



## The Impact of Possessing The Elements of Strategic Cognitive Competence in Enhancing the Dimensions of the Quality of Health Services

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**Abstract.** This study aims to determine the impact of possessing the components of strategic cognitive competence in enhancing the quality of health services in the private health sector operating in the holy Karbala Governorate through a sample that was studied, which included three important private hospitals, namely (Al-Kafeel Hospital, Al-Hujjah Hospital, and Zain Al-Abidin Hospital). To achieve this goal, three dimensions were adopted for the main independent variable, strategic cognitive competence, which are (information technology, decision-making, creative thinking). Five dimensions were also adopted for the dependent variable, the quality of health services, which are (tangibility, reliability, responsiveness, assurance, empathy), based on ready-made scales. A sample of leaders, administrators, and doctors working in these hospitals, amounting to (120) respondents, was selected for the purpose of answering the questions related to the independent variable, strategic cognitive competence. As for the questions related to the dependent variable, the quality of health services, they were answered by a sample of clients of these hospitals, amounting to (120) respondents, in order to ensure the credibility of the answers. A number of statistical programs were used, such as (SPSS V.25, AMOS V.23). One of the most important conclusions reached by the study is that the material aspects of health services, such as medical devices and equipment, are considered good, but they need continuous improvement to keep pace with everything new in this field. The study concluded with a number of recommendations, the most important of which was the need to work on developing an integrated system to measure and analyze the level of patient satisfaction with the nature of the health services provided.

**Keywords:** Strategic Cognitive Ability, Quality Of Health Services, Private Health Sector.

### 1. INTRODUCTION

This study addressed the impact of strategic cognitive competence through employing its dimensions represented by (information technology, decision-making, creative thinking), in achieving the desired quality in health services with its dimensions represented by (tangibility, reliability, responsiveness, assurance, empathy) in the health institutions under study, as the growing knowledge accumulations emanating from the information revolution, global digital openness and artificial intelligence work to the possibility of achieving and providing many types of services, including health services at levels that satisfy what the customer expects. This is the essence of the concept of quality that all types of institutions aspire to reach, including health institutions, due to the important and vital role the latter plays in preserving human health and life. From this standpoint, our study came to try to reveal the extent of the availability of dimensions of strategic cognitive competence in the health institutions under study and what is their relationship to the quality of health services provided. This study included four chapters as follows: - The first chapter was devoted to presenting the study methodology, and the

second chapter included presenting the theoretical aspect of the study, while the third chapter clarified the practical aspect of the study, while the fourth chapter The last section discussed the most important conclusions and recommendations resulting from the statistical effort of this study.

## **2. METHODOLOGY**

### **First: Study Problem**

In light of the major health challenges facing the world and the consequences of the Corona pandemic and other health crises, the global health system in general and health institutions in particular have faced complex challenges and tests that required them to be very careful and pay attention to how to provide their health services at satisfactory levels to their beneficiaries. The study problem was summarized in the following questions:

- a. What is the level of availability of the study variables and their sub-dimensions at the level of the study sample hospitals?
- b. What is the level of correlation between strategic cognitive competence in its dimensions and the quality of health services for the study sample hospitals?
- c. What is the level of impact of strategic cognitive competence in its dimensions in enhancing the quality of health services for the study sample hospitals?

### **Second: Study Importance**

This study gains its importance, as it examines important concepts represented by (strategic cognitive competence and quality of health services) and their major role in promoting the institutional work of private health organizations operating in the country, and trying to find solutions and address the problems facing these organizations. Therefore, the importance of the research lies in the following:

- a. The theoretical aspect: It is represented in building the cognitive framework for the main research variables (strategic cognitive competence, quality of health services) and their sub-dimensions, by following the theoretical paths of specialized literature, and employing the cognitive accumulation in them about the researched topics, thought and perception, in crystallizing the dimensions of the study methodology and diagnosing the interaction between them.
- b. The practical aspect: It is represented in providing the health institutions under study with accurate information about the level of their possession of the elements of strategic cognitive competence and the extent of their ability to employ them in enhancing the quality of health services provided to beneficiaries.

**Third: Study objectives**

- a. Theoretically rooting the research variables and presenting and testing their most important measures determined by the researchers.
- b. Determining the level of commitment of the study sample hospitals to applying and adopting strategic cognitive competence and its sub-dimensions
- c. Determining the level of quality of health services in the field at the level of the study sample hospitals.
- d. Determining the level of correlation between strategic cognitive competence and its dimensions and the quality of health services.
- e. Determining the level of impact of strategic cognitive competence and its dimensions and the quality of health services.

**Fourth: Study variables and measures**

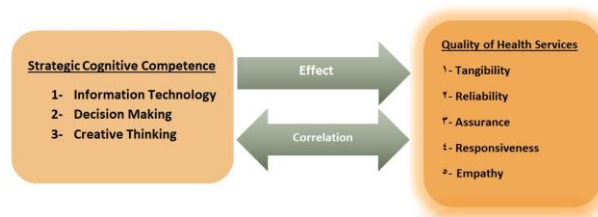
Table (1) shows the study variables, their sub-dimensions, and the measures adopted for measurement.

**Table (1)** Research variables and their measures

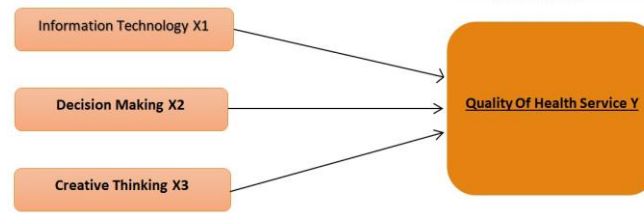
	Variables		Scale
	President	Sub	
1	cognitive Strategic competence	information technology	Shammari and others, 218: -Al 2022 Munaie , 2023: 16-Cleos Al
		decision making	
		Creative thinking	
2	Quality of health services	tangibility	Alayoubi Et Al., 2020 : 17
		Reliability	
		Warranty	
		Response	
		Empathy	

**Fifth: Study plan**

In light of the study problem and its objectives, a hypothetical plan was built that shows the hypothetical relationships between strategic cognitive competence and the quality of health services, which was determined by reviewing the administrative literature related to the subject of the study. This plan reviews the main and sub-variables of the current study, as shown in Figure No. (1).



