Influences of Total Quality Management on Innovation Performance and Organizational Learning

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Abstract: - Throughout history, businesses have struggled to maintain and improve organisational performance in an effort to maintain a competitive advantage. The important elements of the quality management system must be confirmed by the senior management of the organization to increase and enhance performance. The purpose of this article is to identify the most significant quality factors as predictors of innovation performance in Oman. It focuses on top management support, employee involvement, customer focus, and continuous improvement. The study's empirical data, which came from a self-administered survey, served as its foundation. The Ministry of Public Authority for Special Economic Zones and Free Zones and the Ministry of Commerce, Industry, and Investment Promotion, which identify 260 enterprises, provided the information. Data gathering involved the use of convenient sampling. Moreover, SMART-PLS was used to analyse the data. The study found that top management, consumer support, and employee involvement have a favourable impact on organisational learning and innovation performance. The study did discover a negligible effect of continuous quality improvement on organisational learning and innovation performance. The study suggests that future research be conducted to investigate the factors that can have a positive impact on organisational performance and innovation through continuous quality improvement.

Key-Words: - Total Quality Management (TQM), Organizational learning (OL), Innovation Performance (IP) including Process Innovation, and Products management.

Received: April 16, 2023. Revised: September 11, 2023. Accepted: September 19, 2023. Published: September 29, 2023.

1 Introduction

Innovation is crucial in determining a company's overall competitiveness in today's dynamic and rapidly expanding global business climate. A new growth mantra for businesses to stay relevant in the twenty-first century has been made clear by globalization. When businesses are working hard to overtake their rivals in order to gain a competitive edge in an unstable economic environment, innovation must be taken into account as a key strategic driver that gives firms a strategic orientation and allows them to seize market opportunities, [1], [2], [3].

With various forms of communication, customers are well-connected to mainstream markets in the modern corporate environment, [3]. More knowledgeable and willing to learn than ever, they are seeking businesses that can meet their demands both now and in the future. Consumer preferences are always changing and are not stable; rather, they are growing as a result of this conundrum. This significant transformation could be viewed as both a challenge and an opportunity for current enterprises. "It's war: innovate or perish" is the advised remedy, [4]. Hence, a company's ability to survive completely depends on its management's willingness and level of acceptance of these emerging issues, which necessitate ongoing adjustments to business plans to remain competitive in the dynamic global market, [5].

In all facets of innovation, the leadership of highly inventive firms has firmly identified quality as their top priority, [6]. Both innovation and quality control are essential for corporate success and for maintaining competitiveness by gaining a bigger competitive edge, [7], [8], [9], [10].

Companies use Total Quality Management (TQM), a long-term philosophical strategy, to strengthen their competitive edge, [11]. Several

firms have benefited from TQM, yet many people have trouble understanding its present and future advantages, [12]. As a result of the enormous shift in the global market brought about by innovation, the main issue currently facing most corporate executives is whether TQM, with its measured processes and control, stifles innovation and creativity.

According to [13], the performance of product innovation was positively correlated with strategic planning, leadership, customer focus, analysis and information, process management, and human resource management. The study also discovered that knowledge and analysis are regarded as influential. TQM procedures improve a company's success in terms of product innovation. In order to improve their capacity for innovation, key decision-makers at E&E firms found this information and analysis to be very incisive. While working in a competitive climate, senior managers must prioritize their efforts on TQM procedures to optimize organizational benefits in terms of product innovation, [14].

To this end, although the relationship between TQM, innovation, and company performance has been established by many researchers, there has not been sufficient in-depth research examining the relationship between TQM practices and product or process innovation performance. As a result, the results are still inconsistent and could not sustain the positive relationship, whether TQM practices confirmed positive relations with innovation performance or not. This is even more obvious with companies based in Oman. Organizations struggle to grasp concepts with a broad perspective and comprehension, which makes it difficult for them to turn these ideas into well-structured, workable solutions, [15]. From a theoretical standpoint, there has been some effort put into the problem of connecting TQM and other developments, but it is still very little. Second, little is known about how dynamic capabilities like business innovation capability can be used to leverage innovation levels in TQM-practicing firms. Lastly, it is yet unknown how organizational culture (innovation culture) influences the efficient growth of innovation for long-term competitive advantage, [16].

Finally, since these efforts are made to gain a sustainable competitive advantage as well as to create wealth and income for the organizations, it is now essential for an organization to provide the linkage between TQM and innovation performance. This provides a theoretical as well as a practical platform for service and manufacturing organizations. Reaching the anticipated goals and the economic zone's vision would require imaginative and innovative solutions to the aforementioned problems and challenges. Through organizational learning, the study aimed to evaluate the effect of TQM techniques on innovation performance.

2 Over few of Real World Cases

The Public Authority for Special Economic Zones and Free Zones has pursued policies and objectives aimed at attracting investments for new industries or technologies in the Duqm Special Economic Zone. These industries include petrochemicals and various types of iron production, with a focus on direct marketing to large global companies in these sectors. The Authority also participates in international investment forums and exhibitions and conducts promotional campaigns in various capitals and cities around the world. In addition, the Omani government assigns and activates the roles of its embassies and consulates in friendly and sister countries. Furthermore, the Authority aims to establish global-level forums, such as the Duqm Economic Forum, in Duqm, similar to those held in Saudi Arabia and Qatar.

The public policies of the Public Authority for Special Economic Zones and Free Zones have had a significant impact on various sectors in the Duqm Special Economic Zone, as well as other free zones and industrial areas. These policies were developed to diversify the sources of national income, connect the northern and southern regions of Oman, create a strategic outlook on the Arabian Sea and Indian Ocean, and establish a hub that emanates from Duqm. A total area of 260 square kilometers has been allocated for heavy, medium, and light industrial uses, close to the port and airport of Duqm.

The Public Authority for Special Economic Zones and Free Zones has defined its responsibilities in planning, facilitating, organizing, and operating. The Authority has worked to unify the advantages, incentives, laws, and regulations governing the business sector and attract investment in the special economic zones, free zones, and industrial areas. Additionally, it has aimed to achieve integration between the regions in terms of classifying and organizing the relative advantages

enjoyed by the region, distributing investment opportunities among the regions according to national orientations and those set forth in Oman's 2040 development plan, ensuring there is no competition or conflict between these areas, and providing distinctive services to investors in this regard.

Moreover, the Authority has worked to achieve clarity for investors in the legislation, regulations, and laws governing investment in Duqm, free zones, and industrial areas. It has separated the legislative, planning, and regulatory roles performed by the Authority from the operational roles carried out by the operators in the free zones, which are Asyad Group, and the industrial areas, which are Madayn, the Public Establishment for Industrial Estates.

