Global Scientific JOURNALS
GSJ: Volume 10, Issue 12, December 2022, Online: ISSN 2320-9186
www.globalscientificjournal.com

TOTAL QUALITY MANAGEMENT PRACTICES AND PERFORMANCE OF CONSTRUCTION PROJECTS IN RWANDA: A CASE OF BAXONS Ltd

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ABSTRACT

The research project entitled "Total Quality Management Practices and Performance of Construction Projects in Rwanda a case of BAXONS Ltd". This research is conducted mainly to identify the effects of Total Quality Management practices on the performance of construction projects. The study focused on four practices, which are leadership, employees' involvement, stakeholders' management and continuous improvement. It also identified the challenges faced by BAXONS Ltd in their Construction Projects, show the relationship between TQM and construction project performance in Rwanda. The study adopted a mix of both qualitative and quantitative approaches and outsourced a questionnaire to all 56 staff of BAXONS Ltd. The study did not involve sampling due to small population fact. The results in terms of mean about the level of agreement on leadership, continuous improvement, employees' involvement, and stakeholders management in construction project managed BAXONS Ltd were found in two categories of high and very high which prove the influence they have on the project performance. The study finds that an increase in employees' involvement and stakeholders' management variables led to higher project performance. The study also shows a slight negative relationship between leadership, continuous improvement variables and the project performance.

Furthermore, some of the main challenges that BAXONS Ltd faced during the project implementation included lack of clear policies, procurement issues and other management issues, which contributed to higher costs. The study recommends improving the TQM practices by ensuring better stakeholder involvement, top management commitment, education and training of engineers on TQM practices, effective customer-supplier relationships, and effective communication (internal and external). It also recommends conducting further research on the aspects of continuous improvement and leadership management as they are key to TQM and the research found a slight negative relationship with project performance in BAXONS Ltd.

Key Words: TQM, Construction, project, performance, BAXONS Ltd

I. INTRODUCTION TO THE STUDY

The global market, domestic and international competition have made originations around the world that their survival depends on total quality management which plays a very important role especially in the construction projects. Reflecting to the fact that many construction projects have never lived to their goal achievements, it has been revealed by academicians and scholars who worked in construction projects that TQM is the most important determinant to improve construction service, since it includes process improvement by focusing on customer needs and expectations to enhance customer satisfaction and organization performance (Sadikoglu & Olcay, 2014).

In Rwanda, the construction industry is an important sector as it is supposed to participate in infrastructure development, which is a central pillar of Rwanda's development master plan, Vision 2020 and NST1. The report by RTDA (2015) showed that construction industry will grow by 8.7% in 2017 and remain steady up to 2024 with an annual growth of 6.6 %. There however still exist extensive opportunities for investment in areas of slum upgrading and informal settlements and construction of middle- and low-income housing. TQM has brought around higher quality products, more satisfied customers, reduced costs, and improved financial, quality and innovation performance. However, complains were raised about lack of communication between management and employees, intimidation by the management, nonsupport of employees' ideas, Indecision of the top management, management's unfairness to employees, keeping improper records and lack of knowledge transfer due to poor knowledge in management, obsoleteness, inefficiency and incompetence of employees due to lack of training, dissatisfaction of customers, poor customer management, injustice and unfairness to customers.

Despite the economic and social importance of reliable and efficient infrastructure, many construction projects in Rwanda continue to experience delays in timely completion. (MININFRA, 2018), reported that in 45.8% of construction projects in Rwanda that were implemented, government and private companies faced the problem of cost overrun and time overrun. 7.8% exhibited some form of failure due to different reason such as poor leadership in project delivery, insufficient implementing capacity, poor project management, weak project design, incorporate poor outlines and rebelliousness, ravenous property proprietors, cost cutting and utilization of sub-standard material, absence of value control, and utilization of uncouth contactors.

To be able to implement sustainable infrastructure projects, the construction industry should build sufficient capacity to undertake the projects in order to ensure timely, quality and cost-effective implementation of these development projects. It is thus important to understand at which level quality management affects the performance of fair-trade projects. Academician and other researchers are silent about the total quality management practices and the performance of construction projects in Rwanda. There is therefore the need to investigate if TQM practices can help to improve the performance of construction projects by collecting and analysis qualitative and quantitative data from BAXONS Ltd.

