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Total Quality Management (TQM) Practice & Implementation- Analysis of the Nigerian Construction Industry

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Abstract

The study aims to analyse the Total Quality Management (TQM) practice for construction projects in Nigeria. The study also assesses a wide aspect of leadership, team performance of construction projects, and people management in the construction aspects of Nigeria. The essay also analyses the challenges of leadership in the implementation of TQM practice. The study shows that ineffective project management causes issues in TQM implementation. Furthermore, human issues are also impacting TQM implementation in Nigeria construction. The study focuses on the positive impact of leadership and team performance and also discusses how negative team performance can decrease the TQM implementation practice. The study concludes the need for implementation of effective management for TQM practice in Nigeria.

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1. Introduction of TQM

1.1 Background of TQM

Reducing mistakes while maintaining consistently high-quality outputs is the core purpose of quality management, according to ISO8402. Scholars describe total quality management as a method for continually improving goods that helps organizations compete on a global scale (Jimoh et al., 2018). According to the research, the high expense of development is making economic growth even slower. Inflation, ineffective markets, subpar supplies and services, and prolonged project delays are long-standing problems in the construction industry across the world (Chakraborty, Mutingi and Vashishth, 2019). The next section of this research looks at how TQM has helped reduce building collapses in Nigeria.

1.2 Aim of Study

The study's overarching goal is to learn more about TQM implementation in Nigeria's building industry. Another objective of the research is to determine the factors that impact total quality management (TQM) in Nigeria. The research also intends to look at important leadership difficulties and model concepts connected to TQM in Nigeria.

1.3 Objectives of Study

The purpose of this research is threefold:

- To examine TQM in its current form in Nigeria
- To identify the factors that influence TQM
- To identify problems associated with TQM in the building sector.

2. Part 1: Issues in Managing People- Construction Projects

2.1 Issues in People Management

According to scholar, one major issue is that almost no one in Nigeria's construction business uses TQM. Finally, the research showed that Nigeria's construction industry isn't up to standard in terms of the quality of their projects compared to other nations (van Kemenade and Hardjono, 2019). If team members are unable to communicate effectively with each other, team dynamics, production, and performance might plummet. When team members are unable to articulate their thoughts

clearly, issues like these tend to develop. Scholar stated that there is a disconnect between senior management and the people doing the actual work, which leads to issues with personnel management (Ali et al., 2020). Another cause is a lack of interest in and understanding of how to properly maintain machinery, tools, and equipment.

It would seem that competency assessments are excellent indicators of managerial performance, based on promotions, results of 360-degree or supervisor reviews, and other sources. Not all individual achievements are representative of team or company achievements (Al- Saffar and Obeidat, 2020). Therefore, the notion that competency frameworks increase organizational performance is not supported by the facts provided above. One research that identified an exception to this trend was Russell's (2001), which connected the abilities used to choose general managers to the performance of the units they were promoted to lead. Researchers stated that problems with project management, top-down indifference to quality, weak relationships between managers at different levels of the company, and inadequate training and re-training of workers to improve processes are critical issues in people management (Esangbedo and Ealefoh, 2021).

2.2 Leadership Behavior-Construction Industry in Nigeria

Many things need to align for a building project to be finished. Over the course of a certain amount of time, many parent organizations work together on a common project. When a project is over, in a project-based organization, things start to slow down. Management and leadership styles in the construction industry are shaped by the project-based nature of the sector and the frequent usage of temporary multi-organizations. According to researcher, given that leadership is inherently fluid and subject to change, project managers should modify their approaches accordingly (Oke and Aghimien, 2018). According to researcher, a certain kind of leadership could be required for complicated decision-making and massive capital investment projects. Researcher stated that factors like project length and workload intensity dictate the best leadership style (Omoraka, 2020).

2.3 Key Role of Leaders in Team Management

A direct outcome of the exponential rise of technology during the previous century, according to many researchers there is the emergence of very complex architectural projects. Proactive management is crucial for initiatives such as this. Management control strategies rely on cost control, a component of financial control, to keep operations running smoothly. Many indigenous contractors in Nigeria fail after their promoters leave because they were able to bring in competent

management teams and because some of them saw their businesses as stepping stones to financial independence. According to one researcher construction businesses are required to use efficient tactics for cost management if they want to remain in business. Price reductions are critical for eradicating wasteful use of resources. In order to keep project costs within their allotted limits, contractors must have a reliable cost-control strategy in place after a project leaves the contract phase.