Regarding digital transformation and technology in Duqm, free zones, and industrial areas and their connection to increasing productivity efficiency, an electronic system has been built to provide services to investors quickly, accurately, and flexibly. The system also works by issuing permits and licenses rapidly without the need to visit the authority's office in person. The Authority has also worked to achieve justice and transparency, as demonstrated by the investor's ability to choose their land for investment projects. Additionally, the opinions of investors on the quality of services provided have been surveyed, with a satisfaction rate of 82% at the beginning of 2023.

There are numerous investment requests in the Duqm Special Economic Zone, especially for heavy industries such as petrochemicals, refineries, iron production, automobile assembly, shipbuilding-related industries, mining industries, and more. In addition, there is demand for logistics and maritime transportation services and factories related to the fishing industry, with many factories already established.

Oman Drydock Company Project the Oman Drydock Company project is the second-largest facility of its kind in the Middle East and North Africa. It consists of two docks: the first is 410 meters long and 95 meters wide, while the second is 410 meters long and 80 meters wide, both with a depth of 10 meters, allowing for the reception of large container ships and oil tankers with a total capacity of up to 600,000 tons. The facility includes supporting yards and facilities with a total area of 1.2 million square meters and also features berths for ship berthing up to 2.8 kilometers long, providing a place for repairing ships that do not require dry docking.

Therefore, the dry dock allows for the repair of 10 ships at once, including various types and sizes, including commercial, tourist, container, and oil tankers. Plans include the addition of a floating dock to the facility to increase its overall capacity and operational efficiency. The dry dock area also includes facilities for repairing ship structures and equipment, painting, pipe fittings, various cranes, and modern control devices. It also includes facilities for disposing of chemical waste, a waste recycling station, and a sewage treatment plant.

The Oman Drydock Company currently manages and operates the dry dock, and it has brought international expertise in ship maintenance through a management and operations services contract with Daewoo Shipbuilding & Marine Engineering Company, a globally reputable company in this field. The Oman Drydock Company began its trial services in April 2011 and commenced actual operations in early 2012.

Oman Drydock Company has adopted several policies in its business to increase the efficiency and productivity of its services. These include the senior management's direct marketing efforts, enhancing expertise in production operations management, modern marketing and promotion techniques, and drawing up policies to attract investments. The company also aims to build a reputation for an advanced system for executing operations and servicing global logistics companies, maintaining international vessels, building boats, and focusing on the crews of employees in the company. Additionally, the company has opened doors for ship conversion from one purpose to another. Over the past years, the company has carried out the conversion of seven projects for different purposes. Oman Drydock Company aims to satisfy its customers.

Through its capabilities and expertise in ship maintenance and steel structure work, the drydock was able to efficiently manage major and minor emergency repair projects. It has also expanded its range of services to include designing and manufacturing steel structures for the petrochemical sector, building offshore platforms for the oil and gas sector, and their maintenance. The drydock strives to keep up with the latest technological developments and invest in them. In 2017, the drydock expanded its business portfolio by offering unique services for repairing military ships after

signing a joint project agreement with the British international group Babcock to establish the Duqm Naval Dockyard Company. With its vast experience working with naval forces around the world, the Duqm Naval Dockyard Company adds a strategic dimension.

The Port of Duqm is one of the most important and prominent ports in Oman and in the Middle East as a whole, thanks to the royal decree issued by the late Sultan Qaboos bin Said (may he rest in peace) to establish the port in the Al-Duqm governorate. The area is distinguished by its strategic location and its coast facing the most important regions of the Middle East and the Indian subcontinent, as well as African and European countries. One of the port's most notable services is the unloading and loading of all types of general and specialized cargo, including containers, bulk materials, petroleum products, military vessels, and commercial fishing vessels. This significantly contributes to the development of the logistics sector in Oman and drives economic development forward.

One of the remarkable developments for the Duqm Port in recent years is the port's full readiness, which has led to an increase in business and the arrival of larger and more important commercial ships and global investors to the Duqm Special Economic Zone. The port has achieved many accomplishments, including receiving many oil tankers and handling the loading and unloading of the largest general and specialized cargo, such as the wind turbine project for the Harweel region and many other projects related to Omani oil companies, such as Petroleum Development Oman.

The port and its workforce have clear and deliberate capabilities to work towards achieving the desired positive outcomes of every task. The port's workforce has international experience in the field of ports and all related operations, which leads them to handle tasks properly and accurately, including unloading, loading, and working within global safety and security procedures.

The location of the Port of Duqm is highly strategic, as it overlooks the coast opposite the Indian subcontinent, Africa, and Australia and facilitates transit to and from European countries. This enhances the port's position and attracts global investors to come to Duqm due to its strategic location and clear competitiveness with other major ports, both locally and globally.

The Port of Duqm, located in the Sultanate of Oman, is one of the most prominent and important ports in the region, specifically in the Middle East. This is due to the royal decree issued by the late Sultan Qaboos bin Said, which called for the establishment of the Port of Duqm in the Governorate of Al Wusta, as the area is distinguished by its strategic location and its coastline facing important regions of Middle Eastern and South Asian countries, as well as African and European countries. One of the most notable services provided by the Port of Duqm is the unloading and loading of all types of general and specialized cargo, including containers, bulk materials, petroleum products, military vessels, and commercial fishing vessels. This greatly contributes to the growth of the Port of Duqm, supports the logistics sector in Oman specifically, and drives economic development in general.

In recent years, the Port of Duqm has achieved significant developments, such as its readiness to receive larger and more important commercial ships as well as investors from around the world. The port is working to strengthen its relations with neighboring and foreign countries to increase commercial operations and raise the level of the local economy. Additionally, the port is introducing neighboring countries to the ongoing activities at the Port of Duqm, its capacity to handle large and specialized cargo, and its extensive experience in dealing with these goods. Furthermore, the port is highlighting the benefits and advantages it can provide for some specialized projects and how to deal with them.

The Port of Duqm is the only port in Oman located in a free zone that is integrated with the Duqm Economic Zone, allowing investors to enjoy operational and financial incentives offered by the government. It is expected to become a new center for economic growth in Oman. The Duqm Economic Zone provides its investors with some of the best incentives and advantages in the world, including tax exemptions for companies, customs duty exemptions for goods movement, and capital mobility. Moreover, free trade agreements with the United States of America and Singapore add more attractiveness to Oman as an investment destination for global investors.

Karwa Motors Company's project in the Special Economic Zone of Duqm has established a bus factory in the Special Economic Zone of Duqm on an area of 568,000 square meters. The factory is designed to produce three different types of buses: city transit buses, school buses, and intercity buses,

ranging in size from 8 to 12 meters. The factory's production capacity is 700 buses per year, equivalent to producing 3 to 4 buses per day. The production capacity can be increased to six buses per day. The factory's workshops, facilities, and service stations have been designed to accommodate additional production lines in the future to produce different products in the same field. Recently, the company began exporting the first batch of buses to the sister state of Qatar for use in the 2022 World Cup, to be a prominent brand in the largest global event in the region. The company has adopted several production policies based on integrity, credibility, cooperation, customer focus, and innovation.

