The impact of financial technology (FinTech) on improving financial performance: The case of commercial banks in Jordan

Fadi Mohammed Alshannag [1, *], Marah Mohammad Bani Hani [2], Bilal Eneizan [3, 4], Kashif Arif [5], Hassan N. Rawash [6]

[1]Business School, Financial Technology Department, Jadara University, Irbid, Jordan
[2]Business School, Finance and Banking Department, Yarmouk University, Irbid, Jordan
[3]Business School, Marketing Department, Jadara University, Irbid, Jordan
[4]College of Science and Humanities Studies, Prince Sattam Bin Abdulaziz University, AsSulayyil, Saudi Arabia
[5]Department of Accounting and Finance, Salim Habib University, Karachi, Pakistan
[6]Business School, Business Information Technology Department, Jadara University, Irbid Jordan

ABSTRACT

This study explores the main financial technologies adopted by banks to improve their financial performance. The research sample includes 301 participants from commercial banks listed on the Amman Stock Exchange (ASE). Financial performance is considered the dependent variable, while financial technology (FinTech) is the independent variable. Multiple linear regression analysis will be used to test the hypotheses. The findings indicate that FinTech contributes to higher net income and total deposits. The study suggests that banks should adopt inclusive approaches to promote sustainable development.

1. Introduction

The word Fintech is a combination of Finance and Technology referring to the financial services technology founded back in the early 90s (Schueffel, 2016). This novel idea involves a financial framework that is modern in which technology helps provide financial services such as settlement, managing money, and financing via websites, mobile payments, cloud-based computing, and other forms of technological means (Schueffel, 2016). The physical connection between clients and financial service providers has been replaced by computerized networks due to the progress of the digital revolution, particularly during the COVID-19 pandemic. The utilization of FinTech services like mobile payment methods and online financial services has experienced a significant surge because of this change. Because of this, traditional banking is at significant risk as customers begin to handle their accounts differently.

In Jordan, less than 35% of people use banks. The Jordanian Central Bank has played a pivotal role in advancing financial inclusion by executing consumer payment systems, online payments, including cash transfers and bills, and creative identity solutions that address the needs of marginalized communities. In order to strengthen electronic transactions even further, the Central Bank intends to create legal structures. As a result, the banking industry finds itself in a favorable position to take advantage of cutting-edge FinTech solutions to improve financial inclusion, attract deposits, expand flexibility, and reduce costs.

Within the field of economics, Schumpeter asserts that creative thinking, market dominance, and entrepreneurial activity are the driving forces behind any economic transformation. The FinTech revolution has given rise to hypotheses based on this line of thinking. According to Schumpeter, invention also first establishes a monopoly that is later destroyed by competitors and imitations. Consequently, banks may be able to affect their financial performance if they use FinTech and creative goods and services to obtain a competitive edge (Ziemnowicz, 2020).

Since fintech is seen as the banking sector's future, the Central Bank of Jordan has played a significant role in its growth, particularly during the COVID-19 Pandemic (Naz et al., 2024). It recognizes the critical role banking plays in its growth. Consequently, the Middle East and North Africa (MENA) region currently hosts approximately 310

FinTech companies, with more than 7% of them located in Jordan.

The aim of the research is to highlight the significance of financial ratios like ROA, ROE, and C/I in assessing banks' financial effectiveness, assessing financial performance using total deposits and several factors underscore the importance of net profits. Greater overall deposits may be a sign of a bank's expanding clientele and growing confidence in its money management skills, all of which could draw in additional business and boost earnings. Additionally, net earnings offer an indicator of a bank's profitability.

They illustrate the amount of the residual funds remaining after the bank settles its expenses and accounts for all costs, including operating costs and loan losses. Increased net profits are a good thing for investors since they show that the bank is making more money than is spent. Lastly, traders and the public can easily understand total deposits and net earnings, making them helpful metrics for assessing a bank's financial success. They can be used to assess a bank's performance over an extended period or to quickly compare various banks.

