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Impact of Total Quality Management on Organizational Learning among Nigerian SMEs: The Moderating Role of Strategic Thinking

Christo Gbenga Adelakun[1], Banji Rildwan Olaleye[2], Ntseliseng Khumalo[3], Yinka Emmanuel Omikunle[4]

Abstract: Organizational learning (OL) has become a vital capability for staying competitive in the 21st-century business world. This research examines the impact of Total Quality Management (TQM) on organizational learning in small and medium-sized enterprises (SMEs) in Nigeria, while also considering the moderating influence of strategic thinking. Data collected from survey responses of 154 SME owners in Ejigbo Local Government Area, Osun State, were analyzed using partial least squares structural equation modeling (PLS-SEM) to test the proposed relationships. The findings indicate that TQM significantly improves organizational learning ($\beta = 0.251$, $t = 2.741$) and that strategic thinking further enhances this link ($\beta = 0.287$, $t = 2.382$). These results expand organizational learning theory by positioning TQM as both an operational and strategic facilitator of learning, while also emphasizing the cognitive function of strategic thinking in amplifying learning outcomes. Practically, the research highlights the importance for SME managers to implement TQM practices and foster forward-thinking skills to promote adaptability, innovation, and competitiveness. Policymakers and development agencies are encouraged to develop initiatives that integrate quality management with strategic thinking training to enhance SME resilience. Limitations related to the cross-sectional design,

[1] PhD Student, Department of Business Administration, Federal University Oye-Ekiti, Nigeria, Address: PMB 373, Are Afao Road, Oye-Ekiti, Ekiti State, Nigeria, E-mail: christo.adelakun@fuoye.edu.ng.
[2] Postdoctoral Researcher, Business School, North-West University, Potchefstroom, South Africa, Address: Private Bag X6001, Potchefstroom 2520, South Africa, Corresponding author: 55612989@mynwu.ac.za.
[3] Lecturer, Business School, North-West University, Potchefstroom, South Africa, Address: Private Bag X6001, Potchefstroom 2520, South Africa, E-mail: ntseliseng.khumalo@nwu.ac.za.
[4] MSc Student, School of Education, Federal College of Education, Abeokuta, Ogun State, Nigeria, E-mail: yinkaomikunle993@gmail.com.

sample scope, and reliance on self-reported data are acknowledged. Suggestions for future research include longitudinal studies, cross-country comparisons, and the integration of digital transformation factors. Overall, the study demonstrates that combining TQM with strategic thinking offers SMEs a powerful pathway toward becoming learning organizations capable of thriving in dynamic environments.

Keywords: Organizational Learning; PLS-SEM; SMEs; Strategic Thinking; Total Quality Management

JEL Classification: B23, D83, M00, M10, M21

1. Introduction

In the competitive landscape of globalization and technological advancements, organizations operate with agility and efficiency (Jafari-Sadeghi et al., 2022; Olaleye, Herzallah & Anifowose, 2021). By adopting new strategies, they aim to navigate uncertainty and future changes (AlMaryani & Sadik, 2012). Consequently, businesses adapt their policies to anticipated developments. Amidst this, organizations often adhere to specific administrative procedures, which have historically been recommended for evaluating their ability to manage learning (Do et al., 2022).

Achieving Total Quality Management (TQM) requires contemporary methods that focus on gathering information to optimize resource utilization and minimize costs. As companies prioritize product quality, they assess their operations to obtain precise cost information, adapting to changes in consumer preferences (Cui et al., 2022; Rildwan, Monday & Afolabi, 2019).

Organizational learning involves members acquiring skills and integrating knowledge to enhance performance. This relies on knowledge management practices collaboratively embraced by members. Knowledge gained from events like seminars remains unproductive until applied (Franklin, 2015). Mylse (2014) describes organizational learning as an ongoing process in which organizations adapt to their environment to achieve a competitive advantage.

