

Implementing Total Quality Management (TQM) in Education: Enhancing Competitive Advantage and Sustainable Performance in Educational Institutions

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ABSTRACT

In an increasingly competitive educational landscape, Total Quality Management (TQM) offers a strategic approach to enhance institutional quality, stakeholder satisfaction, and long-term sustainability. Despite its potential, consistent implementation of TQM remains challenging due to limited resources, institutional readiness, and cultural variations. This study investigates how TQM can be effectively adapted in Indonesian secondary schools by incorporating culturally relevant leadership practices—an area that remains underexplored. A qualitative case study approach was employed, involving three public high schools in Bandung Regency, Indonesia. Data were collected through in-depth interviews, direct observations, and document analysis to comprehensively understand TQM implementation in these educational settings. The findings indicate that TQM practices have contributed to improvements in school accreditation scores, stakeholder engagement, and operational efficiency. Notably, culturally embedded leadership approaches enhanced stakeholder trust and alignment with local values. However, challenges persist in the form of limited training opportunities, resource constraints, and inconsistencies in cultural adaptation, which have impeded the full realization of TQM benefits. This study demonstrates that while TQM can substantially improve educational quality and institutional competitiveness, its long-term success depends on sustained investment in capacity-building, culturally responsive leadership, and strategic resource allocation. The integration of local leadership values within TQM frameworks emerges as a critical factor for effective adaptation in Indonesian schools. These insights are transferable to other contexts facing similar barriers in implementing quality management systems in education.

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1. INTRODUCTION

The implementation of Total Quality Management (TQM) in educational institutions has received significant attention to increase competitiveness and encourage sustainable school performance. As the global education landscape becomes increasingly competitive, institutions must strive for operational excellence, quality improvement, and responsiveness to stakeholder demands to maintain their competitive advantage (Al-Kahtani & Al-Mekhlafi, 2024; Ikhsan et al., 2023). Originally developed for the business sector, TQM has evolved into a versatile framework that applies across a wide range of service sectors, including education. TQM's core principles—continuous improvement, customer focus, and systematic process management—are seen as valuable tools for improving academic and administrative processes, thereby aligning the educational institution with stakeholder needs and institutional goals (Gunawan et al., 2024; Ktebi, 2024).

Although there is increasing recognition of the potential of TQM in education, its practical application in schools, especially in the Indonesian context, is still underexplored. Schools in Indonesia face specific challenges that affect the effective implementation of TQM, including limited resources, varying levels of readiness, and the need for culturally relevant leadership practices. These challenges hinder the consistent application of TQM principles and often result in inconsistent results (Ikhsan et al., 2023; Menteşogulları, 2023).

In addition, although the alignment of TQM with global standards, such as the Sustainable Development Goals (SDGs), has been noted, its relationship to the unique challenges faced by Indonesian schools requires further development. The SDGs emphasize quality education, equity, and inclusivity, all of which resonate with TQM's holistic approach, but the practical integration of these principles in Indonesia's educational environment requires more focused attention (Nogueiro & Saraiva, 2023; Zien et al., 2024).

This study seeks to address this gap by exploring the application of TQM in secondary schools in Indonesia, focusing on how TQM can be tailored to local needs while addressing contextual challenges. This research aims to contribute to the understanding of how TQM can improve the quality of education and institutional sustainability in Indonesia, where educational institutions face pressure to improve performance amid resource constraints and community demands for equality and quality of education.

Recent literature emphasizes the importance of leadership in the successful implementation of TQM. Effective leadership is essential for fostering a quality-oriented culture in educational institutions and encouraging continuous improvement at all levels (Nadeem, 2023). In the context of education, leadership is not only about maintaining standards but also about fostering a collaborative environment where all members of the institution are motivated to contribute to a shared vision of quality. Schools that integrate strong leadership with TQM principles often show better outcomes, including higher student satisfaction, better staff engagement, and improved reputation in a competitive education market (Ahmed, 2024; Ren, 2024). However, the role of leadership in Indonesian educational institutions—especially in terms of aligning with TQM principles—is often undermined by a lack of cultural alignment and a rejection of changes in hierarchical structures (Hoque et al., 2017).