Oman Oil Company and Kuwait Petroleum International have partnered on the Duqm Refinery Project. It is one of the largest greenfield refinery projects in the Middle East and is located in the Duqm Special Economic Zone in Oman. The refinery has a daily processing capacity of 230,000 barrels and is designed to produce a variety of products such as diesel, jet fuel, naphtha, and liquefied petroleum gas (LPG).

The construction of the Duqm Refinery started in 2018 and was completed in 2021, with the project costing around $6.5 billion. The refinery is outfitted with cutting-edge technology and adheres to the strictest environmental regulations. It also has a strategic location on the Arabian Sea, putting it in a good position to meet Asia's and the Middle East's growing demand for energy products.

The Duqm Refinery is expected to play a key role in the development of the Duqm Special Economic Zone, which is an important component of Oman's economic diversification strategy. The refinery will create jobs for the local community and aid in the development of the surrounding infrastructure.

3 Literature Review

Due to intense rivalry in both the local and international markets and high market saturation over the past ten years, the business has undergone a significant change. In addition to rivalry, the most important factor for businesses to continue existing in a fast-expanding global market is a desire for quality assurance, [17]. Several businesses began losing market share to foreign competitors that offered low-priced, diverse, and high-quality goods, [18]. Many businesses have moved their attention away from low-cost production and toward higher-quality goods, [19]. They concluded that the enterprises that provide excellent quality and go above and beyond the expectations of the voice of the consumer will endure longer in the market, while those that lag will vanish forever in this period of global competition. These businesses have invested time and money in developing new quality management strategies and techniques, quality policies for continuous improvements, quality control, and quality assurance programs, in addition to spending money on acquiring and implementing new technologies like computer-integrated marketing, just-in-time production, computer-aided design, and integrated manufacturing, [17], [18], [19]. The truth is that they thought it was one of the finest methods to expand and maintain themselves in their current markets as well as seize new potential markets. Even today, academics hold that businesses must prioritize their quality practices to generate high-quality goods because their customers are the ones who ultimately determine the quality of a product and spur competition among businesses, [13]. It is also asserted that firms must take further steps to implement Total Quality Management (TQM) and continually strive for improvement to meet higher standards of quality in the eyes of customers. In a recent study, the author claims that one factor driving global competition is an organization's struggle to achieve a better standard of quality, [20]. TQM principles have been used by both private and public businesses since the late 1980s as a means of achieving improved performance levels within companies. It is important to note that over the past ten years, a significant improvement in TQM awareness has also been seen, [19]. Nowadays, the majority of businesses in both developed and developing nations are committed to expanding their reach beyond domestic markets, [21]. Since industrialized countries like the UK, Germany, the USA, and Japan view TQM as a turning point, they are increasingly pushing to enhance organizational policies in the context of TQM. They understand that doing so will assist them in achieving economic vibrancy, higher standards of living, and sustainable growth. The study, [22], also emphasized the necessity for new management that is solely based on TQM principles because claims that doing so increases a company's productivity, [23]. As a result, leaders of top-tier organizations began paying close attention to establishing TQM in their

businesses long ago after realizing that the secret to their success lies not in quality alone but in "total quality." Even nations have brought up this issue and included government agencies working with foreign specialists to help their domestic businesses compete in the global market. Organizations have used a number of recommended frameworks, some of which have succeeded while others have struggled to reap the benefits of TQM, [15], [17], [24]. Many people associate the cost of adopting TQM with it because they believe that only large, well-organized global corporations can afford it and have the capacity to comprehend the impact of its essential components. In the form of national quality awards, various country-specific quality frameworks that incorporate some key TQM components have also emerged at the national level. If effectively implemented by the businesses, these frameworks will aid them in meeting the established milestones. As a result, outstanding businesses would receive coveted national quality awards. However, some of the more reputable businesses have adopted the standards created by organizations like MBNQA, EFQM, ANQA, etc., [25]. However, as required by the quality awards given in their respective countries, many organizations placed a particular emphasis on putting these TQM principles into practice. In addition to quality, [25], has stressed that innovation is a crucial component to securing a competitive advantage in the market. As a result, the firm's internal knowledge would not only help them to withstand external pressures and threats, but it would also make it easier for them to maintain a competitive advantage by providing high-quality, innovative products in both domestic and global marketplaces.

3.1 Theoretical Development Relationship between TQM and Innovation Performance

TQM provides an appropriate and fertile environment for innovation. TQM gives a company the motivation and dedication needed to establish an environment of unending innovation. Empirical evidence is provided by, [26], to support the validity of the TQM effect on an organization's success in terms of innovation. They discovered a strong correlation between the challenging TQM aspects and the complex novelties in product creation. In their research, the authors argued that by putting quality management techniques and tools to use, an organization would be able to recognize potential innovation zones through sound innovation plans that modify pertinent procedures and processes appropriately.

Contradictory claims regarding the connection between innovation and TQM, such as those made, asserted that the ideology and principles of TQM are incompatible with innovation in an organization.

Earlier researchers stressed that incessant enhancement belongs to an incremental change, standardization, and required validation to create stability and control, [4], for inhibiting and inflexible innovation. Process management techniques that aim to minimize waste and maximize efficacy sometimes work against innovation, [27]. Process management, according to the authors, lowers the slack resources needed to spread innovation. Additionally, the customer focus strategy, a key element of TQM, is criticized as a source of innovation.

The study, [4], opposed customer-focused strategies because they were thought to make businesses "narrow-minded" about their current goods and services, despite further investigation of customers' requirements in the modern era. However, a pro-innovation stance asserts that companies that embrace TQM and regard it as a crucial component of their culture and system may provide platforms for innovation growth. Three crucial facets of the TQM practices—customer focus, creative staff, and flexible organizational structure—are crucial for achieving the suggested level of innovation. By emphasizing the value of customer satisfaction through the implementation of TQM, a firm can be persuaded to be innovative and creative by focusing on the requirements and demands of its customers.

The flexibility of an organization's structure may change as a result of TQM practices, which eventually will have an impact on the innovation process. TQM creates an atmosphere and culture that are conducive to continuing innovations and, in the end, pave the path for crucial innovations to take place, [28]. Although there is a growing body of empirical literature that examines the relationship between TQM and TI, there is still variation and inconsistency in the findings. So, it is essential to identify and investigate how MBNQA practice and TI relate in the Sultanate of Oman.

3.2 Relationship between Organizational Learning and Innovation Performance

The organizational learning curve in the economic context of the industry was the first to demonstrate

organizational learning and its implications for a firm's performance. In some cases, businesses count the lowest cost in a given industry when they are in the manufacturing process of a good or service to reap cost-based benefits, [29]. Cost-cutting is unquestionably very beneficial for manufacturing companies. According to the resource-based view, organizations can gain a competitive advantage by utilizing their resources and competencies, [22], which is where organizational learning is intended to be useful. Organizational learning is a concept of a resource-oriented strategy that depends on the organization's ability to transform common resources based on unique capabilities that are difficult for rivals to copy or transfer.