Total quality management is a strategic orientation focused on securing a commitment from top management to allocate resources for process improvement, product quality, employee participation, and innovation. Implementing quality management practices generally enhances performance across financial, human resources, and teamwork processes (Akinola et al., 2022; Jaafreh & Al-Abedallat, 2012). Externally, quality management adapts to market changes by addressing customer demands and sourcing high-quality materials. Market growth potential motivates top managers to take risks and explore innovative approaches to improve performance (Hoskisson et al., 2013; Rotimi et al., 2021). Quality management practices enable executives to invest in human capital and learning, allowing the

organization to adapt to market changes (Hung et al., 2011; Wang et al., 2012). However, corporate settings are dynamic, presenting both opportunities and threats to growth (Obiwuru et al., 2011). Thus, in today's business environment, organizations must stay competitive through tactical and strategic thinking, prompting the search for new competitive strategies as older ones become obsolete (Chirico & Salvato, 2008).

Total Quality Management (TQM) emphasizes the importance of continually enhancing organizational performance through quality initiatives. In Nigeria, Small and Medium Enterprises (SMEs) are vital to the national economy; however, they encounter challenges such as insufficient resources and inadequate management practices, which impede their competitiveness. Despite the potential advantages associated with Total Quality Management (TQM) and organizational learning, numerous Nigerian SMEs face difficulties in effectively implementing these strategies. The role of strategic thinking as a moderating factor in the relationship between TQM and organizational learning within Nigerian SMEs remains insufficiently understood. This study aims to examine the impact of TQM on organizational learning and to elucidate the influence of strategic thinking as a moderator in the relationship between TQM and organizational learning.

2. Literature Review

2.1. Total Quality Management

Organizations employ Total Quality Management as a strategic approach to achieving excellence. TQM emphasizes the essential commitment of top management and the allocation of resources to improve processes, product quality, employee engagement, innovation, knowledge sharing, and learning. Numerous studies indicate that Total Quality Management enhances financial metrics, human resources, product and service innovation, collaboration, and learning. Total Quality Management (TQM) empowers individuals to identify opportunities for improvement, address challenges, and contribute to the organization's success. Everyone works together to improve quality and optimize the organization's operations through this strategy. Total Quality Management (TQM) is a comprehensive organizational approach that aims to improve all facets of a company's processes and capabilities, enabling the production and delivery of products and services that align with customer expectations. According to Bhat and Rajashekhar (2009), Faisal et al. (2011), and Shan et al. (2016), TQM has become a crucial standard for maintaining competitiveness across various industries, including service sectors. It involves the entire organization in a continuous effort to enhance products, services, and processes, with the goal of meeting or exceeding customer needs and achieving corporate objectives.

2.2. Organizational Learning

Learning encompasses the acquisition of knowledge, skills, attitudes, and perspectives. Scholars of organizational learning possess various definitions and perspectives. Despite the absence of a cohesive definition, certain scholars assert that it enhances corporate performance over time (Fang et al., 2010). Kalkan (2006) characterizes organizational learning as "a conscious or unconscious process that impacts organizational actions, encompassing knowledge acquisition, utilization, and evaluation, supported by organizational memory," highlighting its dynamic essence of ongoing knowledge acquisition and assessment. Organizational learning capability includes knowledge and the learning process. Personal comprehension, interpersonal communication (Argyris & Schon, 1996), and collective decision-making enhance the organization's knowledge and adaptability. Organizational learning entails the acquisition of skills, resources, and information to improve performance (North & Kumta, 2018; Olaleye, 2017). Effective knowledge management is essential. Seminars impart knowledge; however, their application does not guarantee efficacy (Namada, 2018). Organizational learning is a continuous effort to adapt to the environment and gain a competitive advantage through the development of skills and knowledge (Namada, 2018). Organizational learning occurs through engagements with operational specialists (Dixon, 2017), fostering an environment that promotes ongoing development and novel perspectives (Malhotra, 1996; Igashi et al., 2022). The utilization and dissemination of tacit knowledge are vital for market competitiveness and organizational learning (Hussein et al., 2014).

2.3. Strategic Thinking

Strategic thinking is often portrayed in literature as a cognitive process used to identify and tackle emerging challenges based on anticipated environmental conditions (Dixit, Singh, Dhir & Dhir, 2021). It plays a crucial role in enhancing organizational performance (Jalali & Golmohammadi, 2022). Strategic thinkers frequently employ innovative approaches and methods to craft insightful tactics and solutions (Smriti, Dhir & Dhir, 2021). According to Dixit et al. (2021), strategic thinking is considered a synthetic process that aids in outlining interdependencies and establishing internal alignments within organizations.

