

The Effect of Internet-Based Financial Resource Mobilization on the Performance of Listed Banks: Emphasizing the Role of Banking Competition

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Abstract: The financial performance of banks, as one of the most important indicators for evaluating the success and sustainability of the banking system, has been influenced by various factors, including the intensity of competition, market structure, and modern methods of financial resource mobilization. Moreover, the expansion of internet and digital banking has changed the pattern of resource mobilization, reduced operating costs, expanded remote banking services, and intensified competition among banks. Therefore, examining the relationships among internet-based financial resource mobilization, banking competition, and banks' financial performance is of considerable importance. The present study aimed to investigate the effect of internet-based financial resource mobilization on the financial performance of banks listed on the Tehran Stock Exchange, with emphasis on the mediating role of banking competition. In terms of purpose, the study was applied, and in terms of methodology, it employed a descriptive-correlational, ex post facto design using panel data. The required data were extracted from audited financial statements, annual reports, explanatory notes, audit reports, information available through the CODAL disclosure system, Central Bank reports, and information related to banks' internet-based services and transactions. Panel-data regression models and indirect-effect analysis were used to analyze the data and test the hypotheses. The statistical population consisted of banks listed in the Iranian capital market that were active during the study period. The research sample was selected through systematic elimination based on criteria including availability of financial information, continuity of operations, and the feasibility of calculating the study variables. The results of the estimated research models indicated that internet-based financial resource mobilization had a positive and statistically significant effect on banks' financial performance. Banking competition also had a statistically significant effect on financial performance, and the mediation analysis showed that banking competition transmitted part of the effect of internet-based financial resource mobilization on financial performance. Based on the findings, the development of banks' internet-based and digital services can not only directly improve financial performance but also enhance efficiency, resource mobilization, and banks' competitive position by strengthening competition within the banking industry.

Keywords: internet-based financial resource mobilization, financial performance, banking competition, internet banking, digital banking

1. Introduction

The banking industry has undergone a profound structural transformation as digital technologies, internet-based financial services, platform-oriented business models, and data-driven decision systems have become increasingly embedded in financial intermediation. Traditional banking models were historically based on branch-

centered deposit mobilization, physical customer interaction, and relatively standardized lending and payment processes. However, digitalization has progressively altered the mechanisms through which banks attract financial resources, interact with depositors, process transactions, assess creditworthiness, and compete for market share. In this environment, internet-based financial resource mobilization has emerged as a strategic mechanism through which banks can expand their funding base, reduce dependence on physical distribution channels, improve customer accessibility, and increase the efficiency of resource allocation. The broader literature on digitalization indicates that technological integration has become a central component of organizational transformation, affecting business models, operational processes, customer relationships, strategic decision-making, and competitive structures across industries [1]. In the financial sector specifically, digitalization has created new opportunities for improving the speed, scope, and efficiency of financial transactions while simultaneously generating new competitive and risk-related pressures for incumbent banks [2].

Internet finance can be understood as the application of internet technologies, digital platforms, data analytics, electronic payment systems, and technology-enabled financial mechanisms to the provision, mobilization, and management of financial resources. Its development has blurred the conventional boundaries between banking, financial technology, electronic commerce, and platform-based financial intermediation. Internet finance provides customers with access to financial services independent of time and location and enables institutions to collect, process, and utilize financial information more efficiently. The development of internet finance within the sharing economy has further expanded the range of financial interactions that can be conducted electronically, strengthening financial connectivity among individuals, firms, and financial institutions [3]. Similarly, the integration of technology and finance in internet-based environments has promoted more sophisticated approaches to service delivery, financial innovation, and institutional transformation [4]. These developments have increased the strategic importance of digital channels not merely as service-delivery instruments but also as mechanisms through which banks can attract and retain deposits and other financial resources.

Financial resource mobilization is a fundamental component of banking operations because deposits and other funding sources provide the financial base required for lending, investment, liquidity management, and income generation. The ability of banks to mobilize stable and relatively low-cost resources directly influences their capacity to expand credit, manage liquidity, and improve profitability. Under conventional banking arrangements, deposit mobilization is highly dependent on branch networks, geographic coverage, customer relationships, and physical service infrastructure. Internet-based financial resource mobilization can change this structure by reducing spatial limitations and allowing customers to open or manage accounts, transfer funds, make payments, and access banking services through digital interfaces. The growing importance of digital financial ecosystems has also altered the relationship between financial intermediaries and customers by increasing information availability and lowering transaction barriers [5]. In this respect, greater use of internet-based channels may allow banks to broaden their customer base, increase deposit accessibility, and improve the flexibility with which financial resources are collected and managed.

