A Proposed Model for Enhancing Institutional Performance Quality in Yemeni Universities in Light of the Japanese Kaizen Methodology

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Abstract:

The study aimed to develop a proposed model to improve the quality of institutional performance in Yemeni universities in light of the Japanese Kaizen methodology. This was achieved by identifying the current status of institutional performance quality in Yemeni universities. The researchers used the descriptive approach in both its survey and developmental forms. To achieve the study's objectives, a simple random sample of 312 faculty members was selected. A questionnaire was designed to collect data from faculty members at Sana'a University and the University of Science and Technology. The study reached several findings, the most significant of which indicated that the quality of institutional performance in Yemeni universities, from the perspective of faculty members, was rated as average, with a low level across the following domains: goal achievement, service quality, job security, and institutional vision. Based on these findings, a proposed model was developed to enhance institutional performance in Yemeni universities using the Japanese Kaizen methodology.

Keywords: *Model, Institutional Performance, Yemeni Universities, Japanese Kaizen Methodology.*

Introduction:

Universities are vital institutions influencing social, economic, political, and educational domains through core functions: education, research, and community service. They advance sustainable development by producing graduates adaptable to global changes. Consequently, universities must systematically enhance institutional performance and quality across all

functions through structured improvement methodologies to achieve excellence.

Kaizen methodology has proven successful in fostering productive improvements and enhancing work quality across individual, family, societal, and institutional levels. As a cornerstone of Total Quality Management (TQM), continuous improvement is essential for keeping pace with rapid global advancements driven by communication technologies and the information revolution. For the Japanese, this principle is considered an integral part of daily life (Ibrahim, 2018).

The Kaizen methodology originated in Japan and is primarily attributed to Masaaki Imai, who popularized the concept through his seminal 1986 book, Kaizen: The Key to Japan's Competitive Success. Initially published in English, the book became a bestseller for three consecutive years and was subsequently translated into Japanese and numerous other languages. Following the global popularization of the Kaizen philosophy, Imai founded the Kaizen Institute in Tokyo and established dozens of branches worldwide (Gudgel & Feitler, 2000).

The term "Kaizen" derives from Japanese, where "Kai" signifies change and "Zen" signifies good, translating to continuous improvement in English. As a methodology, Kaizen emphasizes both process and results, focusing on correct task execution to eliminate waste and reduce unnecessary exertion (Luis, Maldonado & Oropesa, 2017).

Within university contexts, Kaizen is defined as "a methodology for the continuous improvement of performance management at the point of activity, with the participation of employees across all departments and levels of the university's colleges. Its purpose is to reduce waste and address defects and problems in performance by making small, sequential, and continuous improvements using available resources, thereby achieving objectives with the highest quality and lowest cost" (Al Hamoud, 2019).

As engines of development globally and regionally, universities play a pivotal role in human capital development at local levels. Yemeni universities, as institutions responsible for cultivating the nation's economic wealth through human capital, particularly benefit from Kaizen's application to enhance institutional performance.

Statement of the Problem:

Yemeni universities, including Sana'a University and the University of Science and Technology, confront significant challenges impairing their institutional performance. The Sana'a University Strategic Plan (2022-2026) identifies critical issues: inconsistent quality standards across teaching, administration, and faculty development; insufficient incentives to attract/retain qualified staff; faculty shortages in key specializations; inadequate skilled technicians; equipment deficiencies; insufficient practical training facilities; limited educational resources; poor maintenance of laboratories and facilities; severe

financial constraints; minimal community research collaboration; and limited community representation in governance (Sana'a University, 2022-2026).
Compounding these issues, Sana'a University's annual report (1444 AH) documents substantial brain drain of academic and administrative personnel to the private sector, NGOs, and neighboring countries due to ongoing conflict and salary interruptions (Sana'a University, 1444 AH). Research further indicates Yemeni universities rank poorly compared to regional and international counterparts, directly linked to weak institutional performance (Al-Qudsi & Al-Noor, 2024). Additionally, Al-Sarabi (2016) identifies bureaucratic administration as a key impediment, noting that this dominant style neglects the human element, reducing employee satisfaction and performance, ultimately leading to weak administrative outcomes.
In light of the aforementioned problems and challenges facing Yemeni universities, which have impacted their overall performance, there is a clear need to improve the quality of institutional performance across various aspects. This requires a scientific approach that has proven successful in many service institutions, namely the Japanese Kaizen methodology. Accordingly, the central problem of this study is to answer the following main research question:
What is the proposed model to improve the quality of institutional performance in Yemeni universities in light of the Japanese Kaizen methodology?

This question can be addressed by answering the following sub-questions:

- What is the current state of institutional performance quality in Yemeni universities from the perspective of faculty members?
- Are there statistically significant differences in the responses of the study sample regarding the state of institutional performance quality in Yemeni universities from the perspective of faculty members, attributable to the study variables (gender, academic rank)?

Study Objectives:
The current study aims to:

- Develop a proposed model to improve the quality of institutional performance in Yemeni universities in light of the Japanese Kaizen methodology by:
  - Identifying the current state of institutional performance quality in Yemeni universities.
  - Identifying statistically significant differences in the responses of faculty members regarding the state of institutional performance quality, attributable to variables such as gender, university type, and academic rank.