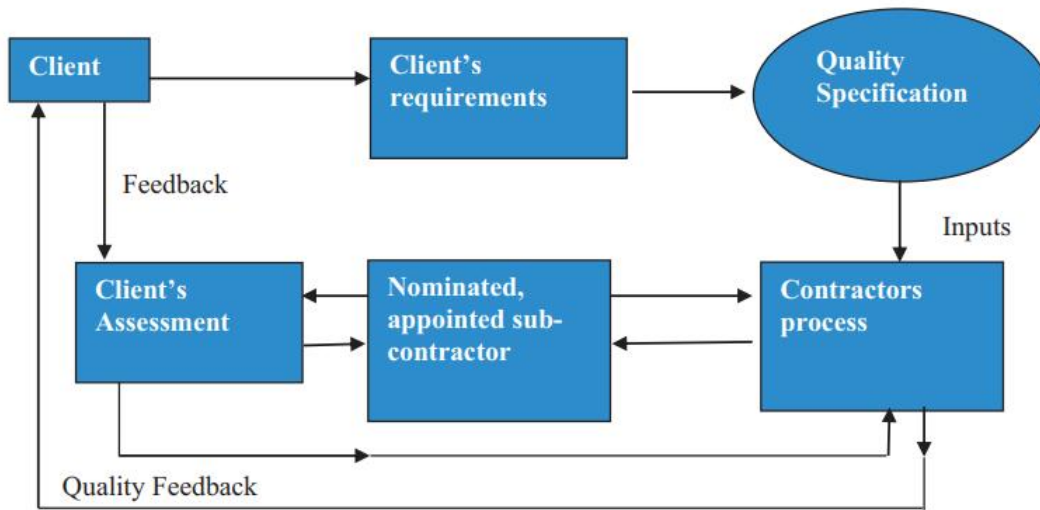
3. Part 2: Project Quality of Construction in Nigeria

3.1 TQM Goals in Nigerian Construction Management

According to (Odiba, Demian and Ruikar, 2021), a large number of managers hold the view that an organization's ISO9000 certification has no effect on its capacity to accomplish its TQM objective. When used to the construction business, TQM yields advantages for both customers and contractors. The success of the relationship depends on the honesty and politeness of all people involved. The contractor may complete the job flawlessly if the customer comprehends the organization's requirements and desires. If the customer employs agents and consultants to monitor the contractor's performance, the relationship may be effectively managed. In order to achieve these goals, researcher stated that academics put the needs and desires of customers first when they design and construct buildings (Ajayi Oluwaseyi and Osunsanmi Temidayo, 2018). A system-oriented evaluation technique is lacking in the construction business when it comes to measuring client expectations. Researcher stated that total quality management's (TQM) ultimate goal is to satisfy the contractor's and customer's functional expectations of the product (Omoraka, 2020).

3.2 Multidimensional Perspectives in Nigerian Construction Projects

According to Arifin et al., (2022), customers are ready to pay for satisfactory building projects. These criteria include things like presentation, uniformity, conformity, functionality, features, dependability, serviceability, punctuality, and readiness to incorporate contemporary technologies. Every project starts with a request for a customer brief. According to Bajaj et al., (2018) , consumers use them to express their objectives related to those objectives. Figure 1 shows the accompanying structure that the client uses to describe the end objective's quality standards. Figure 2 shows that the client's assessment technique often results in brief expansions, despite the structure's tiny size. This is because it keeps a multi-dimensional view of quality.



