

Exploring the Link between Total Quality Management and Business Performance

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Abstract

The study examined the influence of total quality management on business performance in manufacturing industry in Nigeria with a particular reference to Nestle Nigeria Plc. The broad objective of this study was to examine how leadership, supply quality management, employee participation, recognition and reward and quality system management predicted business performance. The study employed survey research. Primary data was used for the study with questionnaire as research instrument. The subjects were two hundred employees from Nestle Nigeria Plc. The six hypotheses formulated for this study were tested using multiple Regression and Pearson correlation. The findings for this study revealed that leadership, supply quality management, employee participation, recognition and reward and quality system management jointly and independently predicted business performance. Based on the findings of the study, it is recommended that management should try to update themselves on the various TQM practices so as to face the competitive environment.

Keywords: Total Quality Management, Business Performance, Employee Participation, Recognition and Reward

1. Introduction

According to Crosby (1984) everyone has had experiences of poor quality when dealing with business organizations. The experience of poor quality is exacerbated when employees of the company either are not empowered to correct quality inadequacies or do not seem willing to do so. We have all encountered service employees who do not seem to care. The consequences of such an attitude are lost customers and opportunities for competitors to take advantage of the market need. Successful companies understand the powerful impact customer-defined quality can have on business (Goetsch and Stanley, 1995). In such a competitive environment resulting from world globalization and liberalization, firms survive with much difficulty unless they create the competitive advantage over their competitors (Adam *et al.*, 2001; Samson & Terziovski, 1999; Terziovski & Samson, 1999). With the increasing competitive, business survival pressure and the dynamic, changing customer-oriented environment, total quality management (TQM) has been recognized as one of the important issues and generated a substantial amount of interest among managers and researchers (Benson *et al.*, 1991; Flynn *et al.*, 1995; Powell, 1995; Sousa and Voss, 2002; Terziovski & Samson, 1999). Past studies on the relationships between TQM practices and quality performance have showed significant and positive results (Prajogo and Sohal, 2003; 2004; Terziovski and Samson, 1999; Ahire *et al.*, 1996; Flynn 1995).

In other words, over the past two decades, total quality management (TQM) has become most widely used management acronym and is considered as the buzz word in the management practices. It has been well accepted by managers and quality practitioners as a change management quality approach (Arumugam *et al.*, 2009). It plays a vital role in the development of management practices (Prajogo and Sohal 2003). The level of awareness towards TQM has increased drastically and has gone to its peak to become a well-established field of research (Yusof and Aspinwall, 1999) due to intense global competition, increasing consumer consciousness of quality and rapid technology transfer.

In response to these challenges and to facilitate organizations in achieving higher quality levels, many companies are implementing TQM approach and quality initiatives for achieving sustainable competitive advantage and enhanced company performance. Many researchers asserted TQM as an approach to improve effectiveness, flexibility, and competitiveness of a business to meet customers' requirements (Oakland, 1993), as the source of sustainable competitive advantage for business organizations (Terziovski, 2006), as a source of attaining excellence, creating a right first-time attitude, acquiring efficient business solutions, delighting customers and suppliers etc. (Mohanty and Behera, 1996) and above all as a source of enhancing organizational performance through continuous improvement in organization's activities. Accordingly TQM is an organization wide approach to continuously improving the quality of all the organizations, processes, products and services (Kotler, 2000). Total quality management is a management philosophy that is managing organizations to improve its overall effectiveness and performance towards achieving world class status (Waldman, 1994). Total quality management practices towards achieving quality performance is and tactically important for gaining a

competitive advantage to the organizations (Corbett et al., 2005). According to Vuppapapati et al. (1995), TQM is an integrative philosophy of management for continuously improving the quality of products and processes to achieve customer satisfaction. Dean and Bowen (1994) defined TQM as a philosophy or approach to management that can be characterized by its principles, practices, and techniques. Its three principles are customer focus, continuous improvement, and teamwork. Each principle is implemented through a set of practices, which are simply activities such as collecting customer information or analyzing processes.

