



Tikrit Journal of Administrative and Economics Sciences

مجلة تكريت للعلوم الإدارية والاقتصادية

EISSN: 3006-9149

PISSN: 1813-1719



The role of using electronic payment cards in implementing financial inclusion

Mohammed H. Adnan*

College of Administration and Economics/University of Anbar

Keywords:

Financial inclusion, electronic payment cards, ATMs, point-of-sale devices, withdrawal devices, local retail financial transactions.

ARTICLE INFO

Article history:

Received 17 Apr. 2025
Accepted 26 May. 2025
Available online 30 Jun. 2025

©2023 THIS IS AN OPEN ACCESS ARTICLE
UNDER THE CC BY LICENSE

<http://creativecommons.org/licenses/by/4.0/>



*Corresponding author:

Mohammed H. Adnan

College of Administration and
Economics/University of Anbar



Abstract: There has been a growing interest in research on financial technology and its role in implementing financial inclusion. This study aims to look at electronic financial transaction tools, like electronic payment cards and the devices needed (ATM, POC, POS), that help people make electronic financial transactions locally to promote financial inclusion. The study employed a quantitative inferential approach, which involved the collection of quantitative data and the use of multiple regression analysis with EViews 10 to conduct a more accurate statistical test. We collected the study data from the Central Bank of Iraq's official website from the beginning of 2018 to the end of 2023. Annual data were processed and converted to monthly data to ensure balanced time series observations. We processed the data using the natural logarithm to prepare them for the multiple regression statistical test. The study concludes that the use of electronic payment cards is effective in implementing financial inclusion. It recommends studying the effectiveness of using automated teller machines (ATMs) and point-of-sale (POS) devices at a later date, as they did not achieve the desired results in this study.

دور استعمال بطاقات الدفع الإلكتروني في تطبيق الشمول المالي

محمد حمدان عدنان

كلية الإدارة والاقتصاد/جامعة الأنبار

المستخلص

تزايد الاهتمام بالبحث في مجال التكنولوجيا المالية ودورها في تحقيق الشمول المالي. تهدف هذه الدراسة إلى دراسة أدوات المعاملات المالية الإلكترونية، مثل بطاقات الدفع الإلكتروني والأجهزة اللازمة (أجهزة الصراف الآلي، ونقاط البيع، ونقاط السحب)، التي تُمكن الأفراد من إجراء معاملات مالية إلكترونية محلياً لتعزيز الشمول المالي. اعتمدت الدراسة على منهج استدلال كمي، تضمن جمع البيانات الكمية واستخدام تحليل الانحدار المتعدد باستخدام برنامج EViews 10 لإجراء اختبار إحصائي أكثر دقة. جمعت بيانات الدراسة من الموقع الإلكتروني الرسمي للبنك المركزي العراقي من بداية عام 2018 إلى نهاية عام 2023. تمت معالجة البيانات السنوية وتحويلها إلى بيانات شهرية لضمان توازن السلاسل الزمنية. تم معالجة البيانات باستخدام اللوغاريتم الطبيعي لإعدادها لاختبار الانحدار المتعدد الإحصائي. وخلصت الدراسة إلى أن استخدام بطاقات الدفع الإلكتروني فعال في تحقيق الشمول المالي. وتوصي بدراسة فعالية استخدام أجهزة الصراف الآلي ونقاط البيع لاحقاً، نظراً لعدم تحقيقها النتائج المرجوة في هذه الدراسة.

الكلمات المفتاحية: الشمول المالي، بطاقات الدفع الإلكتروني، أجهزة الصراف الآلي، أجهزة نقاط البيع، أجهزة السحب، المعاملات المالية المحلية بالتجزئة.

1. Introduction

A major problem that has plagued the Iraqi economy for decades is the lack of trust between citizens and the Iraqi banking system, a result of wars, political upheavals, and economic instability. This problem has created a giant gap and a reluctance to engage in banking transactions, leading to citizens hoarding money and not depositing it in banks. This behavior has limited daily transactions to paper money, which is vulnerable to theft, damage, fire, and other risks.