Source(s): Shanka, 2004

Figure 1: Steps involved for determining quality goal

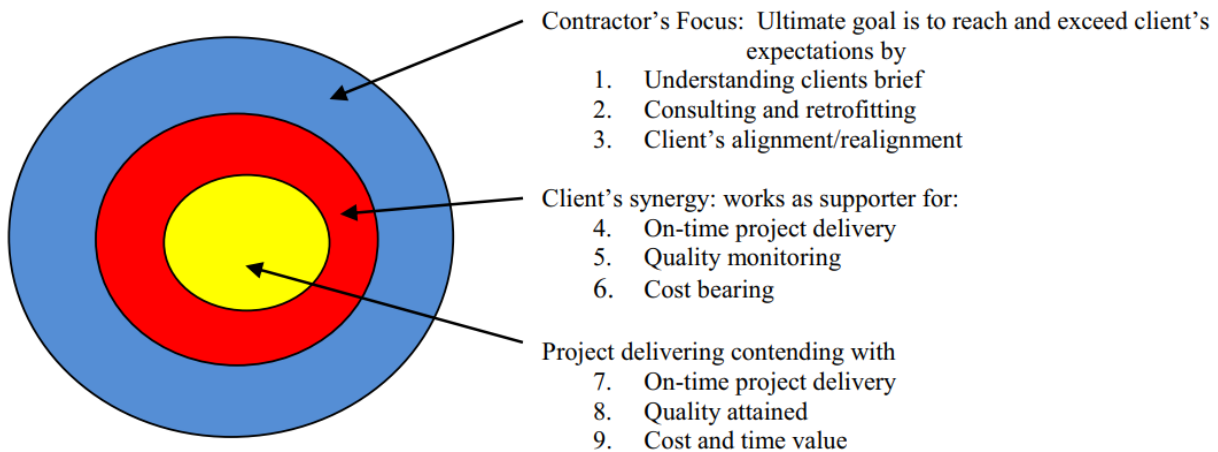


Figure 2: Role of Project teams in construction project

3.3 TQM Practice Implementation

Four factors—the contractor's organizational structure, cooperation, the client's commitment, and process control—determine whether a total quality management (TQM) construction project succeeds or fails (Bouranta et al., 2019). These four aspects are linked to the contractor's understanding of the client's objectives, communication, organizational culture, and commitment, according to research (Asante and Ngulube, 2020). Everyone is starting to wonder whether the building industry is finally going to use Total Quality Management (TQM) to provide owners high-quality projects. Consider the 2014 work of Maher Altayeb and Bashir Alhasanat. They set out to identify the factors that would establish TQM's criticality at each step of a construction project. Through the use of Total Quality Management (TQM) techniques, researcher stated that assessed the effectiveness of Palestinian construction sector owners, consultants, and contractors (Yu, Park and Hong, 2017). Seven critical success factors were identified by a computer-generated model. Among these, 18.34% involved continuous improvement, 18.04% featured interactions, 17.6% included customer satisfaction, and 18.27% required resilience and preparation. The following components made up the leadership structure: 5.15 percent, learning and education (17.00 percent), and management direction (5.60 percent).

Results from a cross-study with Egyptian Indigenous and Japanese contractors provide insight on the difficulties of implementing TQM in this industry. In addition, according to (Khurniawan et al., 2020) ,the main challenges to implementing TQM in Niger Second Niger Bridge stem from site operators and the fact that it is location-bound. The most common problems with Niger Second Bridge are ineffective leadership from upper management, a lack of dedication and backing, and comparable concerns. The construction of the Second Niger Bridge began on September 1, 2018, and will continue until May 23, 2023. Just seven months after the second Niger bridge was inaugurated by the previous administration, contractor Julius Berger has delivered it to federal authorities. Approximately 336 billion rupees were spent on the project. The Second Niger Bridge was built with cooperation as its driving philosophy. Operators are brought in from the beginning of the project forward as part of this approach to help with risk management. The Federal Ministry of Works and Housing was responsible for the project's upkeep, according to Zaidi and Ahmad, (2020).

