



Evaluating the Five Kaizen Success Measurements through Employees Work Improvement and its Effects on Overall Work and Quality of Services: Empirical Study of Insurance Companies in Jordan

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ABSTRACT

The study aimed to understand the impact of the five Kaizen success measurements (organizational policy and awareness, education and training, cultural factors, internal processes assessment and recognition) on the overall quality of work and the quality through by employees work improvement as mediated factor on insurance companies in Amman. The study used a questionnaire to gather data from distributed on the 200 employees used random sample was applied to the population of this study consisting of all executives, department managers and employees of the insurance companies in Amman, Jordan. The questionnaire consists of three sections. Least square-structure equation modeling (PLS-SEM) program was chosen and used in this study in an effort to examine and test the data associated with the hypotheses. The results show Kaizen methods positively effect on the employee work improvement of the companies of. The kaizen implement employee work improvement positively effect on overall work and quality of service, Kaizen implementation positively affects overall work and quality of service, Employee work improvement on overall work and quality of service is partially mediated between kaizen implementation and on overall work and quality of service of Insurance companies in Jordan. Additionally, small companies can use Kaizen to enhance the overall work with low cost compared to other methods of improvement, which can be of a high cost that small companies cannot afford.

Keywords: Kaizen Implementation, Education and Training, Cultural Factors, Employees Work Improvement, Overall Work and Quality of Services, Insurance Companies

JEL Classifications: G22, P36

1. INTRODUCTION

In a turbulent world economy characterized by stiff competition, companies seek to achieve higher productivity and better quality of all its products. As a result, many of them have evolved their systems to achieve better management and productivity at work. After losing the second World War, the Japanese companies, for example, started to apply Kaizen philosophy to achieve this goal. Essentially, Kaizen is a term coined by Toyota that pertains to business practices that continually enhance all operations

and incorporate all employees from the CEO to the staff on the production line (Al Smadi, 2009). Even though big companies neologize it, this does not mean that it is only practised in large production lines but also include small workplaces within small companies (Kalinowski et al., 2016).

Further, Kaizen founded on the principle that we should not seek for drastic or abrupt improvements to promote the organization, but any kind of enhancement or adjustment, as long as it is continuous, which can boost the productivity and output of the organization

(Soltani and Amanat, 2019). To illustrate, Continuous improvement approach, with the involvement of all employees, seeks a steady and continuous improvement in product quality, facilities, efficiency and competitiveness. Beside Kaizen, Continuous improvement of quality control methods and techniques include Benchmarking, Quality Circles, QFD Method, Six Sigma Poka Yoke, and others (Paraschivescu and Cofirle, 2015). Kaizen's principle focuses mainly on a continuous, persistent flow of incremental improvements (genuinely permanent enhancement). In contrast, Kaizen events (at least apparently) rely on rapid change cycles, followed by relative inactivity intervals (Glover et al., 2015). Adopting Kaizen means non-ending Improvement progress in all parts and pillars of an organization which allow it to maintain competitiveness on the market (Ćwikła, 2016) and achieve results on the long term instead of direct unreliable results. Indeed, actualizing the Kaizen method in a workplace does not have a high cost or any real expensive advanced technology required for its implementation. Conclusively, the Kaizen method focuses mainly on the cooperation between people in the workplace so that each employee in the company will be able to be part of this system (Ohno, 1988).

2. LITERATURE REVIEW

2.1. Review of Previous Studies

Gauri et al. (2015) did a study on the implementation of Kaizen inside Bajaj Industries located at (Immamwada in Nagpur). The research show real life time case of implementation of Kaizen in a famous organization in India, and the ability of Kaizen methods to improve the production quality. The study observed the kaizen implementation problems and the problems of the industry, and solved by the improving work place and work improving work efficiency. The study shows the ability of Kaizen to improve production and reducing costs and problems of the production. The study adopts productivity as a tool of measurement of production measurement. This problem observed during Kaizen implementation are solved with better working efficiency, better working environment, continuous work production, Under these circumstances, the implementation of lean tool Kaizen, improves the production environment with moderate investment. This case study carries evidence of the genuine advantages when applying Kaizen to the manufacturing shop floor. In this study productivity is an average measure of the efficiency of production.

(Gurway, 2016). The research studied Kaizen implementation on a small scale manufacturing company as the it was facing problems of increased lead time and stock out situations, and then Kaizen methods were implemented and solved these problems by small correction steps but continuous ones. The study follow the kaizen process to solve the problems in the organization and show the solutions are done according to the Kiazen method by small continuous steps of improvement in the work place and environment.

The study of Kumar et al. (2018). The study aimed at presenting road map for the implementation of Lean-Kaizen method using value stream mapping (VSM) to search for unknown continuous improvement opportunities in a small and medium-sized enterprise (SME) located at small cities in India. Data was collected before

the implementation and after, and eliminated rework time, reduced inventory level, reduced lead time and C/T, improved productivity and product quality are presented as results of the research. The study found that the Kaizen method will provide ability for everyone in the organization to participate in affective work and achieving goals of the company. The studies show that Kaizen improved the time and the quality of the production in the small size organizations and lead to better work place. The study suggests that this method can be applied in bigger organizations also in India.

