



The Mediating Effect of Kaizen between Total Quality Management (TQM) and Innovation on Organizational Performance

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Paper ID: 13A7C

Volume 13 Issue 7

Received 0 January 2022

Received in revised form 09
May 2022

Accepted 16 May 2022

Available online 24 May
2022

Keywords:

Business management;
TQM method; Kaizen
technique; Quality
management;
Innovation; Company
performance.

Abstract

Continually identifying new chances to gain competitive advantages is essential for organizations. Literature indicates that firms must differentiate themselves by stressing quality and constant development in their products and services in order to achieve future success. Total Quality Management (TQM) methods have a substantial impact on development and competitiveness. Therefore, a thorough Kaizen technique is required to remove waste and provide value to performance in order to maintain competitiveness. The objective of this research is to shed light on the mediating impact of overall quality management and innovation on organizational performance. Kaizen has collected primary data using surveys in order to gain quantitative data. The unit of analysis is a survey questionnaire filled out by employees of Jeddah's general education administration. This suggested approach aims to provide educational institutions with a deeper grasp of TQM and Kaizen methods. Therefore, structural equation modeling (SEM) approaches are used to find and assess the link between TQM, Kaizen, and company performance.

Disciplinary: Business Management

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Cite This Article:

Alghofeli, M.S. (2022). The Mediating Effect of Kaizen between Total Quality Management (TQM) and Innovation on Organizational Performance. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 13(7), 13A7C, 1-20. <http://TUENGR.COM/V13/13A7C.pdf> DOI: 10.14456/ITJEMAST.2022.129

1 Introduction

The international market continuously grows, imposing new expectations and requirements on enterprises to remain competitive. As a result, organizations must innovate in terms of product quality to achieve business excellence. As a result, Total Quality Management (TQM) is essential to developing current management. So successful TQM is possible when a business prioritizes

continual improvement as a core feature. Kaizen is a well-known method of continual improvement that fosters innovative thinking.

Kaizen, a Japanese term, means constantly enhancing a company's routine operations (Chen et al., 2001). Kaizen is two Japanese words combination: Kai, which means alteration, and Zen, which means improvement (Palmer, 2001). Also, kaizen is recognized as Gemba Kaizen, which translates to "Continuous Improvement" (CI).

Both kaizen and TQM are concerned with quality. Total Quality Management seeks to maximize quality through value addition, perfecting products, increasing productivity, and reducing variation in measurements and processes. Kaizen, on the other hand, seeks to enhance quality via small incremental alterations in cycles and the workplace (Saleem et al., 2012).

The Gemba Kaizen concept goes back to the 1980s, when Japanese expert Masaaki Imai declared the kaizen approach is one of the most main concepts in Japanese management and is critical to Japan's competitiveness. In terms of its early historical origins, Kaizen first surfaced in Japan in 1950, when the government admitted to a fault with its management system other than a lack of staff. As a result, it started to address this issue in collaboration with labor unions. In 1986, Imai used the kaizen principle to increase Toyota's competence, productivity, and competitiveness. As a result, and as a result of Toyota's increased productivity and competitiveness, the notion of Kaizen has grown ingrained in Japanese production and is used in almost every area. It is seen as a significant measure of progress and success (Masaaki & Seiitiro, 1986).

A competitive advantage is achieved through a quality product. Continuous improvement must be carried out constantly in the manufactured products, using, among other options: technological developments, and industrial innovations. With high-quality standards, permanence in the productive sector is achieved (Cardenas Caldas, 2012).

Competitiveness is also achieved by developing well-structured manufacturing procedures (a series of steps sequentially arranged) that allow the implementation of continuous manufacturing flows and even mass customization of products (Kaizen, 2020).

In Japan, the Kaizen concept has become a popular approach, utilized in management as well as popular culture. Kaizen has established a basis upon which any institution or organization may be developed. Because employees and managers rarely make a concerted effort to believe "Kaizen," it is possible to argue that Kaizen is a natural and prevalent way of thinking in Japan. As a consequence, people think that the way they believe, which is Kaizen (Wilson, 2012).

Abdullah et al. (2008) showed that there are many ingredients that must be met for the success of the kaizen approach, the commitment of the senior management through granting material and moral incentives, building an organizational culture oriented towards continuous improvement, and building an effective communication system that is real and open in all directions. Schuler (2003) examine how companies view successful competitors and may wish to attempt similar processes of continuous improvement.

An overall quality management system is a framework that promotes the continuous enhancement of facts of a company's operations. Total quality management's objective is to enhance the goods and services' quality by enhancing human resources, equipment, and processes while lowering operational costs. Organizational performance management is a method and system for integrating finance, sales, business planning, marketing, budgeting and forecasting, human resources, and operations. Given the significance of whole quality management and Kaizen in the organizations' industrial development and improved performance. We targeted to explore the association between innovation with organizational performance and TQM, in the administrative functions of education in Jeddah, while accounting for the mediating role of the Kaizen variable.

In his theory of TQM, any organization or corporation must have a well-designed system for thorough knowledge to reach its intended aim. That whole quality management is a fundamental component of organizational learning and improvement and is vital to the organization's overall performance progress (Deming, 1992).

