

Effects of Total Quality Management on the Performance of the Food and Beverages Industry in Zimbabwe

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Abstract: *The food and beverages sector in Zimbabwe has been of late characterised by deteriorating market and operational performance despite implementation of various strategies. It was against this background that the researchers sought to determine the effects of total quality management practices as a strategy on the performance of the food and beverages industry in Zimbabwe. The main objectives of this study were to find out whether total quality management had an impact on performance of the food and beverages sector in Zimbabwe and to establish total quality management related challenges faced by the food and beverage sector. The study adopted a combination of exploratory and descriptive survey research since it was the first of its kind in this sector; and the need to fully explain the underpinning variables. Stratified random sampling and non-random sampling techniques were used to come up with a sample of hundred and twelve (112) respondents. Questionnaires, personal interviews and observations were used as research instruments. Data was analysed using Stata and Microsoft Excel packages and it was presented in tables and bar graphs. The study revealed that total quality management practices positively impacted on the performance of the food and beverage sector in Zimbabwe. The researchers recommended that the food and beverage industry should enter into strategic alliance with suppliers of inputs, get ISO certification and seek continuous top management support and commitment and invest in market research training for its employees and other stakeholders.*

Key words: *total quality management, total quality management practices, operational performance, market performance, food and beverage industry.*

I. INTRODUCTION

The advent of globalization characterized by widening consumer choice has intensified competition in both local and international markets. Consumers were now exposed to a wider range of generic products which enabled them to choose products of high quality at low prices. One of the strategies that could give organizations a competitive advantage could be the offering of quality products and services to consumers at competitive prices. The success of Japanese organizations in the late 20th century led most organizations to consider quality as the prominent market variable which gives a competitive advantage, (Alolayyan et al, 2013). As a result most organizations are now integrating Total Quality Management (TQM) as a strategic choice to gain customer loyalty, market share and win competition and subsequently survive in the competitive environment. The existing turbulent market environment requires companies to adopt and implement total quality management practices which enable them to identify and quickly respond to changing market conditions. TQM practices help organizations to respond proactively through continuous improvement to achieve best organizational performance (Chase et al., 2005). More so, total quality management may be adopted by organizations to increase market share and to gain competitive advantage, reduce operational costs and improve corporate reputation (Heizer and Render, 2004). Ismail, (2002) further identifies generic TQM practices as, customer focus, leadership and top management commitment, employee training, employee involvement, continuous improvement, innovation, product design, cross functional quality teams, benchmarking, performance measurement and statistical process control. These generic practices are applicable to all organizations regardless of size and type. Firms need to give priority to total quality practices which give them competitive advantage in order to survive global competition.

Zimbabwean manufacturing sector seemed to be threatened by globalization and increasing customer demand for quality products. According to the Sunday Mail Newspaper of 5 July 2015, direct foreign competition had increased from 58% in 2013 to above 90% in 2014. This could be witnessed by an influx of foreign produced products to the local market, (CZI Report, 2014). All this led to loss of both local and foreign market share by the Zimbabwean manufacturing sector. Local customers told The Daily Newspaper of 19 May 2014, that they preferred imported products because they were of better quality than locally produced products. This confirmed that local firms' performance was affected by perceived low quality products. The CZI report for the year 2014, also found out that some Zimbabwean manufacturing companies were not exporting their products because they did not meet international quality standards. It seemed these firms were not confident to export their products because they were of inferior quality to those of other international players.

The Zimbabwe's beverage sector was not an exception as it was also being affected by global competition, high operational costs and customer demand for quality, (Dairiboard Holdings Annual Report 2014). According to the CZI Report 2013, the sector's average capacity utilisation in 2012 was 58% and it dropped further to 42% in 2013 and 36.3% in 2014, which translates to a 22 percentage points' decline on average capacity utilization in just three years. Delta, reported 12% and 10% decrease in Lager beer and soft drinks sales respectively in 2014 its financial statement. The loss was attributed to an influx of imported beverages as customers perceived imported beverages to be of better quality than locally produced beverages. For instance, Dairiboard Annual Report (2014) noted that milk quality problems resulted in the organization losing a considerable market share to imports. Quality challenges seemed to be affecting the entire beverage industry regardless of firm size. This called for the need to adopt total quality management practices which could enable the industry to survive in the 21st century which was characterised by a turbulent operating environment. Against this background, the study sought to assess the nature and extent to which quality related challenges were affecting operational performance of the beverage sector in Zimbabwe.

