

The Effectiveness of Total Quality Management and Operations Performance at a Bakery Firm in The City of Tshwane, Pretoria South Africa

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Abstract

In recent times, the South African bakery industry has gone under intense competition that threatens the survival of players within the sector. An identified bakery firm located in the City of Tshwane is not immune to the problem. Faced with fierce competition from established bakery firms such as Albany, Sasko, Supreme, Blue Ribbon and retail own brands such as Shoprite, Spar and Pick n Pay, the bakery firm urgently need to rethink its strategy to secure its survival. An assessment of total quality management (TQM) on the operations of the bakery firm is a recommended strategy for continuous improvement and gaining a competitive edge. It is therefore important in this study to understand employees' perceptions of total quality management and establish its impact on operational performance. For the sake of bringing this study into operation, the researcher utilised a descriptive research design. Data was collected through a well-structured questionnaire from a sample of 110 employees working for the bakery firm. Analyses of data that include mean values, standard deviation, correlation and regression analyses was performed through the use of the Statistical Package for Social Sciences. Results showed that employees had a negative perception on total quality management factors that include leadership, knowledge management, supplier management, customer focus, employee involvement and process management. A significant positive relationship was also found between total quality management (leadership, knowledge management, supplier management, customer focus, employee involvement and process management) and operational performance. This study also provides recommendations to authorities within the bakery industry so as to improve total quality management and operational performances

Key words: African Bakery Industry, Total quality management, operations performance, City of Tshwane, leadership, support management, knowledge management

1- Introduction and Scope of the Study

In recent times, the South African bakery industry has gone under intense competition that threatens the survival of players within the sector (Gharakhani, Rahmati, Farrokhi, & Farahmandian, 2013, p 46). An identified bakery firm located in the City of Tshwane is not immune to the problem. Faced with fierce competition from established bakery firms such as Albany, Sasko, Supreme, Blue Ribbon and retail own brands such as Shoprite, Spar and Pick n Pay, the bakery firm urgently need to rethink its strategy to secure its survival. According to Sadikoglu and Olcay (2014), an assessment of total quality management (TQM) on the operations of the bakery firm is a recommended strategy for continuous improvement and gaining a competitive edge.

Operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts have led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence operations at a bakery firm in the City of Tshwane in South Africa.

2- Theoretical Framework Total Quality Management

The aspect of Total Quality Management is defined as an approach that brings together and take care of all the critical areas of business that include the employees, machinery, the systems, management and external stakeholders (i.e. suppliers, customers, government) as advised by Evans (2011). Similarly, to Evans, Sadikoglu and Olcay (2014) state that TQM is a philosophy that ensures a quality delivery of products, services and systems to the satisfaction of customers, employees, shareholders and other related stakeholders. The definitions of TQM provided by Sadikoglu and Olcay (2014) and Evans (2011) have a strong emphasises on the success of operational processes.

2.1 Total quality management practices

According to MacKelprang et al. (2012) and Phan et al. (2011), the practices of TQM are classified as top management influence, knowledge and process management, training, supplier quality management, customer focus and strategic quality planning. The TQM practices are described by Sadikoglu and Olcay (2014) in the context of the bakery industry as follows:

Top management influence refers to the support that is displayed by the bakery's leadership. According to Goetsch and Davis (2010) and Criado and Calvo-Mora (2009), top management support is seen through its promotion of employee development, establishment of an effective communication system with employees, managers and customers. Phan et al. (2011) also state that top management should encourage employee participation in decision making.

Previous studies (Kim et al., 2012; Parast and Adams, 2012) found a positive relationship between top management support and improvement in firm operations, inventory management performance, employee performance, innovation performance and customer results. Based on these findings it becomes crucial to carry out this present study that seeks to understand employees' perception of the current state of TQM at the bakery firm.

Knowledge management is defined by Sadikoglu and Zehir (2010) as a process that ensures that employees receive timely reliable, consistent, accurate and necessary data that they need to perform their work effectively and efficiently. On the other hand, process management is defined by Sadikoglu and Temur (2012) as an emphasises given on activities through a set of methodologies including preventative and proactive approaches.