Organizations in most countries seek to reduce their costs to achieve a competitive advantage, and in their quest for this, we see them applying every new method that achieves this goal. One of the new and effective methods for reducing costs is the method of continuous progressive improvement (Kaizen). In today's hyper-competitive world, culture and attitude of learning are critical, as the business is always developing. As a result, businesses must accept change in order to stay. However, just deciding that workers must embrace change is insufficient; the choice must be accompanied by activities that foster a climate in which people are comfortable, ready, and eager to use advances consistently. Thus, with the help of kaizen culture, it is possible to express the study problem with the following questions:

RQ1: Can the innovation and adoption quality result in operational performance improvement and sustainability within the organization?

RQ2: How do organizations get a competitive advantage by using the mediator impact of Kaizen on innovation-associated organizational performance and total quality management?

1.1 Research Objective

To insight the relationship between total quality management and Innovation on organizational performance with a mediator's effect on Kaizen

2 Theoretical Background

Kaizen refers to a process of continuous improvement that includes all interested parties, including employees, managers, and workers. We do not want to take a gander at unexpected or explosive alterations to enhance the organization; any type of advancement or alteration, as long as it is ongoing, will boost organizational performance and productivity. It is among the most efficient methods of growth. One of the continuous improvement methods that have achieved great success in industrial facilities is the continuous improvement method using the kaizen

methodology, where its application led to reducing costs, improving quality, and improving competitiveness in the market (Kazem, 2011).

In the Japanese setting, this is referred to as visual administration. Gemba Kaizen is regarded as one of the most current change approaches applied in many administrations. It is a continuous practical model for running everyday incidence and occurrences in their respective places and times, and the administrative model's success is dependent on realism and transparency in administrative connections at work (Thessaloniki, 2006).

Kaizen and Total Quality Management (TQM) (a constant improvement process), according to (Saleem et al., 2012), are two basic notions that directly deal with the continuous enhancement of an organization's processes and performance in order to impact positive changes in employees' and management's mentalities and behavior. To ensure clarity and to maximize the benefits of both ideas, it becomes necessary to distinguish TQM and Kaizen exactly. TQM characteristics are largely concerned with increasing customer satisfaction through quality improvement. It is both bottom-up and top-down, consequently, kaizen is process-oriented and bottom-up, focusing on modest incremental adjustments. Total Quality Management is more expensive to implement than Kaizen. Kaizen enables changes to be accomplished while utilizing an organization's available resources. To successfully implement kaizen, the organizational culture must be appreciative, and the outcomes of continuous improvement must be disseminated throughout the organization to inspire all employees and ensure the program's success.

2.1 Total Quality Management Practice

Modern organizations have objected to innumerable political, economic, social, and technical, developments in recent years. In the 1980s, a novel notion of quality management emerged in the corporate sector. With the evolution of the notion of quality, manufacturing businesses adopted the entire system of quality management, which checks the goods' quality at all production stages (Modgil & Sharma, 2016). Numerous firms throughout the world have adopted total quality management as a management philosophy. The quality improvement effort in manufacturing sectors initiated the quality movement in nearly all nations (Alhawari & Alryalat, 2015).

The TQM approach is essentially a holistic management strategy that is increasingly used to continuously improve organizational processes while focusing on meeting the needs of clients, teamwork, redesigning processes, employee involvement, and building correlations with suppliers. (Mendes, 2017).

It is imperative for any company to consider quality as an intended destination since it has greatly impacted the growth and progress of its business over the past twenty years (LORİ & FALLAHNEJAD, 2015). This creates it one of the most effective managerial strategies to enhance product and service quality (Mardani & Kazemilari, 2012). Juran, Feigenbaum, and Deming suggested key elements' number for implementing and evaluating TQM in various industries. TQM

can be defined as a management approach that seeks to improve performance, effectiveness, and productivity via management, and long-term planning (Honarpour et al., 2018).

There are numerous advantages to implementing TQM-based quality improvement systems, including higher effectiveness and efficacy (Zakuan et al., 2010), as well as the opportunity to develop processes that are difficult for competitors to copy (González-Benito et al., 2003). Even so, quality systems have evolved over time via an evolutionary process, with a clear emphasis on generation inspection approaches and an increase in complexity and breadth of approaches, including quality assurance and statistical process control.

2.2 Kaizen

Companies' familiarity with quality and performance ideas, as well as their application to production unit management, may have a vital role in improving their performance and standing in both external and internal competitive arenas. Japan's incredible success has prompted everyone to recognize and modulate the management techniques and working culture of these hardworking people. The Kaizen system, which focuses on continual improvement, is one of these distinctive or extremely effective Japanese methods. Kaizen is a Japanese phrase composed of two words that mean "alter toward betterment" or "continuous and progressive enhancement" (Zehir et al., 2012).

According to Imai (2006), kaizen was established as an innovative and new operational approach to increase the competitiveness of firms in the twenty-first century. Kaizen's primary purpose is to integrate work culture to achieve a never-ending increase in productivity and quality (Desta et al., 2014). Consequently, Kaizen is one of the most essential practices additionally to Japanese culture (Abdulmouti, 2015). The beginning improvement comes from the idea that all organizations have equal potential for growth and development (Aurel et al., 2015). The "engine" of continual development is people. He promotes staff engagement to produce additional suggestions and ideas for minor improvements to normal responsibilities (Khayum, 2015). This is a result of Kaizen's seeking for continual improvement in our personal lives and everyday responsibilities (Saleem et.al 2012). Therefore, Kaizen procedures need the engagement of all employees to detect inefficiencies at all levels of the organization and, as a result, implement the necessary corrective measures for continuous improvement (Aurel et al., 2015).

