

Article

The Impact Of Modern Information Technology Governance On The Quality Of Banking Service (Applied Research In A Sample Of Iraqi Banks)

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Abstract: This research thus seeks to examine how modern information technology governance affects the quality of banking services through examining the relationship between the application of these principles when managing modern technologies and banking performance. The banking sector is one of the most dependent sectors which has been using information technology to provide excellent services to customers. With the further development of the usage of the modern technologies like cloud computing, artificial intelligence, and big data processing there is a need for proper IT governance to address the appropriate usage of the technologies. In this regard, the research considers understanding the need to promote an appropriate framework for managing IT governance in banking institutions. Incorporated in this framework is the development of policies and procedures to govern the utilization of contemporary technologies and checking their compliance on the strategic plan of the institution. I also established that IT governance influences the improvement of the quality of banking services as it relates to the security, speed, and accuracy of service delivery as well as the satisfaction of customers' rising expectations. The study collects both archival data through literature review and survey data generated through case studies in banks that have adopted IT governance practices. The authors of the study prove that the enhancement of IT governance has an important positive impact on increasing the quality of banking services through increasing operation adaptability, better customer need satisfaction, and mitigation of technology risks. Besides, the research provides a framework of guidelines that banking institutions may use to properly adopt IT governance so as to harness the benefits of advanced technology with concomitant quality service delivery and customer satisfaction.

Citation: Jasim L. A. The Impact Of Modern Information Technology Governance On The Quality Of Banking Service (Applied Research In A Sample Of Iraqi Banks). American Journal of Economics and Business Management 2025, 8(1), 347-356.

Keywords: IT governance, Banking service quality

Received: 25th Dec 2024

Revised: 28th Dec 2024

Accepted: 18th Jan 2025

Published: 24th Jan 2025



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1. Introduction

The subject of leadership pertaining to the IT system is an emerging topic in the world today where the banking institutions are redefining their mission in the delivery of their services and also in the accomplishment of their business operations. This evolution, which can be attributed to the fast growing innovations in digital technology, comes with totally new challenges and of course new opportunities for innovation within banks that may lead to increased, "effectiveness in their service delivery and over all organizational efficiency.

In these changes, the concentration on the style of applying IT governance principles has emerged more essential than before. Implementing IT governance is not only about the application of regulation to the use of advanced technologies but acts as a fundament

to solidify the strategic vision of banking organizations. This is why IT is governance seen crucial since it has to ensure that technological advancements do not result in increased insecurity to customer information on the side of the banks.

The banking industry is highly competitive in terms of seeking customer attention and their satisfying needs which make the quality of banking as one of the strongest indicators of how successful a bank is in offering quality services to the targeted customer base. From this perspective, modern IT governance occupies a critical position as the means to achieve the provision of IT services in compliance with the best available practices. (Hafez, Abdel Nasser Alak, et al., 2012); (Ettish, A. A., El-Gazzar, S. M., & Jacob, R. A., 2017, pp. 361–370).

Chapter One

First: Research Problem

Centre of excellence for banking of institution increases pressure on banking institutions to embrace change and ensure that information technological is well harnessed to ensure that excellent banking services are offered to the clients. Despite the fact that, the banking industry world over has embraced the use of modern information technologies there lacks clear knowledge on how to attain the best integration of these technologies and their governance in order to deliver excellent services. The subject of the research is therefore to establish the centrality of the issue explored in the research problem: the way governance of modern information technologies affects the quality of banking services and if indeed this form of governance is important in achieving excellence and competitiveness in this industry.

Second: Research Significance

The management of the current information technology plays an important role in improving and building the quality of banking services. With high rates and progress of digitalization in the recent years and the varieties of difficulties that companies from the financial industry experienced, the banks have turned to the support of modern IT technologies to control their activity and advance the offered options for clients.

This research focuses on IT governance as a way of ensuring integration between banking technology and Banking processes with a view of enhancing efficiency, security, and effectiveness of service delivery. In addition, to establish the extent to which IT governance varies with the quality of banking services to assist banks make informed strategic choices in this area of significant competition.

Third: Research Objective

Thus, the purpose of this study is to establish the effects of modern IT governance on service delivery in the banking segment. The study focuses on how governance applications facilitate improvement of banking performance through effective organization and management of new technologies in; artificial intelligence, cloud computing, big data analytics among others. Further, it aims at finding out how banking institutions can achieve corresponding values of technological innovation and service quality and how technical processes will be managed to fit into the strategic map of the firm.

Fourth: Research Hypothesis

This research hypothesizes the existence of a statistically significant positive relationship between the implementation of modern IT governance and the improvement of banking service quality. In other words, the adoption of effective IT governance practices by banks will lead to an enhancement in the quality of banking services provided to customers.