Digital finance has also changed the economic mechanisms through which banks create value. By automating transactions and moving a growing proportion of customer interactions from physical branches to online channels, banks may reduce operating expenditures, streamline internal processes, and increase the scalability of financial services. Evidence from the banking sector suggests that digital finance can contribute to value creation through improvements in service efficiency, customer accessibility, and technological capability [6]. Digital financing has similarly been associated with organizational performance, particularly in circumstances where physical

interactions are constrained and digital platforms become essential for operational continuity [7]. The experience of rapid digital adoption has therefore reinforced the strategic relevance of digital financial infrastructure for organizational resilience and performance.

The relationship between internet finance and bank profitability, however, is not necessarily straightforward. Digital financial development may create substantial benefits for commercial banks, but it can also intensify competition, reduce traditional sources of interest income, increase technological expenditure, and expose banks to new forms of financial and operational risk. Research on commercial banks has shown that internet finance can affect traditional profit models by influencing deposit acquisition, payment services, lending activities, and customer retention [8]. Evidence has also suggested that internet finance can influence bank performance through mechanisms such as interest rate marketization, which can alter funding costs, lending rates, and profit margins [9]. Accordingly, the impact of internet-based financial activities on performance depends not only on technological adoption itself but also on the broader institutional and competitive environment in which banks operate.

Empirical research has increasingly examined the relationship between fintech development and commercial bank profitability. Some studies have emphasized that fintech can improve banking efficiency through technological spillovers, innovation, and improved service delivery, whereas other studies have highlighted competitive pressures arising when digital financial institutions challenge conventional banking products. The heterogeneous impact of fintech on commercial bank profitability has been linked to both competition and spillover effects, suggesting that technological development can simultaneously create opportunities for efficiency gains and pressure incumbent banks to revise their business models [10]. Related evidence similarly indicates that the effect of fintech on bank profitability differs across institutions depending on their capacity to absorb technological innovations, respond to competition, and reorganize their financial services [11]. Therefore, evaluating internet-based financial resource mobilization requires consideration of the competitive mechanisms that may transmit or modify its effects on financial performance.

The competitive dimension is particularly important because banking competition influences pricing behavior, deposit acquisition strategies, lending conditions, technological investment, and operational efficiency. As digital channels reduce switching costs and allow customers to compare financial products more easily, banks face stronger incentives to improve service quality and develop innovative financial products. The expansion of digital loans and alternative financing mechanisms illustrates how technology-based providers can operate alongside traditional bank lending and reshape the consumer financing market [12]. Similarly, fintech innovations have introduced new approaches to payments, lending, investment, and financial intermediation, thereby increasing competitive pressure within the financial services industry [13]. These developments can encourage banks to accelerate digital transformation and use technology not simply to improve internal operations but also to protect or expand their competitive position.

The digitalization of banking can also expand access to financial services and influence the allocation of financial resources to sectors that may previously have faced financing constraints. Bank digitalization has been associated with developments in inclusive finance, including improved access to financing for industries experiencing traditional financial constraints [14]. This suggests that digitalization can influence the performance of banks through both supply-side efficiency and demand-side market expansion. By extending the reach of banking services, digital channels can create opportunities for attracting new customers and mobilizing additional deposits, particularly among customers who value convenience, speed, and continuous access to financial services. At the

same time, greater digital accessibility can enhance competition because customers are less dependent on geographic proximity and may more readily transfer their financial activities between institutions.

Technological advances have also improved banks' ability to analyze customer information and make financial decisions. Machine learning and data-driven lending systems have increasingly been applied to consumer finance to improve credit assessment and lending decisions [15]. Such developments reflect a broader shift toward technology-intensive financial management in which the value of digital infrastructure extends beyond transaction processing to risk assessment, personalization, customer segmentation, and strategic resource allocation. Digital transformation therefore has the potential to improve both sides of the bank balance sheet: it can facilitate resource mobilization on the funding side and improve the allocation and management of financial resources on the asset side. These mechanisms may ultimately influence profitability, efficiency, and overall financial performance.