The objective of this paper is to elaborate the effects of Total Quality Management Practices on the Performance of Construction Projects in Rwanda. Specifically, it aims to examine the influence of employee involvement on the performance of construction projects. To find out

the effect of leadership on performance of construction project. It also object to identify the effect of continuous improvement on the performance of construction project as well as determining the effects of stakeholder management on the performance of construction project of BAXONS Ltd.

II. LITERATURE REVIEW

2.1. Theoretical Review

2.1.1. Deming Theory

Deming's theory is a system-based management philosophy which enhance the leadership and management style for quality." Deming outlined what he found to be the managerial changes necessary to improve quality. These changes are illustrated as a list of 14 principles intended to guide improvement in organizational structure and behavior (Deming, 2018, p. 23).

This theory is a management philosophy grounded in systems theory. It is based on the principle that each organization is composed of a system of interrelated processes and people which make up system's components. The success of all workers within the system is dependent on management's capability to orchestrate the delicate balance of each component for optimization of the entire system.

Deming's theory of total quality management was built on fourteen points of management namely.

It was based on philosophy plan-do-check-act. He argued that ratio-quality is equivalent to output of workforce over total costs. The system of profound knowledge is based on system appreciation to understand the company's processes and systems, variation knowledge to understand the occurrence of variation and their causes, knowledge theory to understand quality programs and psychology knowledge to understand human nature.

Deming 14 concepts of Total Quality Management

Create a constant purpose for improvement	Eliminate the fear
To adopt the New Philosophy	Break down barriers between departments,
To stop depending on inspections	Avoiding unclear slogans,
To use a single supplier for one item	To eliminating management by objectives,
To improve constantly and forever	To remove barriers to between employees,
To use of training on the job	To Implement education and self-improvement among the team
To implement leadership and eliminate fear among the team,	Make Transformation one's job within the organization

Deming's theory in construction industry would help especially that the quality is not inspected on the end product, but during the production process. This is a key in ensuring quality of end product because quality is controlled in every production stage.

2.1.2. Crosby's Theory

Philip Crosby is a noted quality professional, author, and consultant who is widely known for promoting the concept of "zero defects" and for attempting to define quality from the viewpoint of conformance to requirements. (Crosby, 2005).

Philip Crosby also credited the initiation of TQM movement. He argued similarly to Deming but pointed out that money spent on quality is money well spent. He is known for the saying "Quality is Free". Management is commitment to quality. Crosby defines quality as adherence to requirements and prevention is best way to ascertain quality. Also, he posed challenge that zero mistakes are the performance standards of quality. Furthermore, Crosby's theory stated that quality is measured by the price of nonconformity. More precisely consistency in producing conforming products and services at optimum price should be the ideal target (Crosby, 1980, p. 61).

Crosby discussed 14 steps of quality improvement

Management Commitment	Train Supervisors
Quality Improvement Teams	Zero Defects Day
Measure Processes	Establish Improvement Goals
Cost of Quality	Remove Fear
Quality Awareness	Recognize
Correct Problems	Quality Councils
Monitor Progress	Repeat the Cycle

2.2. Empirical Review

2.2.1. Employees' involvement and project Performance

A study by Khattak, Iqbal and Khattak (2013) examines the relationship between employee's involvement and organization performance in Milieu of Pakistan. Data was collected from different organizations of Pakistan by using questionnaire with sample size of 509. Correlation and regression analysis was used to establish relationship amongst the variables. Results confirmed that organizational performance ranges from 56% to 94% due to employees' involvement in Pakistani Organizations. Furthermore, empowerment, team orientation and capacity development have a strong and positive relationship with organizational performance.

Sofijanova and Zabijakin-Chatleska (2013) study investigated the relationship between employee involvement and organizational performance: Evidence from the manufacturing sector in Republic of Macedonia. Data was collected from a survey of 36 companies belonging to the Macedonian manufacturing industry. A hypothesis testing was carried out with a quantitative 15 method and statistical analysis of data. The effective use of employee involvement is positively related to perceived organizational performance. More precisely, employee participation and empowerment programs, and the use of self-managing teams

have a direct and statistically significant correlation to the managerial perception of the organizational performance

Chesoli (2016) study evaluated the influence of employee involvement in decision making on performance of Small and Medium Enterprises (SMEs) in Kitale, Trans Nzoia County, Kenya. The data generated were statistically analyzed using descriptive inferential statistical tools. Results showed that' on overall, employee participation in decision making had significant positive impact on organizational performance in the SMEs

Ikon and Chika (2017) studied employee involvement and performance of selected private Universities in Delta State, Nigeria. The findings revealed that there is a significant positive relationship between employee voice and turnover intention of employees in the selected private universities in Delta State.

