Contemporary Issues in Social Sciences and Management Practices (CISSMP)
ISSN: 2959-1023
Volume 2, Issue 2, June, 2023, Pages 81-91
Journal Homepage:
https://www.cissmp.com/index.php/CISSMP

Factors Affecting the Implementation of Quality Management Practices and their Related Issues in Construction and Manufacturing Industries of Pakistan

Asif Muhammad Waqar Zafar[1], Hiba Arshad[2], Muhammad Arslan Siddique[3]

[1] National Logistic Cell Quetta, Pakistan
[2]Lab Engineer Comsats University Islamabad (Sahiwal Campus), Pakistan
3Research scholar, Superior University Lahore, Pakistan

ARTICLE INFO

Article History:
Received: March 31, 2023
Revised: April 11, 2023
Accepted: May 18, 2023
Available Online: June 31, 2023

Keywords: Quality Management practices, Quality data and reporting, Management Commitment and organizational capabilities

Funding:
This research received no specificgrant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The objective of this study is to explore the factors influencing the implementation of quality management practices and their associated challenges in the construction and manufacturing industries of Pakistan. Six factors were examined to assess their impact on organizational capabilities and effectiveness within these industries. The study focused on engineers as the sample subjects, specifically those working in national or multinational companies in either the construction or manufacturing sectors. The data collection process was conducted rigorously and without bias, using a structured questionnaire based on a five-point Likert scale. Statistical software SPSS was used for data analysis, including investigating causal relationships between variables and measuring data reliability and validity. This study employed a quantitative research approach in a non-contrived environment, adopting a cross-sectional design. The findings of the study highlight a strong positive relationship between factors such as quality data and reporting, management commitment, role of quality department, training and education, employee involvement, and organizational capabilities and effectiveness. However, the relationship between supplier partnership and organizational capabilities and effectiveness was found to be weak.

Corresponding Author's Email: waqar25@hotmail.com

Citation: Muhammad Waqar Zafar, Hiba Arshad, & Siddique, M. A. (2023). Factors Affecting in The Implementation of Quality Management Practices and Their Related Issues in Construction and Manufacturing Industries of Pakistan. Contemporary Issues in Social Sciences and Management Practices (CISSMP), 2(2), 81-91.

Introduction

The construction industry in Pakistan faces significant challenges, including low profitability with only a 4% contribution to the GDP despite employing over 7% of the workforce. The industry is plagued by issues such as cost overruns, poor quality, and time delays, often leading

to disputes and litigation. To address these challenges, there is a need for a cultural and behavioral shift among all stakeholders, including top-level management and project staff (Osazevbaru & Oyibo, 2023). Total Quality Management (TQM) places significant emphasis on the active participation of all essential stakeholders in the process of quality control and assurance. Regrettably, the construction industry in Pakistan has yet to fully adopt Total Quality Management (TQM) principles in its day-to-day operations (Khadim et al., 2023). The construction industry in the twenty-first century has had a notable influence, leading to a dearth of skilled labor on one hand and a scarcity of resources on the other. The utilization of Total Quality Management (TQM) is imperative in large-scale endeavors in order to maximize the efficiency of resources and minimize costs. Consequently, the significance of Continuous Quality Improvement (CQI) has been recognized in the context of large-scale projects in Pakistan. However, the implementation of Total Quality Management (TQM) may be less feasible for medium and small projects due to a lack of emphasis on quality management (Hussain et al., 2018).

In numerous construction projects, a dearth of specialized personnel assigned to quality assurance and control has resulted in the industry's neglect of quality. Many contractors tend to prioritize cost-saving strategies without fully comprehending the expenses linked to substandard quality and the subsequent consequences they encounter as a result of deficient and insufficient work. By fostering knowledge and understanding of Total Quality Management (TQM) within the contractor community, we can facilitate their recognition of the advantages associated with proficient quality management practices. The objective of this study was to assess the tools and techniques currently utilized by the construction industry in Pakistan with regards to quality management (Iqbal et al., 2023).

