

Content and Contextual Analysis of the Total Quality Management and Innovative Performance through Organizational Learning

AHMED SAIF SALIM AL MAAMARI, ABDULAZIZ BIN MAT ISA
College of Graduate Studies (COGS),
Universiti Tenaga Nasional,
Jalan IKRAM-UNITEN,
43000 Kajang, Selangor,
MALAYSIA

Abstract: - The research is based on Innovative Performance (IP) as viewed through the quality management and innovation performance lenses. For this, a content analysis of the concept was performed to investigate the phenomenon of interest in depth. This paper aims to identify the most important quality variables as predictors of innovation performance in the Sultanate of Oman, with a focus on employee involvement, customer focus, and continuous improvement. A systematic literature review (SLR) was used to conduct content analysis for the study. Furthermore, contextual analyses were performed to investigate the phenomenon in depth. According to the findings, top management, consumer support, and employee involvement all have a good impact on IP and OL. However, the study discovered that continual quality improvement did not affect IP or OL. The study suggests that future research be undertaken to investigate the aspects that can have a favourable impact on organizational performance and innovation through continuous quality improvement.

Key-Words: - Innovation Performance (IP), Organizational learning (OL), Total Quality Management (TQM) including Human Capital Management, and Customer focus.

Received: March 23, 2023. Revised: September 5, 2023. Accepted: October 4, 2023. Available online: November 17, 2023.

1 Introduction

Today's economic dynamic is quickly increasing global climate, innovation is critical to defining a company's overall competitiveness. Globalization has untangled a new growth philosophy for companies looking to stay competitive in the twenty-first century. To grasp market possibilities at a time when organizations are struggling to achieve traction, organizations must regard innovation as a fundamental strategic driver that provides them with a strategic orientation and a competitive advantage in the turbulent economic environment, [1], [2], [3].

Consumers are well-connected to mainstream markets in today's economic environment thanks to information and communication technologies (ICTs), [3]. They are better informed, more willing to learn, and looking for organizations that can match their current and future needs than ever before. This quandary has resulted in "ever-changing consumer preferences that are neither stable nor escalating." For established businesses, this huge transition may be viewed as both a challenge and an opportunity. The proposed remedy

is "it's war: innovate or die", [4]. Thus, an organization's sustainability is fully dependent on its acceptance level and management's eagerness to confront these emerging difficulties, which necessitate ongoing changes in business strategies to remain relevant in a dynamic global market, [5].

Quality has long been recognized as a priority by the leaders of highly creative firms, [6], [7]. Both innovation and quality assurance are critical for corporate success and maintaining a competitive edge, [8], [9], [10], [11].

TQM is a long-term philosophical approach used by businesses to gain a competitive edge, [12]. TQM has yielded profitable outcomes for many firms, although many are unaware of its current and future benefits, [13]. Because innovation has produced a major shift in the global economy, most business leaders are concerned that TQM, with its control and monitored procedures, will suffocate creativity and innovation. This has prompted a new debate in academics as well as among industrial professionals and in-house R&D teams over how

firms can encourage innovation while employing TQM.

As a result, managers today are looking for answers to the question of what actions they may take to maximize overall innovation-related processes while adhering to the TQM concept. Because these management practices TQM are deeply embedded in organizational routines, leveraging them to foster successful innovations, add value to a firm's overall success, and create a better reputation for stakeholders is something that requires attention and fosters new considerations in academic research, [14]. As a result, the current study focuses on TQM and how it affects innovative performance in firms.

TQM (TQM) is widely used around the world and has piqued the interest of academics, [13], [15], [16], [17], [18], [19]. The latter has mostly focused on the influence of TQM on firm performance; however, attention has recently shifted to its relationship with innovation. Unfortunately, the effort put into addressing the challenges of integrating TQM with other sorts of innovations is still minimal from a theoretical standpoint. Second, the extent to which a dynamic competency, such as corporate innovation capability, can be critical in leveraging innovation levels in TQM-practicing organizations has received little attention. Finally, it is unknown what role organizational culture (innovation culture) has in the effective development of innovation for long-term competitive advantage. [14].

The level of TQM procedures is critical for firms implementing technological innovation capabilities. This is due to the ease with which successful firms can be identified and measured. According to the findings of the previous research, different levels may be considered as positioning models for assisting organizations to identify their weak points and aid in forming the essential future actions to follow up the incessant challenges of constant improvement, [13], [15], [16], [19]. The stages can also help to highlight various perceptions of organizational progress at all levels, with the goal of continuous improvement.

From an organizational standpoint, organizational leadership must understand TQM techniques and their link with IP to be able to remain competitive to gain a competitive advantage. Previous studies' results and findings are unsustainable due to the paucity of investigations on this link. According to the findings, [20], there is

insufficient evidence to indicate a link between Practices of TQM and innovation. The studies, on the other aspect found to have beneficial associations between TQM and IP, [14].

Another study, [21] discovered there was an insufficient contribution to the relationship between TQM and innovation, notably in the few empirical studies. Based on these findings, companies continue to suffer from an inability to sustain innovation over a lengthy period. This is because the research on organizational innovation was conducted in an inconsistent and unconvincing manner and was regarded as a low-concentration explanation. As a result, businesses are unable to capture ideas with a broad vision and comprehension, and they are unable to transfer these concepts into well-organized and practical procedures, [22].

Finally, establishing a relationship between TQM and Innovation Performance is critical for every organization today since it provides both a theoretical and practical basis for service and manufacturing organizations. These are efforts to gain a long-term competitive advantage while also generating profit for the organizations.

This work aims to clarify the means through which one can reach development, discover what is new, reach innovation, move away from traditional and stereotypical methods, and search for modern methods, better options, and tools that can contribute to development and progress in terms of comprehensive quality and innovative performance through organizational learning, in addition to identifying the most important factors through which you will effectively contribute to achieving customer satisfaction, employee efficiency, and continuous quality improvement. The indirect archaeological notions of inventive behavior between total quality management and organizational learning are also discussed in this article.

There is some ambiguity in previous literature, necessitating additional research and analysis to achieve the desired conclusions. As well there is a lack of studies regarding TQM in the middle east region specifically the Gulf Council Countries.

2 Research Methodology

The report employs a multi-method approach while keeping the study's scope and aims in mind. A complete Systematic Literature Review (SLR) was

conducted in the first phase to explore the phenomenon of interest in depth. For SRL, the search engines Google Scholar, Web of Sciences (WoB), and Scopus were used to find relevant material. In the first part of the study, the keywords were total quality management, innovation performance (IP), and (OL). Similarly, for the second round of content analysis, "TQM and IP", "IP and OL", and "TQM and OL" and similar keywords were employed.

Furthermore, the study period was made indefinite to investigate all essential topics. Furthermore, only documents published in English were evaluated for the search. The document search focused on research publications from journals, periodicals, and conferences. Similarly, literature was consulted for the search and study. Finally, only documents published in social and commercial journals were chosen for publication.

The PRISMA diagram was used for the content search. The examination discovered a total of 637 documents in the first and second phases. These documents were scanned for duplication, redundancy, and other irregularities, and 208 were deleted in the first round. Similarly, 39 documents were deleted because they were published in a language other than English. Similarly, 72 documents were eliminated because they had been published on a different subject, as stated in the inclusion criteria. The specifics are shown in the PRISMA diagram in Figure 1.

Due to the contextualization of the study and its confinement to the economic zones and centres in Oman, the study also focused on local and contextual practices, policies, and regulatory documents in the second phase, so that the research can present policy documents for the country's social and economic development.

Furthermore, the pre-seasons for the content and contextual analysis were admitted, as literature on TQM and creative processes in the organizational setting, particularly in the Omanization context, was found to be silent.

Based on previous research, this study focuses on total quality management and implicit analysis related to industrial innovation for businesses in the Sultanate of Oman's free zones located in a demographic regional environment. Based on the findings of these studies, we re-applied portions of the departments more appropriately for the nature of the business and departments in the Sultanate of Oman.

