

## Adopting Total Quality Management in the Application of Electronic Governance in Iraqi Universities

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### Abstract

Current research seeks to quantify comprehensive quality management and its contribution to establishing universities e-governance through dimensions (continuous improvement, Top management commitment, learning and training, employee empowerment, strategic planning), The research problem has been identified through a set of questions, with the aim of identifying the relationship and impact of TQM in achieving electronic governance. In light of this, a set of hypotheses have been formulated to diagnose the reality of TQM. As for the dependent variable, electronic governance, was measured through dimensions represented by (Transparency, effective participation, accountability, and independence) and to accomplish the descriptive and analytical method was employed to achieve these goals. The research tool was distributed to a randomly chosen sample of academic leaders and faculty members from the following institutions: Al-Furat Al-Awsat Technical University, University of Baghdad, Babel University, Al-Qadisiyah University, and Karbala University via the Internet (132 We came to a number of conclusions, the most significant of which is the acceptance of the main research hypotheses that confirm the existence of a relationship and influence between total quality management and electronic governance. A number of statistical methods have been relied upon for the purpose of accessing the scientific results related to the use of the statistical program SPSS V.25 and program Smart pls. Additionally, there are a number of recommendations, the most important of which is that academic and administrative bodies understand the importance of TQM and how it might help them achieve electronic governance.

**Keywords:** Total Quality Management, E-governance.

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## **Introduction**

In order to achieve the best possible investment of material and human resources and to provide services at a high level of efficiency and effectiveness, there has been an urgent need for a quantum leap in the field of total quality management. This is because the current economic crises have affected government institutions, including universities. One of the contemporary organizational management concepts that holds tremendous relevance in the global today is the adoption of electronic governance as one of the fundamental prerequisites for achieving comprehensive quality in institution, Universities also came under intense pressure as the unemployment rate among university graduates rose because there was a discrepancy between the skills the labor market required and the skills acquired by graduates of higher education, As a result, they turned to creativity and excellence to provide education that would enable their students to compete and contribute to social and economic development. From this perspective colleges are more interested than ever in implementing whole quality management to enhance educational results. Higher education institutions have seen a remarkable interest at different levels in keeping up with societal needs through the development of technical, scientific, cultural, and professional cadres and human energies in the academic and administrative aspects. There have also been calls for the application of electronic governance to ensure quality in educational institutions. To guarantee and regulate the grade of services offered to the beneficiaries in accordance with thorough scientific and academic foundations and standards applicable to all sectors. The research was divided into four axes in order to achieve the intended outcomes based on the aforementioned information. The first axis dealt with the research methodology, the second with the theoretical framework, and the third with the field aspect. The results and suggestions arrived at were presented on the fourth axis.

## **Scientific Methodology**

### **Research Problem**

Recent scientific studies have shown the need for educational institutions to adopt electronic governance represented by information and communication technology to keep abreast of developments in the surrounding environment of similar universities by directing electronic governance towards developing the structure of educational institutions, advancing the reality of the educational environment, achieving comprehensive quality requirements, and making the best use of the capabilities and skills of both workers and students. Students studying in it, taking into account the technologies adopted in it, its financial capabilities, and the plans drawn up by the administration for the purpose of achieving its basic goals, based on a new philosophy represented in drawing up the future vision to achieve the requirements of educational quality at the lowest possible cost, Based on the foregoing the research problem revolves around the Not adopting universities studied methodological steps of a scientific nature to apply and benefit from electronic governance and not to employ them in translating the real crises experienced by educational institutions The following research inquiries are highlighted:-

1. How much do the TQM criteria help with attaining electronic governance?
2. What is the degree of achieving the requirements of total quality management as seen by faculty members?
3. What is the extent of applying electronic governance in educational institutions from the perspective of faculty members?

### **Importance of Research**

1. The significance of the study is a result of the critical role that comprehensive quality management plays in the implementation of electronic governance, which achieves the highest levels of precision in predicting the future of the educational institution.
2. The research tries to enrich the issue of total quality requirements and its relationship to electronic governance in universities.
3. The significance and originality of the research's topic, which examines "electronic governance," one of the contemporary administrative concepts in the field of education quality In order to deal with the quickening changes in education, it must adopt this idea.

### **Research Objectives**

1. Knowing the degree of sufficient awareness of the culture of electronic governance in educational institutions.
2. Understanding the importance of overall quality in implementing electronic governance in universities.

- Determining the requirements and capabilities of applying electronic governance and the problems it faces in academic institutions.

### Research Limits

- Human Limits:** Faculty members and university leaders in educational institutions.
- Spatial Boundaries:** Technical Institute – Karbala.
- Temporal Limits:** The period in which the research was completed extended from 30/12/2021 to 1/5/2022.

### Research Methodology

The literature and research works in the subject of study were presented and analyzed using the analytical descriptive technique. A questionnaire was created to determine the contribution of overall quality management to the implementation of electronic governance in universities.

### Research Sample

A random sample of faculty members and university leaders via the Internet amounted to 132 teachers in different specializations.

### Research Hypotheses

The following are the represented research hypotheses:

- The first major finding is that there is a strong relationship between electronic governance and complete quality management across all of its dimensions.
- The second important finding is that obtaining electronic governance with its aspects has a statistically significant impact on TQM.

### Hypothetical Scheme of the Research

The hypothetical scheme consists of two variables as follows:

- The five components (continuous improvement, senior management commitment, learning and training, employee empowerment, and strategic planning) that make up comprehensive quality management needs.
- E-governance is represented by four dimensions (transparency, effective participation, accountability, independence).

Figure (1) Scheme of the hypothetical research prepared by the researchers.