2.2. Concept of Kaizen Methodology

Kaizen is a Japanese term that is used today in many businesses in the east and west, meaning a constant improvement in the workplace (Chen et al., 2000). It is a mixture of two words with two notions: Kai (change) and Zen (for the better) (Palmer, 2001). Many scholars are interested in and recognize this philosophy because it is a way to maximize the company's productivity with the potential to manufacture high-quality goods with relatively little effort. According to Suzaki (1987), constant improvement implies no edge to a company's improvement process, and it was initially used to reinforce the production process in Japan. The Kaizen is characterized by more than just means of improvement, as this philosophy focuses on the entire cycle of difficulties in the everyday work activities and can be extended to any field in the business that requires improvement (Teian, 1992). According to Williams (2001), continuous improvement approaches are a full way of reducing operating costs. In this vein, the quality feature implementation (QFD) is a popular way of converting the customer's needs into a full product. Relevant studies findings on this topic reveal that the ideal time to reduce the overall cost of producing a product significantly is at the design stage of the new product development programmers (Williams, 2001).

In different countries, starting from Japan to several multinational companies in the US and Europe, the kaizen tools and general philosophy was incorporated. Studies have found that leadership is the dominant factor for the effective adoption of Kaizen. The meaning of this is essentially the capability to implement the Kaizen philosophy in any social context, and not only in Japan but with appropriate leadership discipline that recognizes and applies the philosophy (Kaplinsky, 1995). Hilton (1999) identifies the goals of the Kaizen approach as the following: (1) Reducing the work effort and production costs by considering the recommendations of the workers seriously and exploring the ability to incorporate such suggestions. (2) Continues to increase the quality of the product by placing a map to clear the path for continuous improvement directing everyone in the business. (3) Concentrating on customer satisfaction always in the process. Furthermore, Kaizen, according to Imai (1986), involves three primary principles (1) process orientation by working out how processes can be built, (2) standards development and maintenance by supporting consistent and reasonable performance levels and (3) people orientation by engaging and including everybody in the organization.

2.3. Five Kaizen Success Measurement Variables

2.3.1. Organizational policy and awareness

Although Kaizen is not necessitating significant expenditure for its implementation, however, it requires persistent organizational

policy initiatives and commitment (Singh and Singh, 2012). Thus, practices associated to the management and staff commitment and their influence on company profits in implementing the Kaizen are determined because the absence of motivation to accomplish the organization aims of a specific strategy in the market influences the leaders' dedication and involvement (Oropesa-Vento et al., 2015). In this context, the review of related literature has highlighted many factors such as excellent communication between the top management and their workers, strong organizational strategy, the engagement of a Kaizen champion staff in the organization, powerful knowledge management and willingness of employees to add to Kaizen's success. The survey also reveals that resistance to change, lack of employee motivation, lack of understanding of the strategic direction of companies and difficulties in managing quality improvement itself shaped plenty of the obstacles in executing Kaizen (Maarof and Mahmud, 2016).

2.3.2. Education and training

Organizational training has proven effective in a group format. Staff members require preparation and training alongside their colleagues for more impact (Helfrich, 1994; Kabst et al., 1996). Notably, it is vital to make learning permanent that preparation and training occurred nearby where the actual work is being undertaken (Kabst et al., 1996).

Moreover, stated that all educational associations should stress the emphasis on in-service training and growth and an ongoing process for acquiring knowledge and skills for administrative staff to acquire and upgrade social, technical and theoretical skills and abilities. Additionally, institute training should Provide perpetual training programs related to the work of faculty members, affiliated employees, and educational institution management where each program will pursue the organization's vision and mission through the staff participation and institutional changes as advised by Farooq et al. (2007).

2.3.3. Cultural factors

Kaizen is a valuable source for promoting the work culture, working practices and relevant experience. Kaizen practices can help businesses reduce staff movement, costs, errors and strengthen operator skills by creating a working culture that allows workers to understand the main company priorities and the Kaizen process needed to map and analyze them. Companies need to assure that their consumer receives the goods and services at an economic value.

Several scholars examined the cultural factors (Dombrowsky and Mielke (2014): (Mohammed and Khayum, 2015). Dombrowsky and Mielke (2014), for example, consider a different kind of quality improvement process with efficient and sustainable lean deployment in the few companies. This process of quality enrichment is related to a different approach to leadership, which reinforces the importance of the theme of "leadership and culture." As identified in their investigation.

In an organizational context, people are functioning as the "driver" to keep improving. Motivates employees participation in regular essential duties can create more ideas and suggestions for small

improvements (Mohammed and Khayum, 2015). This is alluded to Kaizen quest for advancement and emphasizes on constant improvement through workers daily and personal life obligations and duties (Saleem et al., 2012).

In the same line, motivation and satisfaction of employees were also identified as crucial factors, as was employee participation. These are related to workers buying in and also reflect the culture prevalent in the company for quality improvement. One exciting conclusion was that when workers believe that what they work is add and build value, they are more satisfied, committed and motivated.

2.3.4. Internal process

Hammer and Champy (1994) clarified that KAIZEN promotes process-oriented thinking, as processes require to be optimized before more beneficial outcomes are obtained. In this regard, Patidar et al. (2016) reported that several companies, inspired by successful Japanese experience, had embraced Kaizen as the most successful way of enhancing productivity and quality of products through improved internal organizational (work and managerial) processes.

A research conducted by Suárez-Barraza and Lingham (2008) on Kaizen team suggested that the internal process of a Kaizen team is a crucial component of staff personality and should be integrated into their Kaizen method. Based on mapping and analysis of participants comments regarding the importance of their conversational spaces the study concluded that the Team learning and development inventory (TLI) is undoubtedly a tool that would permit Kaizen groups to utilize Kaizen's philosophy to strengthen their entire group – a Kaizen approach within the Kaizen team.