Fifth: Research Population and Sample

The research population consists of the following banks: Baghdad Bank, Sumer Commercial Bank, Across Iraq Investment Bank, Iraqi National Bank, Iraqi Union Bank, Economy Investment and Finance Bank, Iraqi Credit Bank, Gulf Commercial Bank, Middle East Investment Bank, and Mansour Investment Bank. A total of 322

questionnaires were distributed, of which two were excluded due to their unsuitability for statistical analysis. Consequently, 320 valid questionnaires, representing 99% of the distributed questionnaires, were analyzed. This percentage is deemed acceptable for conducting statistical analysis.

Sixth: Data and Information Collection Sources

2. Materials and Methods

To achieve the study's objectives, data and information were collected using the following methods:

First Aspect: Theoretical and Academic

This aspect relies on the available resources, including local, Arab, and international sources, comprising scientifically peer-reviewed research, books, and several published studies related to the study's topics.

Second Aspect: Practical and Applied

Statistical equations were utilized to assess the importance of IT governance and the quality of banking services in the Iraqi organizations and banks under study while examining ways to improve their performance. Statistical methods were employed using SPSS (Version 26) and Microsoft Excel 2010 to derive the study's results.

Chapter Two: Theoretical Review

First: The Concept of IT Governance

Modern information technology IT is therefore one of the underlying pillars holding the banking sector performance. It includes practices and processes intended to facilitate the proper application of technology within an organization for purposes of meeting its goals and mission lines. More and more banks use IT governance to meet the requirements of regulations, optimize the business processes, improve the quality of services to clients. This is in holding high applications and adopting contemporary methodologies that bank need to enhance their services ad sustain organisations during volatility (Merhout, J. W., & O'Toole, J., 2015, pp. 1–6).

According to the Organization for Economic Cooperation and Development (OECD), IT governance is a system that defines how business organizations are directed and controlled, working out the roles of the board of directors, managers and other participants of the company, as well as the regulations they follow " (Na'im Dahmash & Ishaq Abu Zar, 2003, p. 27).

The International Finance Corporation (IFC) describes IT governance as "the system through which corporate tasks are managed" (Mohammad Mustafa Suleiman, 2006, pp. 15–16).

The study by Mufreh Ali Jassim, titled *The Impact of Information Technology on Achieving Banking Service Quality: An Analytical Study on Some Private Iraqi Banks in Baghdad*, adopted a cognitive and exploratory approach to identify key links that benefit the banking sector between information technology and the quality of banking services. A questionnaire was employed to collect data and opinions from a sample of employees in private Iraqi banks to draw tangible conclusions that could be leveraged to formulate the necessary insights and recommendations for the healthy growth of banking services in the Iraqi banking sector.

As a learned technique, the ITG skill is to show hierarchy in the proper performance of IT governance models; regarding the skills and environmental status which are known as key success factors in this globalized revolution added for the markets and organizational challenges especially banking sects. This correlates with the organizational development concept called the Punctuated Equilibrium Theory which describes the stage that an organization is in.

The primary benefits of implementing IT governance in the banking sector include achieving several advantages for banks, such as enhancing cyber security, improving operational efficiency, and ensuring compliance with regulations and legislation.

Furthermore, IT governance enables banks to deliver customized and rapid services that meet customer expectations, thereby increasing customer loyalty and expanding the bank's market share (Al-Madbouli, Dalia Mohammed, 2016).

Second: The Concept of Information Technology (IT)

Information technology (IT), with its tools and mechanisms, has proven to be of immense significance. Since the Industrial Revolution, few advancements have impacted human life as profoundly as IT, bringing transformative changes to transactions and communication (Rashid Al-Marri, 2018). IT has become indispensable for individuals, organizations, and nations, especially amidst the rapid technological transformations the world is witnessing and the continuous advancements in computer systems, software, and communication tools. The sheer volume of information, which continues to grow and can now be transferred with ease, is one of the defining characteristics of this era (Abdel Mutaal A., 2018, p. 770).

From a technical perspective, information security is defined as a set of tools, techniques, and procedures necessary to ensure the protection of information from both internal and external threats (Rashid Mohammed Al-Marri, 2018, p. 17).

Third: The Importance of IT Governance

The importance of IT governance lies in its role in enhancing the quality of banking services. Amid increasing challenges such as rising customer expectations and the complexity of regulatory environments, IT governance emerges as a critical factor in improving the quality of banking services. By adopting methodologies like DevOps and advanced data analytics, banks can enhance the speed and reliability of their services, leading to increased customer satisfaction and a stronger market position (Manjula Gupta, 2022, Vol. 14, Issue 4).