1.1 Problem statement

The Food and beverage industry seemed to be losing market share because of quality related challenges. Delta, the major player in this industry lost 12% and 10% sales in lager beer and soft drinks respectively because of the proliferation of imported beverages into the country, (Delta Corporation Full Year Report 31 March 2015). Similarly, Dairiboard seemed to be facing quality problems in raw milk and this resulted in related imports gaining ground (Dairiboard Annual Report 2014). The question is whether quality management practices have an impact on market and operational performance of the food and beverage industry. Thus, our study sought to determine the extent to which total quality management related practices have affected the performance of the beverage sector in Zimbabwe with a view to proffering some solutions.

1.2 Objectives of the study.

- To determine the extent to which total quality management practices were affecting performance of the food and beverage sector.
- To establish total quality management practices employed in the food and beverage sector.
- To assess the effectiveness of the total quality management practices employed in the sector.
- To determine the total quality management practices related challenges that faced the sector.

1.3 Research Questions.

- 1) To what extent do total quality management practices affect the performance of the food and beverage sector.
- 2) Which total quality management practices are being used in the food and beverages sector?
- 3) How effective are the total quality management practices employed in the food and beverages sector?
4. What are the total quality management related challenges facing the food and beverage sector?

II. REVIEW OF RELATED LITERATURE

2.1 Total quality management overview

There are as many definitions of total quality management as there are authors and researchers in the field. American society for quality (ASQ) argues that TQM is about the totality of the system rather than its individual parts seeking to identify the causes of its failure. Chitale *et al* (2003) also notes that TQM = Total + Quality + Management. Chitale *et al* (2003) argues that total means that TQM includes all activities, departments, everyone in the organization, all the time. It leaves nothing out as everything in the firm is involved in TQM, which means it eliminates silo thinking, and encourages teamwork. Similarly, Manizu (2013) notes that quality in the equation stands for the entirety of the shape and appearances of the goods and services that validates its ability to meet the needs of customers. Juran (1989) views quality as fitness for use whereas Manizu *et al*, (2013) specifically look at quality in the context of the food and beverage industry from the user and manufacturer point of view. On one hand, Manizu *et al*, (2013) contends quality is about excellence or superiority and from a product quality perspective is about specific measurable attributes shown in measurable differences and usually associated with price. On the other hand, from user's point perspective, quality reflects consumer wishes while from a value-based perspective, quality is related to the price of the product or the usefulness or satisfaction offered by the product at a comparable price. From this perspective the authors indicate that it is higher price for better quality. From the manufacturing point of view, quality is confirmation to specifications since out-of-specification products are of poor quality. In the foregoing equation, management deals with the planning, organising, controlling and leading.

In support of Chitale *et al's* (2003) view, Olcay (2014) adds that TQM is an organization wide approach of continuously improving the quality of products, services or processes by focusing on customer expectations to enhance their satisfaction and firm performance. The issue of continuous improvement is quite

key as technology and consumer preferences are continuously changing, meaning that organizations need to continuously improve their processes and proficiency. Likewise, Chipandambira (2012) also refers TQM, “as a management philosophy for continuously improving quality of goods and services delivered through the participation of all organizational members.” This implies that TQM is a process of making the whole organization quality oriented culminating in continuous improvement of processes. Zakuan (2012) defines TQM in the context of its benefits to the organization. He asserts that TQM brings effectiveness, cohesiveness, flexibility and competitiveness as well as improves efficiencies of the entire organization. Furthermore, Mitra, (2005) asserts that total quality management is a comprehensive approach to improving quality. This shows that TQM encompasses all practices or strategies which are aimed at improving product quality. This is in line with Mustafa *et al* (2005) who defined TQM as emphasises on provision of best quality products to customers at low cost. Mitra, (2005) agrees with the BSI standards that TQM is both a management philosophy and a set of guiding principles that comprise the foundation of a continuously improving organization.