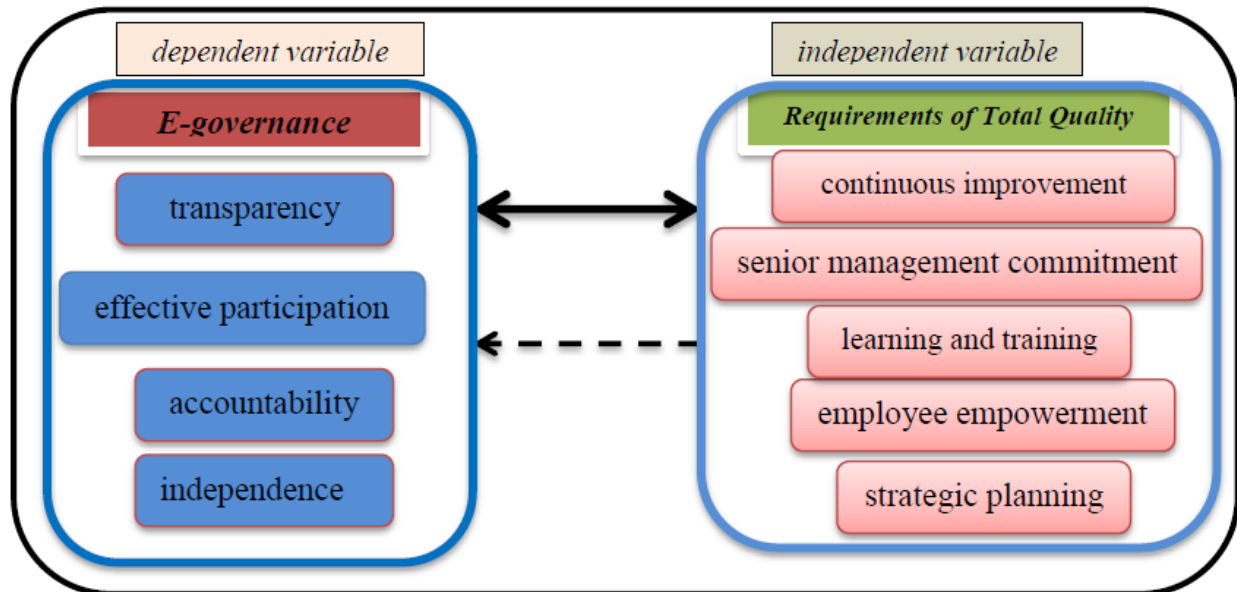


Figure 1: Scheme of the Hypothetical Research

### Research Tools

The following statistical techniques are used for data collection and analysis.

1. **Theoretical Framework Tools:** The researcher relied on the writings and research gathered from the sources reflected in the scientific references, such as books, magazines, dissertations, research papers, and university theses.
2. **Questionnaire:** This research's primary and trustworthy data-collection tool. The Likert scale was used, which is a five-point scale with values ranging from (1) completely disagree to (5) completely agree. It was meant to cover all search criteria.

## **Theoretical Framework**

### **Total Quality Management Requirements**

#### **Total Quality Management**

One of the more recent management theories that has gained traction is overall quality management. been emphasized by all departments of all organizations in industrially developed countries, as well as many organizations in developing countries and worked on applying it including educational institutions, in order to face The technological and scientific changes affecting their work including competition between public universities and the eligibility of universities, and for the purpose of shedding light on the We look at a few of the researchers' and writers' interpretations of the concept of total quality management because there is no definition that is generally agreed upon and accepted by thinkers and researchers. According to Isaksson (2006), total quality management is an ongoing effort to meet the needs and expectations of customers and, ideally, to exceed those expectations at the lowest possible cost through continuous improvement to which all parties concerned are committed.

Indicates (Msallam, et al., 2020) Total quality management is a philosophy, broad guidelines, and principles that direct the organization towards achieving continuous development, which are quantitative methods in addition to human resources that work to improve and use available resources as well as services, So that the efficiency of operations within the organization, seeks to meet the current needs of potential consumers, noting that the intellectual orientations adopted by thinkers focus on the outcomes that can be obtained through total quality management, which is summed up by (the management philosophy) and the operational procedures of the organization that seek to fully utilize both its human resources and its raw materials in order to be more effective and efficient in achieving its goals, as total quality management represents a philosophy and a new administrative model, as the philosophy of total quality management arose from the philosophy of continuous improvement with a focus on quality as a major dimension of business, and confirms (Matougm, 2011) that total quality management is considered one of the main entrances to continuous improvement of the quality of the product or service in order to meet the requirements of customers. According to (Kistiani, et al., 2019), total quality management is defined in two ways. The first is that it is an approach to business management that seeks to maximize an organization's competitiveness through continuous improvement of its products, services, employees, processes, and environment. The second is that total quality management is an approach that can only be achieved by taking into account certain aspects of holistic quality management: A. focus attention to both internal and external customers, B. Focus fixated on quality, C. Making decisions and solving problems scientifically, D. Showing dedication Long-term E. Requires collaboration G. Ongoing improvement L. Organizing education and training, K. Providing limited freedom, H. The presence of a shared purpose, R. Empowerment of employees.

#### **Importance of Quality Management**

Given the intense competition and the rapid advancement of technology economic, social and political changes, and the resulting intensity of competition at the global and local levels, educational institutions are looking for options in order to survive and enter the market competition with other educational institutions, and work to provide high services at the lowest costs and increase profitability and thus increase The ability to achieve internal and external satisfaction, as I found that the best alternatives that achieve that goal is to adopt the philosophy of quality as a long-term work platform (Ajami, 2020), He adds Henard & Soleine, 2008) that the importance of providing quality in educational institutions appears through the purposeful use of total quality management in achieving many opportunities for success, which are as follows:

- a. Increasing employee happiness and fostering a sense of teamwork among them.
- b. Work to build new working practices and methodologies.
- c. Lowering the price of administrative services.
- d. Increasing the efficiency of educational institutions and achieving individual satisfaction by providing services of acceptable quality.

- e. The ability to compete or through continuous improvement.
- f. Quality cost reduction by doing things right the first time.

Both (Nguyen & Kemenade, 2020) There is a broad consensus that employees need to be emotionally involve in the broadest sense of the culture of quality and that there must be a strong internal motivation. These are the most important success factors critical to the implementation of TQM that are contained in scientific research. They are the commitment of senior management as well as transformational leadership that is a critical factor in the successful implementation. Moreover firms that seek to apply overall quality management to create competitive advantage face challenges since there is a lack of emphasis on strategic planning and a lack of a clear vision. Institutional success depends in large part on the institution and its worth.

### **Objectives of Total Quality Management**

Suggests (Rodriguez, et al, 2018) that the following are some of the goals of complete quality management.

