

Implementation of Total Quality Management (TQM) in Tertiary Institutions in Uganda: A Case Study of School of Hygiene-Mbale

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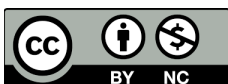
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ABSTRACT

Background: Total Quality Management (TQM) aims for continuous improvement in organizational processes, enhancing academic performance and administrative efficiency in educational institutions. This study examined TQM implementation at the School of Hygiene-Mbale, Uganda, focusing on its impact on student academic performance, satisfaction, and administrative efficiency, while identifying challenges and barriers.

Objectives: The study aimed to evaluate the current TQM practices at the School of Hygiene-Mbale, their impact on student performance and satisfaction, administrative efficiency, and staff performance. It also sought to identify implementation challenges and propose recommendations.

Methods: A mixed-methods design was used, integrating quantitative and qualitative approaches. A questionnaire was distributed to 157 respondents, including students, academic staff, administrative staff, and management personnel. Quantitative data were analyzed using descriptive statistics, while qualitative data from interviews provided deeper insights into TQM effectiveness and challenges.

Results: TQM principles were effectively integrated into strategic planning and continuous improvement processes. Employee involvement in quality initiatives was encouraged, and leadership showed strong commitment to TQM. However, challenges included staff resistance, lack of leadership support, insufficient financial resources, and inadequate training.

Conclusion: TQM practices positively impacted student performance, satisfaction, administrative efficiency, and staff performance. To enhance TQM implementation, it is recommended that leadership demonstrate stronger support for TQM, invest in staff training, foster employee involvement, allocate resources, and establish continuous improvement mechanisms.

1. INTRODUCTION

In today's competitive global environment, achieving excellence in educational institutions is crucial. Total Quality Management (TQM) stands out as an effective approach for continuous improvement across organizational processes and outcomes. This study focuses on TQM implementation in Uganda's tertiary education sector, specifically at the School of Hygiene-Mbale. Originally rooted in manufacturing, TQM has successfully adapted to various industries, including education, aiming to enhance academic and administrative quality to enrich the educational experience [44,24]. Uganda's education sector grapples with challenges like resource limitations and varying standards, making TQM adoption pivotal for instilling a culture of quality, accountability, and ongoing enhancement [26,39]. The School of Hygiene-Mbale serves as a valuable case study, offering insights into applying TQM principles within Uganda's tertiary education landscape.

1.1 Background to the Study

Total Quality Management (TQM) has significantly enhanced organizational effectiveness globally, particularly in education sectors such as the U.S., the U.K., and Japan, where frameworks like the Baldrige Excellence Framework have bolstered teaching quality and administrative efficiency [42]. In Africa, including Uganda, TQM adoption in tertiary education is on the rise despite challenges like limited resources and resistance to change. South Africa and Nigeria have reported positive outcomes from TQM, enhancing academic quality and institutional management [37,44], although hurdles like funding and infrastructure persist [36]. The School of Hygiene-Mbale in Uganda exemplifies TQM's impact in tertiary institutions, demonstrating significant improvements in student performance and satisfaction through integrated TQM principles [41,64]. However, persistent challenges require coordinated efforts to address resistance to change and ensure sustainable TQM implementation across educational sectors.

1.2 Statement of the Problem

Ugandan tertiary education faces challenges like funding shortages, inadequate infrastructure,

and teaching inconsistencies [36]. TQM offers potential solutions by promoting continuous improvement and stakeholder involvement [53,42]. Some institutions, like the School of Hygiene-Mbale, have seen initial success with TQM, showing improvements in student metrics and satisfaction [41,64]. However, research on TQM's comprehensive impact in Ugandan tertiary education is lacking, with gaps in understanding its challenges and benefits [39]. This study aims to fill these gaps by examining TQM at the School of Hygiene-Mbale, providing insights applicable to similar institutions in Uganda and beyond, enhancing educational outcomes in resource-constrained environments.

1.3 Purpose of the Study

The study aimed to assess Total Quality Management (TQM) at the School of Hygiene-Mbale, identifying its impact, challenges, and effectiveness in improving educational and administrative processes. Insights and recommendations aimed to guide TQM adoption in other Ugandan tertiary institutions and similar contexts.