Information Technology as a Tool in Banking Management

Information technology (IT) is recognized as one of the essential tools for managing banking operations. It facilitates the development of systems characterized by confidentiality, flexibility, speed, and transparency (Asaad Siraj, 2014, p. 114). The application of IT in the banking work environment also aids in streamlining banking procedures, enabling the efficient delivery of banking services without wasting time or effort. This, in turn, enhances efficiency and productivity by simplifying the processes of providing banking services.

Experimental studies have shown that institutional flexibility reflects an organization's dynamic ability to restructure, regroup, and integrate resources, information, processes, and technologies across its various activities (Yang and Liu, 2012). This highlights the importance of effective and successful investment in diverse types of knowledge to obtain essential information that allows for the swift, efficient, and accurate understanding of data in the context of contemporary human life (Hussein Theeb, 2012, p. 46).

IT's Role in Enhancing Institutional Strategy

Information technology serves as a fundamental tool to enhance an organization's strategy by providing critical data. With continuous advancements, IT has become a primary support mechanism for strengthening relationships with clients and suppliers. This is achieved through three defined strategies (Abdullah Ghanem & Mohammed Qureshi, 2011, p. 39):

1. Cost Reduction: Lowering production costs leads to increased profitability.
2. Differentiation: Advances in IT enable organizations to distinguish their services and outperform competitors.
3. Innovation: Employing modern work methodologies fosters creative development and boosts production efficiency. In summary, IT plays a vital role in improving supplier relationships and transforming the fundamentals of competition in the banking and business sectors.

Fourth: The Concept of Banking Service Quality

Banking service quality is one of the most important strategies used by banks, as it is considered a distinctive tool to meet all the requirements for development and growth, ensuring customer satisfaction, understanding their current and future needs, and striving to fulfill them. Quality means that the bank's ultimate goal is to align with the customer's expectations to the extent that the customer is satisfied. Understanding the customer's needs and expectations is essential for gaining new customers or retaining existing ones. This is achieved by offering services or products that meet their needs, are reasonably priced, and are delivered on time (Emari et al., 2011).

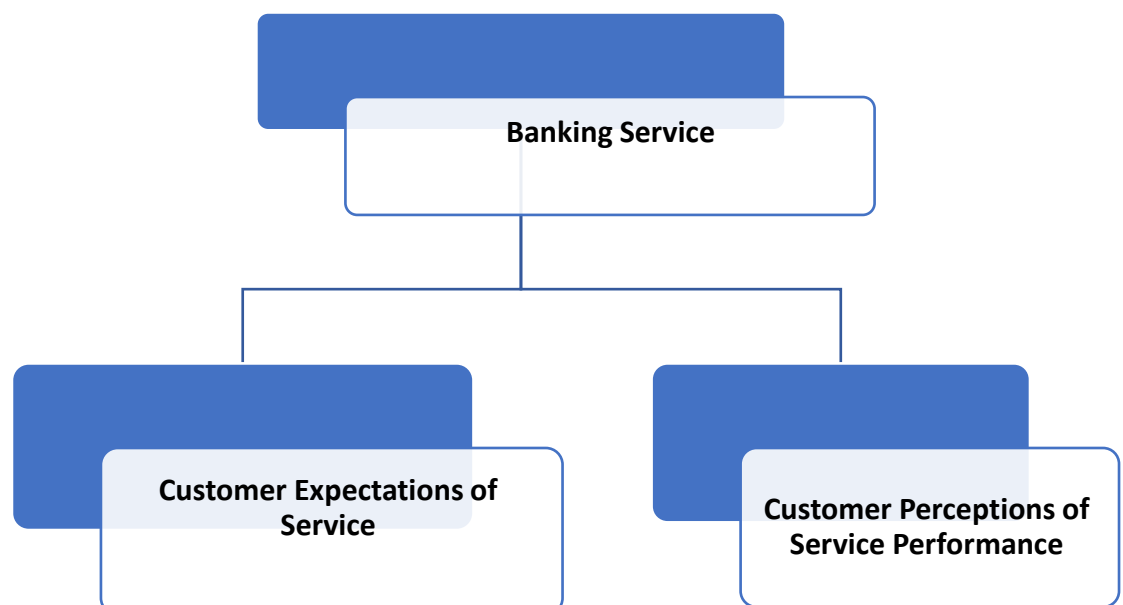
Over time, various dimensions of service quality have been proposed, initially formulated by Parasuraman et al. in 1988. They suggested ten dimensions: tangibles, reliability, responsiveness, competence, courtesy, credibility, security, accessibility, communication, and understanding the customer. Initially, the developers of the model defined ten dimensions of service quality, but after conducting multiple tests, it was found that some dimensions were inherently related, leading to a reduction in the total number of dimensions to five: reliability, assurance, tangibles, empathy, and responsiveness. These five dimensions are believed to reflect service quality across various industries and environments (Gupta, M. 2022, 14(4), 1–10).