1. Quality, mastery, and improvement are among the necessities of the modern era, and accordingly, an environment that supports and maintains this mastery and development, and works on continuous improvement in everything, must be created.
2. Developing and strengthening the spirit of teamwork, and involving all employees in the process of development, change, and modernization in institutions.
3. Achieving a quantum leap and tangible excellence in the educational process, which is based on documentation, follow-up and the development of tools for measuring the performance of processes that guarantee good achievement.
4. Creating a culture that is strongly focused on beneficiary students.
5. The need to pay attention to the level of performance of workers in educational organizations and institutions, and to include them in continuous training and development programs that are positively reflected in improving the quality of the outputs of these organizations and educational institutions.

### **Requirements of Total Quality Management**

#### **1. Continuous Improvement**

Continuous improvement is a strategy to assure the success and advancement of enterprises that is founded on luring and keeping customers, meeting all of their wants, and developing performance processes Success goals are incrementally attained by continuous improvement, which also yields profitability and a competitive edge., and successively achieves success goals (Jonsdottir, et al, 2014). argues that because it is founded on the notion of continuous improvement and development comprehensive quality management is an endeavor for ongoing development and improvement rather than a program with a predetermined beginning and finish (Suleiman, 2019), No matter how proficient and successful the performance, there is always room for development and improvement, As a result quality must be assessed and continually improved in accordance with data that is frequently collected and analyzed. Moreover the degree of quality and the needs and expectations of the beneficiaries are not fixed but rather variable.

The philosophy of continuous improvement is based on the idea that every aspect of operations should be improved accurately and within the purview of the daily responsibilities of those in charge of them. Additionally, continuous improvement is concerned with continuously improving every aspect of the production of goods and services in order to meet consumer demands and thrive in a market that is expanding. It is mentioned that continuous improvement is required to overcome the obstacles given by competition and to always please the client. The firm must continuously enhance its processes and methodologies to reach a higher quality of its products (Abimbola, et al., 2020).

#### **2. Senior Management Commitment**

Since senior management educates other employees on the value of TQM and provides leadership needs, as well as approves training requirements and the majority of organizational changes, senior management's commitment is crucial in adopting and implementing TQM (Abimbola et al., 2020). (Karanja et al., 2020) establishes that senior management's commitment has a positive impact on quality management. As a result senior management must be dedicated to contributing to quality effort by abiding by organizational terms, rules, and policies. This can be done by simply ensuring that there is effective communication and quality enhancement aimed at enhancing *organization* performance, suggests (Olusanjo, 2019) that commitment of senior management is the foundation of the total quality management philosophy, and senior management is considered a catalyst in implementing total quality management and setting values goals and systems to meet and exceed customer expectations and lead to improved performance

organization, also adding that The idea of leadership is the capacity of senior management to develop a procedure, a strategic vision for the company, and that is to concentrate on customer needs. Management must set quality policies, establish and publish quality goals, provide resources, and offer problem-oriented training and improvement, and then believes that the management's commitment is what makes management effective In total quality management, In order to achieve strategies and objectives, senior management must accept evaluation and take part in improvement initiatives. The information system must be aligned with business strategy based on market demand and consumer needs in order for the organization to perform well be profitable, and have effective leadership that encourages direction, Customer satisfaction and business performance are priorities for the corporation.

### **3. Learning and Training**

The organization measures its performance against its competitors by focusing on some chosen industry metrics, according to which the benchmarking is conducted, Training equips employees with the necessary skills and techniques to enable them to improve quality in the production process and to successfully implement total quality management, A method of self-evaluation and self-advancement it entails an organization comparing its performance to that of its rivals in order to pinpoint its advantages and disadvantages (Abimbola et al, 2020), and confirms (Fadlallah 2018) that education and training is an effective activity that contributes to increasing the skill of Human resources in performing their work to implement current and future work plans and programmers, this depends success of human resources, especially on the human element in terms of training the working individuals and increasing their skills and capabilities, and that the training programs contribute to providing the workers with information according to scientific bases that reflect positively on the performance of the workers and their capabilities, He continues, saying (Kassem & In'airat, 2014) that the educational system is seen as a course of action, and that the activities of higher education institutions have been transformed by global technological changes. Teachers must continue to learn new techniques or methods of teaching in order to benefit students and society at large. The development process includes input from students, teachers, administrative staff, physical facilities, and processes, Teaching, learning, and administration are the processes, and hiring, profit, and satisfaction are the outputs of those processes.

### **4. Employee Empowerment**

To fulfill the goals and values of the business, employees must work in an environment that fosters their competence, confidence, and dedication to total quality management. This environment must also boost productivity and satisfy the demands and desires of consumers, Therefore one of the fundamental requirements for the success of overall quality management is employee participatio (Pambrenia, et al, 2019), believes that increasing knowledge, skills, and motivation of the workforce will result in the success of the educational institution, Full employee participation and teamwork in the educational institution can enhance employee motivation and success through opportunities to learn and practice new skills and techniques, and supports (Abimbola et al, 2020) Through programs of responsibilities that must be implemented to continuously improve quality as well as through appropriate and effective training, employees can be empowered to participate in decision-making, Employees will then have sufficient knowledge of the industry and the organization's structure, which will increase their motivation for work, general performance, and loyalty to the company. In addition, they will be able to provide high-quality services.

From the viewpoint of (Msallam et al, 2020) empowering employees refers to the successful implementation of total quality management and calls for reliance on modern concepts in total quality management, which are emphasizing the significance of employees' roles in activating and achieving the goals the goals set for the organization which calls for work Comprehensive in building and sustaining the workforce, acquiring human competencies, training, developing, and nurturing them, starting with hiring and performance reviews, methods of individual and group motivation, fostering teamwork, achieving ways of loyalty and belonging to the organization, and other human dimensions adopted by contemporary organizations in achieving their goals.

### **5. Strategic Planning**

Managing resources to implement strategic policies and plans must be in harmony with the environment and must have the ability to modify the strategy in order to compete and survive in a competitive business. Total quality organizations' strategic plans are created to give them a sustainable competitive advantage in the market. The organization can achieve world-leading quality over time with the implementation of total quality management (Pambrenia,et al, 2019), indicates (Ross, 2017) that organizations applying total quality management and planning for it begins with a strategic decision that focuses on total quality, which the organization's vision and mission

depend on achieving the highest degrees because it is the efficient means through which organizations can compete and achieve a competitive advantage in the markets. (Bolatan et al, 2019) believes that organizations that compete for customer satisfaction and must take into account quality as an essential part of the strategic planning process must take this into account and that without doing so, their strategic plans are not adequate. On the other hand, organizations that do not compete for customer satisfaction may disagree and may believe that their plans are adequate. Making quality plans in relation to one's strategy and goals is necessary for those who want to succeed in quality management, Quality improvements can be attained by organizations that have a clear vision and concentrate on high-quality activities. Strategic planning is a management strategy that concentrates on the outcomes of the organizational process and regards strategic planning as a crucial component of success in implementing (TQM).