A study by Bell and Omachonu (2011) and Chen (2008) found that knowledge and process management are important aspects towards a successful revitalisation of the operational processes of a firm. It is therefore critical for this proposed study to be carried out so as to find out the relationship between knowledge management and process performance in the context of the bakery firm.

Training is also an aspect that is considered closely related to TQM. According to Prajogo and Hong (2008), training refers to an act of improving the current skills and knowledge level of the firm's employees including managers and employees. Sadikoglu and Olcay (2014) state that training is critical in bringing success in the firm. A study carried out by Phan et al. (2011) also found that training is positively related to operational performance, inventory management performance, employee performance, innovation performance, customer results and financial performance. It is therefore important to assess training and operations performance within the bakery industry as proposed in this study.

The success of a bakery's operation heavily relies on the performance of its suppliers. According to Bell and Omachonu (2011), supply chain management in TQM implies developing relationship and strategic alliance with the suppliers. The relationship would also require the firm to involve its suppliers as early as possible from the product process development in order to take advantage of their expertise and knowledge. It is therefore important for this current proposed study to assess the state of supplier quality management at a bakery firm.

According to Phan et al. (2011), customer focus refers to the ability of the firm to fully understand its customers' expectations and offer them accordingly. It is therefore important that the firm focus its effort towards the needs and wants of its customers while streamlining its operations towards an achievement of such needs. Customer satisfaction leads to the firm's performance. It is therefore important for this proposed study to assess employees' perception on the ability of the organisation to focus on its customers and improvement on the processes on the firm.

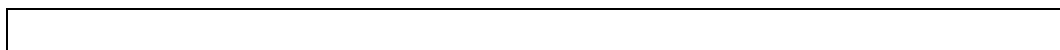
According to Sadikoglu and Olcay (2014), strategic quality planning involves the firm's vision, mission and values. A proper strategic quality plan should involve its employees (Phan et al., 2011). Previous studies such as Criado et al. (2009) and Chen (2008) found that strategic quality planning is positively associated with operational performance. It is therefore important for this proposed current study to carry out a similar study in the context of the bakery firm and assess the relationship between strategic quality planning and operational performance.

2.2 Operations performance

According to Sadikoglu and Olcay (2014), operational performance is measured on the efficiency and effectiveness of the operations that are responsible for the delivery of the products and services. Efficiency and effectiveness of the operations is realised through the ability to timely deliver products and services according to customer's expectations.

3- The Conceptual Model

The conceptual theoretical model given in Figure 1.1 is grounded on the total quality management factor theory. It conceptualises the relationship between total quality management factors and operational performance. Operational performance is the dependent variable while total quality management factors (leadership, knowledge management, supplier management, customer focus, employee involvement and process management) are independent variables.