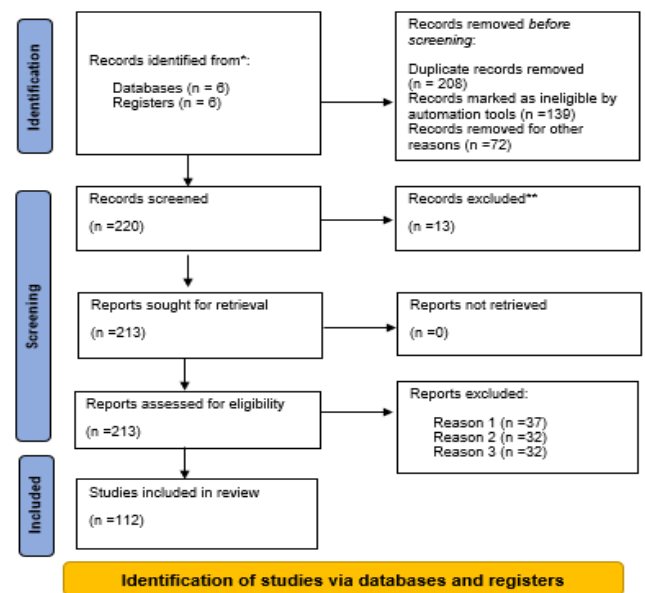


Fig. 1: PRISMA diagram for the study

3 Findings of the Study

3.1 Contextual Analysis of the Study

During the contextual analysis, the CEO and top management were addressed by emails, phone calls, messages, and other possible methods to investigate the Omanization context in depth. The analysis discovered the email of Microsoft CEO Mr Satya Nadella, who communicated his ideas to staff via email. He emphasized the word 'innovation' throughout his presentation. For example, he declared, "We must prioritize innovation." "We need to bring more innovation to bear," another statement says. Mr Satya Nadella used the word 'innovation' or 'innovative' three times while addressing a question during an interview for a promotional film. Mr Nadella focused on innovation again in his response to another question on his plans to lead Microsoft, saying, remove any restrictions that prevent us from being innovative; every individual should create. "Then, this innovation is concentrated on what Microsoft can accomplish uniquely," he added.

Finally, he emphasizes that he wants to be able to lead Microsoft into "innovation forward." On the Global Innovation Index 2016 (GII), the majority of Arab countries received less than 40 points out of a possible 100. GII conducted research in 128 countries. The United Arab Emirates (UAE) was placed first among Arab countries and 41st overall, with 39.35 points, while Saudi Arabia was ranked second among these nations and 49th overall, with 37.79 points.

Qatar was ranked third and 50th in the world, with 37.47 points, followed by countries with 70 or fewer points.

The political environment, human capital, business environment, and research and development are the most important sectors contributing to Oman's global innovation index. The most influential of these is the corporate environment, [23]. The growing tendency in the corporate environment demonstrates its contribution to national and worldwide innovation. The graphic below explains the derivatives that contribute to the global innovation index.

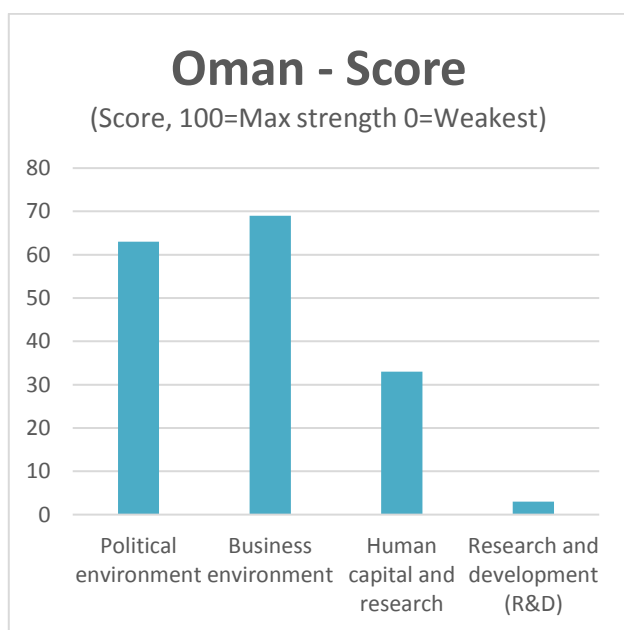


Fig. 2: Sectors contributing to Oman's Global Innovation Index

3.2 Source: Global Innovation Index 2018

The Global Innovation Index Ranking provides a more diverse image of global rivalry, with countries from various corners of the world appearing as tough competitors with both the push and the potential for innovation to become global market leaders. A comparison of the top ten economies' innovation index rankings between 2012 and 2013 shows that many countries improved their rankings, including the United Kingdom, the Netherlands, the United States, and China, which moved up from fifth to third place, sixth to fourth, tenth to fifth, and eighth to seventh place, respectively. Many economies lost ground, including Singapore, which fell from third to eighth spot, and Finland, which fell from fourth to sixth spot. Switzerland and Sweden are undisputed leaders, consistently ranking in the top 25.

The Research Council (TRC) of Sultanate of Oman's Industrial Innovation Strategy focuses on ten key areas to boost innovation: education, research and development, localization of knowledge and technology, production and commodities, knowledge management, information readiness, consulting services, local marketing, standardization and follow-up, and harmonized policies, [23].

Along with this, efforts are being made to enhance the level of quality outputs by the industries, as this is one of the issues that has prevented Omani industries from entering worldwide markets, [24]. In this regard, the government has taken several initiatives, such as establishing National TQM (NTQM LLC) with the primary goal of assisting and elevating local firms to worldwide quality standards, [23].

Last but not least, local companies, in collaboration with the government, use a TQM approach to provide quality management services such as SFZ (Salalah Free Zone), which integrates all organizational roles such as executive, finance, marketing, planning, projects, information and communication technology (ICT), engineering, human resources (HR), and administration to emphasize customer needs and achieve desired organizational goals, [25].

3.3 Content Analysis

The corporate world has altered considerably over the previous decade as a result of high saturation and fierce rivalry in both home and overseas markets. Aside from rivalry, the desire for quality assurance has emerged as the most significant factor for firms to maintain survival in a fast-expanding international market, [26]. Despite having low-cost, diverse, and high-quality products, several enterprises began losing market share to international competitors, [27]. Many businesses switched their emphasis away from low-cost production and toward higher-quality products, [28].

They realized that in this age of global competition, survival of the fittest applies, and as a result, businesses that provide outstanding quality and go above and beyond the consumer's voice will stay longer in the market, while those that fall behind will vanish forever. These businesses have not only spent money on acquiring and implementing new technologies like computer-integrated marketing, just-in-time production, computer-aided design, and integrated manufacturing, but they have also spent time and

effort on introducing and implementing new quality management strategies and techniques, quality policies for continuous improvement, quality control, and quality assurance programs, [27]. They believed it was one of the best ways to grow and sustain existing markets while also attracting new potential clients.

Even today, Researchers believe that to produce high-quality products, organizations must emphasize their quality processes, as they are judged by their customers, who are the primary source of determining the quality and stimulating competition among enterprises, [29]. It is also suggested that to meet better quality standards in the eyes of customers, firms must go a step further regulate TQM, and strive for continuous development. One of the factors according to Researcher, is the struggle of the company to achieve a greater degree of quality, [30].

Total Quality management principles have been adopted by private and public firms to attain improved levels of performance in their organizations since the late 1980s. It is also worth noting that there has been a significant positive movement in TQM awareness during the last decade, [28].

The study, [11], has also emphasized the necessity for new management that is based on TQM principles, which, according to researcher, helps boost the company's productivity, [21]. As a result, executives of world-class enterprises have long paid special attention to building TQM in their organizations, realizing that the hidden treasure is "total quality," which will make them more successful.

Countries have even highlighted this issue at the national level, enlisting government agencies in collaboration with foreign specialists to assist domestic firms in competing in international markets. Organizations have employed several proposed frameworks, some of which were effective while others were not, [20], [22], [26], [31]. Many were terrified since they didn't know what they were looking for. They were looking for answers to concerns like, "Will the existing frameworks meet their needs?"

In addition to quality, innovation is a critical aspect of achieving an advantage in competition in the market. As a result, the firm's internal expertise would not only assist them in withstanding external pressures and dangers, but it would also help them maintain a competitive advantage by offering high-

quality new products both domestically and internationally markets.

3.4 Total Quality Management

TQM is widely recognized as a Japanese approach to quality improvement that has greatly contributed to the growth of today's highly successful organisations' management practices, [12], [13], [29], [32]. TQM is being evaluated as a corporate management element on a larger scale, [32]. According to, which demands organizations have a clear internal conceptual understanding of TQM to realize its actual worth and give support for its implementation, [33].

The TQM concept involves internal and external customers and their integration, as well as the involvement of employees at all levels throughout the company in the goal of continual improvement, [34]. They defined TQM as the "art of managing the whole to achieve excellence." It is also true that no commonly accepted definition of TQM exists rather, each published book on the subject provides a fresh definition for readers to comprehend, [35].

According to, [36], as quoted in quality management is all about teamwork, where every individual worker contributes his or her best efforts to an organization with available resources to fulfil customer expectations by producing services that meet or surpass the expectations of customers. The preceding criteria are based on managerial tools and approaches known as hard TQM (employee involvement, customer focus, and continuous improvement).

