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The Impact of Knowledge Accumulation on Achieving Service Quality
(An Analytical Survey Study of the Opinions of Specialist Doctors at Al-Kafeel Specialist Hospital in Karbala)

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Abstract:
The current study aims to demonstrate the impact of human resources' knowledge accumulation on improving service quality within the research community, which is represented by specialist physicians at Al-Kafeel Specialist Hospital in the holy Karbala Governorate. The research sample consisted of (144) specialist physicians. To achieve this, the independent variable, human resources' knowledge accumulation, was measured using three sub-dimensions: (knowledge integration, knowledge absorption, and knowledge sharing). The dependent variable, service quality, was measured using five sub-dimensions: (tangibility, reliability, safety, responsiveness, and empathy). To reach the results, the descriptive-analytical approach was used, and data was collected through a questionnaire. The research relied on a set of statistical methods, including confirmatory factor analysis, Cronbach's alpha, and descriptive statistics, including arithmetic mean, standard deviation, and relative importance. It also relied on analytical statistical tools, including structural equation modeling and correlation coefficients. Based on ready-made programs (SPSS V.25; AMOS V.25; Excel 2013), the research was conducted. The research reached a set of conclusions, the most prominent of which is the existence of a significant effect between the knowledge accumulation of human resources and the quality of service among specialist physicians at Al Kafeel Specialist Hospital.

Keywords: knowledge accumulation, service quality.

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Introduction

Service quality is one of the primary factors that significantly influence customer satisfaction in the healthcare sector. This includes all medical services provided to patients. With the increasing challenges facing healthcare organizations today, improving service quality has become a top priority for these organizations, as everyone strives to improve healthcare and provide high-quality services. The challenges facing institutional organizations in improving service quality include many aspects, the most important of which are the increased demand for healthcare services, challenges related to financing and operations, and the digital transformation, which requires updating the methods and technologies used in providing healthcare services. In addition, healthcare organizations face other challenges, such as legal challenges and health legislation, as well as recruitment and training challenges that support the provision of high-quality healthcare services. Therefore, healthcare organizations need to accumulate knowledge to improve the quality of services provided to patients and society as a whole.

Knowledge accumulation is a vital and critical element in the success of healthcare organizations, as it helps them adapt to the changes surrounding them and achieve quality in the services they provide. Due to the sensitive nature of healthcare work, knowledge accumulation is a key factor in achieving quality service and meeting the needs of patients and the community. In light of the numerous challenges facing the healthcare system, as discussed above, knowledge accumulation becomes even more important in achieving quality service.

Given the importance of studying the presence of knowledge accumulation among specialist physicians at Al Kafeel Specialist Hospital and the resulting quality of service provided, avoiding medical errors, confronting and resolving problems, and making sound decisions, this study aims to determine the level of knowledge accumulation among a sample of specialist physicians at Al Kafeel Specialist Hospital and the extent to which this accumulation contributes to enhancing the quality of service provided to customers.

The study consists of four chapters: Chapter One presents the study methodology, Chapter Two covers the theoretical aspect of the study, Chapter Three focuses on the practical aspect, detailing its tools and analyzing the results. Chapter Four concludes the study with the conclusions and recommendations reached in the field.

1- Study Methodology

This chapter addresses two main sections of the study: The first section: The study methodology. We review the study's methodological framework, which is a set of rules and regulations that were established to ensure acceptable results regarding the phenomenon selected for the study.

1-1- The study problem:

The problem of this study lies in investigating "the need of Al-Kafeel Specialist Hospital in Karbala Governorate to achieve quality service provided to patients as a proactive activity by relying on the accumulated knowledge of the working physicians, as they are an important component of the success of the service."

To more precisely define the study problem, several questions were posed:

1. What is the level of knowledge accumulation among the working physicians at Al-Kafeel Specialist Hospital?

2. What is the level of quality of services provided at Al-Kafeel Specialist Hospital?

3. Does the accumulated knowledge of physicians affect the quality of services provided at Al-Kafeel Specialist Hospital?

1-2- The Importance of the Study:

The importance of the study can be indicated through:

First: The scientific importance of the study: This is represented by the importance of the research variables, which are among the important topics that many studies continue to address and evaluate at the local and international levels. This study complements previous scientific efforts in this field.

Second: The practical importance: This is represented by strengthening the position of knowledge accumulation in service organizations, given its significant impact on raising and improving the quality of service provided. Service quality is one of the fundamental pillars upon which health institutions rely. Therefore, the results of this study can be utilized to improve the level of services provided to customers.