Tetik et al. (2019) argue that construction projects are characterized by fragmented structures and loose coupling among the various actors involved. The present study proposes the implementation of Digital Design and Manufacturing (DDM) as a means to enhance construction performance by improving coordination and reducing uncertainty. This is achieved through the adoption of a behavior-based project management approach. Operational models are employed to delineate the various tasks encompassed within a given context, while concurrently exploring alternative pathways. This is achieved through the examination of case studies that pertain to partial implementations.

The implementation of quality management practices is of paramount importance in the efficient management of intricate and strategic operations. Nevertheless, the persistent challenge in the construction and assembly industries has been the attainment of elevated levels of quality. Annually, substantial quantities of time, financial resources, and both human and material assets are squandered as a result of inadequate or nonexistent quality management systems, with a particular focus on the construction sector. The recognition of the complexity associated with quality management in the construction industry is crucial, as it encompasses a diverse array of projects, varying in scale, and involves multiple occupations, professions, and organizations. In Palestine, construction projects have the potential to contribute to the development of a sustainable and self-sufficient economy, provided there is a supportive political environment. However,

following the Oslo Accords, there was a period during which the Palestinian authority was constrained, hindering the establishment of a stable economy, which has had a direct impact on the construction sector.

1.1 Problem Statement

The issue lies in the fact that the majority of assessments conducted in Pakistan, around 90%, have not focused on the implementation of quality management models for evaluating the country's industrial development and competitiveness. Existing assessments have primarily focused on the use of financial models for overall performance evaluation. However, relying solely on financial models for assessing the reality of a situation is no longer sufficient. There is a need to integrate quality management models with financial models to gain a comprehensive understanding of the overall effectiveness of construction and manufacturing firms. To address this gap, fieldwork was conducted to examine the effectiveness and adoption of quality management practices within organizations.

1.2 Research Objectives

- To know the effect of significant worth the board practices on improvement organizations.
- To know the effect of significant worth the board practices on amassing adventures.

2.0 Literature Review

The study conducted by Coelho et al. (2022) aimed to investigate the correlation between the implementation of total quality management (TQM) practices and the performance of logistics within the context of construction innovation. The researchers discovered that Total Quality Management (TQM) had a substantial impact on the performance of logistics, specifically in relation to increased dedication to top-level management, prioritization of customer needs, optimization of supplier arrangements, enhanced process control, and ongoing improvement efforts. In their study, Tetik et al. (2019) examined the relationship between organizational culture and total quality management within the context of the dynamic construction industry. Factor analysis was employed to ascertain the dominant cultural characteristic.

Lai et al. (2016) highlighted the importance of patent assembly in overcoming challenges and fostering innovation in the construction industry. They emphasized that organizational culture plays a crucial role in this process, although some design firms face limitations in cultivating an innovative culture. Mengistu and Mahesh (2019) discussed the impact of enactment levels in the construction industry and the need for performance measurement to gauge the effectiveness of practices and implement improvement interventions. He et al. (2022) focused on the stabilization of the construction industry, emphasizing the importance of assessing contestants' perceptions of industry, enterprise, and specific project levels to enhance confidence and project performance. In summary, these studies highlight various aspects of quality management, organizational culture, innovation, performance measurement, and confidence-building within the construction industry.

Role of Quality department in Organizational Capabilities

Considering and examining the role of the quality department raises questions about its

purpose. While we may assume that its purpose is to ensure customer satisfaction, promote product quality, or assist in manufacturing, these reasons alone do not support the organization effectively. The primary purpose of the quality department is to generate profits by reducing inefficiencies, operational errors, and product defects. It should also proactively improve operational capacity and capability through the implementation of new processes, tools, or skills. Unfortunately, many quality departments are constrained by being reactive rather than proactive. They are often tasked with conducting surveys, addressing customer complaints, or fulfilling similar requests. As a result, quality departments are seen as a burdensome cost rather than adding tangible value to the organization (Rehman et al., 2019).