## **Electronic Governance**

### **Electronic Governance and Electronic Government**

In the beginning, it is necessary to point out that no specific definition or concept of the concept of governance and e-government was provided by specialists and researchers due to the novelty of the topic and its overlap with some of them, Although the terms "e-government" and "e-governance" are frequently used interchangeably and as synonyms in the literature, they have different meanings and functions. Electronic networks refer to the use of information and communication technology (ICT) and automated tools by the government to effectively and efficiently provide services to residents and other stakeholders both inside and outside the country's borders, These exchanges result in "Government to Citizen" (G2C), "Government to Government" (G2G), and "Government to Business" (G2B) electronic networks (G2B), The use of information and communication technology infrastructures may vary from department to department and from industry to industry, but the main objective is to deliver services efficiently. According to the Department of Communications and Postal Services, the government must properly plan the implementation of e-government in order to improve service delivery and reduce costs and offering services to residents such as e-governance (Uwizeyimana, 2015) electronic services, electronic citizens, and electronic democracy E-governance efficiently provides people with online means to access government resources and information (also known as electronic service delivery) which enables citizens to engage in policy decisions (Blom & Uwizeyimana, 2020) and defines (Salam, 2013) In order to promote simplicity, ethics, accountability, responsiveness, and transparency in institutional administrative work, e-governance is the practice of integrating information and communication technologies into government procedures.

### **Importance of Electronic Governance**

In many developed countries, reforming e-governance is one of the top priorities because it has become a pressing issue and real-world necessity, Economic pressures brought on by environmental changes like industry, information technology, and globalization have also had an impact on the structure of university governance, Universities are beginning to change how they run; good governance in higher education is a set of mechanisms that direct and oversee the university to operate in accordance with the expectations of all stakeholders, by putting the principles of openness, responsibility, accountability, and fairness into practice (Sayidah et al., 2019), The significance of governance can be seen in the management of higher education institutions because it establishes the organizational structure for universities, which defines the lines of responsibility through which these educational institutions achieve their objectives in addition to what they stand for as a control tool (Abed Alshaer, 2017).

1. Assist in the formation of independent institutions, as well as the boards and administrative bodies in charge of setting their strategic course and ensuring the management's effectiveness, caliber, and efficiency.
2. Academic institutions make every effort to meet their objectives.
3. Identifying lapses and flaws in the performance and results of educational services.
4. Ensure that the responsibilities for long-term strategic goals and immediate operational needs are equally distributed.
5. Ensuring that administrative and academic employees' rights and interests are protected without prejudice.
6. Governance is a system of oversight and self-monitoring that results in the integrity of the law's implementation, excellent management, and the protection of employee rights, all of which are necessary to ensure that society is satisfied with universities' performance.

### **Objectives of Electronic Governance**

(Chan, 2007) defines the objectives of educational institution governance as follows:

1. Improving and developing the performance of educational institutions.

2. Helping the management of the organization develop a strong strategy and make sure that decisions are made that will boost performance.
3. Reducing any dangers or disputes that may arise within the educational setting and affect student performance.
4. Increasing the educational institution's standing in the community.
5. Improving the educational institution's instructional and administrative procedures and ensuring that all transactions conducted by the institution are conducted with fairness, integrity, and transparency.
6. Distinguishing between organizational ownership, management, and performance evaluation.
7. Confirming the administration's responsibilities, evaluating its performance, promoting accountability and accountability, and not confusing the tasks and responsibilities of the members of the university institution.
8. Finding the structure that was determined by the educational institution's objectives, the means of achieving those objectives and monitoring performance, and the continuous review, amendment and development of the laws governing the performance of the educational institution.
9. Providing the necessary guidance to the educational institution on how to achieve compliance with the best standards and standard practices.

(Al-Kisar, 2018) confirms that the goals of electronic governance in educational institutions include the following:

1. Creating a conducive environment for work that contributes to the effectiveness of universities will increase internal and external universities' efficiency.
2. Ensuring democracy and justice for all parties involved by establishing laws and regulations that direct university leaders and officials in carrying out administrative activity.
3. Improving everyone's ability to participate in decision-making processes, including academic and administrative staff, leaders, and students.
4. Improving the performance of all student groups by ensuring justice and equality among faculty and staff.
5. Granting all parties who gain from the presence of universities the right to accountability.
6. Adhere to clear frameworks and methods that let employees give and engage completely in all activities, allowing them to practice their jobs to the fullest extent possible.

## **Components of Electronic Governance**

### **1. Transparency**

Transparency means the clarity of what is going on and turns on within the institution with the ease of flow of accurate and objective information and the ease of use and application of this information by the employees of the institution, This principle must be available in educational institutions, as it achieves full affiliation with the institution, complete clarity in decisions within the institution objectivity, decision-making through laws and rules, free and available information, and following the legal foundations and controls of the educational institution (Najm, 2017), (Al-Kasr, 2018) believes that disclosure and transparency is not only about the information necessary to rationalize the decisions of all stakeholders at the level of the organization, but rather the concept expands to include disclosure within public reports of indicators indicating adherence to the principles of governance and confirms (Sana, 2017) that transparency is the disclosure of educational and executive policies of educational institutions, and the presentation of opinions and ideas, cooperation and coordination between the members of the educational institution.

(Al-Shaer, 2017) verifies that transparency and disclosure serve to give a clear and accurate image of everything that occurs in order to enable the accomplishment of confidence, honesty, and objectivity in administrative operations, It also makes sure that the right information is disclosed at the right time. Information that is clear and comprehensive, as well as guaranteed transparency, timely appropriate, and accurate disclosure of all matters related to the provision of information on financial and operational results, objectives, and members of the Board of Directors, salaries and benefits of senior officials, structures, and policies.