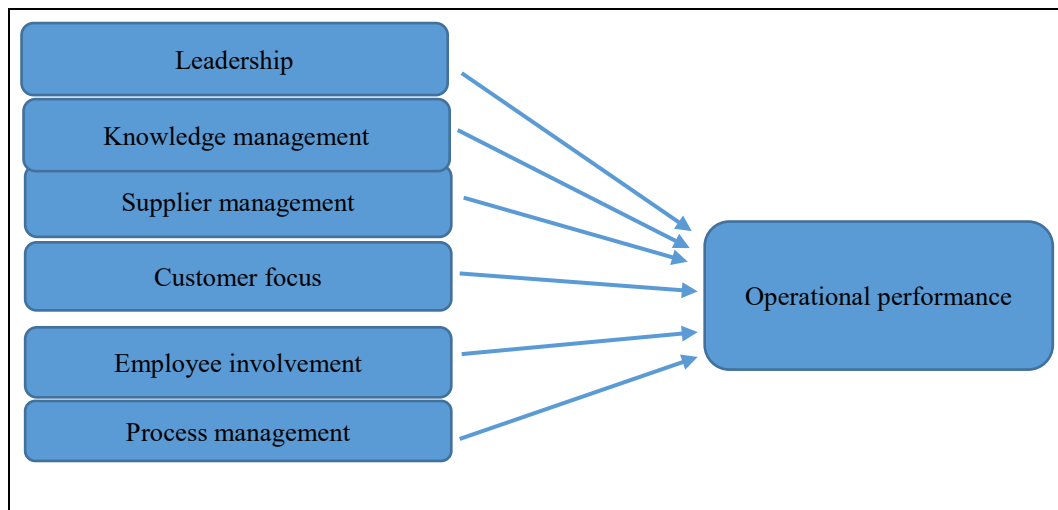


Figure 1.1: Conceptual theoretical model

The model illustrated in Figure 1.1 shows the conceptualised relationship between sub-constructs of total quality management and operational performance. According to the model, there are seven sub-constructs that forms the bases of this study. As already noted in this section, these sub-constructs are leadership, knowledge management, supplier management, customer focus, employee involvement, process management and operational performance. The first six sub-constructs are predictors of total quality management.

4- Factors Affecting Total Quality Management, Operational Performance and Identifying Research Gaps

With numerous studies have been conducted over the past years related to factors that affect total quality management and operational performance. These include studies by quality management authors such as Al-Damen (2017), Zahari and Zakuan (2016), Almansour (2015) and Alamri et al. (2014). The studies indicated a significant relationship between total quality management and operational performance. However, these studies did not fully address certain gaps critical gaps as indicated in this present study.

The study carried out by Zahari and Zakuan (2016) found that total quality management attributes such as leadership that include delegation, creation of employee ownership and responsibility is critical improving operational performance. The study further found a positive relationship to be existing between leadership and operational performance. On the other hand, Jaafreh and Al-abadallat (2013) found that similar leadership factors such as clear vision, goals, objectives, values and policies of the organization result in a total quality management system. However, it was found that employees had a negative perception towards these leadership attributes. It is therefore important for this study to assess the perceptions of employees in different environment, in this case a bakery firm so as find out the opinions of employees regarding leadership factors that are also considered important in creating a total quality management environment.

Considering that a positive relationship was found between leadership factors such as delegation, creation of employee ownership and responsibility, this present study seek to test similar factors but on a different environment. Hence, it is therefore upon this background that a hypothesis 1 is tested as follows:

H1: There is a positive relationship between leadership and the overall operations performance of a bakery firm.

In a recent study carried out by Al-Damen (2017) it was found that a knowledgeable workforce is an important component of ensuring total quality management. This study echoed the results of the study carried out by Zu, Fredendall and Gouglas (2008) that found that factors such as timeously, reliable, accurate and consistent information provided to the employees leads to a total quality

management organisation. However, these two studies did not test the relationship between knowledge factors and operational performance. This study seeks to close this gap in the body of knowledge. It is therefore an opportunity and hypotheses 2 in this study is presented as:

H2: There is a positive relationship between knowledge management and the overall operations performance of a bakery firm.

Kim et al. (2012) and Phan et al. (2011) both carried out similar studies but with different dependent variables. Kim et al. (2012) tested the relationship between total quality management such as supplier management and innovation, while Phan et al. (2011) tested the relationship between quality management and competitive performance. This study seeks to understand the relationship between total quality management factor (supplier management) and operational performance. It is therefore upon this background that hypotheses 3 is presented as:

H3: There is a positive relationship between supplier management and the overall operations performance of a bakery firm.

A study conducted by Khanna, Sharma and Laroiya (2011) found that the adoption of a customer focus approach is instrumental towards a development of a total quality management system. The study also found a positive relationship to be existing between customer focus and operational performance. It is however important to note that these findings were based in India within the manufacturing firms. In this current study the focus is on the South African bakery based in the City of Tshwane. Considering a difference that can occur between India and South Africa, it is important to carry out this study so as to find out the relationship between customer focus and operational performance. It is therefore upon this background that hypotheses 4 is given as:

H4: There is a positive relationship between customer focus and the overall operations performance of a bakery firm.

A study carried out by Zahari and Zakuan (2016) in the Malaysian manufacturing firms it was found that the involvement of employees is critical in creating a total quality management system. A research by Almansour (2015) also found that employee involvement is critical towards a development of a total quality management system. Since these studies were not conducted in South Africa, specifically within the City of Tshwane, it is therefore important to carry out this current study and establish the relationship between employee involvement and operational performance. Hypotheses 5 is given as:

H5: There is a positive relationship between employee involvement and the overall operations performance of a bakery firm.