2.3 Total Quality Management Practice and Kaizen

The principles of Kaizen and TQM are intently connected, but not similar. The most crucial shared characteristic is the company's commitment to continual development in order to attain high-quality goods and procedures. They are complementary ideas with the same underlying premise. To maximize their benefits, the most successful organizations almost always employ both strategies simultaneously (Janjić, 2009).

The basis for quality improvement is standards, which, once attained, are substituted with innovative, higher standards based on progress. Standardization is a crucial cornerstone of both Kaizen and TQM adoption. Both TQM and Kaizen aim to improve corporate performance by

achieving higher quality, which in turn increases customer happiness. Thus, both philosophies emphasize continual quality improvement, with Kaizen emphasizing incremental and steady progress and TQM emphasizing the need and necessity of dramatic change to achieve tremendous results (Saleem et al., 2012).

H1: TQM is positively related to Kaizen

2.4 Innovation

An invention is turned into a commercial product through innovation. A unique aspect of innovation is that it builds a brand, provides knowledge, and creates a new platform through the creation of a novel community, and a new culture (Nghah & Ibrahim, 2012).

There are several steps involved in innovation. It entails creative activity or thoughts and creativity that make a particular and tangible contribution to the field in which the innovation is made. Businesses can build new ways to add value by offering goods and services, implementing new operational and organizational practices, giving technology solutions, or developing skillsets. Furthermore, innovation can aid in the development of the skills and competencies necessary to master, recognize, and upgrade current technology while simultaneously providing something innovative (Ofori et al., 2015). Soliman (2013) describes the correlation between innovation parameters as company innovation, market innovation, product innovation, and industrial innovation.

2.5 Innovation and Kaizen

Two studies investigated the use of Kaizen in multinational Mexican corporations (one public and the rest privately-owned).

Suárez-Barraza & Ramis-Pujol (2010) explicated the significance of implementing the kaizen process innovation method to a public firm's service and demonstrated shorter, more effective procedures. Suárez-Barraza et al. (2012) indicated how process innovation and Gemba-Kaizen enhanced plant performance, and quality improvements, and reduced raw material consumption.

H2: Innovation is positively related to Kaizen

2.6 Organizational Performance

The performance of an organization may be viewed as a multidimensional concept that comprises more than simply financial performance. Organizational productivity is an organization's ability to meet the needs of stakeholders while also meeting its own survival needs (Al-alak & Tarabieh, 2011). As this ratio indicates the ratio of financial success to sales growth, (Return on assets) and Sales Growth Ratio are used to measure organizational performance (Majeed, 2011). The organizational performance objective is profit maximization, which takes into account the organization's obligations to its stockholders. Market achievement and financial performance indicators are examples of organizational performance. Furthermore, organizational performance refers to an organization's market performance in terms of achieving appreciated

market outcomes and the financial performance of an organization that achieves profit-driven results (Roostika, 2014). The procedures of an organization should be more customer-friendly and effective. There are many techniques to measure organizational effectiveness that incorporate various stakeholder viewpoints, including the balanced scorecard is the most prevalent measure, Nevertheless, it is not the only one. The multimodal performance framework (MMPF) has four components: market performance, performance productivity, employee motivation, and influence on people, which contains the satisfaction of numerous stakeholders like employees, investors, consumers, and suppliers. The performance prism is the latest conceptual framework that contends that a performance management process should be structured around five distinct characteristics that are associated with the system's performance point of view (Ringim et al., 2012).

2.7 Kaizen and Organizational Performance

Kaizen procedures may aid businesses in minimizing worker motion, costs, and defects, as well as improving the skills of the operator, by fostering a work culture that inspires employees to be aware of the business's primary objectives and the Kaizen process necessary to map and assess them. Firms must guarantee that their products and services give customers economic value (Desta et al., 2014). Ghodrati & Zulkifli (2013) assessed the impact of Kaizen implementation on the performance of industrial organizations. Matter what type, size, manufacturing, or service is provided by the organization. The results demonstrate that kaizen is a successful method for improving organizational performance. Therefore, kaizen approaches would substantially assist the organization's aims of continual improvement and enhanced performance.

Agrahari et al. (2015) provide the implementation technique and recommendations for kaizen in small-scale enterprises. The qualitative form of safety, productivity, efficiency, and housekeeping practices' outcomes.

H3: Kaizen Culture is positively correlated with Organizational Performance

2.8 Total Quality Management Practice and Organizational Performance

According to Soltani & Amanat (2019), owing to the Kaizen culture and its interaction with several social strata and organizations in Japan, the factory has become a university, and the university has become a factory. As a result, the worker learns from management, and the manager advantages from the worker's ideas; as a result, performance and productivity are improved, thereby enhancing the company's performance. This phenomenon is visible in public and private organizations. In light of the significance of quality in companies and the increased focus on it, several perspectives on the means and strategies for reaching this objective are provided. The most serious obstacles and underlying causes of overall quality management failure that must be discussed are an absence of managerial commitment, transformation-free, resistance to cultural alteration, and misconstruing or inability to adopt this mindset (Forza & Filippini, 1998).