2.2 Total quality management practices

According to Qin Su *et al* (2008) total quality management practices are all kinds of quality management programs and plans that can result in improved products and services, reduced costs, more satisfied customers and better bottom line financial performance. Total quality management practices are comprised of both traditional quality management methods like measurement and quality programs and philosophies. Beaumont cited by Manizu *et al*, (2013) defines quality management practices as the collection of techniques, practices, policies and procedures which are simple to implement but with an appreciable effect on quality. In determining total quality management practices, various studies have been carried out by both individual researchers and institutions. Pasin *et al*, (2005) group total quality management practices into nine generic practices. They concluded this after scrutinising differences and similarities of all practices proposed by different researchers. The nine generic practices are proposed by various researchers and authors and these are: top management commitment and support, organization for quality, employee training, employee participation, supplier management, customer focus, continuous support, quality system, improvement information analysis and use statistical quality techniques (Pasin *et al*, 2005). The same authors associate these generic TQM practices with the manufacturing sector. However, Khan *et al*, (2009) argue that customer focus, statistical quality control, teamwork, continuous improvement, quality improvement team, and systematic improvement team are TQM practices which are specific to food and beverage industry. Manizu *et al*, (2013) partly agree with Khan *et al*, (2009) when they point out that TQM practices which are specific to food and beverage industry are leadership, strategic quality planning, customer focus, employee training and process management.

2.3 Business performance

Performance measurement is vital for organisations as it enhances effective business management. Manizu, (2013) defines performance “as the extent to which an operation meets performance objectives and major steps in order to meet customer needs”. According to Lam *et al*, (2011), business performance is about the consequence of company’s operations or achievement of company’s goals. In support of this definition Gavrea *et al*, (2011) defines business performance as the ability to exploit its surrounding and efficient use of its scarce resources. Effectiveness and efficiency is measured through appropriate utilization of given resources. Performance should be measured in one way or the other. Deming cited by Manizu, (2013) declares that, “without measuring something, it’s impossible to improve it”. It follows that to improve organisational performance, managers need to measure the organisation’s performance but need to identify measurement variables.

2.4 Market performance

Market performance is all about perceptions of customers and employees in evaluating company results. Customers and employees judge company performance by looking at service quality, customer satisfaction; customer loyalty and customer retention, (Lam *et al*, 2011). Camarero, (2007) equates objective performance with economic performance and judgemental performance to market performance. Likewise, Camarero, (2007) notes that market performance increases economic performance of a company. Objective performance/economic performance is about financial and market based assessments like profitability ratios, return on investment (ROI), return on assets (ROA), sales growth and market share. Market performance is also measured by change in sales, change in market share, repeat purchases and new customers. An increase in any of these market performance indicators is good for the company and vice versa if there is a decrease.

2.5 Operational performance

Stock *et al*, (2000) argues that organisational performance is measured using financial and market criteria. Manizu (2013) adds operational performance to the list proposed by Stock *et al* (2000). Operational

performance was defined by Manizu, (2013) as a measure of internal operations of the firm. Variables like change in operational costs, waste reduction, product quality improvement, productivity, new product development and distribution efficiencies are measured to determine operational performance (Stevenson, 2012).

2.6 Relationship between TQM practices and business performance

2.6.1 Management commitment and leadership

Olcay (2014) argues that, leaders in TQM system view a firm as a system, support employee development, establish multipoint communication among all employees, customers, managers and use that information effectively and efficiently. Zakuan (2012) adds that management commitment encourages employee participation in decision making as well as empowering them. If managers and leaders are committed to TQM they make decisions which support TQM implementation and they can easily come up with a quality policy, establish quality management structure and lure everybody in the firm towards quality, (Olcay, 2014). Empirical studies by Besterfield *et al* (2003) show that management skills and style have a bearing on staff morale. Similarly, Phan *et al*, (2011) found out that management commitment and leadership improves operational performance. This is further supported by Kim (2012); Phan *et al* (2011) whose studies also concluded that management commitment and leadership improve inventory management and enhances innovation in organisations. Macinti (2008), Zu *et al*, (2008) seem to concur that leadership improves the overall firm performance and Olcay, (2014) even goes further to say that there is a positive relationship between leadership commitment and overall firm performance.

