

INFORMATION TECHNOLOGY CAPABILITIES AND SERVICE QUALITY IMPROVEMENT IN HIGHER EDUCATION INSTITUTIONS: EVIDENCE FROM AN IRAQI TECHNICAL INSTITUTE

Hydar Sayah¹
Nor Hasni Bt. Osman
Mazhar Abbas

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ABSTRACT

The study reveals the relationship between information technology and service quality. The study problem was embodied due to the students' unwillingness to join The Technical Institute / Shatrah – Iraq. To achieve the main objective of the study, a conceptual framework was first developed to address the problems associated with the design process in the context of improving service quality. This was followed by an exploratory study conducted at the Technical Institute/ Shatrah, aiming to analyze the extent of information technology adoption and its impact on service quality. The study employed a quantitative approach, using a questionnaire as the primary data collection tool distributed to faculty members. The results were analyzed to determine the level of technological adoption and its relationship with the studied quality dimensions. The study found a positive impact of information technology on service quality. However, the institution suffers from weak IT infrastructure, lack of development programs, and limited awareness of IT's role. Service quality is also low due to poor facilities, such as outdated laboratories and an underdeveloped library. Competition from private institutes offering medical programs further reduces the institution's appeal. Weaknesses were noted across all service quality dimensions—technical, functional, and image—resulting in a negative perception among students. The study recommends improving service quality by addressing student needs, aligning programs with market demands, upgrading facilities, and implementing a strong IT system. This study uniquely highlights the combined impact of IT infrastructure and service quality on student satisfaction. It emphasizes the need for integrated improvements in technology, facilities, and program alignment to enhance the institution's competitiveness and appeal.



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1. INTRODUCTION

The organization's reputation is enhanced by its high-quality service, which aids in its survival and expansion in a cutthroat market. It is important that the quality of all

services provided in higher education institutions is at a good level and meets the needs. Service quality depends on total quality management and customer service. The essence of service quality is the belief that the organization exists to serve its customers. The mental

¹ Corresponding author: HydarSayah
Email: hydar_alshatry@yahoo.com

image of service quality often varies from customer to customer. One customer may rate the quality highly while another may find the same experience average (Yavuz & Gülmez, 2016). Good plans and regulations are not enough to provide high-quality education services and a poor economic situation complicates educational development. To improve the quality of education service, local governments must respond to educational development planning and improvement (Dewi et al., 2018). The quality of academic service can be measured through six dimensions: teacher quality, knowledge, administrative service, activities, continuous improvement, and leadership. Leadership is very important in improving the quality of educational service (Latif et al., 2019). Awaid (2020) indicates in a study he conducted at an Iraqi government university that the quality of service can be improved by applying human resources strategies because they provide competent faculty members and good employees. According to a study done by Budiyaniti et al. (2020) at the Human Resource Development Board Province in Indonesia, service quality exists and has five dimensions: responsibility, empathy, assurance, tangibility, and reliability. These dimensions have a positive and significant impact on participants' satisfaction, which in turn affects their motivation and trust. The study by (Demir et al., 2021) conducted in the Kurdistan Region of Iraq reveals that service quality directly affects the perceived value and satisfaction but has no direct effect on the willingness to pay. Cahyono et al. (2020) study conducted in private universities in Indonesia indicated that service quality has a significant effect on student loyalty. In addition to the possibility of increasing student loyalty by improving the quality of service by improving aspects of tangibles, empathy, reliability, responsiveness, and assurance. Barr et al. (2017) study revealed that the success of information and communication technology depends on supporting social relations and technological organization. The goal of improving information technology is to improve the quality of health services. Chege et al. (2020) in a study conducted on Kenyan companies indicate that information technology influences firm performance positively. AL-Mahwey and Sayah (2020) indicate in a study conducted in the health sector the possibility of improving the quality of health services through information technology. This is the first study that studies the quality of service in its dimensions (technical, functional, image) in Iraqi education and the impact of information technology in improving the quality of service in education. The Technical Institute / Shatrah – Iraq is one of the governmental education organizations that provide education services for students. Students often prefer to join private Institutes because they meet their desires. They believe that private Institutes provide them with the right to choose the specialization they want more than public institutes. Students believe that the educational process in private institutes is better than in public institutes because they believe that private institutes provide a good educational environment and this is

positively reflected in their education. They perceive that private institutes have hardware equipment, software, and human resources that help in providing good educational service. Therefore, the study of the impact of information technology on improving the quality of education services will be conducted to diagnose weaknesses and defects and provide solutions to increase students' confidence in the education services provided at The Technical Institute / Shatrah – Iraq.

