Pak. j. life soc. Sci. (2024), 22(2): 22724-22735 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.001617

RESEARCH ARTICLE

Total Quality Management and Performance of Small and Medium Enterprises in Lira City, Uganda

Richard Abongo[1], Dr. Robert Oguti Etengu (PhD)[2*], Dr. Aina-Obe Shamssuddin Bolatito (PhD)[3], Bosco Opio[4], Yahaya Kisu[5]

[1] Faculty of Managament Science, Lira University, Lira, Uganda

[2,3,5] Faculty of Managament Studies, Islamic University in Uganda, Mbale, Uganda

[4] Faculty of Public Health, Lira University, Lira, Uganda

ARTICLE INFO

Received: Oct 19, 2024

Accepted: Dec 14, 2024

Keywords

Total Quality Management
Small and Medium Enterprises
Performance Measurement
Continuous Improvement
Customer Satisfaction

***Corresponding Author:**

robertogutietengu@gmail.com

ABSTRACT

This study examines the effect of total quality management (TQM) practices on the performance of small and medium enterprises (SMEs) in Lira City. The population of the study was 600 construction SMEs in Lira City. The study sample consisted of 234 owners and managers from the construction enterprises. Data was analysed using the Statistical Package for Social Scientist (SPSS) Version 23. Descriptive statistics, correlation analysis, and robust regression were used to explore the associations between performance and TQM practices. The results indicate that strategic planning (SP) and workforce focus (WF) have positive and significant effects on performance. However, customer focus (CF) had a positive but insignificant effect on performance. The study contributes to the knowledge on TQM and performance of SMEs by providing empirical evidence on their ability to improve the construction industry in an emerging economy of Uganda. The study recommends that construction SMEs should continuously implement TQM practices with the aim of improving their performance.

1. INTRODUCTION

The concept of total quality management (TQM) emerged in the early 1920s when product quality control was applied with statistical theory and was further developed by Deming, Juran, Feigenbaum, and Crosby in the 1940s (Nermeen, 2017). In recent years, however, the focus of TQM has widened to encompass the quality of all organisational concerns (Jong et al., 2016). According to Cherng-Yee et al. (2019), TQM is a strategy by which management and employees make full engagement in the continuous improvement of the production of goods and services. By making continual improvements based on constant feedback, TQM seeks to improve the quality of products and services (Vassos et al., 2024). Moreover, TQM has become an essential strategic approach employed by many construction firms to solicit quality as a strategic tool for enhancing market share and increasing organisational profitability (Aghimien & Aigbavboa, 2019).

In spite of the numerous studies that have assessed TQM through various quality awards, this study specifically utilizes the Malcolm Baldridge National Quality Award (MBNQA). This choice is informed by its broad recognition as a significant quality criterion, stemming from its incorporation of both soft and hard elements of TQM (Lee & Ooi, 2015). The MBNQA framework has seen extensive application in empirical research by numerous scholars (Lee & Ooi, 2015), has been successfully implemented in both developed and developing nations (Lee & Ooi, 2015), and has also been applied within the construction sector (Jaeger et al., 2013). This framework incorporates seven distinct

quality criteria: leadership, strategic planning (SP), customer focus (CF), operational focus, workforce focus (WF), analysis and knowledge management, and results (Cherng-Yee et al., 2019).

In order to fulfill customer needs and deliver exceptional value, organisations must implement TQM initiatives (Wang et al., 2012). Moreover, fostering and sustaining mutually beneficial relationships with customers enables firms to attain enhanced long-term performance (Hilman et al., 2020). This study measures performance by utilizing the most widely recognised dimensions of success in construction companies, specifically time, cost, and quality (Mane & Patil, 2015). Furthermore, the metrics for operational performance (Sadikoglu & Olcay, 2014), employee performance (Sadikoglu & Olcay, 2014), customer satisfaction (Neyestani, 2016), and financial performance (Sadikoglu & Olcay, 2014) are also taken into consideration.

Theoretically, the study is anchored on resource-based view (RBV) theory. The emphasis of RBV is on harnessing unique and intangible organisational resources like TQM and OC that, if utilised efficiently and effectively, can contribute to competitive advantage (Eniola *et al*., 2019), thereby leading to improved performance of SMEs. Globally, numerous research have been carried out in both the developed and the developing nations on TQM and organisational performance. The majority of these earlier studies' findings, however, are conflicting. While some empirical studies (Al-Dhaafri et al., 2016; Mehralian et al., 2017; Panuwatwanich & Nguyen, 2017) demonstrate a favourable relationship between TQM and organisational performance, others (Duarte et al., 2011) found no influence of TQM on performance. The few empirical studies that have looked at the effect of TQM on performance in the context of SMEs have produced mixed findings. For instance, although some researchers found no impact (Kober et al., 2012), others indicated that TQM deployment can enhance the organisational performance of SMEs (Sahoo & Yadav, 2018; Herzallah et al., 2014). The primary causes of these disparate findings could be that they were conducted in various industries and contexts, used different TQM measures, used different performance measures in their research models, lacked management support and training, and applied the practice ineffectively (Sadikoglu & Olcay, 2014; Tarí et al., 2010).