This study aims to address three primary research questions that have not been sufficiently explored in relevant literature, particularly in the context of COVID-19: (1) Does the financial performance of Jordanian banks change because of FinTech adoption? And (2) How much do automation (Auto), alternative payment methods (APMs), and financial inclusion (FI) influence Jordanian banks' bottom lines? And (3) Does the FinTech component assess Jordanian banks' long-term financial performance?

2. Literature review

FinTech involves a variety of modern services enabled by progress in communication and information technologies (Venaik et al, 2024). Meanwhile, Abad-Segura et al. (2020) defined fintech as the fusion of finance and technology, describing it as a collection of innovative firms delivering financial services predominantly through technological means. Naz et al. (2024) investigated the COVID-19 effect on FinTech and concluded that the innovativeness of digital platforms is responsible for the unconventional economy which is helpful in bringing the technology and people nearer. Gai et al. (2018) asserted that FinTech reflects how the financial services industry has adapted to technology. FinTech, according to Zaghlol et al. (2021), is the use of computerized innovations and the Internet in the financial services industry. FinTech is anticipated to bring about new strategies, results, applications, and cycles of markets in the financial sector (Caragea et al., 2024). FinTech also includes software and other technologies that help with banking and finance, which has led to the development of credit card payments, fund transfers, ATM/debit cards, digital currencies, and other payment processing methods, among other types of financial transactions. Nicoletti et al. (2017) stated that the Fintech ring range is so big that it covers different sectors of activities and domains (Nicoletti et al., 2017). One outgrowth of the innovation as evidenced by banks rising FinTech alternatives is the fact that consumers who seemed to find it difficult to access established financial services during the 2008 crisis settled for these alternatives (Knight and Wójcik, 2020).

Mer and Virdi (2023) argued that FinTech draws on the most advanced technologies comprised of AI, mobile wallets, IoT, NFC, and blockchain. Suseendran et al. (2020) indicated that these technologies are the key driving force to foster the advancement of FinTech services. According to Barbu et al. (2021), the FinTech industry growth is mainly supported by technological advances, acceptance of innovative technologies, tailored design, and provision of round-the-clock financial services which collectively improve users' experience.

FinTech is directly related to creativity in financial service delivery and the emergence of business models based on financial services (Nangin et al., 2020). Furthermore, FinTech organizations are more technologically minded than conventional financial institutions (Senyo et al., 2024). Consumers can now have access to financial services that are quicker, more convenient, and more affordable thanks to advances in information technology. Furthermore, according to the research of Romānova and Kudinska (2016), both innovative IT firms and traditional financial institutions are adopting FinTech solutions.

Because of its contentious status, FinTech has captured the interest of governments, regulators, regulatory agencies, and experts (Naz et al., 2024). According to Fernando and Dharmastuti (2021), the expansion of FinTech within a nation is credited to its beneficial effects on both the public and financial institutions, notably in mitigating high-interest rate loans. They went on to say that FinTech allows people to handle their money more securely. Furthermore, Petralia et al. (2019) said that FinTech's debut and expansion have had a significant influence on traditional banking business models.

FinTech has impacted many financial domains, such as raising funds, savings, payments and expenditures, and credit (Nguyen et al., 2024). Cheng and Qu (2020) stated that there are two ways in which FinTech might affect traditional banks: either using technology in bank-FinTech collaborations or in banks and outside of FinTech (including FinTech enterprises). Nonetheless, de Roure et al. (2021) highlighted the rivalry between FinTech and conventional financial firms, with the latter being impacted by their performance, risk-taking, and inventiveness.

Buchak et al.'s (2018) study was the first to investigate how regulatory considerations are integrated when examining how FinTech credit affects bank performance. Numerous studies, such as those by Chen et al. (2019), attested to FinTech's capacity to improve financial services through the

promotion of cost-effective transactions, improvement of service excellence, and enlargement of company structures. Additionally, Yao and Song (2023) pointed out that FinTech could support commercial banks' diversification efforts. Li et al. (2017) found a favorable correlation between the rise in FinTech activities and bank stock returns.