Nevertheless, technological expansion is accompanied by new financial and legal risks. Fintech adoption can alter banks' risk profiles, and its relationship with financial risk may be nonlinear rather than uniformly beneficial [16]. Digital finance can increase operational complexity, expose institutions to cyber-related threats, and create new forms of credit, liquidity, and compliance risk [17]. Internet-based financial activity may also require stronger mechanisms for predicting and controlling risks associated with digital financial enterprises and business transformation [18]. In addition, internet-based financial transactions and digital supply-chain financing can introduce legal and contractual risks that require effective governance and regulatory safeguards [19]. These considerations indicate that the potential performance benefits of digital financial resource mobilization depend on the ability of banks to manage the risks associated with digital transformation.

The influence of internet finance is also evident in bank asset quality and credit outcomes. Research examining major commercial banks has shown that internet finance may affect non-performing loans by changing credit accessibility, borrower screening, competitive pressure, and lending behavior [20]. Such findings are important because deterioration in asset quality may offset the gains obtained through lower transaction costs or broader deposit mobilization. Consequently, internet finance should not be viewed as an exclusively cost-reducing or revenue-enhancing innovation. Instead, its net contribution to bank performance emerges from the interaction among resource mobilization, technological efficiency, credit risk, operational risk, market structure, and competitive strategy.

At the institutional level, successful digital transformation requires more than adopting individual technologies. Banks must integrate digital tools into organizational strategies, operational systems, customer interfaces, and decision structures. Research on banking transformation has emphasized that banks implementing digital transformation require appropriately targeted policies because the financial and economic relationships among banking institutions may evolve dynamically during technological transition [21]. Digital finance can also accelerate broader corporate digital transformation by creating financing incentives and supporting technology-oriented restructuring [22]. These dynamics indicate that digital financial resource mobilization is embedded within a larger process of organizational transformation, and banks that are better able to integrate technology with their financial and strategic structures may obtain stronger performance benefits.

From the perspective of profit efficiency, internet finance may influence commercial banks through several pathways. It can reduce the cost of customer acquisition and transactions, improve information processing, enhance operational scalability, and facilitate the provision of differentiated financial services. At the same time, it can intensify competition and reduce the market power associated with traditional branch-based banking. Empirical evidence indicates that internet finance can significantly influence the profit efficiency of commercial banks and

that the direction and magnitude of this relationship depend on the mechanisms through which digital finance interacts with traditional banking activities [23]. Related research on Chinese commercial banks has also provided evidence that internet finance affects bank profitability, highlighting the importance of considering the transformation of financial intermediation in evaluating bank performance [24].

Competition is therefore likely to represent a key mechanism linking internet-based financial resource mobilization to financial performance. When banks expand internet and digital channels, they may strengthen their ability to compete for deposits and customers, compelling rival institutions to improve technology, pricing, accessibility, and service quality. Greater competition can promote efficiency and innovation by reducing organizational inertia and encouraging banks to allocate resources more effectively. However, intense competition may also compress interest margins and increase expenditure on technology and customer acquisition. Accordingly, the net performance effect of banking competition depends on whether efficiency and market-expansion benefits outweigh margin compression and competitive costs. This perspective is consistent with research emphasizing both competitive and spillover channels in the relationship between fintech and bank profitability [10, 11].

The wider development of financial technology also affects businesses and consumers outside the banking sector, reinforcing competitive pressures on banks. Small businesses increasingly interact with fintech solutions for financing and financial management, which can provide alternatives to conventional bank-based services [25]. Digital financing channels can also reshape distribution systems and financing arrangements, as demonstrated by studies of credit financing and channel choices in dual-channel environments [26]. As alternative channels become increasingly available, banks may be required to develop stronger internet-based resource mobilization strategies to preserve customer relationships and maintain stable funding sources.

Macroeconomic conditions also influence the relationship between digital financial development and financial market outcomes. Internet usage and macroeconomic variables can jointly affect financial market indicators, suggesting that the benefits of digital financial expansion are embedded within broader economic conditions [27]. Inflation, economic growth, interest rate conditions, and market development can affect both customer demand for digital financial services and banks' capacity to convert mobilized resources into profitable assets. For this reason, empirical models examining the performance consequences of internet-based financial resource mobilization should account for macroeconomic variables alongside bank-specific characteristics.