Furthermore, several scholars have shown that the continuous improvement cycle is described as the "P-D-C-A system" which entails a set of steps to be reiterated in the quest for continuous improvement. The cycle's four fundamental steps are (i) P (plan): Gathering data to recognize and specify the problems that require improvement and identify ways of resolving them, (ii) D (do) execute the program using a trial run, a study sample, and other analysis methods, (iii) C (check) review the outcomes to discern if there is a precise alignment between the initial targets and what was actually accomplished; and if needed, make underlying changes, (iv) A (act): Take action based on the outcome of the analysis step, and eventually, (v) P (plan): Working at full scale on the plan or doing more work (Doherty, 2008; Redmond et al., 2008). Ultimately, this method helps top management to identify requirements, schedule operations, assign sufficient resources, enforce quality improvement programs and assess outcomes to ascertain the effectiveness.

2.3.5. Assessment and recognition

The company should develop a system for recognizing and rewarding process improvement achievements in order to promote all workers and enhance quality initiatives (Dale et al., 2007). Self-assessment program is one of these attempts to do the evaluation process. Suggested that the Self-assessment is founded

on a variety of criteria. In order to satisfy each criterion, several standards must also be met. Self-assessment allows each plan to have mission, objectives and results of the program. It must have a preliminary development plan in order to meet the goals of the program. Fundamentally, Self-assessment stimulates excellence in the industry by demanding frequent and systematic analysis of processes and outcomes. It emphasizes strengths and opportunities for change and promotes quality improvement (Oakland, 2014).

2.4. Employee Work Improvement

Continuous improvement, or Kaizen, was characterized as an incremental approach to increase performance through minor changes and workforce participation (Brunet and New, 2003). As such, sharing knowledge, incentives and power with staff is a fundamental management activity that encourages them to take the initiative and make the decision to solve problems, magnify effectiveness and improve service (Kumar et al., 2016). This improvement involves the workers' facilities, equipment, material, working practices, efficiency, and behaviors. This implies that the quality, time, productivity and effectiveness of the manufacturing process are the liability of any person, either in the upper management or in the workshop (Petru and Abbas, 2015).

In this line, the effectiveness of work is the adequate performance of an employee based on quality, the quantity of work, timeliness, productivity and accuracy of work used to fulfill the actual objectives (Ricardianto et al., 2020). While Job well-being enrichment programs are those that include organizational reform, involve significant resources, affect the company as a whole and are long-term oriented (Nangoy et al., 2020).

2.5. Overall Work and Quality of Services

Prior literature reveals that manufacturing companies require distinguishing themselves in the market by stressing quality and perpetual product and service enhancement as a critical component for future preservation and performance (Shan et al., 2016). Kaizen is one of the well-recognized methods in continuous improvement that encourages creative thinking. Generally, consumers are concerned about the quality, cost and delivery time of the products. Therefore, Companies are required to establish a quality system that continually ascends and enhances productivity as well as quality (Jadhav et al., 2014). As a result, Kaizen's philosophy has significantly impacted scholars attention as it increases the organization's productivity as well as assists to deliver high-quality goods with minimal efforts (Jain et al., 2015).

Khan et al. (2018) asserted that by continuously improving product quality, the flaw rate of a product could be reduced, product costs decreased; Meanwhile, sales and market share improved. In addition, companies can lower the cost of the product sold and the overall processing time. However, Staff training for the current process does not entail continuous improvement. Still, continuous improvement can be achieved by introducing new ideas to the workplace and then sharing them across the organization.

Over the years, the demand for continuous improvement on a broader scale within the company has become a necessity.

Consequently, a variety of continues improvement methodologies have been formulated based on a simple principle of quality or process improvement, or both, to minimize waste, optimize the production line and improve efficiency (Bhuiyan and Baghel, 2005). Hence, the implementation of the 5S-Kaizen methodology may contribute to workplace or workflow management with a promise to boosting performance, reducing waste and increasing process integrity (Sujova and Marcinekova, 2015). Fundamentally, the methodology obtains its name from the use of five Japanese terms as the cornerstones of this theory, whereby each term starting with the letter "S."

At the macro level, the formula used to calculate the labour productivity is dividing the total amount of products and services sold minus the total of exported ones by the total of working time. Likewise, the same way of thinking is applied at micro-level, where a company's overall added value is separated by the time spent working to assess labor productivity. Thus, it is rational to presume that increasing labor efficiency at micro-level would lead to improvements at macro-level (Kollenburg and Wouters, 2019).

3. PROBLEM STATEMENT

As small companies thrive for better services and products with low costs to be able to compete with bigger companies, methods of achieving this can vary and the ability of applying it is not always guaranteed. Applying a method that will not cost high price and will be suitable for small scale companies is not always found. Kaizen can offer a method that can be cheap to implement and easy to apply for small companies. Insurance companies in Jordan mostly are small business and have small number of employees and need low cost services and high quality with high efficiency of the employees. The efficiency of one employee can affect the total work flow as the number of the employees is small. Thus Kaizen can offer a solution for these small companies. And this study is to show the effect of Kaizen on the total work and the services quality after introducing the method in these companies.

3.1. Conceptual Model

Derived from the reviewed literature sources a consolidated model adopted from the work of Joseph M. Juran, William E. Deming's cycle and H. Krezner. Demonstrates the effects of five Kaizen success measurement variables (independent variables). The measurement variables represented by organizational policy and awareness, education and training, cultural factors, internal processes and assessment and recognition) through employee work improvement and the dependent variable represented work and the quality of the services of Insurance companies in Jordan. The conceptual model that guided this study is reflected in this Figure 1.