To redefine the role of the quality department, we must strive for excellence in every department, helping them define and achieve excellence in a way that contributes to the organization's overall growth. This shift requires moving away from solely focusing on cost reduction and instead developing new skills and capabilities through reduced control and testing (Mahmood et al., 2015). The primary objective of the quality department should be to support initiatives that drive excellence in core processes and enable sustainable growth. This involves identifying practices such as quality philosophy, setting department-specific goals, providing effective methods and documentation, monitoring performance against targets, and developing problem-solving capabilities to evaluate corporate performance in achieving business objectives. These tasks are challenging, but quality professionals must be diligent and willing to work hard. Ultimately, the purpose of the quality department extends beyond cost reduction and testing. It is about striving for excellence in core processes and supporting initiatives for continued progress. By emphasizing this purpose, the quality department can redefine its role, ensuring its contribution to overall organizational success (Bhatt, 2000).

Training and Education in Construction and Manufacturing Industries

Training and development, commonly referred to as human resource development (HRD), is an academic discipline that centers on augmenting the effectiveness and productivity of individuals and collectives in organizational contexts. Human resource development activities are undertaken with the objective of enhancing and cultivating the skills and abilities of individuals in order to maintain competitiveness within the business market. The primary objective of training is to provide employees with the essential skills required for their present positions, whereas development entails preparing employees for prospective roles and increased responsibilities (Shelbourn et al., 2001).

The goal of training and development is to create learning organizations that enable employees to effectively perform their jobs, gain a competitive edge, and pursue personal growth. The measurable outcome of effective training and development is improved organizational growth. It involves the transfer of knowledge and information to managers, who then translate it into training programs. Organizations that approach training and development from this perspective are more likely to develop high-performing individuals who not only progress but also remain with the organization long enough to excel in their roles and facilitate the growth of others (Goulding

et al., 2012).