According to Rodríguez-Gutiérrez et al. (2015), the SME sector is essential to the growth and general performance of both developed and emerging nations. It contributes to innovation and technological advancement and is a major source of job creation (Romero-Martínez et al., 2010). SMEs actually make up 90 to 99 percent of all businesses worldwide (Rodríguez-Gutiérrez et al., 2015) and account for 67 percent of the self-employment in the labour force (Hilman et al., 2020). In spite of this and the availability of various helpful management techniques and resources, SMEs' performance in the construction sector is still regarded as poor in the majority of African nations, as most projects are still being delivered beyond schedule, above budget, and below quality. In most of these countries, including Uganda, completing construction projects is more of a fantasy than a reality for construction clients, as poor-quality delivery has left the majority of clients unhappy (Aghimien & Aigbavboa, 2019).

2. LITERATURE REVIEW

2.1 Theoretical review

The theory underpinning this study is the RBV. According to this theory, competitive advantage and superior performance of an organisation are explained by the distinctiveness of its capabilities (Owolabi & Makinde, 2012). RBV holds that every organisation has its own unique set of competencies, which include both tangible and intangible assets, as well as organisational capabilities and the ability to use these resources effectively (Otieno, 2017). Moreover, the theoretical basis of this view is that organisations can use both tangible and intangible internal resources and capabilities to boost performance and, as a result, gain a competitive edge (Nabiswa & Mukwa, 2017).

The resource-based theory has been used in this study to explain how SMEs' ability to survive in the construction sector is largely dependent on their unique resources and the human capital that enables them to take advantage of opportunities (Nabiswa & Mukwa, 2017). If used properly, TQM and OC are significant, distinct, and intangible organisational resources that may enhance organisational performance and provide a competitive edge (Kaur & Sharma, 2014; Sahoo & Yadav, 2017; Valmohammadi & Roshanzamir, 2015). Kraaijenbrink, Spender, and Groen (2010), however,

have criticised the resource-based theory, arguing that the theory can only apply to small firms, which operate in predictable environments. Furthermore, the firm's valuable, rare, inimitable, and non-substitutable resources and capabilities are not always sufficient to explain a firm's sustained competitive advantage.

2.2. Empirical literature review and hypothesis development

Among TQM practices, three practices have mainly attracted the attention of scholars on the TQM-performance nexus, namely, strategic planning (SP), customer focus (CF), and workforce focus (WF). SP can be conceptualised as the procedure of creating and upholding consistency between the establishment's goals and possessions and its shifting prospects (Gommera et al., 2018). It is a tool used by management to find the best future and the best path to destination for an organisation (Yangailoa, 2023). In TQM, SP is crucial in achieving a satisfied quality and increased performance (Pradhan, 2017; Qasrawi et al., 2017). Research on the association between SP and performance have provided strong evidence of the link between SP and performance. Gomera et al. (2018) found a positive association between SP and the financial performance of small, micro, and medium-scale enterprises (SMMEs). In addition, the studies of Farish et al. (2017), Mehralian et al. (2017), and Omar et al. (2018) found that strategic planning and development have a significant impact on organisational performance. Moreover, Donkor et al. (2018) established that a consistent application of strategic planning methodologies contributes to the advancement of SME performance.

According to Yaacob (2014), CF represents one of the several critical factors of TQM. It involves addressing the needs and anticipation of current and potential customers by developing a wide-ranging insight of customer needs and then conveying recognised value to customers (Abrokwah-Larbi, 2023). The concept of CF has received considerable attention in extant literature, and its impact has been confirmed by several empirical studies. For instance, Abrokwah-Larbi (2020), Han et al. (2021), and Setiyaji et al. (2022) have established a positive relationship between CF and performance, while other studies (Hussain et al., 2022; Manishimwe et al., 2022) have documented a negative relationship between CF and performance.

Finally, WF represents an orgaisation's most dynamic resource (Cherng-Yee et al., 2019). It dominates an organisation's operation process and further ensures the orgaisation performs its daily operations efficiently and effectively (Sabella et al., 2014). In a situation where an organisation has a high degree of WF, the needs of the employees will be noticed (Cherng-Yee et al., 2019). As a result, this will generate better work performance and increase their morale and satisfaction. Although there is sparse empirical evidence relating to studies on WF and performance, most of the studies show that WF has a significant association with performance. Hewa et al. (2018) studied the link between workforce quality and organisational performance and reported a strong positive correlation. Cherng-Yee *et al.* (2019) investigated the association between TQM and project performance in Malaysian construction organisations. They discovered that the most common TQM technique on project performance was WF. Therefore, based on the preceding discussions, we speculate the following hypotheses:

H1: SP has a positive significant effect on SME performance.