Study Significance:

The significance of this study lies in the following:

- The study holds great importance as it addresses a significant topic: the Japanese Kaizen methodology as an approach to improving the quality of institutional performance in Yemeni universities.
- The findings of this study will benefit Yemeni universities and their decision-makers by providing them with information and indicators on the current state of institutional performance quality, enabling them to develop appropriate improvement and development solutions.
- Several parties can benefit from the study's results, including the Ministry of Higher Education and Scientific Research and other researchers in this field.

Study Limitations:

The current study is confined to the following limitations:

- **Thematic Limitation:** This study is limited to developing a Kaizen-based model for enhancing institutional performance at two representative Yemeni universities: Sana'a University (the oldest public institution) and the University of Science and Technology (the first private university). These institutions were selected as exemplars of Yemen's public and private higher education sectors.
- **Human Limitation:** The study includes faculty members.
- **Geographical Limitation:** The study's application is restricted to Sana'a University and the University of Science and Technology in Sana'a.
- **Temporal Limitation:** The study was conducted during the academic year 2024-2025.

Definition of Terms:

The current study is limited to the following terms:

- **Model:** Nasrallah (2010) defines it as: "A general representation that seeks to clarify the relationship between its various constituent elements. This is achieved by showing the main roles played by the different elements that form this reality."
- **Institutional Performance:** "The degree of interaction between the internal and external environment of the institution to achieve its goals with efficiency and effectiveness" (Al-Ghanayem & Ghosh, 2025).
- **The Japanese Kaizen Methodology:** The researchers operationally define the Japanese Kaizen methodology as: a systematic approach to enhancing institutional performance within Yemeni universities. It focuses on reducing deficiencies across key areas, including; institutional objectives, service quality, employee job security, and community perception by minimizing waste in time, effort, and resources. This methodology develops targeted solutions to elevate overall institutional performance quality.

Theoretical Framework:

The Kaizen methodology serves as "the starting point for diagnosing hidden problems within educational institutions and identifying waste in operations. It aims for continuous improvement aligned with quality goals, involving all employees, and seeks the best methods for perpetually enhancing administrative processes" (Rahma, Bibars & Kamal, 2019).

Objectives of Applying the Kaizen Methodology:

The application aims to achieve several objectives. The most prominent of these, as identified by Tawfiq & Dawood (2017), Al-Khozami (2001), Al-Rikabi (2008), and Yousef (2013), are as follows:

- Continuous improvement of process quality to deliver high-quality services, achieve customer satisfaction, reduce costs, and add real value.
- Using benchmarking techniques to achieve superior performance.
- Monitoring and controlling processes with efficiency and effectiveness, ensuring adaptability, and identifying and resolving the root causes of problems.
- Seeking the optimal use of available resources and minimizing defects.
- Encouraging the implementation of small, continuous improvements.
- Reducing operational time while increasing efficiency, saving costs, and minimizing errors to empower human resources, improve employee morale, and discover their capabilities, thereby increasing the satisfaction of service recipients.

Steps for Applying the Kaizen Methodology:

The Kaizen methodology application involves a systematic approach to continuous improvement, as outlined by Al-Jubouri (2008), Al-Maghazi (2017), Joshi (2013), and Kaplan & Atkinson (1998):

- Process Understanding: Identify improvement-targeted processes and assess beneficiary satisfaction.
- Critical Process Selection: Prioritize processes with the greatest institutional performance impact, addressing less impactful processes sequentially.
- Process Analysis: Conduct detailed examination of selected processes proposed for improvement.
- Solution Generation: Develop multiple alternatives, verifying each can achieve objectives and identifying driving/resisting forces.
- Optimal Solution Selection: Choose the best alternative using established criteria, selection methods, and decision-making approaches.
- Implementation Planning: Prepare a structured plan for executing the selected solution.
- Outcome Verification: Confirm achievement of desired objectives following implementation.

Requirements for the Successful Application of the Kaizen Methodology:

To ensure effective continuous improvement through Kaizen methodology, the following critical requirements must be addressed:

- Top Management Support: Leadership commitment to Kaizen application is fundamental (Al-Hamid, 2016).
- Motivating Organizational Climate: A cooperative environment fostering achievement, consultation, and collective work enhances performance and quality assurance (Al-Subaie, 2015; Al-Abadi, 2015).
- Employee Initiative Encouragement: Promoting creative ideas and suggestions increases loyalty and productivity (Al-Harbi, 2017; Omar, 2018).
- Employee Participation & Empowerment: Involving all staff in change processes with appropriate authority facilitates improvement (Bakr, 2016).
- Effective Communication System: Direct interaction between leaders and employees is essential for problem identification and solution development (Khalil, 2017).
- Employee Training & Qualification: Staff must be trained in Kaizen principles and tools (Al-Hamid, 2016).
- Quality Culture Dissemination: Building an organizational culture committed to continuous improvement synergizes collective efforts (Al-Ani, 2011; Omar, 2018).
- Management by Wandering Around (MBWA): Direct worksite observation, stakeholder communication, and on-site problem-solving are central to Kaizen effectiveness (Al-Harbi, 2017; Omar, 2018).