Two theories have been discussed thus far: disruptive innovation and customer demand. The banking industry may be impacted by the rise of fintech. According to the consumer demand theory, FinTech will supplant newly established financial institutions by meeting client needs. On the other hand, the disruptive innovation theory proposes that new players in the market adopt cutting-edge technologies to provide easily accessible and reasonably priced services that are fiercely competitive (Nguyen et al., 2024). Yudaruddin (2023) stated that the client's theory clarifies how FinTech companies in the banking industry are replacing antiquated services to satisfy consumer demand. According to the principle of disruptive innovation, traditional banks face intense rivalry from FinTech firms that leverage cutting-edge technology to offer customers affordable and convenient access to services.

According to Juengerkes (2016), banks can gain from working with FinTech firms by being able to confront disruptive innovation and develop client trust. According to Nguyen et al. (2024), FinTech also provides advantages for mobile payments, which may be made more affordable. The implementation of technology by Islamic and conventional. According to Abdul-Majid et al. (2017), banks vary. According to Yudaruddin (2023), Islamic banks have more expenses associated with Sharia consultants and have a poorer rate of innovation than mainstream banks. According to Panjwani and Shili (2020), Islamic financial organizations frequently exhibit low levels of innovation.

3. Methodology

3.1. Research population and sampling

The researcher focused on commercial banks listed on the Amman Stock Exchange (ASE). The study's sample consisted of all 13 Jordanian commercial banks registered on the ASE. The necessary data for the current research will be gathered through the distribution of 350 questionnaires to important employees and managers working in various divisions of commercial banks listed on the ASE. Only 313 questionnaires were received and 310 were viewed for the analysis.

3.2. Research hypotheses

Based on the review of existing work on FinTech the study hypotheses were developed which are present as follows:

H1: FinTech and financial performance (total deposits) of commercial banks are positively correlated.
H1.1: Financial inclusion and performance of commercial banks are positively correlated.
H1.2: Alternative payment methods (APMs) and the performance of commercial banks are positively correlated.
H1.3: Automation and performance of commercial banks are positively correlated.
H2: FinTech and financial performance (net profit) of commercial banks are correlated.
H2.1: Financial inclusion and financial performance (net profit) of commercial banks.
H2.2: APMs and financial performance (net profit) of commercial banks.
H2.3: Automation and financial performance (net profits) of commercial banks.

3.3. Variable measurement

The study considered various factors essential for testing hypotheses and attaining pertinent results. Financial technology (FinTech) served as the primary independent variable, evaluated through three variables: financial inclusion, alternative payment methods (APMs), and automation. The dependent variable was the financial performance of banks, gauged by total deposits and net earnings.

3.3.1. Dependent variables (financial performance)

The researcher used total deposit and net profit as the two metrics to gauge financial performance. The financial statements of the sample commercial banks were the source of the information for these variables from 2015 to 2022. The mathematical averages of the data from each bank over an 8-year period were computed by the researcher to guarantee integrity between the independent and dependent variables of the study.

The savings and deposits combined refers to total deposits, it includes the total deposits by individuals, institutions, and other financial institutions. The equation for the calculations is as under:

$$Total\ deposit = Demand\ Deposits + Term\ Deposits + Interest\ and\ Non-Interest - Bearing\ Deposits$$

The outcome of deducting all costs from revenues is net profit. This amount represents the whole outcome of an organization's funding and operational efforts. As a result, it is frequently used as a basis for choices about business operations by creditors, investors, and lenders. We compute net profit as follows:

$$Net\ Profit = Function\ (Net\ Revenue, Cost\ of\ Goods\ Sold, Operating\ Expenses, Financing\ Costs, and\ Tax\ Costs)$$

3.3.2. Independent variables (FinTech)

The purpose of the questionnaires was to evaluate several aspects of fintech, such as automation, APMs, and financial inclusion. Each of the three categories was given its own paragraph in the questionnaire to the participants. To guarantee that the independent and dependent variables are consistent. Every FinTech dimension was evaluated by the participants on a 5-point Likert scale.