H2: CF has a positive significant effect on SME performance.

H3: WF has a positive significant effect on SME performance

3. METHODS

3.1. Data and data collection

The population of this study comprises 600 construction SMEs in Lira City. A representative sample of 234 was randomly selected from the SME population of 600 using Krejcie and Morgan's (1960) Table. The construction SMEs were segmented into five (5) categories or strata. Stratified random sampling was then used to select the construction SMEs from each stratum according to their proportion to the overall sample, that is, 55 mechanical enterprises, 111 building enterprises, 37 enterprises in road construction, 14 enterprises in architecture, and 17 enterprises engaged in culvert production. We developed a structured questionnaire based on a five-point Likert scale in order to collect data on the three TQM practices under investigation. The questionnaire also contained a section aimed at collecting data on performance metrics (i.e., efficiency and financial

performance). Moreover the questionnaire was administered to the managers or owners of the SMEs by a drop and pick late technique. Respondents were followed through regular phone calls and personal visits. Out of the 234 questionnaires administered, only 206 were considered valid, giving a response rate of 88%. Thus, 28 questionnaires were noticed to be invalid and, as such, were not added to the final analysis. To reinforce the efficiency and validity of the data, key informants were interviewed as well.

3.2. Validity and reliability

According to Wang et al. (2023), validity is the fundamental consideration in promising the quality of an instrument and is vital to be examined. It represents the extent to which specific items on a tool accurately assess the concept being measured in the research study and ensures that the questions being asked permit valid inferences to be made (Anggraini et al., 2023). In this study, validity was ensured by requesting two professionals in the field of strategic management to review all the 30 questionnaire items on TQM practices and performance for readability, clarity, and comprehensiveness. Thereafter, a content validity index (CVI) was established by calculated using the following formula:

$$\text{CVI} = \frac{\text{Number of items declared valid by rater}}{\text{Total number of items}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

The results of the test revealed a CVI of 0.83, that is, 25 out of the 30 items were declared valid. Because a CVI value above 80% or 0.80 is regarded as a high level of agreement, it follows that the questionnaire's items explained the thematic domain under study, as recommended by Masuwai et al. (2024).

Reliability was ensured by pilot testing 10 questionnaires prior to actual data collection with the aim of evaluating its suitability. This was done using a test-retest procedure, which involved administering the same questionnaire to the same individuals under the same conditions after two weeks. Correlations between the scores at the time before and after two weeks were estimated using the Cronbach alpha value.

The Cronbach's alpha reliability coefficient for SP (0.844), CF (0.873), and WF (0.921), as shown in Table 1, exceeds the recommended benchmark of 0.7 (Al-Saffar & Obeidat, 2020), which is an indication of high internal consistency.

Table 1: Validity and reliability of the constructs

Variables	No. of items	Cronbach's alpha
Strategic Planning	5	0.844
Customer Focus	6	0.873
Workforce Focus	10	0.921
Performance	9	0.948
Overall	30	0.989

3.3. Data analysis

Data was analysed using the Scientific Package for Social Scientists (SPSS) Version 23. Both univariate, bivariate, and multivariate analyses were used in the study. The univariate analysis was done using means and standard deviation. The means were used as a measure of central tendency, while the standard deviation was employed to measure dispersion with the objective of exhibiting how dispersed the responses are from the mean.

To determine the relationship between TQM constructs and the performance metrics of SMEs, a bivariate correlation analysis was employed. Three fundamental model diagnostic tests - normality of the residuals, homoscedasticity of the residuals, and multicollinearity - were conducted in order to ascertain the model specification. The swilk test was used to determine whether the residuals were normal. Meanwhile, the Breusch-Pagan test for heteroscedasticity was used to test the null hypothesis that the variance of the residuals is homogenous. To check for multicollinearity, the variance inflation factor (VIF) was employed. We used multiple regression analysis to test our hypotheses. The resultant regression model is as follows:

$$\text{TQM}_i = \beta_0 + \beta_1 \text{SP}_i + \beta_2 \text{CF}_i + \beta_3 \text{WF}_i + \varepsilon \quad (1)$$

Where TQM stands for total quality management; β_0 is a constant term; SP is strategic planning; CF is customer focus; WF is workforce focus; B_1 - β_3 are the oefficients of the slope parameters; and ε is the error term.

4. RESULTS

4.1. Demographic profile of respondents'

Table 2 displays the demographic characteristics of the respondents. The respondents provided their demographic details, including age group, gender, marital status, level of education, SME category, number of employees and position held.