### **2. Participation**

Is the degree to which direct stakeholders account for their interests and the part they play in the decision-making process, Stakeholders are typically represented by students, faculty members, government, industry representatives, donors, community organizations, unions, and alumni (Najm: 2017), (Alshaer, 2017), excerpted from (Lung-Sheng Lee, 2010), The purpose of the participation is to give all groups associated with the institution, both internally and externally, represented in the administrative councils of the academic and administrative councils, academics, administrators, students, and the community, opportunities to participate in the establishment of policy and the foundations and guiding principles of work in the various fields of university activities, and confirms (Adriana & all,



2012) Academic achievement is based in large part on the faculty's ability to engage in decisions that affect the university, which is essential for both enhancing democratic procedures.

### **3. Accountability**

Accountability seeks to establish a clear organizational structure that specifies places of power and duty and makes authorities and decision-makers responsible for their obligations to the business and shareholders, Accountability is a regulation for keeping decision-makers accountable or those who carry out their actions and the outcomes of their decisions and actions towards shareholders and other stakeholders (Alshaer, 2017), in light of governments and ministries allowing public universities more autonomy, this autonomy is frequently coupled with a greater degree of accountability in the form of quantifiable evidence of the achievement and progress being achieved in terms of attaining the institutions' objectives, goals for the institution spread of information on institutional goals educational success the integration of graduates into the workforce, internal and external quality control systems, the adoption of metrics for assessing the performance of students, teachers, managers, and administrative staff, the risk management process, and dealing with misconduct (Adriana & All, 2012).

### **4. Independence**

(Adriana & all, 2012) indicates that increasing the autonomy of public institutions by making them independent and self-governing is a significant international trend, This resulted from the necessity to improve academic institutions' receptivity to social and economic contexts and their capacity to change with emerging technology, performance of reputable universities Academic independence must be taken into consideration, as well as the responsibility for designing curricula, the extent of universities' independence in offering or canceling degree programs, defining academic structures, deciding the number of students, and a host of other factors, Financial independence is determined by indicators such as the ability of universities to set tuition fees carry over surplus government funding, borrow and invest money, own and sell land, and attract funds on a competitive basis (Alshaer, 2017), conflicts of interest, The establishment and nomination of committees and boards of directors serves as the starting point for this process, To check or certify that the financial statements accurately depict the true financial condition and performance, an impartial, efficient, and qualified external control body is appointed. This body does its work in accordance with professional norms and principles.

## **Practical Framework**

### **Description of the Research Sample**

The research sample included a group of teachers at (al-furat al-awsat technical university, university of Baghdad, university of Babylon, university of al-qadisiyah, university of Karbala) at various administrative levels, and the researchers were able to reach (155) teachers, only (132) responses from through the questionnaire were valid for analysis statistic.

### **Testing the Research Measurement Tool**

In the current study, a number of tests were used to determine the consistency and quality of the research findings (the answers of the sample members) among these tests are the following:-

- 1. Validity:** To ensure the ability of the data to measure the object for which it was built.
- 2. Reliability:** In addition to testing the validity and stability of the scale questions, we need to know their ability to measure under different conditions, and these tests can be conducted through what is called convergent validity which requires three methods to know the extent of the questions' convergence which are external saturations, The standards of these measures are shown in table (1) for the items (Factor Loading) Composite Reliability, Average Variance Extracted, and Cronbach Alpha Coefficient.

**Table 1: Criteria for Evaluating the Measurement Model**

<b>Standard</b>	<b>The Purpose</b>	<b>Acceptable Minimum</b>
Factor Loading	The extent of the paragraph's actual expression of dimension	0.70
Alpha coefficient for Cronpach	Test the internal consistency inside the scale's paragraphs.	0.70
Composite stability	Test and scale consistency	0.60
Extracted average variance	Scale validity test	0.50

**Source: Created by the two scholars using statistical resources**

Table (2) reviews the standards of the measurement model, although there are some rather low values, nevertheless they are considered acceptable according to (Hair et al., 2006), and thus the model for measuring the main variables (total quality and electronic governance) can be adopted in all its paragraphs.

**Table 2: The Values of the Research Variables Measurement Model and its Dimensions**

<b>Variables</b>	<b>Dimensions</b>	<b>Paragraphs</b>	<b>Factors loading</b>	<b>Cronpach's Alpha</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted</b>
<b>Total Quality management</b>	<i>Continuous Improvement</i>	<i>Q 1</i>	<i>0.828</i>	<i>0.849</i>	<i>0.895</i>	<i>0.631</i>
		<i>Q 2</i>	<i>0.816</i>			
		<i>Q 3</i>	<i>0.789</i>			
		<i>Q 4</i>	<i>0.693</i>			
		<i>Q 5</i>	<i>0.839</i>			
	<i>Senior management commitment</i>	<i>Q 6</i>	<i>0.826</i>	<i>0.853</i>	<i>0.897</i>	<i>0.637</i>
		<i>Q 7</i>	<i>0.836</i>			
		<i>Q 8</i>	<i>0.778</i>			
		<i>Q 9</i>	<i>0.708</i>			
		<i>Q 10</i>	<i>0.834</i>			
	<i>Learning and training</i>	<i>Q 11</i>	<i>0.754</i>	<i>0.827</i>	<i>0.879</i>	<i>0.592</i>
		<i>Q 12</i>	<i>0.814</i>			
		<i>Q 13</i>	<i>0.778</i>			
		<i>Q 14</i>	<i>0.773</i>			
		<i>Q 15</i>	<i>0.726</i>			
	<i>Employee empowerment</i>	<i>Q 16</i>	<i>0.760</i>	<i>0.828</i>	<i>0.879</i>	<i>0.594</i>
		<i>Q 17</i>	<i>0.813</i>			
		<i>Q 18</i>	<i>0.779</i>			
		<i>Q 19</i>	<i>0.769</i>			
		<i>Q 20</i>	<i>0.730</i>			
	<i>Strategic Planning</i>	<i>Q 21</i>	<i>0.824</i>	<i>0.879</i>	<i>0.913</i>	<i>0.677</i>
		<i>Q 22</i>	<i>0.864</i>			
		<i>Q 23</i>	<i>0.819</i>			
		<i>Q 24</i>	<i>0.745</i>			
		<i>Q 25</i>	<i>0.857</i>			
<b>Electronic governance</b>	<i>Transparency</i>	<i>W1</i>	<i>0.606</i>	<i>0.797</i>	<i>0.859</i>	<i>0.553</i>
		<i>W2</i>	<i>0.842</i>			
		<i>W3</i>	<i>0.646</i>			
		<i>W4</i>	<i>0.827</i>			
		<i>W5</i>	<i>0.767</i>			
	<i>effective participation</i>	<i>W6</i>	<i>0.655</i>	<i>0.802</i>	<i>0.862</i>	<i>0.558</i>
		<i>W7</i>	<i>0.834</i>			
		<i>W8</i>	<i>0.610</i>			
		<i>W9</i>	<i>0.836</i>			
		<i>W10</i>	<i>0.772</i>			
	<i>Accountability</i>	<i>W11</i>	<i>0.607</i>	<i>0.780</i>	<i>0.854</i>	<i>0.541</i>
		<i>W12</i>	<i>0.833</i>			
		<i>W13</i>	<i>0.701</i>			
		<i>W14</i>	<i>0.774</i>			
		<i>W15</i>	<i>0.744</i>			
	<i>Autonomy</i>	<i>W16</i>	<i>0.833</i>	<i>0.774</i>	<i>0.851</i>	<i>0.537</i>
		<i>W17</i>	<i>0.838</i>			
		<i>W18</i>	<i>0.676</i>			
		<i>W19</i>	<i>0.683</i>			
		<i>W20</i>	<i>0.607</i>			