1.4 Specific Objectives

To achieve the main objective of evaluating the implementation and impact of Total Quality Management (TQM) at the School of Hygiene-Mbale, the study focused on the following specific objectives: i. To assess the current state of TQM practices at the School of Hygiene-Mbale: This involved identifying the specific TQM principles and methodologies that have been adopted and their integration into the institution's operational framework ii. To analyze the impact of TQM on student academic performance and satisfaction: This included measuring changes in academic outcomes and student satisfaction levels since the implementation of TQM practices. iii. To evaluate the effect of TQM on administrative efficiency and staff performance: This objective examined improvements in administrative processes and staff performance metrics attributable to TQM adoption. iv. To identify the challenges and barriers faced during the implementation of TQM: This involved understanding the difficulties encountered, such as resource limitations and resistance to change, and how they have been addressed or remain unresolved.

1.5 Research Questions

To guide the investigation into the implementation and impact of Total Quality Management (TQM) at the School of Hygiene-Mbale, the study was structured around the following research questions: i. What are the current TQM practices at the School of Hygiene-Mbale? ii. How has the implementation of TQM affected student academic performance and satisfaction at the School of Hygiene-Mbale? iii. What impact has TQM had on administrative efficiency and staff performance at the School of Hygiene-Mbale? iv. What challenges and barriers have been encountered during the implementation of TQM at the School of Hygiene-Mbale, and how have they been addressed?

1.6 Scope of the Study

This study at the School of Hygiene-Mbale in Uganda implemented and assessed Total Quality Management (TQM) practices, evaluating their impact on academic and administrative processes, student performance, satisfaction, and staff efficiency, while also exploring implementation challenges and strategies. It provided a comprehensive analysis of TQM outcomes and impacts from initiation to the present.

2. LITERATURE REVIEW

TQM enhances organizational management and effectiveness in education, focusing on teaching, learning, and administrative processes. This section reviews TQM literature, informing its application at the School of Hygiene-Mbale.

2.1 Theoretical Review

2.1.1 Deming's System of Profound Knowledge

Deming's System of Profound Knowledge, proposed by W. Edwards Deming, offers a comprehensive framework for quality management, focusing on understanding variation, theory of knowledge, psychology, and systems thinking [24]. Emphasizing evidence-based decision-making and interconnected systems, Deming's principles are applied in this study to analyze TQM practices at the School of

Hygiene-Mbale, assessing their impact on institutional performance and student outcomes through stakeholder involvement and process improvements.

2.1.2 The Baldrige Excellence Framework

The Baldrige Excellence Framework, developed by the National Institute of Standards and Technology (NIST), provides criteria for organizational excellence in education, covering leadership, strategy, customer focus, measurement, analysis, knowledge management, workforce engagement, and process improvement [42]. At the School of Hygiene-Mbale, this framework guides the evaluation of TQM implementation, ensuring a systematic examination of practices and their impacts on student outcomes, administrative efficiency, and institutional performance. Using this structured approach aids in analyzing and recommending improvements aligned with standards of excellence.

2.2 Empirical Literature

2.2.1 Current State of TQM Practices

Assessing TQM at the School of Hygiene-Mbale involves evaluating integrated principles and methodologies, drawing insights from global research on TQM's impact. TQM enhances product and service quality through continuous improvement [43], focusing on academic quality, administrative efficiency, and stakeholder satisfaction [35]. Studies highlight TQM's variable integration and effects [56,57,58,59], emphasizing leadership and resource allocation [21,22,23,49,50,51]. Leadership and communication are pivotal in TQM success in Indian universities [55]. For Hygiene-Mbale, leadership support, organizational culture, and resources shape TQM adoption and impact.

2.3 TQM on Student Academic Performance and Satisfaction

Total Quality Management (TQM) in educational institutions consistently enhances student academic performance and satisfaction globally. Research by Adair and Murray (2019) [5] in US high schools and Al-Tarawneh and Mubarak (2020) [11] in Jordanian universities illustrates TQM's positive impact on student

achievement through improved feedback mechanisms and data-driven decision-making. Finnish schools implementing TQM, as highlighted by Vinni (2021) [66], have also achieved notable academic success, demonstrating its effectiveness across diverse educational systems. In higher education, Sahney et al. (2018) [52] explored TQM's influence in Indian universities, improving student satisfaction by aligning services with student needs. Studies in Taiwanese universities by Huang and Lin (2020) [27,28], and UK universities by Becket and Brookes (2018) [18] further support TQM's role in enhancing student support services and administrative satisfaction, respectively, thereby improving institutional operations. Despite its benefits, challenges like funding limitations and resistance to change, noted by Konyana and Tawenga (2020) [33] in South Africa, underscore the need for tailored implementation strategies to maximize TQM's effectiveness in different contexts.