3.2. Study Hypothesis

The research studies the relation between the employee work improvement by introducing Kaizen method implementation of improvement and the overall work and the quality of services. The hypothesis is as the following:

- H₀1: Employees work improvement using Kaizen methods will not affect the overall work and the quality of the services of the companies of Insurance companies in Jordan.
- H₀1-1: Kaizen methods will not affect employees work improvement of the of the companies of Insurance companies in Jordan.
- H₀1-2: Employees work improvement will not affect Overall work and quality of services of Insurance companies in Jordan.
- H₀1-3: Kaizen methods will not affect Overall work and quality of services of Insurance companies in Jordan.

4. STUDY METHODOLOGY

The study reviewed all available literature on the topic of the study, and used a study tool to collect the data through direct interview or by sending the study tool (questionnaire) to the employees in the chosen companies used random sample was applied to the population of this study consisting of all executives, department managers and employees of the Insurance Companies in Amman, Jordan.

The study is done on 40 small Insurance companies as mention in Table 1 and offices in Amman Jordan; each has different numbers of employees. All these companies were agreed to apply Kaizen methods in their offices and to allow for a questionnaire to be distributed to their employees after month.

The questionnaire had 3 sections which are:

1. Kaizen implementation
2. Employee work improvement using Kaizen
3. Over all work improvement.

The questionnaire includes all these sections in order to understand the effect of the Kaizen methods applied. The research sample is of 200 employees in 40 companies across Amman city and areas around the main city. The 40 companies are as the following:

Table 1: Sample of the study (from researcher base on result of survy)

Number of employees in the company	Number of companies	Kaizen applying period
5-20	13	Monthly
20 -30	27	Monthly
Over 30	0	0

5. CONSTRUCTS MEASUREMENTS ANALYSIS

The smart partial least square-structure equation modeling (PLS-SEM) program was chosen and used in this study in an effort to examine and test the data associated with the hypotheses. Accordingly, two respective stages were completed (Anderson and Gerbing, 1998) in mind of examining the content, convergent and discriminant validity of variables, with additional data testing carried out in relation to all of the individual hypotheses, in alignment with the study framework.

5.1. Path Loadings for the Proposed Model

Owing to the path loading for all factors exceeding the value of (0.55), all factors linked with the study model then underwent correction and were accepted for analysis (Falk and Miller, 1992). Figure 2 provides an overview of the path loading results for all of the variables linked with the suggested model in this study. The figure details three individual aspects, namely kaizen implementation, employees work improvement, and overall work and quality of services, with Table 2 providing an overview of the factor loading of the research constructs.

5.2. Path Loadings for the Modified Model

Initially, there was the removal of the Kaizen implementation items (a1.a2,c1,d1,d2,d4,d5,d6,h2,i2).

Owing to the fact that the standardized path loading for all indicators exceeded 0.55, they were all recognized as significant (Falk and Miller, 1992). Notably, all path loading are detailed (factors analysis result) in the model, as shown in Figure 2.

5.3. Reliability and Validity Test

When seeking to determine validity and reliability in any study survey, this is affected by the design of the survey. Importantly, validity and reliability are the simple standards considered when assessing the overall accuracy and validity of a study. In order to ensure the chance of gathering incorrect data is decreased as much as possible, two specific aspects should be considered, namely reliability and validity. When it comes to ensuring validity, emphasis was placed on questioning different professionals on the way in which vague and problematic questions could be identified, and how the overall level of understanding amongst questions could be tested. After the completion of a professional review, various suggestions were made, detailing the addition