Total Quality Management is a framework (a set of values, techniques and tools) that includes a quality assurance system but also the management of all processes and resources, with a strong top management commitment and the involvement of all the people in the company in continuous improvement activities (preventing mistakes and waste of time) striving after the clients' satisfaction and strengthening brand image. Several studies have shown that the adoption of TQM practices can allow firms to compete globally (Easton, 1993; Ernst and Young, 1991; Handfield, 1993; Hendricks & Singhal, 1996; Womack & Roos, 1990). Tobin (1990) has stated that TQM is a totally integrated program for gaining competitive advantages by continuously improving every facet of organizational culture. TQM is therefore an integrated management philosophy and set of practices that emphasize increased employee involvement and teamwork, continuous improvement, meeting customers' requirements, team-based problem-solving, constant measurement of results, closer relationship with suppliers, and so on (Ross, 1993). TQM can be defined as a set of techniques and procedures used to reduce or eliminate variation from a production process or service-delivery system in order to improve efficiency, reliability, and quality (Steingard and Fitzgibbons, 1993).

Furthermore, TQM has been regarded as one of effective ways for firms to improve their competitive advantage (Kuei *et al.*, 2001). TQM is an approach for continuously improving the quality of goods and services delivered through the participation of individuals at all levels and functions of an organization. Large quantity of literature and academic journals has been devoted to analyzing the essences of TQM and how it should be implemented in organizations. Especially in the 1990s, a significant volume of research was performed to investigate the relationship between practices of TQM and organizational performance. Total quality management is one of the most popular and durable management concepts and it has passed through a number of phases since 1920's. The total quality management practices in an organization are leadership, process management, information analysis, customer focus, supplier relationship quality system improvement, continual improvement and people involvement (Flynn *et al.*, 1995a). **Total Quality Management** (TQM) is a philosophy that says that uniform commitment to quality in all areas of an organization promotes an organizational culture that meets consumers' perceptions of quality.

Previous researches had shown that TQM philosophy can be applied to any organizations, including manufacturing, services, and information-related industries (Alkhafaji *et al.*, 1998; Mandal *et al.*, 1999). In order to make manufacturing industries more prosperous and competitive, it proves to be worthwhile to investigate how TQM may affect business performance. The focus of this study is to provide evidences on whether or not implementation of TQM practices affects various levels of firm performance.

2. Objectives of the Study

The Primary objective of this study is to investigate the influence of total quality management on business performance, other objectives include:

1. To examine whether leadership, supply quality management, employee participation, recognition and reward and quality system management will predict business performance.
2. To ascertain the significant relationship between leadership and business performance.
3. To determine whether supply quality management is associated with business performance.
4. To analyze the connection between employee participation and business performance.
5. To examine the nexus between recognition and reward and business performance.
6. To determine the link between quality system management and business performance

3. Literature Review

3.1. What is Total Quality Management?

To have an understanding of the concept, we need to define the component words. The word 'total' means that everyone in the organisation: all process, systems, levels of management and employees must be involved in satisfying the customer.

The word 'quality', on the other hand, means so many things to so many people. In the words of Garvin (1988), "Quality is an unusually slippery concept, easy to visualise and yet exasperatedly difficult to define". Its diverse conception has brought to the fore several and sometimes incompatible definitions. Such definitions according to Wilkinson *et al* (1998) include:

'Conformance to standards, specifications or requirements'

The International Standards Organisation, ISO 8402 Glossary of Terms defines quality as "the totality of features

and characteristics of a product or service that bears on its ability to meet a stated or implied need". It recognises that customers' needs can be defined in terms of safety; usability; availability; versatility; compatibility with other products; reliability; maintainability; overall cost (including purchase price, maintenance costs, and product life); environmental impact; or other desired characteristics. Similarly, the word 'management', recognises that TQM is not an accidental phenomenon of any organisation's activities. It "is a managed process which involves people, systems, and supporting tools and techniques". It also implies that continuous quality improvement must be planned, measured and controlled. Total Quality Management (TQM) can be seen as a change in management style that aims to continuously increase value to customers by designing and continuously improving organisational processes and systems.

