



## The Mediating Role of Knowledge Sharing in the Relationship Between Information Technology and Competitive Advantage: A Study of Its Application in Iraqi Banks

Mustafa Mohammed Kleban Zuhairi  
Imam Aladham University College - Iraq

**Corresponding Author:** Mustafa Mohammed: [mustafamoh@imamaladham.edu.iq](mailto:mustafamoh@imamaladham.edu.iq)

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### ABSTRACT

The current study aims to examine the role of information technology in enhancing the competitive advantage of Iraqi banks through knowledge exchange as a mediator in the relationship. The study sample of 268 employees in distributed across 10 private banks operating in Baghdad. The descriptive analytical approach and structural equation modeling relied on the Smart PLS 3 statistical analysis program. The results generally indicate the importance of information technology and knowledge exchange in enhancing the competitive advantage of institutions. Therefore, institutions should develop a strong technical infrastructure and a corporate culture supporting knowledge exchange to achieve sustainable competitive performance. Banks should increase their efforts to invest strategically in information technology to improve internal operations and enhance competitive capabilities. These investments include upgrading the technical infrastructure and training employees on the use of modern technologies.

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## INTRODUCTION

In today's world, information technology has become a major driver of growth and development in various economic sectors, including the commercial banking sector. Research has shown that the use of information technology in banks can lead to achieving a competitive advantage by improving operational efficiency, providing more distinguished services to customers, and quickly adapting to changes in the market (Megha et al., 2022). Information technology (IT) represents a pivotal catalyst for growth and progress across economic fields, especially in the banking sector. Research findings emphasize the transformative impact of information technology on banks, and demonstrate its role in enhancing competitive advantage by enhancing operational efficiency, providing unique customer services, and quickly adapting to market dynamics (Sudatt et al, 2022). The integration of technology into banking operations not only streamlines operations and enhances productivity but also facilitates the provision of tailored products and services to customers, thereby increasing customer satisfaction and loyalty. Moreover, information technology enables banks to respond quickly to market shifts, ensuring relevance and competitiveness amidst the evolving industry landscape.

By embracing technological innovations, banks can navigate the digital age with skill and drive growth and development while securing a sustainable position in the market (Awwad & El Khoury, 2024). However, the mere use of information technology does not necessarily guarantee a competitive advantage. Other factors may influence this relationship, such as knowledge sharing among employees and different departments within the bank. Knowledge sharing can help in employing information technology more effectively and making the most of it, as the knowledge-sharing process plays an important role in strengthening the relationship between the use of information technology and competitive advantage within banks. Studies have shown that knowledge management, intellectual capital, and strategic leadership significantly impact a company's competitive advantage (Dina et al., 2022) (Dicky et al., 2020). In addition, organizational intelligence has been identified as a mediating factor between IT capabilities and competitive advantage, emphasizing the importance of leveraging knowledge within organizations (Fawwaz, 2021).

Moreover, the effective use of IT, along with knowledge sharing between employees and departments, can improve operational capabilities and electronic collaboration and, ultimately, a stronger competitive position for banks (Panji et al., 2023). This understanding will help banks develop effective strategies to use IT and knowledge strategically to achieve sustainable competitive advantage, especially in the Iraqi environment, which is one of the emerging environments in the banking sector in light of a dynamic and constantly changing environment. It needs to employ these practices in its activities to raise performance levels due to the importance of these banks in promoting and sustaining economic growth in Iraq. Iraqi banks play an important role in the country's economy through various mechanisms. Studies have shown that the performance of investment portfolios in Iraqi banks is affected by economic crises, GDP, market value, and global oil prices (Saad & Anissa, 2023). In addition, the determinants of bank

profitability in Iraq include factors such as bank size, equity-to-total assets ratio, GDP growth, and government effectiveness, which significantly affect the profitability of Iraqi banks (Hamid et al., 2020). Moreover, banking assets in Iraq have a long-term equilibrium relationship with inflation, indicating the importance of the banking sector in managing economic stability and inflation rates within the country (Muhannad et al., 2022). In general, Iraqi banks not only provide basic financial services but also contribute to economic development, encouraging investment and stability within the country (Sabah & Nibras, 2022). Mobile technology is a crucial ICT financial instrument in emerging economies (Abdelrhman, 2025; Hussein et al., 2023). Therefore, enhancing the culture of knowledge sharing can improve the benefits derived from IT investments, ultimately contributing to a sustainable competitive advantage in the Iraqi banking sector. Despite the growing interest in the impact of information technology on competitive advantage, there is a lack of research examining the role of knowledge sharing as a mediating factor in this relationship, especially in the local context of Iraqi banks.