**Figure (1)** Hypothetical diagram of the study



**Figure (2)** The structural diagram of the second hypothesis

### **Sixth: Study hypotheses**

**H<sup>1</sup>:** There is a statistically significant correlation between strategic cognitive competence in its dimensions and the quality of health services, and several sub-hypotheses branch out from it:

- a. There is a significant correlation between information technology and the quality of health services.
- b. There is a significant correlation between decision-making and the quality of health services.
- c. There is a significant correlation between creative thinking and the quality of health services.

**H<sup>2</sup>:** There is a statistically significant effect between strategic cognitive competence in its dimensions and the quality of health services. The following sub-hypotheses branch out from it:

- a. There is a significant effect of the dimension of information technology on quality of health services.
- b. There is a significant effect of the dimension of decision-making on the quality of health services.
- c. There is a significant effect of the dimension of creative thinking on the quality of health services.

**H<sup>3</sup>:** There is a significant multiple effect of the dimensions of strategic cognitive competence on the quality of health services.

### **Seventh: Study Methodology**

This study relied on the descriptive analytical approach, as this approach is one of the appropriate approaches in providing a clear and accurate picture in explaining the phenomenon that is the problem of the study, and it is also an additional source of knowledge and facts that helps in the process of understanding this study.

### **Eighth: Study Community and Sample**

To enrich the requirements of the practical aspect of this study and in order to achieve its objectives, the study community and sample were chosen as follows: Three important private hospitals operating in the holy Karbala Governorate were chosen, represented by (Al-Kafeel Hospital, Al-Hujjah Hospital, and Zain Al-Abidin Hospital), and a random sample of (120) individuals was chosen from those affiliated with these hospitals who hold important administrative positions in them and in all their administrative divisions. At the same time, a random sample of (120) individuals from the beneficiaries of the services of these hospitals was chosen from customers in order to measure the quality variable in the health services provided by these hospitals.

### **Ninth: Study Tools**

In order for the study to achieve its objectives, the following tools were used:

- a. Theoretical side tools: These tools were represented by books, letters, theses, research and periodicals.
- b. Applied side tools: The questionnaire form was adopted as the main tool for collecting data using the five-point scale, and a number of descriptive and analytical statistical methods were relied upon in analyzing the data, including the weighted arithmetic mean, standard deviation, simple correlation coefficient and simple regression coefficient, and the statistical program (SPSS V. 23) was used to process the data.

## **3. LITERATURE REVIEW**

### **First: Strategic Cognitive Competence (SCC)**

Strategic cognitive competence has been defined by many definitions by writers and researchers in this field. It has been defined as the ability of individuals to achieve and make successful judgments based on investing in previous experiences (Oso, 2019: 450). It has also been defined as a set of cognitive capabilities and abilities that individuals possess in order to perceive and understand the nature of relationships between things and events (Al-Shammari et al., 2021: 237). Therefore, it is the sum of the capabilities and skills possessed by the human resource, which increases the strength of the organization and achieves the necessary understanding through the ability to link events and work to analyze the activities necessary in the organization's work (Kharbat, 2022: 18). It includes encoding information, quickly accessing it and retrieving it from memory, reasoning and inference. Thus, it is linked to a wide range of behaviors and results, which is reflected in achieving success in the field of work (Christelis & Padula, 2010: 18). (Al-Hasnawi ,2019: 459)

indicates that strategic cognitive competence represents the mechanism that works to redefine the organization from a traditional organization to a pioneering knowledge organization that has a high ability to face current and future challenges by investing in modern technological knowledge. Based on the above, the researcher believes that strategic cognitive competence is represented by all the skills, abilities, intellectual, creative and informational capabilities that the human forces working in the organization possess, which are invested in facing current and future challenges, events and situations.

The importance of strategic cognitive competence is evident through its ability to improve the cognitive capabilities and abilities of individuals in confronting and solving problems and establishing appropriate solutions for them in the future. It is an important pillar in enhancing the flexibility of cognitive thinking (Peter & et al, 2018: 9). Cognitive competence works to provide cognitive and practical power to individuals, which enables the organization to achieve its goals of progress and advancement and achieve goals faster than similar organizations that rely on traditional skills. Therefore, strategic cognitive competence is the key to excellence and leadership (Al-Hasnawi, 2020: 459). This importance also appears for organizations through providing the requirements for building the future and is not limited to the scientific level, but rather extends to the limits of generating ideas and developing skills among individuals at the lowest cost and in the fastest possible time. Thus, the importance lies in the following: (Al-Shammari and Al-Jabouri, 2021: 237)

A-Producing new knowledge on an ongoing basis.

B-Obtaining valuable knowledge from external sources.

C-Investing knowledge in making vital strategic decisions.

D-Continuously introducing improvements to all operations practiced by the organization.

E-Disseminating available knowledge to all branches and departments of the organization.

F-Documenting knowledge and storing it in the database and software.

G-Working to accelerate the growth of knowledge through innovation and continuous motivation.

Many studies and researches have agreed that strategic cognitive competence is based on three vital and important dimensions: (information technology, decision-making, and creative thinking). (Al-Shammari et al., 218: 2022), (Kleos and Al-Munaie, 2023: 16).