Developing countries, including Iraq, are striving to achieve financial inclusion and expand banking and financial transactions at various levels and for all individuals, companies, and government transactions. Financial inclusion activities are reflected in the recovery of the economic and financial situation by expanding the scope of financial and banking services to various segments of society. Initially, in 2017, the Central Bank of Iraq issued a decision mandating that government employee salaries be paid through local banks and issuing Master-card cards to employees, which required them to deposit and withdraw their monthly salaries through banks or ATMs located across the country. This decision came as part of the

government and Central Bank of Iraq's strategy to attract more deposits in an attempt to enhance confidence in Iraqi banks. It also aims to utilize electronic banking technologies to reduce the risks of paper cash transactions and the associated risks of theft, damage, and other risks.

Developing countries face significant challenges in keeping pace with rapid technological changes and their impact on their economic, financial, and banking systems. Technological progress has significantly impacted the financial industry, with interest in digital technology growing across all fields and industries. Modern software and advanced communication networks provide multiple cross-border financial services. In addition, modern financial technologies provide open access to cities and villages in remote geographical areas, which is reflected in the growth of the financial industry, banking transactions, commercial businesses, and even dealings with the government.

The study highlights the importance of the Central Bank of Iraq's and the Iraqi government's strategy for implementing financial inclusion to improve the economic situation and provide widespread financial services. The strategy allows broad segments of society to conduct financial and banking transactions using communication networks and electronic cards, which provide the ability to conduct financial transactions without the need to visit bank branches.

The research includes six parts: the first is an introduction to the research; the second is a review of the literature related to financial inclusion as well as electronic payment cards; the third part of the research includes the theoretical framework, while the fourth part includes the methodology and data; the fifth part includes multiple regression analysis and statistical results of the research; and finally, a discussion of the conclusions and proposals reached by the results of the research in the sixth part.

2. **Literature Review:** The financial environment has become more competitive than ever, in light of international finance and the commercial and industrial internationalization of production and service activities. This environment has posed challenges for developing countries to keep pace with advanced financial technology. These changes have sparked the interest of researchers worldwide. Among the recent topics in financial studies are financial inclusion and advanced financial technology.

Electronic payment methods have received widespread attention from researchers recently. We review previous literature that has examined electronic payment cards across developing and developed countries due to their direct impact on economic growth in general and financial inclusion in particular. Teoh et al. presented a study that aimed to explore the factors influencing perceptions of electronic payment from the perspective of Malaysian consumers (Teoh et al., 2013). In the same context, Kabir et al.'s study aimed to examine and analyze the most influential factors contributing to the adoption of electronic payment (Kabir et al., 2017).

Mustapha states in his study that one of the most important financial innovations is the electronic payment system. Numerous studies in developed countries have demonstrated the positive impact of this financial innovation (Mustapha, 2018). Salloum et al. examine the adoption of electronic payment systems in higher education institutions. Therefore, the study attempts to investigate the factors influencing the adoption of electronic payment systems at six different universities in the United Arab Emirates (Salloum et al., 2019). A Philippon study indicates that the cost of financial intermediation has decreased recently due to technological advancements and increased competition (Philippon, 2019).

According to Le et al.'s study, open payment networks and cards power the activities of thousands of financial institutions, millions of retail locations, and hundreds of millions of consumers (Le et al., 2019). Bhutta et al.'s study compared the traditional payment process with considerations of IoT-based payment systems (Bhutta et al., 2022). Van Dinh's study investigated the factors influencing the electronic payment behavior of Vietnamese consumers. The primary focus was to identify the challenges consumers face when using electronic payment methods (Van Dinh, 2024).

According to previous literature, there are many topics related to the study of electronic payment cards, including the factors influencing their use and other studies of their role in economic growth and financial inclusion. These technologies are considered advanced technologies in the financial field and have significant impacts in various fields and at all levels, and they require a study in Iraq.

On the other hand, earlier studies have looked at how financial inclusion connects to digital finance, as discussed in Peterson K. Ozili's research, which is important for current discussions and local efforts to boost

financial inclusion using digital finance in developing and emerging economies (Peterson K. Ozili, 2018).

Okello Candiya Bongomin et al. examined the relationship between mobile money use and financial inclusion in rural Uganda (Okello Candiya Bongomin et al., 2018). Le et al. examined the trend of financial inclusion in Asia and its impact on financial efficiency and financial sustainability (Le et al., 2019).