2. LITERATURE REVIEW

2.1. Information Technology

IT is an integrated system that connects infrastructure, information systems, digital communication networks, databases, and human capabilities to support operations and contribute to strategic decision-making. Therefore, IT is no longer simply computer hardware and software (Lichtsteiner et al., 2022). Raheem & Al-Khaldi (2021) state that organizations have become increasingly reliant on IT because it has become a fundamental system for achieving excellence in our time. As a crucial element of differentiation in the modern era, it has emerged as one of the most important systems compared to others and has become a central focus for any company. Yulianti (2021) states that the expanding role of information technology is a result of the rapid pace of digital transformation. This transformation integrates digital technologies into all organizational functions. Meiryani et al. (2022) argue that digital transformation enhances organizational agility, supports innovation, and automates activities, procedures, and operational processes. It enables organizations to respond effectively to evolving customer needs. Nugraha et al. (2022) further state that digital transformation leads to faster service delivery, reduced errors, and improved customer communication. Therefore, information technology has become a strategic organizational capability that directly contributes to improved service quality by increasing responsiveness, accuracy, and reliability, and by delivering customer-centric services. With the development of information technology, vast amounts of information in all fields and over great distances can be transferred and exchanged, and anyone can access information at any time and from any location. This calls for awareness of the threats that may arise and of the precautions that can be taken to protect information (Torten et al., 2018). Deconstructing the term "information technology" and examining it from a linguistic and academic perspective are necessary to comprehend the notion. Derived from the Greek word "tech," which meaning "study" or "science," the term "technology" relates to art and talent (Raheem & Al-Khaldi, 2021). Information refers to a set of data that is appropriately organized to give a special meaning (Sathish et al., 2020). It is also the result of data processing, whether by computer or traditional manual methods, which results in added value that helps the user

to know and understand the problem or phenomenon (Akhmedov & Shuhkrat. 2020). Figure .1 shows the process of converting data into information after performing operations using a computer, and then converting the information into knowledge through technological means. Data was collected from inside and outside the organization while knowledge was used in the process of making decisions regarding goods and services.

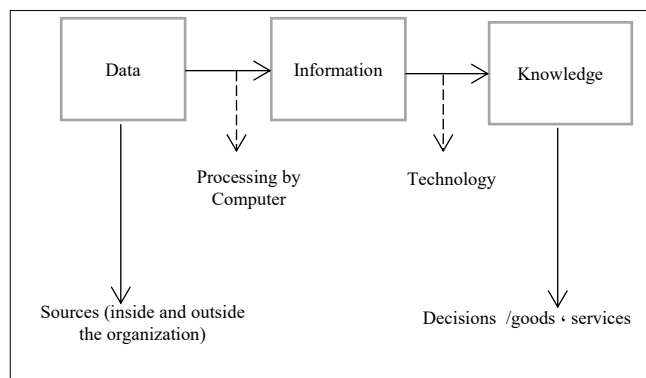


Figure 1. Data transformation into knowledge, (Al-Falahi & Shahada, 2019)

The information technology system is the foundation of the information system because it collects, processes, stores, and distributes the necessary information that contributes to the strategic decision-making process (Talebi & Khatibi, 2023). Digital maturity is an organization's ability to adopt, integrate, and use digital technologies effectively in its activities, procedures, and even strategies. Therefore, organizations with digital maturity possess efficient information technology and are thus better equipped to achieve their goals and improve the quality of their services (Huang & Rust, 2013; Moldabekova et al., 2020; Renata & Bernarto, 2025). Information technology in this study represents an integrated organizational capability encompassing technological infrastructure, information systems, digital applications, and data-driven decision support mechanisms. These components collectively contribute to enhancing organizational efficiency and significantly improve the quality of services within the technical institute. Information technology is defined as all the tools used to collect, store, process, exchange, and use data. It includes mainframes, servers, desktop computers, mobile devices, tablets, and smartphones; and software, such as operating systems and applications to help the user accomplish his work effectively (Reynolds, 2016). Szmajser et al. (2018) define it as the technology related to acquiring, collecting, processing, and transmitting information with the aim of the organization obtaining the best decisions necessary to provide products and services. Das (2020) defines it as the use of information to meet human needs or purposes, including reference to the use of contemporary devices such as the Internet. AL-Tabtabae & Abed Rusul (2021), define it as the study, design, development, implementation, support, and

management of computer information systems, applications, and other software. Information technology contributes to organizing information and operations within the organization in a way that enables the organization to optimally exploit its resources, especially with regard to exploiting the energies of human resources working in administrative activities (AL-Shafeay et al, 2020). Information technology contributes to improving the products and services provided to customers, by collecting information about customer trends, desires, and needs and translating this information into products that meet these needs and desires (Das, 2020).