Total quality management (TQM) refers to a management strategy in which a firm achieves organizational growth through a dedication to customer requirements. A corporation satisfies those requirements when it enables every person in every department to maintain high standards and strive for continual development. Total quality management is the forefather of several quality management methods, including Six Sigma, Lean, and ISO.

TQM standards have been established in countries such as Germany, France, the United Kingdom, and Turkey. TQM was, however, superseded by ISO (International Standards Organisation), which had become the standard for much of continental Europe, and by Six Sigma, another methodical response to quality challenges created in the 1980s, by the 1990s. TQM concepts, however, serve as the foundation for the majority of ISO and Six Sigma.

TQM, like its successor techniques, effectively adapted to finance, healthcare, and other areas following its inception in manufacturing. Toyota, Ford, and Philips Semiconductors are just a few of the well-known companies that have employed TQM.

There is no single recognized body of knowledge for overall quality management, such as the Project Management Body of Knowledge (PMBOK) for the Project Management Institute. Similarly, there are no prescribed actions for deploying TQM methodologies and tools. Organizations have been able to deploy and adapt TQM as they see fit, resulting in numerous definitions of the approach.

From conducting this study, implementation of these techniques in real-world environments such as Industrial free zones would increase the ease of management of large industrial projects.

3.5 Approaches to TQM

The global interest in implementing TQM practices and principles in various countries, firms, and industries sheds light on the efforts made in the past by academic researchers, practitioners, and consultants who conducted rigorous research and developed TQM measurement constructs. Researchers identified the following ways based on specific organizational features or criteria that are required for TQM implementation:

1. Systems perspective approach
2. Critical success factors (CSF) approach
3. Quality award models' approach.

3.6 Systems Perspective

Systems schools, which have their roots in general system theory envision organizations or businesses as complex interrelationships of process, input, feedback, and output, [37]. Furthermore, they argue that traditional management ideas do not provide a complete picture of a certain scenario in the organization. In other words, the organization could be better viewed as a complicated system with various levels of flexibility processes and different feedback loops that it employs to ensure its continuous existence in a competitive market. In terms of change management, system, emergent characteristics, and complexity are three aspects that have a significant relationship, [38].

According to, [39], to "the quality management system (QMS) can be considered of as the service

mechanism for the organisation" since it "makes an effective judgement about boundaries at all system interfaces in the organisation, along with the user and organisational systems."

Thus, quality judgement is implemented at the borderline between the user and supplier systems in terms of what passes through them, according to system theorists. Furthermore, quality judgment aids in determining whether the result is a waste of a product. An adequate output is called a product; however, if it is not consumed by the user system, it becomes a waste, [37]. The systems approach has had a long-lasting impact in the context of TQM, as distinct management models such as TQM and HPO (High-Performance Organisation) are seen to have originated from a system thinking perspective. The system thinking management style emphasizes the need for organizations to take a more comprehensive approach, [40]. Thus, the TQM process can be considered a system with interactive components, and expecting desirable results from just one aspect of the system is incorrect. As a result, TQM from this perspective is more than just leadership, culture, employee training, and team formation; rather, it is a composite of all of these aspects that work together in an organization to achieve desired results, [41].

According to, [41], TQM failures occur when management is unable to implement quality management (TQM) by viewing it as a complex system of interconnected serial interactions. According to, [42], the business excellence awards are the new shape of TQM today. All of the quality awards that we are familiar with today are models of business excellence and follow a full systems approach that includes systemic control of all available resources, including cultural and social components.

The study, [42], prompted to develop of a quality model from a system dynamics perspective that aids in understanding the relationships between a set of system variables and anticipates consequences over time, [43].

The study, [42], demonstrated the interconnection of several organizational subsystems in the context of quality using system dynamics software. This is depicted in Figure 2. Using system dynamics to approach TQM, the TQM index is obtained as the sum of TQM variables classified as 'enablers' and results, [43].

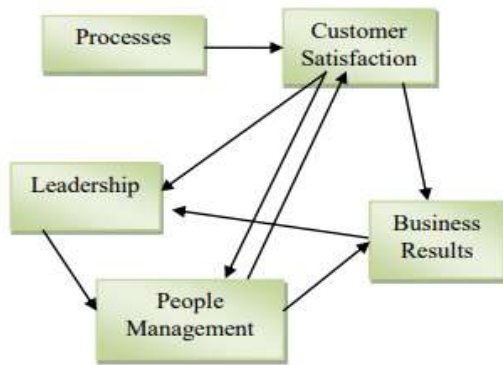


Fig. 3: Quality & business results, [42].

Using MBNQA of the United States, writers classified enablers as human resource (HR) focus, supplier focus, market and customer focus, strategic planning, and information management process management. They went on to describe information management as a 'base' where 'enablers' provide respite and information serves as glue.

3.7 TQM Critical Success Factors (CSF)

TQM implementation entails the deployment definition numerous of elements or components, [44]. This might be performed using the literature's second major method for understanding the CSF. The study, [45], identified eleven significant influencing factors that can impact successful TQM implementation. These are the following factors: the quality improvement measurement system, Customer and people management, external interface management, and strategic quality management, corporate quality culture, operational quality planning, teamwork structures, supplier partnerships, orientation, effective communication, and customer satisfaction. The study, [46], defined the TQM list with fundamental characteristics for TQM excellence based on award-based and academic scholar-based frameworks in a complete analysis of numerous quality frameworks for manufacturing, as shown in Figure 3. Their research discovered striking similarities between different frameworks and discovered that the factors contributing to achieving Total Quality Excellence (QTE) include both soft aspects (i.e., management systems such as leadership, employee focus, and customer focus) and technical aspects (i.e., techniques and tools for quality improvement).

The study, [47], sought CSF in Pakistan's manufacturing business. As a means of achieving

high levels of effective quality management, he identified ten critical factors: "The availability and use of quality information, the quality policy, the strategic planning process of quality management, benchmarking, empowering employees, top management orientation, top management participation, human resource allocation, and feedback are all examples of quality management practices".

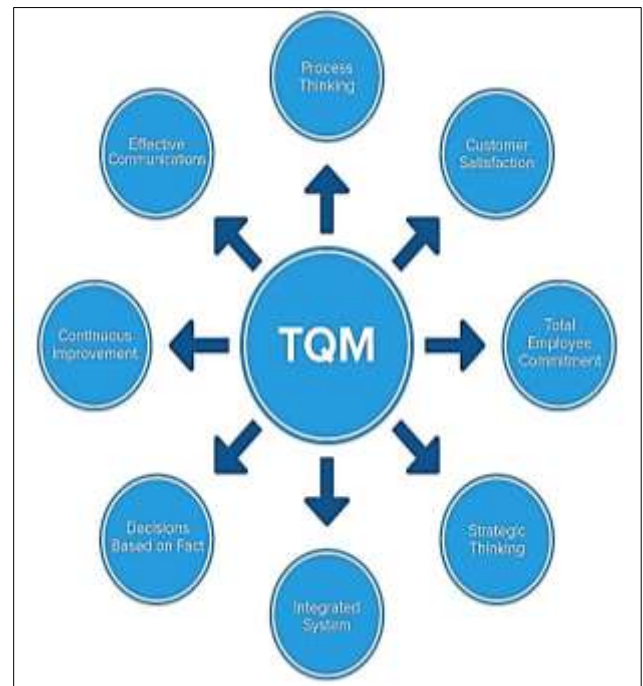


Fig. 4: TQM approaches, [10].

One conclusion that may be taken and is reported by various scholars is that there is a lack of agreement on a single list of TQM important criteria since studies have not been able to address clearly "What makes TQM work?", [48], according to Figure 4. An evident challenge of TQM critical factors is to " identify them, and how should their influence be measured before they become critical." As a result, there are differences as well as similarities between authors when it comes to the important components of TQM.

3.8 Quality Awards Approach

The next primary way to understand TQM is to use the business excellence of national quality awards, abbreviated as EM/NQAs. Many EM/NQAs are credited to the Deming Prize, EFQM, and MBNQA models. It can be seen that, despite having multiple specifications for such models, many EM/NQA are

unique, [49], [50]. EM/NQAs exist solely to elevate industries and prepare them for global competitiveness. The study, [51], conducted a comparative analysis of the Western awards and the Deming Prize based on the objectives, quality principles, and criteria and reported that all of these awards have at least seven common sets of criteria: "leadership, strategic planning, marketing and customer focus, information and analysis, process management, business findings and human resource focus " and have all highlighted the importance of customer-driven quality, employee satisfaction, and business results.