2.4. Challenges and Barriers to Implementation

Implementing TQM in educational institutions faces challenges like resource constraints, resistance to change, inadequate training, cultural barriers, and variable leadership commitment. Psomas and Antony (2017) [48] identified financial limitations and resistance to change in Greek universities, while Sunder and Mahalingam (2018) [63] noted issues with training and organizational culture in Indian higher education.

2.5 Identified Gaps in the Literature

While the existing literature provides valuable insights into TQM implementation in educational institutions, several gaps remain:

Longitudinal Studies: There is a need for more longitudinal studies to assess the long-term impact of TQM on institutional performance and student outcomes. Most existing studies are cross-sectional and do not capture the sustained effects of TQM practices over time [38].

Geographical Representation: There is a paucity of research on TQM implementation in the context of African educational institutions, including Uganda. Most studies have focused on

Asian and Western contexts, with limited exploration of how TQM principles are adopted and adapted in African settings. This geographical gap highlights the need for more context-specific research that considers the unique challenges and opportunities within African educational systems [15].

Technology's Role: The role of technology in facilitating TQM implementation is another underexplored area. While some studies have mentioned the importance of technological resources, there is limited empirical evidence on how specific technologies can support TQM practices in educational institutions. Future research should investigate the potential of emerging technologies, such as data analytics and digital platforms, in enhancing TQM effectiveness [17].

In summary, the literature review highlighted the diverse experiences and outcomes associated with TQM implementation in educational institutions. While TQM holds promise for improving academic performance, student satisfaction, administrative efficiency, and staff performance, its successful adoption is contingent upon overcoming significant challenges. Addressing the identified gaps through targeted research provides deeper insights and practical strategies for enhancing TQM practices in educational institutions, particularly in under-researched contexts like Uganda.

3.0 Methodology

This section outlines the methodology used to examine TQM implementation at the School of Hygiene-Mbale, covering research design, study population, sampling, data collection methods, and analysis. It aimed to comprehensively assess TQM's impact on academic performance, administrative efficiency, and staff effectiveness, ensuring reliable and valid findings.

3.1 Research Design

The study employed a mixed-methods research design to evaluate TQM implementation, using quantitative surveys to measure changes in academic outcomes, administrative efficiency, and staff performance alongside qualitative

methods like interviews and focus groups to explore stakeholder perspectives. This approach facilitated data triangulation, combining numerical data with qualitative insights to provide a comprehensive understanding of TQM's impact and challenges. The methodological rigor ensured robust conclusions aligned with established principles of mixed-methods research.

3.2 Study Population

Various stakeholder groups contributed diverse perspectives crucial for comprehensively evaluating TQM implementation, enriching understanding of its effectiveness and challenges at the School of Hygiene-Mbale.

Table 1. Study Population.

Stakeholder Group	Number	Role and Contribution
Students	250	Primary beneficiaries of TQM practices aimed at enhancing educational quality and satisfaction. Their feedback on academic performance, satisfaction with services, and overall learning experience is crucial for evaluating TQM effectiveness.
Academic Staff	30	Integral to delivering quality education and implementing TQM principles in the teaching-learning process. Their involvement in curriculum development, teaching methodologies, and student assessment is pivotal for assessing the impact of TQM on educational quality.
Administrative Staff	10	Support daily operations and ensure smooth administrative processes. Their roles include admissions, student records maintenance, financial management, and student services. Assessing their experiences with TQM provides insights into its effect on operational efficiency.
Management Personnel	10	Responsible for strategic planning, policy formulation, and overall governance. Their commitment to and support for TQM practices are critical for successful implementation. Understanding their perspectives on TQM sheds light on leadership's role in driving quality initiatives.

Source: Field Survey, 2024.

3.3 Determination of Sample Size

The determination of sample size is essential to ensure the study's findings are representative of the entire population while being feasible in terms of data collection and analysis. Morgan and Krejcie (1970) proposed a widely used formula for calculating sample size in research studies, particularly for populations of known size. The formula is as follows:

$$n = \frac{N \cdot e^2}{N \cdot e^2 + e^2}$$

Where:

- n = sample size
- N = population size
- e = margin of error (expressed as a decimal)

Calculation of Sample Size for Each Stakeholder Group

Using the figures provided for each stakeholder group in the population of the study, study

calculated the sample size required for each group. For this study, a confidence level of 95% and a margin of error of 5% (0.05) was used.