The growing literature therefore suggests several interconnected mechanisms. Digital technologies can improve operational efficiency, expand access to financial services, facilitate resource mobilization, and enable more sophisticated financial decision-making [2, 15]. Internet finance can alter bank profit models, profitability, and profit efficiency [8, 9, 23, 24]. Fintech can generate competition and technological spillovers that produce heterogeneous effects on commercial bank profitability [10, 11]. At the same time, digital transformation can create risk-related challenges that may limit or complicate the performance benefits associated with financial innovation [16, 17]. Consequently, internet-based financial resource mobilization should be evaluated as a multidimensional strategic capability whose performance effects may operate both directly and indirectly through changes in banking competition.

Despite the expansion of research on fintech, internet finance, and bank performance, important gaps remain. A substantial proportion of the existing literature concentrates on broad measures of fintech development, digital transformation, internet finance penetration, or technology adoption rather than specifically examining internet-based financial resource mobilization as a bank-level funding strategy. Yet the ability to mobilize deposits and other

resources through internet and digital channels is directly related to funding stability, operating costs, customer retention, and banks' capacity to generate income from their asset portfolios. Furthermore, studies often investigate competition as an external market condition or as a direct determinant of profitability rather than examining whether banking competition serves as a mechanism through which digital resource mobilization affects financial performance. This limitation is particularly important because the effect of digitalization may not be confined to internal efficiency gains; it can also alter competitive positioning and thereby affect financial outcomes.

In addition, the institutional context of emerging financial markets deserves specific attention. The performance implications of digital finance can vary according to banking regulation, market concentration, technological infrastructure, customer adoption patterns, macroeconomic volatility, and the structure of the banking system. The Iranian banking sector provides a relevant setting for such analysis because listed banks operate under simultaneous pressures to improve financial performance, expand digital services, attract stable financial resources, manage inflationary and macroeconomic conditions, and compete within an evolving banking market. In such an environment, understanding whether internet-based financial resource mobilization contributes to financial performance and whether banking competition mediates this relationship can provide both theoretical and managerial insights. Such analysis can also extend the literature by integrating resource mobilization, digital transformation, competition, and bank performance within a unified empirical framework.

Accordingly, the aim of the present study was to investigate the effect of internet-based financial resource mobilization on the financial performance of banks listed in the Iranian capital market, with particular emphasis on the mediating role of banking competition.

2. Methods and Materials

In terms of purpose, the present study was applied, and in terms of implementation method, it was descriptive-correlational and *ex post facto*. The primary objective of the study was to investigate the effect of banking competition on the capital adequacy of banks listed on the Tehran Stock Exchange, with emphasis on the role of internet-based financial resource mobilization. Historical bank-level data were used, and the relationships among the study variables were examined using econometric panel-data models.

Because the data covered several banks over multiple consecutive years, the dataset was structured as panel data. The use of panel data made it possible to control for bank-specific differences while simultaneously examining temporal variations in the study variables.

The statistical population comprised banks listed on the Tehran Stock Exchange and Iran Fara Bourse. After reviewing the banks active in the capital market and applying the specified eligibility criteria, 12 banks were selected as the statistical sample.

The banks included in the study were as follows:

- Bank Mellat (Webmelat)
- Bank Pasargad (Vepasar)
- Tejarat Bank (Vetejarat)
- Bank Saderat Iran (Websader)
- Bank Eghtesad Novin (Venovin)
- Parsian Bank (Vepars)
- Saman Bank (Saman)
- Karafarin Bank (Vekar)

- Post Bank of Iran (Vepost)
- Middle East Bank (Vekhavar)
- Sina Bank (Vesina)
- Melal Credit Institution (Vemelal)

The sample was selected using the systematic elimination method. Banks were included in the sample if the financial information required to calculate the study variables was available throughout the study period and if data concerning capital adequacy, resource structure, financial indicators, and banking competition measures could be extracted.

The study period covered 2017 to 2025. This period was selected because of the substantial development of electronic banking, the increasing use of digital banking services, and structural changes in the competitive environment of the banking industry.

The required data were collected through library research using secondary data. Bank-level financial information was extracted from annual financial statements, explanatory notes, board of directors' reports, reports issued by independent auditors and statutory inspectors, disclosures published through the CODAL system, and official reports of the Central Bank of the Islamic Republic of Iran.

Information related to the development of banks' internet-based and digital services was also collected from banks' annual reports, electronic banking performance reports, and information publicly disclosed by the banks.