1-3- Objectives of the Study:

The primary objective of the current study is to demonstrate the extent to which

knowledge accumulation affects service quality at Al-Kafeel Specialist Hospital in Karbala Governorate. As a result, this study seeks to achieve the following objectives:

1. To determine the level of knowledge accumulation among physicians working at Al-Kafeel Specialist Hospital.

2. To reveal the level of service quality and the availability of service quality dimensions and variables at Al-Kafeel Specialist Hospital.

3. Detecting the level of influence of the knowledge accumulation variable on achieving the service quality variable.

1-4- Study measures and hypothetical diagram of the study variables:

Table (1) shows the study variables, their sub-dimensions, and the sources for each variable.

Table (1) Approved measures

Key Variables	Subdimensions	Scale
Knowledge Accumulation	Knowledge Integration Knowledge Assimilation Knowledge Sharing	Ly &Lai ,2017
Service Quality	Tangibility Dependability Responsiveness Safety Empathy	Author et al.,2012

Source: Prepared by the researcher

The purpose of the hypothetical diagram is to analyze and clarify the logical relationships between a set of primary and secondary variables of particular interest. The dimensions of the variables were selected based on the intellectual contributions and approved literary references contained in Table (1) of the study. The focus was on the relationships between the following:

Independent variable: Knowledge accumulation, with its dimensions of knowledge integration, knowledge assimilation, and knowledge sharing.

Dependent variable: Service quality, with its dimensions of responsiveness, reliability, tangibility, empathy, and safety.

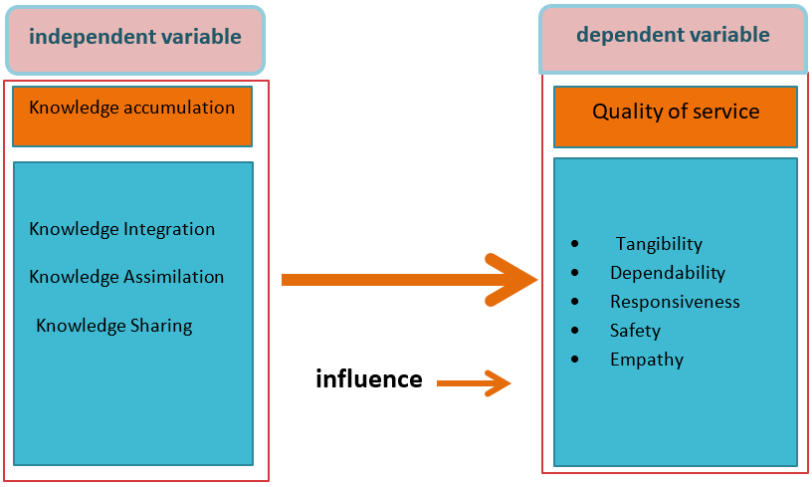


Figure (1) Hypothetical scheme of the study
Source: Prepared by the researcher

1-5- Study Hypotheses:

In order to answer the study's problem, the following main hypothesis was formulated:

- Main Hypothesis: (There is a significant effect of the knowledge accumulation variable on the service quality variable)

A. First Sub-Hypothesis: There is a significant effect of the knowledge integration dimension on service quality)

B. Second Sub-Hypothesis: There is a significant effect of the knowledge absorption dimension on service quality)

C. Third Sub-Hypothesis: There is a significant effect of the knowledge sharing dimension on service quality)

1-6- Study Limits:

1. Spatial Limits: Al-Kafeel Specialist Hospital in Karbala Governorate was selected to represent the spatial limit of the study.

2. Temporal Limits: October 6, 2024 - July 7, 2025

3. Human Limits: The study sample was selected from specialist physicians working at Al-Kafeel Specialist Hospital.

4. 4- Objective boundaries: Knowledge accumulation - Service quality.

1-7- Study sample:

The study sample included a number of specialist physicians working at Al-Kafeel Specialist Hospital in Karbala, the subject of the study. The original study population was (160) physicians. Therefore, the sample size representing this population was (113), according to the sample size determination table of (Krejcie & Morgan). The number of distributed questionnaires was (160), the number of returned questionnaires was (7), the number of questionnaires valid for analysis was (144), and the number of discarded questionnaires was (9). The response rate was (90%) of the returned questionnaires, as shown in Table (2).

Table No. (2): Number of distributed, returned, and valid questionnaires for analysis

	Questionnaire	number	ratio
1	Distributed	160	%100
2	Returned	7	%4
3	Discarded	9	%6
4	Valid for Analysis	144	%90

Source: Prepared by the researcher

1-8- Study Methodology:

To fulfill the requirements of the current study's methodology, enrich it scientifically, and achieve its scientific and practical objectives, the descriptive analytical method was adopted to analyze the study problem. Then, we moved to the applied aspect and collected field data through a questionnaire containing the study variables. The data were analyzed and tabulated to test the hypotheses and interpret the results.