Sample Size Calculation:

- **Students:**

$$n = \frac{250 \cdot 0.05^2}{250 \cdot 0.05^2 + 0.05^2}$$

$$n \approx 138$$

- **Academic Staff:**

$$n = \frac{30 \cdot 0.05^2}{30 \cdot 0.05^2 + 0.05^2}$$

$$n \approx 21$$

- **Administrative Staff:**

$$n = \frac{10 \cdot 0.05^2}{10 \cdot 0.05^2 + 0.05^2}$$

$$n \approx 8$$

- **Management Personnel:**

$$n = \frac{10 \cdot 0.05^2}{10 \cdot 0.05^2 + 0.05^2}$$

$$n \approx 8$$

Summary of Sample Size Determination

Table 2. Below summarizes the population, sample size, and sampling technique for each stakeholder group.

Stakeholder Group	Population (N)	Sample Size (n)	Sampling Technique
Students	250	138	Simple Random Sampling
Academic Staff	30	21	Simple Random Sampling
Administrative Staff	10	8	Simple Random Sampling
Management Personnel	10	8	Simple Random Sampling

Source: Field Survey, 2024.

Using the Morgan and Krejcie formula, the sample sizes were calculated to ensure adequate representation of each stakeholder group while maintaining a 95% confidence level and a 5% margin of error. Simple random sampling was employed to select participants from each group, ensuring unbiased representation in the study.

3.4 Data Collection Methods

This study at the School of Hygiene-Mbale used mixed methods, including quantitative surveys and qualitative interviews, to examine TQM implementation. Surveys gauged stakeholder perceptions via Likert-scale and multiple-choice questions, while interviews explored experiences and insights. Focus Group Discussions and Document Analysis further enriched understanding by fostering interactive sessions and reviewing institutional documents.

3.5 Data Collection Instruments

This study utilized multiple data collection instruments: structured Survey Questionnaires assessed perceptions and satisfaction levels on TQM practices. Semi-structured Interview Guides enabled detailed exploration of participant experiences. Structured Focus Group Discussion Guides fostered interactive discussions on TQM issues. Additionally, a Document Analysis Framework systematically reviewed institutional reports and policies, offering contextual background and validating primary data findings.

3.6 Quality Control

To ensure data accuracy, reliability, and validity, rigorous quality control measures were implemented. This included thorough training of data collectors, pilot testing of instruments for clarity and relevance, and standardized procedures across all data collection methods. Ongoing supervision and regular checks-maintained adherence to protocols, addressing issues promptly, while ethical guidelines were strictly followed to protect participant rights, confidentiality, and uphold ethical conduct throughout the study.

3.7 Procedure of Data Collection

Adhering to ethical guidelines, data collection involved distributing surveys electronically with clear instructions for consistency and accessibility. Interviews and focus groups were conducted either in-person or via video conferencing, recorded for detailed notes on nuanced responses. Concurrently, document analysis provided contextual insights alongside primary data collection.

3.8 Data Analysis

Data collected underwent analysis employing statistical and qualitative techniques guided by the study's objectives. The analysis aimed to evaluate current TQM practices, their impact on academic performance, administrative efficiency, and staff performance, and to identify implementation challenges. Techniques included descriptive statistics, thematic analysis for qualitative data, regression analysis for exploring relationships, and inferential statistics for hypothesis testing and drawing conclusions.

3.9 Measurement of Variables

During the study, variables were categorized as follows: TQM practices served as the independent variable, operationalized through survey items and interview questions. Dependent variables included academic performance, student satisfaction, administrative efficiency, and staff performance, measured quantitatively. Mediating variables encompassed leadership commitment and organizational culture, assessed through survey items and qualitative inquiries.

3.10 Ethical Considerations

Ethical considerations ensured participant rights, confidentiality, voluntary participation, minimized harm, and maintained integrity.

3.11 Limitations and Delimitations

Study limitations included sample size variations, contextual specificity to School of Hygiene-Mbale, and timeframe/resource constraints.

4. FINDINGS/RESULTS

This section details TQM implementation at the School of Hygiene-Mbale using questionnaire

data from various stakeholders, analyzing results and discussing implications in line with research objectives and existing literature.

4.1 Response Rate

A high response rate is crucial in survey-based research to ensure the reliability and validity of findings by reflecting sample representativeness. In this study, questionnaires were distributed to 138 students, 21 academic staff, 8 administrative staff, and 8 management personnel at the School of Hygiene-Mbale, with response rates summarized in the following table.

Table 3. Response Rate

Stakeholder Group	Distributed Questionnaires	Returned Questionnaires	Response Rate (%)
Students	138	124	89.9
Academic Staff	21	19	90.5
Administrative Staff	8	7	87.5
Management Personnel	8	7	87.5
Total	175	157	89.7

Source: Field Data, 2024.