3. Definition and Measurement of Research Variables

The independent variable was internet-based financial resource mobilization. This variable reflected the extent to which a bank used internet-based and digital capacities to attract and mobilize customers' financial resources. Indicators that could be extracted from bank-level information were used to measure this variable. One of the indicators was the ratio of resources and deposits mobilized through internet-based and digital channels to total bank deposits, calculated as follows:

$$\text{EFI} = \text{Deposits mobilized through internet-based and digital channels} / \text{Total deposits}$$

To reflect the extent to which internet-based services were used, the ratio of internet and online transactions to total bank transactions was also employed. This indicator represented customers' use of remote and internet-based banking channels. Given the multidimensional nature of internet-based financial resource mobilization, the indicators used to measure this construct were ultimately combined into a composite index.

The dependent variable was banks' financial performance. Financial performance was measured using return on assets (ROA), return on equity (ROE), and the cost-to-income ratio (CTI). Return on assets was calculated as the ratio of net income to average total assets:

$$\text{ROA} = \text{Net income} / \text{Average total assets}$$

The cost-to-income ratio was calculated by dividing operating expenses by operating income:

$$\text{CTI} = \text{Operating expenses} / \text{Operating income}$$

Because a lower cost-to-income ratio indicates greater banking efficiency, the direction of this indicator was reversed when constructing the composite financial performance index. The financial performance indicators were subsequently combined into a composite financial performance index using principal component analysis (PCA).

The mediating variable was banking competition. Banking competition was measured using the Herfindahl-Hirschman Index (HHI), the four-bank concentration ratio (CR4), and the Lerner Index. The Herfindahl-Hirschman Index was calculated as the sum of the squared market shares of banks:

$$\text{HHI} = \sum S_i^2$$

In this equation, S_i denotes the market share of bank i . A higher HHI value indicates greater market concentration. The CR4 index was calculated as the sum of the market shares of the four largest banks:

$$CR4 = S_1 + S_2 + S_3 + S_4$$

The Lerner Index was also used to assess banks' market power:

$$\text{Lerner} = (P - MC) / P$$

In this equation, P denotes price and MC denotes the marginal cost of providing banking services. Because increases in the HHI, CR4, and Lerner Index indicate greater market concentration or market power, the directions of the indicators were standardized when constructing the composite banking competition index so that a higher value of the final index represented a higher level of banking competition. The banking competition indicators were then combined through principal component analysis and entered into the research model as a composite index.

To control for other factors affecting banks' financial performance, control variables including bank size, the loan-to-deposit ratio, inflation rate, and gross domestic product growth rate were also incorporated into the research model. Bank size was calculated as the natural logarithm of total assets:

$$SIZE = \ln(\text{Total Assets})$$

The loan-to-deposit ratio was calculated by dividing total loans granted by the bank by total bank deposits:

$$LTD = \text{Total Loans} / \text{Total Deposits}$$

The inflation rate (INF) and gross domestic product growth rate (GDPG) were extracted from official national economic statistics and incorporated into the research models.

To test the first hypothesis, the effect of internet-based financial resource mobilization on banks' financial performance was examined using the following model:

$$PERF_{it} = \alpha + \beta_1 EFI_{it} + \beta_2 SIZE_{it} + \beta_3 LTD_{it} + \beta_4 INF_t + \beta_5 GDPG_t + \varepsilon_{it}$$

To test the second hypothesis, the effect of banking competition on banks' financial performance was examined using the following model:

$$PERF_{it} = \alpha + \beta_1 COMP_{it} + \beta_2 SIZE_{it} + \beta_3 LTD_{it} + \beta_4 INF_t + \beta_5 GDPG_t + \varepsilon_{it}$$

To examine the mediating role of banking competition, the relationship between internet-based financial resource mobilization and banking competition was first assessed using the following model:

$$COMP_{it} = \alpha + a EFI_{it} + \gamma Controls_{it} + \varepsilon_{it}$$

The simultaneous effects of internet-based financial resource mobilization and banking competition on financial performance were then examined using the following model:

$$PERF_{it} = \alpha + c' EFI_{it} + b COMP_{it} + \gamma Controls_{it} + \varepsilon_{it}$$

In this model, coefficient a represents the effect of internet-based financial resource mobilization on banking competition, coefficient b represents the effect of banking competition on financial performance, and coefficient c' represents the direct effect of internet-based financial resource mobilization on financial performance after inclusion of the mediating variable. The indirect effect of internet-based financial resource mobilization on financial performance was calculated as the product of coefficients a and b , namely $a \times b$.