Furthermore, there is a lack of quantitative evidence demonstrating how cultural and organizational challenges can influence the effectiveness of knowledge sharing in enhancing competitive advantage. Therefore, this study seeks to fill this gap by exploring the triangular relationship between information technology, knowledge sharing, and competitive advantage in Iraqi banks. The research problem is (Has the management of Iraqi commercial banks been able to employ the mediating role of knowledge sharing in the relationship between information technology and the competitive advantage of these banks? Accordingly, the way information technology affects the competitive advantage will be explored, as well as how knowledge sharing can enhance this relationship.

This research provides significant knowledge additions to the academic literature and practical practices in the field of knowledge management and information technology in the banking sector, particularly in the emerging Iraqi context. This research expands on existing theories that emphasize the role of information technology as an enabler of competitive advantage through the mediation of knowledge sharing, supporting knowledge management theories (such as the Nonaka model, 1994) and technological capability theories (such as Bharadwaj, 2000). Furthermore, it develops a mediation model that links information technology (comprising databases, software, and hardware) and competitive advantage (through cost, quality, and market share) via the mediator of knowledge sharing (with its dimensions: culture, social networks, and incentives). It bridges the research gap in the local Iraqi context, which is considered an unstable environment and most in need of such a study. This study is one of the first quantitative studies to examine the triangular relationship between information technology, knowledge sharing, and competitive advantage in the Iraqi context, which is considered emerging and faces unique challenges, such as weak technological infrastructure and a traditional organizational culture that may hinder knowledge sharing.

## **THEORETICAL REVIEW**

### ***The relationship between information technology and competitive advantage in banks:***

Information technology plays an important role in shaping the competitive advantage of banks. Studies have shown that a bank's competitive advantage is strongly influenced by its digital business strategy, which includes administrative and operational capabilities, information technology, and electronic collaboration (Panji et al., 2023). In addition, technological adaptation has been found to enhance banks' financial performance, although the impact may vary based on the level of competition in the market (Mudeer et al., 2022). Moreover, the application of advanced information technology in the banking sector not only improves efficiency and reduces costs but also contributes to the development of new products and services, which ultimately enhances customer satisfaction and market position (Sudatt et al., 2022). E-banking, facilitated by information technology, provides secure, reliable, and cost-effective services, providing a strategic advantage to banks and improving customer experience and operational efficiency (Khafaj et al., 2024). Overall, leveraging information technology effectively can significantly enhance a bank's competitive advantage and financial performance in today's dynamic market landscape.

### ***The relationship between information technology and knowledge sharing in banks:***

It plays an important role in facilitating knowledge sharing within banks, which ultimately impacts customer relationship management (CRM) and profitability [2]. The characteristics of technology significantly influence knowledge sharing, leading to improved CRM capabilities and profitability in the banking sector [2]. In addition, the use of knowledge management techniques in banks highlights the importance of understanding how individual traits, such as dispositional envy, can influence knowledge sharing behaviors [4]. Furthermore, creating an environment conducive to knowledge sharing through technology can enhance innovation within banks, promoting the development of new products and processes [3]. Overall, the integration of information technology into banking operations not only enhances knowledge sharing but also leads to innovation and profitability by improving CRM capabilities. By reviewing the relationship between the variables, the following hypotheses can be formulated:

H 1: *There is a positive relationship between information technology and the competitive advantage of private Iraqi banks.*

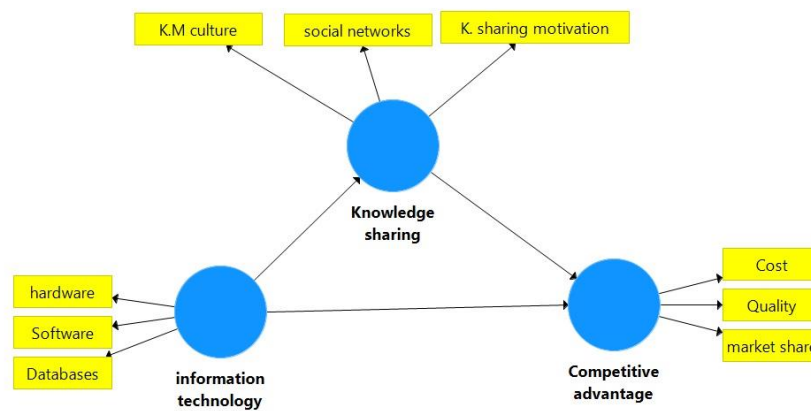
H 2: *There is a positive relationship between information technology and knowledge sharing in Iraqi banks.*