In addition to leadership, governance structures play an important role in supporting the implementation of TQM. The success of TQM in education is closely related to how well the governance framework is aligned with TQM principles. A well-structured governance framework allows for a systematic assessment of quality initiatives and supports institutional commitments for continuous improvement (Ningtyas & Khusnuridlo, 2023). In vocational and higher education institutions, for example, the integration of TQM principles with governance frameworks has resulted in better coordination and better performance outcomes. However, in Indonesia, the integration of governance and TQM is still in its infancy, and many schools struggle with inefficiencies due to the lack of alignment between governance structures and quality management practices (Bilen, 2010; Sulaiman et al., 2013).

In addition, TQM's emphasis on continuous improvement and holistic approach is particularly relevant to educational institutions, where success is measured not only by academic performance but also by the broader impact on students' personal development and future employability. In primary and

secondary education, for example, strategic planning within the framework of TQM has shown promise in improving school performance by fostering a culture of shared purpose, process-oriented management, and effective communication among staff (Gunawan et al., 2024). These characteristics contribute to creating a supportive and sustainable educational environment, which is crucial for gaining a short-term and long-term competitive advantage.

However, the application of TQM in education is not without challenges. The study highlights the need for a systematic approach to applying TQM principles in diverse educational settings, as seen in a study of school principals in Sweden, where school principals expressed a strong need for quality tools to aid in planning and assessment (Billah & Karim, 2021). Similarly, research in schools in Indonesia shows that while TQM has the potential to improve service quality and stakeholder satisfaction, its implementation is often hampered by cultural resistance, lack of resources, and inadequate leadership training (Al-Kahtani & Al-Mekhlafi, 2024; Ikhsan et al., 2023). Addressing these challenges requires a contextualization approach that considers the unique characteristics of educational organizations in Indonesia.

An essential aspect of this study is the integration of culturally relevant leadership practices, such as the Muhammadiyah leadership model, in Indonesian schools. This leadership style emphasizes community engagement, trust, and continuous improvement, and has been shown to align with TQM practices, enhance institutional sustainability and improve academic outcomes (Bidayati et al., 2023; Hartono, 2024). By incorporating a leadership model that reflects local cultural values, TQM can be tailored to better suit the needs and challenges of Indonesian schools, thereby strengthening its potential to create a sustainable competitive advantage.

This study is unique in that it systematically examines the challenges and opportunities for the application of TQM principles in the specific context of Indonesian education. By integrating aspects of leadership, governance, and cultural adaptation, this study aims to provide a comprehensive understanding of how TQM can be effectively applied in secondary schools in Indonesia. The novelty of this study lies in its focus on culturally sensitive leadership and governance models, which are critical to the successful implementation of TQM in Indonesia's educational environment.

Thus, while TQM has demonstrated its potential as a tool to improve the quality and competitiveness of educational institutions globally, its implementation in Indonesian schools presents unique challenges that require careful consideration of leadership, governance, and cultural factors. This study contributes to the growth of the literature by offering practical insights into how TQM can be tailored to meet the specific needs of Indonesian educational institutions, thus supporting their long-term sustainability and alignment with global standards, including the SDGs. Future research may focus on refining these TQM practices further to meet the needs of the evolving education system in Indonesia and beyond.

The main objective of this study is to analyze the implementation of Total Quality Management (TQM) in educational institutions and understand its impact on competitive advantage and stakeholder satisfaction. This research focuses on the identification and development of TQM strategies that can be adapted to the unique characteristics of educational institutions, to address the implementation challenges commonly faced in this sector. Specifically, this study has the following objectives:

1. Identify the core principles of TQM that are relevant to be applied in educational institutions as well as analyze their contribution to improving the quality of academic and administrative services.
2. Analyze the relationship between the implementation of TQM and the satisfaction of stakeholders, including students, parents, and communities, to improve the competitiveness of educational institutions.
3. Examine the role of leadership and governance in supporting the successful implementation of TQM in the education sector, and how these elements can strengthen a quality-oriented culture in institutions.