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Even in recent years, there has been empirical support for the significant and positive relationship between innovation and organizational learning. According to a study by, [30], using secondary data sources, organizational learning had a favorable impact on company performance in 287 listed Chinese enterprises (i.e., financial performance and innovation).

In their study of 119 respondents working in Spanish auto manufacturers, [31], stressed the need for a positive team environment for learning to boost long-term innovation and performance. Reviewing the prior literature makes it clear that the connection between TI and organizational learning is unquestionably a fruitful area for future research and necessitates a complete examination in organizational contexts.

3.3 Relationship between TQM and Organizational Learning

Businesses that successfully implement TQM policies and strategies focus on enhancing learning, growing knowledge exchange, and changing culture. As higher-level management starts TQM procedures within the enterprises, individual learning is mimicked and stimulated via the organizations, [32]. The following is a thought for a few. Many academics have worked to explore and explain the role of TQM in organizational learning. In Malaysia, empirical investigations of 139 manufacturing companies revealed a substantial and favorable relationship between organizational learning and TQM. Likewise, [33], conducted a study on 193 Turkish-based businesses and concluded that TQM has a major impact on organizational learning capacity. In addition, research has shown that when TQM's core principles are effectively used, learning can boost productivity excessively and increase sustainability in quality. The intention of the employees to participate in organizational learning will increase as TQM creates a culture that fosters trust inside the firm. Yet, prior research on TQM and organizational learning has been unable to demonstrate a strong and distinct association between these two variables in the context of Oman.

Some prior studies considered TQM as a single element that affects organizational learning and came to the conclusion that there is a strong correlation between them, [34]. Therefore, a more thorough investigation of the subject is necessary to determine which MBNQA model TQM dimension will have a major impact on organizational learning. Finding the factors that hindered the learning process will require a thorough investigation. The present study then uses the multidimensional TQM methodology to examine, within the context of the Sultanate of Oman, the relationship between MBNQA-TQM and organizational learning.

3.4 Organizational Learning as the Mediator between TQM and Innovation Performance

The relationship between innovation performance and TQM can be greatly mediated by organizational learning. Teamwork enables invention, not the other way around. The study, [35], emphasizes the significance of soft TQM methods for fostering teamwork, encouraging creative ideas from employees, and creating a communication environment for achieving product innovation quickly.

In small Business transactional/ transformational leadership style (another aspect of TQM) found that a blended leadership style is necessary to simultaneously carry out the different courses of action to promote organizational learning for the sake of welcoming innovation and to gain a competitive advantage with high performance. Hard TQM techniques, such as emotional process management, help the business handle daily tasks based on best practices and may lead to the creation of a learning platform to support innovation processes.

Using quality information effectively, such as receiving immediate and insightful feedback from production processes, can hasten the development of new and innovative goods that meet consumer demands. Unfortunately, there is no empirical data on the research of organizational learning as a mediator between each MBNQA-TQM dimension for TI (such as knowledge acquisition, distribution, application, and storage). Only, [32], have studied these correlations, as far as the researcher is aware. The following would be a correlation to determine whether following would be a correlation to determine whether.

3.5 Hypothesis Development Top management, Organizational Learning & Innovation Performance

A crucial role of top management is played in the framework of OL, [36], [37], [38]. Innovation is encouraged because of committed leaders. The study, [37], found that leaders have principles that inspire subordinates to be their best selves, [39]. According to a study done in an Indian manufacturing business, consulting, delegation, and top management all help OL, [40]. Similar to, [41], who acknowledges that top management plays a crucial part in OL sustainability in non-profit organizational settings.

Corporate innovation is essential for corporate sustainability, according to a number of recent studies, [27], [42]. These skills are essential for innovation and organizational development, [43]. The ability of managers to facilitate internal comprehension, enhance organizational learning, and make use of cutting-edge technology makes managerial focus particularly necessary, [43].

Additionally, studies have revealed a connection between top management backing and organizational innovation. In, [44], [45], the authors emphasize that using technical expertise to effectively generate organizational innovations is one of the basic duties of top management support. They show how assistance from top management influenced the conception, creation, and application of process enhancements in the area of information systems. The ability of a corporation to develop and perfect new products and processes to a viable level, which is based on the cumulative generation of new products and processes, provides the underlying capacity to alter what markets receive. As a result, innovation is frequently observed through market phenomena such as the emergence of new products and the diversification of existing products. Hence, this study hypothesizes that:

H1: Top management support has a significant relationship with organizational learning.
H2: Top management support has a significant relationship with process innovation.
H3: Top management support has a significant relationship with product innovation.
H4: Organizational learning has a significant relationship with process innovation.
H5: Organizational learning has a significant relationship with product innovation.

3.6 Customer Focus, Organizational Learning & Innovation Performance

Building strong relationships with clients has become essential for business success because it helps improve overall performance, [46], [47], [48]. Because of this, marketing researchers and practitioners have shifted their attention to the firm's fundamental competencies, which include identifying and meeting the needs and wants of its clients, [48]. In other words, by gathering and sharing information about customer requirements, an organization can be more attentive to those needs, respond appropriately, and be ready to act quickly, [46].

The ultimate objective of TQM is to satisfy the reasonable requirements of the customers, and one method to do this is through interaction, as is frequently discussed in the literature on TQM. (i.e., learning from customers). An organization's relationship with its customers is crucially important.

Through interactions with customers, a business is better equipped to determine the criteria needed by clients. TQM pushes manufacturing companies to continuously seek out new approaches to manufacturing goods and provide services that satisfy consumers' needs, interests, and expectations by institutionalizing a customer-focused approach (i.e., technological innovation).

The successful management of customer interactions has drawn increasing attention from management experts and practitioners over the last few decades, [49]. Customer service is the major focus of our business, [50]. Businesses must build an environment that fosters learning within the organization in addition to using technical tools, as this is thought to be a key factor in creating and sustaining strong customer relationships, [50].

These connections are heavily reliant on the creation, acquisition, and integration of knowledge, which improves the company's capacity to engage with clients, create new tools and capabilities, and nimbly learn how to provide clients with proactive service, all of which improve the firm's performance, [51]. The literature makes the implication that developing shared interpretations, proactive organizational learning strategy development, ensuring synergistic information dissemination and timely knowledge gathering and integration within the company are all essential for the successful implementation of the technology.