Figure 1: Research mode

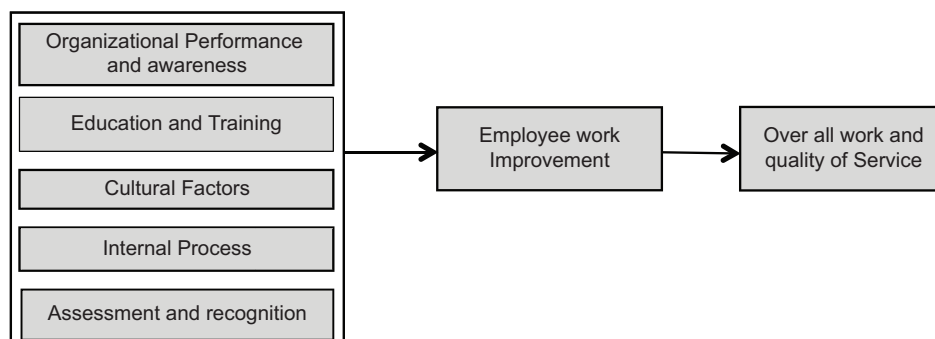


Figure 2: Path loading for modify model

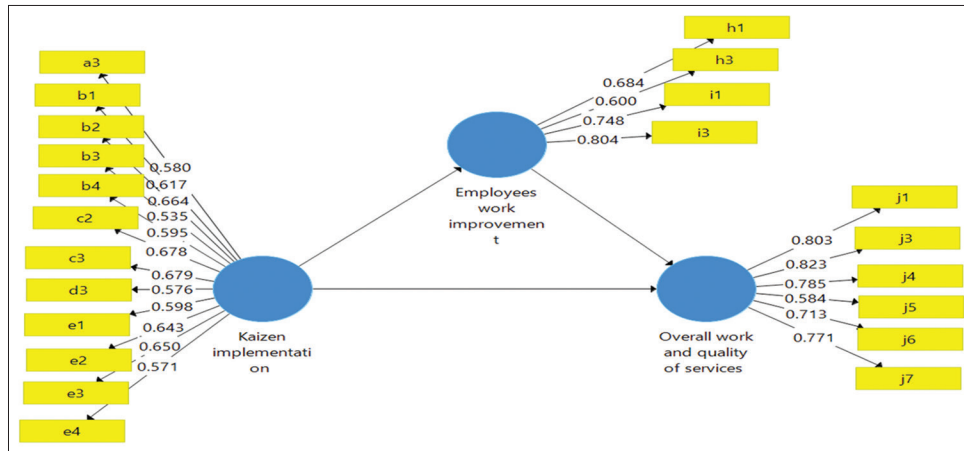


Table 2: Factor loading

Variables	Item	Factors loading	Result
Kaizen implementation	a1	0.458	Delete
	a2	0.432	Delete
	a3	0.579	Accept
	a4	0.453	Delete
	b1	0.594	Accept
	b2	0.638	Accept
	b3	0.479	Delete
	b4	0.571	Accept
	c1	0.641	Accept
	c2	0.692	Accept
	c3	0.680	Accept
	c4	0.370	Delete
	d1	0.295	Delete
	d2	0.444	Delete
	d3	0.661	Accept
	d4	0.440	Delete
d5	0.657	Delete	
d6	0.460	Delete	
e1	0.572	Accept	
e2	0.619	Accept	
e3	0.600	Accept	
e4	0.536	Accept	
Employees work improvement	h1	0.677	Accept
	h2	0.390	Delete
	h3	0.646	Accept
	h4	0.750	Accept
	i1	0.668	Accept
	i2	0.322	Delete
	i3	0.763	Accept
Overall work and the quality of the services	j1	0.810	Accept
	J2	0.855	Accept
	j3	0.821	Accept
	j4	0.791	Accept
	j5	0.552	Accept
	j6	0.684	Accept
	j7	0.759	Accept

and removal of, or otherwise changes to, different items in the questionnaire.

In order to ensure the items in the questionnaire could be considered both valid and reliable, Table 3 provides clarification as to the Cronbach’s Alpha (CA) result, and Composite Reliability (CR) for the entire model constructs. In regards internal consistency reliability, Cronbach’s alpha was applied as the lower bound of

the internal consistency reliability, with all CA and CR results acknowledged as being at the lowest recommended value of 0.65 (Nunnally and Bernstein, 1994) Accordingly, this demonstrated that acceptable reliability can be identified across all variables. In relation to convergent validity, one of the most widely implemented criterions is that of AVE (Fornell and Larcker, 1981). Notably, all AVEs presented in the Table 3 ranges between 0.75 and 0.90, meaning convergent validity is satisfied across all constructs.

5.4. Discriminate Validity Test

Latent variable correlation calculation is carried out in consideration to establishing discriminant validity, which implies that there is a need for a construct to share a larger portion of variance with its measures as opposed to with any other construct incorporated within a specific model (Fornell and Larcker, 1981). The latent variable correlations (discriminant validity) findings may be seen in the following table, which details all constructs and shows they illustrate a significant degree of variance when compared with other constructs. As can be seen in Table 4, acceptable discriminate validity may be seen, with no instance of a correlation coefficient seen to exceed 1.0; this ensures there is no presence of multicollinearity between factors. Importantly, if a correlation coefficient is seen to be more than 1.00, this would highlight a problem in regards multicollinearity (Hair et al., 2006). In line with the measurement model testing, with emphasis placed on all aspects as shown above, reliability and validity may be seen to be present in the case of the framework.

5.5. R (Square) Test

Path coefficient calculations give indication as to the relationship across constructs in regards used and unused mediation constructs. Accordingly, the use of the R (square) test was recognized as reasonable when it comes to explaining measurements and their interpretation. Table 5 gives an overview of the R (square) values.

The R (square) value is linked the effect of Kaizen implementation on the overall work and the quality of services without the mediation of Employees work improvement, with a score of 0.275, which therefore can be taken to infer that it has exceeded 25%. This provides explanation of the view that the prediction level is acceptable, and can be seen to be aligned with what has been emphasized in the study of Gaur

and Gaur (2006). In consideration to the R (square) value associated with effect of Kaizen Implementation on the overall work and the quality of services with mediation by employees work improvement, the score was seen to be 0.487, which therefore surpasses 25%. Accordingly, this can be seen to be an acceptable prediction level, as also noted in the study of Gaur and Gaur (2006).

5.6. Hypotheses Testing

The researcher carried out logical analysis in order to ensure testing on the framework was completed; this was done in order to present a sound conclusion pertaining to the findings and relating to the hypotheses; this is facilitated through the application of Bootstrapping analysis in smart PLS software. Finally, as can be seemed through the completion of the test, the T value rate for all enablers of Kaizen implementation on overall work and the quality of services without the mediation of Employees work improvement has been determined, as shown in Figure 3.