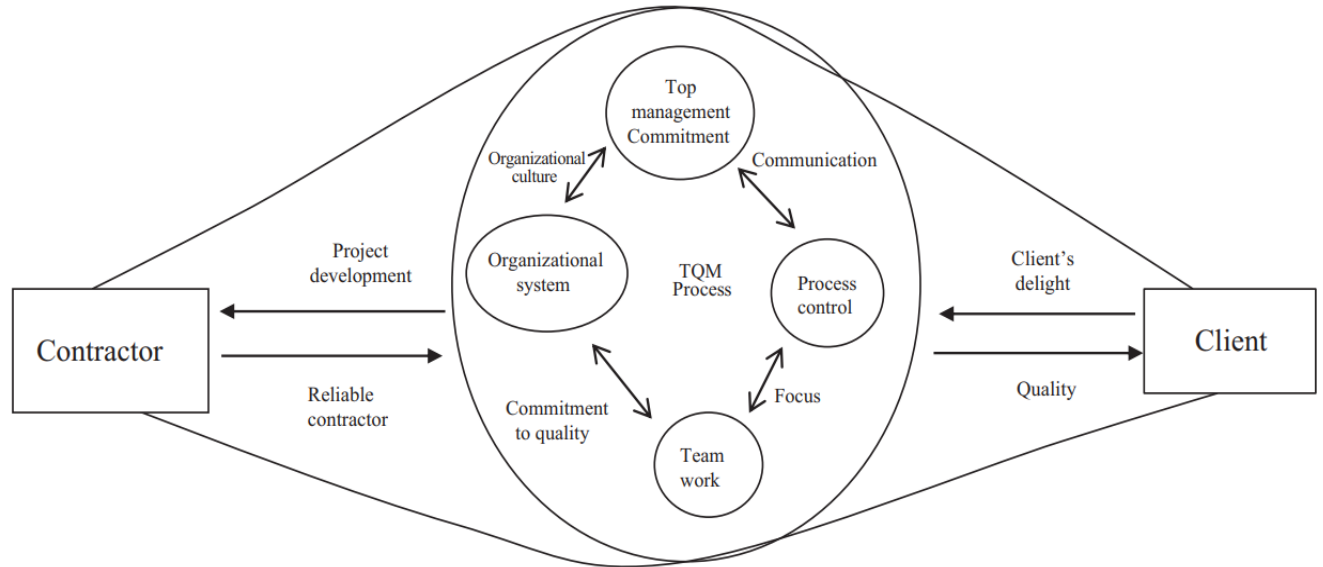


Figure 3: TQM Model showing a Nigerian construction project

3.4 Challenges in TQM Implementation

The difficulties encountered by the Pakistani construction industry during the implementation of Total Quality Management were examined by (Topalović, 2015). To ensure that all construction businesses adhered to the quality criteria, scientists performed double-checks. Companies' claims on their dedication to TQM adoption and compliance with certain criteria were substantially inflated, according to descriptive data. According to Topalović, (2015). unskilled workers in Pakistan's construction industry did not have the necessary knowledge and experience to effectively execute TQM. Findings from the CIRC study suggest that TQM concepts can be useful in addressing issues plaguing the Hong Kong building industry. Lau, Tang, and Li investigated the extent to which the construction sector in Hong Kong has adopted TQM. Comparable to Singapore and China, research in Hong Kong's construction sector has also shown reasonably high advances, according to a correlation instrument and questionnaire survey. This may be attributed to the relatively high level of TQM implementation.

4. Part 3: Role of Leadership Style and Team Performance

4.1 Positive and Negative Impacts of Leadership

In order to maintain standards and stay compliant, it is necessary to manage and regulate the workforce effectively. Leadership styles have an effect on what leaders do, says researcher (Ahire, Waller and Golhar, 1996). Leaders may influence their teams' mindsets and behaviours via a variety of means, some of which have far-reaching consequences. Considerations like the use of subcontractors may influence the responses of project managers. One such thing that shows how leadership style affects procurement strategy is how construction sites use direct employment instead of subcontractors (Walker, 2011). Further, the author of the research shows that task-oriented leadership styles work better in situations where there is a lot of subcontracted labour (BRESNEN et al., 1986). Construction project managers would do well to consider and evaluate the relative strengths of different leadership styles at different points in the lifecycle of their projects.

Researcher suggest that studying the ephemeral nature of project cycles could provide light on leadership in the construction industry (Coelho et al., 2022). When a project progresses, a leader's actions may also evolve. There are a lot of moving parts in leadership decisions, so there may be more time for debates, changes, and disagreements. During building construction, for instance, a more demanding and controlling requirement could emerge. The work environment has a substantial impact on managerial executives' leadership styles in the construction business. Identifying the optimal time to apply a certain leadership style to a project is not always straightforward. Leaders may have to experiment with different strategies or integrate elements of several techniques until they discover a balance between people and work, according to Kumar and Sharma, (2017).

4.2 Quality Issues and Team Performance

Managers and employees both benefit from open lines of communication in terms of increased commitment and output (Jaeger and Adair, 2016). According to (Yunis, Jung and Chen, 2013), the most important things for managers to do to help their workers work together and succeed on the job are to have collaborative supervisory-workgroup ties and to be participative supervisors. Managers' use of bonuses and other monetary incentives to boost staff production is another example of "transactional leadership" (Chiarini and Baccarani, 2016).

Further, transformative leaders put the team's needs before their own, say (Georgiev and Ohtaki, 2019). This inspires their followers to become great. Based on this notion, effective leadership comprises motivating subordinates to think outside the box when faced with problems, assigning clear roles and duties, and providing helpful feedback when needed. It could be difficult to get other people excited about working together to accomplish a common goal. Under a transformational leader, employees may be more motivated to put the organization's success ahead of their own goals. When this occurs, workers are more inclined to prioritize the requirements of the organization and go above and above, as stated by (Lepistö, Saunila and Ukko, 2021).