- a. **Information Technology:** In light of the tremendous developments in the field of information technology that have cast their shadows on all aspects of life, this technology is one of the important technologies and methods through which important value can be added to the overall operations of the organization, whether technical or organizational. It is considered the modern behavior for managing the work of organizations and a way to achieve their goals (Maity & et al, 2019: 3). It is also an important source of progress for all types of organizations by investing in the information network to obtain all information and view the developments, innovations and modern knowledge obtained in the field of business (Al-Hasnawi, 2022: 460).
- b. **Decision-making:** It is the essence of the administrative process within any organization and is practiced by leaders through diagnosing the problem, identifying the available alternatives, evaluating them, and then choosing the best alternative, which is represented by the decision-making process by decision-makers, which is the conclusion or result of the decision-making process (Al-Warari and others, 2016: 208). It is necessary for the decision-maker to be patient and not rush into this process in order to limit and study the available alternatives accurately, which enables the organization to maximize its returns to the maximum possible extent and reduce costs to their lowest levels (Jonce, 2018: 21). (Al-Lami, 2015) states that the decision-making process becomes more difficult and complex in times of crisis due to the high level of risk and the control of uncertainty due to the lack of clarity and the ability to rely on a specific system (Al-Kharif and Miftah, 2024: 68).
- c. **Creative Thinking:** It is a set of skills that reveal creativity in the individual's behavior, and therefore it is a mental activity characterized by a strong desire to search for solutions and reach original results that were not previously known (Hamadi, 2021: 300). It is also a level of higher levels of thinking, which can only be reached by developing and growing the individual's intellectual and mental activity by placing him in the face of problems of increasing difficulty and stimulating his thinking in ways that allow him to adapt to various types of difficulties, to reach new and innovative solutions (Youssef, 2019: 16). It is a complex and purposeful mental activity faced by a strong desire to search for solutions or reach original results for a specific situation or problem at hand (Hassan, 2024: 345).

## **Second: Quality of Health Services (QHS)**

The service is generally defined as any performance or action that any party can provide to another party, and is intangible and does not result in its ownership, or it is the

activities or benefits that are offered for sale or that are offered in connection with a specific commodity (Haesen et al ;2008:376), and it is also defined as any activity provided by one party to another party and its basis is intangible and does not result in any transfer of ownership (Abdullah and Hassan, 2019: 27), as for the quality of the health service, it is defined as a comparison of the beneficiary's requirements and expectations with what he actually obtains within the health institution, and it thus expresses a measure of the success of services in meeting the expectations of beneficiaries (Iatagan & Manea, 2015: 1736), and it also reflects the nature of the interaction between the beneficiary and the service provider and is realized by comparing what is expected and the actual performance of the service (Khathir and Maryami, 2017: 32), and the quality of the health service is simply an expression of an accurate fulfillment of the requirements and expectations of the beneficiary (Oakland, 2014:4), and expresses a set of essential qualities that characterize the service and that can meet the desires and requirements of the beneficiary (Mwita, 2018: 37), and the excellent quality of health service is the key to obtaining a competitive advantage in the health industry, and the level of satisfaction of beneficiaries depends on their perception of the quality of the service and trust in the service provider (Hennayake, 2017:157), and (Ladhari, 2018: 65) confirms that the health organization is able to provide its services efficiently when it has human resources capable of understanding the beneficiary's requirements well and working to achieve them with some interest and in an accurate manner, which will be reflected in achieving their satisfaction and loyalty. In light of the above, the researcher defines the quality of health services as the standard that reflects the extent to which the beneficiary's mental expectations match what he actually gets within the health institution, so the beneficiary is the only party capable of issuing a judgment about the quality of those services or not.

A number of writers and researchers believe that the importance of health service quality is crystallized in the following paragraphs: - (Heizer, et.al, 2016: 251), (Al-Taie and Raouf, 43: 2018)

- a. It contributes to supporting continuous improvement processes in the organizational and technical process.
- b. Service quality represents a safe administrative system for advanced world systems.
- c. Service quality standards or measures contribute to enhancing confidence in the organization's activities.
- d. Enhancing the aspirations and achievements of human resources.



- e. Working to enhance and develop the organization's reputation while taking into account quality standards in its activities.

Al-Kaabi (2021: 57) believes that the importance of service quality enables organizations to achieve their goals and distinguish themselves from their counterparts, by providing services at high quality levels that are consistent with the expectations and requirements of their beneficiaries, which gains their trust and achieves their satisfaction and loyalty towards them in the long term.

To measure service quality, five dimensions were developed according to the service quality scale, known today as the (SERVQUAL) scale, which includes the following five dimensions (tangibility, reliability, assurance, responsiveness, empathy); (Johnson, 2017: 48) (Tanyamai, 2018: 42) ; (Tsietsi & Last, 2018: 33) ; (Maghsoodi et al., 2019: 151); (Alayoubi et al., 2020: 17) ).

- a. **Tangibility:** It lies in things related to the devices and equipment used in providing the service, buildings, interior design, and support services that are considered an indicator of quality (Alayoubi et al., 2020: 14). Both (Von & Cuffe, 2017: 38) pointed out the major role played by the physical appearance of the service provider and the sophistication of the treatment that will be reflected in creating a good mental image among the beneficiaries towards the health organization, and supporting its reputation to be reflected positively in gaining new beneficiaries, increasing its profits, and strengthening its competitive position. (Sweeney et al., 2016: 39) added that tangibility means the ability of the service organization to display the physical facilities in a distinctive way, to be reflected in creating an environment that indicates interest in meeting the needs and desires of the beneficiary.
- b. **Reliability:** Reliability is defined as the ability of the health service provider to perform the promised service reliably and accurately (Tsai tan, 2017: 87 - 94). It also means the ability of service organizations to provide services on time, fulfill obligations when promised, and ensure that they are free of errors and ensure the credibility of health services, which is reflected in their effectiveness in particular and performance in general (Drawi, 2018: 10). (Kheng et al., 2017: 68) added that some service organizations may resort to advertising their services or that these services are linked to advantages and guarantees that cannot be fulfilled, and this matter negatively affects the degree of reliability in them. Reliability is embodied in service providers who are the link between beneficiaries and the organization through their dealings. Therefore, these must be highly trusted by beneficiaries in order to build and enhance reliability.

