees' commitment to quality as the degree to which the employee feels devoted to organizational sustainability. He further stressed that commitment to quality will be heightened when workers are consulted and allow to participate in decision making. In such situations the level of commitment to quality and productivity will amplified.

Research and development (R&D) as the process by which an organization work to obtain new knowledge designed to create new technology, product, and services to enhance the organizational bottom line (Zhenji, Yue & Jian, 2018). To succeed in this competitive and tough business environment, organizations are striving to increase the demand for research and development as they are indices

that drive quality product and business performance.

Profitability

Gadoiu (2016) defines profitability as the efficiency of a company expressed as a ratio between the resulted benefits and the efforts to achieve them. Ziad and Abdelrazaq (2017) defined profitability as the indicator that detects the competitive status of the organization as well as the quality of its management. Profitability in the form of retained earnings is one of the main sources of generating capital for the business. Farah (2016) defined Profitability as the capacity to make benefits from all the business operations of an organization. Babalola and Anifowose (2018) view profitability as the ability of a given investment to earn a return from its use. Muya and Gathogo (2016) refer to profitability as an excess of finance that firm keep for specific risk that provides fulfillment against short-term economic problems. Yazdanfar (2013) refer to profitability as a relative concept, while profit depicts absolute connotation. Both terms are closely related and mutually independent, as they are two different concepts that closely articulate organizational competitiveness. Ziad and Abdulrazaq (2017) argued that no business could survive without profitability outlay; hence profitability, both current and future, is critical in the evaluation of the company plans.

There are several indicators related to profitability which firms cannot do without in the process of craft the business plan. Implementation of the plan supports the firm's ability to generate profits by utilizing available financing and investment formats. Gadoiu (2016) observed that the corporate finance theory establishes two relative measures of profitability, the return on assets and the return on equity whose actual size and influence are used in diagnosing the profitability of a company. Ali and Billah (2018) affirmed that profitability could also be measured with a gross profit margin (GPM), operating profit ratio, net profit margin (NPM) and return on capital employed (ROCE) aside from the common measure of return on assets (ROA) and

return on equity (ROE). Muya and Gathogo (2016) stressed that the key indicators of measuring performance in organizations are profitability, management performance, market shares, firm size, innovativeness, and human resources management.

Empirical Review

Several studies, most of which have been carried out in developed and developing countries on the effect of quality management dimensions on profitability with diverse findings (Alex, 2018; Alsyghayir, 2017; Al-Damen, 2017). Some of the studies concluded that there is a positive and significant relationship between quality management on profitability (Becker-Blease, Kaen, Etebari & Baumann; 2018; Gleen; Lee & Jose, 2014; Muya & Gathogo, 2016). Babalola (2018) conducted a study adopting quality management dimensions such as customer focus, research and development and leadership commitment and found a significant positive effect of quality management on profitability. Moreover, Jayanth (2016) conducted a study utilizing customer focus and leadership commitment and found a positive effect of quality management on profitability.

Ziad (2017), in his study on quality management on profitability, use continuous improvement as a measure of quality management dimension and found a significant positive effect of quality management on profitability. Hsin (2015) and Olowe (2013) carried out different studies and found a significant effect of quality management on profitability.

Despite the agreements of the linkage between quality management and profitability, there are some studies that differ. For instance, Gilles (2015); Waldman and Javidan (2004) saw no significant positive effect of quality management on profitability. He expressed that profitability can only be feasible only if top management has a remarkable wealth of experience to implement all

ISO policy. Also, Aaron (2018) found that what determines the profitability base of a business is a function of the commitment of the employees and adequate coordination of strategic quality management dimensions. The study did not show much evidence on the level of improvement between different dimensions of performance caused by the implementation of quality management practice on profitability. In light of the preceding, it was hypothesized that:

H₀: Quality management dimensions have no significant effect on the profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria.