H 3: *The impact between information technology and competitive advantage will be magnified by the variable of knowledge sharing in Iraqi banks.*

**METHODOLOGY**

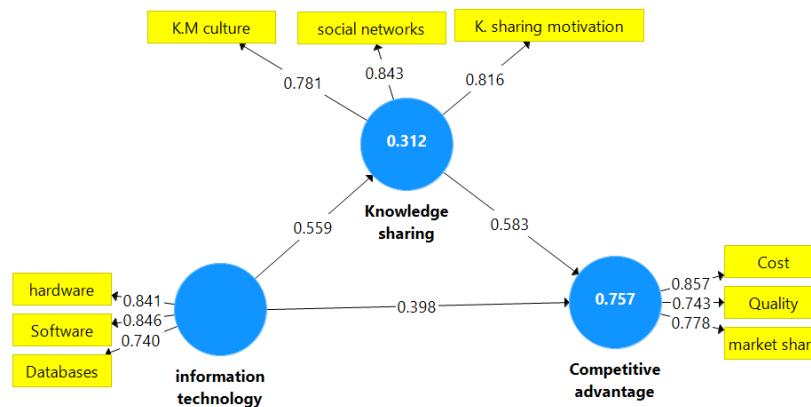
The descriptive analytical approach was used for a sample of employees in Iraqi commercial banks. It was applied in 10 Iraqi banks listed in the Iraq Stock Exchange. The study population consisted of 1300 employees. A random sample of employees from all administrative levels, upper, middle and executive, was taken, amounting to 296. The final sample suitable for analysis became 268, due to the exclusion of a number of incomplete samples, with a response rate of 90.54%, which is a high percentage of the original selected sample, consistent with the objectives of the study.

The hypothetical model of the research: Figure (1) below shows the study model represented by the independent variable (information technology) and the dependent variable (competitive advantage), while the mediating variable (knowledge sharing)



**Figure 1. hypothetical model of the research**

Model quality test: Figure (2) below seeks to test the effect of the independent variable through three sub-dimensions (Databases, Software, Hardware) on the competitive advantage of banks in the presence of three dimensions (cost, quality, market share) through the mediating variable "knowledge sharing" consisting of three sub-dimensions (k.culture, social networks, k.shering motivation)



**Figure (2) Model quality test**

**Table (1) Validity and reliability**

		<i>Outer Loadings</i>	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>	<i>(AVE)</i>	<i>VIF</i>
<b>Competitive advantage</b>	Cost	0.857	0.705	0.836	0.631	<b>1.893</b>
	market share	0.778				<b>1.412</b>
	Quality	0.743				<b>1.540</b>
<b>Knowledge sharing</b>	K. sharing motivation	0.816	0.748	0.855	0.662	<b>1.484</b>
	K.M culture	0.781				<b>1.232</b>
	social networks	0.843				<b>1.472</b>
<b>information technology</b>	Databases	0.740	0.742	0.851	0.657	<b>1.743</b>
	Software	0.846				<b>1.657</b>
	Hardware	0.841				<b>1.463</b>

The results of Table (1) above indicate, in general, that all variables show good levels of reliability, reflected by the Cronbach's Alpha index and the composite reliability index, and the average variance extracted index (AVE) also falls within the goodness of fit, and there is no problem of collinearity in the variables, reflected by the VIF index, all of which are less than 3, and fall within the acceptable range. As for the external loadings, they indicate good contributions of the sub-variables to the formation of the main variables.

**Table (2) Cross Loadings**

<b>Cross Loadings</b>			
<b>Diminutions</b>	<b>Competitive advantage</b>	<b>Knowledge sharing</b>	<b>information technology</b>
<b>Databases</b>	0.472	0.396	0.740
<b>Software</b>	0.667	0.595	0.846
<b>Hardware</b>	0.594	0.324	0.841
<b>Quality</b>	0.743	0.810	0.446
<b>Cost</b>	0.857	0.593	0.582
<b>market share</b>	0.778	0.482	0.709
<b>social networks</b>	0.711	0.843	0.591
<b>K. sharing motivation</b>	0.657	0.816	0.391
<b>K.M culture</b>	0.586	0.781	0.347

Table (2) above shows the results of the cross-loadings for the variables "competitive advantage," "knowledge sharing," and "information technology." In general, it can be noted that the variables related to information technology (databases, software, hardware) are more related to this variable than the other variables, while the variables related to knowledge sharing (quality, motivation for knowledge sharing, knowledge management culture, social networks) are

more related to knowledge sharing. The variables related to competitive advantage (cost, market share, quality) are more related to this variable, with medium correlations with the other variables.