By having access to feasible, inexpensive financial services and products that suit their needs (transactions, payments, savings, credit, and insurance, for example) and are provided in an ethical and sustainable manner, both individuals and businesses are said to be financially included. Three criteria are used to quantify financial inclusion: (i) financial services availability, (ii) financial services utilization, and (iii) the caliber of goods and services provided

APMs are a type of cashless payment. These include bank transfers, e-wallets, mobile devices, local card schemes, prepay and postpaid techniques, credit or debit card payments, loyalty program points, and electronic invoices.

The conversion of a labor process, technique, or piece of technology to automatic control or operation is known as automation. Automation entails a thorough reorganization of the work process, which redefines both human and machine tasks. It does not only transfer human functions to machines. Regardless of location, cost savings and operational enhancement can be facilitated by robotic process automation and cognitive automation solutions. An online and offline structured questionnaire was utilized to measure the three independent variables.

3.4. Research design

The matter of questionnaire construction was based on inputs from bank managers, the results of a thorough review of literature, and preliminary evaluations of existing studies. It contained two parts that were marked off carefully to make it easier for the participants to grasp. The introductory part contained queries that tried to identify the demographic profile of the participants age of study respondents, sex, experience in years, designation, and academic qualifications. The second section focused on FinTech components pertinent to enhancing financial inclusion and advancing automation and the involvement of Accepted Payment Methods (APMs) in the context of commercial banking. Participants in this were instructed to assess the perceived significance of individual items on a 5-point Likert Scale with the following ratings: 1 (Minimal significance) to 5 (maximum significance) The control group constructed a real audience, profiled as Jordanian commercial banks' administration and main staff, highly familiar with FinTech developments. Convenience sampling was used to select study participants. However, this sampling method may introduce bias as the participant was selected based on availability. Future studies may address this issue by employing random or stratified sampling to enhance representativeness. The participants held varied roles in the banking business and had varying levels of experience.

3.5. Questionnaire

A 5-point Likert scale was used in the questionnaire, where 1 represented the least significant item and 5 the most significant. Concentrated on the following FinTech aspects of Jordanian commercial banks: automation, APMs, and financial inclusion.

4. Analysis and results

4.1. Demographic analysis

Table 1 consists of demographic data about the respondents who these survey participants. When it comes to the issue of age distribution, the most part of the sample which brings about 40.2% of the whole respondents is below the age of 35 and the second group of people who have the number of 16.3% corresponds to the 35-40 age range. Discounting size drops off the charts for this ear bracket and the percentages become 17.6 between 40 and 45, 12.6 between 45 and 50, and 13.3 for over 50. With respect to gender, we almost have an equal number of men and women, 49.8% and 50.2 %, respectively, among the respondents. A bachelor's degree is a controversial qualification among Africans as 15% of the population have gained one in the area, 16% followed by a Master's or PhD degree, and, 5% have gained Diploma qualifications. Among job titles, the largest group holds a job title of Accountants (33.9%), Auditors/Financial Analysts (24.6%), Managers hold 18.3% of the job titles, and Loan Officers are the second largest group (23.3%). As regards experience, almost a fourth of the respondents have less than 5 years of experience (32.6%) and 5 to 10 years (33.9%), approximately half of the respondents have 10 to 15 years of experience (20.3%) and the rest 13.3% have experience more than 15 years. These demographic details not only give a clear indication of the composition of respondents' groups but also offer the possibility of identifying specific groups that may have an influence on stock market decisions.

4.2. Measurement model

The current research employed SmartPLS 4 to perform the main analysis of the study because of the predictability characteristic of SmartPLS (Urbach and Ahlemann, 2010). The steps performed to run the model were based on the suggestion by Anderson and Gerbing (1988), having two steps to be followed. Firstly, a measurement model was run

to assess the validity and reliability of the model. The convergent validity checks the intercorrelation among the items and constructs they intend to measure. Sarstedt et al. (2022) stipulated that convergent validity can be assessed by examining the factor loading of each item, ideally exceeding 0.7. Additionally, the average variance extracted (AVE) should be at least 0.5, and the construct reliability (CR) should meet a minimum threshold of 0.7 for each construct. The provided Table 2 evaluates convergent validity by presenting factor loading, AVE, and CR values, all of which fall below the specified thresholds, ensuring the validity of the research model.