Xun et al.'s study attempted to investigate whether digital finance driven by the internet revolution is helping to promote inclusive growth in China. achieved this by comparing the Digital Financial Inclusion Index, which measures the development of digital finance in China (Xun et al., 2020). Alrabei et al.'s study discussed the impact of mobile payment systems on increasing financial inclusion rates (Alrabei et al., 2022). Noreen et al.'s study provided insights into current government policies and strategies for fintech adoption and financial inclusion in Pakistan (Noreen et al., 2022). Tay et al., (2022) asserts that progress in financial inclusion stems from technology and governance aligned with societal needs and education.

(Hamid et al., 2023) analyzed the use of electronic payments in Iraq: trends, impacts, and opportunities (2018-2023) for the purpose of allocating (AsiaHwala, Zencash, and Naspay). In the context of the digital program, Al-hujaimy & Hussien, (2025) examined the role of digital transformation in the Iraqi personal financial system.

Ahmed & Al-Nuaimi (2022) presented a study on the impact of financial depth on enhancing financial inclusion in some Arab countries. Abdullah & Hamad, (2023) presented a study of the interactions that addressed some financial diversities in development in Iraq from 2004 to 2021. In the context of joint cooperation, Hassan & Faihan, (2024) studied the contribution of some comprehensive financial diversities to green banking: an applied study on the Iraqi private sector.

A review of the previous literature reveals significant global interest in using advanced financial technology to promote financial inclusion. Among these methods is the use of electronic payment cards supported by network communication systems that provide financial services to a wide segment of the population. The global research interest in studying the requirements for implementing financial inclusion made it necessary to analyze and study the success of the financial inclusion strategy in Iraq. The

research gap was represented by the scarcity of studies on financial inclusion in Iraq using quantitative data based on the use of electronic payment cards. This gap calls for further research to address several fundamental questions in this context:

- ❖ Has the government's strategy, represented by the Central Bank of Iraq, succeeded in developing electronic financial and banking services?
- ❖ Does the use of electronic payment cards have an impact on implementing financial inclusion?

The research aims to answer the previous questions through the use of quantitative data and financial analysis coupled with statistical evidence. It also seeks to prove the role of using electronic cards in financial inclusion, in addition to comparing the research results with previous literature to verify the achievement of the research objectives.

The importance of the research lies in its focus on advanced topics that occupy an important aspect in modern financial studies in light of the technological progress of financial and banking services that the developed countries of the world are competing to achieve, and even developing countries are interested in keeping pace with the technological development of financial services and their significant impact on the growth of economic and commercial activity locally and globally. The research is based on the following hypotheses:

- A. Hypothesis 1: "The Central Bank's strategy does not lead to the development of financial services."
- B. Hypothesis 2: "The use of electronic payment methods does not lead to the implementation of financial inclusion."
3. **The theoretical framework:** The electronic payment system is growing rapidly compared to previous years due to the increasing prevalence of online banking and shopping. Electronic transfers are financial transactions conducted electronically between consumers and retailers (Hassan et al., 2020).

3-1. Electronic payment cards: Electronic payment is a system of financial exchange between buyers and sellers in an online environment facilitated by a digital financial instrument (such as encrypted credit card numbers, electronic checks, or digital cash) supported by a bank or intermediary (Aigbe & Akpojar, 2014). The digital environment is growing, and connected devices are interacting with each other, resulting in a new digital experience for financial transactions for both consumers and businesses. Consumers can pay using a wide range of connected devices (Bhutta et al., 2022).

A credit card is an account that lends money to a consumer, meaning it allows consumers to purchase goods or services on credit. A credit card, as a symbol of trust, transfers the risk of granting credit from the merchant to the card-issuing bank. Both consumers and merchants must register with the bank. Participants in credit card payments include (Aigbe & Akpojaro, 2014).

3-1-1. Types of cards and electronic payment technologies : There are four basic technologies in payment systems that use the Internet, the most important of which are (Kabir et al., 2017):

- A. **Debit card:** This is the most widely used electronic payment method in online banking. ATM cards allow debit card users to make instant payments for products purchased through the bank. Funds are secured in banks and will only be withdrawn when debit card users make any purchases using them. There are two types of debit cards: online and offline.
- B. **Smart card:** This plastic card, also known as a chip, is preloaded with information such as the amount of money and personal information, and allows instant payments. Examples of this type of card include VISA cards.
- C. **Credit card:** A credit card is issued to customers by financial institutions to process payments over the internet.
- D. **Electronic cash:** Electronic cash is money in digital format, using software preinstalled on the customer's computer that enables financial transactions.