Table 2: Background characteristics of the respondents

Variables	Frequency	Percentage (%)
Age Group		
Below 20 years	2	1.0
21 - 30 years	26	12.6
31 - 40 years	87	42.2
41 - 50 years	80	38.8
51 years and above	11	5.3
Total	206	100
Gender		
Male	147	71.4
Female	59	28.6
Total	206	100
Marital Status		
Married	152	73.8
Single	48	23.3
Widowed	6	2.9
Total	206	100
Level of Education		
Certificate	2	1.0
Diploma	118	57.3
Bachelor Degree	85	41.3
Master's Degree	1	0.5
Total	206	100
SME Category		
Mechanical	48	23.3
Building	98	47.6
Road Construction	33	16.0
Architecture	12	5.8
Culvert	15	7.3
Total	206	100
No. of Employees		
1-50	194	94.2
50-100	12	5.8
Total	206	100
Position Held		
Owner	19	9.2
Manager	187	90.8

Total	206	100

In total, 206 responses were 206 collected. Out of this a majority, that is, 87 respondents representing 42.2 % were between the ages of 31 and 40 years. This was followed by 80 respondents representing 38.8% in the age group of 41 to 50 years, 26 respondents representing 12.6% in the age group of 21 to 30 years, 11 respondents representing 5.3% in the age group of 51 years and above, and 2 respondents representing 1% were below 20 years. From this analysis, it is evident that the majority of the construction SME's owners or managers are in the age group of 31 to 50 years.

Regarding gender, only 28.6% of respondents were female, whereas the majority (71.4%) were male. This indicates that, in comparison to women, men contribute marginally more effectively to the performance of SMEs in the construction sector. In terms of marital status, 73.8% of the respondents were married, 23.3% were singles, and 2.9% were widowed. Amongst the respondents, 1.0 had certificates, 57.3% had diplomas, 41.3% had Bachelor's Degrees, and only 0.5% had Master's Degrees. Thus, it can be concluded that nearly all of the respondents (99%) had a high levelof education.

In relation to the SME category, 23.3 % were mechanical enterprises, 47.6% were building enterprises, 16% were in road construction, 5.8% were architectural firms, and 7.3 % were in culvert production. In addition, a majority of the enterprises (95.1%) were small enterprises compared to 4.9% medium enterprises. As shown in Table 4.2,19 respondents (9.2%) were owners, and 187 respondents (90.8%) were managers.

4.2. Descriptive statistics of TQM and performance

This section presents descriptive statistics on TQM practices and performance. The performance and degree of TQM practices of SMEs were described using descriptive statistics, particularly in terms of means and standard deviations. While SMEs' performance was evaluated in terms of efficiency and financial performance, TQM practices were evaluated in terms of SP, CF, and WF. According to the results in Table 3, the respondents disagreed that they used SP to a greater extent, with an overall mean of 2.8476. This result contradicts the qualitative findings from the interviews. The managers interviewed stated that:

"*They use SP to a greater extent by recruiting qualified engineers, ensuring safety at the workplace, ensuring there's sufficient financing for operations to cater for salaries and wages, and other operational costs, for example, timely purchase of raw materials.*".

Table 1 also shows that the mean score of CF is 2.917, which indicates a disagreement that the construction SMEs in Lira City pay attention to CF as a TQM practice in their construction businesses. The qualitative data obtained from the interviews confirmed that:

"*The SMEs do not treat CF as an important tool in performance drive.*" *Moreover, they did not even understand what CF is all about.*".

The mean score of WF on a rating scale of 1–5 was 2.879, indicating a disagreement among the owners and managers of the construction SMEs in Lira City that WF was not taken seriously in TQM implementation. Finally, SME's performance level on the same scale rating was 2.747, indicating poor performance. When key informants were interviewed as to what should be done to help construction SMEs perform better, a majority of them stated that:

"SMEs should embrace *SP and WF strategies.".*

A minority others said that:

"For SMEs to perform better, corruption in the procurement system should be checked because to be awarded a contract, one has to pay a bribe to the procurement of about 10% to 15% of the contract value before he is awarded a contract, and this eats into the profits and consequently leads to shoddy work.".

Table 3: Descriptives statistics for TQM practices and perfomance

Variables	Min	Max	Mean	St. deviation	Observations
Strategic Planning	1.4	4.4	2.848	.84	206

Customer Focus	1.5	4.667	2.917	.806	206
Workforce Focus	1.7	4.4	2.879	.768	206
Performance	1.556	4.444	2.747	.948	206

4.3. Bivariate analysis

The study determined the degree of the association between TQM attributes and construction SMEs' performance using Pearson product-moment correlation analysis. The summarised correlations and their significance levels are shown in Table 4.

Table 4: Correlations coefficients

Variables	**(1)**	**(2)**	**(3)**	**(4)**
(1) Performance	1.000			
(2) Workforce Focus	0.820*	1.000		
(3) Customer Focus	0.785*	0.889*	1.000	
(4) Strategic Planning	0.767*	0.834*	0.853*	1.000
* $p < 0.05$; n = 206				

The results in Table 4 show that the performance of construction SMEs is positively and significantly correlated to WF ($r = 0.820$, $p < 0.05$), CF ($r = 0.785$, $p < 0.05$), and SP ($r = 0.767$, $p < 0.05$). This implies that as the scores in WF, CF, and SP increase, the scores in the performance of construction SMEs increase. In addition, WF is positively correlated with CF ($r = 0.889$, $p < 0.05$) and SP ($r = 0.834$, $p < 0.05$), and CF is positively and significantly associated with SP ($r = 0.853$, $p < 0.05$).