1-9- Description of the Study Sample

Table No. (3) Description of the Study Sample

Personal Information	Frequency	%
Gender	Male	116
	Female	28

	Total	144
Educational Attainment	Bachelor's	
	Higher Diploma	107
	Master's	26
	Doctorate	8
	Total	3
	5 – 1	144
Years of Service	10 – 6	85
	15 – 11	46
	20 – 16	12
	21 and above	1
	Total	0
	5 – 1	144
Training Courses	10 – 6	101
	11 and above	36
	Total	7
	Frequency	144

Source: Prepared by the researcher

1. Gender: It appears that males constitute the majority, at (81%), representing (116) individuals of the total study population. In contrast, females constitute a small percentage, at only (19%), equivalent to (28) individuals. It can be concluded that the hospital relies primarily on male specialist physicians, with a greater percentage than females.

2. Educational Attainment: The distribution of specialist physicians in the study sample shows that the majority of individuals hold a bachelor's degree, representing (64%), or (107) individuals of the total study population. Furthermore, the percentage of those holding a doctorate degree was (3%), equivalent to (3) individuals of the study sample. This diverse distribution of educational levels reflects the availability of opportunities for specialist physicians to fully develop their academic careers.

3. Years of Service: The data from the table shows that the highest percentage of individuals had years of service ranging between (1-5) and (6-10) years, representing 59% and 32% of the total study sample, equivalent to 85 and 46 individuals. On the other hand, the lowest percentage was for physicians with more than (11) years of service, representing 8%, or only 12 physicians in the study sample. This reflects the diversity of experience and stability within the hospital across different service levels.

4. Number of Training Courses: The table shows that the highest percentage of sample members who completed training courses fell within the range of (1-5) courses, representing 70%, or 101 individuals in the study sample. This was followed by those in the range of (6-10) courses, representing 25%, or 36 individuals. It is also noted that (5%) of the sample members completed more than (11) training courses, equivalent to 7 individuals. This data demonstrates physicians' interest in increasing the number of training courses .

2. Theoretical Framework of the Research

2-1- The Concept of Knowledge Accumulation:

The term "knowledge accumulation" is commonly used in various disciplines, particularly in relation to the fields of intellectual capital and knowledge management. This concept encompasses two basic processes: the process of creating and the process of acquiring knowledge accessible within the organization (Doraszelski, 2003:5). Thus, knowledge accumulation represents the acquisition of knowledge, which has become increasingly

important compared to the vast amount of knowledge deemed necessary for human resources charged with carrying out their functions and operational activities.

The table below outlines a series of definitions and viewpoints of various authors and researchers, chronologically, as shown in Table No. (4).

Table No. (4) illustrates the terminological concepts of the variable of knowledge accumulation.

	Researcher and year	The Concept
1	Bontis,2004:13	A process by which an organization absorbs new internal and external knowledge streams and uses them to rebuild and apply its knowledge structure. It must be able to create an environment for acquiring external knowledge and information.
2	Boudreau et al,2016:2768	It is the exploitation of the skills and expertise of organizational members through teamwork, brainstorming sessions, and the search for the information necessary to achieve the organization's goals, achieve a competitive advantage, and thereby ensure survival and continued competitiveness.
3	Abdelmoaty et al., 2025	It is a set of experiences, capabilities, competencies, and various methods that must be invested in by the organization to achieve a competitive advantage.

"Source: Prepared by the researcher"

Based on the concepts of knowledge accumulation mentioned above, an operational definition of knowledge accumulation can be given as the process of gathering information and knowledge from various internal and external sources, analyzing, understanding, and using it to improve practical intellectual skills, develop new ideas, solve problems, and innovate by generating new ideas and theories that provide the organization with a competitive advantage.

2-2- The Importance of Knowledge Accumulation:

It is well known that the accumulation of knowledge within any organization has a significant impact on its performance and competitiveness. This accumulation represents the basis for developing innovative strategies that contribute to improving service quality. Knowledge accumulation relies on the systematic collection and analysis of information to enhance organizational performance. Studies have shown that organizations that invest in knowledge accumulation achieve a significant improvement in the quality of services provided, which contributes to increased customer satisfaction. (Mullei, 2018) The importance of knowledge accumulation for organizations can be explained as follows:

1-Enhancing innovation: Through research and development, organizations can generate new ideas and improve performance (Bontis, 2004:13).

2-Information management and waste reduction: Effective production strategies, such as those based on the "just-in-time" production principle, are effectively supported by information management, which simultaneously significantly reduces product development time, thereby improving operational efficiency and reducing waste. (Boudreau et al., 2016:2768).