2.1.1. Dimensions of Information Technology

The majority of authors concurred that the elements of information technology that rely on them for data processing, conversion into information, and collecting are represented by hardware, equipment, software, communication networks, and human resources. In light of this, the current study will examine information technology components using a measurement model that incorporates dimensions based on the following:

- **Hardware equipment:** comprises all devices for electronic control of different input, output, and storage components as well as devices for trading, processing, retrieving, and broadcasting data to recipients. The primary component of these devices is the computer (Otero, 2018).
- **Software:** Contains drivers that control the hardware in devices and hardware (Hammadi et al., 2018). This dimension manages data processing, storing, retrieval, and transmission as required and consists of system drivers and application software (Sittig & Singh, 2015).
- **Communication Networks:** According to Abdul Hadi & Hadi (2018), a communication network is a collection of computers and other peripheral devices that are connected to enable users to share information. Communication technology is significant and has valuable content in information and communication technology.
- **Human Resources:** This is the most crucial component of information and communication technology since people who manage and operate it also make the decisions about what information is useful to adopt in the decision-making process (Hammadi et al., 2018).

2.2. Service quality

Quality is the standard that should be achieved by an individual, group of individuals, or an organization. Quality is defined as satisfying the wants and desires of the consumer. Quality of service is a critical and determining factor in increasing customer happiness and generating profits, so the organization and its staff should use quality as a gauge for service success (Siswoyo & Susilawati, 2020). Two words make up service quality: service and quality. Multiple traits (intangible,

interconnectedness, variability, perishability, and can't be stored) are referred to as services. The user-based approach to service is known as quality. While the value of the service provided to the customer is called Service quality (Ali et al., 2021). However, (Dam & Dam., 2021) pointed out that service quality is a meet to customer requirements. According to (Naini et al., 2022), fulfilling the needs and desires of the customer and accurately delivering the service in a way that strikes a balance in the customer's expectations are key components of service quality. Tannady & Hartono (2018) indicate that service quality is the customer's perception of service quality is the outcome of comparing expectations for service performance across time. As defined by (Ramya et.al., 2019), the service providers can enhance customer satisfaction by improved service performance. Service quality may be defined as a customer's evaluation of a certain service in terms of how well it fits their needs and levels of satisfaction (Pakurár et al., 2019). Service quality is the degree to which a service meets the expectations of the customer is measured in terms of its quality. In order to spot issues with the service delivery process and find ways to improve business, it is critical for service providers to have a solid understanding of service quality (Rafiudeen, 2020).

Service Quality is an indicator of the success of the service organization because it provides information about the service, keeps pace with developments in technology, and meet changes in expectations and opinions about services. Service quality is the true measure of customer satisfaction as it works to plan and evaluate the service provided by the organization. The importance of service quality emerges from reducing the cost and time for service providers through the optimal use of resources (Karaca & Durna., 2019). Issa (2021) points out that service quality achieves the provision of service with specifications that meet customer satisfaction, gain their loyalty and retain them. Service quality achieves competitive advantage by increasing efficiency and effectiveness in service organizations, and gaining customer satisfaction.

2.2.1. Service Quality Models

Several models are used to measure the quality of services, including:

- **Grönroos Model:** Grönroos (1982, 1984) developed the initial idea for the service quality model. Three aspects of service quality were put out by him (Ghotbabadi & Baharun, 2015):
 - ✓ Technical Quality: What customers obtain from their interactions with the service provider is the first dimension, known as the technical (outcome) dimension (AL-Mahwey & Sayah, 2020).
 - ✓ Functional Quality: The second element is functional (process), which refers to the customer's method of receiving the technical service (Issa, 2021).
 - ✓ Image Quality: Customers' perceptions of the organization and the quality of the services they receive constitute the third component of service quality in this model. The way that clients view the company's services determines its reputation (AL-Mahwey & Sayah, 2020).
- **Service Quality GAP model:** This method of measurement, which has five gaps, was dubbed the "Gap Model." (Pongamponkaiwan & Leelasantitham, 2020):
 - ✓ The first gap is the difference that exists between the expectations of the customer and the provider's notion in relation to those expectations. Assessments of service quality are impacted by this disparity and the factors that influence it.
 - ✓ The second gap is the difference between the opinion of the service provider in terms of customer expectations and standards for quality. This gap affects service quality from the customer's perspective.
 - ✓ The third gap, which affects service quality from the perspective of the customer, is the difference between the actual services rendered to the customer and the quality requirements.
 - ✓ The fourth gap is the one that exists between the actual service that customers receive and the communications that customers receive regarding the service. Customer expectations of the services they receive are influenced by external communication. This gap affects the quality of service from the customer's perspective.
 - ✓ The fifth gap is the discrepancy between the services that clients actually received and what they had anticipated. When internal management reduces the four gaps, the service quality gap will disappear.
- **SERVQUAL Model:** Ten dimensions were established by Parasuraman to gauge the quality of services: tangibility, reliability, responsiveness, communication, credibility, security, competence, courtesy, customer understanding, and access (Parasuraman et al., 1988). The SERVQUAL model, determines the relative impact of five dimensions, namely, tangibility, reliability, responsibility, confidence, and empathy, on customer perception (Jonkisz et al., 2021).
- **SERVPERF Model:** This model was developed by (Cronin & Taylor, 1994). Service Quality=Actual Performance. Here, quality refers to perceived quality, and actual performance refers to customers' perceptions, which is the same concept as SERVQUAL with rejecting customer expectations (Ahsene & Zerfa, 2023)
- **5QS Model:** This model was developed by Zineldin in (2006) and the model (The Five-Dimensional Model for Measuring Quality) is

symbolized by the symbol (5Qs). This model consists of five dimensions, which are (Altaf et al., 2018):

- ✓ Quality of object: The technical accuracy of the diagnosis and the processes called quality of object.
- ✓ Quality of process: describes the provision services.
- ✓ Quality of infrastructure: the skills and efficiency of the worker and ensuring prompt services.
- ✓ Quality of interaction: the state of customer interaction with information and financial and social exchange.
- ✓ Quality of atmosphere: frank and friendly feeling or frank and friendly relations with the service provider.

This study is based on the Grönroos model after employing the model in a way that is compatible with measuring the quality of educational services.

2.3 Gaps in the literature

It is still a subject of debate, as there are many models for measuring service quality. In higher education, the dimensions of service quality have been used and called HEDPERF which consists of the dimensions (Non-Academic Aspect, Academic Aspect, Reputation, Access, The Program Issue, and Understanding) (Purwanto et al., 2020; Verma et al., 2023). In fact, HEDPERF is an adaptation of the SERVQUAL model which includes the dimensions (Reliability, Responsiveness, Assurance, Empathy, Tangibles). While (Kang & James, 2004) indicated that the dimensions (Reliability, Responsiveness, Assurance, Empathy, Tangibles) represent functional quality. While there were few studies that address the Grönroos model, which includes the dimensions of (technical quality, functional quality, image quality)

Many previous studies have also addressed the role of service quality in improving customer satisfaction and loyalty (Haq & Awan, 2020; Nguyen et al., 2020; Abror et al., 2020; Ali et al., 2021; Panday & Nursal, 2021; Noori, 2022; Khayru & Issalillah, 2022; Venkatakrishnan et al., 2023; Barre et al., 2023; Ashiq & Hussain, 2024). However, studies seeking to improve service quality were few compared to published studies on service quality.

This study focuses on measuring the quality of educational service according to the Grönroos model, which measures quality in all its dimensions (technical, functional, and image). The study highlights the importance of technology in improving the quality of educational services.

3. METHODOLOGY

The IT dimensions' questionnaire was adopted according to what was indicated by (AL-Mahwey & Sayah, 2020)

after making modifications to it to be suitable in the field of education. The service quality variable questionnaire was adopted as indicated by (Kang & James, 2004), with some modifications made to make it suitable for adoption in the field of education. The questionnaire was designed based on the Likert scale, which includes 1 Strongly Disagree and 5 Strongly Agree. The questionnaire was distributed to all faculty members at [Institution], numbering (54) faculty members. Research model is presented on Figure 2.