4.4. Influence of TQM on performance

4.4.1. Model specification

Normality of the residuals was tested using the swilk test. As shown in Table 5, the p value obtained is very small ($p < 0.001$), implying that the residual (r) is not normally distributed.

Table 5: Shapiro-Wilk W Test for normal data

Variable	**Obs**	**W**	**V**	**Z**	**Prob > z**
Residual (r)	193	0.862	19.927	6.872	0.000

The Breusch-Pagan test was used to test the presence of heteroscedasticity. As illustrated in Table 6, the results of the Breusch-Pagan test show s Chi square Chi2(1) = 1.11, with Prob (chi2) > 0.05, which confirms that the data is homogeneous.

Table 6: The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity

Ho: Constant variance
Variables: Fitted values of performance
chi2(1) = 1.11
Prob > chi2 = 0.2922

To test for multicollinearity a VIF test was employed. The findings in Table 7 demonstrate that there is no multicollinearity among the variables since the VIF values for each variable measuring TQM are less than 10.

Table 7: Variance inflation factor

Variables	**VIF**
Customer Focus	5.919
Workforce Focus	5.422
Strategic Planning	4.009
Mean VIF	5.117

Because the assumption of normality has not been satisfied by the three diagnostics, the OLS regression would not be reliable. As a remedy, robust regression was employed.

4.4.2 Robust regression results

The study hypotheses were tested using robust regression. The results in Table 8 demonstrate that SP has a significant and positive ($\beta = 0.255$, $p < 0.05$) effect on the performance of SMEs. Consequently, Hypothesis 1 (H_1) is supported. The results on CF and performance, however, revealed no significant effect ($\beta = 0.116$, $p > 0.1$). Hypothesis 2 (H_2) is therefore not confirmed. Finally, the

results regarding the effect of WF on performance revealed a very positive and significant effect ($\beta = 0.255$, $p < 0.01$), confirming Hypothesis 3 (H_3). The overall model's overall performance was also very satisfactory. In particular, the variables included in the final model accounted for approximately 77% of the total variance in SMEs performance. Moreover, the model is classified as very fit because it has a large F-statistic and is very strongly significant with a p-value of 0.000, which is smaller than 0.10.

Table 8: Results of the regression: TQM practices and performance

Performance	Coef.	St. Err.	t-value	p-value	95% conf. interval	Sig
Strategic Planning	0.255	0.081	3.14	0.002	0.095 0.416	**
Customer Focus	0.116	0.103	1.13	0.261	-0.087 0.319	
Workforce Focus	0.740	0.103	7.22	0.000	0.538 0.943	***
Constant	0.502	0.134	-3.76	0.000	-0.766 -0.239	***
Mean dep. var 2.370		SD dependent var 0.950				
Adjusted R^2 0.766		Number of obs 206.000				
F-test 205.695		Prob > F 0.000				
**** p<0.01, ** p<0.05, * p<0.1*						

5. DISCUSSION

Our results unequivocally demonstrate that SP has a significant effect on SMEs' performance. This finding is consistent with findings of studies by Farish et al. (2017), Mehralian et al. (2017), and Omar et al. (2018), which revealed a significant positive effect of SP on performance. The results of the regression analysis are further supported by the findings of Gomera *et al.* (2018), which revealed a positive correlation between SP and financial performance. Our findings, however, indicate that CF has no discernible effect on SMEs' performance. This shows that understanding customer needs is not a top priority for construction SMEs because it has no bearing on their performance as suggested by Cherng-Yee Jong et al. (2019). Moreover, this result is inconsistent with the studies of Abrokwah-Larbi (2020), Han et al. (2021), and Setiyati et al. (2022), which documented a significant positive effect of CF on performance.

When analysing the association between WF and the performance of SMEs, it emerges that WF significantly improves the performance of SMEs. Moreover, this result is consistent with the findings of Ayat (2019), who found that workforce diversity improves job performance, and Hewa et al. (2018), who found a strong positive correlation between workforce quality and organisational performance. The results of Cherng-Yee et al. (2019), however, which discovered a partial correlation between TQM practices and project performance of Malaysian construction companies, contradict these findings. From a theoretical perspective, our study lends more credence to RBV theory since it offers a framework for explaining how SP and WF are applied in SMEs to try to maximise their performance.