The process of obtaining, disseminating, and employing knowledge linked to creative performance is known as organizational learning, [51]. Organizational learning improves organizational intelligence, encourages the development of new knowledge and ideas and the ability to understand and apply them, nurtures creativity, and provides a foundation for organizational innovation orientation (in conjunction with culture), [47]. Although businesses with a strong commitment to learning often demonstrate a significantly greater level of inventive orientation and activity, organizations must have the capabilities essential to operate as learning organizations or to grow with the goal of customer pleasure. If TQM implementation can consistently increase value for consumers, it will now be deemed successful. Thus, the hypotheses are as follows:

H6: Customer focus has a significant relationship with organizational learning.
H7: Customer focus has a significant relationship with process innovation.
H8: Customer focus has a significant relationship with product innovation.

3.7Continuous Improvement, Organizational Learning & Innovation Performance

The notion of continuous improvement, which seeks to streamline or simplify a process, is promoted by TQM. To maintain control and stability, continuous improvement emphasizes incremental change and calls for standardization or formalization, [35]. Forcing workers to concentrate on the specifics of the current quality process rather than a fresh concept to alter the current work system, would result in rigidity and stifle creativity. Using SEM analysis, we demonstrated the positive and substantial correlation between MBNQA-based TQM procedures and both customer satisfaction and innovation across 241 Malaysian businesses.

The goal of the process of continuous improvement is to find the root of a mistake and remove it to prevent it from happening again. The study, [52], explained that organizations operating in a dynamic environment are likely to carry out continuous improvement in their operations; they also explained that the competitive landscape changes more quickly in this environment due to shifts in customer needs, competitor activity, and service and product innovation. It is thought that the TQM deployment can be made successful, hence improving both OL and innovation performance, by institutionalizing a strategy for continuous improvement. Many researchers did reveal that there is a substantial association between both OL and innovation performance and continual improvement, as reported in the earlier empirical studies mentioned above. Thus, the suggestion of the following hypothesis:

H9: Continuous improvement has a significant relationship with organizational learning.
H10: Continuous improvement has a significant relationship with process innovation.
H11: Continuous improvement has a significant relationship with product innovation.

3.8 Employee Involvement, Organizational Learning & Innovation Performance

Employees must comprehend TQM as a corrective and developmental method for the benefit of all stakeholders in the firm if TQM is to live up to its principles. Employee participation in reengineering processes, learning new techniques, and sharing their thoughts with management are all necessary for this. Management must intentionally give staff the skills and authority to make essential decisions if they are to demonstrate this degree of dedication and involvement.

Employees must feel that management has complete faith in them to be responsible for quality achievement and ongoing improvement. If the quality movement is to be successful on a genuinely global scale, it must persuade managers of the advantages of the idea that there should be more freedom and less control. They must understand that managing is more than just dominating, but sadly, their egos and fear prevent them from ever truly relinquishing control, [53]. Also, it is the duty of employees to spot quality flaws and proactively

identify risks to continuous development and quality. Employees must be free from the fear of reprimand or punishment from management to do this. A culture of learning and the opportunity to make mistakes while learning must be fostered by managers. The study, [54], suggests that to promote learning inside a business, employers should establish a culture of development. Employees will know what is necessary and required to be accomplished through the implementation of various employee-oriented activities, such as training, inspiring them to learn throughout training. Improved training can also lower the defect rate, which will improve a company's performance as a whole. Also, when workers feel engaged and empowered, they will have more opportunities to be creative. Thus, the hypotheses for this study are as such:

H12: Employee involvement has a significant relationship with organizational learning.
H13: Employee involvement has a significant relationship with process innovation.
H14: Employee involvement has a significant relationship with product innovation.
The conceptual framework of our study is presented in Figure 1.

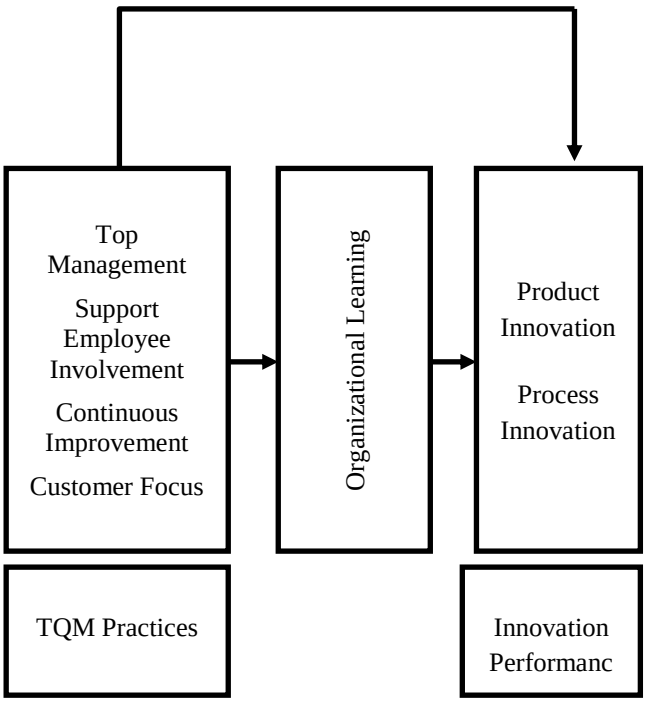

Fig. 1: Conceptual framework

4 Research Methodology

The research used a quantitative study approach to achieve its goals. Companies in Saltant, Oman, situated on the southern coast of the Arabian Peninsula in western Asia, provided the empirical data that was gathered. The Sultanate of Oman is home to 260 businesses that fall under the category of big construction firms, according to designations made by the Ministry of Commerce, Industry and Investment Promotion, and Public Authority for Special Economic Zones and Free Zones (Grade Excellent and One). In order to maintain model fitness, reliability, and construct validity, the sample size was calculated. In, [55], [56], G. Power was used in this study to determine the group size.

G. Power is a recognized power analysis tool for choosing the sample size for empirical research, [33]. The expected sample size to test the regression model should not be less than 140 using G*Power 3 with a 0.05 alpha level, a 0.95 power level, the number of exogenous constructs, and a 0.15 effect size, [33].

The individual respondent (senior executives taking part in the research, such as quality managers, production managers, etc.) served as the unit of analysis. The implied method for gathering data was a self-directed questionnaire strategy. The building companies in Oman were sent a total of 500 questionnaires via postal mail. All of the constructs were operationalized using a five-point Likert scale, which ranges from 1 to 5 (strongly disagree to strongly agree). In contrast, the performance of the innovation (product and process) was assessed using the same scale but with the following question: "How much have the following practices been used in your organization over the last three years? Please circle the appropriate response on a five-point scale where 1 is "strongly disagree," 5 is "strongly agree," 4 is "agree," 3 is "neutral," and 2 is "disagree." To prevent any obstacles during data collection, the scale was also pre-tested in the Oman context.

According to, [57], a response rate of 40% is thought to be the norm for empirical research. To avoid any ambiguity, anomalies, or redundancies, a second check was made for missing values on the 284 answers that the study received in our instance. Thus, 270 responses were obtained for the research, and these were used to analyze the data. Additionally, SMART-PLS was used to analyze the data.