- c. **Guarantee:** The concept of guarantee is often associated with the concepts of trust and credibility, and the guarantee loses its credibility if there is no trust. Guarantee is generally defined as the knowledge of service providers and their ability to stimulate trust in beneficiaries. It is thus reflected in the service provider having a good level of knowledge with a good level of sophistication in the art of dealing, which is represented in showing trust, security and respect when dealing with beneficiaries (Jun et al., 2017: 81). It also expresses providing a safe environment for beneficiaries of health services that is free of risks (Abu Shaaban, 2017: 33). In the same context, (Alayoubi et al., 2020: 14) indicated that it means the level of security and trust in the service provided and dealing with its provision is free of errors, while (Raza et al., 2020: 93) addressed the concept of guarantee as follows:
- A service organization that has respectful service providers in dealing with beneficiaries.
  - Providing services that make the customer feel safe when benefiting from the organization's services due to the trust they have gained through their continued dealings with it.
  - Accurately diagnosing the customer's needs and desires and showing personal interest in meeting them.
- d. **Responsiveness:** It means that the service provider has a desire mixed with psychological, intellectual and material readiness to provide the service to the customer quickly and without errors (Eiriz & Figueiredo, 2017: 40). Responsiveness is a basic feature that customers who benefit from health service providers expect due to the sensitivity and danger of this type of service to their lives in the event of weak response (Tsai tan, 2017: 87-94). It thus reflects the extent of the service providers' readiness and desire to provide immediate aid and assistance services to beneficiaries (Al-Zibaq, 2017: 39). In the same context, (Vijayadurai, 2016: 13) sees it as expressing the extent to which the organization possesses innovative ideas and high flexibility in implementing services in a way that achieves the needs and desires of beneficiaries to obtain the service in the shortest period of time.
- e. **Empathy:** Empathy is generally defined as a dual intellectual and emotional interaction between the mind and emotion, which leads to sound outcomes represented in providing excellent health services to beneficiaries. Empathy means making beneficiaries feel appreciated and cared for by the organization's employees (Alayoubi et al., 2020: 14).

(Nitecki, 2016: 181) indicated that empathy is the organization's showing of personal interest to the beneficiary in terms of providing a comfortable physical environment for providing the service, as well as in terms of the appropriate timing for obtaining the service, as well as the accuracy of administrative procedures, the efficiency of service providers, and the level of understanding they have in diagnosing and treating the problem.

#### 4. RESULTS

##### First: - Confirmatory Structural Validity Test

The purpose of the confirmatory structural validity test is to ensure that all unmeasured theoretical structures are related to one dimension and represent it in the measurement, and therefore to ensure the consistency of the scale structure at the level of a specific environment, and for the purpose of evaluating the structural model resulting from the outputs of confirmatory structural validity, two criteria must be verified, which are as follows (Singh, 2016: 388):

- The standard saturation coefficients of the paragraphs that appear on the arrows in the estimated model according to the outputs of the AMOS statistical program are greater than 0.40.
- The acceptable values of the model fit indicators listed in the table below are achieved, noting that these indicators have been agreed upon by the most important reliable researchers in the field of statistics.

**Table (2)** Goodness of Fit Indicators

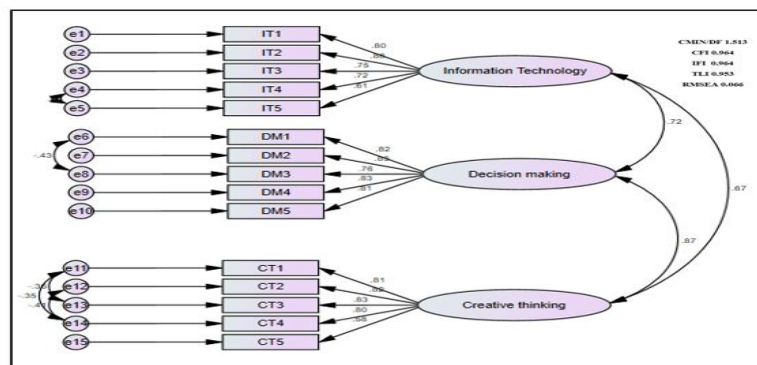
	<b>Indicators</b>	<b>conformity quality rule</b>
<b>1</b>	<b>The ratio of <math>\chi^2</math> values to degrees of freedom DF</b>	<b>CMIN/DF &lt; 5</b>
<b>2</b>	<b>Comparative Conformity Index (CFI)</b>	<b>CFI &gt; 0.90</b>
<b>3</b>	<b>Incremental Fit Index (IFI)</b>	<b>IFI &gt; 0.90</b>
<b>4</b>	<b>Tucker and Lewis Index (TLI)</b>	<b>TLI &gt; 0.90</b>
<b>5</b>	<b>Root Mean Square Error of Approximation (RMSEA)</b>	<b>RMSEA &lt; 0.08</b>

*Source: Singh, Vedant, Perceptions of emission reduction potential in air transport: a structural equation modeling approach. Environment Systems and Decisions, 2016, Vol. 36, no.4, p: 388.*

In light of the above, the results of the confirmatory structural validity test for the research variables' scales were as follows:

a. Confirmatory structural validity of the strategic cognitive competence variable

The strategic cognitive competence variable was measured through three sub-dimensions: (Information Technology (5) paragraphs, Decision Making (5) paragraphs, Creative Thinking (5) paragraphs). It is clear from Figure (3) that the estimates of the standard saturation coefficients exceeded (0.40) as shown in Figure (3) and that they are all statistically significant because the values of the critical ratio (C.R) shown in Table (3) are higher than (1.96) at a significance level of (5%), which indicates the feasibility and validity of these parameters. The results showed, after conducting five modification indices, that they all met the acceptance rule assigned to them. Thus, the structural model obtained a high level of conformity, which confirms that the strategic cognitive competence variable is measured by (15) paragraphs distributed over three sub-dimensions.