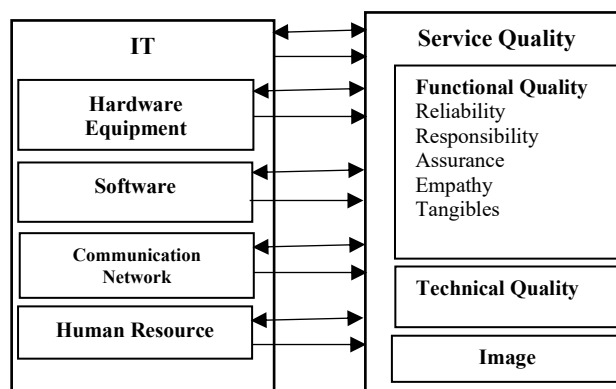


Figure.2 Research Model.

To know the distribution of the data, whether normal or not, it is required to find the Kolmogorov-Smirnov's test because the sample size is (54) respondents, which is greater than 50 respondents. Table .1 indicates that the (Kolmogorov-Smirnov) statistic for the information technology variable (0.085) at a significance level of (0.200), while (Kolmogorov-Smirnov) for the service quality variable (0.078) at a significance level of (0.200), which indicates that the data distribution is characterized by a normal distribution because (Sig) is higher than (Sig = 0.05), which is the minimum limit for considering the data to have a normal distribution. Accordingly, the data is characterized by a normal distribution.

Table 1. Tests of Normality

Variables	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
IT	.078	54	.200*
Service Quality	.085	54	.200*

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 3. Shows the distribution of data for the IT variable and the service quality variable. It is clear that the data follow a normal distribution

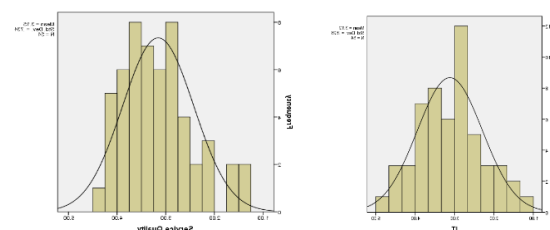


Figure 3. Data distribution for variables (IT,SQ)

The Cronbach's Alpha was calculated to determine the stability and validity of the measurement tool. Table 2 shows that the value of the Cronbach's Alpha for the questionnaire items for the information technology variable was (0.864).

Table 2. Reliability Statistics

Variables	Reliability Statistics	
	Cronbach's Alpha	N of Items
IT	.864	14
Service Quality	.931	38
Total	.951	52

While the value of the Cronbach's Alpha for the questionnaire items for the service quality variable was (0.931). While the value of Cronbach's Alpha for all questionnaire items was (0.951). These values are high compared to the minimum acceptance limit of (0.60), which indicates the possibility of passing the questionnaire and distributing it to the individuals of the study sample.

4. RESULT AND DISCUSSION

The results of Table 3 indicate that there is a weakness and lack of interest in the hardware equipment and tools that contribute to achieving an efficient information technology system. Financial allocations are often few, which does not constitute an obstacle to providing modern tools and hardware equipment. hardware equipment. The institute does not have a system to follow up on the improvement and development of the programs it adopts in performing its tasks, in a way that improves the performance of its cadres, including faculty members and employees. In addition to the institute not having an internal intranet network for exchanging information that is characterized by confidentiality and security in exchanging information. Information is exchanged through an external communications network. There is no system in the institute that attracts qualified or experienced employees who are creative in their work, especially in the field of technology. Rather, they rely on the Federal Service Council in the recruitment process. The Technical Institute does not have direct contact with the Federal Service Council, which contributes to determining the institute's needs for employees who possess specific skills that are determined in advance in the institute in order to ensure the recruitment process is consistent with the institute's requirements and needs. The lack of IT maintenance specialists working at The Technical Institute / Shatrah – Iraq made the IT system ineffective. The Technical Institute / Shatrah – Iraq does not have a plan for training programs to develop its cadres in the field of information technology, which is why the financial allocations for the institute do not include the training aspect.