2.4. Relationship between Organizational Learning, Strategic Thinking, and Total Quality Management

Total Quality Management enhances organizational learning. Lam et al. (2011) and Hung et al. (2011) found that Total Quality Management (TQM) helps Malaysian service enterprises and Taiwanese high-tech companies focus on learning and improvement. Organizations need Total Quality Management to promote ongoing

learning and improvement. A quality management system supports learning. According to Chang and Sun (2007), the components of TQM create a conducive workplace. To cultivate a TQM-enhanced learning culture, firms must engage employees in decision-making and modifications (Love et al., 2000).

Literature suggests that Total Quality Management (TQM) enhances organizational learning, thereby supporting the initial hypothesis of this study. Organizational learning is crucial for competitiveness based on Total Quality Management (Martinez-Costa & Jimenez-Jimenez, 2009). According to Rahman (2004), Total Quality Management enhances performance both technically and behaviorally.

TQM promotes learning, as mentioned by Barrow (1993). Chiles and Choi (2000) strengthen the links between organizational learning and quality management. Moreno et al. (2009) show that organizational learning affects quality management. Ruiz-Moreno et al. (2005) promote a critical quality management culture to enhance employee learning and development. Karami and Gorzynski (2022) argue that strategic thinking is both intuitive and imaginative, providing an organizational perspective. Strategic thinking includes rational and creative approaches to problem-solving, as noted by Dhir and Samanta (2018).

In summary, TQM enterprises demonstrate superior organizational learning. This study demonstrates that Total Quality Management (TQM) influences organizational learning, with strategic thinking serving as a moderating factor in its impact. The following hypotheses are suggested.

H1: Total Quality Management positively influences organizational learning in SMEs.

H2: Strategic thinking moderates the relationship between TQM and organizational learning.

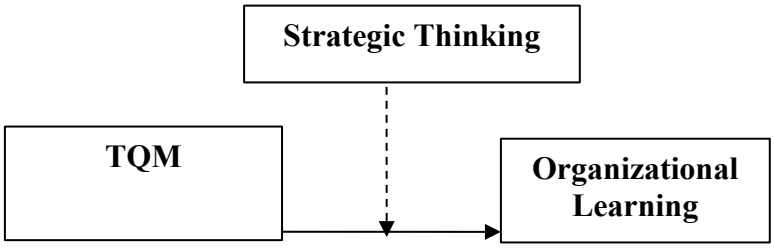

Fig. 1. Conceptual Framework

3. Methodology

The research area is the Ejigbo Local Government Area in Osun State, with a focus on small and medium-sized enterprises (SMEs). SMEs contribute significantly to the

business landscape of the Ejigbo Local Government Area, encompassing a diverse range of sectors and industries. The research design comprises a comprehensive method and framework for deriving conclusions about the relationships among the study variables. A user-friendly survey was employed to conduct quantitative cross-sectional research and gather relevant information from the selected respondents. A convenient sampling method was used to select SMEs from various sectors, including retail shops, restaurants, agribusinesses, grocery stores, tailoring establishments, bakeries, hair salons, and small-scale manufacturing units. A sample size of two hundred is proposed for this investigation.

The survey utilized adopted and modified instruments, with Total Quality Management (TQM) practices operationalized through 30 items across five dimensions: leadership (6), people management (7), customer focus (6), planning (6), and process management (6) (Samson & Terziovski, 1999). Strategic thinking was assessed using nine items derived from various studies (Al-Qershi, 2021; Liedtka, 1998). Organizational learning is assessed using 10 questions derived from Templeton et al. (2002). The questionnaire used a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Data were analyzed with descriptive and inferential statistics in SPSS to evaluate variables and address research questions. In the context of SPSS, descriptive analysis serves as an effective tool for examining, delineating, and presenting respondent data in terms of percentages, means, and frequencies. Additionally, the researcher used PLS-SEM to evaluate the hypothesis.