Banking service quality has been defined as an activity or task received by the customer through employees, organizations, or machines. The provision of services may be linked to a product or may not be associated with one (Prasad, 2015).

3. Results

Banking service quality has also been described as a dynamic state related to products, services, people, processes, and environments. This dynamic state meets or exceeds expectations (Ziad Farhan, 2010, p. 14). According to Mauri et al. (2013), banking service quality is a set of processes with a beneficial content, dominated by intangible elements over tangible ones. These processes are perceived by individuals or organizations through their importance and utility value, which form the source of fulfilling current and future financial and credit requirements. Simultaneously, they represent the bank's profitability source through a reciprocal relationship between both parties.

Figure 1. Illustrates the concept of banking service quality



Source: (Dallila, 2020: 13)

Fifth: The Importance of Banking Service Quality

Service quality plays a crucial role in designing and marketing service products. Service organizations have become increasingly aware of the importance of implementing the concept of Total Quality Management (TQM) and its role in achieving a competitive advantage. The growing impact of financial globalization on banking institutions and their continuous efforts to provide a wide and distinctive range of services to meet the needs and desires of their customers has led them to compete in adopting quality concepts and striving to offer high-quality services. However, several factors have contributed to promoting the importance of quality in financial and banking services, the most important of which are: (Mahmoud, 2021: 43)

1. Globalization: Refers to the internationalization of markets and financial institutions and the growth of reciprocal relationships between economies around the world, which increases the interaction between markets and financial institutions. The result is the globalization of the financial and banking services industry.
2. Technology: Technology provides the following benefits to banks: enhancing transparency, boosting managers' opportunities, and strengthening the banks' capabilities to communicate with regulators for financial statements and reports.
3. Competition: The competition among financial institutions in offering services to customers, in addition to competition between banks in different countries.
4. Financial Innovations: Refers to new financial services.
5. Global Integration: Refers to the establishment of mechanisms for the exchange and trade of foreign currencies and foreign exchange rate differentials on a global level.

4. Discussion

Chapter Three: Practical Aspect

First: Correlation Analysis between the Study Variables

Introduction

The primary objective of the correlation coefficient is to determine the strength of the relationship between variables and indicate whether the correlation is strong, weak, or non-existent. It also aims to identify the direction of the relationship between the two variables, i.e., whether the relationship is positive (direct) or negative (inverse). Studying correlation is fundamental for investigating and analyzing causal relationships. Furthermore, correlation measures are essential indicators for assessing validity and reliability, as they play a significant role in ensuring the accuracy of tests and data collection procedures (Zayed, 2004:163).

Testing the Main Hypothesis of Correlation (First Hypothesis):

Hypothesis

(There is no statistically significant correlation between IT governance and the quality of banking services.)

Table (1) shows that the correlation coefficient between IT governance and the quality of banking services is 0.756, with a significance value of 0.000, which is less than the significance level of 0.01. This indicates a strong, positive, direct correlation. The value of the t-test is 10.844, which is higher than the tabulated value of 2.33. These results confirm the rejection of the null hypothesis and the acceptance of the alternative hypothesis, which states: There is a significant relationship between IT governance and the quality of banking services. This can be attributed to the fact that the banks under study are improving their operations by utilizing modern technology, which in turn enhances the quality of their banking services.

Table 1. Results of the Correlation Analysis between IT Governance and the Quality of Banking Services

	Information Technology Governance (X)
Quality of Banking Services (Y)	.756
Significance Level	0.000
Calculated t-test Values	10.844
Tabulated t-test Values	2.33
. **Correlation is significant at the 0.01 level (2-tailed).	

Second: Testing the Impact Relationships Between the Research Variables**Introduction:**

In the practical analysis, the researcher will answer the hypotheses regarding the impact relationship to demonstrate the effect between the variables and their direction. A positive effect between variables means that an increase in one variable is accompanied by an increase in the other. On the other hand, a negative effect suggests that an increase in one variable results in a decrease in the other. This is illustrated in the following hypothesis.

Test of the Primary Impact Hypothesis (First):

(Information Technology Governance has no statistically significant impact on the quality of banking services.)