Table 1: Demographic characteristics of the respondents

		Frequency	Percentage	Valid percentage	Cumulative percentage
Age	Less than 35	121	40.2	40.2	40.2
	From 35 – 40	49	16.3	16.3	56.5
	From 40 – 45	53	17.6	17.6	74.1
	From 45 – 50	38	12.6	12.6	86.7
	More than 50	40	13.3	13.3	100.0
	Total	301	100.0	100.0	
Gender	Male	150	49.8	49.8	49.8
	Female	151	50.2	50.2	100.0
	Total	301	100.0	100.0	
Academic level	Diploma	41	13.6	13.6	13.6
	Bachelor	192	63.8	63.8	77.4
	Master/PhD	68	22.6	22.6	100.0
	Total	301	100.0	100.0	
Job title	Manager	55	18.3	18.3	18.3
	Accountant	102	33.9	33.9	52.2
	Auditor/Financial analysts	74	24.6	24.6	76.7
	Loan officer	70	23.3	23.3	100.0
	Total	301	100.0	100.0	
Experience	Less than 5 years	98	32.6	32.6	32.6
	5 to 10	102	33.9	33.9	66.4
	10 to 15	61	20.3	20.3	86.7
	More than 15 years	40	13.3	13.3	100.0
	Total	301	100.0	100.0	

Table 2: Convergent validity

Construct	Items	Loading	CR	AVE
Alternative payment method	APM1	0.770		
	APM2	0.787		
	APM3	0.751	0.830	0.594
	APM4	0.773		
	APM5	0.772		
Automation	AU1	0.779		
	AU2	0.824		
	AU3	0.734	0.844	0.614
	AU4	0.779		
	AU5	0.801		
Financial inclusion	FI1	0.744		
	FI2	0.722		
	FI3	0.769	0.824	0.586
	FI4	0.808		
	FI5	0.781		
Net profit	NET1	0.749		
	NET2	0.842		
	NET3	0.806	0.796	0.616
	NET4	0.737		
Total deposit	TA1	0.813		
	TA2	0.817		
	TA3	0.797	0.847	0.617
	TA4	0.749		
	TA5	0.749		

To examine the level of discriminant validity, the Hetrotrait- Monotrait (HTMT) ratio, was used (Henseler et al., 2016). The results of the discriminant analysis depicted that all constructions are discriminant to each other in terms of their measurement items which can be ensured by looking at the off-diagonal values in Table 3, all with the limit of 0.9. Hence the discriminator validity is also evident. To test the robustness of the data analysis, the application of the multi-variate skewness and kurtosis test has been pursued as instructed by Sarstedt et al. (2022). The deviations from multivariate normality are proved by the results of Mardia's multivariate skewness (β = 14.699, p < 0.01) and Mardia's multivariate kurtosis (β = 78.902, p < 0.01). Besides, they used a bootstrapping technique instead of a Hair et al. (2019) recommendation of 50,000 samples and resampling iterations. The path direction, t-values, p-values, and confidence intervals for the structural model were explained using this method. Table 4 and Fig. 1 give the methodology of criteria used to test the hypotheses of this study. The outcome of financial inclusion is that it favors higher deposits in commercial banks. The beta coefficient of 0.213 signifies that the level of financial inclusion is associated with a positive change in the total volume

of deposits, at the 99.7% confidence level as indicated by the very low p-value of 0.003.