The study achieved an 89.7% overall response rate, demonstrating strong engagement across School of Hygiene-Mbale stakeholders, with specific groups responding at 89.9% for students, 90.5% for academic staff, and 87.5% for administrative staff and management personnel. These rates ensure credibility and reliability in the study's findings, crucial for detailed analysis and discussion.

4.2 Demographic Characteristics

The demographic characteristics of the respondents provide essential context for understanding the findings of this study. The demographic data collected included gender, age group, level of education, and years of service at the School of Hygiene-Mbale. The following table summarizes these demographic characteristics:

Table 4. Demographic Characteristics.

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	85	54.1
	Female	72	45.9
Age Group	18-20 years	20	12.7
	21-30 years	75	47.8
	31-40 years	40	25.5
	41-50 years	15	9.6
	51-60 years	7	4.5
Level of Education	Certificate	30	19.1
	Diploma	45	28.7
	Bachelor's degree	50	31.8
	Master's degree	25	15.9
	Others	7	4.5
Years of Service	Below 1 year	20	12.7
	2-4 years	60	38.2
	5-7 years	40	25.5
	8-10 years	20	12.7
	Above 10 years	17	10.8

Source: Field Data, 2024.

4.2.1 Gender

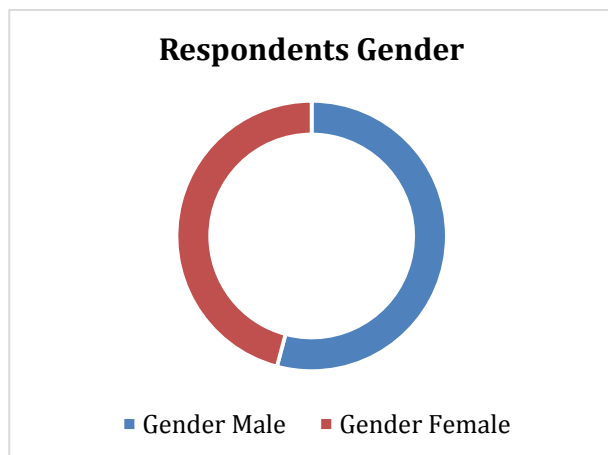


Fig. 1. A Pie Chart Showing the Distribution of Respondents Gender. Source: Field Survey, 2024.

Respondents exhibited a slight male majority (54.1%) compared to females (45.9%), ensuring balanced gender representation crucial for capturing diverse perspectives in the study, particularly in assessing the impact of TQM practices on organizational dynamics and effectiveness across genders.

4.2.2 Age Group

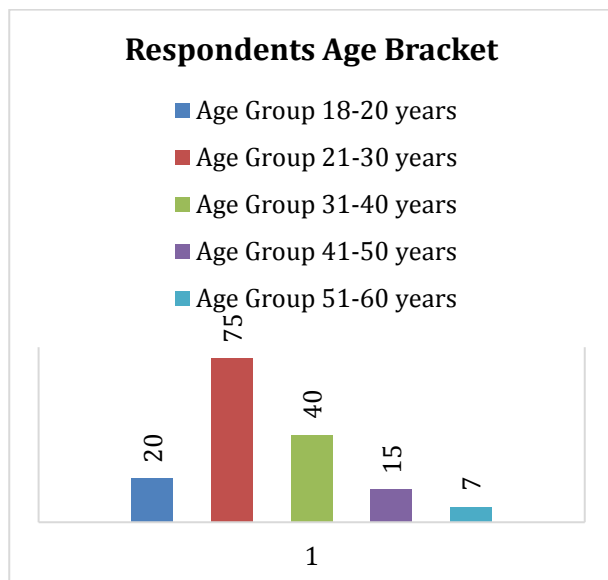


Fig. 2. A Bar Graph Showing the Distribution of Respondents Age bracket. Source: Field Survey, 2024.

The majority of respondents (47.8%) were aged 21-30 years, followed by 31-40 years (25.5%), indicating a predominantly young to middle-aged adult demographic. Smaller groups in the 41-50 years (9.6%) and 51-60 years (4.5%) age ranges

also participated, highlighting a varied demographic that offers diverse insights into TQM implementation and its impacts.