4. Results and Discussion

4.1. Demographic Profile

The study sample comprises 154 small and medium-sized enterprises (SMEs) in the Ejigbo Local Government Area of Osun State, Nigeria. The demographics of the respondents, including gender, age, marital status, and religion, are presented, revealing that female respondents accounted for 53.9% of the total responses, while males represented 46.1%. On average, most respondents (63.7%) fall within the age brackets of 50 years and above and 41–50 years, with the least number falling within the 20–30 age range. The distribution of marital status shows that most respondents are married, indicating a sense of responsibility and commitment to their relationships. Regarding educational qualifications, the majority, 62.4%, hold a bachelor's degree, while 25.3% possess a diploma, and the remaining 12.3% have postgraduate degrees. Finally, responses concerning religion indicate that the majority, 62.4%, practice Islam, closely followed by Christians at 30.5%, while 7.1% are traditional worshippers.

4.2. Correlational Analysis

Table 1 presents the intercorrelations among the latent and observed variables, including the dimensions of total quality management, organizational learning, and strategic thinking. Notably, total quality management has a significant and positive influence on organizational learning, suggesting that effective quality management encourages learning. Additionally, strategic thinking demonstrates a strong dedication to nurturing learning.

Table 1. Correlation Analysis

Variables	OL	ST	TQM
Organizational learning	**1**	0.667	0.515
Strategic thinking (ST)		**1**	0.554
Total Quality Management (TQM)			**1**

Survey: Authors' Computation, 2024

4.3. Hypotheses Testing

4.3.1. Measurement and Structural Models

Both the measurement and structural models were evaluated using Andersen and Gerbing's (1988) two-stage partial least squares (PLS) approach. The measurement model checked convergent validity by examining the consistency among multiple items measuring the same concept. We analyzed factor loadings (λ), average variance extracted (AVE), and composite reliability (CR). Overall, the measurement model fit well and showed moderate predictive ability, with all items having outer loadings (λ) above 0.5, in line with the recommendations of Lin & Wang (2012) and Igbaria et al. (1995). For composite reliability and related metrics like Cronbach's alpha and rho_A, all constructs exceeded the 0.7 threshold, as suggested by Dijkstra and Henseler (2015). The item-construct structure of the measurement model is also convergent. Additionally, the AVE values are above 0.5, indicating sufficient convergent validity. These findings are summarized in Table 2.

Table 2. Measurement model

Latent Variables	Convergent validity	Internal consistency			
	Loadings	CA	rho_A	CR	AVE
Organizational Learning (OL)		**0.785**	**0.769**	**0.773**	**0.617**
OL1	0.816***				
OL2	0.796***				

OL3	0.837***				
OL4	0.855***				
OL5	0.844***				
OL6	0.825***				
OL7	0.827***				
OL8	0.841***				
OL9	0.844***				
OL10	0.8038***				
Total Quality Management	**(TQM)**	**0.829**	**0.830**	**0.838**	**0.774**
Leadership (LD)		0.715	0.721	0.717	0.503
LD1	0.816***				
LD2	0.796***				
LD3	0.837***				
LD4	0.855***				
LD5	0.844***				
LD6	0.805***				
People Management (PM)		0.772	0.731	0.728	0.554
PM1	0.816***				
PM2	0.796***				
PM3	0.837***				
PM4	0.855***				
PM5	0.844***				
PM6	0.829***				
PM7	0.841***				
Process Management (PRC)		0.812	0.819	0.824	0.505
PRC1	0.676***				
PRC2	0.731***				
PRC3	0.665***				
PRC4	0.664***				
PRC5	0.730***				
Customer Focus (CF)		0.718	0.727	0.801	0.542
CF1	0.737***				
CF2	0.705***				
CF3	0.728***				
CF4	0.748***				
CF5	0.679***				
CF6	0.697***				
Planning (PL)		0.852	0.853	0.887	0.517
PL1	0.655***				
PL2	0.716***				
PL3	0.711***				
PL4	0.724***				
PL5	0.743***				
PL6	0.772***				

Strategic Thinking (ST)		**0.860**	**0.917**	**0.866**	**0.525**
ST1	0.801***				
ST2	0.796***				
ST3	0.821***				
ST4	0.815***				
ST5	0.824***				
ST6	0.822***				
ST7	0.825***				
ST8	0.827***				
ST9	0.830***				

Source: Author's Computation, 2024

4.4. Discriminant Validity

Fornell-Larcker's (1981) criterion assessed discriminant validity using inter-construct correlations and square roots of AVEs, listed in Table 3. The measurement model is acceptable as each square root exceeds inter-construct correlations, confirming discriminant validity.