*Source: compiled by researchers using data from the Smart pls application.*

## Statistical Description: Presentation of Research Results and their Interpretation

### 1. Management of Total Quality

The aim of the statistical description of the total quality management variable and its dimensions is to give an impression of the degree of the spread of the proposed total quality concepts among the research sample participants by displaying the arithmetic mean of the scale items their standard deviations, and the intensity of the response. For each weight category, the range is from 1 to 5. The assessment or interpretation of these balanced arithmetic medians is done through (Dewberry, 2004).

1. 1.80: Extremely low
2. 1.81 - 2.60: low
3. 2.61 - 3.40: moderate
4. 3.41 - 4.20: high
5. 4.21 - 5.0: very high

According to Table (3) results, the total quality management variable is generally spread moderately to slightly higher among the research sample, with a general weighted arithmetic mean of (3.38) and a standard deviation (0.66) in terms of relative importance. It follows empowerment of employees in first place (69%), learning and training in second (69%), senior management's commitment in third (68%) and continuous improvement in fourth place (68%), and ranked last after strategic planning (65%).

**Table 3: Means, Standard Deviations, N=132**

Sequence	Item	Relative Importance	standard deviation	Mean
1	The college administration offers the proper support for ongoing improvement processes.	67%	1.02	3.33
2	The College Administration Works To Develop Its Members Through Modern Training.	67%	1.00	3.37
3	The college administration is committed to removing barriers that prevent the use of total quality management.	70%	0.92	3.49
4	The management of the college keeps up with the advancement of technology in the field of education.	66%	1.16	3.29
5	The administration of the college works to connect member development with performance evaluation.	67%	1.01	3.33
	<b>The Mean of the Continuous Improvement Dimension.</b>	<b>67%</b>	<b>0.81</b>	<b>3.36</b>
6	Here is a strategic plan for the college administration that complies with the demands of TQM.	67%	1.03	3.35
7	The administration of the college fosters an environment that is appropriate for achieving the standards of total quality.	68%	1.00	3.39
8	The college administration has a distinct understanding of the TQM requirements.	70%	0.93	3.49
9	The College Administration Supports Its Members Through Their Participation In Its Important Decisions.	67%	1.16	3.34
10	The college administration establishes a culture of change to aid in the implementation of the entire quality requirements.	67%	0.99	3.33
	<b>The mean of the senior management commitment dimension.</b>	<b>68%</b>	<b>0.81</b>	<b>3.38</b>
11	The College Administration Is Very Interested In The Learning And Training Processes.	71%	0.92	3.57
12	The college administration supports training and learning activities by involving its employees in training courses on	70%	0.96	3.51

	an ongoing basis.			
13	The college administration trains and educates its members on modern technologies and devices used in the educational process.	69%	1.00	3.45
14	Nomination for training courses is based on objective bases for senior management for those wishing to train on quality skills.	65%	0.99	3.23
15	The college administration believes that learning and training raises the level of skills of its members in the field of quality.	70%	1.03	3.50
	<b>Mean of the Learning and Training Dimension.</b>	<b>69%</b>	<b>0.75</b>	<b>3.45</b>
16	The college's administration is dedicated to upholding the standards of overall excellence.	72%	0.93	3.58
17	The college administration works to enhance mutual trust among the members.	70%	0.97	3.52
18	All employees apply processes related to quality because it is one of their work tasks.	69%	1.00	3.46
19	The administration of the college's commitment to developing capable leaders for overall quality management.	65%	1.00	3.25
20	The college's leadership adopts a collaborative atmosphere.	71%	1.03	3.53
	<b>The mean of the employee empowerment dimension</b>	<b>69%</b>	<b>0.76</b>	<b>3.47</b>
21	The college administration has a clear vision of what it will be like in the future, in addition to having clear and flexible goals.	65%	1.07	3.25
22	The college administration has strategic plans to make changes in the educational institution to improve the administrative system.	65%	1.05	3.23
23	The Quality Department presents the College Administration's Vision from the Perspective of Administrative Quality.	68%	0.99	3.40
24	He Plans Include Clear Criteria That Help The Official To Be Flexible In Choosing Alternatives.	61%	1.10	3.05
25	The college administration reviews the strategic plans on quality during its meetings.	66%	1.07	3.29
	<b>The mean of the strategic planning dimension.</b>	<b>65%</b>	<b>0.87</b>	<b>3.24</b>
	<b>He general mean of the total quality management variable.</b>	<b>68%</b>	<b>0.66</b>	<b>3.38</b>

**Source: Provided by the researchers based on SPSS V.25 program findings.**

## 2. Electronic Governance

Table (4) Displays The Weighted Arithmetic Mean, The Standard Deviation, And The Relative Weights Of The Electronic Governance Variable And Its Paragraphs. The Arithmetic Mean Indicates Moderation Or Neutrality With Regard To The Spread Of Electronic Governance In Its Various Dimensions In The Research Sample As The Electronic Governance Obtained A General Average Of (3.25) Which Is Greater Than The Mean The Arithmetic hypothesis (3) and a general standard deviation of (.68) and this indicates several reasons, including that most of the research sample realized the decline in electronic governance procedures, or it may be a fear of the nature and purpose within questionnaire, Regarding the emergence of the arithmetic mean, the independence dimension came out on top because the arithmetic mean was (3.36), while the lowest averages were for the share of the questioning dimension, with an arithmetic mean of (3.18).