6. CONCLUSION

In light of the findings presented in Section 4, the study draws the following conclusions: Firstly and foremost, the study's findings demonstrate that SP as a TQM practice has a significant effect on the performance of SMEs. Secondly, SMEs' performance is not significantly influenced by CF. Finally, WF is very significantly linked to the performance of SMEs. Moreover, a construction firm's workforce is a crucial component that supports its overall operations, so it requires careful consideration in an effort to boost performance.

In an effort to improve the performance of businesses in the construction sector, we recommend first and foremost that SP and WF, which have shown a significant effect on performance, be incorporated in the Ugandan construction sector policy. Second, a focus on the customer is a vital practice in TQM implementation; thus, construction firms need to have a better understanding of the needs and expectations of their customers if they wish to see an improvement in their performance.

On the basis of the aforementioned recommendations, this paragraph offers ideas for further research aimed at enhancing our understanding of TQM practices and performance. First off, because of time constraints, the study was essentially cross-sectional in nature. In order to determine the dynamic changes in the relationships between TQM practices and performance, a longitudinal study based on time sequence is recommended for the future, in which case the causality between TQM

practices and performance can be tested through the different time points. Second, this study primarily concentrated on the construction industry; future research could use the methods employed in this study to investigate the impact of TQM practices in other industrial contexts. Moreover, the study recommends a replica of the same study in the service industry.

Authors' individual contribution

Conceptualization — Richard Abongo and Dr. Robert Oguti Etengu; Methods — Dr. Robert Oguti Etengu and Bosco Opio; Formal Analysis — Bosco Opio and Richard Abongo; Investigation — Richard Abongo, Dr. Aina-Obe Shamssuddin Bolatito and Yahya Khisu; Resources — Richard Abongo, Dr. Robert Oguti Etengu, Bosco Opio, Dr. Aina-Obe Shamssuddin Bolatito, and Richard Abongo; Writing — Original Draft — Bosco Opio, Richard Abongo and Yahya Khisu; Writing — Review & Editing — Dr. Robert Oguti Etengu , Bosco Opio and Dr. Aina-Obe Shamssuddin Bolatito.

REFERENCES

Abrokwah-Larbi, K. (2020). The impact of innovative marketing on the performance of Ghanaian food processing Small and Medium Enterprises (SMEs) (Unpublished PhD Dissertation). University of South Africa (UNISA).

Abrokwah-Larbi, K. (2023). The impact of customer-focus on the performance of business organizations: Evidence from SMEs in an emerging West African economy. African Journal of Economic and Management Studies, 15(1), 31-59. https://doi.org/10.1108/AJEMS-04-2022-0167

Aghimien, D., & Aigbavboa, C. (2019). Total Quality management practices in construction project. Materials Science and Engineering, 640. https://doi.org/ 10.1088/1757-899X/640/1/012004

Al-Dhaafri, H.S., Al-Swidi, A.K., & Yusoff, R.Z.B. (2016). The mediating role of TQM and organizational excellence, and the moderating effect of entrepreneurial organizational culture on the relationship between ERP and organizational performance. The TQM, 28(6), 991-1011. https://doi.org/10.1108/TQM-04- 2014-0040

Al-Saffar, N., & Obeidat, A. (2020). The effect of total quality management practices on employee performance: The moderating role of knowledge sharing. Management Science Letters, 10, 77–90. https://doi.org/10.5267/j.msl.2019.8.014

Anggraini, F. D. P., Aprianti, A., Muthoharoh, N. A., Permatasari, I., & Azalia, J. L. (2023). Validity and reliability questionnaire test of knowledge, Attitudes, and behavior on dengue fever prevention. International Journal on Health and Medical Sciences, 1(2), 46-54. https://journals.iarn.or.id/index.php/HealMed/article/view/77

Ayat, M. (2019). Effect of Workforce Diversity on Job Performance of Hotels Working in Jordan. *International Journal of Business and Management* 14(4), 85. https://doi.org/10.5539/ijbm.v14n4p85

Cherng-Yee, J., Adriel K.S.S., & Tek Y.L. (2019). The relationship between TQM and project performance: Empirical evidence from Malaysian construction industry. Cogent Business & Management, 6(1), 1-31. *https://doi.org/*10.1080/23311975.2019.1568655

Duarte, A.L.D.C.M., Brito, L.A.L., Di Serio, L.C., & Martins, G.S. (2011). Operational practices and financial performance: An empirical analysis of Brazilian manufacturing companies. Brazilian Administration Review, 8(4), 395-411. https://doi.org/10.1590/s1807-76922011000400004

Donkor, J., Donkor, G.N.A., & Kwarteng, C.K. (2018). Strategic planning and performance of SMEs in Ghana. The moderating effect of market dynamism. Asia Pacific Journal of Innovation and Entrepreneurship, 12(1), 62-76. https://doi.org/10.1108/APJIE-10-2017-0035

Farish K, Anil, A.P., & Satish K. (2017). Effect of TQM practices on financial performance through innovation Performance - In Indian manufacturing context. International Research Journal of Engineering and Technology, 4(7), 2649–2655.