The study, [49], Most recently, identified nine generic characteristics as crucial ingredients in his complete assessment of 20 EM/NQAs, including leadership, people, supplier/partner, strategic planning, knowledge management, customer, society, processes, and business results. According to, [42], the following ingredients are quality criteria that form the basis of the establishment of these excellence awards because they span all operational areas of a corporation: It was also revealed that the criteria for the internal environment (the differentiators) can be leadership, knowledge management, processes, and strategic planning, which accounted for 50 and 40 percent of the scores in all EM/NQAs, respectively. Last but not least, the goodwill criteria society and suppliers/partners" have a roughly 10% score in most EM/NQAs.

All three are important because if one develops or strengthens the internal environment, the other generates goodwill and contributes to sustainability. The study, [52], TQM practises, as emphasised by were also utilised to design and help create criteria for a variety of quality awards, including the Malcolm Baldrige National Quality Award (MBNQA) and the European Foundation for Quality Award (EFQA). The most extensively acknowledged and widely used framework is the MBNQA framework, which is commonly used as a foundation model for TQM, [53].

The study, [54], discovered three key criteria that are shared by findings in an extensive literature study on TQM implementation constructs, [55]. Many other researchers have employed these three factors as TQM constructs in their studies as well, [54], [56], [57], [58], [59]. To meet the study's aims, we will select three MBNQA-identified factors and add one more "Supplier management" factor widely used by academics in the TQM-Performance research environment. The factors used in research

likewise comparable to those used in previous TQM-IP research, [60], [61], [62].

3.9 Innovation Performance

Individuals and firms absorb, integrate, trade, and develop new information as a result of collective knowledge, [13], [19]. [63], It advocated for close coordination and integration of market information and technological expertise to simultaneously satisfy economic, social, technological, and other constraints, [64]. As a result, innovation is a complex systemic process, [65].

The main reason is that such organisations face the risk of competitors taking over the market, losing key personnel, and, on a very small scale, failing to run efficiently. As a result, innovation would be a key distinction between those considered to be the cream of the crop. Innovation isn't just about creating new products or selling services; it's also about improving current company practices and processes. As a result, at the end of the day, everything would offer value to the organisation.

[102], The defines innovative performance as " the implementation of a new or significantly improved product (good or service), process, a new marketing method, or a new organisational method in business practises, workplace organisation, or external relations." Though the above definition is quite simple, [101], the innovation manual elaborates on innovation as " an iterative process initiated by the perception of a new market and/or new service opportunity for a technology-based invention, which leads to development, production, and marketing tasks aimed at the commercial success of the invention." The explanation of the preceding concepts concludes with two critical aspects of any type of innovation. To begin, the evolution of an invention's technology is linked to its end-user orientation through the adoption and dissemination phases, [65].

Second, the innovation process is "iterative in nature," which implies that any innovation is introduced, then refined and re-introduced, [10], [28]. Thus, the concept of innovativeness is related to any type of innovation and is used to determine the degree of newness for any kind of invention, [66]. Furthermore, for the aforementioned definitions show that any invention cannot become an innovation until it progresses through the stages of production, marketing, and market diffusion, [101].

As a result, any form of discovery that travels out of the laboratory and into the production process and adds value to the organisation, even if it is connected to cost savings, is deemed an innovation. Furthermore, it differs from creation in that it adds economic value to the organisation and may be used by others even if they did not discover it. According to the findings, organisational managers and policymakers must understand different types of innovations in terms of definitions and operationalization, as each type of innovation necessitates sophisticated and unique responses from organisations, [6], [7], [8], [21], [24]. According to literature, innovation is classified into various typologies. Administrative versus technology innovation, process versus product innovation, and incremental versus radical innovation are the most typical categories. Aside from this, the, [102], categorises innovation into four main facets: product innovation, organisational innovation, process innovation, and marketing innovation.

3.10 Product and PI

The studies, [67], [68], define product and process innovation as part of a larger framework of technological innovation. The same concepts are defined as "technological product and process (TPP) innovations" by the, [102]. Product innovation is driven by either technological progress or market demand, according to, [9]. They are not just market-focused, but also customer-driven, [69], [70], proposed a two-dimensional method for product innovation. The first dimension is technological capability, which refers to how far a product has progressed from existing technological capabilities to new technological capabilities. The second technique, the product capability dimension approach, examines the innovation (product) from the customers' point of view. In other words, the second approach attempts to assess the extent to which new product innovation can deliver benefits to consumers as seen by customers or as perceived by customers. One may strongly argue that the competitive market's balance of power could fluctuate dramatically depending on an organization's ability to induce changes in the product in the aforementioned dimensions, [9], [28], [68].

According to, [71], the focus of process innovation is on increasing productivity and production efficiency. According to, [72], process

innovation refers to improvements that an organisation makes to its processes during the product or service production phases. Process innovation is demonstrated through lean manufacturing methods, [73].

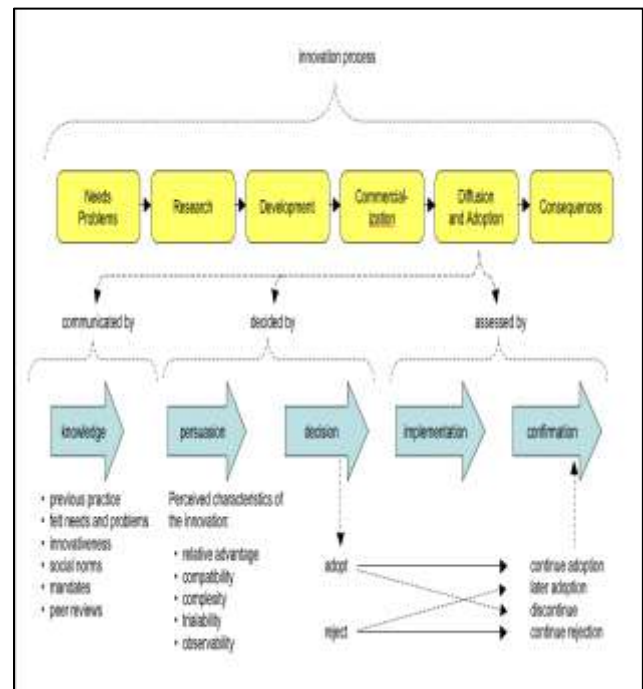


Fig. 5: Example of the innovation process

Process innovation allows organisations to produce a large number of items with few resources while attempting to reach higher levels of performance, [74]. Some good examples of process innovation include the use of an automatic noodle-making machine, the inclusion of bulk-packaging of sleeved goods, the start of three-dimensional modelling for designing purposes, the establishment of an e-commerce website for services and sales, and the implementation of lean production systems, [73]. Process innovation, in contrast to product innovation, focuses on improving the efficiency and efficacy of product production processes, [75], as shown in Figure 5.

3.11 Organizational Learning (OL)

People, not walls and mortar, are responsible for a company's existence, [76]. Continuous improvement in the organisation is possible if the people who work there are well-trained and well-informed. The behavioural characteristics of organisational personnel influence the organisation's positive or negative development. No organisation can be called an "innovative an organisation" unless it

provides its staff with advanced information, skills, and methodologies. Teamwork and increased employee participation are two strategies for developing a learning environment in the workplace. Furthermore, OL capability may be increased by keeping talented employees and attracting new employees who can develop and broadcast relevant information, [77]. Learning may be regarded as a "bridge between working and innovation" as a major organisational source and an essential component of market competitive advantages. For a competitive advantage in local and worldwide modern markets, the emphasis should not only be on learning characteristics, but also on unwavering continuous learning, [78].

With data from numerous earlier learning literature, the outcomes of learning can be restricted to behavioural change, cognitive change, or integrating these parts. From a behavioural standpoint, the learning goal is to change one's behaviour towards an expected outcome. In, [79], scholars defined learning as a process by which individuals gain new knowledge and insight and thus modify their behaviour and actions.

"However, [36], define it as the process of a technique of finding and repairing faults. This viewpoint is comparable to the stimulus-response model which contends that an individual's behavioural change is the stimulus feedback. An improvement in OL, for example, comes when its systems, methods, and processes are altered or influenced by contextual stimuli such as an invention, competitive pressures, or technological advancement, [80]. To put it another way, as argued by, [81], organisations' learning can be improved by modifying their systems and routines in response to external and /or internal stimuli. In contrast to the behavioural perspective, cognitive techniques emphasise learning that may be implemented through an internal mental process that encompasses an individual's information, memories, and insights, [78], [80]. This viewpoint emphasises how a learner builds connotation from events and how he or she individualises their experiences. Some scholars have labelled organisations as knowledge or information processing by with this concept. According to, [82], there is an internal learning method within the organisation that aids in the acquisition, interpretation, retention, and distribution of knowledge. He also emphasised that these learning processes can contribute to the organisational willingness to change the behaviours of their

employees. Similarly, [8], emphasised the importance of mental processes inside a company and individual learning in relation to learning in about contexts. To further this point, it can be observed that organisations and individuals both exchange information and mental process models, allowing them to "not only make sense but also take action". Another study was undertaken on the process of knowledge development in organisations by, [83], discovered that knowledge creation which emerges from vigorous interactions among diverse value systems within an individual. Because organisational learning is dependent on numerous characteristics of management processes, it is difficult to gain a comprehensive understanding of OL.