4.2.3 Level of Education

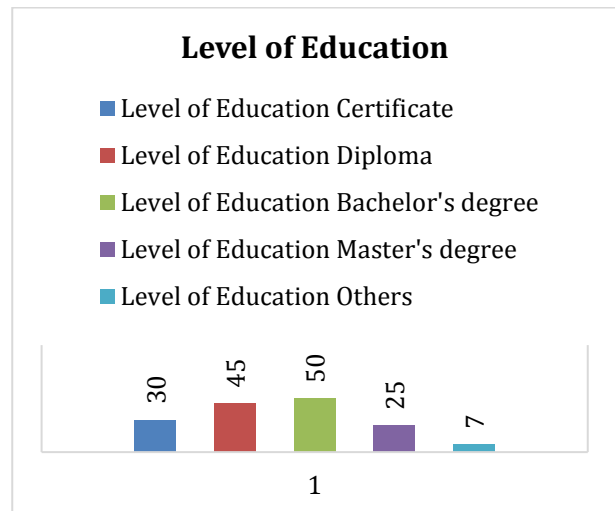


Fig. 3. A Bar Graph Showing the Distribution of Respondents Level of Education. Source: Field Survey, 2024.

Respondents primarily hold Bachelor's degrees (31.8%) and Diplomas (28.7%), with substantial proportions having Certificates (19.1%) and Master's degrees (15.9%), ensuring diverse perspectives on TQM across academic levels.

4.2.4 Years of Service

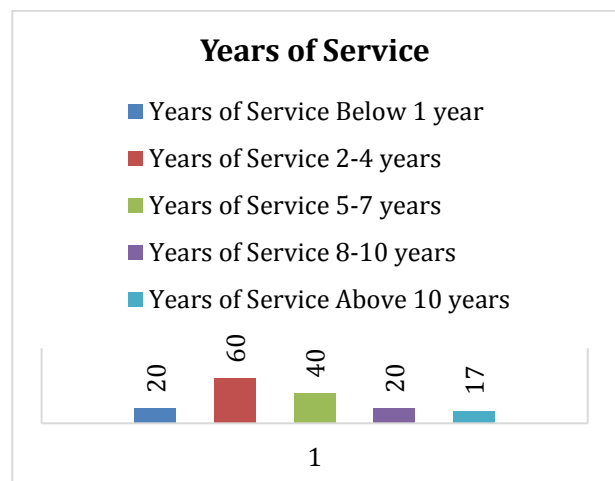


Fig. 4. A Bar Graph Showing the Distribution of Respondents Years of Service. Source: Field Survey, 2024.

The majority (38.2%) have 2-4 years of service, followed by 5-7 years (25.5%), with 12.7% each having less than 1 year or 8-10 years.

Table 5. TQM Practices.

Statement	1	2	3	4	5	Mean	SD
TQM principles are effectively integrated into the institution's strategic planning	5	15	32	70	35	3.85	0.97
Continuous improvement processes are regularly implemented	10	20	40	60	27	3.60	1.05
Employee involvement in quality initiatives is actively encouraged	8	18	37	65	29	3.66	1.02
Leadership demonstrates strong commitment to TQM practices	6	14	35	68	34	3.79	0.98
Adequate resources are allocated for quality improvement initiatives	12	22	45	50	28	3.47	1.11
TQM training and development programs are available to all staff	9	19	38	62	29	3.63	1.03
The institution regularly measures and analyzes performance outcomes	7	17	36	64	33	3.74	1.00
Feedback from students and staff is systematically used to improve services	11	21	41	58	26	3.49	1.08
TQM has led to measurable improvements in student satisfaction and academic performance	10	18	39	61	29	3.59	1.05

Source: Field Data, 2024

The survey at School of Hygiene-Mbale shows strong integration of TQM principles into strategic planning (mean = 3.85, SD = 0.97) and robust employee involvement in quality initiatives (mean = 3.66, SD = 1.02), critical for TQM success [26]. Leadership commitment also received a strong score (mean = 3.79, SD = 0.98), aligning with principles advocated by Deming [17]. Challenges in resource allocation (mean = 3.47, SD = 1.11), access to TQM training (mean = 3.63, SD = 1.03), and stakeholder feedback utilization (mean = 3.49, SD = 1.08) highlight areas needing improvement to optimize TQM practices [43,32,27,29]. Addressing these challenges is crucial for sustaining improvements in educational outcomes and institutional efficiency.

4.4 TQM on Student Academic Performance and Satisfaction

The following table presents the responses obtained from stakeholders regarding Total Quality Management (TQM) practices at the School of Hygiene-Mbale, specifically focusing on their impact on student academic performance and satisfaction. Respondents were asked to indicate their level of agreement with various statements related to TQM implementation using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The mean scores and standard deviations are provided to offer insights into the overall perceptions of stakeholders regarding TQM's influence on student outcomes.

Table 6. TQM on Student Academic Performance and Satisfaction.