Table 3. Discriminant validity (Fornell-Larcker's criterion)

Variables	**OL**	**ST**	**TQM**
Organizational learning	**0.843**		
Strategic thinking (ST)	0.771	**0.711**	
Total Quality Management (TQM)	0.405	0.615	**0.828**

Source: Author's Computation, 2024

4.5. Structural Model

This study evaluated both measurement and structural models. The structural model tests causal relationships among constructs, generating path coefficients, R-squared, t-statistics, P-values, and f^2 via bootstrapping with 5,000 resamples. The analysis showed that total quality management (TQM) and strategic thinking are key factors affecting organizational learning. The first hypothesis indicated TQM positively relates to organizational learning (H1: $\beta = 0.251$, $t = 2.741$). The second hypothesis found that strategic thinking moderates the TQM-organizational learning link (H2: $\beta = 0.287$, $t = 2.382$). The estimation of the coefficients of determination (R2) in the hypotheses indicates that TQM and strategic thinking can explain and account for 51.6% of organizational learning, as the relevant coefficient of determination is 0.516 (which falls within the moderate threshold). Consequently, other factors account for 48.4% of the variations in organizational learning.

Table 4. Path analysis result

Relationship	Std. Beta	Std. Error	T-Value	p-value	F^2	R^2	Decision
H1: TQM → OL	0.251	0.042	2.741	0.000***	0.408	0.516	S
H2: ST* MOD_TQM → OL	0.287	0.026	2.382	0.001***	0.248	0.516	S

*Source: Author's Computation, 2024. Significant at P** < 0.01; P *** <0.05 S- supported*

4.6. Discussion of Findings

The findings of this study furnish compelling evidence that Total Quality Management (TQM) markedly enhances organizational learning (OL) within Nigerian SMEs, with strategic thinking (ST) further strengthening this association. These outcomes are congruent with existing literature underscoring TQM as a comprehensive management philosophy that propels continuous improvement, employee engagement, and knowledge sharing—elements which collectively underpin organizational learning (Dahlgaard et al., 2019; Akinola et al., 2022). By establishing a positive and significant correlation between TQM and OL, the study substantiates Cognitive Learning Theory, which posits that individuals and organizations attain most effective learning through active engagement in problem-solving and quality enhancement activities (Basten & Haamann, 2018).

Consistent with prior scholarly work, our results affirm that TQM practices—such as leadership commitment, people management, process control, and customer orientation—contribute to the development of learning organizations capable of adapting to environmental changes and fostering innovation (Lam et al., 2011; Chang & Sun, 2007). In the context of Nigerian SMEs, where firms often operate under resource limitations, TQM offers a structured framework that not only improves efficiency but also cultivates a culture of knowledge acquisition and application (Olaleye et al., 2021). This observation aligns with the findings of Cui, Lim and Song (2022), who demonstrated that leadership-driven TQM enhances innovative learning in Chinese SMEs.

Discussions and research on total quality management (TQM), strategic thinking (ST), and organizational learning (OL)—concepts of considerable relevance since antiquity—remain profoundly pertinent today. Our objective as social scientists was to elucidate how these foundational concepts of modern corporate life interact and to apply our theoretical and practical insights accordingly. The researcher recognizes that, within this framework, strategic thinking serves as a pivotal antecedent to organizational learning, with TQM playing a critical role in both organizational and individual development. Subsequent examination revealed that TQM and strategic thinking significantly influence organizational learning. Supporting Hypothesis 1

(that TQM exerts a significant effect on learning) suggests that the adoption of TQM positively impacts organizational learning. The findings indicate that TQM is an essential precursor to organizational learning, aligning with Cognitive Learning Theory, which advocates that effective learning occurs through active involvement in problem identification and resolution (Basten & Haamann, 2018; Tucker, Edmondson & Spear, 2002). TQM initiatives enhance organizational learning, leading to improved outcomes, heightened innovation, and increased adaptability to environmental shifts (Dahlgaard, Reyes, Chen & Dahlgaard-Park, 2019).