According to ISO 8402 (1994), quality management can be defined as all activities of the overall management function that determine the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system. Total quality management is an approach that seeks to improve quality and performance which will meet or exceed customer expectations. Hellsten and Klesjo (2000) defined TQM as the management system in continuous change, consisting of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources. Wehrich and Koontz (1994), see TQM as an "organisation's long-term commitment to the continuous improvement of quality – throughout the organisation, and with the active participation of all members at all levels to meet and exceed customers' expectations". TQM is defined as A management philosophy for continuously improving overall business performance based on leadership, supplier quality management, vision and plan statement, evaluation, process control and improvement, product design, quality system improvement, employee participation, recognition and reward, education and training, and customer focus. According to Kanji and Asher (1996),

3.2. Dimensions of Total Quality Management

3.2.1. Leadership

Leadership is defined in the context of TQM as providing and driving the vision (Mittal, 1999). Subburaj (2005) notes that TQM based leadership puts companies far ahead of their competitors in terms of sales, profits and employee morale. Effective leadership for TQM involves everyone in the organisation in value adding activities. He also adds that the most important prerequisite to practicing TQM is that the senior management should firmly believe that TQM is the only way to do business and manage the organisation.

To be successful in promoting business efficiency and effectiveness, TQM must be truly organisation wide, and it must start at the top with the chief executive or equivalent. The most senior directors and management must all demonstrate that they are serious about quality (Oakland, 2003). Deming urges that the senior employees must conduct themselves as leaders rather than managers. According to an empirical investigation done on Leadership and Total Quality management of ISO Certified Companies in Sri Lanka; senior leaders should serve as role models in planning, communication, coaching, reviewing of organizational performance, and employee recognition. As role models, they can reinforce values and expectations while building leadership, commitment, and initiative throughout the organization. TQM is very people oriented so good leadership results in effective TQM implementation (Wick-ramaratne, 2005). According to Juran (1989) it cannot be delegated. Those firms that have succeeded in making total quality work for them have been able to do so because of strong leadership (ibid).

Organising for quality is also vital; Planning should have a 10 year horizon in order to ensure that the principles of TQM are firmly rooted into the culture of the organization. Patience and tenacity are key virtues. Quality objectives and strategies must be developed and deployed down through the organizational hierarchy, along with agreeing goals for improvement (Dale et al, 1998).

The middle management has a particularly important role to play, since they must not only grasp the principles of TQM, but they must also go on to explain them to the people for whom they are responsible, and ensure that their own commitment is communicated. Only then will TQM spread throughout the organisation (Oakland, 2005).

According to Dale (1999) middle management will only be effective, however, if they are committed to it as a concept. The middle manager's role typically involves: Developing specific improvement plans for the department and processes for which they are responsible; ensuring that the objectives, values, policies and improvement initiatives of their departments are aligned with the company's business goals, TQM strategy, and quality management system; Communicating the company's approach to TQM in common sense and jargon free language to first line managers and other employees; Acting as TQM coach and counsellor to the employees for whom they are responsible; Ensuring that first line managers are individually trained in the use of tools and techniques and that they are used effectively; Acting as a "guardian, or sponsor or mentor" to improvement teams and securing the means to reward employees; Providing top management with considered views on how to manage the continuing implementation and development of TQM, taking into account feedback from first line

managers and employees on potential difficulties or obstacles.

3.2.2. Employee Participation

Employees are the strength of the organisation (Subburaj, 2005). They are the prime contributors to its success. When an organisation wants to expand its business or increase its profits, only the employees can make it happen. The only expandable resources in the organisation are the employees. Any improvement will happen only because of the employees.

Therefore, employee participation is essential for TQM.

Bartol and Abhishek (2002) in a study on encouraging knowledge sharing i.e. "the role of organizational reward systems", elude the key to success in any business to the ability to attract, develop and retain a quality work force. They go on to say that to ensure that customers are treated like kings; employees ought to be treated like royalty. As much attention should be paid to the employees' level of satisfaction as that paid to the customers'. Dissatisfied employees lead to increased employee turnover, limited employee continuity with the customer, limited opportunity for customer service training and lower service quality. Quality is rest assured if any organizations management style is characterized and built on the importance of "empowering" employees by making them partners in the business. Successful companies make improvements by flipping the hierarchy upside down and giving power to employees (ibid).

Reward systems are also another aspect; they provide a number of important functions in the organization including motivating active participation of organizational members, meeting role expectations, and motivating innovation and strong commitment to the organization (Steers and Porter, 1991).