2.6.2 Customer focus

Customer focus is the orientation of an organization towards serving its clients' needs, www.businessdictionary.com (accessed on 01/08/2015). This practice puts customer relationship management at the forefront of business excellence. According to ISO, customer focus practice stresses that organizations should understand the current and future needs of customers and strive to meet or exceed them all the time. According to www.softlinkglobal.com, (accessed on 01/08/2015) customer centric approach holds that the external customer is the centre of gravity. The approach helps firms to retain, gain and expand customer base. Being sensitive to customer needs and being proactive to customer needs are important ingredients of the customer centric theory. This illustrates the importance of the customer in business. Olcay, (2014) recommends that organizations need to customize their products, which means they should know customer expectations and requirements before offering their products. Chipandambira *et al*, (2012) point out that the major objective of TQM is to understand, satisfy and surpass customer expectations continuously. Customer focus is at the centre of TQM. According to Chitale *et al*, (2003), satisfying customer expectations is one of the major drivers of TQM. Different researchers assert that customer focus is positively related to organizational performance. Tari, (2008) and Terziovski, (2003) concur that customer focus improves operational performance. Thus Tari *et al*, (2011) conclude that customer focus enhances innovation while Phan *et al* (2011) adds that customer focus improves inventory management and sales of an organization. Joiner (2007) also concluded that customer focus improves aggregate firm performance.

2.6.3 Strategic quality planning

Chipandambira *et al* (2012) assert that strategic quality planning is centred on the vision and mission statements, safety and quality policy of the company. Hitt *et al*, (2011) define strategic planning as the process by which an organization envisions its future and develop the necessary procedures and operations to achieve the intended goals. Additionally Chipandambira *et al* (2012) views strategic planning of a company as the compass of the entity which gives directions to managers as well as guiding employees. Juran cited by Chipandambira *et al* (2012) emphasises that strategic quality management is entirely a top management responsibility; it is top management which is responsible for developing and implementing it to the organization. In support of that, Phan *et al*, (2011) add that management should be trained, be exposed to six sigma, learn manufacturing and process management as this improves their skills. Olcay, (2014) emphasises that vision, mission and values statement should incorporate quality concepts and should be the slogan of the company. However, there seem to be some conflicting views regarding the impact of strategic quality planning on organizational performance as Phan *et al*, (2011) and Kannan *et al*, (2005) assert that strategic quality planning improves inventory management performance, while Macinati, (2008) argues that it is positively related to market performance.

2.6.4 Supplier quality management

Olcay (2014) views supplier quality management in TQM as a practice which deals with reducing and streamlining supplier base, developing strategic alliances with suppliers and engaging them at early stages of product development to meet intended goals. The quality of products or services provided solely depends on the quality of inputs used where "a high quality input translates to high quality outputs", and therefore suppliers

need to adopt TQM, (Mitra, 2005). The philosophy of total quality management has since extended its wings to include suppliers. Instead of manufacturing companies checking raw material quality as they receive them, engagement of suppliers is done from the onset to ensure that their consistence in quality practice, (www.wiley.com, accessed 09/08/2015). The same website further asserts that manufacturing companies involve suppliers in every stage from product design to final production. Research on supplier quality management has shown that it is positively related to operational performance, innovation performance, inventory performance and overall firm performance, (Olcay, 2014; Kannan *et al*, 2005; Phan *et al*, 2011).

2.6.5 Process management

A desired outcome is realised more efficiently when activities and associated resources are managed as a process, (www.iso.org, accessed on 04/08/2015). American Society for Quality views a process as a series of steps that transforms inputs to outputs/products. Process management is activity oriented as opposed to being results oriented; it includes preventative and proactive approaches to quality management (Olcay, 2014). Cronemyr (2013) views a process as a network of activities repeatedly done to create value to both internal and external customers. American Society for Quality, (2012) survey argues that effective process management reduces or eliminates process variations and improve product quality. A total quality management philosophy entails that a quality product and service emanates from a quality process. Quality is controlled at source, (www.wiley.com, (accessed on 09/08/2015) supports this view and argues that the culture of uncovering and solving quality problems at source differentiates the old and new concepts of quality control. The old concept of quality control entails removal of defective products after processing which was costly to companies. The new concept holds that quality control starts from where the process starts and this has significantly reduced generation of scrap hence production costs were reduced as well. Research has shown that process management coupled with good knowledge management improves overall firm performance, (Phan *et al*, (2011); Lee *et al* (2003); Zehir and Sadikoglu, 2012). Olcay (2014) claimed that process management is positively related to business performance.