The results in Table (2) show that there is a significant effect of Information Technology Governance on the quality of banking services, with an R^2 value of 0.572, which means that 57.2% of the variation in the quality of banking services is explained by changes in the implementation of Information Technology Governance in the banks under study. The remaining 42.8% is attributed to other factors not included in the study model. This result is further supported by the F-value of 424.966, which exceeds the critical F-value of 6.72 at a significance level of 0.01 with 1,318 degrees of freedom. This result indicates that the banks in the study show clear banking service quality, evident through their recognition of the importance of applying IT governance and maintaining its use with all available resources to achieve banking objectives. In other words, there is a clear impact relationship between the two variables. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, stating that Information Technology Governance has a statistically significant effect on the quality of banking services.

Table 2. Statistical Indicators for Analyzing the Effect of the Information Technology Governance Variable (X) on the Quality of Banking Services (Y)

Dependent Variable	Information Technology Governance (X)			(R ²)	(F)	The calculat ed (t) value.	Sig	Decisio n
Quality of Banking Services	Information Technology Governance (X)	(α)	1.078	0.572	424.966	7.417	0.000	Accept the alternative hypothesis
		(β)	0.749			20.615		
Critical F Value = 6.72, Critical t Value = 2.34, Sample Size = 319								

Number of Accepted Null Hypotheses = 0
Number of Accepted Alternative Hypotheses = 1

5. Conclusion

1. The results of the statistical analysis for the variable of educational qualifications of the sample employees in the banks under study show that they hold Bachelor's degrees, Master's degrees, PhDs, and Diplomas. This indicates a high proportion of university degree holders, as the banks under study aim to recruit qualified candidates to fill management positions, recognizing the importance of having skilled human resources for such specialized work in the banking sector.
2. The statistical results indicated that all the measures of Information Technology Governance and Banking Service Quality are positively related. This can be explained by the fact that, the analysed banks' top management creates plans for obtaining technological equipment and programmes and defines the technological requirements for the analysed banks to strengthen their financial position.
3. The statistical analysis brought out positive relationship between the variables of Information Technology Governance and Banking Service Quality. This affirms this researcher's argument that the top management of the banks assigns significant value to eradicating constraints and centralising processes that facilitate development to adapt to the global trends in the quality of modern banking services.
4. The qualitative study findings confirmed that the four top management teams of the under-researched banks formulate strategies on acquiring technological hardware, software and also determines the appropriate technology that should be deployed in the respective banks.
5. The statistical results showed that the banks under study have skilled and qualified personnel for using modern software, devices, and technological equipment.
6. The statistical analysis results indicated that the banks under study work on developing the skills and experiences of their employees as a critical resource for information technology.

Recommendations

1. Identify the components related to the installation and operation of the system, such as training, the performance of application software, implementation plans, system and data migration, and testing change plans and strategies.
2. Work on providing a financial information system in the banks under study that protects the financial database (protection from hacking and viruses).
3. Direct the banks under study to work on providing modern technological devices and equipment that keep pace with developments, aiming to improve their financial performance, which in turn leads to high-quality banking services.
4. Provide the banks under study with the necessary information to carry out research and development projects in the appropriate quantity, time, and quality, to achieve creativity and improvement in information technology governance, which contributes to enhancing banking service quality.
5. Update policies and procedures to ensure employee motivation and skill development, which are vital to this work. The banks under study should aim to foster a work environment that encourages creativity and individual and collective growth. Improving educational processes and directing them toward

innovation can enhance employee performance and contribute to better achieving the banks' objectives.

6. Make feedback a primary tool within the banks under study to enhance transparency and interaction between employees and top management. Feedback can serve as an opportunity to identify strengths, as well as to set clear goals and provide constructive guidance on how to improve financial performance, creating a positive work environment.

Research Summary

Banks are among the organizations that extensively use information technology governance in their business operations, which has enabled them to carry out numerous banking operations using this technology. This is considered one of the most significant factors contributing to a fundamental shift in banking practices in the age of globalization. Iraqi private commercial banks have paid considerable attention to intensifying the use of the latest information and communication technologies, as well as computers, and effectively adapting them to innovate new banking services. They have also focused on developing methods of service delivery that ensure smooth and accurate banking services from banks to clients with ease and efficiency. This aligns with the contemporary and growing demands of various customer segments on the one hand and ensures steady growth in the bank's operations and profits on the other.

As for Iraqi commercial banks, they are characterized by their large capital sizes and the significant value of their assets. However, they face a range of challenges, including the diversification and multiplicity of banking risks, compliance with Basel Committee regulations, and increasing pressure to implement various banking and financial techniques in alignment with financial work standards.

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