Organizations worldwide are actively grappling with the translation of Deming's (1986) fourteen principles into their own unique versions of Total Quality Management. As they proceed through the stages of transforming their organizational cultures toward continuous quality improvement, they have evolved a number of reward mechanisms to assimilate workers into the TQM culture and to maintain workers' efforts toward continuous quality improvement goals. Employees welcome some but not all features of TQM, and success depends on certain conditions.

Employees must see quality as a crucial issue for their organisations or as very important and they should be able to feel that they have a "great deal" or a "fair amount" of influence over quality, and own involvement in problem-solving. Acceptance of TQM is greater where several conditions prevail. A strong sense of job security is a key element in encouraging acceptance of quality initiatives.

Training is important; it is not the overall amount which matters, but the extent to which programmes are specifically linked to quality or teamwork. Cooperative relationships with employee representatives are also an important element in easing the acceptance of TQM. The only way to effectively manage and quickly respond to customer needs, however, is to empower frontline employees. In a Total Quality organisation, empowerment is seen as the key to efficiency and flexibility

Firms which maintain working relationships with their unions are most likely to maintain their quality programmes effectively. Short-term pressures tend to undermine TQM initiatives.

3.2.3. Supply Quality Management

Supplier quality management can be defined as the set of supplier-related quality management practices for improving suppliers' quality of products and services. This is exemplified by firm-supplier partnership, product quality as the criterion for supplier selection, participation in suppliers, communication with suppliers, understanding of supplier performance, and supplier quality audit (Mann, 1992; Zhang, 2000a). Supplier quality management has emerged as one of the leading business practices in the past few years. World-class manufacturers are making significant investments in systems and processes to improve supplier quality.

In modern industrial production, the interdependence of buyers and suppliers has increased dramatically. The supplier becomes an extension of the buyer's organization to a certain extent. A revolution in the relationship between buyers and suppliers has emerged in the form of supplier partnership (Juran and Gryna, 1993). According to the review by Hackman and Wageman (1995), developing partnerships with suppliers is one of the major TQM implementation practices. The extensive literature review by Anderson et al. (1994a) indicated that external cooperation between a firm and its suppliers has merits in the just-in time purchasing systems. Working collaboratively with suppliers on a long-term basis is truly beneficial.

With regarding to suppliers' management, an effective suppliers' management will enforce the cooperation between suppliers and firms by allowing suppliers' involvement and/or participation not only in the design process but also in the production process, and help the procurements of materials or parts meet firm's requirements and be efficiently utilized (Flynn *et al.*, 1995; Shin *et al.*, 2000; Tan, 2001). The research findings of Kaynak (2003) showed that suppliers' management, which emerged as an important component of TQM implementation, had directly positive effects on both design management and process management. In addition, the quality of materials provided by suppliers is important and the starting point for firms to produce quality products. Eventually, a good quality of raw materials will reduce the occurrences of rework, scrap, and/or defective outputs. Ultimately, it can result in a good operational performance.

3.2.4. Quality System Management

Quality system is defined as the organizational structure, procedures, processes and resources needed to implement quality management (ISO 8402, 1994). In 1987, the International Standardization Organization published the ISO 9000 standards series on quality management and quality assurance. Implementing ISO 9000 is a way in pursuing quality system improvement in a firm. In this study, quality system improvement means to establish a quality system according to the requirements of ISO 9000. Through the implementation of ISO 9000, a quality manual, quality system procedures, and work instructions are established. In the end, a firm may apply to be registered as having an ISO 9001 (9002 or 9003) quality certificate (Randall, 1995).

According to Hoyle (2007, 94) all organizations have a way of doing things. For some it rests in the mind of the leaders, for others it is translated onto paper and for most it is a mixture of both. Before ISO 9000 came along, organizations had found ways of doing things that had worked for them. Systems, with all their inadequacies and inefficiencies, enabled mankind to achieve objectives that until 1987 had completely revolutionized society. The next logical step was to improve these systems and make them more predictable, more efficient and more effective- optimizing performance across the whole organization- not focusing on particular parts at the expense of the others. ISO 9000 did require organizations to establish a quality system as a means of ensuring product met specified requirements.