Kaizen Methodology Strategies:

There are numerous strategies for applying the Kaizen methodology in educational institutions with the aim of continuous improvement and development, enhancing educational services to achieve a competitive advantage, and meeting the aspirations of beneficiaries. Here, the researchers review some of these strategies:

First: The Plan-Do-Check-Act (PDCA) Strategy:

This is one of the most prominent strategies of the Kaizen methodology, abbreviated as (PDCA) for the four steps it comprises: (Plan, Do, Check, and Act).

Second: The Strategy of Clearing and Removing Obstacles in the Work Environment:

This is a crucial strategy in the Kaizen methodology, as the presence of non-essential items in the work environment represents a waste of time, effort, and money, and negatively affects productivity. Clearing the work environment of

these obstacles is a primary requirement of Kaizen. According to Al-Shibawi and Al-Musawi (2016), this clearing process includes the following steps:

- **Sort (Tidiness):** To identify what is necessary and what is not, and to dispose of the unnecessary.
- **Set in Order (Orderliness):** To arrange the remaining items in an organized and safe manner and not to change their locations, making them easy to access.
- **Shine (Cleanliness):** To keep equipment and the work environment clean.
- **Standardize (Standardization):** To ensure that cleaning and inspection processes are carried out periodically and continuously.

Third: The Strategy for the Elimination of Waste:

This involves eliminating activities that add no value to production and lead to the loss of resources, including forms of administrative corruption. It encompasses seven types of waste: the waste of waiting, transportation, processing, overproduction, inventory, motion, and human resources (Al-Shibawi & Al-Musawi, 2016).

Fourth: The Focus Strategy:

According to Al-Harbi (2017), this strategy includes the following improvement steps:

- **Find:** an opportunity for improvement.
- **Organize:** a team to work on the improvement.
- **Clarify**: the current process.
- **Understand**: the sources of variation and problems.
- **Select**: the appropriate improvement strategy.

Challenges in Applying the Kaizen Methodology:

Despite the benefits of applying the Kaizen methodology, it faces several challenges as pointed out by Aurel, Andreea, and Simina (2015), and Medinilla (2016):

- **Absence of a genuine culture:** There are no procedures aimed at changing employee behavior or a system to evaluate them accordingly.
- **Cultural conflicts:** Managers are often the most concerned with concealing defects. There is no real change management to transition to Kaizen, and there is a fear of communication and making information available to everyone.
- Failure to identify problems.
- Failure in planning and execution.
- **Lack of resources:** There is not enough time or the necessary skills to implement the Kaizen methodology in a productive manner.

Literature Review

Awi (2016) investigated the impact of Kaizen methodology on student satisfaction in Malaysian higher education using a quasi-experimental design with undergraduate student groups (experimental vs. control) and questionnaire data collection. Findings revealed Kaizen techniques effectively identified and reduced waste by focusing on value-adding activities and eliminating non-value-adding processes. Significantly higher student satisfaction was observed in the group applying Kaizen-based continuous improvement compared to the control group, demonstrating the methodology's successful applicability within the higher education sector.

Al-Kasr (2018) explored the feasibility of implementing Japanese Kaizen strategy requirements at the Faculty of Education for Girls, Shaqra University, and assessed their administrative importance. Using a descriptive case study approach, questionnaires were administered to administrative staff. Findings revealed a significant gap: while participants highly rated the importance of Kaizen strategy requirements for administration, the actual application of these requirements was rated below this high perceived importance level.

Omar (2018) examined employee performance at Minia University's Faculty of Education from faculty and student perspectives, proposing a Kaizen-based improvement framework. Using a descriptive approach, the study concluded employees performed at an average, unsatisfactory level across multiple dimensions: possession of necessary job components, pursuit of professional development, focus on beneficiary services within regulations, and optimal utilization of available resources and capabilities.

Al Hamoud (2019) assessed the availability of success requirements for Gemba Kaizen implementation and identified implementation obstacles at Majmaah University's faculties. Using a descriptive approach, questionnaires were completed by 54 academic leaders. Findings indicated high availability of senior management support, employee participation, and effective communication systems. However, improvement culture and qualification/training components were only moderately available. The study emphasized the critical need to foster a continuous improvement culture among all personnel and provide comprehensive Kaizen strategy training to achieve successful implementation.

Soliman (2019) examined the contribution of change management to implementing the Gemba Kaizen model for quality achievement in Egyptian universities. Employing content analysis within a descriptive framework, the study concluded that Kaizen application fosters continuous improvement by disseminating a quality culture among university members and activating change management processes. This synergy enhances process outcomes and facilitates objective attainment.

Al-Yafie and Al-Farsi (2023) developed proposed mechanisms for implementing Kaizen methodology in Yemeni universities. Using a developmental descriptive approach and a modified Delphi technique, the researchers presented a closed-

ended questionnaire containing 42 mechanisms to 47 experts (p. 103). Findings revealed strong expert consensus across all proposed mechanisms, categorized into six dimensions: leadership commitment to improvement (8 mechanisms), process quality (8 mechanisms), employee participation (6 mechanisms), stakeholder engagement (6 mechanisms), measuring improvement results (7 mechanisms), and sustainability of improvement (7 mechanisms). This comprehensive framework provides actionable guidance for Kaizen implementation in the Yemeni higher education context.