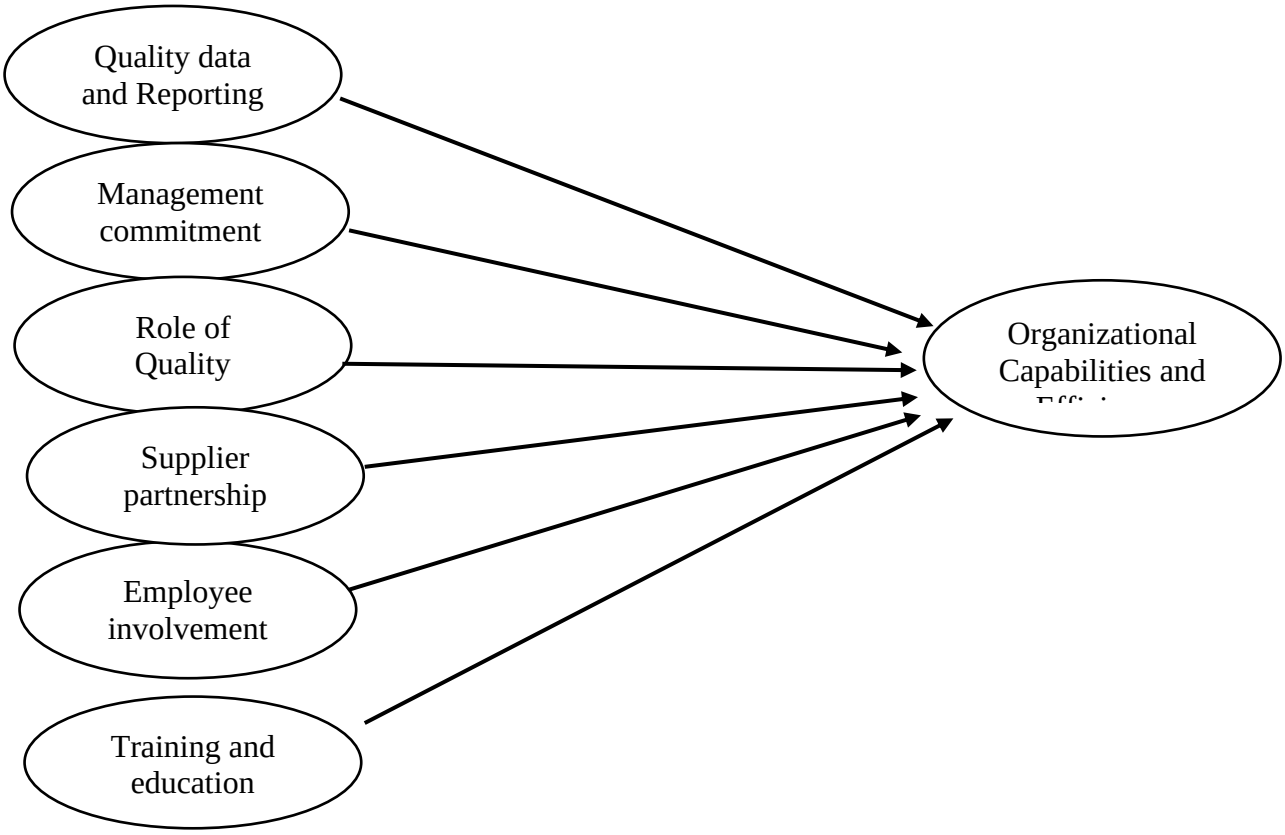
However, the concept of training is often limited to acquiring job-specific skills, classrooms, and PowerPoint presentations. To truly promote holistic personal development, it is important to challenge traditional views and broaden the scope of training. Changing corporate mindsets and attitudes towards training takes time, as many organizations view it as solely focused on job skills. Yet, as we envision and embrace a more progressive approach to developing individuals, the objectivity of training and development and its continuous learning process becomes increasingly vital, aligning with societal needs and emphasizing the importance of organizational learning (Akintoye et al., 2000).

The primary objective of the quality department is associated with supporting initiatives to strive for excellence in core processes and facilitate ongoing growth. This involves identifying activities such as quality thinking, setting objectives in each department to define excellence, implementing effective methods and documentation, monitoring performance against targets, building problem-solving capabilities, and evaluating corporate performance in achieving business objectives. These tasks are challenging, but quality professionals should be resourceful and prepared to adapt. For the quality department, this means shifting focus away from merely meeting requirements and testing, and instead, embracing a commitment to profitability, reducing the cost of quality through efficient evaluation, and cultivating new capabilities. Ultimately, the main purpose of the quality division is to pursue excellence in fundamental processes and support initiatives for sustained growth. This perspective will lead to the identification of practices within the quality department that promote quality throughout the organization (Kumar et al., 1999).

Employees Involvement and Firm Capabilities

From an expert or scholarly standpoint, employee involvement can be referred to as various concepts such as responsibility, voice, engagement, democracy, and similar terms. The topic of employee "voice" has garnered significant attention over an extended period, irrespective of the specific terminology employed. The recognition of the importance of direct involvement in business and state affairs was evident even among the ancient Romans. Contemporary organizations continue to acknowledge the significance of fostering employee engagement across all hierarchical levels and within diverse work contexts (Andries & Czarnitzki, 2014). The concept of employee involvement refers to the active participation and engagement of employees within an organization. It entails empowering employees to contribute their ideas, opinions, and skills towards decision-making processes and problem-solving activities. This academic inquiry seeks to explore the potential benefits that organizations can derive from fostering employee involvement. Employee involvement refers to the active engagement of employees in supporting an organization's objectives through the provision of their own ideas, skills, and efforts in problem-solving and decision-making endeavors. According to the provided definition, involvement encompasses various aspects such as employee engagement, direct communication, and upward critical thinking. This article will primarily concentrate on the final two categories, as the main emphasis lies in attaining outcomes, employing tools, and executing strategies (Uhlaner et al., 2013).