However, this study collects and expands on the following arguments raised in earlier studies: define learning as a "process of change in cognition and behaviour." Second, learning can take place at various levels, including companies, groups, and people. Individuals' learning and acting are seen as the primary factors inside an organisation, [84], nevertheless, as argued, enable learning by sharing what everyone has previously learned. Organisations, on the other hand, cultivate their learning skills, as stated disseminating information to their workers while concurrently endorsing new knowledge in everyday routines. Third, learning has a substantial impact on performance improvement. Although learning may not have an immediate impact on performance, it will ultimately and naturally align with organisational performance, [78], [80], [82], [85], [86].

The study, [87], conducted an OL study in the realm of knowledge management research. They created a theoretical model and disseminated 180 surveys to executives from large, medium, and small enterprises in the Dominican Republic, as well as 103 questionnaires to executives in Brazil. The study's major goal was to demonstrate OL and define how it influences organisational output. According to the results, OL has a substantial influence on various organisational aspects.

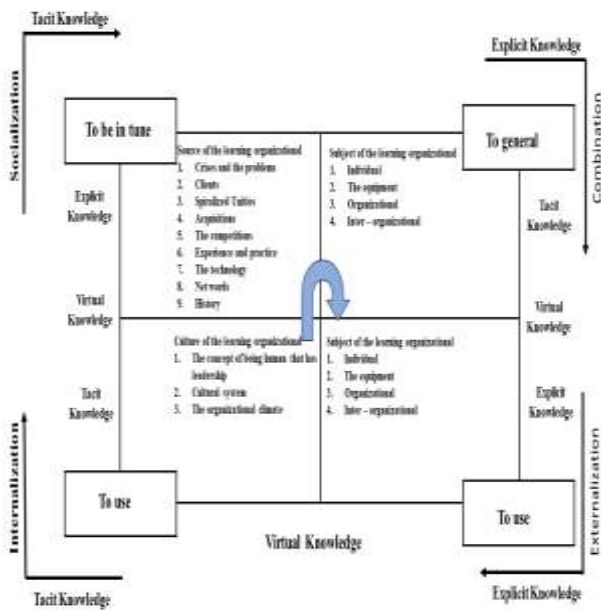


Fig. 6: Organizational Learning Framework, [9].

OL has been built in a variety of ways over many decades to emulate the learning commonalities outlined in the preceding section. To put it simply, OL is a process that creates and disseminates advanced information and innovative knowledge, [88].

The study, [89], defined OL as a process that promotes firm development by disseminating new ideas, such as production characteristics, new technology, or business market trends. It is generally seen as a source of finding and fixing errors, where errors are disparities in employees' perceptions of intended organisational objectives and what they achieved. According to some, information processing to deal with organisational change is referred to as OL, [90].

As well, on the other hand, define it as a system of experience exchange and regard it as a critical metric of adaptation in an organisation. Others, [2], [7], [72], [78], [80], [91], regarded it as an organisational ability to improve performance and efficiency. Classified OL as having three stages: individual learning, group learning, and OL. Individually, OL is the aptitude and stimulation to accomplish everyday activities at the workplace while also sharing the learned information with other employees and, lastly, developing strategies and systems in line with the business culture. Some may argue that the roots of learning begin with and inside individual learning, which is dependent on cooperative settings for knowledge generation.

Moving beyond this point of view, [36], suggested that Organizational Learning is superior to comprehensive after that learn solo. According to originates from various knowledge-bearing entities, dynamic OL may produce variation in learning outcomes, [88]. It suggests that organisational knowledge is likely to be diverse when unique, distinct, and specialised information outnumbers generic knowledge.

Organisational knowledge, on the other hand, tends to be homogeneous when collective knowledge outnumbers individual knowledge. Thus, OL concepts exist at all levels, including organisational, group, and individual according to Figure 6. This argument was supported further by, [80], [84], [89], who argued that OL occurs at various levels (such as organisational, group, and individual) and is achieved when learning outcomes are transferred to other levels (for example, from organisations to groups to individuals and vice versa) via four psychological and social processes (interpreting, intuiting, integrating, and finally, institutionalising). As a result, the flow of learning at different levels is important to expand employees' skills and knowledge for the sake of organisational performance, particularly during the phase of implementing novelty and innovation within an organisation, [78].

3.12 Theoretical Development

3.12.1 Relationship between TQM and IP

TQM provides an appropriate and fertile environment for creativity. TQM can provide the necessary impetus and commitment to a company seeking to foster an environment of perpetual innovation. The study, [92], provides empirical evidence that verifies the TQM effect on an organisation's innovative performance. They discovered that the difficult aspects of TQM are inextricably tied to complex advances in product innovation. For example, argued in their study that by using quality management methodologies and technologies, a company could identify prospective innovation zones and create appropriate innovation plans to modify relevant processes and procedures. Nonetheless, different perspectives exist on the relationship between innovation and TQM.

Previously, academics emphasised that continuous improvement is associated with incremental change, standardisation, and the essential validation to build stability and control

over limiting and inflexible innovation. According to, [93], process management practices that aim to eliminate waste and increase effectiveness might be harmful to innovation. They emphasised that process management decreases the idle resources required to spread innovation. Furthermore, the customer-focused approach, which is a critical component of TQM, is criticised as a source of innovation.

Some scholars, such as, [94], were opposed to customer-focused techniques since they were seen to cause a corporation to be "narrow-minded" about current products and services despite further examination of customers' demands in the modern era. However, one positive viewpoint claims that organisations that embrace TQM and consider it a critical component of their system and culture may give platforms for innovation and progress. In their study, [95], stated "Total Quality Management be considered as creating the groundwork for a cultural climate that fosters creativity in various ways." Customer focus, inventive employees, and a flexible organisational structure are three main elements associated with TQM practises that are critical for achieving innovation, according to, [96]. TQM adoption promotes customer orientation, which emphasises the importance customer satisfactions the findings, focusing on the requirements and desires of customers can encourage a company to be innovative and inventive, [58]. TQM practises may also cause an organisation's structure to change towards flexibility, which may eventually affect the innovation process.

To summarise, TQM creates a favourable culture and environment for continuing innovation and, finally, for important innovation to take place, [97]. Even though There is the expanding empirical literature on TQM-TI, there is still inconsistency and variation in the results. As a result, there is an urgent necessity to stablish and examine the relationship among practices in Sultanate of Oman.

3.12.2 Relationship between OL and Innovation Performance

A learning curve model in the context of the industry's economic situation was the first to demonstrate OL and its consequences on company performance. In some cases, organisations have better experiences while they are creating products or services by focusing on the lowest price in a certain industry to obtain cost-based benefits. Saving money is important and beneficial to

manufacturing companies. Meanwhile, from a resource-based perspective, organisations can gain a competitive advantage by leveraging their competencies and resources, which is where OL is intentioned in. Taking this into account, [1], defined OL as a concept of resource-oriented strategy that is dependent on the organisation's ability to transform common resources according to specific competences competencies simply replicated or to be transferred. The study, [63], surveyed 119 active Spanish automakers, stressed the significance of a supportive and healthy team atmosphere for learning long-term innovation and success. Thus, a review of the past literature reveals that the interaction between TI and OL is certainly a rich area for future research and requires a thorough analysis in organisational settings.

3.12.3 Relationship between TQM and OL

Organisations that successfully apply TQM policies and methods tend to focus on better learning, knowledge sharing, and cultural transformation. When higher-level management implements TQM practises within organisations, employees replicate and provoke OL, [98]. As a result, few researchers considered OL as a possible effect of TQM. Many academics have attempted to study and elaborate on why TQM is essential in OL. As an example, we conducted an empirical study in Malaysia with 139 manufacturing enterprises and discovered TQM and OL have a solid and positive relationship. Similarly, we conducted a study on 193 Turkish enterprises and determined that TQM has a substantial impact on OL skills.