3-2. Financial inclusion: Financial inclusion refers to all initiatives that make formal financial services accessible and affordable, primarily for low-income people (Omar & Inaba, 2020). Tay et al. add that providing financial services through digital platforms enhances basic inclusion. Furthermore, digital financial inclusion is also a starting point for achieving the Sustainable Development Goals (Tay et al., 2022).

Mousa & Maabreh, (2024) define financial inclusion as the process of ensuring that all individuals and businesses have access to basic financial products and services that meet their needs, including transactions, payments, savings, credit, and insurance, in a responsible and sustainable manner.

3-2-1. The importance of financial inclusion: It is worth noting the importance of financial inclusion as follows (Chen & Yuan, 2021):

- A. Economic growth.
- B. Poverty reduction.
- C. Investment in income-generating projects.

- D. Building assets to protect against risks.
- E. Financial inclusion should help the most vulnerable groups access financial services at affordable costs.
- F. Including finance should provide opportunities to share the benefits of economic growth and enhance economic and social well-being.

3-2-1. Financial Inclusion Challenges: Several challenges hinder the effective implementation of financial inclusion. These challenges include (Mousa & Maabreh, 2024):

- A. A comprehensive understanding of the impact of various fintech solutions on different population groups.
- B. Digital literacy issues.
- C. Cybersecurity concerns.
- D. Regulatory barriers
- E. The digital divide that limits access to technology.

4. Methodology and Data: The research data were collected from the Central Bank of Iraq's website for the period 2017 to 2024. The data that could be relied upon in the research were determined after excluding missing values for the years 2017 and 2024 regarding the number of smart cards (Mastercard, Visa card, credit cards, and debit cards). Furthermore, we were unable to obtain data on the number of ATMs, POS devices, and ATMs for the year 2024. Because of this, the research used a set of 72 data points for each variable, which included four independent variables and one dependent variable, showing domestic financial transactions in Iraqi dinars that went through the retail payment system. We adopted this data as a criterion to measure the extent of financial inclusion implementation in Iraq.

The data for the independent variables were changed from yearly to monthly from January 2018 to December 2023 using E-Views 10 software, ensuring the time series is complete and accurate for the analysis results.

Figures 1, 2, 3, 4, and 5 display the changes over time for the research variables after changing the data from yearly to monthly for the number of smart cards, ATMs, POS devices, and withdrawal devices. Additionally, there is a time series showing the value of local retail transactions in Iraqi dinars. In addition, there is a time series that includes the value of local retail transactions in Iraqi dinars.