The results of Table 3 indicate that there is a weakness in the continuity of providing educational services at a stable and advanced level due to the students'

unwillingness to join the institute, which was negatively reflected in the performance of faculty members in providing the best in the educational process. While the institute's administration did not have a clear plan in the field of developing the educational environment to make it an attractive environment for students by opening channels of communication with the local government in order to provide job opportunities for institute graduates, as the employment process is the most competitive criterion for attracting students. Result of the weak financial allocations in the institute, there was a weakness in providing resources to help faculty members fulfill their obligations, such as providing advanced programs and modern laboratory equipment to conduct laboratory tests, which led to the faculty members' weak fulfillment of their job obligations at the required level. The institute's administration worked to enhance students' confidence in the quality of education provided to them at the institute, but this was not within the level of ambition. The information provided to faculty members and students was characterized by instability, due to the lack of financial and administrative independence of the institute. The institute shows good interest in sympathizing with and understanding the academic and personal challenges that students go through. It has adopted programs to help students overcome these challenges, such as holding training programs to help students solve their problems and overcome challenges, in addition to the existence of specialized committees concerned with student affairs. The institute's infrastructure suffered from weakness due to the granting of part of its land and buildings to the recently established Technical College/ Shatrah – Iraq.

The educational process at the institute suffers from the many holidays granted by the local government, which affects the technical specifications of the educational process. In addition to the failure to complete the curriculum in full, because the faculty members are unable to give a full lecture that includes one topic according to what is documented in the curriculum in most cases, because one lecture may include more than one topic as a result of these holidays. What was mentioned has had a significant impact on the educational process by not providing the required knowledge and skills to the students adequately. Although the institute was established long ago and has a good history of providing education, this was not enough to attract students, especially in recent years. Students are looking to join institutes that guarantee them job opportunities after graduation, such as students' desire to join institutes that include medical specialties such as pharmacy, nursing and pathology more than their desire to join institutes that include administrative and engineering specialties such as resource management, surveying and water resources. This has led to students' perception of institutes being based on the institute's ability to provide job opportunities after graduation and not on the level of knowledge and skills that they will acquire during the educational process. Since The Technical Institute / Shatrah – Iraq does not provide job

opportunities for its graduates, students' mental image of The Technical Institute / Shatrah – Iraq is below the acceptable level. The institute realized this fact and moved towards creating academic and educational programs with medical specialties that guarantee the availability of job opportunities for graduates of those specialties.

It is clear from this that the IT system is weak in the The Technical Institute / Shatrah – Iraq and this affects the quality of educational services because the educational service depends on technology in many areas such as

computer programs and the exchange of information between departments in the institute, for example the exchange of information between the scientific department, student affairs, the library, etc. In addition, technology is one of the tools that faculty members rely on to keep pace with developments in their field of specialization, which increases their knowledge and skills, which is positively reflected in the level of knowledge and skills of students.

Table 3. Descriptive Statistics

Variables		Mean	Std. Deviation
IT		3.12	0.83
Hardware Equipment		3.11	0.88
	• The Institute uses computer technology (hardware and equipment) to store and retrieve information when needed.	3.11	0.82
	• The Institute maintains IT devices and equipment through workshops dedicated to this purpose	3.22	0.82
	• The Institute works to introduce modern IT technology adopted in the work continuously	3.07	0.55
	• The Institute keeps pace with modern developments in the field of devices and equipment used in it.	3.02	0.67
Software		3.13	0.89
	• The Institute relies on licensed versions of operating systems and ready-made software	3.20	0.81
	• The Institute requires its employees to use software related to improving its work	3.11	0.96
	• The Institute continuously monitors the development of the software it uses to perform its work.	3.15	0.62
	• The Institute relies on reliable sources to obtain the necessary software to complete its work	3.07	0.70
Communication Networks		3.05	0.94
	• The institute is connected to all its departments by an internal communications network (LAN).	3.09	0.91
	• The institute uses an external communications network to accomplish its work with other institutes.	3.15	0.87
	• The institute has its own information security and protection technologies	2.91	0.92
Human Resources		3.19	0.93
	• The institute attracts the best talents and skills and has expertise in information technology.	3.24	0.87
	• The institute allocates a financial budget for training human resources	3.22	0.84
	• The institute has specialists in systems analysis and design that depend on them to build new systems and develop existing systems.	3.09	0.76
Service Quality		3.15	0.73
Functional Quality		3.15	0.75
	Reliability	3.09	0.91
	• The institution consistently delivers educational services as promised.	2.98	0.89
	• Instructional materials and resources are reliably available when needed.	3.0	0.65
	• The institution is dependable in maintaining scheduled classes and academic	3.41	.094
	• activities without unexpected disruptions.	3.00	0.75
	• The institution addresses academic concerns promptly and effectively.	3.06	0.76
	• The administration provides consistent support to ensure a reliable educational environment.	2.98	0.66
	Responsiveness	3.17	0.85
	• The institution takes responsibility for promptly resolving issues that may affect the teaching process.	3.29	0.83
	• The administration is proactive in addressing the needs and concerns of instructors.	3.15	0.65
	• The institution provides the necessary resources and support to help instructors fulfill their responsibilities effectively.	3.04	0.77
	• Instructors are held accountable for delivering high-quality educational services consistently.	3.11	0.92
	• The institution encourages a culture of responsibility and commitment among its staff and faculty	3.28	0.89
	Assurance	3.19	0.88
	• The institution provides clear and reliable information to both teachers and students.	2.91	0.91
	• The administration ensures that instructors are well-trained and knowledgeable in their subject areas.	3.39	0.99
	• The institution fosters a sense of confidence and trust among students regarding the quality of education provided.	3.33	0.73