Study Methodology and Procedures:

Research Approach:

To achieve the study's objectives and answer its questions, the descriptive approach, employing survey and developmental approaches, was used. This approach is appropriate for this type of research, which is based on data collection and analysis.

Study Population:

The study population consisted of all faculty members at Sana'a University and the University of Science and Technology, totaling 2,426 individuals. This includes 2,126 officially appointed faculty members at Sana'a University, excluding contractors (Annual Report of Sana'a University, 1444 AH / 2023 AD), and 300 faculty members at the University of Science and Technology in Sana'a (Human Resources Department, University of Science and Technology, 2025).

The Study Sample and Its Characteristics:

To achieve the objective of the study, the sample was selected using the simple random sampling method. It consisted of (333) faculty members, representing (13.7%) of the total population size. The sample size was determined according to Steven K. Thompson's formula. The sample was characterized by several demographic variables, namely: gender, university type, and academic rank. Data was collected via participation in electronic and paper-based questionnaires distributed to the sample members. A total of 21 questionnaires were excluded as they were unsuitable for statistical analysis. Consequently, the final study sample comprised (312) respondents. The study sample possesses some characteristics, as shown in the following Table (1):

Table (1): Description and Distribution of Sample Members According to Demographic Variables (n=312)

Variable	Category/ Level	Number Frequency	%
Gender	Male	184	59.0
	Female	128	41.0
Type of University	Government	218	69.9
	Private	94	30.1

Academic Rank	Lecturer	84	26.9
	Assistant Professor	111	35.6
	Associate Professor	83	26.6
	Professor	34	10.9
Total		**312**	**100.0**

Study Instrument:

An electronic questionnaire was designed to collect data from faculty members at Sana'a University and the University of Science and Technology, in accordance with the following steps:

- Initial Construction: Based on a literature review concerning institutional performance development in light of the Japanese Kaizen methodology.
- Expert Review: It was presented to (5) specialized experts in educational administration, and necessary adjustments were made based on what was agreed upon by (80%). The questionnaire emerged in its final form as follows:
  - Part One: An introductory message in addition to preliminary data (gender, university type, academic rank).
  - Part Two: Included (24) statements; distributed across four domains.
  - Internal Consistency Validity: Applied to a pilot sample (n=30), and Pearson correlation coefficients were calculated (Table 2).

Table (2) Pearson Correlation Coefficients for Questionnaire Statements, Dimensions, and Axes (α ≥ 0.05)

Fields	No. phrases	Transaction Scope	Average	Overall Correlation Coefficient
Goal Achievement	9	0.72-0.86	0.79	0.94
Service Quality	5	0.83, 0.90	0.87	**0.96
Job Security	5	0.80-0.90	0.85	**0.91
Institutional Theory	5	0.78-0.87	0.83	**0.93

** Significant at (0.01).

It is clear from Table (2) that all correlation coefficients in all domains of the questionnaire ranged between (0.91-0.96), and all were statistically significant, and strongly so at the (0.01) significance level. This indicates the strength of the internal consistency of the study instrument's axes, and thus all questionnaire axes are considered valid and measure what they were designed to measure.

b. Reliability of the Study Instrument:

The reliability of the questionnaire was confirmed using the (Cronbach's Alpha) equation, as shown in Table (3).

Table (3) Cronbach's Alpha Reliability Coefficients for the Instrument's Axes and the Questionnaire as a Whole

No.	Facilitator	No. paragraphs	Cronbach Alpha Coefficient
1	Goal Achievement	9	0.95
2	Service Quality	5	0.95
3	Job Security	5	0.94
4	Institutional Theory	5	0.93
	Total Questionnaire	**24**	**0.98**

The results shown in Table (3) that the study instrument possesses excellent statistical reliability based on the reliability rate tables (Yuan & Chen, 2011), and that the Cronbach's Alpha value was statistically acceptable for each axis, ranging between (0.93-0.95). Also, the alpha coefficient value for the instrument as a whole was (0.98), which means that the reliability coefficient is high, and these are high reliability coefficients that can be trusted in the application of the current study.

Adopted Criterion in the Study:

To determine the adopted criterion in the study, the cell length in the five-point Likert scale was calculated by subtracting the minimum score from the maximum score (5-1=4) and then dividing it by the highest value to obtain the cell length (4/5=0.80). After that, this value was added to the lowest value in the questionnaire alternatives; to determine the upper limit for this cell, and the cell lengths became as shown in Table(4).

Table (4) Criterion for Judging the Reality of Institutional Performance Quality in Yemeni Universities (n=321)

Value of Substitute	True Limits of Arithmetic Mean		Verbal Significance of the Reality of the Quality of Institutional Performance
	Min.	Max.	
1	1.00	1.80	Very Low
2	1.81	2.60	Low
3	2.61	3.40	Medium
4	3.41	4.20	High
5	4.21	5.00	Very High

Statistical Methods Used in the Study:

To achieve the study's objectives and conduct statistical analyses, the researchers extracted the data and used the Statistical Package for Social Sciences (SPSS), utilizing the following statistical methods:

- Applying descriptive statistics measures (Frequencies & Percent) to describe the study sample.
- Applying Pearson Correlation coefficient to calculate the internal consistency of questionnaire items (construct validity and structural validity).
- Applying Cronbach's Alpha test to extract the questionnaire's reliability degree.
- Arithmetic means and standard deviations (Mean & Std. Deviation); to understand the reality of institutional performance quality in Yemeni universities.
- Applying T-test for two independent samples; to examine the significance of differences between study sample estimates according to variables (gender and university type).
- Applying One Way ANOVA test; to examine the significance of differences between study sample estimates according to the academic rank variable.
- LSD test for post-hoc comparisons; to determine the source of differences in sample members' responses regarding the academic rank variable.