The basic assumption in this study is that the effective implementation of TQM in educational institutions will improve operational efficiency, stakeholder satisfaction, and ultimately, the competitive advantage of the institution. Furthermore, quality-oriented leadership and a good governance structure

will play an important role in the successful implementation of TQM, especially in creating an environment conducive to continuous improvement and innovation in education services.

The novelty of this study lies in the systematic approach used to examine the implementation of TQM in the education sector, which includes aspects of leadership, and sustainable governance. This research not only focuses on the technical implementation of TQM principles, but also pays attention to the role of organizational culture and leadership factors in supporting the success of TQM in the educational environment.

This research focuses on the application of Total Quality Management (TQM) in the education sector with the aim of increasing competitive advantage and stakeholder satisfaction through optimizing the quality of academic and administrative services. The scope of the research covers educational institutions at secondary to higher education levels, with case studies on institutions that have adopted or are trying to apply TQM principles. This study explores various aspects of the implementation of TQM, including continuous improvement, orientation to stakeholder needs, and systematic process management to achieve the expected quality standards.

2. METHODS

This study uses a qualitative case study approach that aims to explore the application of Total Quality Management (TQM) in four State Senior High Schools in Bandung Regency. Qualitative case studies were chosen because this approach allows researchers to gain a deep understanding of complex phenomena in each context. This approach is particularly relevant for researching the application of TQM in education, given that TQM applications can vary between institutions and require in-depth analysis of various aspects, such as school policies, governance, and interactions between stakeholders.

This research was carried out in four public high schools in Bandung Regency, which were selected based on the similarity of geographical aspects, administration, and the implementation of quality improvement initiatives relevant to TQM principles. These four schools have a status that shows the implementation of TQM that has been tested, namely A-Accredited Schools, Model Schools, Schools with ISO status, and National Standard Schools. The selection of these schools is intended to provide a comprehensive overview of the implementation of TQM in various types of schools that have been accredited and have tested quality, although it is not intended to represent all educational trends in Indonesia.

The subjects of the study include principals, vice principals, teachers, and administrative staff who are directly involved in planning, implementing, and evaluating quality in schools. In addition, interviews were also conducted with several students and parents to get perspectives from the recipients of educational services. Participants were selected using purposive sampling, focusing on individuals who had direct involvement in the TQM implementation process. The selection of these participants aims to ensure that the data obtained are relevant to the research objectives, although the results are not intended to be generalized to the entire school population in Indonesia.

The main data collection technique in this study is in-depth interviews conducted in a semi-structured manner, with interview guidelines arranged based on the TQM conceptual framework. These interviews are recorded and transcribed for further analysis, and each informant is given the opportunity to give written consent regarding his or her participation in the research. In addition, participatory observation was conducted to observe the application of TQM in daily practice in schools, including managerial activities, learning, and interaction between teachers, students, and staff. Documentation studies are also carried out by collecting and analyzing documents related to TQM in schools, such as strategic planning, activity reports, performance assessments, and quality evaluation instruments.

Data obtained from interviews, observations, and documents will be analyzed using thematic analysis. The data analysis stage begins with data collection and organization, where data from interviews, observation notes, and documents are grouped based on topics relevant to TQM principles. Next, coding is done to code data based on emerging themes, such as 'continuous improvement',

'customer focus', or 'performance measurement'. For example, a snippet of an interview related to continuous improvement in teaching will be coded "continuous improvement". After that, the researcher will develop a theme by identifying repetitive patterns in the data and forming a category that describes the main findings, for example a theme related to the role of leadership in the implementation of TQM which can be categorized as "leadership role in quality management". The final stage is data interpretation, where each theme that has been developed is analyzed to gain a deeper understanding of how TQM is implemented and its impact on school performance.

To ensure the validity and reliability of the data, this study applies several techniques, including source triangulation, where data is obtained from various sources, such as interviews, observations, and documents, to ensure the consistency of the information obtained. Peer debriefing is also carried out by discussing research findings with peers to ensure proper interpretation of the data. Member checking is used to verify the initial findings with the informant to ensure that the researcher's interpretation is in accordance with the informant's perspective. This research was also conducted by paying attention to the principles of research ethics, where each informant explained the purpose of the research, their rights as a participant, and the right to resign at any time during the research process. The researcher maintains the confidentiality of the data and identity of the informant by using a code or pseudonym for each participant involved.