Quality systems are designed to provide both the support and mechanism for the effective conduct of quality related activities in an organization. It is a systematic means to manage quality in an organization (Kolka, 2002)

3.2.5. Recognition and Reward

Recognition is defined as the public acknowledgment of superior performance of specific activities. Reward is defined as benefits, such as increased salary, bonuses and promotion, which are conferred for generally superior performance with respect to goals (Juran and Gryna, 1993). Public recognition is an important source of human motivation (Deming, 1986). It almost goes without saying that an important feature of any quality improvement program is the showing of due recognition for improved performance by any individual, section, department or division within the firm. To effectively support their quality effort, firms must implement an employee compensation system that strongly links quality and customer satisfaction with pay (Brown et al., 1994). Deming (1986) and Ishikawa (1985) identified one source of human motivation at work as social motivation, the energy that comes from cooperation with others on a shared task and the incentive provided by recognition from others. A large majority of firms implementing TQM modify their performance measurement and reward systems so that achievement of specific quality goals can be assessed and rewarded (Hackman and Wageman, 1995). TQM implementation relies increasingly on performance measurement and performance contingent rewards to motivate and control employees. According to the review results by Hackman and Wageman (1995), 85% of TQM firms have developed programs to reward individuals and teams for quality achievements.

A firm's TQM initiative must be supported with a recognition and reward system that encourages and motivates employees to achieve the desired performance. Firms that are serious about achieving quality and customer satisfaction must integrate these aspects into their recognition and reward system. Ishikawa (1985) suggested that firm-wide gain-sharing or profit-sharing programs can appropriately be used to recognize and reward collective excellence. Excellent employee suggestions should be financially rewarded in order to encourage employee participation. The forms of recognition can be a praise letter, an oral praise, award ceremony, moral award, publicly presenting successful working experiences (Zhang, 2000a). Mann and Kehoe (1994) suggested that working condition improvement be used to recognize employee quality improvement efforts. Cherrington (1995) stated that the forms of reward can be merit pay, piece-rate incentives, and team and group incentives, skill based pay and pay-for-knowledge, suggestion system, profit sharing, salary increase, and bonus scheme.

3.2.6. Business Performance

There are several studies that investigated the relationship between TQM and business performance. Performance is a measure of terms achieved by an individual, a team, an organisation, or a process. EFQM (1999)

Kaynak (2003) indicated that quality improvement had positive effects on improving a firm's financial and market performance. However, as the effects of TQM have different impacts on internal quality and external quality, TQM implementation that directly and positively improves firm's operating performance by increasing quality performance (Kaynak, 2003), has indirect effects on increasing customer satisfaction as well as market share.

It is further noted that quality management can improve operating efficiency by reducing defect rate, scrap rate, and the occurrence of rework (Handfield *et al.*, 1998; Hendricks & Singhal, 1997). The improvement of operating efficiency will improve customers' satisfaction and eventually the company's financial performance. In addition, the improvement of customers' satisfaction and loyalty may sustain or enlarge market share, which can be eventually transformed into better firm's financial performance (Ahire & Dreyfus, 2000; Choi & Eboch, 1998). Thus, the authors propose that operating performance resulting from TQM implementation will increase customers' satisfaction and improve financial performance, respectively.

4. Theoretical Framework

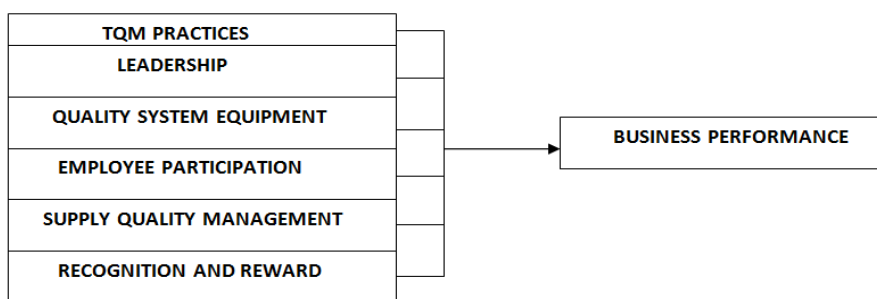
There is no single theoretical formulation of Total Quality Management approach, nor has any definitive shortlist of practices that are associated with it. Worldwide, much research been conducted in the field of TQM implementation. After a review of the relevant TQM literature, it has been found that different researchers adopted different TQM definitions and frameworks based on their own understanding of TQM and research objectives. Consequently, there is less consensus on what TQM is and what constitutes it.