Research Model



Independent Variables **Dependent Variable**

.

3.0 Methodology

Primary data collection has used in this study using a five-point Likert scale from 1 to 5 (1 for strongly disagree 2 Disagree 3 Neutral 4 Agree and 5 strongly Agree). This study is cross sectional because the data is collected just in one sort. And this study is based on quantitative based on a first handed information. The focus of this study is on engineers, specifically those working in national or multinational companies in the construction or manufacturing industries. The selection of respondents was limited to engineers working at different levels, including operational roles and project-based positions in the construction sector. The data collection process was conducted diligently and without bias. The total population of respondents consisted of 250 engineers employed in major cities across Pakistan, aiming to ensure the study's findings are more generalizable and applicable to the prevailing issues within these organizations. Primary data was collected through structured questionnaires administered in various renowned organizations with strong operational frameworks in Pakistan.

In this study, the data collection method utilized convenience sampling, which is a non-probability sampling technique. The study's target population encompassed individuals employed in the construction and manufacturing sectors across four prominent cities in Pakistan, namely Lahore, Multan, Karachi, and Rawalpindi. The objective of this approach was to improve the applicability of the study's findings. Data collection was conducted using a structured questionnaire, which was distributed to a total of 250 respondents. The completed questionnaires were then collected from the participants. The primary emphasis of the data collection process was on two prominent industries: Mughal Plastics, a well-known national manufacturing company with a specialization in plastics, and International Polymer Pvt Ltd, another reputable entity operating within the manufacturing sector. Data was gathered from various construction companies, including Izhar Group of Companies, which is widely recognized in the construction sector, as well as other well-known national construction companies like Multan Prime Construction and Crescent Construction Companies.

The primary aim of this study was to ascertain the fundamental obstacles encountered in the implementation of quality management practices. within these sectors, which was achieved through the administration of the questionnaire. This study utilized primary data, and a five-point Likert scale was applied for data collection from the target respondents. While all aspects of research are important, the collection of data from the precise target respondents holds significant value. SPSS version 20 research software will be used in the data analysis procedure for the purpose of conducting various test like reliability regression and other statistical tools.

Results

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square
	0.705	0.655	0.546

Dependent Variable: Organizational Capabilities and Effectiveness

The adjusted R-squared value incorporates the presence of predictors or independent variables in the model and subsequently modifies the R-squared value. The aforementioned approach offers a more cautious evaluation of the model's suitability in representing the data. The table displays an adjusted R-squared value of 0.546, indicating that around 54.6% of the variability in the dependent variable can be accounted for by the independent variables, while considering the number of predictors.

Table 4.2 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	29.018	3.409		8.511	.000
Management Commitment factors	.094	.042	-.131	-2.267	.000
Role of Quality Department	.124	.067	-.106	-1.836	.000
Training and Education	.414	.051	.453	8.189	.000

Dependent Variable: Organizational Capabilities and Effectiveness

The study examined the impact of various factors on organizational capabilities and effectiveness. The findings revealed significant relationships between the variables. Specifically, management commitment was found to have a significant positive effect on organizational capabilities and effectiveness (P= .000, β .094), indicating a strong association. Similarly, the role of the quality department also had a significant positive effect (P= .000, β .124) on organizational capabilities and effectiveness, further emphasizing its importance.

Moreover, the study highlighted the substantial impact of training and education on organizational capabilities and effectiveness (P= .000, β .414). This factor emerged as a significant driver, indicating that it plays a major role in shaping the dependent variable. The magnitude of the effect was notably higher compared to the other factors studied.