Table 3: Validity and reliability results

Constructs	Cronbach alpha (CA)	Composite reliability (CR)
Kaizen implementation	0.90	0.90
Employees works improvement	0.75	0.84
Overall work and quality of services	0.89	0.90

Table 4: Discriminate validity

	Employees work improvement	Kaizen implementation	Overall work and quality of services
Employees work improvement	0.713		
Kaizen implementation	0.533	0.617	
Overall work and quality of services	0.620	0.571	0.751

Table 5: R (square) value

Relation	R (square)
Effect of Kaizen implementation on the overall work and the quality of services without the mediation of Employees work improvement in insurance companies in Jordan	0.275
Effect of Kaizen implementation on the overall work and the quality of services with the mediation of Employees work improvement in insurance companies in Jordan	0.487

Table 6: Test results of kaizen implementation on overall work and quality of service with the mediation of employee improvement

Relation	Direct affect	Direct affect	Indirect affect	Total affect	Total affect
	t value	Beta	Beta	t value	Beta
Kaizen implementation on employee work improvement	10.602	0.533			
Employee work improvement on overall work and quality of service	6.841	0.441	0.256		
Kaizen Implementation on overall work and quality of service	4.969	0.336			

Figure 3 displays the path coefficient and P-value rate, with the figure emphasizing the hypotheses testing in regards the Kaizen implementation on overall work and quality of service, with the employee work improvement utilized as a mediator. Table 7 provides an overview of the results.

As detailed in Table 7, $H_01.1$ has been validated in terms of its analysis results, emphasizing that Kaizen implementation affect employees work improvement of the of the companies of Insurance companies in Jordan at ($\alpha \leq 0.05$). In regards the statistics t value, this was determined to be (10.602), whereas the (beta) value ratio was (0.533). This gives a clear outline as to the change of kaizen implementation and its ability to induce a change equal to (53.2%) in terms of employee work improvement. As such, it can be noted that Kaizen methods positively affect the employee work improvement of the companies of Insurance companies in Jordan.

Moreover, $H_01.2$ has been clarified, stating that employee work improvement effect on overall work and quality of service of the of the companies of Insurance companies in Jordan at ($\alpha \leq 0.05$), with the statistics T value recognized as (6.841), whereas the (beta) value ratio was (0.441). This gives a clear outline as to the change of one amount of employee work improvement and its ability to induce a change equal to (44.1%) in overall work and quality of service. As such, it can be noted that kaizen implement employee work improvement positively effect on overall work and quality of service of the companies of Insurance companies in Jordan Finally, $H_01.3$ has also been clarified, stating that kaizen implementation affect overall work and quality of service of the companies of insurance companies in Jordan at ($\alpha \leq 0.05$), where the statistics t value was determined to be (4.496), whereas the (beta) value ratio was seen to be (0.336); this provides a clear outline as to the change of kaizen implementation as inducing a change equal to (33.6%) in overall work and quality of service.

As such, it can be noted that kaizen implementation positively affect overall work and quality of service of the companies of Insurance companies in Jordan.

In consideration to Figure 3, the researchers established the t value and beta value as a result of the implementation of the PLS-SEM, which is known to complete analysis on all tested hypotheses linked with kaizen implementation in overall work and quality of service. In this regard, Table 4 provides some insight into these results.

In Table 6, the relation between kaizen implementation and on overall work and quality of service at ($\alpha \leq 0.05$) is recognized as mediated by Employee work improvement on overall work and quality of service. In consideration to the statistics t value, this was

Figure 3: Bootstrapping (path coefficient and P-value) for Kaizen implementation on overall work and quality of service with mediation of employee work improvement

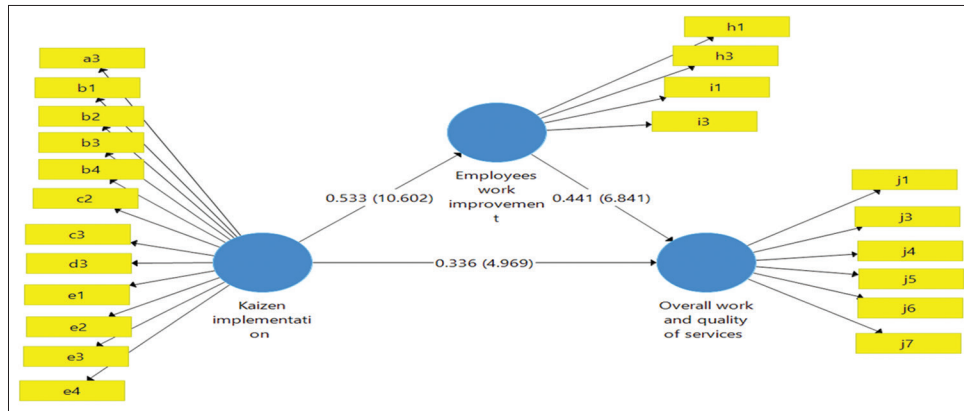


Table 7: Test results of kaizen implementation on overall work and quality of service with the mediation of employee improvement

Relation (direct affect)	t value	Beta value	P value
Kaizen implementation on employee work improvement	10.602	0.533	0.000
Employee work improvement on overall work and quality of service	6.841	0.441	0.000
Kaizen implementation on overall work and quality of service	4.969	0.336	0.000

viewed as being (10.846), with Employee work improvement on overall work and quality of service showing a notable influence in relation to Expenditure Reduction, where statistics T value was calculated to be (13.103). In addition, the (beta) Value ratio for (indirect Affect) has been determined to be (0.184), As such, it may be stated that Employee work improvement on overall work and quality of service is partially mediated between kaizen implementation and on overall work and quality of service