3-Enhancing competitiveness: Knowledge acquisition is significantly accelerated when compared to competing organizations, particularly in complex and multifaceted environments, thus enabling organizations to develop the competitive advantage necessary to maintain their market position in the face of rapid change and uncertainty. (Archibugi ,2017:6)

4-Stimulating creativity and flexibility: Human resource capabilities are significantly enhanced, allowing for a proactive approach to innovation and adaptability, thus equipping organizations to effectively navigate and respond to the dynamic and constantly evolving changes occurring within their external environments. (Chaudhary, 2019:189)

5-Improving strategic decisions: Providing a strong knowledge base is essential for organizations aiming to successfully penetrate new markets and make informed strategic decisions in a timely manner, thus significantly improving decision-making processes and strengthening their competitive position (Lane et al., 2020:1219)

6-Building sustainable knowledge capital: Transforming knowledge into a comprehensive "knowledge store" is essential for organizations, as it ensures the preservation and continuity of the added value it generates, thus contributing to the organization's sustainability and long-term success in an increasingly competitive landscape (Campopiano, 2022:28) .

2-3- Dimensions of knowledge accumulation:

The dimensions previously studied and validated were relied upon. Before (L & Lai, 2017), it aligns with the main objectives the researcher is trying to achieve in the current study. It consists of three dimensions:

A. **The first dimension: Knowledge integration:**

Accordingly, knowledge integration plays an important role in facilitating the application and sharing of knowledge with others, as well as raising the level of learning, skills, and experience of employees to create new ideas for the organization, enhancing its performance and competitiveness.

B. **The second dimension: Knowledge absorption:**

This concept includes the ability to collect and process knowledge relevant to the organization's operations, derived from internal and external sources, thus creating a basis for recognizing, acquiring, and applying new knowledge. The ability to absorb is significantly influenced by the organization's commitment to research and development, as well as its ability to extract ideas from existing processes and gather relevant information (Kayes et al., 2005:579).

C. The third dimension is knowledge sharing.

Knowledge sharing has been defined as the process of transferring ideas, insights, solutions, and experiences from one person to another, exchanging information from its source to its point of contact, and fostering interaction among its users (Kim, 2010: 409).

2-4- The Concept of Service Quality:

The American Federal Institute defines quality as the process of "performing the right task accurately on the initial attempt, relying on the patient's evaluation to assess performance." From a terminological perspective, quality can be defined as the degree to which a specific set of inherent characteristics of a product, process, or entire system is successfully achieved. These characteristics are closely related to requirements, which are understood as a need or expectation that may be implicitly defined or explicitly imposed (Taylor & Baker, 1994: 165).

When formulating any definition of service quality, it is essential to include various aspects, including, for example, characteristics, inherent values, suitability for intended use, support structures, and psychological effects on customers. The definition of service quality differs significantly when viewed from the perspective of the service provider compared to the recipient. From the service provider's perspective, there is a need to

adhere to pre-determined standards established to ensure quality. Conversely, from the consumer's perspective, service quality is interpreted as the degree to which a service meets their personal expectations and specific needs. Service quality can be broadly defined as the sum of characteristics and features that influence an organization's ability to provide services that effectively meet customers' specific needs (Chaudhary, 2019: 189).

2-5- The Importance of Service Quality:

The importance of service quality can be classified into two main components:

A. **The Importance of Service Quality to Customers:** Customers constantly seek exceptional service and superior treatment, all while striving to understand their specific expectations and requirements. An organization must make significant efforts to understand its customers' desires and expectations. Furthermore, the implications of providing high-quality service go beyond simply attracting new customers; it also has profound implications for the organization's economic viability. The most important aspect of service quality for customers is achieving customer satisfaction.It effectively meets their expectations and needs, thus enhancing high levels of customer satisfaction and loyalty. In addition, improving service quality plays a pivotal role in attracting a wider customer base. (Taylor & Baker, 1994:165)

B. **The importance of service quality to an organization**: The loyalty shown by existing customers is a vital component of any organization's success and profitability. Revenue generated from new customers alone may not be sufficient to achieve satisfactory profit margins, and maintaining such a precarious situation presents significant challenges. Therefore, enhancing repeat purchases from existing customers plays a critical role in the overall business strategy. Consequently, the quality of service provided is indispensable for enhancing customer loyalty and profitability. By implementing superior service quality, an organization can significantly enhance its operational efficiency and improve its overall performance, which in turn leads to higher levels of productivity and customer satisfaction, thus contributing positively to the organization's reputation as a whole. Accordingly, it can be asserted that the effective implementation of high-quality services will be instrumental in facilitating the overall success of the organization (Jaiswal, 2008: 411).