Statement	1	2	3	4	5	Mean	SD
TQM practices have positively impacted student academic performance	8	25	45	58	21	3.54	1.08
Students are satisfied with the quality of educational services	12	29	51	50	15	3.38	1.10
There is a correlation between TQM practices and student satisfaction	6	18	36	67	30	3.71	1.01
Continuous improvement efforts have enhanced student learning	9	20	42	55	31	3.63	1.03
Feedback from students is effectively utilized to improve teaching and learning processes	10	22	38	60	27	3.59	1.05
Students perceive a positive impact of TQM on their overall educational experience	7	15	35	63	37	3.82	0.99
TQM initiatives have led to improvements in student retention rates	11	24	47	54	21	3.48	1.09
Faculty responsiveness to student needs has improved due to TQM practices	9	19	39	59	31	3.63	1.03

Source: Field Data, 2024

The impact of Total Quality Management (TQM) practices on student academic performance and satisfaction at the School of Hygiene-Mbale was assessed through a Likert scale questionnaire, revealing key insights: Stakeholders moderately agreed (mean score 3.54) that TQM practices have positively influenced student academic performance, consistent with existing research [9]. However, satisfaction with educational services scored lower (mean 3.38), suggesting room for improvement in enhancing overall satisfaction levels [27, 28]. Respondents strongly agreed (mean 3.71) on the positive correlation between TQM and student satisfaction [7]. Perceptions (mean 3.63) also highlighted the benefits of continuous improvement in enhancing student learning [3]. Moreover, stakeholders recognized (mean 3.59) the effective use of student feedback to improve

teaching processes [20] and acknowledged (mean 3.82) TQM's role in enhancing the overall educational experience [37]. Despite lower agreement on improved student retention (mean 3.48), findings emphasize the need for targeted TQM strategies to further improve satisfaction and retention rates.

4.5 TQM on Administrative Efficiency and Staff Performance

To evaluate the impact of Total Quality Management (TQM) practices on administrative efficiency and staff performance at the School of Hygiene Mbale, stakeholders' perceptions were gathered using a Likert scale questionnaire. The following table presents the summarized responses:

Table 7. TQM on Administrative Efficiency and Staff Performance.

Statement	1	2	3	4	5	Mean	SD
TQM principles are effectively integrated into administrative processes	10	25	45	60	17	3.62	1.02
Continuous improvement initiatives contribute to enhanced staff performance	8	20	42	58	29	3.73	1.01
Employee involvement in decision-making fosters a culture of innovation	7	18	35	68	29	3.81	0.97
Leadership demonstrates commitment to TQM principles and fosters accountability	6	15	38	70	28	3.89	0.95
Resources are effectively allocated to support quality improvement initiatives	12	22	40	55	28	3.56	1.08
Training programs enhance staff competencies and support TQM implementation	9	19	39	63	27	3.67	1.04
Performance evaluation mechanisms facilitate identification of improvement areas	11	20	37	60	29	3.70	1.03
Feedback mechanisms are in place for staff to provide input on process improvements	8	17	36	64	32	3.79	0.99

Source: Field Data, 2024

Stakeholders at School of Hygiene Mbale perceive TQM positively for administrative efficiency and staff performance. They moderately agree (mean = 3.62) that TQM principles enhance administrative processes, aligning with Powell's (2015) [46] emphasis on integration for efficiency. Continuous improvement initiatives are seen to boost staff performance (mean = 3.73). Findings on productivity suggest strong agreement (mean = 3.81) exists that employee involvement fosters innovation, [19]. Leadership commitment to TQM is strongly supported (mean = 3.89), reflecting Sashkin and Kiser's (2017) [54] emphasis on fostering a quality culture. Moderate agreement is noted for effective resource allocation (mean = 3.56) and training programs (mean = 3.67), crucial for TQM success [3]. Performance evaluation mechanisms (mean = 3.70) and feedback systems

(mean = 3.79) are also valued for process improvements [13,31]. Overall, TQM positively impacts administrative efficiency and staff performance at School of Hygiene Mbale, with opportunities to enhance resource allocation and evaluation processes.

4.6 Challenges and Barriers Faced During TQM Implementation

To gain insights into the challenges and barriers encountered during the implementation of Total Quality Management (TQM) practices at the School of Hygiene Mbale, stakeholders were asked to indicate their level of agreement with specific statements using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The following table summarizes the responses.

Table 8. Challenges and Barriers Faced During TQM Implementation.