In contrast, organizational performance is widely recognized to be the most interesting topic in management study, as it represents unquestionably the greatest determinant of corporate success (Martinez-Costa & Martínez-Lorente, 2008). The elements of organizational performance can be categorized as either subjective or objective. The components are entirely true and believable and can be estimated by objective data. Profitability is comprised of several components, including return on investment, asset turnover, stock returns, and earnings per share. Overall, subjective components are those that are predicated on the group that advantages from the organization. Examples include stakeholder and employee satisfaction, and also the innovative product's success (Janjić et al., 2018).

Numerous researchers from various countries and companies have paid increased attention to the connection between total quality management and organizational performance recently. The majority of these studies demonstrate that overall quality management practices have directly and indirectly positive effects on financial performance, productivity, performance, quality, and manufacturing performance (Zwain, 2012). Furthermore, irrespective of the rising technology in those industries, the significance of total quality management adoption in the service and industrial sectors reveals a positive association between success and total quality management practices. However, numerous studies have found insufficient objective evidence regarding the effect of TQM techniques on innovation achievement and job performances (Ruiz-Moreno et al., 2016), and that businesses that use a total quality management framework are not inherently greater than their counterparts that do not utilize a total quality management strategy (Goedhuys & Veugelers, 2012).

According to Demirbag et al. (2006), businesses that concentrate on enhancing the quality of their goods and processes increase revenues and decrease expenses.

Therefore, the financial performance of a company as a consequence of quality efforts may be assessed by the rise in sales and revenues, the decrease in costs, the return on investment, and the gain in market share.

Brah et al. (2002) investigated the link between TQM structures and organization performance by assessing the quality performance of Singaporean businesses. The correlation between TQM and performance was shown to be positive.

H4: The correlation between Organizational Performance and TQM is mediated by Kaizen.

2.9 Innovation and Organizational Performance

As the management discipline evolves, research is based on producing process innovation and determining its operational and strategic importance (Lee & Dale, 1998). The first aim was to develop a viewpoint on centralized, incremental enhancement to fix particular issues of processes at the restrictions of organizational frontiers – Kaizen-type (continuous improvement) – to accomplish better integration of working practices that could transcend visible, organizational boundaries and deliver immediate, and substantial benefits (Lee & Chuah, 2001).

Product innovation and organizations that acknowledge innovation approaches in their operations have a statistically significant positive relationship (Goedhuys & Veugelers, 2012). Numerous studies on the correlation between organizational performance and innovation found that positive evaluations of innovation aspects improved corporate performance (Janjić, 2009). In addition, the performance suggests that innovation type influences it. Those that embrace product innovation approaches have improved financial performance, likewise, companies that employ process innovation have improved operating and financial performance (Anil & Satish, 2019). Moreover, the incorporation of process and product improvements have significantly enhanced the company's growth (Goedhuys & Veugelers, 2012).

H5: The correlation between Innovation and Organizational Performance is mediated by kaizen

2.10 Research Model

The research model was developed dependent on the problem statement that determined and supported the theory. As shown above, the model of study contains three main variables, the independent variables are Total Quality Management and Innovation. The dependent variable is the organizational performance with mediating Effect of Kaizen.



Figure 1: Research Model.

3 Methodology

The three basic types of study designs adopted by researchers are qualitative, quantitative, and mixed approaches. The quantitative design involves collecting basic numerical data and statistically analyzing the collected data. The qualitative design relies on a collection of comprehensive subjective data from a variety of sources and its subsequent analysis (Vujović et al., 2017). The author will use a quantitative research approach to elicit succinct and concrete data from appropriate sources.

To achieve the objectives stated above and answer the research questions, the research will adopt a descriptive survey design and describe the properties of the variables under consideration. Descriptive research, as per (Mugenda & Mugenda, 1999), is the process of obtaining data to express the research questions. This study will use a quantitative research strategy and statistical tools to test hypotheses. Primary and secondary data gathering are the two most commonly utilized data collecting techniques. Primary data collecting involves measuring first-hand raw data that has never been collected before. Secondary data collection entails compiling information from previously conducted investigations (Anil & Satish, 2019). This study conformed to the positivism philosophy, which focused on analyzing the objective reality and empirical relationships between

innovation and total quality management on organizational performance with a mediator's effect on Kaizen.

This study gathers primary data using questionnaires to acquire quantitative data. The unit of analysis is a survey questionnaire completed by the employees of the general administration of education in Jeddah. The data collection instrument is a two-section questionnaire. This tool is the most appropriate for concise data collection, and it will allow the respondents to choose the most suitable choice according to their understanding. The first component will elicit demographic information from respondents. The second section related to questions that covered total quality management was adapted from (Talib et al., 2011). Innovation is adapted from Desta et al. (2014), and Continuous improvement /kaizen is adapted from Aloini et al. (2011). and organizational performance is adopted from Homburg et al. (1999). These questions were made after the factor analysis. Moreover, the questions in section one are on a nominal scale. All the items and responses appear on a five-point Likert scale, on which "1" = "strongly disagree" and "5" = "strongly agree." Smart PLS 3.0 was utilized to evaluate data utilizing the partial least squares structural equation modeling (PLS-SEM) method Ringle et al. (2015). In recent years, the PLS-SEM has been recognized as a beneficial tool for business-related investigations (Hair et al., 2011).