**Table (3) Fornell-Larcker Criterion**

Varibels	Fornell-Larcker Criterion		
	Competitive Advantage	Knowledge Sharing	Information Technology
Competitive advantage	0.794		
Knowledge sharing	0.805	0.814	
information technology	0.724	0.559	0.811

The Fornell-Larcker Criterion table shows the discriminant validity of the three variables: competitive advantage, knowledge sharing, and information technology. In general, the values in the Table above indicate that the three variables have discriminant validity, as each square root of the average variance extracted (AVE) is larger than the relationships between the variables, which means that each variable discriminates itself well from the other two variables. Deductive analysis (hypothesis testing): After ensuring the quality of the model's fit, we will test the research hypotheses through the following model, which aims to test the effect of the independent variable (information technology) on the dependent variable (competitive advantage) through the mediating variable (knowledge sharing), as in Figure (3) below.

**Figure (3) Hypothesis testing model**

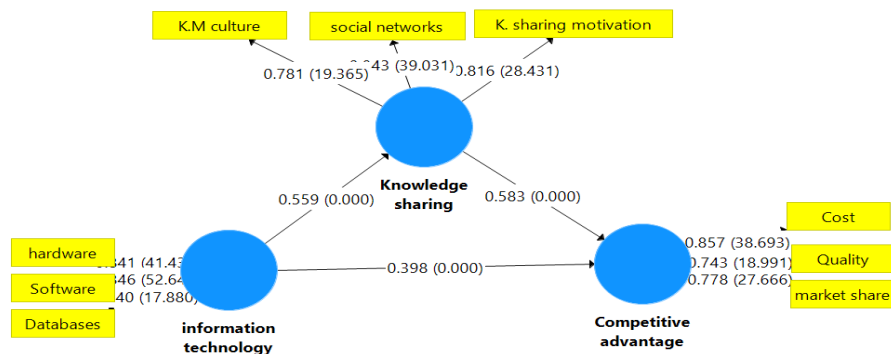


Table (3) below reflects the results of the hypothesis test, as the results indicate that there is a statistically significant effect of the knowledge-sharing variable on the competitive advantage of banks and that this effect is significantly large and positive. The value of  $P < 0.05$  means that the effect is highly significant at the level of (0.583), i.e., a change of one unit in the knowledge-sharing variable will increase the competitive advantage of the banks in the research community by 58%. Also, for the information technology variable, it affects the competitive advantage variable at a level of 39.8%, meaning that a change of one unit in the information technology variable with its three dimensions (Software, hardware) (Databases) will increase the competitive advantage of the banks in the research community at a level of 39.8%. There is also a statistically significant effect of the

information technology variable on knowledge sharing at a rate of 55.9%, meaning that a change of one unit in the information technology variable with its three dimensions (Databases, Software, hardware)) will increase the level of knowledge sharing of the banks in the research community by 55.9%. There is an indirect effect of information technology on competitive advantage through knowledge sharing that is positive and significant. In terms of P value  $< 0.05$ , which means that the effect is highly significant at a level of 0.326.

**Table (4) Results of testing Path coefficient**

Path coefficient	$\beta$	(STDEV)	T	P Values
Knowledge sharing -> Competitive advantage	0.583	0.043	13.689	0.000
information technology - > Competitive advantage	0.398	0.042	9.471	0.000
information technology - > Knowledge sharing	0.559	0.043	13.098	0.000
information technology - > Knowledge sharing -> Competitive advantage	0.326	0.036	9.109	0.000

## RESULTS AND DISCUSSION

All the effects shown in Table (4) above are positive and highly significant, which means that both knowledge sharing and information technology have a significant impact on competitive advantage. In addition, information technology has a significant impact on knowledge sharing, which in turn positively affects competitive advantage. The indirect effect of information technology on competitive advantage through knowledge sharing is also significant and positive, indicating an important role of knowledge sharing as a mediator in the relationship between information technology and competitive advantage. As shown below, The results indicate that knowledge sharing has a significant and positive impact on the competitive advantage of enterprises. This effect is highly significant since the P value  $< 0.05$ . This result is consistent with many previous studies that have emphasized the importance of knowledge sharing in enhancing the competitive advantage of enterprises. Nonaka (1994) found that organizations that promote knowledge sharing among their employees have a better ability to innovate and achieve competitive superiority. This result is consistent with the study of Wang et al. (2020), which concluded that knowledge sharing enhances innovation and helps improve the competitive performance of companies. Kim and Park (2021) also confirmed that enhancing a culture of knowledge-sharing can lead to increased organizational efficiency and effectiveness. Although some studies agree on the importance of knowledge sharing, Lee et al. (2019) indicated that the impact of knowledge sharing can be limited in environments with an unsupportive organizational culture.