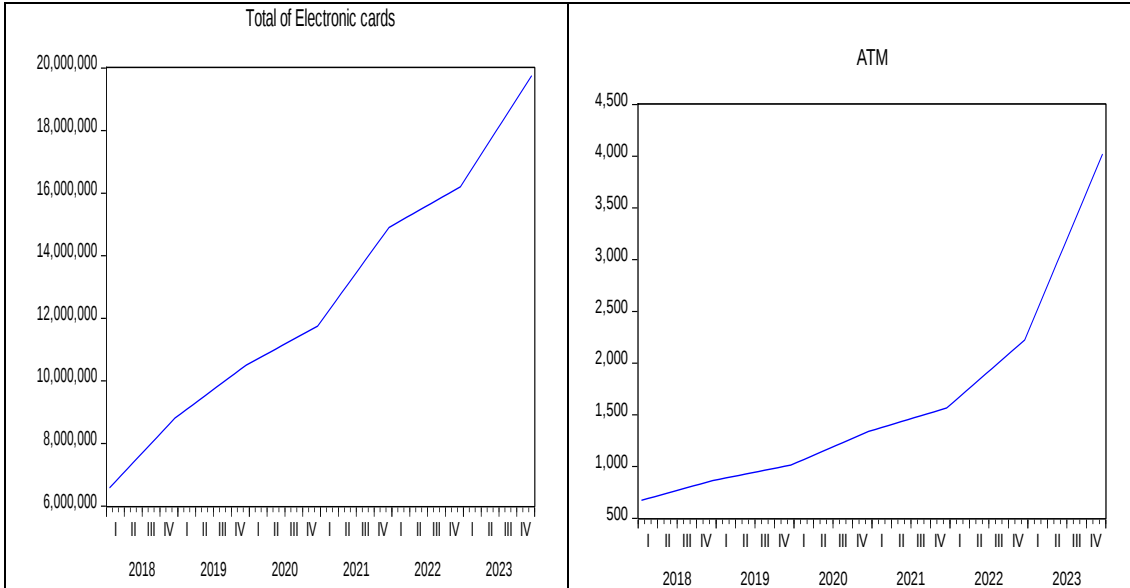


Figure 1: Number of electronic payment cards

Figure 2: Number of ATMs.

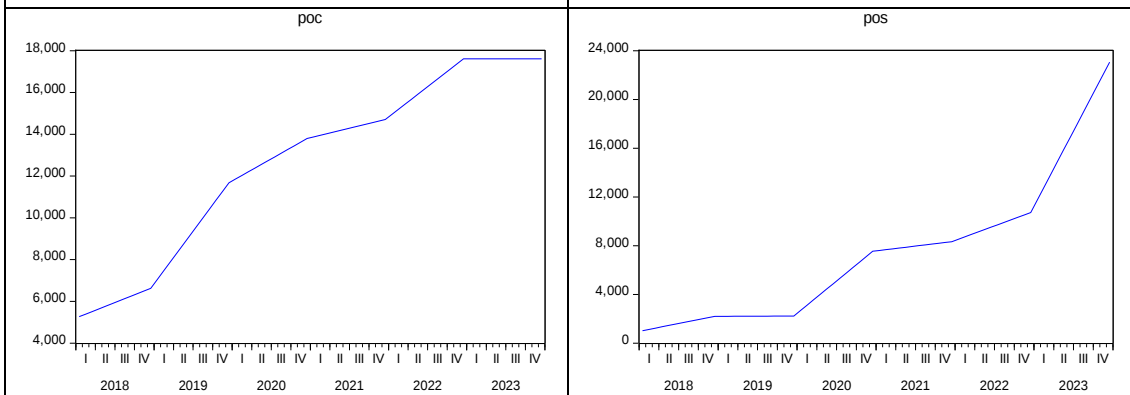


Figure 3: Number of withdrawal points.

Figure 4: Number of point-of-sale devices

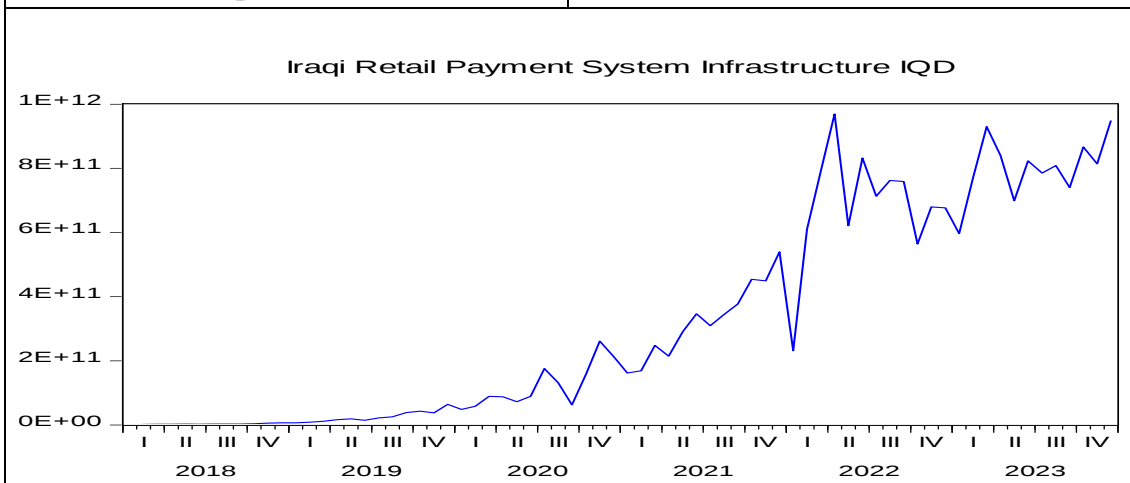


Figure (5): Value of local retail transactions in Iraqi dinars.