Study Results and Discussion:

Results Related to the First Question: "What is the reality of institutional performance quality in Yemeni universities from the perspective of faculty members?"

To answer this question, arithmetic means and standard deviations were calculated to understand the reality of institutional performance quality in Yemeni universities, as shown in Table (5).

Table (5) Arithmetic Means and Standard Deviations of Sample Responses about "The Reality of Institutional Performance Quality in Yemeni Universities" (n=312).

No.	Fields	Rank	Arithmetic Mean	Standard Deviation	Grade
1	Goal Achievement	2	2.23	918	Low
2	Service Quality	4	2.09	936.	Low
3	Job Security	1	2.24	919.	Low
4	Institutional Theory	3	2.13	955.	Low
Average quality of institutional performance as a whole			**2.17**	**873.**	**Low**

Table (5) reveals faculty members' assessment of institutional performance quality in Yemeni universities as low (M = 2.17, SD = 0.873 on a 5-point scale) across all domains. This poor rating likely stems from structural and administrative imbalances negatively impacting academic and administrative processes. This evaluation serves as a critical warning indicator, necessitating urgent review of organizational policies and procedures. It confirms the pressing need for comprehensive reforms, including organizational restructuring, enhanced university governance, infrastructure investment, faculty job security guarantees, activated institutional participation, and strengthened academic loyalty and belonging.

This finding aligns with Omar's (2018) study, which revealed that employees at Minia University's Faculty of Education performed at a moderate level below satisfactory standards. Specifically, deficiencies were noted in possessing necessary job elements, pursuing continuous improvement, addressing beneficiary needs, adhering to organizational frameworks, and optimally utilizing available resources and capabilities.

The following presents the results of domains at the statement level:

Results Related to Goal Achievement Domain:

Table (6) Arithmetic Means and Standard Deviations of Sample Members' Estimates for "The Reality of Goal Achievement Quality in Yemeni Universities" (n=312).

No.	Goal Achievement	Arithmetic Mean	Standard Deviation	Phrase Order/	Grade
1	The university is keen to achieve a strong relationship with the beneficiaries based on trust and credibility.	2.37	1.138	2	Low
2	The university aims to deliver all distinguished and effective services to its beneficiaries.	2.32	1.052	4	Low
3	The university aims to maximise the quality of service by promptly meeting the needs of its beneficiaries.	2.08	1.024	8	Low
4	The university aims to increase the audience space of the beneficiaries of the services provided.	2.40	1.215	1	Low
5	The university works to provide systems that help to provide the service in an	2.33	1.209	3	Low

	optimal manner.				
6	The University optimally invests all available resources in achieving its strategic objectives.	2.16	1.116	7	Low
7	The university reduces the costs and procedures of the services in a way that does not affect their quality.	2.18	1.113	6	Low
8	The university works to raise the professional competence of its members through training courses.	2.27	1.180	5	Low
9	The university provides its services to the beneficiaries with the quality that competes with the services of other universities.	1.93	1.119	9	Low
	Average quality of Goal Achievement as a whole	**2.23**	**918.**	**Low**	

Table (6) indicates faculty members' assessment of goal achievement quality in Yemeni universities as low (M = 2.23, SD = 0.918 on a 5-point scale). Item means ranged from 2.40 to 1.93 (SDs: 1.215-1.119), reflecting weak performance in achieving strategic and operational goals across education, research, and community service domains. This deficiency likely stems from: absence of vision-based institutional planning, inadequate follow-up and evaluation mechanisms, and scarcity of material and human resources. The goal achievement domain ranked second among four institutional performance quality domains, consistently assessed as low.

Results Related to Service Quality Domain:

Table (7) Arithmetic Means and Standard Deviations of Sample Members' Estimates for "The Reality of Service Quality in Yemeni Universities" (n=312).

No.	Service Quality	Arithmetic Mean	Standard Deviation	Phrase Order	Grade
1	The university is keen to achieve satisfaction for the beneficiaries through the services provided to them.	2.13	1.116	3	Low
2	The university continuously communicates with all beneficiaries of its services.	1.89	1.010	5	Low
3	The university works to reduce the complaints and grievances submitted to it by the audience of beneficiaries.	2.14	1.059	2	Low
4	The university works to improve the awareness of its beneficiaries of the services it provides.	2.15	1.031	1	Low
5	The university maintains the beneficiaries and works to increase their loyalty to them.	2.13	1.142	4	Low
	Average quality of services as a whole	**2.09**	**936.**	**Low**	

Table (7) reveals faculty members' assessment of service quality in Yemeni universities as low (M = 2.09, SD = 0.936 on a 5-point scale). Item means ranged from 2.15 to 1.89 (SDs: 1.031-1.010), representing the lowest evaluation in the study. This indicates deficiencies in educational, administrative, and infrastructure services (e.g., libraries, technical support, academic resources). Poor service quality directly impacts faculty satisfaction, educational process effectiveness, and student experience. The service quality domain ranked fourth and last among institutional performance quality domains, consistently assessed as low.