2-6- Dimensions of Service Quality:

In a study by the researcher (Author et al., 2012), he identified the following dimensions of service quality (tangibility, reliability, responsiveness, security, and empathy), which will be adopted by the researcher and the agencies:

1. **Tangibility:** This particular dimension relates to the visual and aesthetic characteristics of the facilities, equipment, and personnel involved in the service delivery process. This aspect is particularly salient for customers, especially those experiencing the service for the first time, as it provides them with a tangible and physical basis for understanding the quality of service they can expect to receive (Harris & Harrington, 2000: 32).

2. **Dependability:** This dimension is characterized by the organization's unwavering commitment to delivering services on time and the associated ability of customers to rely on the consistent performance demonstrated by the service provider. An organization that distinguishes itself in a competitive market is one that consistently delivers services at the expected level of quality, in a timely manner, and without errors (Jaiswal, 2008: 409).

3. **Responsiveness:** This refers to an organization's ability to provide services to its customers quickly and accurately. Patients evaluate the level of responsiveness based on the waiting time before receiving services and receiving answers to their inquiries. Here, a balance must be struck between the quality of the response and the capabilities of the

service provider. In other words, patients are influenced by the speed and accuracy of the response (Parasuraman et al., 1985: 12).

4. **Trustworthiness:** This dimension summarizes the behavior of organizational employees, described as "courteous, honest, and knowledgeable in their interactions with customers, which instills trust and a sense of security." This aspect is among the key determinants of service delivery that benefits the patient. It emphasizes the importance of trust as a fundamental component in developing successful reciprocal relationships. It demonstrates the service provider's willingness to engage in a specific exchange, which in turn enhances customers' confidence in the organization's representatives. This dimension involves establishing a connection with the patient through a personal relationship based on attentive listening (Harris & Harrington, 2000: 32).

5. **Empathy:** The concept of empathy is an indispensable foundation for individuals and organizations that provide patient services. It requires a deep level of understanding and genuine concern for the grievances and concerns expressed by patients, along with providing the basic care these individuals need to feel valued and heard. This empathy imperative requires service providers to devote individual attention to each patient, recognizing that the act of service is inherently personal and must be tailored to each patient's unique circumstances. (Radomir et al., 2012: 33).

2-7- The relationship between knowledge accumulation and service quality:

The importance of knowledge accumulation within organizations is crucial, as it fundamentally improves the quality of service provided by organizations operating across various sectors. Knowledge accumulation is not merely a static process, but rather a dynamic and sustainable endeavor that enables organizations to leverage past experiences and the knowledge they have acquired over time to improve their overall performance and enhance their strategic approaches (Smith & Brown, 2018). Continuous knowledge accumulation plays a vital role in enhancing internal operations by encouraging the adoption of innovative and more efficient work methodologies, which in turn facilitates the reduction of operational errors while simultaneously enhancing overall productivity levels within the organization (Johnson, 2020). The knowledge accumulation process is beneficial in enhancing employee skill development, as it often involves providing specialized training programs and fostering a continuous learning environment that actively promotes knowledge sharing among employees (Radomir et al., 2012:33).

In addition to these benefits, knowledge accumulation is an important driver of innovation within an organization, as it fuels creative thinking and the adoption of advanced digital technologies, thus enabling organizations to envision and design new products and services that effectively meet evolving market needs. This process also leads to a more accurate understanding of customer needs and behaviors, allowing organizations to deliver tailored solutions and value-added services that not only meet but exceed customer expectations, thus ensuring high levels of customer satisfaction (Jaiswal, 2008:407). From a long-term perspective, the continuous process of knowledge accumulation significantly enhances the overall performance of the organization, enhancing its competitiveness within the market and enabling it to successfully achieve its defined strategic objectives. (Parasuraman et al., 1985:12).

3. The Practical Framework for Research

3-1- Measuring Reliability and its Reliability

"Cronbach's alpha coefficient is one of the most widely used statistics for assessing the reliability of research tools. This coefficient measures the level of reliability of a set of items, indicating their combined success in defining the intended concept. Therefore, it is one of the most common criteria used as a decisive measure in assessing the quality of measurement tools. One of the advantages of this coefficient is that it detects items that

reduce the level of reliability of the tool in order to exclude them (Ahmad et al., 2024: 114)." The interpretation of Cronbach's alpha values in assessing the reliability achieved in a specific application environment is adopted as shown in Table (5).

Table (5): Reliability levels according to Cronbach's alpha value

	Cronbach's alpha range	Stability Level
1	0.9 and above	Excellent
2	0.89 – 0.8	Strong
3	0.79 – 0.7	Acceptable
4	0.69 – 0.6	Questionable
5	Less than 0.6	Weak

Source : Ahmed , N. , Alias , F. , Hamat , M. & Mohammed , S. (2024). Reliability Analysis: Application of Cronbach's Alpha in Research Instruments. ***Pioneering the Future: Delving into E-Learning's Landscapep***. Vol 8, p 116.