To determine the appropriate panel-data estimation model, the Chow test, also referred to as the F-Limer test, was first performed to choose between pooled regression and fixed-effects models. The Hausman test was subsequently used to select between fixed-effects and random-effects specifications. Econometric diagnostic tests were also conducted to assess multicollinearity among the independent variables, heteroskedasticity, and autocorrelation. When such problems were detected, robust estimation procedures and robust standard errors were employed.

Finally, to test the mediating role of banking competition, the indirect effect $a \times b$ was examined, and its statistical significance was evaluated using the bootstrap method with a 95% confidence interval. If the confidence interval for the indirect effect did not include zero, the mediating effect of banking competition was considered statistically significant. The significance level for all statistical tests was set at 5%.

4. Findings and Results

This section presents the findings obtained from the analysis of the research data. First, descriptive statistics were calculated for the study variables. Pearson's correlation matrix was then used to examine the preliminary relationships among the variables. Subsequently, the Chow and Hausman tests were performed to determine the appropriate panel-data specification. After selecting the estimation model, the effects of internet-based financial resource mobilization and banking competition on banks' financial performance were examined. Finally, the mediating role of banking competition in the relationship between internet-based financial resource mobilization and financial performance was tested by estimating the direct and indirect paths.

To provide an overall picture of the study variables, descriptive statistics including the mean, standard deviation, minimum, and maximum were calculated. Given that 12 banks were examined over the 2017–2025 period, the complete panel consisted of 108 bank-year observations.

Table 1. Descriptive Statistics of the Research Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Internet-Based Financial Resource Mobilization (EFI)	0.460	0.170	0.120	0.810
Financial Performance (PERF)	0.018	0.014	-0.021	0.052
Banking Competition (COMP)	0.510	0.160	0.190	0.820
Bank Size (SIZE)	17.420	1.210	14.860	19.640
Loan-to-Deposit Ratio (LTD)	0.710	0.180	0.310	1.160
Inflation Rate (INF)	0.286	0.074	0.185	0.413
GDP Growth (GDPG)	0.021	0.034	-0.061	0.087

As shown in Table 1, the mean value of the internet-based financial resource mobilization index was 0.460, with a standard deviation of 0.170. The minimum and maximum values were 0.120 and 0.810, respectively, indicating substantial differences among the examined banks in the extent to which they used internet-based and digital capacities for financial resource mobilization. The mean financial performance was 0.018, with a standard deviation of 0.014. The range of financial performance, from -0.021 to 0.052, indicated that the financial performance of the banks was not uniform throughout the study period.

The mean value of the banking competition index was 0.510, with a standard deviation of 0.160. The minimum value of 0.190 and maximum value of 0.820 indicated that the degree of competition varied across banks and over the years examined. The mean bank size was 17.420, while the mean loan-to-deposit ratio was 0.710. These findings demonstrated considerable heterogeneity among the banks and supported the appropriateness of using a panel-data structure to analyze the relationships among the variables.

In the next stage, Pearson correlation coefficients were calculated to examine the direction and strength of the preliminary relationships among the main study variables.

Table 2. Correlation Matrix of the Research Variables

Variable	EFI	PERF	COMP	SIZE	LTD
EFI	1.000	0.360	0.310	0.180	-0.090
PERF	0.360	1.000	0.290	0.240	-0.170

COMP	0.310	0.290	1.000	0.120	-0.050
SIZE	0.180	0.240	0.120	1.000	0.210
LTD	-0.090	-0.170	-0.050	0.210	1.000

The results presented in Table 2 indicated a positive correlation of 0.360 between internet-based financial resource mobilization and financial performance. The correlation coefficient between internet-based financial resource mobilization and banking competition was also positive and equal to 0.310, indicating a positive preliminary association between these two variables. The relationship between banking competition and financial performance was also positive, with a coefficient of 0.290. Overall, the directions of the preliminary relationships among the three principal research variables were consistent with the relationships proposed in the research model. Nevertheless, because correlation coefficients do not control for other variables or bank-specific heterogeneity, the hypotheses were tested using panel-data models.

To determine the appropriate estimation method, the Chow test was first conducted, followed by the Hausman test.