Source: Prepared by the researcher based on the E-Views program

5. A multiple regression analysis of the electronic payment cards in the financial inclusion application: After getting the data ready for analysis and making sure the time series was balanced, the natural logarithm was taken for all research variables and used before the multiple regression analysis to ensure the data was well-prepared and to get the best results. This was necessary because of the different data patterns and the variation in financial figures and transactions in the local currency (the Iraqi dinar). This variation was due to the different data patterns and the variance of financial numbers and transactions in the local currency (the Iraqi dinar). This difference in the characteristics of the variables necessitated adopting the natural logarithm to ensure the best statistical analysis.

Table 1 shows the nature of the relationship between the research variables, which indicates the value of the coefficient of determination R^2 as 0.984478. This indicates that the independent variables in the research have a strong direct impact on the responding variable. The evidence indicates that the issuance of electronic payment cards and their use in POC and POS, as well as ATMs, contribute to the implementation of financial inclusion by a percentage of 0.98, and that the implementation of the financial inclusion strategy without the use of electronic payment methods achieves a percentage of approximately 0.02. These results mean rejecting the null hypothesis H_0 and accepting the alternative hypothesis that the central bank's strategy leads to the development of financial services.

The results of Table (1) show that the value of S.E. of regression is 0.274713, which means that the errors of the regression model parameters are low. The results also show that the multiple regression parameters for these explanatory variables are important, which confirms that electronic payment cards play a significant role in boosting retail financial transactions, as the F-statistic for the regression model was 1062.380 with a significance level of 0.000. These results mean rejecting the null hypothesis H_0 and accepting the second alternative hypothesis H_1 , which states that the use of electronic payment cards contributes significantly to the implementation of financial inclusion.

Table (1): Results of a multiple regression analysis of the use of electronic payment cards in the application of financial inclusion

Dependent Variable:				IRAQI_RETAIL_PAYMENT_SYSTEM_INFRASTRUCTURE_IQD
Method: Least Squares				
Date: 05/12/25 Time: 23:18				
Sample: 2018M01 2023M12				
Included observations: 72				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
total_of_electronic_cards	4.965981	0.823710	6.028800	0.0000
ATM	-2.076138	0.350268	-5.927284	0.0000
POC	2.811689	0.352176	7.983752	0.0000
POS	0.620665	0.187412	3.311771	0.0015
C	-72.37058	9.044734	-8.001405	0.0000
R-squared	0.984478	Mean dependent var		25.29314
Adjusted R-squared	0.983552	S.D. dependent var		2.141989
S.E. of regression	0.274713	Akaike info criterion		0.320737
Sum squared resid	5.056312	Schwarz criterion		0.478839
Log likelihood	-6.546538	Hannan-Quinn criter.		0.383678
F-statistic	1062.380	Durbin-Watson stat		1.660675
Prob(F-statistic)	0.000000			

Source: E-Views 10 statistical analysis software outputs

The above shows that implementing traditional financial inclusion strategies in Iraq by opening bank branches, conducting traditional banking transactions, and extending financial services to many geographical areas will not achieve effective financial inclusion. The results of the multiple regression analysis show that 0.02 of the factors do not depend on using electronic payment methods and modern technology for transactions. Therefore, neglecting the role of technology costs banks giant sums by opening branches that do not achieve the desired benefit from their establishment and will not serve all segments of society.

The concept of financial inclusion is not new, but modern technologies have contributed to its implementation on a much greater scale than before. One of the goals of traditional financial systems, represented by central

banks and commercial banks, is to achieve financial inclusion, which involves expanding customer service across disparate geographic areas to meet customer needs and achieve fundamental financial objectives for banks related to profits generated from providing banking services.

Having multiple bank branches in a remote city doesn't guarantee the full availability of services to all segments of society. However, granting all customers access to a single electronic payment card offering money transfer, withdrawal, and online purchase services helps them conduct numerous financial and banking transactions, whether using ATMs, point-of-sale machines, automated teller machines (ATMs), or even mobile phones.