In a two-step, the data were examined and interpreted variables and the PLS method was first used in the measurement model to validate convergent validity, internal consistency reliability, and discriminant validity. PLS was then used in the structural model to perform the hypotheses in this research. The study will employ quantitative research to test theories, determine facts, and demonstrate relationships among variables. Quantitative research techniques include the unbiased random selection of research subjects from the study population, the administration of a standardized questionnaire or intervention, and the use of statistical methods to test predetermined hypotheses about the relationships between specific variables. The findings are intended to be reproducible regardless of who does the study, as well as predictive of consequences. Sampling is the process by which the researcher selects study participants from the entire prospective population from which the necessary data is obtained (Taherdoost, 2016). The sample will be chosen from administrative employees in Jeddah's higher education institutions. While other sample approaches are available, this study will use a non-probability convenience sampling methodology. Through this method, respondents do not have an equal chance of selection; instead, the researcher picks respondents based on the researcher's preferences, convenience, and ease of contact. This questionnaire is in English first, then translated into Arabic, and both versions of the questions, Arabic and English, will be provided. After data collection, confirmatory factor analysis (CFA) will be utilized to recognize the measurement's validity and reliability. CFA will be used to validate the survey, and then the structural model and hypothesis testing.

4 Results

The purpose of this study is to test the relationships between the constructs shown in the framework, it was conducted using the structural equation modeling (SEM) method via the Smart-

PLS version 3.0. The significance of SEM is that multiple indicators can be included in the hypothesized model and then test its validation of the final model, and also test the prediction of independent variables on dependent variables simultaneously.

As shown in Figure 1, the model of the study contains three independent variables (TQM Practice, Innovation, and Kaizen), and one dependent variable. The Kaizen is tested as a mediation.

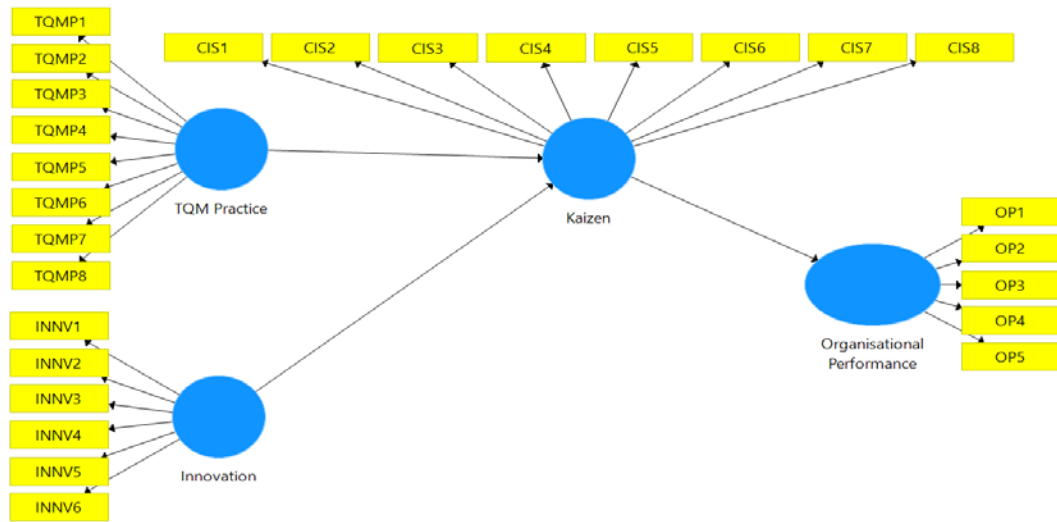


Figure 1: Model of the study.

4.1 Descriptive Statistics and the Measurement Model

The purpose of this stage is to evaluate the model using confirmatory factor analysis (CFA) to achieve the best model fit. There are some conditions that need to be inspected as follows:

Table 1: Descriptive statistics (N=216)

Variable	N	%	
Gender	Female	152	70.37
	Male	64	29.63
Age	20 -30 year	55	25.46
	30 - 40 year	82	37.96
	40 - 50 year	49	22.69
	50 - 60 year	25	11.57
	More than 60 years	5	2.31
Monthly income	5000 SAR or less	35	16.20
	SAR5001-10000	98	45.37
	10001-20000 SAR	18	8.33
	More than 20000 SAR	23	10.65
Job title	Administrative	126	58.33
	Section manager	28	12.96
	Department manger	18	8.33
	Other	44	20.37
Experience	Less than 5 years	60	27.78
	5-10 years	101	46.76
	11-15 years	23	10.65
	More than 15 years	32	14.81
Position	Secondary school	26	12.04
	Bachelor's degree	129	59.72
	Master's degree	42	19.44
	PhD degree	19	8.80

Factor loading (FL) for each indicator/item must be over the recommended value (FL>0.70). Composite reliability (CR) and Cronbach's alpha should be > 0.7. (Average Variance Extracted) AVE should be > 0.50. Discriminant validity approved that each variable shares more variance with its own block of indicators/items than with another variable, it should approve when $\sqrt{AVE} \geq 0.5$ and exceeded the highest values of Pearson correlation (r) in the matrix. The variance inflation factor (VIF) should be less than 5.