The results indicate that information technology has a positive and significant impact on organizations' competitive advantage. This indicates the importance of the role of information technology in improving competitive performance. This result supports some of the results of studies. Müller et al. (2021) found that investments in information technology contribute significantly

to improving the competitive performance of organizations by improving operational efficiency and creating new innovative opportunities. Also, Sousa and Rocha (2019) showed that information technology can be a major driver of change and digital transformation that enhances competitive advantage. On the other hand, some studies have found that technology alone is not sufficient to improve competitive performance without a comprehensive strategy that includes other aspects, such as human and organizational resources (Melville et al., 2004). This suggests that technology must be integrated with other factors to achieve a positive impact. This intersects with the findings of Yoo et al. (2020), which indicated that over-reliance on technology without effective integration strategies can be counterproductive, emphasizing the importance of integration between technology and other organizational aspects.

The results indicate that information technology has a significant and positive impact on knowledge sharing among employees. This effect is highly significant, indicating the role of information technology in facilitating the flow of information. Chen et al. (2022) showed that information technology facilitates the process of knowledge sharing and improves the ability of organizations to innovate. Zhang and Venkatesh (2021) also confirmed that information systems help create a collaborative environment that supports knowledge sharing. It differs from the results of Garcia et al. (2020), which focused on potential challenges such as resistance to change by employees, which may limit the effectiveness of information technology in promoting knowledge sharing. It also intersects with Garcia et al. (2020), which focused on potential challenges, such as resistance to change by employees, which may limit the effectiveness of information technology in promoting knowledge sharing. The results indicate that the impact of information technology on competitive advantage is significantly enhanced by knowledge sharing. This indirect effect is highly significant, indicating the importance of the role of knowledge sharing as a mediator. Agree with Chuang et al. (2021) showed that the positive impact of information technology on competitive advantage, and this result supports the findings of the study by Chuang et al. (2021) that showed that the positive impact of information technology on competitive advantage is greatly enhanced by its role in improving knowledge sharing. Also, the study by Li and Liu (2020) confirmed that technology enhances the effectiveness of knowledge management processes, which in turn contributes to improving competitive performance. The study by Wu et al. (2019) indicated that the interaction between information technology and knowledge sharing can lead to enhancing innovation and overall company performance. It intersects with the results of some studies, such as the study by Nguyen et al. (2019), which indicated that the mediating relationship between information technology and competitive advantage through knowledge sharing may be affected by external factors such as administrative support and organizational policies.

## **CONCLUSIONS AND RECOMMENDATIONS**

The results generally indicate the importance of information technology and knowledge sharing in enhancing enterprises' competitive advantage. Therefore, enterprises should focus on developing a strong technical infrastructure and a corporate culture that supports knowledge sharing to achieve sustainable competitive performance. Bank management should focus on promoting a culture of knowledge sharing among employees. This can be achieved by organizing workshops and seminars and developing internal platforms for exchanging knowledge and experiences. Increase banks' efforts to invest strategically in information technology to improve internal operations and enhance competitive capabilities. These investments include updating the technical infrastructure and training employees to use modern technologies. We recommend that Iraqi bank management adopt information technology solutions that facilitate knowledge sharing among employees, such as knowledge management systems and collaborative systems that support communication and effective information sharing, IT strategies should be integrated with knowledge-sharing enhancement programs. These strategies should focus on using technology to support and facilitate knowledge sharing, which contributes to enhancing competitive advantage in the long term.

## **FURTHER STUDY**

In light of the presented study, some limitations emerge that may affect the generalizability or interpretation of the results. Most notably, the study sample was limited to 10 private Iraqi banks in Baghdad, which may limit the generalizability of the results to government banks or those outside the capital, as well as to banking sectors in other countries with different economic and regulatory environments. Furthermore, the study relied on questionnaires as the primary tool, which may be affected by respondent bias (such as the tendency to respond to socially desirable responses). External influencing factors such as the impact of government policies or economic crises were not included, as well as the neglect of the role of administrative leadership or organizational structure in promoting knowledge sharing. Based on these limitations, future research can be directed toward the following topics: Adding mediating or moderating variables such as organizational intelligence or digital readiness. Examining the impact of strategic leadership as a motivating or hindering factor in the relationship between information technology and competitive advantage. Conducting a comparative study between government and private banks or between Iraqi banks and banks in neighboring countries (such as Jordan and Saudi Arabia). Apply the model in non-banking sectors (such as industrial or service companies) to test its generality.

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