Furthermore, [63], discovered that when TQM essential practises are followed effectively, including learning in an organisation can result in excessive productivity and enhanced quality sustainability. Employees will be more likely to participate in OL if TQM fosters a culture of trust inside the organisation. Nonetheless, past research on TQM and OL has failed to demonstrate a clear and robust association between these two factors in the context of the Sultanate of Oman.

Few previous studies viewed TQM was identified as a single component impacting OL and conclusions were reached that there is a positive association between them, [99]. However, to establish which aspect of TQM, in the form of the MBNQA model, will have a significant impact on OL, a more in-depth assessment of the problem is required. A thorough investigation will be beneficial

in identifying the characteristics that hampered the learning process. Following that, the current study employs the multidimensional TQM approach to study the relationship between MBNQA-TQM and OL in the setting of the Sultanate of Oman.

3.12.4 Organizational Learning as the Mediator between Total Quality Management and Innovation Performance

There is a link between IP and TQM, and OL can play an important mediating role. Knowledge-sharing is promoted by soft quality management, which emphasises employee engagement, teamwork, and empowerment, which has been linked to organisational innovation. According to, [100], the relevance of soft TQM practises for building teamwork, inspiring new ideas from employees, and establishing a communicative atmosphere for achieving rapid product creation. Consistent with these reasons, soft quality management practises, as asserted by, [43], favour an open-door policy for communication and encourage the development of new and innovative ideas, both of which are beneficial to the innovation process. In the study, [43], regarding transactional/transformational leadership style (another aspect of TQM) among small firms, he discovered that a blended leadership style is required to concurrently execute the various courses of action to promote OL for the sake of welcoming innovation and gaining a competitive edge with high performance.

Simultaneously, hard TQM practices, such as affective process management, assist the organisation in dealing with day-to-day tasks based on best practices, which may result in the construction of a learning platform to promote innovation practices. The successful application of high-quality information, such as receiving timely and relevant feedback from production processes, aids in the development of new and dynamic goods that meet market demands.

Unfortunately, empirical evidence on OL as a mediator between each MBNQA-TQM dimension for TI (such as knowledge distribution, application, acquisition and storage) is sparse. Only, [98], according to the researcher's best knowledge, have investigated these associations. As a result, it would be important to study this link further to see if this mediating correlation affects ISO-certified organisations in the Sultanate of Oman.

4 Conclusion and Recommendations

By integrating theoretical and empirical work in the fields of strategic management, innovation, and business performance, this study presents concepts and suggestions to researchers in the areas of strategic and innovative decision-making in various institutions and industrial and commercial sectors to strengthen these institutions and companies through the introduction of an integrated commercial and administrative information system as tools a strategy to strengthen these institutions and companies.

The study conducted a contextual and content analysis of TQM and IP via OL in the Sultanate of Oman. The findings acknowledge that TQM practises are the hallmark of industrial organisations; thus, top management should design a policy framework for TQM application in projects, processes, and operations. It will not only improve industrial performance but also capture the market, resulting in cost and waste reduction.

Furthermore, it will lead to IP, which will give new directions and philosophies to the Sultanate of Oman's industrial development. Similarly, ongoing OL paves the way for IP. As a result, knowledge workers must be supported and allowed to discover and develop their inner and hidden qualities and capabilities. Knowledge workers will acquire social, emotional, psychological, and moral development as a result of OL, which will benefit their IP and organisational development.

This study advises that additional OL and development be conducted to further investigate the contextual factors of TQM and IP. Also, the study is recommended suggests replicate study in the services industry to improve throughput, sustainability, and maintainability.

There are numerous problems, such as acquiring data collection, a lack of certified data, and the presence of a difference in institutional culture at the start of the project and changing it in the current period due to the existence of regulations and laws.

To improve the study, the results must be used on the ground by collecting data and putting it in a unique environment that supports these administrative methods.

References:

- [1] Hveem, Helge. "Global Market Power." *The Palgrave Handbook of Contemporary International Political Economy*, 2018, pp. 43–58.

- [2] Singla, Monika, and Shveta Singh. "Board Monitoring, Product Market Competition and Firm Performance." *International Journal of Organizational Analysis*, vol. 27, no. 4, 2019, pp. 1036–1052.
- [3] Sobol, K., Cleveland, M. and Laroche, M., 2018. Globalization, national identity, biculturalism and consumer behavior: A longitudinal study of Dutch consumers. *Journal of Business Research*, 82, pp.340-353.
- [4] Cooper, Cary L. "The Future of Work: Careers, Stress and Well- being." *Career Development International*, vol. 10, no. 5, 2005, pp. 396–399.
- [5] De Loecker, Jan, and Jan Eeckhout. *Global Market Power*, 2018.
- [6] Bagheri, Afsaneh, and Morteza Akbari. "The Impact of Entrepreneurial Leadership on Nurses' Innovation Behavior." *Journal of Nursing Scholarship*, vol. 50, no. 1, 2017, pp. 28–35.
- [7] Zuraik, Abdelrahman, and Louise Kelly. "The Role of CEO Transformational Leadership and Innovation Climate in Exploration and Exploitation." *European Journal of Innovation Management*, vol. 22, no. 1, 2019, pp. 84–104.
- [8] Futterer, F., Schmidt, J. and Heidenreich, S., 2018. Effectuation or causation as the key to corporate venture success? Investigating effects of entrepreneurial behaviors on business model innovation and venture performance. *Long Range Planning*, 51(1), pp.64-81.
- [9] Johne, F.A. *Industrial Product Innovation*, 2018.
- [10] Kang, K., Burdon, S. and Mooney, G., 2019. Innovation Cultural Factors in Australian Business Environment: IT Organizations in Australia. In *Handbook of Research on Contemporary Approaches in Management and Organizational Strategy* (pp. 129-145). IGI Global.
- [11] Álvarez-Santos, J., Miguel-Dávila, J.Á., Herrera, L. and Nieto, M., 2018. Safety management system in TQM environments. *Safety science*, 101, pp.135-143.
- [12] Lake, Dale G. "Creating High-Performance Organizations, by Edward E. Lawler, Susan A. Morhrman, and Gerald E. Ledford. San Francisco: Jossey-Bass, 1995." *Human Resource Management*, vol. 35, no. 2, 2009, pp. 251–254.
- [13] Mia, M.M., Majri, Y. and Rahman, I.K.A., 2019. The impact of soft TQM practices on organizational enactment: A mediating role of OHSAS18001 standard. *International Journal of Social Sciences Perspectives*, 4(1), pp.1-11.
- [14] Jong, C.Y., Sim, A.K. and Lew, T.Y., 2019. The relationship between TQM and project performance: Empirical evidence from Malaysian construction industry. *Cogent Business & Management*, 6(1), p.1568655.
- [15] Aoun, Malak, and Norlena Hasnan. "Lean Production and TQM: Complementary or Contradictory Driving Forces of Innovation Performance?" *International Journal of Innovation Science*, vol. 5, no. 4, 2013, pp. 237–252.
- [16] Del Castillo-Peces, C., Prado-Román, C., Mercado-Idoeta, C. and Prado-Román, M., 2014. Innovation Through Total Quality Management Elements, and Customer Loyalty in Spanish Financial Institutions. *Entrepreneurship, Innovation and Economic Crisis: Lessons for Research, Policy and Practice*, pp.127-137.
- [17] Din, Muhammad Saadat, and Khaliq Ur Rehman Cheema. "Strategic Change: A Study of TQM and Innovation." *Munich Personal RePEc Archive*, 1 Jan. 1970, mpra.ub.uni-muenchen.de/53204.
- [18] Kongpichayanond, Pimpimon. "Perceived Relationships among Knowledge Management, Total Quality Management, and Organization Innovation Performance: A Thai Study." *Perceived Relationships among Knowledge Management, Total Quality Management, and Organization Innovation Performance: A Thai Study*, 1 June 2013, conservancy.umn.edu/handle/11299/155950.
- [19] Matias, João Carlos, and Denis Alves Coelho. "Integrated Total Quality Management: Beyond Zero Defects Theory and towards Innovation." *Total Quality Management & Business Excellence*, vol. 22, no. 8, 2011, pp. 891–910.
- [20] Honarpour, A., Jusoh, A. and Md Nor, K., 2018. Total quality management, knowledge management, and innovation: an empirical study in R&D units. *Total quality*