2.6.6 Employee training

Employee training is argued to be essential to individual and organizational performance especially in this dynamic world of technology, (Mitra, 2005). Training plays a pivotal role in achieving (Olcay, 2014) and continuous improvement in organizations is associated with continuous training. Goetsch, (2010) and Criado *et al*, (2009) argue that a training needs analysis should be carried out to identify the skills gap, each employee would then receive training in accordance with the outcome of training needs analysis. Olcay, (2014) further points out the advantages of training, affording employees knowledge about the industry and the organization, improving employee loyalty, improving work performance and increasing customer satisfaction which will result in reducing customer complaints. In support, Zakuan *et al*, (2002) adds that employee training is critical to the success of TQM as it increases involvement, commitment and a sense of responsibility. Thus, employee training is at the heart of TQM success, (Nameer, 2008). Training can only be beneficial if it is presented in an unambiguous manner, employees need to know what exactly needs to be done and the contribution of such activities to the whole process, (Mitra, 2005). Researchers have different views to the contribution of employee training to organizational performance. Some researchers, Kumar *et al*, (2012); MacKelprang, (2012); Phan *et al*, (2011), concluded that training is positively related to operational performance, inventory management performance, innovation performance, employee and market performance.

2.6.7 Continuous improvement

Continuous improvement, called *Kaizen* by the Japanese, requires that the firm continually try to improve its systems through learning and problem solving (Oakland, 2004). The major reason is that technology and customer preferences are continuously changing such that perfection can never be achieved hence organisations need to always evaluate their performance and take a step forward towards improving it, (www.wiley.com, (accessed on 09/08/2015). According to Mitra (2005) companies with continuous improvement as one of their total quality management practice can use either the Deming cycle or the Shewart cycle approach, [the Plan, Do, Check and Act (PDCA)] or the benchmarking approach to continuous improvement. The cycle outlines what a company should do to incorporate continuous improvement in its day to day operations. The circular shape of the Deming wheel denotes that continuous improvement is a never ending process.

2.7 Quality management challenges faced by food and beverage industry

The food and beverage sector faces quality related challenges like any other sector in the manufacturing industry. Davideck, (2005) points out the generic quality challenges faced by organisations as shorter product life cycle, products rapidly becoming generic, increased competition for fixed or diminishing

markets, higher customer expectations and higher employee expectations. Davideck (2005) and Robertson (2006) add that variations in quality of raw materials, packaging, product health and safety, product shelf life and training are the major challenges in food and beverage industry.

2.7.1 Variations in raw material quality

The major raw materials for the food and beverage industry are agricultural products. Davideck (2005) argues that the quality of food produced highly depends on the quality of raw materials used. He further argues that the quality control of raw materials depends on the length of storage, disposition to spoilage, chances of contamination and ability to influence nutrition and total sensory quality of products. Empirical evidence reveals that Dairiboard Malawi reduced its raw milk intake by 20% due to quality challenges and this affected operations negatively, (Dairiboard Annual Report,2014). Quality challenges of raw materials force the sector to embark on supplier quality management practice (Davideck, 2005). The same author emphasises that supplier quality control is the cornerstone in the production of high quality products.

2.7.2 Packaging

Packaging is one of the major challenges facing the food and beverage sector considering increased competition and clutter on retail store shelves (Kottler *et al*, 2008). The same authors view packaging as an activity of designing and producing a wrapper for a product. Thackston, (2013), argues that over and above holding, protecting and preserving, packaging facilitates handling and commercialization of food products. Ampuero and Vila (2006) claim that food packaging conveys a favourable or unfavourable implied meaning about the product it contains. Consumers relate the look, feel, taste, and sound of the product to the packaging without even seeing or testing the product, (Underwood, 2001). Mitra (2005) concurs with Underwood (2001) and adds that the whole essence of quality system is to satisfy the customer and packaging assists in assuring the consumer that the product is safe. Packaging is among one of the factors used by customers to make choices when buying, therefore food and beverage companies are faced with the challenge of making their packaging more appealing to consumers than the other forms of packaging (Thackston,2013).

2.7.3 Managing customer expectations

According to American Society for Quality Survey, (2012), managing customer expectations and communicating with them is a major challenge facing customer departments in every company. The food and beverage industry is not an exception; it is also encountering ever changing demands of consumers, (Griffiths *et al*, 2010). Customer requirements are becoming more sophisticated as the market becomes more mature. A mature market is viewed as a buyer's market which is customer centric, where companies need to listen to the demands of customers and strive to meet or exceed them, (Kotler *et al*, 2008). Griffiths *et al*, (2010) point out that "*customers want tasty food that supports good health, food that incorporates flavours of the day; they want the food in convenient portions at reasonable prices*". This implies that the food and beverage companies need to be more innovative to keep pace of customer's continuously changing demands.