Table 3: Discriminant validity

	APM	AU	FI	NET	TO
APM					
AU	0.85				
FI	0.75	0.60			
NET	0.60	0.50	0.81		
TO	0.70	0.65	0.55	0.79	

The strong coefficient of determination (R-squared = 0.689) points to the fact that the financial inclusion's development comprehensively with other drivers attribute to around 68.9% of the total deposits' variation. This reflects the fact that financial inclusion has made total deposits rise to a significant statistic. The positive relationship between alternative payment methods (APM) and total deposits can be explained by the estimated coefficients of 0.240. It shows that there is a close relationship between an increase in APM adoption and a higher total deposit level, evidenced by the presence of p=0.009. On the same note, the literature shows a positive correlation between deposits and investment in automation (AU). In this case, the beta coefficient is 0.432. The p-value of 0.000 is the evidence for this statistically significant relationship.

Table 4: Hypotheses testing, R^2, f^2

Hypothesis	Relationship	Beta	SE	T-value	P-value	R^2	f^2	VIF	Decision
H1.1	Financial inclusion --> Total deposit	0.213	0.071	2.986	0.003	0.689	0.049	2.957	Supported
H1.2	APM --> Total deposit	0.24	0.092	2.596	0.009		0.042	4.423	Supported
H1.3	AU --> Total deposit	0.432	0.076	5.687	0		0.152	3.95	Supported
H2.1	Financial inclusion --> Net profits	0.027	0.064	0.416	0.677	0.689	0.049	4.423	Not supported
H2.2	APM --> Net profits	0.24	0.084	5.195	0		0.192	4.423	Supported
H2.3	AU --> Net profits	0.432	0.077	5.989	0		0.243	3.95	Supported

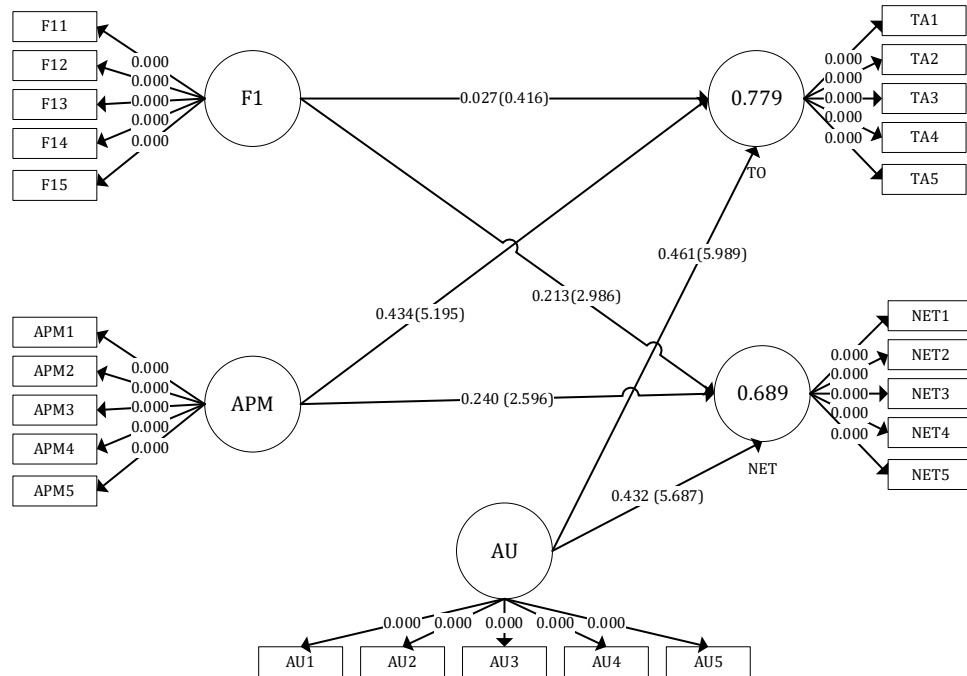SE: Standard error; VIF: Variance inflation factor

Fig. 1: Structural model

5. Discussion

In addition to global dynamics, some local drivers also play a significant role in the FinTech innovation in Jordan, such as favorable regulatory frameworks, accelerated Central Bank initiatives towards promoting financial inclusion, and a low percentage of bank usage compared to the global rate. These criteria set Jordan apart from countries with a more developed financial infrastructure, such as those that benefit from access to modern digital technologies and well-developed banking services. This means the study may have limited reach in countries that have different laws, technologies, or penetration of banking.