5 Analysis and Results

5.1 Demographics of the Study Background Analysis

The characteristics of the 270 valid respondents are listed in Table 1. The respondents were 63% male and 37% female, with men making up the remaining respondents. 7.4% of the respondents are under the age of 30, followed by 41.9% of those between the ages of 31 and 40, 41.9% between the ages of 41 and 50, and 8.9% of those beyond the age of 51. Regarding education, 50.7% of respondents have a degree or professional certificate, while 36.7% have a master's degree. Only 11.5% of respondents have a diploma. Moreover, CEOs made up 50% of the responses. And of those, managers make up 23.7%. The demographic profile indicates that the samples are comprehensive and comprise a wide range of people to reflect on TQM and organizational performance perceptions of innovations.

Table 1. Respondents' characteristics

Gender	**Frequency**	**Percent**
Female	100	37.0
Male	170	63.0
Total	270	100.0
Age (years)	**Frequency**	**Percent**
20 – 30	20	7.4
31 – 40	113	41.9
41 – 50	113	41.9
51 and more	24	8.9
Qualification	**Frequency**	**Percent**
Bachelor	137	50.7
Diploma	31	11.5
Master	99	36.7
Secondary	3	1.1
Working Position	**Frequency**	**Percent**
Staff	19	7.0
Manager	64	23.7
Executive	135	50.0
Director	52	19.3
Total	**270**	**100.0**

5.2 Descriptive Analysis of the Constructs

The mean scores and standard deviation values for each TQM construct are shown in Table 2. about creativity. The average findings indicate that, according to respondents from the organizations surveyed, all six TQM techniques implemented are suitable for use as TQM constructs. Since all mean scores are higher than the midpoint of 2.50, the degree of adoption of each TQM practice is considered to be medium to high based on the mean score values. Kurtosis and skewness were additionally evaluated, and the results were acceptable and supported the normality of the data responses.

Table 2. Descriptive statistics of TQM constructs

Variables	**Missing**	**Mean**	**Standard Deviation**	**Kurtosis**	**Skewness**
Top_Man1	0	3.9	1.242	-0.182	-0.941
Top_Man2	0	3.996	0.81	1.033	-0.835
Top_Man3	0	3.967	0.827	0.922	-0.846
Top_Man4	0	4.089	0.834	1.214	-0.939
Top_Man5	0	4.244	0.73	1.415	-0.933
Customer_F1	0	4.163	0.737	1.004	-0.77
Customer_F2	0	3.807	1.174	-0.144	-0.601
Customer_F3	0	3.733	1.11	-0.221	-0.552
Customer_F4	0	3.848	1.12	0.109	-0.762
Customer_F5	0	4.011	1.163	0.326	-0.761
Customer_F6	0	3.959	1.165	0.101	-0.641
Customer_F7	0	4.178	1.098	0.815	-0.847
Continu_Quali_Impr1	0	4.004	0.876	1.162	-0.973
Continu_Quali_Impr2	0	3.904	0.881	0.639	-0.824
Continu_Quali_Impr3	0	4.011	0.991	1.302	-1.195
Continu_Quali_Impr4	0	3.611	1.102	-0.223	-0.701
Emplo_Inv1	0	3.767	1.048	0.198	-0.785
Emplo_Inv2	0	3.467	1.15	-0.332	-0.704
Emplo_Inv3	0	4.019	0.782	1.503	-0.828
Emplo_Inv4	0	3.73	1.287	-0.445	-0.805
Organ_Learn1	0	3.815	1.187	0.011	-0.945
Organ_Learn2	0	3.778	1.143	-0.057	-0.828
Organ_Learn3	0	3.726	1.276	-0.472	-0.797
Organ_Learn4	0	4.011	0.791	2.356	-1.103
Product_Innov1	0	3.781	1.096	0.025	-0.815
Product_Innov2	0	3.993	1.22	-0.939	-0.798

Product_Innov3	0	3.085	1.228	-0.913	-0.344
Product_Innov4	0	3.544	1.156	-1.256	-0.304
Product_Innov5	0	3.963	1.122	0.04	-1.004
Process_Innov1	0	3.848	1.059	0.906	-1.104
Process_Innov2	0	4.059	0.787	1.077	-0.794
Process_Innov3	0	4.126	0.73	1.014	-0.718
Process_Innov4	0	4.163	0.737	1.004	-0.77
Process_Innov5	0	3.537	1.16	-0.604	-0.434
Process_Innov6	0	3.996	0.805	1.432	-0.893

The data were also subjected to a multi-collinearity test, for which SMART-PLS used the Variation Inflation Factor (VIF), which had to be less than or equal to 5 (VIF=5), [58]. The VIF for each design was deemed adequate, as shown in Table 3.

Table 3. Collinearity statistics (VIF)

Variables	VIF
Continu_Quali_Impr1	1.824
Continu_Quali_Impr2	1.726
Continu_Quali_Impr3	1.369
Continu_Quali_Impr4	1.167
Customer_F1	1.058
Customer_F2	2.391
Customer_F3	2.394
Customer_F4	1.867
Customer_F5	2.949
Customer_F6	3.039
Customer_F7	2.440
Emplo_Inv1	1.250
Emplo_Inv2	1.228
Emplo_Inv3	1.046
Emplo_Inv4	1.002
Organ_Learn1	1.441
Organ_Learn2	2.055
Organ_Learn3	1.929
Organ_Learn4	1.009
Process_Innov1	1.733
Process_Innov2	1.652
Process_Innov3	1.641
Process_Innov4	1.527
Process_Innov5	1.100
Process_Innov6	1.553
Product_Inov1	1.205
Product_Inov2	1.237
Product_Inov3	1.618
Product_Inov4	1.569
Product_Inov5	1.785
Top_Man2	1.282
Top_Man3	1.259
Top_Man4	1.282
Top_Man5	1.145
Top_Man1	1.031

5.3 Construct Reliability and Validity

The measurement's validity and reliability were determined by Smart PLS using confirmatory factor analysis (CFA), as shown in Table 4. According to, [58], the cut-off number for CFA is 0.60, but some studies claim that it should be no less than 0.70, [59]. Each build also has a Cronbach's alpha value greater than 0.60, as is advised, [58]. Additionally, the composite dependability scores, which represent a more thorough assessment of reliability, are higher than the cut-off mark of 0.70, [59]. Additionally, the average variance recovered for each construct (AVE) was higher than 0.5, demonstrating convergent validity. The Dijkstra-Henseler (Rho A) coefficient cut-off values are all higher than 0.7, adding support for composite reliability, [58]. Convergent validity is also proven, according to, [60], when (a) "all factor loadings are greater than 0.50; (b) all-composite reliability (CR) values are greater than 0.70, and (c) the average variance extracted (AVE) value is greater than 0.50. Table 4 contains more information.