**Table 4: Shows the Electronic Governance Variable's Means and Standard Deviations, N=132**

Sequence	Item	Relative Importance	standard deviation	Mean
1	The policies and procedures of the college administration are characterized by simplicity and ease of understanding.	68%	1.01	3.41
2	The college administration has a database available to obtain statistics and data on its various activities.	61%	1.10	3.05
3	The college administration has sources for information exchange (bulletins, reports, websites, social media).	68%	1.06	3.42
4	The college administration provides standards for rewards and incentives for all employees.	61%	1.06	3.03
5	There is a free circulation of information in the college Arithmetic mean of the dimension of transparency.	64%	1.01	3.19
	<b>Mean of the dimension of transparency.</b>	<b>64%</b>	<b>0.78</b>	<b>3.22</b>
6	The college administration cares about the level of students' participation in decisions related to them.	68%	0.99	3.42
7	The concerns of the college leadership with the level of participation of the academic and administrative staff in making its various decisions.	61%	1.10	3.06
8	The college administration is concerned with the level of participation of representatives of the industry, the labor market, and trade unions and syndicates in decisions related to graduates.	69%	1.06	3.44
9	Decisions are made after all stakeholders participate collectively	60%	1.04	2.99
10	There are multiple ways for individuals to participate in the various activities of the university.	64%	1.02	3.20
	<b>Mean of the dimension of active participation</b>	<b>64%</b>	<b>0.78</b>	<b>3.22</b>
11	The college administration acts in line with the follow-up methods and requirements of the quality assurance program to achieve continual improvement.	67%	1.03	3.35
12	The college administration adopts the candidate information on external surveys and communication systems in the academic and administrative evaluation.	60%	1.04	2.98
13	The college administration achieves financial integrity through the availability of information, auditing, and penalties.	64%	1.04	3.18
14	Stakeholders are involved in setting laws and regulations for the university	61%	1.07	3.03
15	Faculty members and administrators are held accountable for non-compliance with the performance standards assigned to them or their violations of the laws and regulations that concern them.	68%	1.04	3.38
	<b>The arithmetic mean of the dimension of accountability.</b>	<b>64%</b>	<b>0.78</b>	<b>3.18</b>
16	A faculty member in the college enjoys the freedom to express his opinions and ideas.	66%	1.03	3.29
17	The college administration enjoys independence in defining its mission.	65%	0.99	3.23
18	The college management has the right to strengthen its academic partnerships.	70%	0.94	3.49
19	The college administration has the right to develop academic majors.	65%	1.06	3.24
20	A faculty member enjoys the freedom to train subject to accepted	71%	0.95	3.56
	<b>Mean of the Independence Dimension.</b>	<b>67%</b>	<b>0.74</b>	<b>3.36</b>
	<b>The General Mean of the Electronic Governance.</b>	<b>65%</b>	<b>0.68</b>	<b>3.25</b>

Source: prepared by the researchers based on the results of the SPSS V.25 program.

## Hypothesis Testing

**The First Major Premise:** There is a strong association between the demands of total quality management and electronic governance in its dimensions as shown in Table (5) which displays the matrix of simple Pearson correlation coefficients between total quality and its dimensions and electronic governance. Additionally, statistics on test type, sample size, and test significance are displayed in the table (Sig.), The calculated (t) value is bigger than the tabular (t)value and The (COHEN, 1983) rule, which is illustrated in Table(5)can be used to infer the correlation coefficient's strength.

**Table 5: Values and Levels of Correlation**

Correlation coefficient value	Level of correlation
less than (0.10)	Low correlation
From (0.10) to (0.30)	Moderate correlation
higher than (0.30)	Strong correlation

Preparation of the Researchers, Based on the Source, (Cohen, 1983).

The value of the simple Correlation Coefficient Between them was (.740\*\*), and this value denotes the strength of the direct relationship between them as well as the relationship of the dimensions of (TQM) with E-governance, Table (6) shows that there is a positive and Significant Correlation between Total quality management and electronic governance. Even after strategic planning (X5), they were all highly correlated and significant, hence the first main hypothesis can be accepted.

**Table 6: Matrix of Correlation between the Variable of Total Quality and its Dimensions and Electronic Governance**

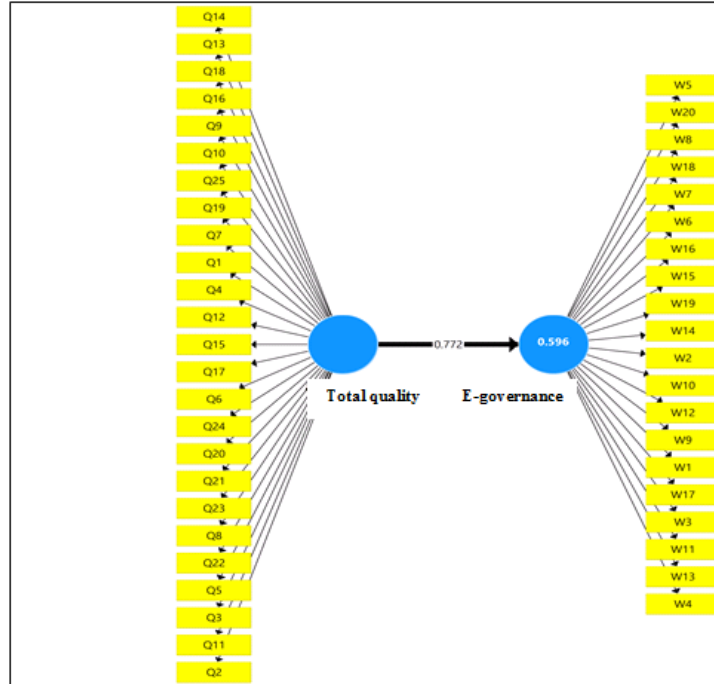
CORRELATIONS								
		X1	X2	X3	X4	X5	X	W
W	Pearson Correlation	.671**	.640**	.703**	.680**	.387**	.740**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	132	132	132	132	132	132	132
**. Correlation is significant at the 0.01 level (2-tailed).								