TQM can be studied from three different approaches: contributions from quality leaders, formal evaluation models and empirical research. Taking the initial research as a basis, the critical factors of TQM found in the literature vary from one author to another, although there is a common core, formed by the following requirements: customer focus, leadership, quality planning, management based on facts, continuous improvement, human resource management (involvement of all members, training, work teams and communication systems), learning, process management, cooperation with suppliers and organizational awareness and concern for the social and environmental context (Tari, J.J. 2005). A company's success in the long term depends on how effectively it satisfies its customers' needs on a constant basis. Therefore, TQM's success is determined by how willing the organization is to change and whether it uses customer satisfaction as a measure in assessing the success of its decisions and actions (Madu and Kuei, 1993 cited in Sila, I. 2007).

A Framework for Total Quality Management

INDEPENDENT VARIABLES

DEPENDENT VARIABLE



A Framework for Total Quality Manageme

5. Methodology

5.1. Research Design

The design for this study is a survey research design. The independent variable is total quality management. The total quality management was measured by five sub variables (Leadership, supply quality management, employee participation, recognition and reward and quality system management) and the dependent variable is business performance with focus on product quality, job satisfaction, employee's loyalty, public image and goodwill among other factors.

5.2. Sample and data collection

For the purpose of this research work, this study was limited to Nestle Nigeria Plc. The company has a total population of about eight hundred employees, out of which a sample size of two hundred was drawn which included management staff, senior staff and junior staff of the company. One hundred and fifty five questionnaires were retrieved and found usable for analysis. The type of data that was used for the study was primary data. The primary data was collected using questionnaire so as to enable the researcher obtain accurate and adequate information relating to the research work. The questionnaire was administered to the management staff, senior staff and junior staff of the company under study.

5.3. Methods of Data Analysis

The demographic information was analyzed using frequency counts and simple percentage. Hypotheses for this research were analyzed with multiple regression analysis and Pearson's Correlation. Hypothesis 1 was tested with multiple regression analysis, and hypotheses 2,3,4,5 and 6 were tested with Pearson's Correlation.

5.4. Research Instruments

This study used questionnaire which was divided into three sections. Section A measured the demographic information. Total Quality Management was measured in section B which is a twenty item questionnaire with Likert scale scoring format ranging from strongly disagree (1) to strongly agree (5). The scales were developed by Zhang (2000). The TQM sub-scales used in this study had reliability co-efficients of 0.89, 0.84, 0.86, 0.88 and 0.90 respectively for leadership, supply quality management, recognition and reward, employee participation and quality system management respectively.

Business performance was measured in section C which is an eight item questionnaire with Likert scale scoring

format ranging from very low (1) to very high (6).

Business performance scale was adapted from a scale developed by Khandwalla (1977) and Das et al (2000) and used also by Ofoegbu and Akanbi (2012)

5.5. Data analysis techniques

The demographic information was analyzed using frequency counts and simple percentages. Hypotheses for this research were analyzed with analysis of variance, Pearson's correlation and independent t-test. Hypothesis 1 was tested with analysis of variance, hypotheses 2 to 4 were analysed with Pearson's correlation while hypothesis 3 was tested with independent t-test.

6. Data Presentation, Analyses and Interpretations

6.1. Analysis of demographic information

Table 1: Table showing the descriptive statistics of demographics

Sex	Frequency	Percentage
Male	94	60.6
Female	61	39.4
Total	155	100.0
Age	Frequency	Percentage
18-25	2	1.3
26-35	49	31.6
36-45	79	51.0
46-55	22	14.2
56+	3	1.9
Total	155	100.0
Marital Status	Frequency	Percentage
Single	43	27.7
Married	100	64.5
Divorced	6	3.9
Separated	6	3.9
Total	155	100.0
Educational Background	Frequency	Percentage
B.Sc,HND	86	55.5
OND,NCE	68	43.9
Primary School	1	0.6
Total	155	100.0
Cadre	Frequency	Percentage
Staff Management	11	7.1
Senior Staff	27	17.4
Junior Staff	117	75.5
Total	155	100.0
Department	Frequency	Percentage
Sales	24	15.5
Marketing	36	23.2
Personnel	21	13.5
Store/Purchasing	22	14.2
Accounting	16	10.3
Production	36	23.2
Total	155	100.0