6. RESULT AND CONCLUSION

- Kaizen methods positively affect on the employee work improvement of the companies of Insurance companies in Jordan
- kaizen implement employee work improvement positively effect on overall work and quality of service of the companies of Insurance companies in Jordan
- Kaizen implementation positively affects overall work and quality of service of the companies of Insurance companies in Jordan
- Employee work improvement on overall work and quality of service is partially mediated between kaizen implementation and on overall work and quality of service of Insurance companies in Jordan
- Based on result Workers are involved in various performance improvement processes through their participation in the formulation and decision-making at all administrative levels
- Based on result It is actually enhance the overall quality of the diverse concepts of the employees

- Based on result the implementation of the moral and material incentives and rewards systems in order to create a spirit of initiative and competition among workers

7. RECOMMENDATION

Insurance companies in Jordan is very important sector as a social system aims to form a reserve against third parties confirmed the losses suffered by individuals and institutions by transferring the burden of risk from one person to several persons or group of persons, that a system designed to reduce or minimize the phenomenon of uncertainty for the loss of financial by shifting the burden of risk. So based on this research and result the researchers create some of recommendations:

- Development of institutional awareness of the importance of the development of performance and continuous improvement
- Building performance improvement and continuous improvement programs
- Work efficiently with targeted performance standards
- Management effectiveness through radical improvements
- The development of efficiency through incremental improvements
- The adoption of all leaders and employees to integrate a comprehensive and systematic quality kaizen continuous improvement.

REFERENCES

- Abu, B.A., Alkasasbeh M., (2017), Effect of Kaizen methodology on the financial performance of Islamic banks in Jordan. Amman Open Arab University, 1(1), 69-93.
- Al Smadi, S. (2009), Kaizen strategy and the drive for competitiveness: Challenges and opportunities. *Competitiveness Review: An International Business Journal*, 19(3), 203-211.
- Anderson, J., Gerbing, D. (1998), Structural equation modeling in practice: A review and recommended two step approach. *Psychological Bulletin*, 103(3), 411-423.
- Bhuiyan, N., Baghel, A. (2005), An overview of continuous improvement: From the past to the present. *Management Decision*, 43, 761-771.
- Brunet, A.P., New, S. (2003), Kaizen in Japan: An empirical study. *International Journal of Operations and Production Management*, 23(12), 1426-1446.