The results of the statistical analysis of the research demonstrate the effective and efficient role of the use of electronic payment cards in implementing the Iraqi government's strategies to achieve financial inclusion. This assumption is confirmed by the results of previous literature, as the study (Mustapha, 2018) concluded that banks' performance improved after adopting electronic payment technologies, which confirms the findings of the current research. The study conducted by Tay et al. in 2022 also agreed with the research results, demonstrating the effective impact of technology in enhancing financial inclusion.

A study by Xun et al. (2020) also found that digital finance helped increase household income, particularly for rural households, in China. This finding confirms the role of digital technologies in financial inclusion. Alrabei et al. (2022) also provided evidence consistent with this research, demonstrating that the price, quality, ease of use, and security of mobile payment systems have a statistically significant impact on financial inclusion. Further evidence consistent with the research findings: Noreen et al. (2022) found that the government of Pakistan has successfully implemented several financial inclusion policies and strategies by adopting financial technology to expand the scope of financial services.

The study presented important findings on the role of electronic payment cards and technology in implementing financial inclusion in Iraq, relying on reliable quantitative data that is not subject to personal judgment. The study's findings are consistent with all previous literature, which has proven the effective role of technology and electronic payment in implementing financial inclusion.

6. Conclusions: The research results of the graphic and statistical analysis reflect positive developments in electronic financial transactions in Iraq. The research provided theoretical and practical evidence of the developments in financial inclusion since the Iraqi government adopted salary localization strategies in 2017. Financial technology facilitates growth in financial transactions locally and internationally. It can be said that the beginnings of developing financial and banking services have yielded positive results in Iraq, and this is what the results of the current research confirmed.

The process of localizing employee salaries is a key step toward enhancing financial inclusion. Increasing the number of electronic cards contributes to the volume of mandatory bank deposits, and providing electronic payment and e-purchase services significantly contributes to strengthening financial inclusion. The issuance of personal cards for non-employees has also strengthened the social segments covered by financial services, especially in 2023 when Rafidain Bank began issuing electronic cards, providing them and delivering them free of charge to citizens. Furthermore, imposing fees for government transactions using electronic cards has significantly contributed to the implementation of financial inclusion policies and strategies.

ATMs have not achieved the desired results in implementing financial inclusion, with significant negative regression results. This is surprising given the increase in the number of ATMs, particularly in 2023, despite the adoption of the natural logarithm for all data to reduce time series volatility. Government strategies have strengthened financial inclusion by providing financial and banking services to citizens at a broader, lower-cost level and across a broad spectrum of society. The increase in local retail transactions in Iraqi dinars during the 2018-2023 research period serves as evidence of this. Financial technology elements and tools, along with the use of electronic payment cards, have combined to achieve financial inclusion.

The current study proposes a future study on the role of ATMs and point-of-sale (POS) devices, as these have not achieved satisfactory results. The period of their greatest increase was in 2023, which did not provide sufficient data to better calculate the regression coefficient.