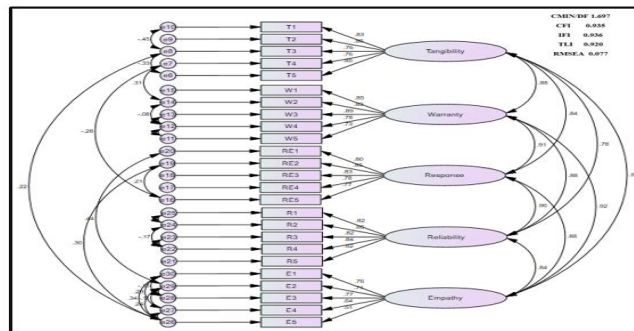
**Figure (3)** Construct validity of the strategic cognitive competence variable

**Table (3)** Standard estimates of the strategic cognitive competence variable

			Standard Saturations	Estimate	SE	CR	P
IT5	<---	information technology	.606	1,000			
IT4	<---		.722	1.089	.133	8.192	***
IT3	<---		.752	1.240	.192	6.458	***
IT2	<---		.884	1.431	.201	7.106	***
IT1	<---		.804	1,200	.178	6.751	***
DM5	<---	Decision making	.809	1,000			
DM4	<---		.831	1.036	.098	10.591	***
DM3	<---		.755	.930	.102	9.137	***
DM2	<---		.827	1.083	.103	10.505	***
DM1	<---		.824	.978	.095	10.334	***
CT5	<---	Creative thinking	.583	1,000			
CT4	<---		.803	1.503	.230	6.525	***
CT3	<---		.827	1.427	.210	6.800	***
CT2	<---		.821	1.390	.205	6.767	***
CT1	<---		.810	1.437	.219	6.563	***

**b. Confirmatory structural validity of the health services quality variable**

The health services quality variable was measured through five sub-dimensions, which are (tangibility 5 items, assurance 5 items, responsiveness 5 items, reliability 5 items, empathy 5 items), as it is clear from Figure (4) that the estimates of the standard saturation coefficients exceeded (0.40) as shown in Figure (4) and that all of them are statistically significant because the values of the critical ratio (C.R) shown in Table (4) are higher than (1.96) at a significance level of (5%), which indicates the feasibility and validity of these parameters. The results showed, after conducting a number of modification indicators, that all of them met the acceptance rule assigned to them, and thus the structural model achieved a high level of conformity, which confirms that the health services quality variable is measured by (25) items distributed over five sub-dimensions.



**Figure (4)** Construct validity of the variable of quality of health services

**Table (4)** Standard estimates for the variable of quality of health services

			Standard Saturations	Estimate	SE	CR	P
T5	<---	tangibility	.846	1,000			
T4	<---		.759	.984	.099	9.912	***
T3	<---		.756	.884	.104	8.475	***
T2	<---		.856	.964	.081	11,857	***
T1	<---		.835	1.082	.096	11,269	***
W5	<---	Warranty	.731	1,000			
W4	<---		.777	1.032	.091	11.354	***
W3	<---		.895	1.269	.128	9.931	***
W2	<---		.835	1.135	.123	9.236	***
W1	<---		.850	1.227	.131	9.399	***
RE5	<---	Response	.766	1,000			
RE4	<---		.780	1.049	.116	9.035	***
RE3	<---		.832	1.119	.115	9.762	***
RE2	<---		.847	1.066	.094	11,318	***
RE1	<---		.801	1.087	.116	9.347	***
R5	<---	Reliability	.824	1,000			
R4	<---		.842	1.036	.095	10.877	***
R3	<---		.819	1.013	.097	10.489	***

<b>R2</b>	<---		<b>.853</b>	<b>1.071</b>	<b>.097</b>	<b>11,064</b>	<b>***</b>
<b>R1</b>	<---		<b>.822</b>	<b>1.053</b>	<b>.100</b>	<b>10.508</b>	<b>***</b>
<b>E5</b>	<---	<b>Empathy</b>	<b>.512</b>	<b>1,000</b>			
<b>E4</b>	<---		<b>.641</b>	<b>1.378</b>	<b>.230</b>	<b>5.982</b>	<b>***</b>
<b>E3</b>	<---		<b>.767</b>	<b>1.816</b>	<b>.331</b>	<b>5.487</b>	<b>***</b>
<b>E2</b>	<---		<b>.707</b>	<b>1.507</b>	<b>.252</b>	<b>5.967</b>	<b>***</b>
<b>E1</b>	<---		<b>.757</b>	<b>1.873</b>	<b>.292</b>	<b>6.415</b>	<b>***</b>

**Second: Testing the stability of the measurement tool**

The stability test of the measurement tool is a statistical method that confirms the reliability of the data obtained by the researcher from distributing the questionnaires to the individuals of the research sample, as the results of the stability test for the questionnaire paragraphs, and in order to identify the stability of the scale, the researcher relied on the (Cronbach's Alpha) test, as it is clear from Table (5) that the value of the stability coefficient (Cronbach's Alpha) for the strategic cognitive ability variable reached (0.883), which indicates the presence of high stability in the paragraphs of the independent variable for the fifteen paragraphs, and that these values are acceptable in descriptive studies as they are high values compared to the standard alpha values of (0.70), while the variable of the quality of health services reached a stability coefficient of (0.943), and this value indicates that the paragraphs of the variable have passed the stability test well as it is higher than (0.70), and these results indicate the presence of high stability in the paragraphs of the variables and the forty paragraphs representing them, and thus the research tool is characterized by With high accuracy and stability.