Overall, the results emphasize the significance of these factors in enhancing organizational capabilities and effectiveness. Management commitment, the role of the quality department, and training and education all contribute to improving the organization's performance and capabilities. However, it is worth noting that training and education stood out as a particularly influential factor in this regard.

Table 5.3 Model Summary

Model	R	R Square	Adjusted R Square
	.223[a]	.050	.028

Dependent Variable: Organizational Capabilities and Effectiveness

In this symbolic summary the value of R Square is .050 that’s also a good effect size.

Table 5.4 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	41.911	3.266		12.834	.000
Employee Involvement	.266	.104	.160	2.557	.000

Supplier Partnership	. 008	.087	-.006	-.096	.000
Quality data and Reporting	.184	.074	-.157	-2.483	.004

Dependent Variable: Organizational Capabilities and Effectiveness

In the effect of employee involvement on the dependent variable organizational capabilities and effectiveness the P value is .000 and β value is .266 that indications significant liaison. And in the effect of supplier partnership the P value is .000 that shows the significant relationship and the β value is .008. That shows the least effect but the effect is in it. In the effect of Quality data and reporting (P=.004, β=.184) that shows the significant relationship.

Conclusion

The findings of the study demonstrate a direct relationship between quality management practices and organizational capabilities and effectiveness. Specifically, in manufacturing industries, a strong quality department has a significant positive impact on organizational outcomes. Supplier partnership is identified as a crucial factor in enhancing organizational capabilities and effectiveness, particularly in manufacturing industries. On the other hand, in the construction sector, the training and education department plays a major role in improving organizational effectiveness by equipping employees with updated skills and knowledge to compete and provide high-quality services.

Nevertheless, the implementation of effective quality management practices is hindered by the resistance to change exhibited by top-level management. This study highlights the significance of fostering interdepartmental collaboration and incorporating engineers from various hierarchical positions within the organization to promote innovation and enhance competitiveness. It is worth mentioning that the five essential elements in quality management practices, namely quality data and reporting, management commitment, the role of the quality department, supplier partnership, and employee involvement, collectively contribute to the enhancement of organizational capabilities and effectiveness.

In conclusion, the study focuses on identifying the major challenges faced by the construction and manufacturing industries, with a particular emphasis on supplier partnership in manufacturing and training and education in construction. Supplier partnership is crucial for smooth organizational effectiveness and quality outcomes in manufacturing, while the training and education department plays a significant role in enhancing quality standards and resource utilization in construction. Overall, the study underscores the importance of effective quality management practices and their impact on organizational capabilities and effectiveness.

The primary objective of this study is to examine the principal obstacles encountered by the construction and manufacturing sectors. One of the primary challenges encountered in the construction industry pertains to the insufficient prioritization of training and education. The resolution of this challenge can be undertaken by the training and education department, which bears the obligation of imparting contemporary knowledge and skills to the workforce. By discharging this obligation, the department has the potential to make a valuable contribution towards surmounting the obstacles and enhancing the efficacy of the construction sector. The

primary obstacle encountered within the manufacturing sector pertains to the establishment of efficient supplier partnerships. The department responsible for supplier partnerships plays a pivotal role in facilitating efficient operations and upholding a robust supply chain. The research emphasizes the correlation between supplier partnership and organizational capabilities and effectiveness within the manufacturing industry.

Furthermore, the present study provides evidence of the robust associations among management commitment factors, the role of the quality department, and other pertinent factors. These factors, including employee involvement and quality data and reporting, significantly contribute to the outcomes of organizational capabilities and effectiveness. They are integral to the smooth flow of operations and the successful completion of processes from raw material procurement to the production of finalized goods. Overall, the findings of my study underscore the importance of these factors working together in a suitable and efficient manner to enhance the organizational capabilities and effectiveness of both the manufacturing and construction industries.

Muhammad Waqar Zafar: Problem Identification and Model Devolpement
Hiba Arshad: Literature search, Methodology
Muhammad Arslan Siddique: Drafting and data analysis, proofreading and editing

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t this article's research, authorship, and/or publication.