Ngambi and Nkemkiafu (2015)'s study found that the ability of an organization to effectively management organizational processes is critical in ensuring total quality management and organizational performance. Sadikoglu and Olcay (2014) further found that process management through the utilization of material that is of quality and utilization of well skilled employees result in an improved total quality management status of the organization. Considering that these studies were carried out to test the relationship between total quality management and organizational performance, this current study zoom close to the relationship between total quality management and operational performance. It is therefore upon this background that this current study test hypotheses 6 as:

H6: There is a positive relationship between process management and the overall operations performance of a bakery firm.

Significant findings were brought forward by studies that were carried out by different authors in different regions. This current study identified the existence of gaps and these were explored in this study. The next section looks at the study problem statement.

5- The Problem Statement

As noted earlier in the background of the study, operations authorities including Kibe and Wanjau (2014) lament the fact that most bakery industry management ignore the perceptions of their employees towards the state of TQM within their operations. Such acts has led to loss of operations effectiveness, ruined product quality, customer dissatisfaction, reduced brand advocacy and possible close shop. It is therefore upon this background that this study seeks to understand the perception of employees on the state of total quality management and its influence operations at a bakery firm in the City of Tshwane in South Africa.

6- Discussions

6.1 Correlation and regression analysis

The underlying assumptions of conducting correlation and regression analysis were well met in this study. Correlation and regression are most suitable for a study which seeks to test a relationship between variables. They are also appropriate for a large sample size, for example 110 respondents utilised in this research. Responses utilised in the questionnaire were continuous in nature since they were in the form of a five Likert scale. In order to test the hypothesised relationships between sub-dimensions of total quality management (leadership, knowledge management, suppliers, customer focus, employee involvement and process management) and overall operational performance depicted on Figure 2.4 in Chapter 2, correlation and regression analyses were performed.

Note that overall operational performance as a dependent variable was measured as a summated average of four items, namely 'The organization has created a reputation of customer satisfaction', 'The organisation has managed to reduce employee turnover', 'Sales level is increasing', and 'Production level is increasing'. The first three items were utilised for further analysis after reliability and validity analysis. A five-point Likert scale with 1 = 'Strongly agree' and 5 = 'Strongly disagree' was also used to measure items relating to operational performance.

6.2 Correlation analysis among sub-dimensions of total quality management and overall operational performance

Correlation analysis was used to measure the strength of relationships, i.e. the variables. Table 4.5 presents a summary of the results of the correlation analyses. The pearson correlation (r) indicates strength and direction (negative or positive) of the correlation, while the p-value indicates the probability that the given r-value is seen by chance.

Table 1: Correlation analysis

		1	2	3	4	5	6	7
1	Leadership	1						
2	Knowledge management	.61 *	1					
3	Suppliers	.62 *	.68 *	1				
4	Customer focus	.71 *	.69 *	.78 *	1			
5	Employee involvement	.71 *	.72 *	.77 *	.84 *	1		
6	Process management	.61 *	1 *	.68 *	.69 *	.72 *	1	
7	Operational performance	.61 *	.75 *	.87 *	.82 *	.74 *	.75 *	1

*p < .001

Studying Table 4.5 reveals that there is an existing strong to moderate positive relationship among all the total quality management sub-dimensions as well as with all of each of the total quality management sub-dimensions and overall operational performance.

6.3 Regression analysis and hypotheses testing

After having observed that the correlation of the six sub-dimensions of total quality management (i.e., leadership, knowledge management, suppliers, customer focus, employee involvement and process management) among themselves as well as to operational performance was moderate to high (Table 1), it was instructive to test how these variables influenced operational performance.

Based on the findings (Table 4.6), the hypotheses were tested as follows:

6.3.1 Hypothesis 1

Based on regression results ($p < 0.001$, $r = 0.61$, $\beta = 0.61$), *hypothesis H_1 which states that there is a positive relationship between leadership and the overall operations performance can be accepted at $p < 0.001$ significant level.* From this finding it can be noted that leadership can lead to overall operational performance. This finding is consistent with Zahari and Zakuan (2016) and Jaafreh and Al-abedallat (2013) studies, which confirms that the ability of a leader to provide clear direction through the vision of the organisation, goals and objectives is important in determining operational performance.