From Table 1, a total of 216 people participated in the current study including 70.37% female and 29.63% male. The age was classified into 5 groups with an advantage of 30-40 years with 37.96%. The monthly income was measured by four categories with an advantage for 5001-10000 SAR with 45.37%. 58.33% worked as administrative, followed by section manager (12.96%) and department manager (8.33%), and other job titles had 20.37%. it indicated that the majority had a limited year of experience with an advantage of 5-10 years (46.76%) followed by less than 5 years (27.78%). 59.72% got a bachelor's degree followed by a master's with 19.44%, then secondary school with 14.81%, and finally a Ph.D. degree with 8.8%.

From Table 2 and Figures 3&4, two items (CIS3&CIS4) were eliminated from the model due to the low factor loading (FL>0.70), it did improve the model fit, an important issue that needs to be considered is the multicollinearity, which occurs when the was a high correlation between the independent's variable, the values of VIF should not exceed 5, which were met.

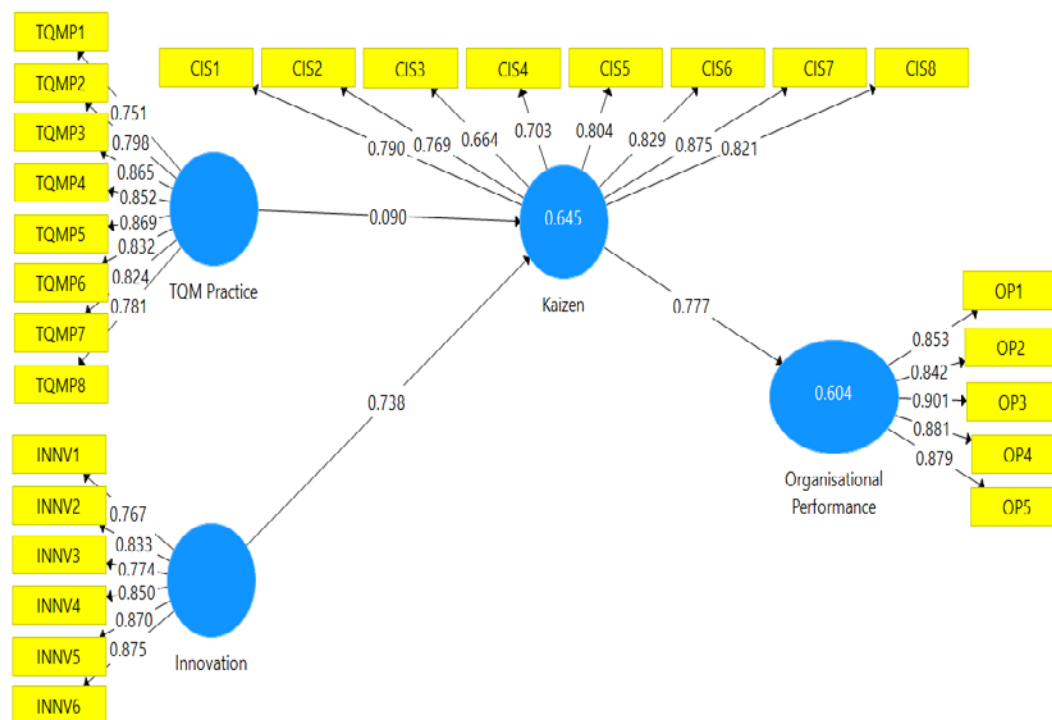


Figure 2: Hypothesized Model - Factor loadings, R² and β.

From Table 2 and Figures 3&4, two items (CIS3&CIS4) were eliminated from the model due to the low factor loading (FL>0.70), it did improve the model fit, an important issue that needs to be considered is the multicollinearity, which occurs when the was a high correlation between the independent's variable, the values of VIF should not exceed 5, which were met.

Table 2: Factor loading (N=216)

Construct	Indicator	VIF	Innovation	Kaizen	Organizational Performance	TQM Practice
Kaizen	CIS1	2.187		0.800		
	CIS2	1.876		0.747		
	CIS5	2.283		0.803		
	CIS6	3.012		0.858		
	CIS7	3.613		0.892		
	CIS8	3.187		0.855		
Innovation	INNV1	1.871	0.767			
	INNV2	2.362	0.832			
	INNV3	1.919	0.771			
	INNV4	2.522	0.850			
	INNV5	3.166	0.871			
	INNV6	3.160	0.876			
Organisational Performance	OP1	2.549			0.853	
	OP2	2.759			0.842	
	OP3	3.663			0.901	
	OP4	3.666			0.880	
	OP5	3.839			0.879	
TQM Practice	TQMP1	3.676				0.749
	TQMP2	4.520				0.796
	TQMP3	3.703				0.865
	TQMP4	3.412				0.852
	TQMP5	3.703				0.869
	TQMP6	3.061				0.834
	TQMP7	2.913				0.822
	TQMP8	2.130				0.783

From Table 3, the correlation between the constructs was significant and positive, they ranged between ($r=0.802$, $p<0.01$) and ($r=0.601$, $p<0.01$). To approve the discriminate validity between the latent constructs, AVE needs to be 0.5 or over, which was met for all the variables, and the lowest square root of AVE (0.822) was higher than the highest correlation (0.802).