**Table (5)** Stability coefficients for research variables and their sub-dimensions

<b>variable</b>	<b>Cronbach's alpha</b>	<b>Dimensions</b>	<b>paragraphs Number</b>	<b>Cronbach's alpha</b>
<b>Strategic cognitive competence</b>	<b>0.883</b>	<b>information technology</b>	<b>5</b>	<b>892. 0</b>
		<b>Decision making</b>	<b>5</b>	<b>785. 0</b>
		<b>Creative thinking</b>	<b>5</b>	<b>814. 0</b>
<b>Quality of health services</b>	<b>943. 0</b>	<b>tangibility</b>	<b>5</b>	<b>.929 0</b>
		<b>Warranty</b>	<b>5</b>	<b>0.923</b>
		<b>Response</b>	<b>5</b>	<b>.927 0</b>
		<b>Reliability</b>	<b>5</b>	<b>.934 0</b>
		<b>Empathy</b>	<b>5</b>	<b>0.937</b>

**Third: Description and diagnosis of research variables**

## a. Description and diagnosis of the independent variable, strategic cognitive competence

This paragraph relates to the description of the independent variable (strategic cognitive competence), which is measured by three dimensions, which are information technology, decision-making, and creative thinking. We see from Table (6) the results of the descriptive statistics for the strategic cognitive competence variable, as the overall average reached (3.563) with a standard deviation of (1.09) and a coefficient of variation of (0.31), and an intensity of response of (71.3%). These results indicate that the strategic cognitive competence variable has obtained a high degree of intensity of the responses of the research sample individuals, which confirms that private hospitals (Al-Kafeel Hospital, Zain Al-Abidin Hospital, and Al-Hajjah Hospital) (research sample) enjoy a good level of strategic cognitive competence, but there are opportunities to improve some dimensions to enhance overall performance by enhancing decision-making skills and creative thinking, as well as increasing the use of information technology to improve performance and innovation. As for the intensity of the response for each dimension of strategic cognitive competence, the information technology dimension obtained an intensity of response (76.9%) and the arithmetic mean of the information technology dimension reached (3.847), which indicates that information technology is considered the most influential in enhancing strategic cognitive competence in hospitals. That is, private hospitals have information technology in order to enhance innovation within private hospitals, through the application of information systems and effective communication. Then came the decision-making dimension in second place, as the intensity of the response reached (69.1%), which indicates that this dimension is less than the information technology dimension, which indicates that there is room to improve decision-making processes in hospitals. The creative thinking dimension ranked third and last, as the intensity of the response for the dimension reached (67.8%), which indicates that creative thinking is the least influential compared to the other dimensions, which indicates the need to enhance this skill in hospital work environments. Table (6) shows the descriptive statistics for the strategic cognitive competence variable.

**Table (6)** Descriptive statistics for the strategic cognitive competence variable

<b>Dimensions</b>	<b>Arithmetic mean</b>	<b>Intensity of the answer</b>	<b>Standard deviation</b>	<b>coefficient of variation</b>	<b>Contrast</b>	<b>Dimensions arrangement</b>
<b>information technology</b>	<b>3.847</b>	<b>76.9%</b>	<b>1.04</b>	<b>0.27</b>	<b>1.07</b>	<b>1</b>
<b>Decision making</b>	<b>3.453</b>	<b>69.1%</b>	<b>1.12</b>	<b>0.32</b>	<b>1.24</b>	<b>2</b>
<b>Creative thinking</b>	<b>3,390</b>	<b>67.8%</b>	<b>1.06</b>	<b>0.31</b>	<b>1.12</b>	<b>3</b>
<b>Overall rate of strategic cognitive competence</b>	<b>3.563</b>	<b>71.3%</b>	<b>1.09</b>	<b>0.31</b>	<b>1.18</b>	

b. Description and diagnosis of the dependent variable (dependent) quality of health services

This paragraph relates to the description of the dependent variable (dependent) quality of health services, which is measured by five dimensions, which are tangibility, assurance, responsiveness, reliability, and empathy. We see from Table (7) the results of the descriptive statistics for the variable of quality of health services, as the general average reached (3.407) with a standard deviation of (1.10) and a coefficient of variation of (0.32), and a response intensity of (68.1%). These results indicate that the variable of quality of health services has obtained a high degree of severity of the responses of the research sample members, which confirms that the needs and desires of patients (beneficiaries in private hospitals by workers) are met in line with their expectations. As for the response intensity for each dimension of the quality of health services, the empathy dimension obtained a response intensity of (72.2%) and the arithmetic mean for the empathy dimension reached (3.612), which indicates that patients feel that they are receiving humane care and attention from service providers. Health, which enhances their positive experience, then came the tangibility dimension in second place. This dimension is one of the important dimensions that reflect the quality of the health services provided. This dimension obtained a good arithmetic mean and a high response intensity rate (69.2%), indicating that patients feel that the services are tangible and visible. The response dimension ranked third, as the response intensity for the dimension reached (68.6%), indicating that patients feel that health service providers respond to their needs in an acceptable manner, but there is still room for improvement. As for the reliability dimension, it ranked fourth, as the response intensity for the dimension reached (65.4%), indicating that there is concern among patients about the reliability in providing health services. As



for the guarantee dimension, it ranked fifth and last. Table (7) shows the descriptive statistics for the health services quality variable.

**Table (7)** Descriptive statistics for the health services quality variable

<b>Dimensions</b>	<b>Arithmetic mean</b>	<b>Intensity of the answer</b>	<b>Standard deviation</b>	<b>coefficient of variation</b>	<b>Contrast</b>	<b>Dimensions arrangement</b>
<b>tangibility</b>	<b>3.462</b>	<b>69.2%</b>	<b>1.06</b>	<b>0.31</b>	<b>1.13</b>	<b>2</b>
<b>Warranty</b>	<b>3.263</b>	<b>65.3%</b>	<b>1.10</b>	<b>0.34</b>	<b>1.21</b>	<b>5</b>
<b>Response</b>	<b>3,430</b>	<b>68.6%</b>	<b>1.07</b>	<b>0.31</b>	<b>1.14</b>	<b>3</b>
<b>Reliability</b>	<b>3.270</b>	<b>65.4%</b>	<b>1.11</b>	<b>0.34</b>	<b>1.24</b>	<b>4</b>
<b>Empathy</b>	<b>3.612</b>	<b>72.2%</b>	<b>1.12</b>	<b>0.31</b>	<b>1.25</b>	<b>1</b>
<b>Overall rate of quality of health services</b>	<b>3.407</b>	<b>68.1%</b>	<b>1.10</b>	<b>0.32</b>	<b>1.21</b>	