The study notes that FinTech adoption, particularly through automation and alternative payment methods, significantly enhances financial performance in Jordanian banks. For policymakers, this further highlights the importance of sustained support of FinTech innovation to extend financial inclusion and drive economic growth. Bank managers, in turn, should focus on investing in these technologies to boost efficiency and customer engagement. Comparisons with studies from other developing regions, such as Southeast Asia and Africa, show similar trends, with FinTech proving essential in improving banking performance, though local regulatory and technological contexts influence the pace of adoption.

The COVID-19 pandemic further accelerated FinTech adoption, as lockdowns and social distancing measures pushed consumers toward digital banking solutions. In Jordan, this shift led to a surge in mobile payments and online banking, positively affecting bank performance. This mirrors

global trends, where the pandemic acted as a catalyst for rapid FinTech adoption, particularly in developing economies.

5.1. Hypothesis H1.1: Financial inclusion and total deposit

The study presents a hypothesis according to which financial inclusion, as a factor, positively affects total deposits in the country's commercial banks. That is like the definition suggested by Barbu et al. (2021), where FinTech happens when new financial services caused by technological advancements are provided. Building on top, Abad-Segura et al. (2020) additionally discussed the peculiar mixture of finance and technology, where financial services are predominantly provided via technological means. Furthermore, Naz et al. (2024) underscored the caliber of FinTech in channeling new technologies into finance when the crisis of COVID-19 erupted. In such a case, it can be said that financial inclusion, which is innovative FinTech, may however enhance commercial banks' total deposits.

5.2. Hypothesis H1.2: Alternative payment methods (APM) and total deposit

Herein, this hypothesis is based on APM positively connecting to total deposits that banks traditionally maintain. The evidence supports the argument by delineating a comprehensive place of Fintech in doing payment systems revolution. In their opinion, FinTech stands for such technical innovations and the internet that can change banking services fundamentally and enable new ways of payment. In addition, once FinTech innovations have led to the growth of different payment processors, financial transactions are not restricted to the boundaries of the traditional banking system, however. This inference can be explained as promoting APM (a subset of fintech) can drive the growth of the total deposits in commercial banks.

5.3. Hypothesis H1.3: Automation (AU) and total deposit

The hypothesis is the statement that there is a positive effect of automation on the total bank deposit size in commercial banks. Such is in line with the earlier work of Lim et al. (2019) and Suseendran et al. (2020) about the emergent importance of sophisticated tech, involving artificial intelligence and blockchain in shaping FinTech services. Using these technological methods extends the utilitarian purpose of FinTech by discovering ways to make financial services easier and more enjoyable for the user. Thus, FinTech becomes a vital aspect of market dynamics as observed by Barbu et al. (2021). Thus, it is likely that the automation of financial services, mainly by simple applications from FinTech

innovations, can result in an increase in total deposits in commercial banks as well.

5.4. Hypothesis H2.1: Financial inclusion and net profits

Similarly, these are the grounds for the hypothesis on a link between financial inclusion and increased net proceeds in commercial banks. To follow the earlier analysis, we can see what Naz et al. (2024) and Barbu et al. (2021) had about the potentiality of FinTech changing to the level of financial inclusion that shows the influence of FinTech on net profits. Financial inclusion may occur through FinTech. Wider access to financial services as well as economic participation may result in greater financial gains for commercial banks.

5.5. Hypothesis H2.2: Alternative payment methods (APM) and net profits

The basic idea of this hypothesis rests upon the observation that FinTech services are of help in enhancing payment systems as put forward by the research conducted by Zaghlol et al. (2021) as well as the study done by Nicoletti et al. (2017) that suggests there exists a strong connection between APM adoption and a strong bottom-line position in commercial banks. The APMs with FinTech innovations make payment processes easier and more efficient, which tremendously boosts the engagement and the volume of transactions done by customers. This increase in the volume of transactions may translate to enhanced net profits recorded by banks.