Table 4. Construct reliability and validity

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Innovation Performance	0.622	0.752	0.718	0.538
Organizational Learning	0.696	0.720	0.777	0.508
TQM1	0.682	0.821	0.708	0.572
TQM2	0.832	0.830	0.872	0.598
TQM3	0.731	0.799	0.830	0.557
TQM4	0.657	0.736	0.751	0.574

The Fornell and Larcker criterion, the heterotrait-monotrait (HTMT) criterion and the evaluation of cross-loadings are not precise enough to find discriminant validity. These techniques are regarded as the most effective criteria for evaluating diagnostic validity. Table 5 contains a summary of

the outcomes of the HTML using Fornell-Larcker criteria. Henseler and associates claim that the cut-off number for HTMT must be less than 0.9, [61].

Table 5. Discriminant validity

Variables	Innovation Performance	Organizational Learning	TQM1	TQM2	TQM3	TQM4
Innovation Performance						
Organizational Learning	0.623					
TQM1	0.774	0.375				
TQM2	0.558	0.631	0.272			
TQM3	0.451	0.271	0.701	0.148		
TQM4	0.597	0.550	0.503	0.627	0.386	

5.4 Evaluation of the Structural Model

The structural model should be examined after the measurement model has been validated. The first important factor to consider when assessing the PLS-SEM is the coefficient of multiple determinations (R2) for each endogenous component. The ratio of a latent variable's explained variance to its total variance is measured by R2. In PLS-SEM path models, R2 values of 0.67, 0.33, and 0.19, respectively, are categorized by, [62], as being significant, moderate, and weak. Table 6 provides examples of the R2 values.

Table 6. R square values

Variables	R Square	R Square Adjusted
Innovation Performance	0.506	0.496
Organizational Learning	0.463	0.455

The next stage in evaluating the structural model is to analyze the regression coefficients between the validated latent variables. The researcher should confirm the regression coefficients' algebraic signs, magnitudes, and significances. The connected research hypotheses are not supported by paths with indicators that are incompatible with the theoretically hypothesized link. The magnitude of a regression coefficient indicates how strongly two latent variables are associated. Regression coefficients should, in the opinion of some authors, be bigger than 0.1 to account for important effects within the model, [62]. Also, at the 0.05 level, regression coefficients must be statistically significant. To determine relevance, resampling techniques like bootstrapping are frequently used. Predictive ability is a final consideration in the evaluation of the structural model, [62].

In the model, none of the control variables had any significance. Researchers using PLS found that

regardless of significance, adding control variables greatly lessens the effect, [58]. By converting the sample and projected covariance matrices into correlation matrices, the root mean square residual (RMSR), also known as the standardized root mean square residual (SRMR), is produced. Additionally, Smart PLS computes the bootstrap-based inference statistics for the SRMR criterion. The findings of the SRMR bootstrap confidence interval are interpreted using the exact model fit.

The difference between the observed and suggested correlation matrices in the model is known as the SRMR. In turn, it makes it possible to use the average size of actual and expected correlation discrepancies as an objective indicator of the model fit requirement. A fit is considered adequate if the number is less than 0.10. In this study, SEM analysis showed that SRMR = 0.082, which is acceptable, [58]. To prevent model misspecification, [61], provides the SRMR as a measure of model goodness of fit for PLS-SEM.

The structural model was evaluated using Smart PLS software in the subsequent stage to test the hypotheses generated by this research (Table 7). By including all abilities, this research initially validated the predicted model. One of the first fit measures in the SEM literature was the normed fit index, which was suggested by, [62], [63]. It computes the Chi-squared value of the suggested model and evaluates it against a useful standard. The Chi-squared value of the suggested model does not provide sufficient information to assess model fit, so the NFI compares the proposed model to the null model. However, the literature does not describe why the PLS-SEM chi-squared value is different from the CB-SEM value.

Table 7. Fit statistics

Coefficients	Saturated Model	Estimated Model
SRMR	0. 082	0.082
d_ULS	12.419	12.419
d_G	6.906	6.906
Chi-Square	664.811	664.811
NFI	0.966	0.966

Therefore, the NFI is calculated as 1 minus the Chi-squared value of the proposed model divided by the Chi-squared value of the null model. The NFI consequently generates numbers between 0 and 1. An improved match is indicated by an NFI number that is nearer to 1. The NFI score for the present study is 0. 966, which is greater than 0.9 and denotes a satisfactory match. In [64], the authors go into great depth about the NFI computation of PLS route models. For the practical user, these justifications are, however, rather challenging to understand. The gradual fit is measured by the NFI. The fact that model complexity is not penalized is thus a major flaw. The NFI result is higher (and consequently more accurate) the more model parameters there are. It is suggested by, [64], to calculate the NFI of PLS path models. The NFI is not yet supported by SmartPLS.

Hypotheses Validation

This research used a bootstrapping method on a randomly chosen subsample (with replacements) from the original set of data to test the hypotheses, [58]. Bootstrapping ensures the reliability and constancy of results, [58]. Following bootstrapping, the structural model utilized route coefficient estimations to emphasize the strength of the association between the independent and dependent variables (Table 8).

Table 8. Path coefficients

Variables	Innovation Performance	Organizational Learning
Innovation Performance		
Organizational Learning	0.073	
TQM1 (Top Management)	0.418	0.143
TQM2 (Consumer Support)	0.201	0.255
TQM3 (Continuous Improvement)	0.038	0.085
TQM4 (Employee Involvement)	0.270	0.548

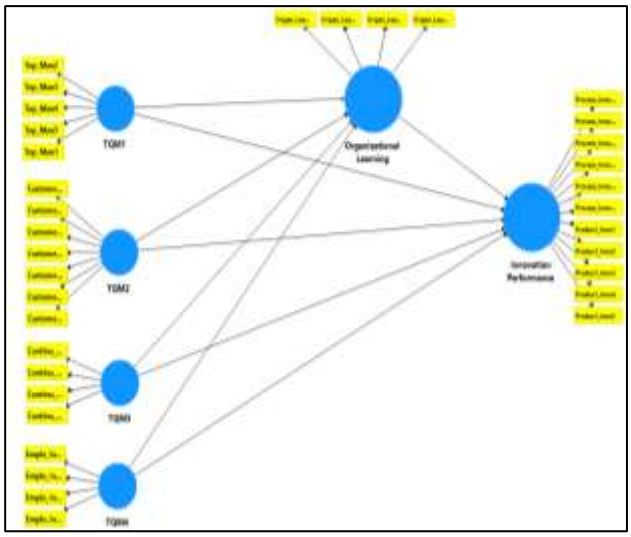

Fig. 2: PLS-SEM diagram

According to the findings presented in Figure 2 (Beta = 0.418, P value 0.05), there is a substantial correlation between top management, or TQM1, and innovation performance. Furthermore, top management support has a beta of 0.143 (P 0.05) and substantially affects organizational learning. TQM2 (consumer support) significantly improves organizational learning (Beta = 0.255; P value = 0.001) and innovation success (Beta = 0.201; P value = 0.010). With a beta value of 0.270 and a P value of 0.008, the findings remarkably demonstrate a significant positive relationship between TQM4 (employee involvement) and innovation success. Employee participation additionally moderately and favourably affects corporate learning (Beta = 0.548, P value = 0.000).