Results Related to Job Security Domain:

Table (8) Arithmetic Means and Standard Deviations of Sample Members' Estimates for "The Reality of Job Security in Yemeni Universities" (n=312).

No.	Job Security	Arithmetic Mean	Standard Deviation	Phrase Order	Grade
1	The university promotes communication between academic staff and administrative staff.	2.35	1.074	2	Low
2	The university seeks to achieve financial satisfaction for all academics and employees.	1.88	1.095	5	Low
3	The university works to reduce the turnover of academics (job stability).	2.47	1.079	1	Low
4	The university adopts improve the ability of academics to react to changing beneficiary requirements.	2.20	1.039	4	Low
5	The university develops the capabilities of academics through meaningful training programs.	2.30	1.075	3	Low
	Average job security as a whole	**2.24**	**919.**	**Low**	

Table (8) indicates faculty members' assessment of job security in Yemeni universities as low (M = 2.24, SD = 0.919 on a 5-point scale). Item means ranged from 2.35 to 2.30 (SDs: 1.074-1.075), reflecting diminished perceived stability regarding contract continuity and financial/professional conditions. This evaluation stems primarily from Yemen's political and economic instability, irregular salary payments, and deficient organizational structures and HR regulations. Notably, the job security domain ranked first among the four institutional performance quality domains, yet still received a low assessment. This pervasive insecurity represents a significant obstacle to

academic performance development, adversely affecting faculty motivation and institutional continuity.

Results Related to Institutional Perspective Domain:

Table (9) Arithmetic Means and Standard Deviations of Sample Members' Estimates for the Reality of Institutional Perspective in Yemeni Universities (n=312).

No.	Institutional Theory	Arithmetic Mean	Standard Deviation	Phrase Order	Grade
1	The university is keen to improve its social image among all customers and their different categories.	2.47	1.216	1	Low
2	The university seeks to improve its perception as a responsible member of the local community by (creating job opportunities, encouraging activities that benefit the community...etc)?	2.29	1.117	2	Low
3	The university adopts all new services to meet the needs and expectations of the beneficiary audience.	1.99	1.088	3	Low
4	The University is keen to maintain the quality of the environment through the services it provides.	1.97	1.054	4	Low
5	The university provides many donations and free grants to civil community organizations and institutions.	1.93	1.167	5	Low
	The average institutional Theory as a whole	**2.13**	**955.**	**Low**	

Table (9) indicates faculty members' assessment of institutional perspective in Yemeni universities as low (M = 2.13, SD = 0.955 on a 5-point scale). Item means ranged from 2.47 to 1.93 (SDs: 1.216-1.167), reflecting deficiencies in

shared vision and institutional belonging. This weakness suggests the absence of a clear organizational culture, effective institutional communication channels, and meaningful faculty participation in decision-making or policy development. Contributing factors likely include decision centralization, weak university governance, and frustration stemming from broader national conditions. The institutional perspective domain ranked third among the four institutional performance quality domains, consistently assessed as low.

Results Related to the Second Question:

Are there statistically significant differences in study sample members' responses regarding the reality of institutional performance quality in Yemeni universities from the perspective of faculty members, attributable to variables (gender, university type, academic rank)?

First: According to the Gender Variable:

To examine the significance of differences between sample members' response means regarding institutional performance quality in Yemeni universities attributed to the gender variable, a (T-test) for independent samples was used, see Table (10).

Table (10) Results of Examining the Difference Significance between Sample Members' Estimation Means Attributed to the Gender Variable.

Field	Gender	No.	Arithmetic Mean	Standard Deviation	T value	Significant at α	Verbal Connotation
Goal Achievement	Males	184	2.32	1.000	2.167	031.	Sig.
	Females	128	2.09	770.			
Service Quality	Males	184	2.22	991.	2.923	004.	Sig.
	Females	128	1.91	821.			
Job Security	Males	184	2.35	963.	2.666	008.	Sig.
	Females	128	2.07	829.			
Institutional Theory	Males	184	2.27	1.025	3.136	002.	Sig.
	Females	128	1.93	807.			
Quality of institutional performance as a whole	**Males**	**184**	**2.29**	**936.**	**2.917**	**004.**	**Sig.**
	Females	**128**	**2.00**	**743.**			

Table (10) reveals statistically significant gender differences (α ≥ 0.05) in faculty perceptions of institutional performance quality in Yemeni universities, with male faculty providing more favorable assessments. This disparity is attributable to three primary factors: First, males typically occupy more administrative positions and committee roles, granting them greater exposure to institutional operations and potentially fostering a more tolerant view of shortcomings. Second, female faculty often face compounded institutional barriers, including limited advancement opportunities and exclusion from decision-making processes, leading to more critical evaluations of performance quality. Third, socio cultural constraints in some Yemeni university environments restrict women's participation in institutional development activities, generating perceptions of exclusion and injustice that negatively influence their assessments.