5.6. Hypothesis H2.3: Automation (AU) and net profits

Finally, the hypothesis suggests a positive association between automation and net profits in commercial banks. Building upon Lim et al. (2019) and Suseendran et al. (2020) personas who pointed towards the growing role of high-tech technologies in delivering better financial services, the hypothesis represents that automation, enabled by emerging technologies in the FinTech arena, can bring about operational efficiency and lower costs for commercial banks, and can lead to higher profits, consequently.

6. Theoretical implications

The outcomes of this research study provide a significant extension which are financially related studies in FinTech. First, the relationship between financial inclusion, APMs, and automation will be studied, and how they are affecting financial performance measures such as deposits and net profits of banks. This aspect of the research enriches knowledge about the mechanisms or processes that are behind FinTech growth and the way they are

changing the banking sector. While building the theoretical background of FinTech, disruptive innovation, and customer demand theories are integrated to theorize FinTech as an elevator in traditional banking. Lastly, the review of the regulatory aspect and the struggle that goes on between Fintech and conventional financial establishments reinforces existing theoretical assumptions concerning the commingling and competition of innovation-powered disruptors and well-established incumbents that exist in the financial sector.

6.1. Managerial implications

Consequently, for institutional management, this research provides a platform with useful recommendations for financial institutions, policymakers, and FinTech entrepreneurs. Through the first link, we can tell that financial inclusion, automation, automation, and APM adoption have a positive relationship with the banks' financial indicators. It means that investments in Fintech previously mentioned can be popular among commercial banks as higher amounts of Total Deposit and Net Profit indicators can be obtained. Secondly, integrating disruptive innovation and customer demand in strategic management decisions of the financial sector can help financial institutions make effective strategies toward the dynamic FinTech environment by keeping an eye on the probabilities of collaboration or competition with FinTech firms. Acknowledging regulatory factors is the third consideration emphasizing the need for compliance with regulations and risk management approaches that will help to capitalize on FinTech opportunities without risk.

For policymakers, aligning regulations with the growth of FinTech in Jordan, especially regarding financial inclusion, is crucial. For bank managers, integrating FinTech solutions such as automation and mobile banking could provide a market edge. As compared to other regions like Southeast Asia, Jordan's FinTech sector shares similar challenges in adoption but presents distinct opportunities to broaden financial access to underserved individuals.

7. Conclusion

This research presents the significant influence of FinTech innovations on the banking sector, providing empirical support for the positive impact of financial inclusion, APM adoption, automation, and performance indicators like total deposits or net profits. Integrating theoretical frameworks into this research, such as technological disruptions and consumer demand theories, permits us to develop a comprehensive picture of how FinTech is transforming traditional banking paradigms and to provide relevant perspectives and points for reflection for financial institutions, policymakers, and FinTech businesses. Moreover, the data collection period of (2015-2022) helped capture the significant role of COVID-19 in enhancing the adoption of FinTech. This event acted as a catalyst for increased acceptability and reliance on digital financial services which in turn enhanced financial inclusion and automation. Future research should explore the long-term effects of FinTech adoption on financial stability, effectiveness, and inclusiveness, as well as the emerging challenges and opportunities FinTech innovations present in the banking sector.

List of abbreviations

AI	Artificial intelligence
APM(s)	Alternative payment method(s)
ASE	Amman Stock Exchange
AU	Automation
AVE	Average variance extracted
C/I	Cost-to-income ratio
CR	Construct reliability
DMUs	Decision-making units
f^2	Effect size (in structural model analysis)
FI	Financial inclusion
FinTech	Financial technology
HTMT	Heterotrait-monotrait ratio
IoT	Internet of things
MENA	Middle East and North Africa
NFC	Near field communication
Net	Net profit (used as a construct label)
PLS-SEM	Partial least squares structural equation modeling
ROA	Return on assets
ROE	Return on equity
R^2	Coefficient of determination
SE	Standard error
TA	Total assets or total deposit (contextually total deposit)
VIF	Variance inflation factor

Compliance with ethical standards

Ethical considerations

Informed consent was obtained from all participants, and their anonymity and confidentiality were maintained throughout the study.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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