This research procedure includes several stages, namely (1) preparation, which includes the management of research permits and coordination with schools related to research schedules; (2) data collection, namely interviews, observations, and document collection in accordance with the agreed schedule; (3) data analysis, using thematic analysis methods; and (4) the preparation of reports, which compile research results based on the findings of data analysis and discuss them in accordance with the research objectives.

3. FINDINGS AND DISCUSSION

This study examines the application of Total Quality Management (TQM) as a strategic approach in increasing competitive advantage and promoting sustainable performance in educational institutions, with a focus on four types of public secondary schools (Model Schools, International Standard School Pilots, National Standard Schools and Accredited Superior Schools (A) in Bandung Regency.

The results show that the implementation of TQM involves integrating the core principles of continuous improvement, customer focus, and process orientation into the organizational and operational framework of these schools. Additionally, the study explores the critical role of leadership and structured governance in creating an institutional culture committed to quality, as supported by previous research (Bidayati et al., 2023; Gunawan et al., 2024; Ikhsan et al., 2023).

This study found that the implementation of Total Quality Management (TQM) in public high schools in Bandung Regency has a positive impact on improving institutional quality, competitive advantage, and stakeholder satisfaction. In particular, the implementation of TQM has improved the school's accreditation, stakeholder engagement, and institutional reputation. However, the main challenges faced by schools are limited resources and institutional readiness in implementing TQM principles consistently. Schools with more resources or more experience in quality management tend to be more successful in implementing TQM principles, while schools with limited training and limited staff face difficulties in meeting TQM policy expectations.

One of the important findings is the difference in the level of understanding and institutional readiness in adopting TQM principles. Schools that have dedicated quality teams and strong leadership support can create a culture of quality that facilitates improved academic outcomes and increases public trust. In contrast, schools with limited training and a lack of coordination between management and staff have difficulty implementing TQM policies effectively. These findings are consistent with previous research that shows that institutional readiness and resource availability play an important

role in the successful implementation of TQM in education (Nogueiro & Saraiva, 2023). A more detailed explanation of the findings and discussion is as follows.

3.1 Policy Foundations and Frameworks Supporting TQM Implementation

The discussion of the results of this study will focus on the analysis of policies and frameworks that support the implementation of Total Quality Management (TQM) in various organizations. The main objective of this analysis is to understand how existing policies can facilitate the implementation of TQM and the extent to which the framework provides support for effective TQM practices.

3.1.1 Description of Policy Structures

A description of the policy structure found in the study, which includes the various components and mechanisms implemented to support TQM. This description will outline how these policies are drafted and implemented, as well as the extent to which they contribute to the consistent and sustainable implementation of TQM.

The implementation of Total Quality Management (TQM) in the education sector is greatly influenced by national and local policy frameworks that prioritize quality assurance in schools. The National Education Standards and related regulations, such as the Minister of Education Regulation No. 63/2009 on Education Quality Assurance, provide basic guidelines aligned with TQM principles, including continuous improvement and user-focused (student) processes. The schools analyzed in this study consistently use this policy as a frame of reference for developing quality assurance processes. However, despite the awareness of SNP guidelines, variations in policy interpretation and application emerged, which are most likely due to differences in institutional readiness and understanding of policy expectations (Khurniawan et al., 2021a).

Policy frameworks at the regional level also play an important role in the integration of TQM, by supporting self-evaluation practices, stakeholder engagement, and the achievement of goals that reinforce TQM principles. Alignment with national standards ensures that schools operate within a structured framework, with clear guidelines on how to measure and achieve quality. This framework suggests that the integration of TQM with a broader business strategy can improve the effectiveness of implementation (Kaur et al., 2021). Notably, the inclusion of the Sustainable Development Goals (SDGs) in this policy further emphasizes quality, equity, and inclusivity as essential elements of sustainable institutional practices, which are in line with TQM's holistic approach to quality management (Nogueiro & Saraiva, 2023).