Source: Field Survey, (2012)

Table 4.2.1 above showed that there are 94(60.6%) males and 61(39.4%) females in the study. The table also showed that there are 2(1.3%) respondents who are of age range 18-25 years, 49(31.6%) are of age range 26-35 years, 79(51.0%) are of age range 36-45 years, 22(14.2%) are of age range 46-55 years while 3(1.9%) are 56 and more years. The marital status of the respondents also showed that 43(27.7%) of the respondents are single, 100(64.5%) of them are married, 6(3.9%) each are either separated or divorced respectively.

The educational background of the respondents showed that 86(55.2%) of the respondents have B.Sc or HND certificates, 68(43.9%) of them have OND and NCE certificates while 1(0.6%) has the primary school leaving certificates.

The table also showed that 11(7.1%) of the respondents are in the Staff Management cadre, 27(17.4%) are Senior Staff while 117(75.5%) are Junior Staff. The cadre of the respondents showed that 24(15.5%) of the

respondents in Sales department, 36(23.2%) are in Marketing department, 21(13.5%) are in the Personnel department, 22(14.2%) are in the Store and Purchasing department, 16(10.3%) are in Accounting while 36(23.2%) are in the Production department respectively.

6.2. Testing of Research Hypotheses

Six hypotheses were formulated and tested for this research work.

H₀: Null Hypothesis

H₁: Alternative Hypothesis

Hypothesis 1

H₀: Leadership, supply quality management, employee participation, recognition and reward and quality system management will not jointly and independently predict business performance.

H₁: Leadership, supply quality management, employee participation, recognition and reward and quality system management will jointly and independently predict business performance.

Table 1: A Table showing Multiple Regressions between Leadership, Supply Quality Management, Employee Participation, Recognition and Reward, Quality System Management and Business Performance.

Variables	F-Ratio	Sig. of P	R	R ²	Adj. R ²	β	T	P
Leadership	36.883	.000	.744	.553	.538	.020	.345	.730
Supply Quality Management						.277	4.751	.000
Employee Participation						.306	4.862	.000
Recognition and Reward						.402	6.589	.000
Quality System Management						.050	.833	.406

Source: Field Survey, (2012)

The table above showed that joint effect of Leadership, Supply Quality Management, Employee Participation, Recognition and Reward and Quality System Management will jointly and independently predict Business Performance was significant (F(5,149) = 36.883; R = .744, R² = .553, Adj. R² = .538; P < .05). The independent/predictor variables jointly accounted for a variation of about 55%.

The following shows the various *relative contributions* and levels of significance of the independent variables:

Leadership (β = .020, P > .05), Supply Quality Management (β = .277, P < .05), Employee Participation (β = .306, P < .05), Recognition and Reward (β = .402, P < .05), and Quality System Management (β = .050, P > .05) respectively.

This shows that while Supply Quality Management, Employee Participation, Recognition and Reward were significant Leadership and Quality System Management were not. The alternative hypothesis is accepted.

Hypothesis 2

H₀: There will not be a significant relationship between leadership and business performance

H₁: There will be a significant relationship between leadership and business performance.

Table 2: A Table Showing Pearson's Correlation between Leadership and Business Performance.

Variable	Mean	Std. Dev.	N	R	P	Remark
Business Performance	38.4065	2.6426	155	.170*	.000	Sig.
Leadership	29.7032	2.2366				

* sig. at .05 level

Source: Field Survey (2012)

It is shown in the above table that there was significant relationship between Business Performance and Leadership (r = .170*, N= 155, P < .05).

The hypothesis is accepted. It shows that there is a very strong link between leadership and business performance. This means that the experience and quality of leadership have a strong link with business performance.