"Here, it is clear from Table (5), in light of the research sample's responses, that the values of Cronbach's Alpha for the main variables and their sub-dimensions ranged between (0.788 - 0.918), and these ratios range between acceptable, strong, and excellent. The values of the structural validity coefficient (the square root of the reliability coefficient) were also very high. Here, it was confirmed that the measurement tool is ready for final application and enjoys reliability and stability at the level of the field application environment at Al-Kafeel Specialist Hospital, the study sample."

Table (6): Cronbach's Alpha coefficients for the research variables

	Its sub-dimensions	Cronbach's Alpha	structural validity coefficient
1	Knowledge integration	0.860	0.927
2	Knowledge absorption	0.885	0.941
3	Knowledge sharing	0.788	0.888
4	Knowledge accumulation	0.918	0.958
5	Dependability	0.836	0.914
6	Responsiveness	0.843	0.918
7	Empathy	0.858	0.926
8	Safety	0.879	0.938
9	Tangibility	0.810	0.900
10	Service quality	0.899	0.948

"Source: SPSS V.25 outputs"

3-2- Description, Analysis, and Interpretation of Study Variables

Describing and analyzing variables at the application environment level is one of the most important prerequisites for determining the level of these variables in the field. Therefore, in this section, the answers of the study sample members will be analyzed, described, and analyzed using appropriate analytical methods (arithmetic mean, standard deviation, and relative importance) at the level of the current study variables, their sub-dimensions, and their measurement items, based on the answers of the sample members at Al-Kafeel Specialist Hospital, the study sample. The interpretation of the level of the study variables was based on the value of the arithmetic mean achieved by dividing it into five categories to which the arithmetic means belong, as shown in Table (7):

Table (7): Classification of the levels of the arithmetic mean according to its categories

Class Sequence	Class range	Category Level
1	1.80 – 1	Very Low
2	2.60 – 1.81	Low

3	3.40 – 2.61	Moderate
4	4.20 – 3.41	High
5	5.00 – 4.21	Very High

Source : Mazahreh, A. , Hammad, H. & Abu-Jaber, H. (2009) " ***The Attitudes of Instructors and Faculty Members about the Quality of Technical Education Programs in Community Colleges in Jordan***" Journal of Social Sciences 5 (4), P.403.

First: Description and Analysis of the Knowledge Accumulation Variable

Regarding the knowledge accumulation variable, it achieved a weighted mean of (4.05), a moderate level, with a standard deviation of (0.419), and a relative importance of (81.00%). This naturally confirms the sample's agreement on the dimensions at a high level at Al Kafeel Specialist Hospital, the study sample.

"It is clear from Table (8) that the ranking of the sub-dimensions of the knowledge accumulation variable was as follows (knowledge integration, knowledge assimilation, and knowledge sharing), according to the responses of the sample members at Al Kafeel Specialist Hospital, the study sample.

Table (8): Descriptive measures of the knowledge accumulation variable

	Dimensions	mean	standard deviation	Relative importance%	Order priority
1	Knowledge Integration	4.279	0.562	85.58	1
2	Knowledge Assimilation	4.206	0.576	84.12	2
3	Knowledge Sharing	3.664	0.469	73.28	3
Weighted overall mean of the knowledge accumulation variable		4.05	0.419	81	-

Source: Prepared by the researcher based on the outputs of Microsoft Excel (SPSS) programs.

Second: Description and Analysis of Service Quality

Regarding the service quality variable, it obtained a weighted total mean of (3.901), which was at a moderate level, with a deviation of (0.443), achieving a relative interest of (78.02%). Naturally, this confirms the sample's agreement on what the dimension includes at a high level at the level of Al-Kafeel Specialist Hospital, the study sample." Table (9) shows that the order of the sub-dimensions of the service quality variable was as follows (reliability, responsiveness, empathy, safety, and tangibility), according to the sample's responses at Al-Kafeel Specialist Hospital, the study sample.

Table (9): Descriptive measures of the service quality variable

	Dimensions	Mean	standard deviation	Relative importance%	Order priority
1	Reliability	4.225	0.597	84.5	1
2	Responsiveness	4.224	0.642	84.48	2
3	Empathy	4.182	0.649	83.64	3
4	Safety	3.533	0.605	70.664	4
5	Tangibility	3.341	0.523	66.82	5
Weighted Mean Overall Score for Service Quality		3.901	0.443	78.02	-

Source: Prepared by the researcher based on the outputs of Microsoft Excel (SPSS) programs.