2.7.4 Product safety and health

Product safety and health issues are vital intrinsic quality challenges being faced by the food and beverage industry. According to Muse, (2011), healthy aspects refer to food composition and nutritional imbalances which cause harm to human health, whereas product safety is about products being free from hazards and risks. These requirements have invited different disciplines to do food inspections before, during and after processing. Mitra, (2005) points out that government authorities are enforcing the rule of strict liability to food manufacturing companies. This rule makes the company liable of any product which does not conform to set quality standards. Changing consumer requirements, competition; environmental issues, restricted product shelf life and variability in food and poor or shortages in raw materials are posing a great risk to safety and health issues, (Mitra, 2005). Continuous quality improvement and continuous employee training are increasingly becoming the answers to the continuously changing demands of customers. Muse (2011) proclaims that entities in food and beverage sector subscribe to various quality assurance systems like the Hazard Analysis Critical Control Point, (HACCP), International Standards Organisation and British Retail Consortium, (BRC) and The Standards Association of Zimbabwe (SAZ) as well as International Standards Association 9000 and 14000 (ISO 900 and 14000). These systems give assurance to both customers and other stakeholders that the entity offers quality products.

2.7.5 Shelf life challenges.

Muse,(2011) states that shelf life of a product refers to the duration between processing or packaging of a product and the point at which the product becomes unacceptable for consumption. The author indicates that unacceptability of a product is reflected by altered sensory properties of that product, for example formation of

odour or sour taste by bacteria decay. Muse, (2011) recommends food and beverage companies to understand processes that limit product shelf life and affect sensory properties. Likewise, Manizu, (2013) adds that food and beverage companies need to strictly manage the shelf life of their offerings.

2.7.6 Employee expectations

Generally companies are facing intense pressure of keeping pace with new technology (Arsic *et al*, 2012). The changing technology is also bringing new employee expectations which should be fulfilled by the company. Manufacturing companies should also keep pace with the new employee expectations. This has a merit of motivating employees and thus ensuring high productivity to the company. Hsu *et al* cited by Arsic *et al*, (2012) argue that new technology triggers a change in employee expectation and that implies employees expect to be trained to enhance their skills and fit into the new technology all the time.

III. RESEARCH METHODOLOGY

3.1 Research design

The researchers used both exploratory and descriptive research designs. The exploratory research design enabled the researchers to ask open-ended questions and learn more about the effects of TQM practices on performance of the food and beverage industry. The researchers also used descriptive research design to get conclusive answers to what emerged from the exploratory design. The study adopted this design because it allowed a multifaceted approach to data collection. Observations, questionnaire, interviews were used to collect qualitative and quantitative data from Delta Beverages in Gweru and Kwekwe branches, Dairiboard Gweru branches. Management and employees were respondents to this study and their views on the effect of TQM to their operational and market performance were key to the study's main objective.

3.2 Target population and sample size

3.2.1 Target population

The study targeted employees and managers from departments which were directly linked with suppliers, the market, operations and human resources development. Managers and employees from procurement, production, human resources, quality control and marketing, therefore, constitute the targeted population. The target population for the study was 140 participants, of which 20 were from Delta Gweru branch, 65 were from Kwekwe Maltings, 30 were from Dairiboard Gweru branch and 25 from Go Beer. This target population comprised 20 managers and 120 employees. As noted by Burns *et al*, (2012) population is the entire collection of all observations of interest as defined by the researcher.

3.2.2 Sample size and sampling procedure

Stratified random sampling that was based on identifying homogeneous subgroups from the population was used. The respondents were divided into two sets, that is, managers and employees. This helped to ensure that the sample was representative of the population as it ensured that each stratum was represented in the sample and it made it easier to make comparisons across the strata. Non-random sampling method was then used to complement stratified random sampling method. The researchers interviewed the procurement, production, quality control, marketing and human resources managers of each of the four firms. This was justified by the fact that the focus of the research was on operational and market performance and these managers were directly in charge of these functions. First-hand information was obtained through this technique. The researchers then used simple random sampling method on the homogeneous groups created by the stratified random sampling. This method was used on distributing the questionnaires; respondents were given questionnaires at random.