3.1.2 Policy Gaps and Implementation Challenges

The analysis of policy gaps and challenges in its implementation aims to provide a deeper understanding of policy aspects that have not fully supported the successful implementation of Total Quality Management (TQM). More than just explaining existing policies, it is important to explore how they are translated and implemented at the institutional level, as well as how they can better support the process of continuous quality improvement.

Despite a clear policy framework in Indonesia, the implementation of TQM faces critical obstacles. One of the main challenges is the inconsistency in translating TQM principles and applying them consistently across schools. Schools often face difficulties in adapting policy requirements to their local contexts. Varying levels of understanding of TQM, as well as uneven resources, greatly affect the successful implementation of TQM-based policies. For example, although self-evaluation policies and quality improvement-based policies are already in place, the limitations of standard training and uneven allocation of resources result in inconsistent implementation among institutions. Schools that have more resources or experience in quality management are more successful in complying with TQM guidelines, while schools that lack staff training and administrative support face difficulties in meeting policy expectations effectively.

This finding is in line with previous research that shows that institutional readiness and resource availability are often cited as key determinants in the successful implementation of TQM in the education sector (Nogueiro & Saraiva, 2023). Institutional readiness, in this case, includes in-depth knowledge of TQM and leadership commitments that support policy implementation, while resources refer to the availability of funds, training, and administrative support needed to implement those policies.

These findings point to the need for more flexible policy adjustments and additional support mechanisms, such as regional-level training programs, to address existing gaps in TQM implementation. Existing policies are often too rigid in their implementation, not considering the diversity of local contexts and resource limitations faced by schools in various regions. For example, many schools lack an understanding of the basic principles of TQM and do not have clear policy enforcement from responsible institutions, making their implementation less effective.

Lack of understanding of TQM among education stakeholders and lack of policy enforcement at the level of responsible institutions are the main obstacles to TQM implementation. This shows that without stronger policy support and a deeper understanding of TQM, implementation will be hampered, and the expected results will not be achieved. Therefore, more responsive policy adjustments to the contextual needs of schools are essential. More flexible policies will be better able to provide a more coherent approach to the implementation of TQM in different educational settings (Kadhim & Ahmad, 2022).

3.2 Process of TQM Implementation in Educational Institutions

The implementation of Total Quality Management (TQM) in the education sector is highly dependent on existing policies at the national and local levels, which provide a basic framework to ensure the quality of education. These policies include a variety of standards and regulations that are explicitly or implicitly aligned with TQM principles, such as continuous improvement and user-focused (student) processes. While these policies provide basic guidelines, challenges in their implementation often arise due to differences in institutional readiness and resources available in each school.

3.2.1 TQM Processes and Adaptations in Educational Contexts

This study shows that the implementation of TQM in schools in Bandung Regency follows a systematic process that focuses on the key principles of TQM—continuous improvement, customer focus, and process-based approach. These schools are actively involved in the practice of structured self-evaluation through School Self-Evaluation. This process allows schools to conduct internal assessments in accordance with the National Education Standards, which is a fundamental step to identifying performance gaps and opportunities for improvement. In addition, the needs of stakeholders, especially students, parents, and staff, are incorporated into the feedback process, which reinforces a customer-focused approach to quality management (Khurniawan et al., 2021a).

One of the other important components is strategic planning for quality improvement, where goals are set based on the results of self-evaluation. This process aligns with TQM's principles of continuous improvement, where identified gaps guide the next action plan (Soraya Silva Tobar et al., 2022). These adjustments are critical for educational institutions seeking to remain responsive to evolving stakeholder needs and changing education standards, and they reflect findings in previous research on the success of TQM in the education sector (Syarifudin, 2023).

3.2.2 Process Consistency and Challenges

Although a structured TQM approach is implemented, there is variability in how schools implement quality assurance processes, mainly due to differences in resources, training, and leadership engagement. Schools with more established governance structures and dedicated quality management

teams show greater consistency in implementing TQM practices across operational levels. However, other schools face major challenges due to limited resources and inadequate staff training on TQM principles. Although all schools conduct self-evaluation, the level of analysis and follow-up carried out varies widely. Some schools have implemented comprehensive improvement strategies, while others have experienced limited follow-up due to limited resources. These findings point to the need for a stronger support system to assist schools in effectively managing the quality improvement process.