- Chen, J.C., Dugger, J., Hammer, B. (2001), A kaizen based approach for cellular manufacturing system design: A case study. *The Journal of Technology Studies*, 27(2), 19-27.
- Ćwikła, G. (2016), Manufacturing information acquisition system methodology as a tool supporting data acquisition for production management. In: *Manufacturing 2014: Contemporary Problems of Manufacturing and Production Management*. Poznan: Poznan University of Technology. p44-56.
- Dale, G., Van-Der-Wiele, T., Van-Iwaarden, J., editors. (2007c), A framework for the introduction of TQM. In: *Managing Quality*. 5th ed. Oxford: Blackwell Publishing Ltd. p88-108.
- Doherty, G.D. (2008), On quality in education. *Quality Assurance in Education*, 16(3), 255-265.
- Dombrowski, U., Mielke, T. (2014), Lean leadership-15 rules for a sustainable lean implementation. *Procedia CIRP*, 17, 565-570.
- Falk, R., Miller, N. (1992), *A Primer for Soft Modeling*. Akron, Ohio: The University of Akron Press.
- Farooq, M.S., Akhtar, M.S., Ullah, S.Z., Memon, R.A. (2007), Application of total quality management in education. *Online Submission*, 3(2), 87-97.
- Fornell, C., Larcker, D.F. (1981), Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gaur, A., Gaur, S. (2006), *Statistical Methods for Practice and Research: A Guide to Data Analysis using SPSS*. Thousand Oaks, California: Sage Publications.
- Gauri, D.P., Gajbhiye, A.N., Gadekar, S.D. (2015), Application of lean kaizen in productivity improvement and safety measures in a manufacturing industry. *International Journal of Engineering Research and General Science*, 3(2), 1302-1307.
- Glover, W.J., Farris, J.A., Van Aken, E.M. (2015), The relationship between continuous improvement and rapid improvement sustainability. *International Journal of Production Research*, 53(13), 4068-4086.
- Gurway, P. (2016), Implementation of kaizen as a productivity improvement tool in small manufacturing industry. *Journal of Information, Knowledge and Research in Mechanical Engineering*, 4, 760-771.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L. (2006), *Multivariate data analysis*. Vol. 6. USA: Pearson Prentice Hall.
- Hammer, M., Champy, J. (1994), *Reengineering the Corporation: Manifesto for Business Revolution*. A. Grand Rapids: Zondervan.
- Helfrich, C. (1994), Die praxis von lean management und prozessorientierung. *Management Zeitschrift Industrielle Organization*, 63(12), 78-80.
- Hilton, R.W. (1999), *Managerial Accounting*. 4th ed. New York: McGraw, Hill.
- Imai, M. (1986), *Kaizen: The Key to Japan's Competitive Success*. New York: McGraw-Hill Education.
- Jadhav, G.S., Jamadar, V.M., Gunavant, P.S., Gajghate, S.S. (2014), Role of kaizens to improve productivity: A case study. In: *Applied Mechanics and Materials*. Vol. 592. Switzerland: Trans Tech Publications Ltd. p2689-2693.
- Jain, A.O., Lad, A.B., Tandel, D.R. (2015), *The Kaizen Philosophy for Industries A Review Paper*.
- Kabst, R., Holt, L.H., Bramming, P. (1996), How do lean management organizations behave regarding training and development? *International Journal of Human Resource Management*, 7(3), 618-639.
- Kalinowski, K., Krenczyk, D., Paprocka, I., Kempa, W., Grabowik, C. (2016), Multi-criteria evaluation methods in the production scheduling. In: *IOP Conference Series: Materials Science and Engineering*. Vol. 145. London: IOP Publishing. p022019.
- Kaplinsky, R. (1995), *Technique and system: The spread of Japanese management techniques to developing countries*. *World Development*, 23(1), 57-71.
- Khan, H.U., Ali, S., Hongqi, L. (2018), Impact of continuous improvement on organization performance insight from Pakistan: An empirical study. *International Journal of Innovation Management and Technology*, 9(1), 7-14.
- Khayum, H.M.O. (2015), Kaizen: Potentiality in utilization of human prospects to achieve continuous improvement in the quality of higher education. *International Journal of Multidisciplinary and Current Research*, 3(6), 1223-1229.
- Kollenburg, V.T., Wouters, S. (2019), *The Future of Continuous Improvement*.
- Kumar, S., Dhingra, A., Singh, B. (2018), Lean-kaizen implementation. *Journal of Engineering Design and Technology*, 16(1), 143-160.
- Kumar, V., Singh, J., Kumar, D., Antil, M. (2016), Total quality management. *National Journal of Advanced Research*, 2(3), 5-8. Available from: <http://www.allnationaljournal.com>.
- Maarof, M.G., Mahmud, F. (2016), A review of contributing factors and challenges in implementing kaizen in small and medium enterprises. *Procedia Economics and Finance*, 35, 522-531.
- Mohammed, H., Khayum, O. (2015), Kaizen: Potentiality in utilization of human prospects to achieve continuous improvement in the quality of higher education. *International Journal of Multidisciplinary and Current Research*, 3, 1223-1229.
- Nangoy, R., Mursitama, T., Setiadi, N., Pradipto, Y. (2020), Creating sustainable performance in the fourth industrial revolution era: The effect of employee's work well-being on job performance. *Management Science Letters*, 10(5), 1037-1042.
- Nunnally, J.C., Bernstein, I.H. (1994), *The assessment of reliability*. *Psychometric Theory*, 3, 248-292.
- Oakland, J.S. (2014), *Total Quality Management and Operational Excellence: Text with Cases*. London: Routledge.
- Ohno, T. (1988), *Toyota Production System: Beyond Large-Scale Production*. USA: CRC Press.
- Oropesa-Vento, M., García-Alcaraz, J.L., Rivera, L., Manotas, D.F. (2015), Effects of management commitment and organization of work teams on the benefits of Kaizen: Planning stage. *Dyna*, 82(191), 76-84.
- Palmer, V.S. (2001), *Inventory Management KAIZEN*. Austin, USA: *Proceedings 2nd International Workshop on Engineering Management for Applied Technology*. p55-56.
- Paraschivescu, A.O., Cofirleț, P.C. (2015), Quality continuous improvement strategies kaizen strategy-comparative analysis. *Economy Transdisciplinarity Cognition*, 18(1), 12-21.
- Patidar, L., Soni, V.K., Soni, P.K. (2016), Continuous improvement philosophy for manufacturing productivity: Critical review. In: *Trends in Industrial and Mechanical Engineering*. New Delhi: Excellent Publishing House. p30. edited book.
- Petru, S., Abbas, K. (2015), Contributions to improving the use of ABC in Egyptian companies by implementing kaizen costing concept. *Lucrări Științifice Management Agricol*, 17(3), 69.
- Redmond, R., Curtis, E., Noone, T., Keenan, P. (2008), Quality in higher education. *International Journal of Educational Management*. 22(5), 432-441.
- Ricardianto, P., Ikhsan, R., Setiawati, R., Gugat, R. (2020), How to improve ship crew's work effectiveness through the leadership style, work life balance and employee engagement in Indonesia national shipping. *Management Science Letters*, 10(2), 399-410.
- Saleem, M., Khan, N., Hameed, S., Abbas, M. (2012), An analysis of relationship between total quality management and kaizen. *Life Science Journal*, 9(3), 31-40.
- Shan, A.W., Ahmad, M.F., Nor, N.H.M. (2016), The mediating effect of kaizen between total quality management (TQM) and business

- performance. In: IOP Conference Series: Materials Science and Engineering. Vol. 160. UK: IOP Publishing. p012012.
- Singh, J., Singh, H. (2012), Continuous improvement approach: State-of-art review and future implications. *International Journal of Lean Six Sigma*, 3, 88-111.
- Soltani, H., Amanat, E. (2019), The mediating role of kaizen in the relationship between total quality management and organization's performance. *Journal of System Management*, 5(1), 61-74.
- Suárez-Barraza, M.F., Lingham, T. (2008), Kaizen within kaizen teams: Continuous and process improvements in a Spanish municipality. *The Asian Journal on Quality*, 9(1), 1-21.
- Sujova, A., Marcinekova, K. (2015), Modern methods of process management used in Slovak enterprises. *Procedia Economics and Finance*, 23, 889-893.
- Suzaki, K. (1987), *New Manufacturing Challenge: Techniques for Continuous Improvement*. New York: Simon and Schuster.
- Teian, K. (1992), *Guiding Continuous Improvement through Employee Suggestions*, Productivity Press, Portland, US.
- Williams, M. (2001), Maximum cost reduction, minimum effort. *Manufacturing Engineer*, 80(4), 179-182.