Gomera, S., Chinyamurindi, W.T., & Mishi, S. (2018). Relationship between strategic planning and financial performance: The case of small, micro- and medium- scale businesses in the Buffalo City Metropolitan. South African Journal of Economic and Management Sciences 21(1), a1634. https://doi.org/10.4102/sajems.v21i1.1634

Han, S., Reinartz, W., & Skiera, B. (2021). Capturing retailers' and customer focus. Journal of Retailing, 97, 582-596. https://doi.org/10.1016/j.jretai.2021.01.001

Herzallah, A.M., Gutiérrez-Gutiérrez, L. & Munoz Rosas, J.F. (2014). Total quality management practices, competitive strategies and financial performance: the case of the Palestinian industrial SMEs. Total Quality Management & Business Excellence, 25(5-6), 635-649. http://dx.doi.org/10.1080/14783363.2013.824714

Hewa, D., Upul, I., Fauzul M.F. (2018). Impact of management quality and workforce quality on organizational performance: A case study of Sri Lanka. Journal of Human Resource Management, 6(1), 37-43. http://dx.doi.org/10.11648/j.jhrm.20180601.15

Hilman, H., Ali, G.A., & Gorondutse, A.H. (2020). The Relationship between TQM and SMEs' performance. International Journal of Productivity and Performance Management, 69(1), 61-84. https://doi.org/10.1108/IJPPM-02-2019-0059

Husain, Z., Dayan, M., Sushil, & Di Benedetto, C.A. (2022). Impact of customer focus on technology leadership via technology development capability – a moderating mediation model. Journal of Business and Industrial Marketing, 37(2), 282-293.doi.org/10.1108/JBIM-04-2020-0186

Jaeger, M., Adair, D., & Al-Qudah, S. (2013). MBNQA criteria used in the GCC countries. The TQM Journal, 25(2), 110–123. https://doi.org/10.1108/17542731311299564

Jong, C. Y., Lew , Y., & Sim, A. (2016). The Influence of TQM on Project Performance: The Case of Construction. The Social Sciences, 1(7), 7547-7552.

Kaur, P. & Sharma, S.K. (2014). Evaluating the relationship and influence of critical success factors of TQM on business performance: Evidence from SMEs of manufacturing sector. IUP Journal of Operations Management, 13(4), 17-30. https://ssrn.com/abstract=2638270

Kober, R., Subraamanniam, T., & Watson, J. (2012). The impact of total quality management adoption on small and medium enterprises' financial performance. Accounting & Finance, 52(2), 421-438. https://doi.org/10.1111/j.1467-629X.2011.00402.x

Kraaijenbrink, J., Spender, J.C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. Journal of Management, 36, 349. https://doi.org/10.1177/0149206309350775

Lee, V. S., & Ooi, K. B. (2015). Applying the Malcolm Baldrige national quality award criteria: An approach to strengthen organisational memory and process innovation. Total Quality Management & Business Excellence, 26(11–12), 1373–1386. https://doi.org/10.1080/14783363.2014.934519

Mane, P. P., & Patil, J. R. (2015). Quality management system at construction project: A questionnaire survey. International Journal of Engineering Research and Applications, 5(3), 126–130. ISSN : 2248-9622

Manishimwe, T., Raimi, L., & Azubuike, C.J. (2022). Customer-centric influence of entrepreneurial marketing on business performance of hotels in Nigeria during the COVID-19 crisis. Journal of Revenue and Pricing Management, 21. https://doi.org/10.1057/s41272-022-00383-w

Masuwai, A., Zulkifli, H., & Hamzah, M.I. (2024). Evaluation of content validity and face validity of secondary school Islamic education teacher self-assessment instrument.Cogent Education, 11(1),1-12. https://doi.org/10.1080/2331186X.2024.2308410

Mehralian, G., Nazari, J.A., Nooriparto, G., & Rasekh, H.R. (2017). TQM and organizational performance using the balanced scorecard approach. International Journal of Productivity and Performance Management, 66(1), 111-125. https://doi.org/10.1108/IJPPM-08-2015-0114

Nabiswa, F., & Mukwa, J.S. (2017). Impact of credit financing on human resource development among micro and small enterprises: a case study of Kimilili Sub County, Kenya. Asian Journal of Management Science and Economics, 4(1), 43-53. ISSN 2413-0591

Nermeen, S. (2017). The relationship between total quality management practices and their effects on firms performance in Palestine. Business & Entrepreneurship Journal,, 6(2), 35-51. ISSN: 2241-3022

Omar, S.S., Ariffin ZZ, Abdullah, A.N., Mahadi, N., Mokhtar, F.S., & Azman, N.A. (2018). Conceptualising the influence of total quality management and organizational performance in Klang Valley Service Industry. Advanced Science Letters, 24(5), 3240-3243. ISSN 1936-6612

Otieno, M.O. (2017). Total quality management and performance of small and medium construction companies in Nairobi City County (Unpublished MBA dissertation). University of Nairobi, Kenya.