2.2.2. Leadership and project implementation

Ekung (2014) highlighted leadership traits of construction project managers' and their impact on project outcome in Nigeria. The result of the study reveals the need to improve project leadership and that the improvement will ensure successful project outcome. The study also identified effective communication, accessibility, intelligence and competence among others as the relevant leadership traits. The challenge however is how to blend different traits in delivering a project. Construction project managers are encouraged to always attempt to change intuitively between the various leadership traits, as the work and people changes.

Morrison and Lee (2011) did a study on the influence of leadership traits on firm performance. Their study focused on manufacturing firms in Canada. The study found that the traits in a manager played a major role in determining the extent to which the managers were able to influence the employees and team them up for a conjoined performance. The researchers further had it that the listening skills and flexibility of the project leaders in the manufacturing firms were some of the major traits that played a huge impact in promoting performance.

King'oo (2017) study investigated the role of senior management support in the provision of quality services by the government of the District of Nairobi, Kenya. The study revealed that hierarchical organizational structure leads to improved quality of service delivery, improved performance and efficiency, maintain law and order in an organization.

2.2.3. Continuous improvement and project implementation

Khan, Ali and Hongqi (2018) carried out an empirical study on the impact of continuous improvement on organization performance insight from Pakistan. A sample size of 40 companies was selected from four sectors (textile, sports, and surgical instrument) to collect information via in-depth interview with managers. The result shows that by bringing innovation to the work place, increasing efficiency and reduce the defect rate will leads the company's improved quality of product.

Maletic and Maletic (2012 study examined the relationship between continuous improvement and maintenance performance. The empirical data for this study were drawn

from a survey of Slovenian organizations in order to address the research problem. Several statistical methods including correlation analysis, regression analysis as well as principal component analysis (PCA) are utilized to accomplish the objective of the study. The findings suggest that continuous improvement significantly and positively relates to maintenance performance.

A study by Otieno (2016) evaluated the relationship between continuous improvement practices and efficiency of Commercial Banks in Kenya. The study adapted a descriptive survey research design, which was exploratory in nature to obtain qualitative information. The target population were branch managers of 39 Commercial banks. The findings revealed that continuous improvement practices considered had a positive relationship with organizational efficiency.

2.2.4. Stakeholder management and Project Implementation

Smith and Love (2004) based on a study on stakeholder management during project inception using strategic needs analysis in a case study, concluded that if stakeholder management/engagement is to be of significant benefit; then it must identify and involve all stakeholders and continue through all the stages of the project. They found that the delay encountered in the planning process of the project was due to objections relating to local planning issues from neighbors and local council who were not involved in the workshops/meetings at the strategic needs analysis (inception) stage. Major decisions about the project were made at the inception stage but unfortunately, the stakeholder management process did not continue to the design and subsequent stages attracting criticisms and actions leading to delay of the project completion.

Oyugah and Onyango (2019), did the study on the effect of Stakeholder Involvement on Performance of Road Construction Projects in Usain Gishu County, Kenya. This study sought to address the effect of stakeholder involvement on performance of road construction projects in Usain Gishu County, Kenya. The research was guided by stakeholder theory. The study embraced descriptive study design. The target population encompassed technical staff from KeNHA, KeRRA, KURA, NCA and two matatu Sacco's; Wareng and North Rift members residing in Usain Gishu County respectively. Census sampling method was adopted where all members in the strata totaling to 101 were involved in the study.

The study adopted survey research method where semi-structured types of questionnaires were used as origins of data from study respondents. Quantitative data was coded and entered into statistical package for social scientists (SPSS) version 25 and analyzed using descriptive and inferential statistics. The findings were dispensed in the form of frequency tables while explanations were presented in prose. It was determined that stakeholder involvement leads to improved performance in construction of road projects in the County ($\beta 1 = 0.125$; $p < 0.05$). To sum up, stakeholder involvement positively and significantly effects discharge and completion of road construction projects in the county. It is therefore recommended that stakeholder involvement, contractor capacity, tendering practices and communication be strongly considered and exhaustively addressed during planning and implementation of all projects dealing with construction of roads in the county.