However, there was no evidence to support the impact of TQM3 (continuous quality improvement) on organizational learning (P value = 0.182) or innovation success (P value = 0.495). As a consequence, the findings of the path analysis in Smart PLS indicated that there is no significant correlation between organizational learning and innovation performance.

5.5 Discussion

The purpose of this study was to determine whether a comprehensive set of management strategies, or TQM, is capable of helping organizations achieve their goals and objectives, meet customer expectations, enhance performance, efficiency, and effectiveness, and produce the desired business outcome. The findings of this research showed that in the Duqm Special Economic Zone, TQM is what separates high-performing firms from conventionally performing construction firms. (DSEZ). The findings are discussed in this chapter, along with the study's conclusion.

The research provided answers to various queries. It evaluated the impact of TQM methods on the effectiveness of innovation. This study's analysis of innovation success takes into account both product and process innovation. The process of creating and introducing new goods and services is referred to as product, and the innovation dimension refers to the rate of innovation, or the length of time needed to create a new good, as well as the capacity to enter new markets with new goods before competitors and frequently replace existing goods with improved versions.

The implementation of novel and enhanced production and delivery techniques, which may involve alterations to the tools, software, and/or procedures employed, is known as process innovation. Similar to this, process innovation takes into account a company's rate of technology adoption as well as how rapidly it adopts new technologies as they appear in the market. Observed results (Beta = 0.418, P 0.05) Moreover, consumer support significantly improves organizational learning (Beta = 0.255; P value = 0.001) and innovation performance (Beta = 0.201; P value = 0.010). With a beta value of 0.270 and a P value of 0.008, the findings surprisingly demonstrate a substantial positive link between TQM4 (employee involvement) and innovation performance. The impact of TQM3 (continuous quality improvement) on organizational learning (P value = 0.191) and innovation performance (P value = 0.495) was not, however, supported.

The holes in past studies were covered by this study, [65]. According to this study, a firm's top management backing and staff involvement—both internal human agents—significantly contribute to the spread of TQM by fostering three stages of creative performance across the board. Hence, innovation in this study will be driven by both management support and employee participation desires. It can be referred to as the level of supplier involvement, collaboration, and other terms that more closely relate to inventive behavior, specifically among Oman's construction workers.

Similarly to this, the study discovered a link between organizational learning and TQM procedures among Omani construction enterprises. Top management support, with a beta of 0.143 (P 0.05), statistically significantly effects

organizational learning as well. With a focus on construction in Oman specifically, there is insufficient data to determine if TQM practices may improve organizational learning and technological innovation.

Employee participation also moderately and favorably promotes organizational learning, according to the data (Beta= 0.548, P value = 0.000). Unfortunately, organizational learning did not significantly benefit from continuous quality improvement. According to this finding, [34], previously highlighted the tri-dimensional linkages between TQM, market performance, and staff members' commitment to learning. Moreover, [24], found that there was a lack of research, particularly empirical studies, on the connection between TQM and innovation. Organizational learning, according to, [32], is the main result of TQM deployment within a firm. Yet, most studies supporting the idea that TQM influences organizational learning were conducted in western nations, [66].

TPM and TQM methods' effects on engineering product and component manufacturers' performance, [66], Oman hasn't done much research in this area, though. Although models were created and are currently being empirically validated in Oman, the studies cited are mostly conceptual. Yet, this conceptual investigation significantly advanced the TQM research community.

The research also looked at the connection between organizational learning and innovation performance in Oman's construction firms. The findings of the path analysis in Smart PLS demonstrated that there is no significant correlation between organizational learning and innovation performance. Organizational learning, however, has not been shown to be a mediating factor between TQM and an organization's success in terms of innovation. Furthermore, developing such expertise is a difficult process that might entail deliberate actions to guarantee positive results. These intentional actions must be taken to ensure that people carry out their designated tasks and work to improve performance. Similarly, the company might still need strong knowledge management capabilities to boost the efficiency of human capital growth and create organizational expertise for innovation.

The study acknowledges that TQM strategies, such as effective process management, have been demonstrated to help organizations establish routines based on best practices, which can then be used to lay the groundwork for learning any new activity, [66]. The idea that organizational learning functions as a mediating factor in the connection between each TQM dimension and innovative performance, however, is not supported by any empirical data. It's interesting to note that, [67], findings from a different study did not support the idea that organizational learning played a major mediating role in the relationship between TQM and innovative performance among Malaysian manufacturing firms. As a result, it will be important to look into whether other Omani businesses have a similar mediating relationship.

6 Conclusion and Recommendations

By examining the relationship between TQM practices and innovation success and utilizing the three dimensions of TQM practices (employee involvement, customer emphasis, and continuous improvement), this study aimed to make theoretical and practical contributions. This study also aims to address the crucial role of a firm's learning processes in fostering innovation performance by investigating the mediating role of organizational learning in the relationship between TQM and innovation performance. This work contributes in many different ways in terms of application. The findings of this research are expected to have significant ramifications for the application of different TQM methodologies, not only for operational performance but also for organizational creativity. The study's conclusions will help managers strike a delicate balance between TQM practices and different innovation dimensions, which, if done well, will allow them to participate in both domestic and international innovation races and make use of their financial situation.

6.1 Implications of the Research

In Omani construction, this research primarily serves as the first to rationalize the TQM categories and their ties to organizational learning. The purpose of this study is to define TQM and demonstrate how it supports organizational learning in Omani construction enterprises. The existing knowledge vacuum is filled by the relationship between TQM and organizational learning in the Omani construction setting. The current theoretical framework is centered on TQM components that are essential for ensuring Omani construction businesses have high organizational learning levels.

Because of this, it is anticipated that this research will add to the expanding body of information on TQM and organizational learning and provide quality management professionals and academics with a clearer understanding of how TQM practices relate to organizational learning. To better comprehend the connection between TQM practices and organizational learning, future studies on the conceptual model may incorporate comparisons between other nations and industries.

In the end, entities have to implement and adhere to ISO 9001/2014 as it has a strong base that can be utilised by the organisation to apply Quality Management. As well as it will improve the internal communication channels within the organisation which will increase the level of initiates generated by the staff further improving the work environment and employee satisfaction.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The author contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received.

Conflict of Interest

No conflict of interest to declare.