Theoretical Review

The theoretical perspective of this study is anchored on Quality control trilogy theory. This theory was propounded by Joseph Juran in 1920. Juran developed a philosophy of quality while working with Western Electric Company in the 1920s and later, in the 1940s while working with Deming where he, nevertheless, developed his own approach which resembles Deming's in certain aspects but differs in others (Zhang & Liu, 2015). Like Deming, Juran saw that the poor quality of products in the US generally, resulted in the loss of customers to foreign competitors, which presented a crisis for many UK companies. Juran theory was in agreement with Deming theory in areas of improving quality involve new thinking and changes at all levels within the management hierarchy (Abbas, 2018). His contribution to quality management was presented in the form of a trilogy published in 1986 in which he proposed three processes necessary to bring about quality improvement. The interrelationship of the theory to the study holds that product quality management is the responsibility of the leader's commitment to facilitate organizational performance. More also, the quality practice of organizations is a function of adequate control of the resources.

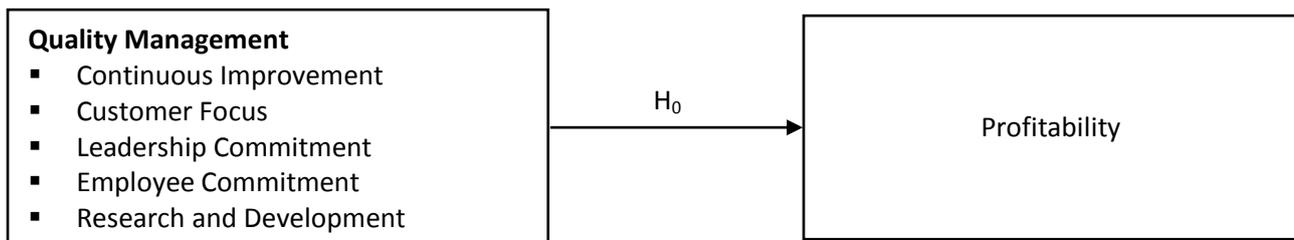


Figure 1: Conceptual Model (Quality Management and Profitability)

The figure above presented the conceptual model based upon the review of literature and it showed the effect of quality management (Continuous improvement, customer focus, leadership commitment, employee commitment, and research and development) on profitability.

METHODOLOGY

The study adopted cross sectional survey research design. The study population was 844 employees from 24 selected indigenous manufacturing SMEs in Port Harcourt Rivers State and Aba in Abia State, Nigeria. Given the fact that the population of the study was relatively small, the study utilized total enumeration to collect data from the whole

population. The utilization of the total enumeration method is on the foundation that scholar such as Mokhtar (2013) used it in a similar study while investigating total quality management practices and organizational Performance at Intravenous Infusions Limited Koforidua. A structured and self-administered questionnaire was used for data collection. There were 795 respondents, representing 94.20%. SPSS version 26 was used to analyses the descriptive and inferential statistics.

RESULTS AND DISCUSSION

Multiple regression analysis was used to analyses and tests the hypothesis as follows:

Table 1: Summary Results of Multiple Regression Analysis of Profitability on Quality Management Dimensions of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria

Model	B	T	Sig.	F(5,834)	R2	Adj. R2	F(Sig)
(Constant)	14.556	9.775	.000	54.864	0.248	0.243	0.000
Continuous Improvement	-.036	-1.079	.281				
Customer Focus	-.039	-1.311	.190				
Leadership Commitment	.012	.263	.793				
Employees Commitment	.422	12.389	.000				
Research and Development	.052	1.459	.145				

a. Dependent Variable: Profitability

b. Predictors: (Constant), Continuous Improvement, Customer Focus, Leadership Commitment, Employee Commitment, Research and Development

Source: Researcher’s Field Survey, 2021

Table 1 presented the multiple regression results for the effect quality management dimensions (continuous improvement, customer focus,

leadership commitment, employee commitment and research and development) on profitability of the selected manufacturing SMEs in Port Harcourt

and Aba, Nigeria. The results revealed that employee commitment ($\beta = 0.422$, $t = 12.389$, $p = 0.000$) have positive and significant effects on profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. However, leadership commitment ($\beta = 0.012$, $t = 0.263$, $p = 0.793$) and research and development ($\beta = 0.052$, $t = 1.459$, $p = 0.145$) have a positive but insignificant effect on profitability of selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. Continuous improvement ($\beta = -0.036$, $t = -1.079$, $p = 0.281 < 0.05$) and customer focus ($B = -0.039$, $t = -1.311$, $p = 0.190 < 0.05$) have negative and insignificant effect on profitability of the selected manufacturing SMEs in Port Harcourt and Aba. This implies that only employee commitment is a significant predictor of profitability of selected manufacturing SMEs in the study area.