A sample size of 112 respondents was drawn from a target population of 140. The researchers drew a sample of 17 from Delta Gweru branch, 51 from Kwekwe Maltings, 24 from Dairiboard Gweru branch and 20 from Go Beer breweries. The researchers followed the Krejcie and Morgan (1970) model which specifies that a sample of 112 respondents is representative of a target population of 140.

IV. FINDINGS AND DISCUSSION

4.1 Total quality management practices used by the food and beverage industry

Table 4.1 TQM practices used in beverage industry.

#	Total quality management practice	Kwekwe Maltings	Delta Gweru	Dairiboard Zimbabwe	Go Beer
1	Management commitment and leadership	✓	✓	✓	✓
2	Customer focus	✓	✓	✓	✓
3	Strategic quality planning	✓	✓	✓	✓
4	Employee training	✓	✓	✓	✓
5	Supplier quality management	✓	✓	✓	✓
6	Continuous improvement	✓	✓	✓	✓
7	Process management	✓	✓	✓	✓
8	Statistical quality control	✓	✓	-	-
9	Teamwork	✓	✓	-	-

Source: Survey data, 2015.

Results in table 4.1 above showed that all organizations under study had implemented all the seven TQM practices. These findings concurred with argument by Manizu *et al* (2013) that customer focus, management commitment and leadership, strategic quality planning, supplier quality management employee training and continuous improvement are the best TQM practices for the food and beverage sector. Over and above the seven TQM practices, Kwekwe Maltings and Delta Gweru used statistical quality control and teamwork as additional TQM practices. These results were consistent with suggestions by Khan *et al* (2009) that statistical quality control and teamwork are TQM practices which are applicable to any organization.

4.2 Relationship between total quality management practices and performance

4.2.1 Effects of TQM practices on beverage companies.

Table 4.2 Effects of TQM practices on companies

Source	Partial SS	MS	P-Value
Company code	2.87007519	0.956691729	0.7208

Source: Survey data, 2015.

The P-value is 0.7208 which is greater than 0.05 indicating that there is no significant variation in the effects of total quality management practices from company to company, hence the researcher can generalize the findings of the effects of total quality management practices on performance.

4.2.2 Effects of TQM practices on market performance

Table 4.3 Effects of TQM practices on market performance.

Source	TQM
TQM	1.0000
Market performance (r)	0.3920
P-Value	0.0001

Source: Survey data, 2015.

The P-value is 0.0001 which is less than 0.05 meaning there is a significant relationship between total quality management practices and market performance. Also there is a relatively fair positive relationship between total quality management practices and market performance. These findings concurred with Kumar *et al* (2012), Phan *et al* (2011) and Macinati (2008) who discovered that total quality management practices increase market performance and the overall firm performance. The positive relationship is indicative of the importance of total quality management practices to market performance of the firm; and therefore, firms need to implement total quality management practices to sustain competition.

4.2.3 Effects of TQM practice on operational performance

Table 4.4 TQM practices and operational performance

Source	
TQM	1.0000
Operational performance (r)	-0.1223
P-Value	0.2256

Source: Survey data, 2015.

The P-value is 0.2256 which is greater than 0.05 meaning that there is negative insignificant relationship between total quality management and operational performance. The result is novel to total quality management literature, Kumar *et al* (2012); MacKelprang (2012); Olcay, (2014) and Phan *et al* (2011) assert that total quality management practice is significantly related to operational performance of the firm. However, the outcome was supported by Joiner, (2007) who argued that the negative relationship is indicative of lack of management commitment and supporting environment for effective implementation of the TQM practices. Implementation of TQM practices without adequate management commitment and supporting environment is not enough. Firms need to create a supporting environment for TQM practices to be effective as literature claims.