### **Third: Hypothesis Testing**

#### **a. Correlation**

Pearson's correlation coefficient was used to determine the relationship between strategic cognitive competence in its dimensions and the quality of health services, to test the first main hypothesis (there is a statistically significant correlation between strategic cognitive competence in its dimensions and the quality of health services). The correlation between strategic cognitive competence in its dimensions and the quality of health services was presented in Table (8) below, and the correlation relationships will be explained as follows:

- We see from Table (8) below the existence of a direct correlation relationship with statistical significance between strategic cognitive competence in its dimensions and the quality of health services, as the value of the correlation coefficient between the two variables reached (0.846\*\*), which is statistically significant at a significance level of 5%.
- We note the existence of a statistically significant correlation between the sub-dimensions of the independent variable, strategic cognitive competence (information technology, decision-making, creative thinking) and the dependent variable, the quality of health services. The values of the correlation coefficient between them reached (0.645\*\*, 0.810\*\*, 0.825\*\*) respectively, at a significance level of (5%), which confirms the existence of a strong correlation between the two variables.

**Table (8)** Correlational relationships

independent variable Dependent variable	Strategic cognitive competence	Strategic cognitive competence Dimensions		
		information technology	Decision making	Creative thinking
Quality of health services	<b>**0.846</b>	<b>** 0.645</b>	<b>0.810 **</b>	<b>** 0.825</b>
<b>Sig. (2-tailed)</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
<b>Result (Decision)</b>	<b>There is asignificant Not rejecting the first main hypothesis correlation at the 5% level between Strategic cognitive .competence in its dimensions and the quality of health services</b>			

*Source: Prepared by the researcher based on SPSS V.25*

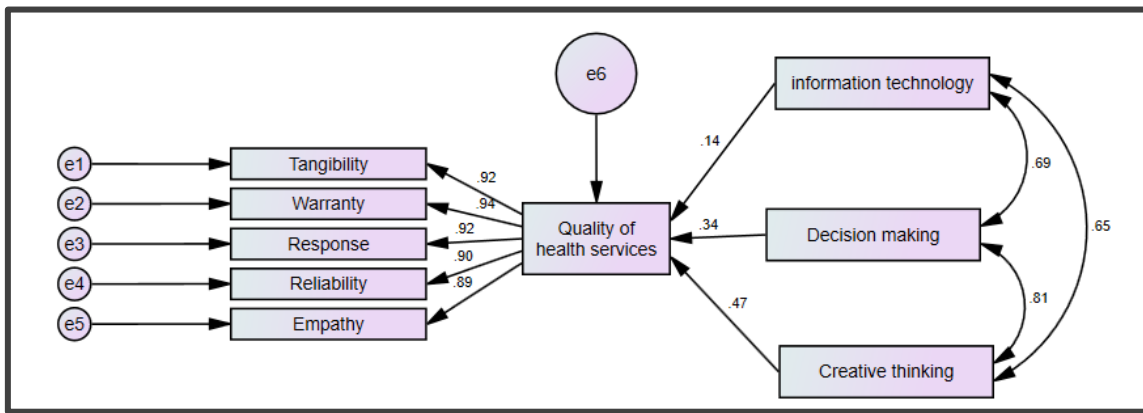
*n=120*

b. Simple linear effect

To test the second main hypothesis (there is a statistically significant effect of the dimensions of strategic cognitive competence on the quality of health services), three sub-hypotheses branch out from this hypothesis, which are as follows:

- The first sub-hypothesis:- There is a statistically significant effect of the dimension of information technology on the quality of health services. From Figure (5) and Table (9), we conclude that there is a statistically significant positive effect of the dimension of information technology on the quality of health services. It is also clear that the value of the standard impact coefficient reached (0.142), and this value is statistically significant because the value of the critical ratio (C.R.) shown in Table (9) amounting to (2.676) is statistically significant at the level (P-Value = 0.05), which indicates that the first sub-hypothesis is not rejected, i.e. there is a statistically significant effect relationship for the dimension of information technology on the quality of health services.
- The second sub-hypothesis: There is a statistically significant effect of the decision-making dimension on the quality of health services. From Figure (5) and Table (9), we conclude that there is a statistically significant positive effect of the decision-making dimension on the quality of health services. It is also clear that the value of the standard impact coefficient reached (3390). This value is statistically significant because the value of the critical ratio (C.R.) shown in Table (9) amounting to (4.214) is statistically significant at the level of (P-Value = 0.05), which indicates that the second sub-hypothesis is not rejected, i.e. there is a statistically significant effect relationship for the decision-making dimension on the quality of health services.

- The third sub-hypothesis: There is a statistically significant effect of the creative thinking dimension on the quality of health services. Through Figure (5) and Table (9), we see the presence of a statistically significant positive effect of the creative thinking dimension on the quality of health services. It is also clear that the value of the standard impact coefficient reached (4720). This value is statistically significant because the value of the critical ratio (C.R.) shown in Table (8), which reached (4.214), is statistically significant at the level of (P-Value = 0.05), which indicates that the third sub-hypothesis is not rejected, i.e. there is a statistically significant effect relationship for the creative thinking dimension on the quality of health services.