	• Instructors are supported in building strong, credible relationships with students through effective communication.	3.22	0.55
	• The institution consistently meets expectations in delivering a safe and stable educational environment	3.09	0.96
	Empathy	3.21	0.73
	• The institution is attentive to the individual needs and concerns of both instructors and students.	3.43	0.90
	• The administration shows genuine care and understanding toward the challenges faced by instructors	3.11	0.63
	• The institution provides flexible support that accommodates the unique needs of instructors	3.19	0.98
	• Instructors are encouraged to show empathy and understanding toward their students' academic and personal challenges.	3.09	0.90
	• The institution promotes an environment where open communication and personal attention are prioritized	3.28	0.94
	Tangibles	3.06	0.85
	• The educational facilities and equipment provided by the institution are modern and well-maintained.	2.93	0.71
	• The institution ensures that classrooms and learning spaces are clean, organized, and conducive to teaching.	3.07	0.91
	• The availability and quality of instructional materials, such as textbooks and digital resources, are satisfactory.	3.09	0.79
	• The visual appearance of the institution, including signage and environment, reflects professionalism and quality.	3.13	0.81
	• The technological tools and resources available (e.g., projectors, computers, software) are sufficient and reliable for effective teaching	3.41	0.76
	Technical Quality	3.17	0.89
	• It is successful to complete a course.	3.22	0.82
	• There is no noise during the lesson.	3.15	0.65
	• The semester can be completed without the interruption	3.15	0.80
	Image	3.14	0.76
	• It is a reliable Institute.	3.19	0.81
	• It provides an excellent service to students.	3.31	0.86
	• It is a successful Institute.	3.28	0.99
	• It makes a lot of contribution to the society.	3.09	0.70
	• It has an superior technology .	3.22	0.93
	• It is sincere to the students and the society .	2.93	0.67
	• It has a good reputation	3.24	0.81
	• It is a large-scale Institute.	3.28	0.97
	• It is familiar to the students.	2.85	0.91
	• It is honest.	3.06	0.72

Table 4 indicates that there is a positive correlation between the independent variable information technology and the dependent variable service quality. The correlation between information technology and service quality was (0.838**), which is a high and statistically significant correlation, as the sig value reached (0.000), which is less than (0.05). Correlations were found between the dimensions of the information

technology variable and the dimensions of the service quality variable, in addition to the sub-dimensions of the functional quality dimension. All correlations were positive and statistically significant. The highest correlation of IT with the functional quality dimension was (.815**). While its correlation with image was (.751**). As for the correlation of IT with technical quality, it was (.728**).

Table 4. Correlation Coefficient between Information and service quality

Independent variable Dependent variable		IT	Hardware Equipment	Software	Communication Networks	Human Resources
Service Quality	Correlation Coefficient	.838**	.747**	.759**	.745**	.734**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Functional Quality	Correlation Coefficient	.815**	.666**	.743**	.768**	.728**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Reliability	Correlation Coefficient	.663**	.488**	.636**	.610**	.673**
	Sig. (2-tailed)	.000	.000	.000	.000	.000

Responsiveness	Correlation Coefficient	.745**	.605**	.673**	.698**	.686**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Assurance	Correlation Coefficient	.731**	.630**	.677**	.676**	.624**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Empathy	Correlation Coefficient	.663**	.555**	.612**	.618**	.566**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Tangibles	Correlation Coefficient	.753**	.641**	.671**	.756**	.640**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Technical Quality	Correlation Coefficient	.728**	.664**	.652**	.650**	.612**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Image	Correlation Coefficient	.751**	.705**	.670**	.646**	.652**
	Sig. (2-tailed)	.000	.000	.000	.000	.000