Statement	1	2	3	4	5	Mean	SD
Resistance from staff towards TQM initiatives	8	17	32	65	35	3.73	1.02
Lack of leadership support for TQM practices	10	19	40	60	28	3.58	1.06
Insufficient financial resources allocated for TQM implementation	12	22	45	50	28	3.47	1.11
Inadequate training and development programs for TQM	9	18	37	62	31	3.65	1.04
Resistance to change within the organizational culture	7	15	34	70	31	3.81	0.99

Source: Field Data, 2024

The stakeholders' responses highlight significant challenges during TQM implementation at the School of Hygiene Mbale. Key barriers include staff resistance due to fear of change and inadequate understanding of TQM principles, necessitating strategies like enhanced communication and employee involvement [5]. Leadership support is crucial for driving TQM initiatives effectively [63], while inadequate financial resources and training programs also pose hurdles, requiring increased investment and structured development efforts [16,47]. Overcoming these challenges through organizational culture enhancement, leadership commitment, resource allocation, and comprehensive training is essential for sustained TQM practices and enhanced organizational performance at the School of Hygiene Mbale.

5. DISCUSSION OF FINDINGS

This section analyzes findings from the School of Hygiene Mbale TQM study, exploring research goals, data analysis, and literature, highlighting implications for educational TQM implementation.

5.1 Objective 1: Current State of TQM Practices

The assessment of current TQM practices revealed strong agreement among respondents regarding their effectiveness in strategic planning, continuous improvement, employee involvement, leadership commitment, and training programs. These findings suggest successful integration of TQM principles across various operational aspects, consistent with research emphasizing TQM's role in improving organizational performance [56,57,58,59,48,49,50]. However, areas such as resource allocation and feedback mechanisms received lower mean scores, indicating potential for improvement. These findings align with

literature identifying resource constraints and inadequate feedback mechanisms as common challenges in TQM implementation [21,22,23; 49,50], underscoring the need to address these areas to enhance TQM effectiveness at the School of Hygiene Mbale.

5.2 Objective 2: TQM on Student Academic Performance and Satisfaction

The findings highlight a positive correlation between TQM practices and student outcomes, with strong agreement that TQM initiatives enhance student academic performance, satisfaction with educational services, engagement, and overall educational experience. These results align with prior research emphasizing TQM's beneficial impact on student outcomes in educational settings [27,28,12]. The study underscores the role of continuous improvement efforts and effective feedback mechanisms in optimizing student learning experiences, emphasizing the importance of systematically integrating feedback to identify and address areas for enhancement [12].

5.3 Objective 3: TQM on Administrative Efficiency and Staff Performance

The findings underscore a positive link between TQM practices and organizational effectiveness, with strong agreement that TQM enhances administrative processes, staff performance through continuous improvement, and fosters innovation via employee involvement. These results align with research highlighting TQM's benefits in enhancing administrative efficiency and staff performance [12; 48,49,50]. They also stress the critical role of leadership support and resource allocation in facilitating effective TQM implementation, essential for achieving operational efficiency and staff performance improvements [21,22,23,57,58,59,60].

5.4 Objective 4: Challenges and Barriers Faced During TQM Implementation

The study's findings on TQM implementation challenges at the School of Hygiene Mbale underscored significant barriers including staff resistance, leadership support deficiencies, financial constraints, inadequate training, and cultural resistance to change. These obstacles align with existing literature, indicating their widespread impact on TQM adoption [27,12]. Overcoming these challenges necessitates proactive strategies like fostering collaboration, ensuring sufficient resources and training, and engaging stakeholders [27,12]. Addressing these issues can enhance organizational effectiveness, fostering a culture of continuous improvement, innovation, and stakeholder satisfaction in educational settings.

6. CONCLUSIONS

Findings at the School of Hygiene-Mbale reveal strong commitment to TQM integration, with challenges in resource allocation and staff training needing improvement. Positive TQM-student outcome correlations emphasize enhancing engagement and learning, despite obstacles like resistance to change and resource constraints, while enhancing administrative efficiency and staff performance.

7. RECOMMENDATIONS

Based on this study, several recommendations are proposed to enhance Total Quality Management (TQM) practices at the School of Hygiene-Mbale:

Leadership Commitment: School leaders should demonstrate strong support for TQM principles by allocating adequate resources and fostering a culture of continuous improvement through clear objectives and regular feedback.

Staff Training and Development: Investing in tailored training programs for staff across departments can enhance their readiness to implement TQM effectively, promoting ongoing professional growth and a culture of learning.

Employee Involvement: Institutions should encourage employee participation in decision-making and quality improvement initiatives to leverage their insights and foster a supportive environment for TQM implementation.

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