- management & business excellence*, 29(7-8), pp.798-816.
- [21] Tari, Juan José, and Mariano García-Fernández. "A Proposal for a Scale Measuring Innovation in a Total Quality Management Context." *Total Quality Management & Business Excellence*, vol. 31, no. 15–16, 2018, pp. 1703–1717.
- [22] Faller, John Michael. "Quality Assurance Implementation, Management Practices, and Staff Performance in the Technical Colleges of the Sultanate of Oman: Inputs for a Quality Intervention Program." *Academic Journal of Interdisciplinary Studies*, vol. 7, no. 2, 2018, pp. 49–60.
- [23] Harthy, S. A. (2018). Oman Gii Lab 2019: Step Forward towards Achieving Oman Vision 2040. Portulans Institute.
- [24] Ahmed, S. A., Al-Kindi, M., & Summad, E. (2018). *Measurement of innovation performance in selected industries in Sultanate of Oman*. Paper presented at the 8th International Conference on Industrial Engineering and Operations Management, IEOM 2018.
- [25] Sazegar, M., Forouharfar, A., Hill, V. and Faghih, N., 2018. The innovation-based competitive advantage in Oman's transition to a knowledge-based economy: dynamics of innovation for promotion of entrepreneurship. *Entrepreneurship Ecosystem in the Middle East and North Africa (MENA) Dynamics in Trends, Policy and Business Environment*, pp.491-518.
- [26] Thorpe, Brian, and Peter Sumner. *Quality Assurance in Construction*, 2017.
- [27] Giroud, Xavier, and Holger M. Mueller. "Firm Leverage, Consumer Demand, and Employment Losses during the Great Recession*." *The Quarterly Journal of Economics*, vol. 132, no. 1, 2016, pp. 271–316.
- [28] Liu, Weiping, and Kwaku Atuahene-Gima. "Enhancing Product Innovation Performance in a Dysfunctional Competitive Environment: The Roles of Competitive Strategies and Market-Based Assets." *Industrial Marketing Management*, vol. 73, 2018, pp. 7–20.
- [29] Al-Qayoudhi, S., Hussaini, S.S. and Khan, F.R., 2017. Application of Total Quality Management (TQM) in higher education institution (HEI) in oman: shinas college of technology-A case study. *Humanities & Social Sciences Reviews eISSN*, pp.2395-6518.
- [30] Blackiston, G. Howland. "Juran Institute: A Barometer of Trends in Quality Management." *National Productivity Review*, vol. 16, no. 1, 1996, pp. 15–23.
- [31] Francioli, L., Conway, P.M., Hansen, Å.M., Holten, A.L., Grynderup, M.B., Persson, R., Mikkelsen, E.G., Costa, G. and Høgh, A., 2018. Quality of leadership and workplace bullying: The mediating role of social community at work in a two-year follow-up study. *Journal of Business Ethics*, 147, pp.889-899.
- [32] Narula, S., Pal, S., Saini, V., Saxena, P., Goyal, A. and Yadav, M., 2018. Role of TQM in sustained business performance in Indian automotive supply chain. *Harnessing Human Capital Analytics for Competitive Advantage*, pp.121-143.
- [33] Arunachalam, Subramaniam. "I-Manager Publications." *Imanager Publications*.
- [34] Dubey, R., Gunasekaran, A., Childe, S.J., Papadopoulos, T., Hazen, B.T. and Roubaud, D., 2018. Examining top management commitment to TQM diffusion using institutional and upper echelon theories. *International Journal of Production Research*, 56(8), pp.2988-3006.
- [35] Rees, Chris. "Employee Involvement in Quality Management Strategies: A Case Study Based Analysis." *Royal Holloway Research Portal*, 1 Jan. 1996, pure.royalholloway.ac.uk/en/publications/employee-involvement-in-quality-management-strategies-a-case-stud.
- [36] Saleem, M., Khan, N., Hameed, S., & Abbas, M. (2012). "An Analysis of Relationship between TQM and Kaizen". *Life Science Journal*, 9 (3), 31-40.
- [37] McElyea, B. E. (2003). Organizational Change Models. *Futurics*, 27 (1/2), 57.
- [38] Harrington, H.J., Carr, J.J. and Reid, R.P., 1999. What's this "systems" stuff, anyhow?. *The TQM Magazine*, 11(1), pp.54-57.
- [39] Cusins, Peter. "Understanding Quality through Systems Thinking." *The TQM Magazine*, vol. 6, no. 5, 1994, pp. 19–27.

- [40] Taiwo, Joseph. "Systems Approaches to Total Quality Management." *Total Quality Management*, vol. 12, no. 7, 2001, pp. 967–973.
- [41] Reed, R., Lemak, D.J. and Mero, N.P. (2000) Total Quality Management and Sustainable Competitive Advantage. *Journal of Quality Management*, 5, 5-26.
- [42] Bauer, A., Reiner, G. and Schamschule, R., 2000. Organizational and quality systems development: an analysis via a dynamic simulation model. *total quality management*, 11(4-6), pp.410-416.
- [43] Khanna, V.K., Vrat, P., Shankar, R. and Sahay, B.S., 2002. Developing causal relationships for a TQM index for the Indian automobile sector. *work study*, 51(7), pp.364-373.
- [44] Thiagaragan, T., Zairi, M. and Dale, B.G., 2001. A proposed model of TQM implementation based on an empirical study of Malaysian industry. *International Journal of Quality & Reliability Management*, 18(3), pp.289-306.
- [45] Black, Simon A., and Leslie J. Porter. "Identification of the Critical Factors of TQM." *Decision Sciences*, vol. 27, no. 1, 1996, pp. 1–21.
- [46] Sharma, Monica, and Rambabu Kodali. "TQM Implementation Elements for Manufacturing Excellence." *The TQM Journal*, vol. 20, no. 6, 2008, pp. 599–621.
- [47] Ullah, S. (2012). *Implementation of TQM practices in manufacturing sector of Pakistan*. *Journal of the Computer. The Internet and Management*, 20 (1), 57-62.
- [48] Sebastianelli, Rose, and Nabil Tamimi. "Understanding the Obstacles to TQM Success." *Quality Management Journal*, vol. 10, no. 3, 2003, pp. 45–56.
- [49] Talwar, Balvir. "Business Excellence Models and the Path Ahead" *The TQM Journal*, vol. 23, no. 1, 2011, pp. 21–35.
- [50] Tan, K.C., Wong, M.F., Mehta, T. and Khoo, H.H., 2003. Factors affecting the development of national quality awards. *Measuring Business Excellence*, 7(3), pp.37-45.
- [51] Robert, V., Gary, S., & Jason, B. (2000). *A comparative analysis of national and regional quality awards*.
- [52] Sousa, Rui, and Christopher A Voss. "Quality Management Re-Visited: A Reflective Review and Agenda for Future Research." *Journal of Operations Management*, vol. 20, no. 1, 2002, pp. 91–109.
- [53] Choi, Thomas Y, and Karen Eboch. "The TQM Paradox: Relations among TQM Practices, Plant Performance, and Customer Satisfaction." *Journal of Operations Management*, vol. 17, no. 1, 1998, pp. 59–75.
- [54] Prajogo, Daniel I., and Soon W. Hong. "The Effect of TQM on Performance in R&D Environments: A Perspective from South Korean Firms." *Technovation*, vol. 28, no. 12, 2008, pp. 855–863.
- [55] Samson, Danny, and Mile Terziovski. "The Relationship between Total Quality Management Practices and Operational Performance." *Journal of Operations Management*, vol. 17, no. 4, 1999, pp. 393–409.
- [56] Arumugam, V., Ooi, K.B. and Fong, T.C., 2008. TQM practices and quality management performance: An investigation of their relationship using data from ISO 9001: 2000 firms in Malaysia. *The TQM Journal*, 20(6), pp.636-650.
- [57] Ooi, K.B., Teh, P.L. and Yee- Loong Chong, A., 2009. Developing an integrated model of TQM and HRM on KM activities. *Management Research News*, 32(5), pp.477-490.
- [58] Prajogo, Daniel I., and Amrik S. Sohal. "The Multidimensionality of TQM Practices in Determining Quality and Innovation Performance — an Empirical Examination." *Technovation*, vol. 24, no. 6, 2004, pp. 443–453.
- [59] Teh, P.L., Ooi, K.B. and Yong, C.C., 2008. Does TQM impact on role stressors? A conceptual model. *Industrial Management & Data Systems*, 108(8), pp.1029-1044.
- [60] Lee, V.H., Ooi, K.B., Tan, B.I. and Chong, A.Y.L., 2010. A structural analysis of the relationship between TQM practices and product innovation. *Asian Journal of Technology Innovation*, 18(1), pp.73-96.
- [61] Prajogo, Daniel I., and Amrik S. Sohal. "The Integration of TQM and Technology/R&D Management in Determining Quality and