**Figure (5)** The regression path for the sub-hypotheses of the second main hypothesis

**Table (9)** Estimates of the impact model

			<b>Amount of impact</b>	<b>Estimate</b>	<b>SE</b>	<b>CR</b>	<b>P</b>
<b>Quality of health services</b>	<-- -	<b>information technology</b>	<b>.142</b>	<b>.152</b>	<b>.057</b>	<b>2.676</b>	<b>.007</b>
<b>Quality of health services</b>	<-- -	<b>Decision making</b>	<b>.339</b>	<b>.325</b>	<b>.077</b>	<b>4.214</b>	<b>***</b>
<b>Quality of health services</b>	<-- -	<b>Creative thinking</b>	<b>.472</b>	<b>.497</b>	<b>.078</b>	<b>6.367</b>	<b>***</b>

c. Multiple linear effect

Analysis of the multiple linear effect between the dimensions of strategic cognitive competence as an independent variable and the quality of health services as a dependent variable to prove what was stated in the third main hypothesis (there is a statistically significant multiple effect of the dimensions of strategic cognitive competence on the quality of health services) and in order to accept the main hypothesis above or not, the F test was used to analyze the significance of the multiple linear regression model as shown in Table (10) which was built according to the following equation:

$$Y = 0.371 + 0.086 X_1 + 0.331 X_2 + 0.461 X_3$$

**Based on the multiple linear regression equation above, the following can be interpreted:**

- a. The fixed term equals 0.371, so if information technology X<sub>1</sub>, decision-making X<sub>2</sub>, and creative thinking X<sub>3</sub> equal zero, then the quality of health services  $Y = 0.371$ .
- b. The regression coefficient for the information technology dimension reached (0.086), and the value of this coefficient shows a direct relationship in the quality of health services, which is a statistically insignificant value at a significance level of 5%.
- c. The regression coefficient for the decision-making dimension X<sub>2</sub> reached (0.331), meaning that when the decision-making process increases by one unit, the quality of health services will increase by 0.331 units, which indicates that well-studied decisions based on accurate data lead to a significant improvement in the quality of health services provided.
- d. The regression coefficient of the creative thinking dimension X<sub>3</sub> reached (0.461), i.e. when the creative thinking process increases by one unit, the quality of health services will increase by 0.461 units, which indicates that creative thinking contributes to developing new solutions that enhance the quality of health services.
- e. The value of the coefficient of determination R<sup>2</sup> reached (0.744), which explains 74.4% of the nature of the relationship between the dimensions of strategic cognitive competence and the quality of health services, i.e. the changes that occur in the quality of health services Y result from changes in the dimensions of strategic cognitive competence, while the remaining percentages, amounting to (25.6%), are explained by other variables not included in the research.
- f. The calculated F value for the multiple linear regression model, amounting to (112.258), is statistically significant at a significance level (Sig=0.000), which indicates the significance of the regression.
- g. Therefore, we conclude that the third main hypothesis is not rejected, i.e. there is a statistically significant multiple effect of the dimensions of strategic cognitive competence on the quality of health services.

**Table (10)** Results of multiple linear regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
strategic cognitive	(Constant)	.371	.192		1.938	.055
	Information TechnologyX1	.086	.066	.086	1.297	.197
competence	Decision makingX2	.331	.077	.371	4.306	.000
	Creative thinkingX3	.461	.080	.470	5.754	.000
a. Dependent Variable: Quality of health service <b>CalculatedF 112.258 Sig 0.000 , R Square 0.744</b>						

Source: Prepared by the researcher based on SPSS V.25

n=120

## 5. CONCLUSIONS AND RECOMMENDATIONS

### First: Conclusions

- Through the applied aspect, we conclude that improving the use of information technology can significantly improve the quality of health services provided.
- That well-thought-out decisions based on accurate data can lead to a significant improvement in the quality of health services provided to patients.
- We conclude that creative thinking and innovation lead to the development of new solutions that enhance the quality of health services.
- The dimensions of health service quality (tangibility, assurance, responsiveness, reliability, empathy) reflect important aspects that directly affect the patient experience and satisfaction, and focusing on improving these dimensions helps enhance the hospital's reputation and increase patient loyalty.
- That patients feel highly appreciated by health service providers in private hospitals.
- That the physical aspects of services such as equipment are considered good but need improvement.
- The response dimension ranked third, indicating an acceptable level of response to patients' needs, but there is an opportunity for improvement.
- The reliability dimension ranked fourth, indicating some concern about the reliability of the health services provided.

- i. The insurance dimension received the lowest arithmetic mean and response intensity, indicating an urgent need to improve confidence in the health services provided. 10. We conclude from the practical side an acceptable level of quality of the health services provided, but it also indicates that there are areas that need improvement.

**Second: Recommendations**

- a. Hospitals should use information technology and update the information system used to improve data collection and analysis, which contributes to making decisions based on accurate information.
- b. Private hospitals should encourage creative thinking, i.e. the need to create a work environment that encourages creative thinking, as workers can provide new ideas and innovative solutions to the challenges facing healthcare services.
- c. The need to conduct a periodic assessment of the quality of health services through patient opinion surveys and data analysis to improve performance and better meet patients' needs.
- d. Enhancing cooperation between different teams within the hospital, which leads to the exchange of creative ideas, which contributes to improving the quality of health services in general.
- e. The need to develop dedicated applications that allow patients to book appointments and communicate with medical staff easily, which enhances the patient experience and increases their participation in their health care.
- f. The need to establish an integrated system in each hospital to measure and analyze patient satisfaction with the level of health services provided to them, and to pay attention to complaints submitted by patients by sympathizing with patients when submitting complaints, listening to them, and trying to solve the problems they face.
- g. Hospitals should enhance training programs for healthcare workers to enhance their empathy and communication skills with patients.
- h. The need to improve medical services and equipment to ensure a comfortable and healthy environment for patients.
- i. The need to develop efficient and effective mechanisms to ensure a rapid response to patients' needs.
- j. Work to improve the reputation of hospitals by ensuring the provision of reliable and efficient services to patients, in addition to enhancing transparency in the health services provided.

- k. The need to enhance trust between patients and hospitals by providing accurate information about the qualifications and medical experiences of workers, in addition to adhering to the specified dates for health services.

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