The impact relationships of the information technology variable and its dimensions on the service quality variable and its dimensions were found. It was found that there are positive impact relationships of the information technology variable and its dimensions on the service quality variable and its dimensions. This indicates that information technology and its dimensions have a positive impact on the service quality variable and its dimensions. Tables 4 and 5 reveal that information technology has a positive relationship with service quality and that service quality can be improved by paying attention to the information technology system. The management The Technical Institute / Shatrah – Iraq must realize the importance of information technology

and its role in improving the quality of service. The quality of educational service has recently become dependent on information technology. While the institutes were able to continue providing their educational services by relying on information technology, especially during the Corona pandemic. Meanwhile, institutes that do not have an effective and efficient information technology system suffered from providing high-quality educational service during the Corona pandemic. Therefore, attention must be paid to information technology because it affects the quality of service in all its dimensions.

Table 5. Regression analysis between the IT and service quality

Independent variable	a	β	F	R ²	Sig	Dependent variable	Dimensions/ Dependent variable
Hardware Equipment	1.171	0.638	74.318	0.588	0.000	Service Quality	
Software	1.179	0.630	74.615	0.589	0.000		
Communication Networks	1.357	0.589	70.261	0.575	0.000		
Human Resources	1.271	0.591	68.470	0.568	0.000		
IT	0.832	0.745	124.929	0.706	0.000		
Hardware Equipment	1.265	0.605	52.945	0.505	0.000		Functional Quality
Software	1.141	0.640	71.469	0.579	0.000		
Communication Networks	1.203	0.637	92.613	0.640	0.000		
Human Resources	1.230	0.245	66.295	0.560	0.000		
IT	0.639	0.776	69.957	0.574	0.037		
Hardware Equipment	1.055	0.682	42.452	0.449	0.003		Technical Quality
Software	1.106	0.659	39.534	0.432	0.002		
Communication Networks	1.394	0.583	31.479	0.377	0.000		
Human Resources	1.284	0.593	32.222	0.383	0.001		
IT	0.790	0.764	51.530	0.498	0.025		
Hardware Equipment	1.194	0.628	16.243	0.527	0.000		Image
Software	1.290	0.592	48.151	0.481	0.000		
Communication Networks	1.475	0.548	44.131	0.459	0.000		
Human Resources	1.297	0.580	53.197	0.506	0.000		
IT	0.920	0.713	77.826	0.599	0.001		

5. CONCLUSION

The results reveal a positive impact of the information technology variable and its dimensions on the service quality variable and its dimensions. The results revealed a weakness in information technology at The Technical Institute / Shatrah – Iraq because it does not have a development program for the information technology system. The institute suffered from a weak importance of information technology in performing its tasks. As for the quality of service, the The Technical Institute / Shatrah – Iraq suffers from a weak quality of service and a weak infrastructure such as laboratories and the library, as the laboratories do not have advanced laboratory equipment. There are also competitors from private sector institutes because they provide educational programs with a medical specialization because they realize that graduates of medical specializations have a higher chance of obtaining a job opportunity than other specializations. The results showed weakness in all aspects of technical and functional quality and image, and this is a negative indicator because the poor image among students of the quality of education at the institute makes the institute an unattractive environment for students. The institute's leadership should pay attention to the quality of educational service by identifying the needs and desires

of students while taking into account the needs of the labor market. The institute's leadership must also provide the educational process requirements, such as laboratory equipment and others. It is necessary of establishing an effective and efficient information technology system within the provision of high-quality educational services.

6. LIMITATIONS AND FUTURE RESEARCH

This study was conducted at The Technical Institute / Shatrah – Iraq - Iraq only. This study relied on the intentional sample. The researcher can expand the scope of the study in the future by taking several governmental institutes and private sector institutes and conducting a comparative study between them.

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Hydar Sayah

University of Sumer,
Dhi – Qar,
Iraq.

hydar_alshatry@yahoo.com

ORCID: 0000-0001-8157-699X

Nor Hasni Bt. Osman

Universiti Utara Malaysia,
Sintok, Kedah,
Malaysia.

has1218@uum.edu.my

ORCID: 0000-0001-6073-5672

Mazhar Abbas

Universiti Utara Malaysia,
Sintok, Kedah,
Malaysia.

mazhar.abbas@uum.edu.my

ORCID: 0000-0003-2629-0424