5. Part 4: Analysis of Humans and Quality Issues

5.1 TQM in Construction Projects-Quality Management Theories

There were many instances when the quality of this project did not meet the client's expectations, and the associated expenses are shown below. To reduce these costs, building projects might adopt total quality management (TQM), which consists of statistical quality control, the TQM phase, and complete quality control (Alzoubi et al., 2022). Total Quality Management (TQM) is more of a management philosophy put out by Edwards Deming than a plan for quality technology. According to (Ali and Johl, 2021) in order to achieve Deming's goal of a high-quality end result, all parties involved in a contractual process should collaborate. Figure 4 shows the three kinds of quality management techniques that were discovered throughout the inquiry. These include cost-value goals, the three phases of quality application, and the quality benefits for contractors and customers.

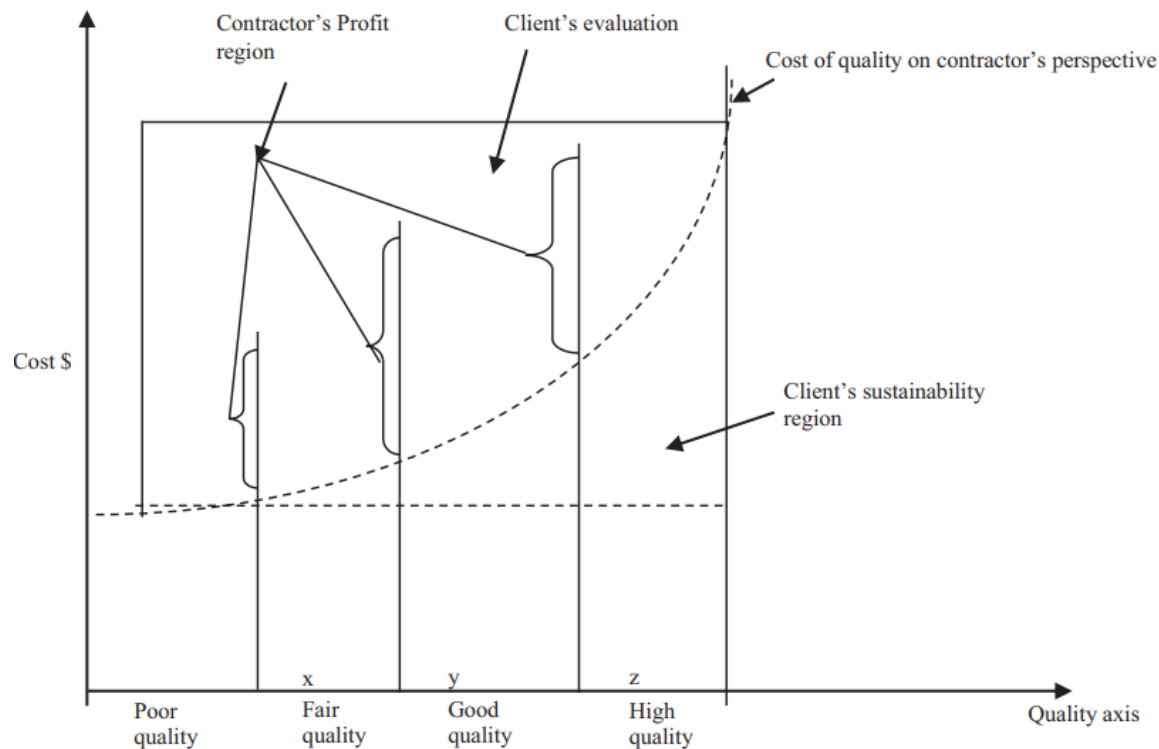


Figure 4: Role of cost and value of quality in Nigerian construction projects

5.2 TQM-Implemented Construction- Juran's Quality Improvement Steps

J.M. Juran's concept of quality improvement procedures as it pertains to construction projects is therefore used by the researchers to back up their claims (Benzaquen and Charles, 2020). Researchers state that contractors and customers may improve the quality of a building project by working together (Fauzi, 2021). The contract, the contractor's organization's reputation, and the investment's value all benefit. The goal of Total Quality Management (TQM), an approach to project management in the construction industry, is to create a contractual organization in which employees not only accomplish the company's most essential goals, but also enjoy the perks of working for a first-rate employer. This method emphasizes the importance of the client and their satisfaction while also showcasing the contractor's dedication to continual improvement as a company policy and culture (Nguyen and Nagase, 2019). Experts in the field claim these to be Total Quality Management's main goals.