Hypothesis 3

H₀: There will not be a significant relationship between Supply Quality Management and Business Performance

H₁: There will be a significant relationship between Supply Quality Management and Business Performance

Table 3: Table Showing Pearson's Correlation between Supply Quality Management and Business Performance

Variable	Mean	Std. Dev.	N	R	P	Remark
Business Performance	38.4065	2.6426	155	.456**	.000	Sig.
Supply Quality Management	04.3871	0.5742				

* sig. at .01 level

Source:Field Survey, (2012)

It is shown in the above table that there was significant relationship between Business Performance and Supply Quality Management ($r = .170^*$, $N= 155$, $P < .05$).

The alternative hypothesis is accepted. It shows that there is a strong association between supply quality management and business performance.

Hypothesis 4

H₀: There will not be a significant relationship between Employee Participation and Business Performance

H₁: There will be a significant relationship between Employee Participation and Business Performance.

Table 4: A Table Showing Pearson's Correlation between Employee Participation and Business Performance.

Variable	Mean	Std. Dev.	N	R	P	Remark
Business Performance	38.4065	2.6426	155	.544**	.000	Sig.
Employee Participation	20.2258	2.0750				

* sig. at .01 level

Source: Field Survey, (2012)

It is shown in the above table that there was significant relationship between Business Performance and Employee Participation ($r = .170^*$, $N= 155$, $P < .05$).

The hypothesis is accepted. This means that employees' creativity, independence and participation that determine the extent a firm will perform and gain sustained competitive advantage.

Hypothesis 5

H₀: There will not be a significant relationship between Recognition and Reward and Business Performance

H₁: There will be a significant relationship between Recognition and Reward and Business Performance

Table 5: A Table Showing Pearson's Correlation between Recognition and Reward and Business Performance

Variable	Mean	Std. Dev.	N	R	P	Remark
Business Performance	38.4065	2.6426	155	.600**	.000	Sig.
Recognition and Reward	4.7548	0.5140				

* sig. at .01 level

Source:Field Survey,(2012)

It is shown in the above table that there was significant relationship between Business Performance and Recognition and Reward ($r = .600^*$, $N= 155$, $P < .01$).

The alternative hypothesis is accepted. This hypothesis supports motivation theories that say that employees should be recognised and rewarded for their contribution to the achievement of organisational goals and objectives.

Hypothesis 6:

H₀: There will not be a significant relationship between Quality System Management and Business Performance

H₁: There will be a significant relationship between Quality System Management and Business Performance.

Table 6: A Table Showing Pearson's Correlation between Quality System Management and Business Performance

Variable	Mean	Std. Dev.	N	R	P	Remark
Business Performance	38.4065	2.6426	155	.600**	.000	Sig.
Quality Management System	15.4774	1.9651				

* sig. at .01 level

Source: Field Survey, (2012)

It is shown in the above table that there was a significant relationship between Business Performance and Quality Management System ($r = .600^*$, $N= 155$, $P < .01$).

The alternative hypothesis is accepted.

7. Concluding Remarks

A number of conclusions have been made from this research.

First, the instruments for measuring TQM implementation and overall business performance are reliable and valid, and can be used by other researchers to test the effects of TQM implementation on overall business performance. The reliable and valid instruments can also be used in testing the time dimension of TQM practices.

Second, several conclusions has been obtained from testing the hypotheses which are listed as follows: (1) leadership, supply quality management, employee participation, recognition and reward and quality system management jointly and independently predicted business performance; (2) there was a significant relationship between leadership and business performance; (3) there was a significant relationship between supply quality management and business performance;(4)there was a significant relationship between employee participation and business performance; (5)there was a significant relationship between recognition and reward and business performance; (6) there was a significant relationship between quality system management and business performance. The analysis of the questionnaire confirmed various assertions and dispositions of writers as reviewed in chapter two with regards to leadership, employee participation, supply quality management, recognition and reward, and quality system management.

Third, the case study reveals that the total quality management variables in this study are applicable in practice. It can be used by manufacturing firms to improve their TQM implementation efforts. The case study further shows that this TQM implementation can be used to self-assess firms' quality improvement efforts and measure their progress over time. Through this study, firms can quickly identify which areas urgently need improvement. Thus, the resources can be allocated more wisely and more effective improvement plans can be formulated.

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