6.3.2 Hypothesis 2

Based on results ($p < 0.001$, $r = 0.75$, $\beta = 0.75$), *hypothesis H_2 which states that there is a positive relationship between knowledge management and the overall operations performance can be accepted at $p < 0.001$ significant level.* Hence, it can be confirmed that knowledge management can lead to overall operational performance. This is in line with Al-Damen (2017) and Zu et al.'s (2008) findings that show that knowledge management items such as timeously, reliable, accuracy and consistency of information are significantly related to operational performance.

6.3.3 Hypothesis 3

Based on results ($p < 0.001$, $r = 0.87$, $\beta = 0.87$), *hypothesis H_3 which states that there is a positive relationship between supplier management and the overall operations performance is accepted at $p < 0.001$ significant level.* It can be seen that improvement in supplier management can result to increased operational performance. This is consistent to Kim et al. (2012) and Phan et al.'s (2011) study that found attributes related to supplier management to be correlated to operational performance.

6.3.4 Hypothesis 4

Based on results ($p < 0.001$, $r = 0.82$, $\beta = 0.82$), *hypothesis H_4 which states that there is a positive relationship between customer focus and the overall operations performance can be accepted at $p < 0.001$ significant level.* This means that the ability of the organisation to appropriately focus on customer's needs is important in creating operational performance. This finding is in line with that of Khanna, Sharma and Laroiya (2011) who found that customer focus is significantly related to operational performance.

6.3.5 Hypothesis 5

Based on results ($p < 0.01$, $r = 0.74$, $\beta = 0.74$), *hypothesis H_5 stating that there is a positive relationship between employee involvement and the overall operations performance is accepted at $p < 0.001$ significant level.* An increase in employee involvement will result in an increase in overall operational performance. This confirms Zahari and Zakuan (2016) and Almansour's (2015) results that found that aspects related to employee involvement are important in determining overall operational performance.

6.3.6 Hypothesis 6

Based on results ($p < 0.001$, $r = 0.75$, $\beta = 0.75$), *hypothesis H_6 which states that there is a positive relationship between process management and the overall operations performance can be accepted at $p < 0.001$ significant level.* This means that the ability of the organisation to appropriately focus

on its processes is important in creating operational performance. This finding is in line with that of Khanna, Sharma and Laroiya (2011) who found that management of operational processes is significantly related to operational performance.

The hypotheses above are based on results of regression analysis done as shown in Table 2. Table 2 contains alpha and regression coefficients, SEB which is the standard error of the coefficient of determination, β which is the standardised beta coefficient, and R^2 which is the coefficient of determination as used to measure the explanatory power of predictor variables (sub-dimensions of total quality management) to the dependent variable (operational performance).

Table 2: Regression analysis

Dependent variable: Overall operational performance

	B	SEB	β	t	Sig	R^2	Hypothesis
(Constant)	3.20	.64		5.00			
Perceived leadership	.40	.05	0.61	8.04	0.000*	0.37	Accept H1
(Constant)	1.15	.61		1.89			
Perceived knowledge management	.51	.04	0.75	11.87	0.000*	0.57	Accept H2
(Constant)	.98	.41		2.39			
Perceived supplier relationship	.64	.03	0.87	18.26	0.000*	0.76	Accept H3
(Constant)	1.02	.49		2.10			
Perceived customer focus	.67	.04	0.82	15.15	0.000*	0.68	Accept H4
(Constant)	.27	.70		.39			
Perceived employee involvement	leaders.88	.08	0.74	11.59	0.000*	0.74	Accept H5
(Constant)	1.15	.61		1.89			
Perceived process management	.51	.04	.75	11.87	0.000*	0.57	Accept H6

*p < 0.001

7- Conclusion

This chapter has directed its focus on the operationalization of the study. Provided in this chapter is the analysis that assisted in understanding the demographic profile of the sample respondents. The analyses further moved on to provide understanding of employees' perceptions through the use of descriptive analysis. Furthermore, inferential analysis is provided in this chapter in order to provide answers to the second objective of the study that seeks to understand the relationship between total quality management and operations performance.

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