The significant value of path estimations (β) was examined based on the t value ($p<0.05$). R squared (R^2) is a function of the influence of the independent variables on the dependent variable, so the R^2 of organizational performance was 0.603, It means that 60% of the influence is made by independent variables. SRMR achieved a good result (0.068). The mean scores ranged between (3.53 ± 0.81 /high level) and (2.96 ± 0.92 /moderate level). So the model is accepted for testing the hypotheses.

Table 3: AVE, \sqrt{AVE} , CR, α , R^2 and Correlation between variables

Construct	M \pm SD	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	R square (R^2)	Innovation	Kaizen	Organisational Performance	TQM Practice
Innovation	3.53 \pm 0.81	0.908	0.929	0.687	—	0.829			
Kaizen	3.54 \pm 0.74	0.907	0.928	0.684	0.646	0.802**	0.827		
Organizational Performance	3.50 \pm 0.82	0.921	0.940	0.759	0.603	0.794**	0.776**	0.871	
TQM Practice	2.96 \pm 0.92	0.932	0.943	0.676	—	0.696**	0.601**	0.640**	0.822

SRMR=0.068

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

The validity of the measurement model was evaluated by assessing the convergent validity and discriminant validity of the constructs. First. Convergent validity, and construct reliability can

be assessed from the Cronbach's alpha and composite reliability values of each construct. The recommended composite reliability and Cronbach's alpha value are more than 0.7 (Ghazali.2014). The result of the reliability test in Table 3 shows that all constructs have Cronbach's alpha and composite reliability values are more than 0.7. According to Hair et al. (2010), the average variance extracted (AVE) is greater than 0.5 for all constructs, indicating sufficient convergence. As a second measure of validity, discriminant validity can be measured by comparing correlations between constructs with the square root of the average variance extracted for a construct (Fornell and Larcker 1981). Based on Table 3, the square root of the AVE is greater than the correlation with other constructs, which indicates adequate discriminant validity.

4.2 The Structural Model and Hypothesis Testing

After conducting validity tests on the measurement models, we evaluated the structured model. The results of hypothesis testing are shown in Table 4.

H1: The result of structural equation modeling approved that the structural path between the constructs was significantly positive ($\beta=0.082$, $t=1.117$, $p>0.05$). thus, H1 was unsupported that Total Quality Management is not positively related to Kaizen.

H2: The result of structural equation modeling approved that the structural path between the constructs was significantly positive ($\beta=0.745$, $t=19.528$, $p<0.001$). thus, H2 was supported that Innovation is positively related to Kaizen.

H3: The result of structural equation modeling approved that the structural path between the constructs was significantly positive ($\beta=0.776$, $t=10.760$, $p<0.001$). thus, H3 was supported that Kaizen Culture is positively associated with organizational Performance.

Table 4: Results of Hypotheses Testing

Relationship	β	t	p	Decision
H1: Total Quality Management is positively related to Kaizen	0.082	1.117	0.264	Unsupported
H2: Innovation is positively related to Kaizen	0.745	10.760***	0.000	Supported
H3: Kaizen Culture is positively associated with organizational Performance	0.776	19.528***	0.000	Supported
H4: The relationship between Total Quality Management and Organizational Performance is mediated by Kaizen	0.063	1.114	0.265	Unsupported
H5: The relationship between Innovation and Organizational Performance is mediated by Kaizen	0.578	8.473***	0.000	Supported Partial mediation

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

H4: The result of structural equation modeling approved that the structural path between the constructs was significantly positive ($\beta=0.063$, $t=1.114$, $p>0.05$). thus, H4 was unsupported that the relationship between Total Quality Management and Organizational Performance is not mediated by Kaizen.

H5: The result of structural equation modeling approved that the structural path between the constructs was significantly positive ($\beta=0.578$, $t=8.473$, $p<0.001$). and as the path between innovation and organizational performance was found to be significant, the mediation is partial thus, H5 was supported.

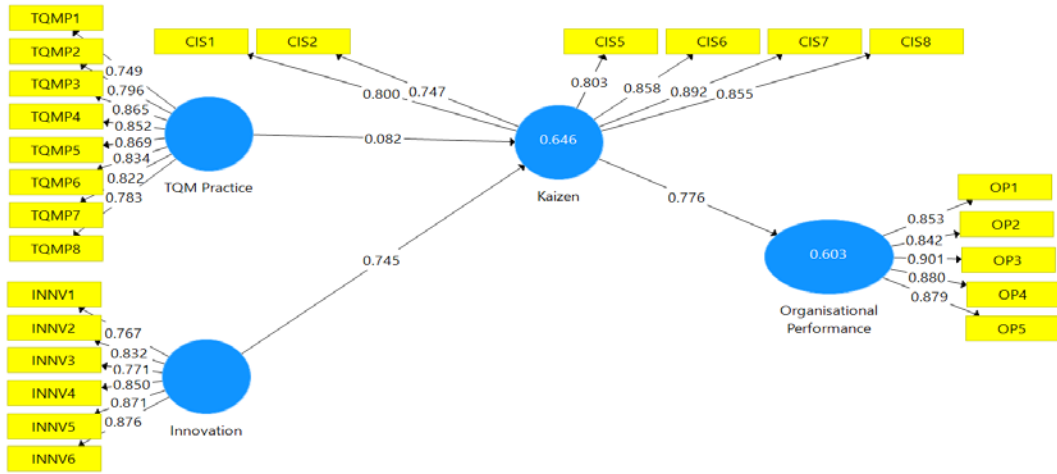


Figure 3: Final Model - Factor loadings, R2, and β values.