Owolabi, S. A., & Makinde, O. G. (2012). The effects of strategic planning on corporate performance in university education: A study of Babcock university. Kuwait Chapter of Arabian Journal of Business and Management Review, 2(4), 27-44. https://j.arabianjbmr.com/index.php/kcajbmr/article/view/345

Panuwatwanich, K., & Nguyen, T.T. (2017). Influence of organisational culture on total quality management implementation and firm performance: Evidence from the Vietnamese construction industry. Management and Production Engineering Review, 8(1), 5-15. https://doi.org/10.1515/mper-2017-0001

Pradhan, B.L. (2017). Confirmatory factor analysis of TQM implementation constructs: Evidence from Nepalese manufacturing industries. Management Review: An International Journal, 12(1), 26-56.

Qasrawi, B.T., Almahamid, S.M., & Qasrawi, S.T. (2017). The impact of TQM practices and KM processes on organisational performance: aan empirical investigation. International Journal of Quality and Reliability Management, 34(7), 1034–1055. http://dx.doi.org/10.1108/IJQRM-11-2015-0160

Rodríguez-Gutiérrez, M.J., Moreno, P., & Tejada, P. (2015). Entrepreneurial orientation and performance of SMEs in the services industry. Journal of Organizational Change Management, 28(2), 194-212. https://doi.org/10.1108/JOCM-01-2015-0020

Romero-Martínez, A.M., Fernández-Rodríguez, Z., & Vázquez-Inchausti, E. (2010). Exploring corporate entrepreneurship in privatized firms. Journal of World Business, 45(1), 2-8. https://doi.org/10.1016/j.jwb.2009.04.008

Sabella, A., Kashou, R. & Omran, O. (2014). Quality management practices and their relationship to organizational performance. International Journal of Operations & Production Management, 34(12), 1487–1505. http://dx.doi.org/10.1108/IJOPM-04-2013-0210

Sadikoglu, E., & Olcay, H. (2014). The effects of total quality management practices on performance and the reasons of and the barriers to TQM practices in Turkey. Advances in Decision Sciences, 537605, 1-18. https://doi.org/10.1155/2014/537605

Setiyaji, A., Alves, G.M.D.F.F., & Wijaya, L. (2022). The importance of customer focus for organizational performance: A study focus to an information and communication technology company based in Indonesia. Proceedings of the International Conference on Industrial Engineering and Operations Management Istanbul, Turkey, March 7-10, 2022.

Sahoo, S., & Yadav, S. (2017). Entrepreneurial orientation of SMEs, total quality management and firm performance. Journal of Manufacturing Technology Management, 28(7), 892-912. https://doi.org/10.1108/JMTM-04-2017-0064

Sahoo, S., & Yadav, S. (2018). Total quality management in Indian manufacturing SMEs. Procedia Manufacturing, 21, 541-548. https://doi.org/ 10.1016/j.promfg.2018.02.155

Tarí, J.J., Claver-Cortés, E., Pereira-Moliner, J., & Molina-Azorín, J.F. (2010). Levels of quality and environmental management in the hotel industry: Their joint influence on firm performance. International Journal of Hospitality Management, 29(3), 500-510. https://doi.org/10.1016/j.ijhm.2009.10.029

Valmohammadi, C., & Roshanzamir, S. (2015). The guidelines of improvement: relations among organizational culture, TQM and performance. International Journal of Production Economics, 164(3), 167-178. https://doi.org//10.1016/j.ijpe.2014.12.028

Vassos, V., Voltezou, A., Stavropoulos, A., Stavropoulou, E., Stefanis, C., Tsigalou, C., Nena, E., Chatzaki, E., Constantinidis, T. C., & Bezirtzoglou, E. (2024). The role of total quality management in the pharmaceutical, food, and nutritional supplement sectors. Foods, 13(16), 2606. https://doi.org/10.3390/foods131626

Wang, B., Rau, P. L. P., & Yuan, T. (2023). Measuring user competence in using artificial intelligence: Validity and reliability of artificial intelligence literacy scale. Behaviour & Information Technology, 42(9), 1324–1337. https://doi.org/10.1080/0144929X.2022.2072768

Wang, C.H., Chen, K.Y., & Chen, S.C. (2012). Total quality management, market orientation and hotel performance: The moderating effects of external environmental factors.

International Journal of Hospitality Management, 31(1), 119-129. https://doi.org/10.1016/j.ijhm.2011.03.013

Yaacob, Z. (2014). The direct and indirect effects of customer focus on performance in public firms. International Journal for Quality Research, 8(2), 265-276. ISSN 1800-6450.

Yangailoa, T. (2023). The mediating effect of TQM practices on the relationship between strategic planning and productivity. Management Science Letters, 13, 136–149. http://dx.doi.org/10.5267/j.msl.2022.12.001