Murwanashyaka & Shukla (2017), conducted the study on the effect of Stakeholders Management Practices on Performance of Construction Projects in Rwanda. The purpose of this research was to examine the effects of the Stakeholders Management practices on performance of construction projects in Rwanda because many international investment and delivery projects still have strikingly poor performance records in terms of economy, environment and public support due to poor stakeholders' relationship management. The researcher used descriptive research method based on qualitative and quantitative approach in order to get a better analysis of the study. The findings established that stakeholder's management had a positive effect on performance of Kigali-Gatuna Road rehabilitation project.

The results indicated that all variables (contract management practices, Communication Management practices and Conflict management practices) had a positive relationship with project performance and predicted 57.8% of Kigali - Gatuna Road rehabilitation project performance. The remaining 42.2% may be explained by other factors beyond this research which may be suggested as further research.

III. RESEARCH METHODOLOGY

3.1. Research Design

This study adopted a mixed method research design whereby both qualitative and quantitative approaches have been used together by the researcher to assess the effects of total quality management practices on construction project. Mixed Method research design is a research design in which both Qualitative and Quantitative approaches are used complementally in types of questions, research methods, data collection and analysis procedures and inferences within one research (Subedi, 2016). Mixed convergent design is done when both quantitative and qualitative data are collected at the same time.
According to Holt and Goulding (2014), qualitative design is done for semi-structured interviews and quantitative are questionnaire survey. Qualitative and quantitative research used together produces more complete knowledge necessary to inform theory and practice. Results from one method are used to elaborate on results from the other. Also, research uses qualitative data to develop a theory that is subsequently tested, and lastly, the multi-method approach enhances a study with a supplemental data set, either quantitative or qualitative.

In order to assess the relationship between the Total Quality Management practices such as leadership, employees' involvement, continuous improvement and stakeholder management and the performance construction project, quantitative design is used to assess how this relate to the project performance in Rwanda. Qualitative data were collected and analyzed to identify some of challenges faced in construction projects during initiation and planning as well as during the project execution, monitoring, control and closing.
We used mixed convergent design, whereby both quantitative and qualitative data were collected concurrently as both types of data had equal value for understanding the research findings. They were analyzed and mixed to make thorough interpretation.

3.2. Data analysis

The primary data was analyzed using both descriptive and inferential statistical. The researcher used excel in coming up with the statistical analysis for the study. Excel is one of the most widely used available and powerful statistical packages that covers a broad range of statistical procedures, which allows a researcher to summarize data (e.g. compute means and standard deviations), determine whether there are significant differences between groups, examine relationships among variables, and graph results.

Excel were used in processing and analysis of data which informed the presentation of findings, analysis and interpretation. Data analysis was done based on descriptive statistics particularly means and standard deviation. The researcher was also interested in establishing the contribution of total quality management practices to the performance of projects managed by BAXONS Ltd using regression analysis.

Description of Descriptive statistics

$1.0 \leq \mu \leq 1.8$: Very low mean i.e. the fact is not apparent

$1.9 \leq \mu \leq 2.6$: Low mean i.e. the fact appears less

$2.7 \leq \mu \leq 3.4$: Neutrality

$3.5 \leq \mu \leq 4.2$: High mean i.e. the fact appears more

$4.3 \leq \mu \leq 5.0$: Very high mean i.e. strong evidence of the existence of the fact

$\sigma \leq \sigma \leq$ 0.5 i.e. homogeneity of responses

$\sigma > \sigma >$ 0.5 i.e. heterogeneity of responses

Description of Regression Analysis

The model used in the study took the form below:
$Y = \beta 0+\beta_1 x_1+\beta_2 x_2+\beta_3 x_3+\beta_4 x_4+e$, where: Y =Performance of construction projects BAXONS Ltd, {βi; i=1, 2, 3 and 4} = the coefficients representing the various independent variables. B_0 = the Y intercept {Xi; i=1, 2, 3 and 4} = Values of the various independent (covariates) variables.

e = the error term which is assumed to be normally distributed with mean zero and constant variance, Y =Performance of construction projects. X_1= leadership, X_2 = employee involvement, X_3= continuous improvement and X_4 = Stakeholder management

Data Presentation, Analysis and Interpretation

For the researcher to present research findings and interpretation, tables, figures, frequencies, and percentages were used as means of analyzing and interpreting the data. Responses were collected from a sample of 56 employees including staffs from Planning and monitoring DM, Finance and accounting department, Human resource, Engineers and architectures, Technical and maintenance team, Logistics and store keeper, Quantity survey and monitoring evaluation, General foreman and Operational staff handling various projects. The researcher had a strong feeling that data collected through questionnaires and documentary review were enough to give the required information to attain the objectives of the study.