- Innovation Performance.” *Omega*, vol. 34, no. 3, 2006, pp. 296–312.
- [62] Singh, Prakash J., and Alan J.R. Smith. “Relationship between TQM and Innovation: An Empirical Study.” *Journal of Manufacturing Technology Management*, vol. 15, no. 5, 2004, pp. 394–401.
- [63] Jensen, M. B., Johnson, B., Lorenz, E., Lundvall, B. Å., & Lundvall, B. (2016). *Forms of Knowledge and Modes of Innovation*. The Learning Economy and the Economics of Hope. (Pp. 155-182).
- [64] Kline, S. J., & Rosenberg, N. (1986). *An overview of innovation*. The positive sum strategy: Harnessing technology for economic growth. (pp. 275-305).
- [65] Boyle, Luke, and Kathy Michell. “Urban Facilities Management: A Systemic Process for Achieving Urban Sustainability.” *International Journal of Sustainable Development and Planning*, vol. 12, no. 03, 2017, pp. 446–456.
- [66] Lassen, Astrid Heidemann, and Børge Timenes Laugen. “Open Innovation: On the Influence of Internal and External Collaboration on Degree of Newness.” *Business Process Management Journal*, vol. 23, no. 6, 2017, pp. 1129–1143.
- [67] Biemans, Wim G. *Managing Innovation within Networks*, 2018.
- [68] Najafi-Tavani, S., Najafi-Tavani, Z., Naudé, P., Oghazi, P. and Zeynaloo, E., 2018. How collaborative innovation networks affect new product performance: Product innovation capability, process innovation capability, and absorptive capacity. *Industrial marketing management*, 73, pp.193-205.
- [69] Utterback, James M, and William J Abernathy. “A Dynamic Model of Process and Product Innovation.” *Omega*, vol. 3, no. 6, 1975, pp. 639–656.
- [70] Veryzer, Robert W. “Discontinuous Innovation and the New Product Development Process.” *Journal of Product Innovation Management*, vol. 15, no. 4, 1998, pp. 304–321.
- [71] Fukugawa, Nobuya. “Division of Labor between Innovation Intermediaries for Smes: Productivity Effects of Interfirm Organizations in Japan.” *Journal of Small Business Management*, vol. 56, 2017, pp. 297–322.
- [72] Yeh, Chien Chi, and Edward C.S. Ku. “Process Innovation Capability and Subsequent Collaborative Team Performance in Travel Planning: A Knowledge Exchange Platform Perspective.” *Current Issues in Tourism*, vol. 22, no. 1, 2017, pp. 107–126.
- [73] Reichstein, Toke, and Ammon Salter. “Investigating the Sources of Process Innovation among UK Manufacturing Firms.” *Industrial and Corporate Change*, vol. 15, no. 4, 2006, pp. 653–682.
- [74] Abrunhosa, Ana, and Patrícia Moura E Sá. “Are TQM Principles Supporting Innovation in the Portuguese Footwear Industry?” *Technovation*, vol. 28, no. 4, 2008, pp. 208–221.
- [75] Garcia, Rosanna, and Roger Calantone. “A Critical Look at Technological Innovation Typology and Innovativeness Terminology: A Literature Review.” *Journal of Product Innovation Management*, vol. 19, no. 2, 2002, pp. 110–132.
- [76] Huy, Quy, and Christoph Zott. “Exploring the Affective Underpinnings of Dynamic Managerial Capabilities: How Managers’ EMOTION Regulation Behaviors Mobilize Resources for Their Firms.” *Strategic Management Journal*, vol. 40, no. 1, 2018, pp. 28–54.
- [77] Purusottama, Ambara, and Ari Ardianto. “The Dimension of Employer Branding: Attracting Talented Employees to Leverage Organizational Competitiveness.” *JURNAL APLIKASI MANAJEMEN*, vol. 17, no. 1, 2019, pp. 118–126.
- [78] Sohi, Ravipreet S. “Organizational Learning and Inter-Organizational Knowledge Transfer.” *Handbook of Research on Distribution Channels*, 2019, pp. 114–129.
- [79] Stata, Ray. “Organizational Learning - the Key to Management Innovation.” *MIT Sloan Management Review*, 15 Apr. 1989, sloanreview.mit.edu/article/organizational-learning-the-key-to-management-innovation.
- [80] Rice, Ronnie O’Brien. “Analyzing How Cultural Norms Affect Learner Preferences in Organizational Learning Programs.” *Multicultural Andragogy for Transformative Learning*, 2019, pp. 241–251.
- [81] Daft, Richard L., and Karl E. Weick. “Toward a Model of Organizations as Interpretation Systems.” *Academy of*

- Management Review*, vol. 9, no. 2, 1984, pp. 284–295.
- [82] Lombardi, Rosa. “Knowledge Transfer and Organizational Performance and Business Process: Past, Present and Future Researches.” *Business Process Management Journal*, vol. 25, no. 1, 2019, pp. 2–9.
- [83] Jain, Ajay K., and Ana Moreno. “Organizational Learning, Knowledge Management Practices and Firm’s Performance.” *The Learning Organization*, vol. 22, no. 1, 2015, pp. 14–39.
- [84] Dixon, Nancy M. *The Organizational Learning Cycle*, 2017.
- [85] Schwab, K. (2018). The Global Competitiveness Report 2018.
- [86] Stoffelsma, Lieke, and Wilbert Spooen. “The Relationship between English Reading Proficiency and Academic Achievement of First-Year Science and Mathematics Students in a Multilingual Context.” *International Journal of Science and Mathematics Education*, vol. 17, no. 5, 2018, pp. 905–922.
- [87] Garzón Castrillon, M. A., & Fischer, A. L. (2017). *The organizational learning in Dominican Republic and Brazil*. Ingeniería y Desarrollo, 26, 37-50.
- [88] Huber, George P. “Organizational Learning: The Contributing Processes and the Literatures.” *Organization Science*, vol. 2, no. 1, 1991, pp. 88–115.
- [89] North, Klaus, and Gita Kumta. “Knowledge Management.” *Springer Texts in Business and Economics*, 2018.
- [90] Huber, G. P. (2016). *Organizational intelligence*. In M. Augier, & D. Teece, (Eds) The Palgrave encyclopaedia of strategic management. London: Palgrave Macmillan.
- [91] Steenkamp, Jan-Benedict. “The Uncertain Future of Globalization.” *International Marketing Review*, vol. 36, no. 4, 2019, pp. 524–535.
- [92] Kim, D.Y., Kumar, V. and Kumar, U., 2012. Relationship between quality management practices and innovation. *Journal of operations management*, 30(4), pp.295-315.
- [93] Zehir, C., Ertosun, Ö.G., Zehir, S. and Müceldilli, B., 2012. Total quality management practices’ effects on quality performance and innovative performance. *Procedia-Social and Behavioral Sciences*, 41, pp.273-280.
- [94] Slater, Stanley F., and John C. Narver. “Customer-Led and Market-Oriented: Let’s Not Confuse the Two.” *Strategic Management Journal*, vol. 19, no. 10, 1998, pp. 1001–1006.
- [95] McAdam, R., Armstrong, G. and Kelly, B., 1998. Investigation of the relationship between total quality and innovation: a research study involving small organisations. *European Journal of Innovation Management*, 1(3), pp.139-147.
- [96] Pfeifer, T., Siegler, S. and Varnhagen, V., 1998. Business excellence through a robust development process for innovative products. *Total Quality Management*, 9(4-5), pp.191-194.
- [97] Santos-Vijande, María Leticia, and Luis Ignacio Álvarez-González. “Innovativeness and Organizational Innovation in Total Quality Oriented Firms: The Moderating Role of Market Turbulence.” *Technovation*, vol. 27, no. 9, 2007, pp. 514–532.
- [98] Hung, R.Y.Y., Lien, B.Y.H., Yang, B., Wu, C.M. and Kuo, Y.M., 2011. Impact of TQM and organizational learning on innovation performance in the high-tech industry. *International business review*, 20(2), pp.213-225.
- [99] Lam, S.Y., Lee, V.H., Ooi, K.B. and Lin, B., 2011. The relationship between TQM, learning orientation and market performance in service organisations: An empirical analysis. *Total Quality Management & Business Excellence*, 22(12), pp.1277-1297.
- [100] Flynn, J., Slovic, P. and Mertz, C.K., 1994. Gender, race, and perception of environmental health risks. *Risk analysis*, 14(6), pp.1101-1108.
- [101] OECD (1991), *OECD Economic Outlook, Volume 1991 Issue 1*, OECD Publishing, Paris.
- [102] OECD (2005), *OECD Annual Report 2005*, OECD Publishing, Paris.

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

I contributed to 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.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)

This article is published under the terms of the Creative Commons Attribution License 4.0

https://creativecommons.org/licenses/by/4.0/deed.en_US