3-3- Testing Study Hypotheses and Interpreting Results

Structural equation modeling is a statistical modeling technique used to analyze relationships between observed and latent variables. It is an effective tool for understanding complex relationships within a data set by combining both measurement and structural components. Structural equation modeling enables researchers to assess direct influences between variables and detect unobserved underlying constructs that drive these relationships in order to form a measurement model. The relationships between observed variables are represented with latent variables, and standard errors are included, indicating that the observed variables are incomplete indicators of their latent constructs (Sheykhfard et al., 2024: 430). This analytical tool will be used to test the main and sub-hypotheses, as follows:

1. Testing the main hypothesis: (There is a significant effect of knowledge accumulation on service quality)

Table (10) shows a significant positive effect of knowledge accumulation on service quality, as it is clear that the standard parameter estimate value is The standardized impact coefficient reached 0.69, meaning that the knowledge accumulation variable affects the service quality variable by 69% at the Al Kafeel Specialist Hospital study sample. This means that the dependent variable, service quality, will increase by 69% if attention to the knowledge accumulation variable increases by one unit. We also note that the impact coefficient value is significant, as the critical ratio (C.R.) shown in Table (10), amounting to 11.280, is significant at the significance level (P-Value) shown in the same table.

"As shown in Table (11), the interpretation coefficient (R2) value reached 0.47, meaning that 47% of the changes in the service quality variable are due to changes in knowledge accumulation, while the remaining 53% are due to other variables not included in the study model. The main hypothesis above can be accepted.

Table (10): Paths and parameters for testing the impact of knowledge accumulation on service quality

Tracks			Standardized regression weights	Non-standard estimation	standard error	critical ratio	Significant percentage
Quality of service	←	Knowledge accumulation	.686	.725	.064	11.280	***

Source: Amos V.25 outputs

Based on the above, the sub-hypotheses emanating from the main hypothesis can be tested as follows:

A. "Testing the first sub-hypothesis (H-1): (There is a significant impact of the knowledge integration dimension on service quality)"

Table (11) shows a significant positive impact of the knowledge integration dimension on service quality. It is clear that the standard parameter estimate (standard effect coefficient) reached (0.53). This means that the knowledge integration dimension affects the service quality variable by (53%) at the hospital level for the study sample. This means that the dependent variable, service quality, will increase by (53%) if attention is given to the knowledge integration dimension by one unit. We also note that the value of the impact coefficient is significant, as the value of the critical ratio (C.R.) shown in Table (38), amounting to (7.394), is significant at the significance level (P-Value) shown in the same table.

"As shown in Table (11), the value of the interpretation coefficient (R2) reached (0.28), which means that the changes occurring in the service quality variable are due to (28%)

changes in the knowledge integration dimension, and the remaining (72%) are due to other variables not included in the study model." Based on the above, the first sub-hypothesis arising from the main hypothesis can be accepted.

Table (11): Paths and parameters for testing the impact of the knowledge integration dimension on service quality.

Tracks			Standardized regression weights	Non-standard estimation	standard error	critical ratio	Significant percentage
Quality of service	←	Knowledge accumulation	.526	.414	.056	7.394	***

Source: Amos V.25 outputs

B. "Testing the Second Sub-Hypothesis (H-2): (There is a significant effect of the knowledge assimilation dimension on service quality)"

Table (12) shows a significant positive effect of the knowledge assimilation dimension on service quality. It is clear that the standard parameter estimate (standardized effect coefficient) reached (0.57), which means that the knowledge assimilation dimension affects the service quality variable by (57%) at the hospital level in the study sample. This means that the dependent variable, service quality, will increase by (57%) if attention to the knowledge assimilation dimension increases by one unit. We also note that the value of the impact coefficient is significant, as the value of the critical ratio (C.R.) shown in Table (40), amounting to (8.344), is significant at the significance level (P-Value) shown in the same table.

"As shown in Table (12), the value of the interpretation coefficient (R2) reached (0.33), which means that (33%) of the changes occurring in the service quality variable are due to changes in the knowledge absorption dimension, and the remaining (67%) are due to other variables not included in the study model." "Based on the above, the second sub-hypothesis arising from the main hypothesis can be accepted.

Table (12): Paths and parameters for testing the impact of the knowledge absorption dimension on service quality.

Tracks			Standardized regression weights	Non-standard estimation	standard error	critical ratio	Significant percentage
Quality of service	<-	Knowledge absorption	.572	.440	.053	8.344	***

Source: Amos V.25 outputs

C. "Testing the Third Sub-Hypothesis (H-3): (There is a significant impact of the knowledge sharing dimension on service quality)"

"Table (13) shows a significant positive impact of the knowledge sharing dimension on service quality. It is clear that the standard parameter estimate (standardized impact coefficient) reached (0.51). This means that the knowledge sharing dimension affects the service quality variable by (51%) at the hospital level in the study sample. This means that the dependent variable, service quality, will increase by (51%) if attention to the knowledge sharing dimension increases by one unit. We also note that the impact coefficient value is significant, as the critical ratio (C.R.) value shown in Table (13), amounting to (7.043), is significant at the significance level (P-Value) shown in the same table."