Furthermore, the study demonstrates that TQM and ST together explain 51.6% of the variance in organizational learning, indicating substantial explanatory power relative to comparable studies conducted in emerging markets (Hung et al., 2011; Martinez-Costa & Jimenez-Jimenez, 2009). The remaining 48.4% underscores the influence of additional factors—such as organizational culture, leadership style, and digital transformation—in shaping learning outcomes. This observation corroborates recent research by Do et al. (2022), emphasizing the importance of organizational resilience and resource-based initiatives, as well as that of Hussein et al. (2014), who accentuate the role of tacit knowledge utilization in effective learning.

The success of TQM is predicated on its capacity to empower organizations to learn, innovate, and address quality issues more effectively. In this regard, establishing a learning organization necessitates the consistent implementation of high-quality practices. Extending prior research that highlights the influence of strategic thinking on relationships such as leadership style and decision-making, talent management and core competencies, entrepreneurial orientation and SME performance, and organizational learning and TQM, it is logical to posit that strategic thinking also moderates the TQM-organizational learning nexus. Supporting Hypothesis 2 (that strategic thinking significantly moderates the TQM–OL relationship) and presenting compelling evidence, our findings confirm that both TQM and strategic thinking substantially augment organizational learning.

Significantly, our analysis reveals that strategic thinking moderates the TQM–OL relationship, indicating that SMEs exhibiting higher levels of strategic thinking are better equipped to translate TQM practices into learning outcomes. This perspective aligns with Dixit et al. (2021), who characterize strategic thinking as a synthetic and anticipatory process enabling organizations to align internal resources with external opportunities. Our findings extend this understanding by empirically demonstrating that ST not only influences performance but also enhances the learning dividends derived from TQM. This supports Jalali and Golmohammadi's (2022) argument that organizations with robust strategic thinking capabilities are more innovative and better poised to leverage quality management systems for sustainable long-term advantage.

Moreover, the moderating role of strategic thinking affirms the view expressed by Karami and Gorzynski (2022), who contend that strategic thinking amalgamates intuition, creativity, and rational analysis to generate adaptive responses in dynamic environments. In SMEs, where swift responses to market fluctuations are often critical for survival, managers engaged in strategic thinking are more inclined to transform quality management routines into actionable learning and innovation strategies. This finding is further supported by Igashi, Sani and Wuen (2022), who observed that SMEs integrating strategic foresight with learning processes achieve superior performance and competitive advantage.

Collectively, these findings underscore that, while TQM provides the structural basis for learning, strategic thinking acts as the catalyst that enables SMEs to realize the benefits of quality-oriented practices fully. The synergy of TQM and ST endows SMEs with a dual advantage: operational efficiency and cognitive flexibility. This is particularly vital in developing economies such as Nigeria, where SMEs frequently contend with volatile business environments and resource constraints. By embracing both quality management and strategic foresight, SMEs can promote innovation, enhance competitiveness, and bolster resilience against external shocks.

5. Conclusion and Recommendations

5.1. Implications of the Study

This study provides both theoretical and practical contributions to the understanding of how Total Quality Management (TQM) and strategic thinking influence organizational learning (OL) in Nigerian SMEs. The study adds to the literature by confirming that Total Quality Management (TQM) significantly boosts organizational learning (OL). This supports Cognitive Learning Theory, which highlights problem-solving and active participation as key learning mechanisms. By positioning strategic thinking as a moderator, the study builds on existing models that have mostly viewed TQM and OL separately.

The findings strengthen the idea of TQM as a driver of organizational learning in SMEs, broadening the reach of organizational learning theories, especially in resource-limited settings like developing economies. By empirically confirming the moderating role of strategic thinking, the study offers a detailed view that connects cognitive skills with organizational behavior and strategic management research. This expands the discussion on how contextual factors affect the TQM–OL relationship. Our findings suggest that firms can help instructional managers employ critical thinking to address learning challenges and enhance future teaching outcomes by adopting a strategic mindset.