It is important to improve the quality management mechanism of education to ensure the sustainability and effectiveness of the implementation of TQM in the future (Denisenko, 2023). This is in line with the literature that shows that organizational resources and institutional readiness are the main determining factors in the effectiveness of the implementation of TQM in education (Nogueiro & Saraiva, 2023).

3.2.3 Comparative Analysis with Other Educational Contexts

Compared to other educational contexts that have adopted TQM, the schools in this study reflect similar adjustments to the TQM process to meet institutional goals and stakeholder demands. Research shows that the successful implementation of TQM in education requires adjustments to the quality management framework to meet academic needs, including educational outcomes and student development (Al Mohaimen et al., 2022). The school's approach to strategic planning and quality monitoring is aligned with the TQM adaptation seen in the international education program, which also prioritizes institutional governance and innovation to meet academic standards (Bidayati et al., 2023; Hartono, 2024).

3.3 Impact of TQM Implementation on Institutional Quality and Competitive Advantage

The application of Total Quality Management (TQM) in secondary schools in this study shows a positive impact on institutional quality and competitiveness, both in terms of quantitative and qualitative. The quantitative results reflected in the increase in school accreditation showed the achievement of national education standards through the TQM principle of continuous improvement, while qualitative feedback from stakeholders, such as students and parents, showed an increase in satisfaction with school operations and the quality of educational services. This increase in satisfaction not only strengthens the school's relationship with stakeholders, but also supports the school's competitive position in the local education market. This is in line with the findings of TQM studies related to other educational institutions, where stakeholder trust and institutional reputation are key elements for gaining a competitive advantage.

3.3.1 Quantitative and Qualitative Outcomes

The implementation of TQM in the schools studied provides measurable improvements in institutional quality and increased stakeholder satisfaction. Some of the key quantitative outcomes include an increase in accreditation ratings across the schools evaluated, reflecting alignment with the National Education Standards (SNP) and TQM's focus on continuous improvement. Qualitative feedback from students and parents highlights the increase in satisfaction with school operations, management responsiveness, and overall quality of education. Positive trends in accreditation and stakeholder satisfaction demonstrate the role of TQM in improving institutional performance and aligning it with competitive educational standards (Jamil, 2023; Nogueiro & Saraiva, 2023).

3.3.2 Increased Stakeholder Satisfaction and Competitive Positioning

Stakeholder satisfaction emerged as a key benefit of implementing TQM, which is in line with the customer-focused orientation of TQM. Schools that actively integrate stakeholder input into the quality process report improved relationships with students, parents, and community members. For example, practices such as regular feedback collection, structured response systems for student needs, and more

intensive parent engagement programs contribute to the school's perception as a responsive, quality-focused institution. This attention to stakeholders needs not only increases satisfaction, but also strengthens the school's competitive position in the local education landscape (Khurniawan et al., 2021a; Ningtyas & Khusnuridlo, 2023).

This increase in stakeholder engagement is in line with findings from previous studies on TQM in educational institutions, where customer-oriented quality improvements resulted in higher levels of institutional trust and reputation. This is particularly relevant for educational institutions seeking competitive advantage through consistent quality and reliability, as seen in a global education model where stakeholder trust is inextricably linked to competitive success (Al Mohaimen et al., 2022; Hartono, 2024).

3.4 Challenges in Sustaining TQM Implementation

This discussion will discuss in more depth the challenges that arise in maintaining TQM practices, especially related to limited resources, training, and adaptation of leadership and institutional culture. This aspect is essential because if not handled appropriately, these challenges can hinder the consistency of TQM implementation and reduce the positive impact that has been achieved, which ultimately affects the quality and competitiveness of educational institutions in the long term.