References

Akintoye, A., McIntosh, G., & Fitzgerald, E. (2000). A survey of supply chain collaboration and management in the UK construction industry. *European journal of purchasing & supply management*, *6*(3-4), 159-168.

Andries, P., & Czarnitzki, D. (2014). Small firm innovation performance and employee involvement. *Small Business Economics*, *43*, 21-38.

Bhatt, G. D. (2000). A resource-based perspective of developing organizational capabilities for business transformation. *Knowledge and process management*, *7*(2), 119-129.

Coelho, C., Mojtahedi, M., Kabirifar, K., & Yazdani, M. (2022). Influence of Organisational Culture on Total Quality Management Implementation in the Australian Construction Industry. *Buildings*, *12*(4), 496.

Goulding, J., Nadim, W., Petridis, P., & Alshawi, M. (2012). Construction industry offsite production: A virtual reality interactive training environment prototype. *Advanced engineering informatics*, *26*(1), 103-116.

He, Q., Tian, Z., & Wang, T. (2022). Performance measurement methods in megaprojects: An analytical review. *International Journal of Project Management*, *40*(6), 634-645.

Hussain, S., Fangwei, Z., Siddiqi, A. F., Ali, Z., & Shabbir, M. S. (2018). Structural equation model for evaluating factors affecting quality of social infrastructure projects. *Sustainability*, *10*(5), 1415.

Iqbal, M., Ma, J., Ahmad, N., Ullah, Z., & Hassan, A. (2023). Energy-Efficient supply chains in construction industry: An analysis of critical success factors using ISM-MICMAC approach. *International Journal of Green Energy*, *20*(3), 265-283.

Khadim, N., Thaheem, M. J., Ullah, F., & Mahmood, M. N. (2023). Quantifying the cost of quality in construction projects: An insight into the base of the iceberg. *Quality & Quantity*, 1-27.

Kumar, V., Kumar, U., & Persaud, A. (1999). Building technological capability through importing technology: the case of Indonesian manufacturing industry. *The Journal of Technology Transfer*, *24*(1), 81-96.

Lai, K. S., Yusof, N. A., & Kamal, E. M. (2016). Organizational culture of the architectural firm: a case in a developing country. *International Journal of Construction Management*, *16*(3), 197-208.

Mahmood, S., Qadeer, F., & Ahmed, A. (2015). The role of organizational learning in understanding relationship between total quality management and organizational performance. *Pakistan Journal of Commerce and Social Sciences*, *9*(1), 282-302.

Mengistu, D. G., & Mahesh, G. (2019). Construction education in Ethiopia: Knowledge and skills level attained and effectiveness of internship program. *Higher Education, Skills and Work-Based Learning*, *9*(3), 510-524.

Osazevbaru, H. O., & Oyibo, F. (2023). Conceptualising Total Quality Management as a predictor of performance in Nigerian microfinance institutions. *European Journal of Business and Management Research*, *8*(1), 86-92.

Rehman, S.-u., Mohamed, R., & Ayoup, H. (2019). The mediating role of organizational capabilities between organizational performance and its determinants. *Journal of Global Entrepreneurship Research*, *9*(1), 1-23.

Shelbourn, M., Aouad, G., & Hoxley, M. (2001). Multimedia in construction education: new dimensions. *Automation in construction*, *10*(2), 265-274.

Tetik, M., Peltokorpi, A., Seppänen, O., & Holmström, J. (2019). Direct digital construction: Technology-based operations management practice for continuous improvement of construction industry performance. *Automation in construction*, *107*, 102910.

Uhlaner, L. M., van Stel, A., Duplat, V., & Zhou, H. (2013). Disentangling the effects of organizational capabilities, innovation and firm size on SME sales growth. *Small Business Economics*, *41*, 581-607.