For SME managers, the findings show that TQM practices are not just operational tools but strategic enablers of learning, adaptability, and innovation. This means SMEs should incorporate TQM practices such as leadership commitment, people management, and customer focus into their daily operations. The moderating role of strategic thinking suggests that entrepreneurs and managers need to develop critical and forward-looking thinking skills to realize the learning potential of TQM fully. Therefore, training programs combining quality management techniques and strategic thinking development could be essential for boosting SME competitiveness. Policymakers and development agencies in Nigeria can use these insights to create capacity-building initiatives that integrate TQM frameworks with leadership and strategic thinking training, thereby improving SMEs' sustainability, competitiveness, and resilience.

5.2. Limitations and Future Research Directions

The study used a cross-sectional design, which limits the ability to determine causality between TQM, strategic thinking, and organizational learning. Future research should adopt longitudinal designs to provide more substantial evidence of cause-and-effect relationships over time between these variables. This approach would enable scholars to track how TQM practices develop and how they support sustained learning and adaptability within SMEs. Additionally, relying on a convenience sampling method restricts the generalizability of the findings. Although 154 SMEs participated, the sample might not fully represent the diversity of SMEs across Nigeria. The study focused exclusively on SMEs in the Ejigbo Local Government Area of Osun State, which may limit the generalizability of the results when applied to other regions or countries with different cultural, institutional, and market environments. Therefore, expanding the scope of the study beyond Ejigbo to include SMEs across Nigeria—or conducting cross-country comparisons in other developing and emerging economies—would improve external validity. Such research could also explore how institutional, cultural, and market differences influence the relationship between TQM and organizational learning.

Relying on self-reported survey data might introduce response bias. Since the study used questionnaires for small and medium-sized firms (SMEs) listed in the SMEDAN database, the sample lacked variety, and participants might have exaggerated their TQM adoption or organizational learning practices. Future studies should expand to a broader geographic area to produce more comprehensive and detailed findings. Given the diversity of SMEs across sectors like manufacturing, services, and agribusiness, future research could focus on sector-specific analyses. This would help determine whether the strength of the TQM–OL relationship varies by industry, especially between technology-driven and traditional sectors. Moreover, with the rise of digitalization, future research should examine how digital tools,

knowledge management systems, and Industry 4.0 practices impact the link between TQM, strategic thinking, and organizational learning. This could position TQM within a broader digital learning ecosystem for SMEs.

The current study only considered TQM and strategic thinking as predictors of organizational learning, neglecting other important factors such as organizational culture, leadership style, digital transformation, or knowledge-sharing networks. Although a moderating role for strategic thinking was identified, the study did not investigate possible mediating mechanisms—such as innovation capacity or knowledge management systems—that could further explain how TQM leads to learning outcomes. Finally, while this research employed a quantitative approach, incorporating mixed-methods strategies—such as case studies, interviews, or focus groups with SME owners and managers—would add qualitative insights to complement the statistical analysis. This would reveal contextual factors and lived experiences that influence or hinder organizational learning.

5.3. Conclusion

This study explored how Total Quality Management (TQM) affects organizational learning (OL) among SMEs in Ejigbo Local Government Area, Osun State, Nigeria, and how strategic thinking influences this relationship. The results indicate that TQM considerably enhances OL, and strategic thinking amplifies this effect. Overall, the findings emphasize the value of adopting quality management practices and fostering a culture of critical, forward-looking thinking within SMEs. The results demonstrate how TQM can help SMEs address work-related learning gaps. Managers should recognize TQM's role in promoting learning and ensure its adoption in SMEs. To enhance learning, SMEs should encourage staff to adopt TQM more actively. Furthermore, implementing TQM and strategic thinking improves SMEs' problem-solving, goal achievement, competitiveness, productivity, and cost-cutting efforts. By emphasizing TQM as both an operational and strategic tool, the study contributes to theory and practice, especially for resource-limited SMEs in developing economies. Integrating strategic thinking into TQM offers a strong approach to boosting adaptability, innovation, and competitiveness. While the study provides valuable insights, it also notes methodological and contextual limitations and suggests directions for future research.

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