"As shown in Table (13), the value of the interpretation coefficient (R2) reached (0.26), which means that (26%) of the changes occurring in the service quality variable are due to

changes in the knowledge sharing dimension, and the remaining (74%) are due to other variables not included in the study model." Based on the above, the third sub-hypothesis arising from the main hypothesis can be accepted.

Table (13): Paths and parameters for testing the impact of the knowledge sharing dimension on service quality.

Tracks			Standardized regression weights	Non-standard estimation	standard error	critical ratio	Significant percentage
Quality of service	<---	knowledge sharing	.508	.479	.068	7.043	***

Source: Amos V.25 outputs

4. Conclusions and Recommendations

4-1- Conclusions

"This study embodies the conclusions reached by the researcher based on the theoretical and field aspects of the current study and its hypotheses, which were as follows:

1. The variable of knowledge accumulation achieved a high level of significance. This indicates that the dimensions of knowledge accumulation enjoy a high level of attention from the hospital administration in terms of knowledge integration, attention to all health procedures, provision of services to patients, and their assimilation by doctors. This aims to improve performance to a greater extent and enhance the level of participation among doctors in the hospital, in order to enhance the level of skills and capabilities, provide higher-level services to patients, and respond to all emergency situations.

2. The responses indicated that the hospital administration paid attention to the response dimension, providing appropriate services to patients in a timely manner, and maintaining and encouraging doctors and other healthcare staff to adhere to their job duties and be present within the work schedules set forth in the schedules. This ensures a rapid response, especially to emergency cases that may be reported to the hospital from time to time, and responds to all inquiries and questions that may arise from various patients.

3. After observing the results of the sample responses, it became clear that the variable of knowledge accumulation had a significant impact on the quality of service at the level of the sample members' responses at Al Kafeel Specialist Hospital. This indicates the hospital administration's interest in the variable of knowledge accumulation, in terms of knowledge integration and interest in absorbing tacit knowledge, especially in terms of the ideas, abilities, and mental skills possessed by doctors. It also focuses on encouraging them and promoting helpful behavior and sharing among them in transferring information and knowledge from one doctor to another in order to enhance the level of services provided to patients. This will enhance the quality of service provided to patients.

4. The sample responses indicated a significant positive impact of the dimension of knowledge integration on service quality at the hospital level. The specialist sponsor, in turn, indicates that the hospital administration's efforts to integrate and continually update the specialized knowledge possessed by doctors, and to encourage them to keep pace with global developments and innovations in their specialties, will enhance the level of services provided to patients with the highest quality."

5. Statistical analysis revealed a significant positive impact of the knowledge absorption dimension on service quality at Al Kafeel Specialist Hospital. This, in turn, indicates that the hospital administration's efforts to maximize healthcare staff's comprehension of their specialized knowledge and enhance the level of implicit knowledge in their mental, analytical, and diagnostic abilities, and to support their efforts to continually update this

knowledge, will enhance their level of humane interaction with cases that require it and support the quality of service they provide to patients.

6. The sample results indicated a significant positive impact of the knowledge sharing dimension on service quality at Al Kafeel Specialist Hospital. This, in turn, indicates that the hospital administration's efforts to enhance knowledge sharing among its healthcare staff and enhance the level of socialization of new recruits to ensure their integration into the hospital's environment and organizational culture. This requires attention to enhancing the level of specialized knowledge in diagnosis and treatment, patient-friendly interaction, and sharing useful information and knowledge with all specialist doctors in the hospital's departments to ensure the highest level of service quality.

4-2- Recommendations

The recommendations phase is a crucial phase in the study's structure, presenting practical suggestions based on the findings and conclusions reached. Furthermore, the recommendations aim to draw attention to practical steps that can be taken to implement the findings in a real-world context. These recommendations are:

1. Encourage interest in increasing knowledge accumulation among specialist physicians within the hospital by holding training and educational courses on the most important and latest therapeutic methods used.

2. Encourage the adoption of new methods for knowledge integration among physicians working within the hospital.

3. Encourage physicians to engage in the process of assimilation and sharing of knowledge and information among themselves by offering material and moral incentives.

4. Increase interest in knowledge integration by documenting and maintaining information in records, and diligently recording and following up on patient cases to benefit from previous experiences.

5. Increase interest in the quality of service provided to patients by understanding their needs, treating them with kindness, and responding quickly to complaints.

6. Investing the level of accumulated knowledge available to the specialist doctors in the study sample to enhance their role in maximizing service to segments of society and strengthening the hospital's social responsibility by providing charitable initiatives and volunteer efforts in providing free health services within hospital buildings and through mobile work teams on religious occasions.

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