In order to measure the use of employees' involvement in construction projects, the associated statements were made accordingly. Among all the seven statements provided only three respondents were undecided and the rest agreed and strongly agreed.

The results in terms of mean indicate two categories. The first category which includes mean of 4.0, mean of 4.25 and mean of 4.29 shows high mean and this elaborates that the fact appears more. Another category of mean ranges from 4.77, 4.52,4.43 to 4.34; this shows very high mean which explains that there is strong evidence of the existence of the fact.

In order to know how leadership management affect project performance at BAXONS Ltd. There are six statements made about BAXONS Ltd regarding TQM. Respondents agreed with the statement with mean ranging from 4.19, 4.23, 4.34, 4.34,4.43 and 4.77. This shows the existence of the facts.

In order to measure the existence how continuous improvement was applied in projects implementations for BAXONS. Six statements regarding continuous improvement were listed. The research respondents agreed and strongly agreed by mean of 4.29, 4.29, 4.57, 4.38, 4.20 and 4.09 respectively.

Furthermore, respondents revealed an outstanding level of stakeholder management in the implementation of construction project by BAXONS Ltd. Following the statements that was shared by the researcher in order to understand the level of stakeholder management and performance of construction project by BAXONS Ltd. It was revealed that all respondents agreed and strongly agreed with the presence of stakeholders' management in activities carried out by BAXONS Ltd. As evidenced by mean ranging from 4.20, 4.14, 4.91, 4.43, 4.52,4.66 to 4.34. It is clear that apart from the mean of 4.14 and 4.20 that indicate high mean, all other means are at the level of very high. This level indicates that there is strong evidence of the existence of the fact.

These prove that TQM practices affected the performance of construction project at BAXONS Ltd in a positive way and this is evidenced by the above findings that are in form mean whereby all means are at the level of high and very high. This elaborates the strong evidence of the existence of the facts.

In order to assess the level of project performance, the researcher made five statements which prove the project success. Respondents confirmed that BAXONS Ltd comply with projects timely completion, completion within budget, with high quality of projects, improved customer satisfaction and meeting defined project goals. They agreed and strongly agreed with the above statements which was witnessed by mean ranging from mean of 4.04, 4.43, 4.43,4.63 to 4.38 respectively and except the 4.04 which is a high mean on the first statements, all other mean in these findings are above 4.3, it is enough to understand that there is evidence of the existence of the fact.

Regression Analysis

Regression Statistics	
Multiple R	0.954
R Square	0.911
Adjusted R Square	0.904
Standard Error	0.183
Observations	56

ANOVA

	Df	SS	MS	F	Significance F
Regression	4	17.414894	4.353723	129.84	4.42002E-26
Residual	51	1.7101064	0.033531		
Total	55	19.125			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0.22606383	0.2460537	-0.918758	0.3625	-0.72003715	0.2679
Stakeholder management	0.289893617	0.098592937	2.940308169	0.0049181 72	0.091960038	0.48782 7196
Continuous improvement	-0.03324468	0.0882689	-0.376629	0.7080	-0.21045196	0.14396 26
Leadership management	-0.066489362	0.15256426	-0.435812173	0.664812162	-0.372774894	0.23979 6171
Employees involvement	0.855053191	0.138549235	6.171475351	1.1039E-07	0.576903995	1.13320 2388

Source: Primary data (2022)

Adjusted R Square tell us the variation in the dependent variable due to change in independent variables. The above findings have the adjusted R Square of 0.90, due to the fact that model is adequate. From the findings, one can also say that there is a strong positive relationship between the study variables marked by R = 0.95. The fact that Adjusted R Square (0.91) is that 91 % change in Employee involvement and Stakeholder management affect positively the project performance.

The significance F value was less than 0.05, an indication that the model was statistically significant. The calculated value was greater than the critical value 129.84>3.01) an indicator that employee involvement and stakeholder management are significant to the performance of the project.