3.4.1 Resource and Training Constraints

This study identifies resource limitations as a major challenge in maintaining TQM practices in schools. Limited funding and a lack of specialized training for educators and administrative staff hamper the school's ability to maintain consistent quality management. Schools with limited budgets struggle to invest in periodic training programs, which are indispensable for effectively instilling TQM principles in institutional processes. These findings are in line with previous research that highlighted resource availability as a key determinant in the successful adoption of TQM, especially in the education sector, where financial and human resources are often limited (Nogueiro & Saraiva, 2023).

Inadequate training is also an important obstacle, as staff who are not familiar with TQM methods tend to have difficulty in adopting systematic quality practices. Schools that do not provide continuous professional development based on TQM principles struggle to maintain quality improvement, with quality processes often losing momentum over time. These challenges reflect a similar trend in TQM studies in education, where resource and training deficits can lead to inconsistent implementation and reduced impact (Khurniawan et al., 2021a).

3.4.2 Leadership and Cultural Adaptation

This study also emphasizes the important role of leadership and cultural adaptation in maintaining TQM practices. Schools with committed leaders who actively support quality initiatives demonstrate more effective TQM practices. These leaders create a culture of quality by encouraging shared goal-setting, open communication, and a shared commitment to continuous improvement. In contrast, schools with less engaged leadership face difficulties in maintaining quality practices, as staff motivation and adherence to TQM principles are reduced in the absence of active guidance and encouragement (Nazareno et al., 2024).

Cultural adaptation adds to other challenges, especially in aligning TQM principles with the unique values and expectations within each school community. For example, in schools that are influenced by culturally specific leadership styles, such as the Muhammadiyah leadership model, the adjustment of TQM to local values is very important to gain support from staff and the community. These findings highlight the importance of integrating TQM with culturally relevant practices to ensure its acceptance and impact are sustainable in a diverse educational environment (Bidayati et al., 2023).

3.4.3 Challenges

The challenges faced in this study reflect the challenges noted in other educational contexts, which show that resource limitations, training needs, and cultural factors are common barriers to the sustainability of TQM in education. These barriers demonstrate the need for additional support structures, such as targeted training programs and adaptable policy frameworks, to improve TQM implementation. Other literature also shows that educational institutions that adopt TQM are more likely to succeed with external support, such as government funding or partnerships, to address resource gaps and provide access to ongoing professional development (Khasanah et al., 2023).

3.5 Implications of TQM Findings for Policy, Practice, and Future Research

The findings of this study offer valuable insights for policy development, practical application, and future research related to the implementation of Total Quality Management (TQM) in educational institutions. These insights highlight the importance of a more adaptive, consistent, and supportive approach in applying TQM principles to improve institutional performance and student outcomes.

From a policy perspective, the study emphasizes the need for consistent support from both central and local governments. This includes regular resource allocation and focused training programs for educators. Policies should provide sustainable funding for quality assurance, teacher professional development, and school infrastructure. To ensure continuous improvement, policy frameworks should also be flexible enough to adapt based on feedback from schools and align more closely with core TQM principles, such as ongoing evaluation and refinement (Nazareno et al., 2024; Nogueiro & Saraiva, 2023).

In practice, TQM goes beyond quality control; it enhances stakeholder satisfaction and helps schools remain competitive. Schools can integrate TQM into daily management through regular self-assessments, open feedback systems, and shared goal setting. Establishing dedicated quality teams that collaborate with school leadership can help monitor progress and adjust strategies. Schools that consistently involve stakeholders and build a culture focused on quality tend to achieve better outcomes, including improved satisfaction and a stronger institutional reputation (Khasanah et al., 2023).

Adapting TQM to cultural contexts is also important. For example, incorporating leadership models based on local values, such as the Muhammadiyah approach in Indonesia, can increase acceptance and support. These culturally relevant approaches encourage stronger community engagement and institutional commitment to quality goals (Bidayati et al., 2023). Aligning TQM with a school's values and cultural environment makes implementation more effective and sustainable.

One of the most important findings from this research is the positive impact of TQM on student outcomes. Schools that effectively apply TQM—especially with structured systems for improvement and a focus on student needs—report higher academic achievement, better student satisfaction, and stronger engagement in the learning process. Tailoring the learning experience to individual student needs enhances both learning outcomes and overall classroom experiences. Schools that actively collect and use student feedback tend to reduce failure rates and increase student involvement (Rosyidah et al., 2024).