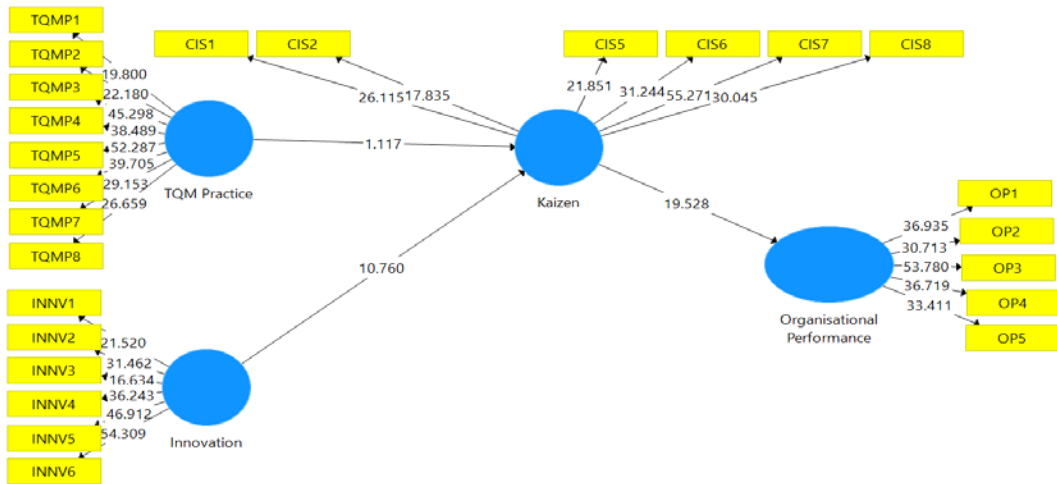


Figure 4: Final Model of PLS-based t values.

5 Discussion and Implications

The study aimed to gain insight into the correlation between innovation and overall quality management on organizational performance with a mediator's impact on Kaizen. To achieve this goal, The data was obtained by a questionnaire to get the needed data from the employees of the general administration of education in Jeddah and they were asked to complete the survey. The quantitative approach is used to test hypotheses to strengthen or reject them. The items of the variables shown in Figure 1 were taken from previous studies. The answers to the items will be taken on a 5- point Likert scale. The data will be analyzed using the PLS through various statistical tests.

As a result, 216 questionnaires were successfully returned. After collecting data, the testing of measurement validity and reliability could occur by EFA. Then analyze the data using structural equation modeling (SEM) and Smart-PLS version 3.0 techniques. The relevance of SEM lies in the fact that various indicators may be incorporated in the hypothesized model, its validation of the final model tested, and the simultaneous testing of the prediction of independent factors on dependent variables. As indicated in the research model, the study's model consists of two primary variables, with overall innovation and total quality management as the independent variables.

The dependent variable, organizational performance, is measured using the instrument proposed by Homburg et al. (1999), with kaizen serving as a mediator. The value is created via the development of digitally enabled integration capabilities and is apparent at the process level. This research demonstrates that kaizen with total quality management may provide value. Specifically, value is created via the total quality management efficient application to enhance processes. This confirms the TQM and the view theory of the system that is endorsed by Deming (1992). In his philosophy of comprehensive quality management, each company or business must have a well-designed system for full knowledge to attain its desired purpose. TQM is a critical component of organizational learning and improvement and is important to the organization's overall performance advancement.

5.1 Theoretical Contributions

In a variety of respects, the research contributes considerably to the quality management literature's body of knowledge. By attempting to address a recent range of core quality management procedures and infrastructure in Saudi Learning Organizations' context, this article suggests a theoretical framework that blends total quality management and kaizen activities. Second, this work gives dependable and valid scales for measuring infrastructure construction and basic quality approaches. Third, by visualizing QM from two perspectives, this research leads to a better understanding of the multiple positions that QM dimensions play in influencing business performance in terms of enhanced return on investing, stakeholder, and shareholder.

5.2 Managerial Implications

The work's results have significant implications for managers. According to the findings of this study, an organization's success requires core quality management practices and infrastructure. To achieve maximum organizational performance, managers should create and sustain their organization's quality system and devote adequate resources to both sorts of activities. The combined impact of quality performance on company success can encourage managers to involve employees in quality improvement activities in order to push prospective innovation. Also, this study suggests that the introduction of kaizen techniques might have an impact on organization performance, allowing it to respond to organizational shifts.

6 Conclusion

The objective of this study is to shed light on the link between overall quality management and innovation on organizational performance via the influence of Kaizen as a mediator. Based on prior research, the link between Total Quality Management and organizational performance was uneven. Therefore, it is necessary to determine the mediator for the TQM-OP interaction. Thus, the primary purpose of this study is to integrate and identify Kaizen as a conceptual framework mediating between TQM and an organization's success. There are five hypotheses addressing the relationships between the stated variables. The conceptual framework has been presented for

future study in order to provide employees with an understanding of the significance of TQM-Kaizen and to enhance the competitive growth of educational institutions.

7 Availability of Data and Material

Data can be made available by contacting the corresponding author.

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