Second: According to the University Type Variable:

To examine the significance of differences between sample members' response means regarding institutional performance quality in Yemeni universities, attributed to the university type variable, a (t-test) for independent samples was used, see Table (11).

Table (11) Results of Examining the Difference Significance between Sample Members' Estimation Means Attributed to the University Type Variable.

Field	Type of University	No.	Arithmetic Mean	Standard Deviation	Calculated T value	Significant at α	Verbal Connotation
Goal Achievement	Government	218	2.12	830.	3.060-	002.	Sig.
	Private	94	2.46	1.063			
Service Quality	Government	218	1.94	794.	4.303-	000.	Sig.
	Private	94	2.43	1.137			
Job Security	Government	218	2.08	826.	4.875-	000.	Sig.
	Private	94	2.61	1.016			
Institutional Theory	Government	218	1.97	854.	4.582-	000.	Sig.
	Private	94	2.50	1.074			
Quality of institutional performance as a whole	**Government**	**218**	**2.03**	**753.**	**4.505-**	**000.**	**Sig.**
	Private	**94**	**2.50**	**1.034**			

Table (11) reveals statistically significant differences (α ≥ 0.05) in faculty perceptions of institutional performance quality between university types, with private universities receiving more favorable assessments. This disparity is attributed to four key factors:

First, private universities typically exhibit greater administrative flexibility and streamlined decision-making processes, enabling quicker adaptation to challenges and procedural updates. Second, their financial dependence on student recruitment drives stronger motivation for service quality improvement and faculty satisfaction enhancement. Third, public universities face compounded challenges including resource scarcity, bureaucratic interference, centralized decision-making, and administrative routine, which negatively impact performance quality perceptions. Fourth, contractual relationships in private universities often foster greater faculty appreciation and job security compared to the rigid employment structures characterizing public institutions.

Third: According to the Academic Rank Variable:

To examine the significance of differences between sample members' response means regarding institutional performance quality in Yemeni universities, attributed to the academic rank variable, one-way ANOVA was used, with Table (12) illustrating this.

Table (12) Results of Examining the Difference Significance between Sample Members' Estimation Means Attributed to the Academic Rank Variable.

Axis		Sum of Squares	Degree of Freedom	Squares Mean	F Value	Significance Level	Verbal Connotation
Goal Achievement	Between Groups	9.030	3	3.010	3.660	013.	Sig.
	Within Groups	253.300	308	822.			
	Total Variance	262.330	311				
Service Quality	Between Groups	13.137	3	4.379	5.200	002.	Sig.
	Within Groups	259.390	308	842.			
	Total Variance	272.527	311				
Job Security	Between Groups	26.181	3	8.727	11.357	000.	Sig.
	Within Groups	236.686	308	768.			
	Total	262.86	311				

	Variance	7					
Institutional Theory	Between Groups	20.102	3	6.701	7.834	000.	Sig.
	Within Groups	263.455	308	855.			
	Total Variance	283.557	311				
Quality of Institutional Performance as a Whole	**Between Groups**	**16.107**	**3**	**5.369**	**7.491**	**000.**	**Sig.**
	Within Groups	**220.765**	**308**	**717.**			
	Total Variance	**236.872**	**311**				

Table (12) reveals that:

There are statistically significant differences at the significance level (a ≥ 0.05) between sample members' response means attributed to the academic rank variable.

To determine the direction of differences in sample members' responses attributed to the academic rank variable, the LSD test for multiple comparisons was used, as shown in the following table.

Table (13) Shows LSD Test Results for Multiple Comparisons between Sample Members' Response Means Attributed to the Academic Rank Variable

Groups	Lecturer	Assistant Professor	Associate Professor	Professor
Lecturer		0.923	0.00**	0.322
Assistant Professor	0.923		0.00**	0.339
Associate Professor	0.00**	0.00**		0.037
Professor	0.322	0.339	*0.037	

** Significant at (0.01).* Significant at (0.05).

Table (13) reveals that:

There are statistically significant differences at the significance level (a ≥ 0.05) between sample members' response means attributed to the academic rank

variable, specifically in favor of (Associate Professors), possibly due to the following reasons:

- Associate professors occupy a middle stage in the academic hierarchy, possessing sufficient experience to evaluate institutional reality objectively without the extreme optimism sometimes exhibited by senior professors involved in decision-making or the pessimism characteristic of new assistant professors facing professional obstacles.
- Associate professors frequently assume administrative responsibilities and departmental leadership roles, providing direct exposure to institutional performance and organizational dynamics that other academic ranks may not experience.
- This group typically experiences greater job stability and academic recognition, which likely contributes to their more positive assessment of the institutional environment compared to lower-ranked faculty facing uncertain career trajectories.
- Expectation variations exist across academic ranks: full professors may hold exceptionally high standards based on extensive experience, leading to more critical evaluations, while assistant professors may assess institutional performance through a lens of frustration or marginalization.

Results Related to the Third Question:

"What is the Proposed Model for Improving Institutional Performance Quality in Yemeni Universities in Light of the Japanese Kaizen Methodology?"

In light of the current study's theoretical framework, previous studies addressing the current study's subject, and the field study results revealed through descriptive statistical analyses of the study questions regarding the reality of institutional performance quality in Yemeni universities, which can be developed through the Japanese Kaizen methodology, the aim is to develop a proposed model that helps improve institutional performance quality in Yemeni universities through the Kaizen methodology.