However, schools with limited resources often face significant challenges in applying TQM effectively. Without proper teacher training and adequate learning facilities, it becomes difficult to maintain high-quality learning environments. Even when schools are committed to TQM, a lack of support limits the full impact of its principles. This highlights the need for investment in teacher training and access to better facilities and educational tools. When teachers are trained to incorporate TQM in their teaching, they can make classrooms more interactive and responsive to students' needs. Similarly, improved resources, such as technology and well-equipped classrooms, help schools implement TQM more successfully.

To overcome these challenges, more flexible and targeted funding policies are essential. External partnerships with government bodies, NGOs, or private organizations can also provide crucial support in terms of training and infrastructure. Regular evaluation of how TQM is implemented will ensure schools remain aligned with best practices and are responsive to student needs and changes in the educational landscape. These efforts can lead to long-term improvements in learning outcomes and the overall quality of education.

In summary, while implementing TQM can be difficult in resource-limited schools, proper investment in training and infrastructure can lead to significant improvements. Schools that overcome these barriers tend to see better academic performance and higher student satisfaction, strengthening the overall education system (Rosyidah et al., 2024).

The study also confirms that TQM contributes to broader institutional benefits. Schools that apply TQM consistently report improvements in operational performance, stakeholder trust, and institutional competitiveness. By adopting core principles such as continuous improvement and a focus on stakeholder needs, these institutions align with both national education goals and global quality standards. Increased accreditation scores and positive feedback from parents and communities show that TQM can drive meaningful change when adapted to local contexts (Khasanah et al., 2023; Nogueiro & Saraiva, 2023).

TQM also helps schools stand out in a competitive education environment. By improving stakeholder engagement and offering responsive services, schools build stronger relationships with students, parents, and the community. This focus on consistent quality helps retain students and improves the institution's public image. Aligning TQM practices with the Sustainable Development Goals (SDGs) further enhances a school's reputation and impact (Al Mohaimen et al., 2022; Bidayati et al., 2023).

Overall, this study demonstrates that TQM can serve as a long-term strategy for sustainable performance in education. Institutions that implement TQM show better efficiency, improved relationships with stakeholders, and a stronger culture of quality. However, continued success depends on overcoming resource limitations and ensuring alignment between TQM practices and local school culture. Providing targeted support and developing flexible policies will help expand the adoption of TQM and strengthen its impact (Khurniawan et al., 2021b; Nazareno et al., 2024).

Looking ahead, future research should explore how TQM can be customized for different school environments, particularly those with diverse cultural, financial, and organizational characteristics. More studies are also needed to understand the long-term effects of TQM on student achievement, personal growth, and career readiness—factors that are critical for sustained success in education (Al Mohaimen et al., 2022). Another important area for future study is the role of partnerships with governments, NGOs, and private entities in supporting schools through funding, training, and innovation. Understanding how these collaborations affect TQM outcomes can help schools adopt more effective and sustainable practices.

By exploring these areas, future research can contribute to making TQM a more adaptable and impactful strategy for improving education around the world.

4. CONCLUSION

This study highlights the value of implementing Total Quality Management (TQM) in Indonesian public secondary schools, showing its potential to improve educational quality, institutional competitiveness, and stakeholder satisfaction. The findings reveal that schools with strong leadership and dedicated quality teams are better able to build a culture of continuous improvement, align with national standards and the Sustainable Development Goals (SDGs), and achieve positive outcomes such as higher accreditation scores, better community trust, and improved student performance. However, the study has limitations, particularly due to differences in resource availability and varying levels of TQM readiness among schools. These factors suggest that the findings may not be fully

applicable to under-resourced institutions. Additionally, since the research relies on qualitative data, the results may not be generalizable to all educational contexts. Future research should explore TQM in a wider range of school environments, including those with limited resources, and use quantitative methods to measure long-term impacts on student achievement and institutional development. Despite its limitations, this study supports TQM as a practical and adaptable strategy for advancing sustainable and high-quality education.

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