The results further revealed that quality management dimensions (continuous improvement, customer focus, leadership commitment, employee commitment and research and development) explained 24.3% of the variation in profitability of the selected manufacturing SMEs (Adj. $R^2 = 0.243$). However, the model did explain 75.7% of the variation in profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria, implying that there are other factors associated with profitability of the selected manufacturing SMEs in Port Harcourt and Aba were not captured in the model. Furthermore, the result shows that the overall model was significant in predicting the profitability of the selected manufacturing SMEs in Port Harcourt and Aba ($F(5,834) = 54.864$, $p = 0.000$). The result shows that at least one of the quality management dimensions has a significant effect on the profitability of the selected manufacturing SMEs. The multiple regression model from the results is thus expressed as:

$$PRO = 14.556 + 0.422EC \dots\dots\dots \text{Eq. (i)}$$

Where:

$$PRO = \text{Profitability}$$

EC = Employee Commitment

From the above regression equation above, it was revealed that holding quality management dimensions (continuous improvement, customer focus, leadership commitment, employee commitment and research and development) constant (at zero), profitability of the selected manufacturing SMEs will be 14.556. This implies that if continuous improvement, customer focus, leadership commitment, employee commitment and research and development take on the values of zero (do not exist), there would be 14.556 times level of repetition of the profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria. The model shows that a unit change in employee commitment will lead to 0.422 unit change in profitability of the selected manufacturing SMEs. Therefore, the null hypothesis (H_0) which states that quality management dimensions (continuous improvement, customer focus, leadership commitment, employee commitment and research and development) have no significant effect on profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria is hereby rejected.

Discussion of Findings

The results of linear multiple regression analysis for the effect of Quality management dimensions on the profitability of selected manufacturing SMEs in Port Harcourt and Aba Nigeria indicated that quality management dimensions have significant effect on the profitability of selected manufacturing SMEs in Port Harcourt and Aba Nigeria. The results of this study agree with the findings of various empirical studies on the effect of Quality management dimensions on profitability of selected manufacturing SMEs (Aaron, 2018; Becker-Blease, Kaen, Etebari & Baumann, 2018; Gleen, Lee & Jose, 2014 Aaron, 2018). Conceptually, scholars have reported that quality management assist in accomplishing profitability in the organization: It has been recognized as a successful management philosophy in manufacturing and service industries (Giogio, Verbane & Kasren, 2015; Chibba, 2017).

Different studies have been conducted on quality management and profitability in different organizations (Muhonen, 2017; Farah, 2016; Muya & Gathogo, 2016; Becker-Blease, Kaen, Etebari & Baumann, 2018; Gleen, Lee & Jose, 2014; Aaron, 2018). There seems to be an agreement with the majority of scholars on the linkage between quality management and profitability. Muhonen (2017) found a significant positive effect of quality management on profitability and the findings further associated competitiveness with profitability. In addition, Farah (2016) found a significant positive effect of quality management on profitability with an emphasis on strategic management practice and self-refinement. Muya and Gathogo (2016) also observed that organizations that implement quality management practice perform better, although individual experience differential relatively increase the profitability profile. Becker-Blease, Kaen, Etebari and Baumann (2018) found a significant effect of QM and profitability with emphasis on long term goal of the organization. The findings of this study provided support for quality control trilogy theory by Juran 1920 and quality improvement theory by Deming 1940s. The interrelationship of the underpinning theories in relation to this research shows that management is responsible for providing a clear mission and vision of the company

to employees given the importance of customer satisfaction as measures to business performance.

CONCLUSION AND RECOMMENDATIONS

The study focused on the effect quality management (continuous improvement, customer focus, leadership commitment, employee commitment and research and development) on profitability of the selected manufacturing SMEs in Port Harcourt and Aba, Nigeria, and the results revealed that quality management (employee commitment) has significant and positive effect on profitability. The result concluded that quality management was important to operations of SMEs as veritable tools to attain the overall business objectives which can be best measured by profitability. The study recommended that manufacturing SMEs and owners managers should key on to the enormous benefits associated with implementation of quality management practices as full utilization of quality management practices improve firm profitability inflow. Therefore, implementations of quality management should be the heart of owners and managers of manufacturing SMEs since the overall activities of any business is erected to ensure timely and accurate response to the changes in the environment which are likely to affect business profitability.

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