The proposed model's elements consisted of the following components: the proposed model's objectives, principles, foundations, implementation stages, application requirements, and implementation obstacles, detailed as follows:

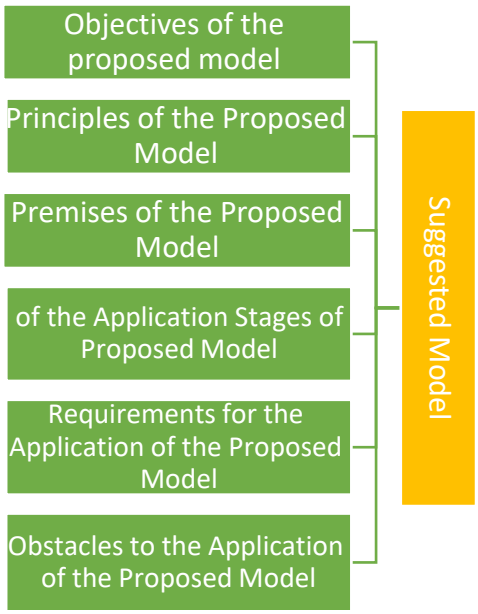

Figure (1) Proposed Conceptual Framework.

First: Proposed Model Objectives:

- Continuously improve institutional performance quality by adopting a culture of gradual and continuous improvement across all university components.
- Enhance the efficiency of academic and administrative processes to achieve optimal resource utilization.
- Promote a culture of collective work and active participation in decision-making at all levels.
- Achieve satisfaction among university service beneficiaries (students, academics, staff, community).
- Create a flexible and creative university environment that interacts with local and global changes.

Second: Proposed Model Principles:

Kaizen means continuous improvement, a Japanese management philosophy focusing on small, cumulative improvements over time through the participation of all organizational members. Accordingly, the model is based on the following principles:

- Daily and continuous improvement of every aspect of work.
- Prioritizing human beings as the primary source of change and development.
- Eliminating waste in time, effort, and resources.
- Encouraging a culture of self-accountability and team spirit.
- Simplifying procedures and reducing complexities in the institutional work environment.

Third: Proposed Model Foundations:

The proposed model is based on the following points:

- The low level of institutional performance in Yemeni universities according to field study results.
- The need for alternative management models compatible with limited resources and unstable environments.
- The success of the Kaizen model in global educational and industrial institutions despite sometimes limited capabilities.
- The gradual implementation potential of continuous improvement without requiring costly radical changes.
- Focusing on human capital as the primary driver of institutional development.

Fourth: Proposed Model Implementation Stages:

No.	Stage	Description
1	Preparation and Awareness	Spreading the Kaizen culture through awareness workshops, and building the conviction of leadership and faculty members of the importance of continuous improvement.
2	Formation of Kaizen Teams	Forming small teams representing various departments and faculties, studying problems and proposing improvements.
3	Diagnosis and Analysis	Conducting analytical studies of current performance using kaizen tools, such as: (Cause and Effect Diagram, Flow Map, Waste Analysis).
4	Planning for Improvement	Propose simple and specific development plans, applicable, with prioritization.
5	Implement improvements	Implement changes gradually, starting with departments that are less resistant to change.
6	Evaluate and follow-up	Follow up on the results of improvements using institutional performance indicators, and continuous re-evaluation.
7	Generalization and stabilization	Transfer successful experiences to the rest of the university units, and install improved procedures within systems and policies.

Fifth: Model Application Requirements:

Implementing the proposed model requires applying the following points:

- University leadership commitment and support for the new culture.
- Training administrative and academic staff on Kaizen principles and tools.
- Encouraging a culture of teamwork and engagement in improvement teams.

- Establishing a reward and incentive system to encourage developmental initiatives.
- Providing performance analysis and institutional documentation tools.
- Creating an effective feedback and monitoring system to support decisions.

Sixth: Model Implementation Obstacles:

The proposed model implementation may face the following obstacles:

- Weak culture of change and continuous improvement in the university environment.
- Internal resistance from some leaders or employees afraid of change.
- Lack of technical and financial capabilities that support the application of analytical tools.
- Administrative routine and bureaucracy that impede rapid decision-making.
- Weak training and qualification in quality management.
- Absence of an institutional system for systematic and periodic performance documentation and evaluation.

Conclusion:

This proposed model represents a flexible framework for improving institutional performance in Yemeni universities according to Kaizen principles. It is a realistic model applicable in low-resource environments if institutional will exists and workers are supported and empowered. The model focuses on gradual change based on a deep understanding of reality, involving all stakeholders, and achieving quality through simple but continuous steps.

Recommendations:

In light of the findings, the researchers recommend the following:

- Adopt and apply the proposed model in academic and administrative work in Yemeni universities.
- Analyze the factors responsible for the deterioration of institutional performance quality in Yemeni universities qualitatively and quantitatively.
- Compare Yemeni universities with universities in similar environments to identify gaps.
- Propose a national model for institutional performance quality that considers the specificity of the Yemeni context.

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Data availability

The data that support the findings of this study are available from the authors upon reasonable request.

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