Additionally, the table shows a p-value of 0.05 less than alpha (5%), the significance level on two specific variables. This means the given the associated data fit well with the multiple regression model. On the other side, two variables which are leadership and continuous improvement presented showed P value which is greater than 5% by 0.66 and 0.7 respectively. However, in the employees responded to the aspects of both variables with high and very high mean.

Another part of the regression model shows the coefficients, this helps to establish the regression equation $= -0.23 + (-0.07)X_1 + 0.855X_2 + (-0.03)\ X_3 + 0.29X_4$. X_1 stands for Leadership, X_2 Employee involvement, X_3 Continuous improvement, X_4 Stakeholder management. From this equation, one can reveal that holding Leadership, Employee involvement, Continuous improvement and Stakeholder management to a constant zero, this intercept means that having another variable equal to zero, projects performed by BAXONS Ltd will be -0.23. To mean that stakeholders and employees involvements are the heart project performance of BAXONS Ltd. A unit increase in Employee involvement would lead to project implemented by BAXONS Ltd to increase its performance by a factor of 0.855. A unit increase in Stakeholder management would lead to increase in the performance of project implemented by BAXONS Ltd by a factor of 0.29. From all those variables, the P- value is less than 0.05, which indicate that all the variables are statistically significant in influencing the performance of projects implemented by BAXONS Ltd.

IV. CONCLUSION AND RECOMMENDATIONS

The main objective of the study was to examine the effects of Total Quality Management Practices on the performance of the project. The study focused on four practices which include examining the influence of employee involvement on the performance of construction project of BAXONS Ltd. Finding out the effect of leadership on performance of construction project of BAXONS Ltd. Identifying the effect of continuous improvement on the performance of construction project of BAXONS Ltd and Determining the effects of stakeholder management on the performance of construction project.

As the research indicated, employees of construction projects in BAXONS Ltd agreed at high rate with TQM facts regarding employees' involvement. Also, the research show positive relationship between employees' involvement and project performance. In addition, finding shows that BAXONS employees agreed with facts of stakeholders' management at high rate which shows how TQM practices were applied in projects implementation. The regression analysis has shown that there is a strong relationship between stakeholders' management and the project performance. Therefore, the research concludes that Employees involvement and Stakeholders' management are key aspects of project success.

Furthermore, the research has shown that BAXONS Ltd employees agreed at high rate that TQM facts regarding leadership and continuous improvement are applied in BAXONS Ltd.

However, the regression analysis has shown a slight negative relationship between project performance and leadership and continuous improvement.

This give an assignment to BAXONS management team to assess why they don't correlated these TQM practices with the effective performance of projects. It also call them to raise more awareness on the TQM practices and system in general and how they apply in their every daily work. This is because TQM aspects are key to the performance of construction projects and if any of them is left behind, it may lead to the project failure.

In order to successfully run the projects, the whole team should adopt Total Quality Management. This is because it is clear that TQM practices played the important role in the effective performance of the BAXONS projects. From the response, you could tell how the person who do not have the spirit of TQM do not own his every daily responsibilities and this could results to bad performance. Additionally, the cost associated with fixing what is done wrong is minimized with TQM practices.

Recommendation for theory and future research

This study recommends adoption and application of effective project management leadership practices. Due to the complex nature of projects, the study recommends that project teams acquire a mix of competencies like conceptual skills, people skills and technical skills while problem solving, interpersonal and communication skills cut across all levels of management. Technical and professional expertise should be embraced in order to moderate the impact of TQM practices on project complexity and familiarity on project performance.

Furthermore, even if the researcher finds this research very informative, further research are needed. This research recommends other researchers to do the comparative analysis of TQM practices in public and private construction firms. It will also be relevant if a study is conducted examining the effect of quality management practices used on other projects rather than constructions.

In addition, there is a need to assess whether TQM practices supporting customer satisfaction and service quality. Furthermore, researchers should look in how TQM is adopted in East African region and other African countries to understand the influence it has on the success of projects and learn which practices of TQM have much influence so projects can enhance these.

In addition, the research recommends conducting further research on the aspects of leadership and continuous improvement. This is because they are important key in TQM and the current research finds a slight negative relationship between the BAXONS Ltd projects performances and these specific variables. However, this might not be the case in other construction companies and other kinds of the projects. By doing this, they should tackle all aspects of each TQM and cover many industries as well as more respondents from different departments. This will help researchers generate more information that will shade more lights on these variables.

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