4.2.4 Respondents’ views on the effects of total quality management practices on business performance

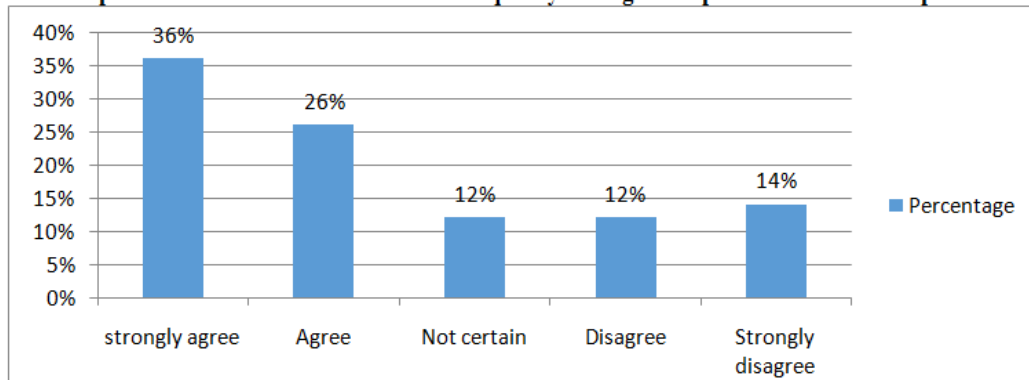


Figure 4.1 Respondents’ perception on TQM practices effects on performance

Source: Survey data, 2015.

The greater percentage (62%) strongly agreed/agreed that total quality management practices affect business performance and only 26% disagreed/ strongly disagreed with the statement. The difference was not certain whether total quality management has an effect on business performance. These findings indicate that level of total quality management awareness is high in the food and beverage industry.

4.2.5 Quality challenges encountered by the food and beverage sector

Table 4.5 Quality challenges in food and beverage industry

Problem	Remedy
Variations in raw material quality	<ol style="list-style-type: none"> 1. Entering into strategic alliances with suppliers of raw materials. 2. Blending different batches of raw materials before processing. 3. Inspection and testing of raw materials.
Changing customer needs	<ol style="list-style-type: none"> 1. Market research 2. Being customer focus. 3. Continuous improvement.
Packaging	<ol style="list-style-type: none"> 1. Market research 2. Use of ISO certified packaging.
Product Shelf life	<ol style="list-style-type: none"> 1. Use of appropriate packaging. 2. Market research 3. Batch processing.
Product contamination.	<ol style="list-style-type: none"> 1. Strict controls at packaging plant. 2. Maintenance of good housekeeping standards before, during and after running the packer machine. 3. Thorough inspection before dispatching to customers. 4. Continuous improvement.

Source: Survey data, 2015.

Respondents confirmed that they face raw material quality variations, changing customer preferences, packaging and product contamination problems. These findings confirm the findings and conclusions of Thackston (2013) and American Society for Quality Survey (2012) and Griffiths *et al* (2010). To counter the impact of these problems the food and beverages employed different remedies to these problems as shown in table 4.5 above.

V. RECOMMENDATIONS.

Based on both express and implied findings of the study, the following recommendations were made:

5.1 Leadership commitment to TQM practices

There was need for an organizational culture premised on continuous top management commitment and support. The effectiveness of total quality management practices requires continuous top management support and commitment. The researchers urge top management to show their commitment both in theory and practice. The vision, mission statement and company policies needed to be translated to action.

5.2 Supplier –strategic partnership

Beverages firms needed to engage suppliers of raw material. This would assist the firms to address the problem of raw material quality variations. Suppliers would be part and parcel of the value chain hence they end up knowing the exact quality requirements of the various stages of production. In the case of Dairboard, it needs to be in alliance with dairy farmers while Kwekwe Maltings needs to be in alliance with sorghum and

maize farmers.

5.3 Investment in training

The food and beverage sector should invest more in educating and training of its stakeholders on the importance of total quality management practices and its effects on the performance of the organization. The stakeholders include employees, suppliers, customers, board members and the society at large. This would make it easier for the firms to implement the practices across the whole spectrum of its stakeholders. In the same vein employee skills need to be continuously upgraded so that the employees keep abreast of technology.

5.4 ISO certified suppliers

The researchers observed that ISO certification is associated with quality by both customers and suppliers locally and internationally and consequently most organizations use it as a marketing tool. Suppliers and customers would want to deal with internationally recognized organizations. Internally, ISO certification would encourage teamwork and enhance continuous improvement. In view of these observations, we recommend that firms in the food and beverages industry should get ISO certified and also deal with suppliers who are also ISO certified.

5.5 Research and development

The study recommended that firms in the food and beverage industry regularly carry out market research to get insight into both the micro environment and macro environments as internal and external stakeholders' preferences are always changing especially with changes in technology and stiff competition due to globalisation.

RECOMMENDED FURTHER STUDIES

We acknowledge that our study was not exhaustive given the geographical scope, the population and sample sizes of this study. Thus we recommend future researches to cover a larger geographical area and use larger population and sample sizes to enable generalisation of the findings and recommendations to the entire sector.

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