5.3 Quality Advancement in Construction Projects: TQM Model

Contracting organizations may achieve quality goals and stay competitive with global best practices by using an integrated TQM approach (Nasim, 2018). Ensure that all of these evaluations adhere to the standards established by the Total Quality Management (TQM) metric dial and the quality improvement strategy proposed by Jiménez-Jiménez, Martínez-Costa, and Para-Gonzalez (2019). Contractors using TQM should, therefore, follow Adam et al.'s (1997) recommendation for quality improvement in order to reduce structural failure rates. Figure 5 shows that the metric framework is still often utilized by TQM practitioners for developing continuous quality management programmes. This was brought about by the changes made by Anil and K.P. (2019).

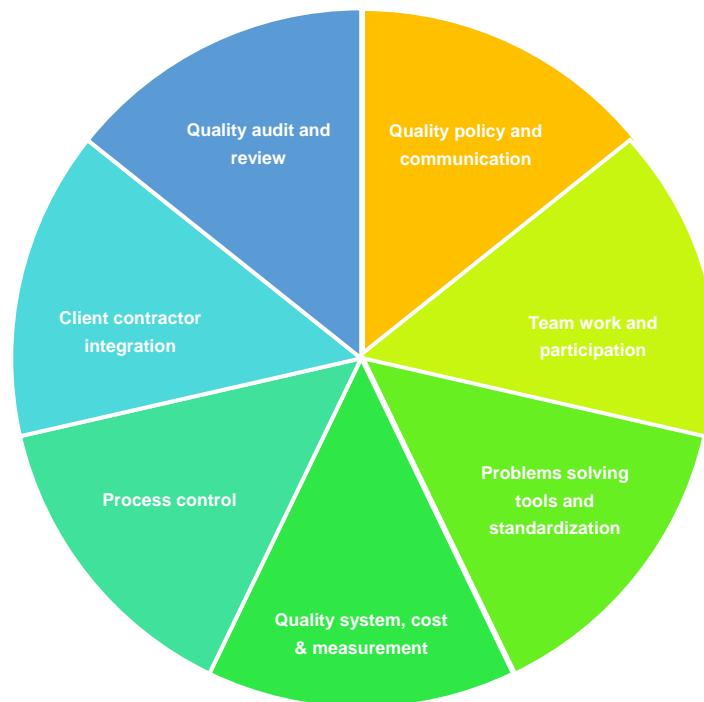


Figure 5: Model of Integrated Total Quality Metric (Shankar, 2004)

5.4 Impacts of Quality Metrics

In order to determine how satisfied the client is with the contractor's or agent's performance, researchers develop a metric that takes the project completion rate into consideration. According to Juran's technique, which is based on J.M. Juran's measurement block, one metric for measuring a project's "zero-defect" status, is making sure there is no opportunity for rework mistakes or field failures while the project is being developed. Projects that employ TQM often attempt to prevent failures by examining the time value characteristics of potential causes. Then, after the fault liability period ends, you won't have to stress about paying to repair structural components, parts, or services. Building projects often undergo replacements when a Total Quality Management framework is not in place, according to this theory's primary assumption, which is that this is a natural consequence of structural degradation. In the short term, this may be a smart investment, but in the long run, fixing the underlying problems could end up costing more (Androwis et al., 2018). If you want to know how quality impacts a construction project over time, the ideal metric to use is the life cycle cost. According to (Jong, Sim and Lew, 2019), this expenditure is going to persist forever.

6. Conclusion of Study

Total Quality Management (TQM) is essential for any firm in today's competitive global market. The human resource management system in Nigeria's construction sector is rife with issues including inflation, inadequate training, sloppy project management, strained relationships between managers, and a complete lack of recognition and incentive programs. The short-term focus of the construction business necessitates that managers tailor their approaches to meet the specific demands of each project.

Building projects in Nigeria are becoming more complex due to fast technical advancements, thus there is an urgent need for effective cost control processes throughout the post-contract phase of project management in the country's construction industry. Lastly, TQM is essential for improving the Nigerian building industry and reducing the occurrence of structural breakdowns.

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