Source: Created by the Researchers Using SPSS V.25 Program Findings

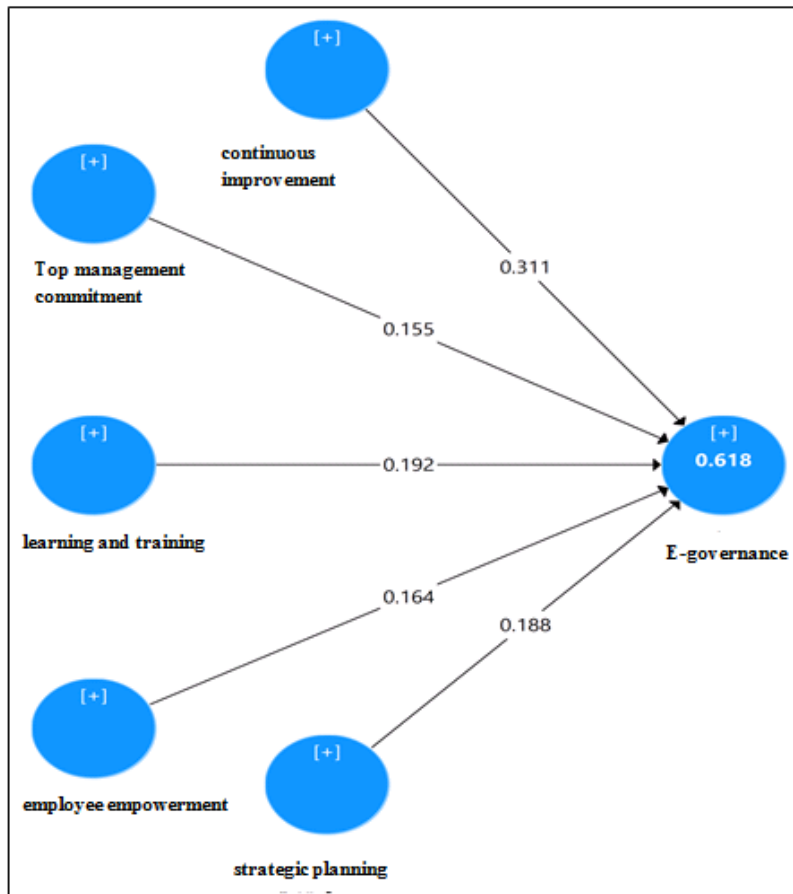
\*W = electronic governance

\*X = overall quality

**SECOND MAIN HYPOTHESIS:** The overall quality management has a statistically significant impact on establishing E-governance in all of its dimensions According to Figure (2) the statistical tool (Smartpls) was used to identify a causal relationship between overall quality and e - governance, Indicating that the overall quality management accounts for 60% of the changes affecting electronic governance, the direct effect coefficient (Path Coefficient) was approximately (0.772), while the coefficient of interpretation was (0.596) The remaining 40% may be attributable to other factors or variables that are not related to the overall quality. The is being investigated in the current research model, and it is shown in Table (1), Since the combined effects of the total quality dimensions (continuous improvement, senior management commitment, learning and training, employee empowerment, and strategic planning) explained about 62% of the changes that affect electronic governance, we can accept the second hypothesis, which states that the total quality variable has a significant and favorable impact on electronic governance.



**Figure 2: The Direct Impact of the Total Quality Variable on Electronic Governance**



**Figure 3: The Direct Effects of the Total Quality Dimensions on Electronic Governance**

## **Conclusions**

1. The research sample is appropriately knowledgeable about the demands of comprehensive quality management that educational institutions must meet.
2. E-governance contributes to ensuring the achievement of administrative effectiveness through the use of modern technologies in the work of educational institutions, which helps in building an integrated information system. Despite the advantages achieved by electronic governance, there are many risks that result from lack of experience, awareness, training, and weak procedures and tools applicable supervision.
3. Total quality management gives a competitive advantage to organizations, and if they want to implement it, they must meet the basic requirements on which they are based.
4. Educational institutions are fully convinced of the importance of quality as an approach and method of work, which should be adopted in all educational institutions, branches and different administrative levels.
5. The findings of the statistical analysis of the sample responses demonstrated the significance of electronic governance in educational institutions through the application of TQM criteria.
6. The use of electronic governance helps reduce time and effort, as well as eliminate red tape and errors in the work of educational institutions.
7. Educational institutions seek to adopt electronic governance by automation their work and introducing modern technologies, whether in administrative work, external dealings, or lectures.

## **Recommendations**

1. Forming independent committees within educational institutions to follow up, implement and evaluate e-governance requirements; And work to spread the culture of good electronic governance, including the principles of transparency, integrity, accountability and participation through.
  - a. Ensure freedom of expression for university academic and administrative bodies in exposing illegal practices or corruption that some leaders in higher education may fall into.
  - b. Ensuring that university academic and administrative bodies use the various means of media and publishing to express their opinions and the problems they suffer from.
  - c. Ensuring adherence to the principles of integrity, fairness and objectivity when dealing with illegal and illegitimate cases practiced by leaders in universities and colleges, or influential in higher education institutions.
2. Issuing legal legislation that guarantees the real independence of educational institutions from various financial and administrative aspects; Which will be reflected in improving the performance of educational institutions and their scientific competence.
3. Providing the physical and human environment that is compatible with the requirements of implementing electronic governance in educational institutions by issuing instructions and orders that encourage and simplify the implementation of the electronic governance system in educational institutions.
4. Allocating a special budget to cover the requirements for training and developing skills specialized in implementing the requirements of comprehensive quality and electronic governance in educational institutions.
5. Senior management should focus on advancing and increasing understanding of the concept of total quality management among administrative leaders and staff in educational institutions by incorporating them into training programs, workshops, conferences, and seminars and informing them of the successful experiences of international universities in managing the field of total quality.
6. To continually contribute to the enhancement of administrative procedures and processes, teamwork should be promoted and academic and administrative quality teams should be established.
7. Creating a framework for the ongoing improvement of educational institutions' inputs, so that the criteria used to pick each faculty member, administrator, and student are clear-cut, transparent, and based on objective standards.
8. In order to improve the skills of staff members and educate them, management of educational institutions must support electronic governance procedures by adopting the use of information technology, creating a separate department for it, and providing a specialized cadre for that.

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