Reference

1. Abdullah, D. S., & Hamad, M. J. (2023). Measuring and analyzing the impact of some financial inclusion variables on sustainable development in Iraq for the period 2004-2021. 19(64), 399–412.
2. Aigbe, P., & Akpojar, J. (2014). Analysis of Security Issues in Electronic Payment Systems. *International Journal of Computer Applications*, 108(10), 10–14. <https://doi.org/10.5120/18946-9993>
3. Al-hujaimy, S. A., & Hussien, I. A. (2025). The role of banking digitization in developing the profitability of the Iraqi banking sector: International experiences with special reference to Iraq. 21(69), 120–134.
4. Alrabei, A. M., Al-Othman, L. N., Al-Dalabih, F. A. N., Taber, T. A., Ali, B. J. A., & Amareen, S. M. (2022). The Impact of Mobile Payment on the Financial Inclusion Rates. In *Information Sciences Letters* (Vol. 11, Issue 4, pp. 1033–1044). <https://doi.org/10.18576/isl/110404>
5. Bhutta, M. N. M., Bhattia, S., Alojail, M. A., Nisar, K., Cao, Y., Chaudhry, S. A., & Sun, Z. (2022). Towards Secure IoT-Based Payments by Extension of Payment Card Industry Data Security Standard (PCI DSS). *Wireless Communications and Mobile Computing*, 2022. <https://doi.org/10.1155/2022/9942270>
6. Chen, W., & Yuan, X. (2021). Financial inclusion in China: an overview. *Frontiers of Business Research in China*, 15(1). <https://doi.org/10.1186/s11782-021-00098-6>
7. Hamid, S., Ali, A., & Ali, M. A. (2023). Economic Analysis of The Electronic Payment System in Iraq: Study of Trends, Impacts and Opportunities for The Period (2018-2023) for Selected Companies (Asiahawala & Zaincash & Nasspay). 20(67), 109–134.
8. Hassan, G. J., & Faihan, M. A. (2024). The impact of some financial inclusion variables on green banking: an applied study on the Iraqi private banking sector. 20(67), 111–130.
9. Kabir, M. A., Saidin, S. Z., & Ahmi, A. (2017). Analysis of factors that influence electronic payment adoption. *Journal of Engineering and Applied Sciences*, 12(Specialissue3), 6560–6568. <https://doi.org/10.3923/jeasci.2017.6560.6568>
10. Le, T. H., Chuc, A. T., & Taghizadeh-Hesary, F. (2019). Financial inclusion and its impact on financial efficiency and sustainability: Empirical evidence from Asia. *Borsa Istanbul Review*, 19(4), 310–322. <https://doi.org/10.1016/j.bir.2019.07.002>
11. Mousa, H., & Maabreh, A. (2024). The Role of Financial Technology (Fintech) in Promoting Financial Inclusion A Literature Review. *International Journal of Digital Accounting and Fintech Sustainability (IJDAFS)*, 1(1), 2024. <https://ijdaf.com/>
12. Mustapha, S. A. (2018). E-Payment technology effect on bank performance in emerging economies-evidence from Nigeria. *Journal of Open Innovation: Technology, Market, and Complexity*, 4(4). <https://doi.org/10.3390/joitmc4040043>
13. Noreen, M., Mia, M. S., Ghazali, Z., & Ahmed, F. (2022). Role of Government Policies to Fintech Adoption and Financial Inclusion: A Study in Pakistan. *Universal Journal of Accounting and Finance*, 10(1), 37–46. <https://doi.org/10.13189/ujaf.2022.100105>
14. Okello Candiya Bongomin, G., Ntayi, J. M., Munene, J. C., & Malinga, C. A. (2018). Mobile Money and Financial Inclusion in Sub-Saharan Africa: the Moderating Role of

- Social Networks. *Journal of African Business*, 19(3), 361–384. <https://doi.org/10.1080/15228916.2017.1416214>
15. Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. *Journal of Economic Structures*, 9(1). <https://doi.org/10.1186/s40008-020-00214-4>
 16. Peterson K. Ozili. (2018). Impact Of Digital Finance On Financial Inclusion And Stability. *Borsa Istanbul Review*, 18(4).
 17. Philippon, T. (2019). Nber Working Paper Series on Fintech and Financial Inclusion. In National Bureau of Economic Research. <http://www.nber.org/papers/w26330>
 18. Salloum, S. A., Al-Emran, M., Khalaf, R., Habes, M., & Shaalan, K. (2019). An innovative study of e-payment systems adoption in higher education: Theoretical constructs and empirical analysis. *International Journal of Interactive Mobile Technologies*, 13(6), 68–83. <https://doi.org/10.3991/ijim.v13i06.9875>
 19. Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, 8(6), e09766. <https://doi.org/10.1016/j.heliyon.2022.e09766>
 20. Teoh, W. M. Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: An empirical analysis. *Internet Research*, 23(4), 465–485. <https://doi.org/10.1108/IntR-09-2012-0199>
 21. Van Dinh, D. (2024). Digital economy and the electronic payment behavior: An empirical analysis. *Transnational Corporations Review*, 16(4), 200078.
 22. Xun, Z., Guanghua, W., Jiajia, Z., & Zongyue, H. (2020). Digital Economy, Financial Inclusion and Inclusive Growth. *China Economist*, 15(3), 92–105. <http://finance.sina.com.cn/roll/2019-04-24/doc-ihvhiqax4733019.shtml>.