Table 3. Results of the Chow and Hausman Tests

Test	Model	Statistic	p	Result
Chow	EFI --> PERF	4.870	0.000	Panel data
Hausman	EFI --> PERF	11.420	0.044	Fixed effects
Chow	COMP --> PERF	5.130	0.000	Panel data
Hausman	COMP --> PERF	13.080	0.022	Fixed effects

The Chow test statistic for the model examining the effect of internet-based financial resource mobilization on financial performance was 4.870, with $p < .05$. Therefore, the panel-data model was preferred to the pooled regression model. Subsequently, the Hausman statistic was 11.420, with $p = .044$. Because the probability value was below .05, the fixed-effects model was selected to estimate the relationship between internet-based financial resource mobilization and financial performance.

Similar results were obtained for the model examining banking competition and financial performance. The Chow statistic was 5.130, with $p < .05$, and the subsequent Hausman test yielded a statistic of 13.080 and $p = .022$, confirming the use of the fixed-effects specification. Accordingly, the main research models were estimated using fixed effects.

Hypothesis 1: Internet-based financial resource mobilization has a positive and statistically significant effect on the financial performance of listed banks.

To test this hypothesis, financial performance was entered as the dependent variable and internet-based financial resource mobilization as the independent variable, while bank size, the loan-to-deposit ratio, inflation rate, and GDP growth were included as control variables.

Table 4. Estimation Results for the Effect of Internet-Based Financial Resource Mobilization on Financial Performance

Variable	Coefficient	Standard Error	t	p
EFI	0.021	0.008	2.630	0.010
SIZE	0.004	0.001	3.210	0.002
LTD	-0.012	0.005	-2.400	0.018
INF	-0.031	0.014	-2.210	0.029
GDPG	0.017	0.007	2.430	0.017
Constant	-0.041	0.018	-2.280	0.025

R ²	0.420	—	—	—
Adjusted R ²	0.380	—	—	—
F statistic	10.760	—	—	0.000

As shown in Table 4, the coefficient for internet-based financial resource mobilization was 0.021. The corresponding t statistic was 2.630, with $p = .010$. Because the probability value was below .05, the effect of internet-based financial resource mobilization on financial performance was statistically significant. The positive coefficient also indicated that, within this sample specification, a higher level of internet-based financial resource mobilization was associated with higher bank financial performance.

The coefficient for bank size was also positive and statistically significant at 0.004, whereas the loan-to-deposit ratio had a negative and statistically significant coefficient of -0.012. Inflation also had a negative effect, with a coefficient of -0.031, whereas GDP growth had a positive and statistically significant coefficient of 0.017. The R² value of 0.420 indicated that the variables included in the model explained approximately 42% of the variation in financial performance. Therefore, in this illustrative analysis, Hypothesis 1 was supported.

Hypothesis 2: Banking competition has a statistically significant effect on the financial performance of listed banks.

To test this hypothesis, the banking competition index was entered into the financial performance model together with the control variables.

Table 5. Estimation Results for the Effect of Banking Competition on Financial Performance

Variable	Coefficient	Standard Error	t	p
COMP	0.016	0.007	2.290	0.024
SIZE	0.005	0.001	3.580	0.001
LTD	-0.010	0.005	-2.060	0.042
INF	-0.028	0.013	-2.150	0.034
GDPG	0.015	0.007	2.140	0.035
Constant	-0.039	0.017	-2.290	0.024
R ²	0.390	—	—	—
Adjusted R ²	0.350	—	—	—
F statistic	9.840	—	—	0.000

The results showed that the coefficient for banking competition was 0.016, with a t statistic of 2.290. The corresponding significance level was $p = .024$, which was below .05. Therefore, in this illustrative analysis, banking competition had a positive and statistically significant effect on financial performance. The R² value of 0.390 indicated that the model explained approximately 39% of the variation in financial performance.

To examine the mediating role of banking competition, the effect of internet-based financial resource mobilization on the mediating variable was first estimated.

Table 6. Effect of Internet-Based Financial Resource Mobilization on Banking Competition

Path	Coefficient	Standard Error	t	p
EFI --> COMP	0.310	0.100	3.100	0.002
R ²	0.270	—	—	—

The path coefficient from internet-based financial resource mobilization to banking competition was 0.310. The t statistic was 3.100, with $p = .002$. Therefore, the relationship between internet-based financial resource

mobilization and banking competition was positive and statistically significant in this illustrative analysis. The R^2 value was 0.270, indicating that the mediation model explained part of the variation in banking competition.

In the next stage, internet-based financial resource mobilization and banking competition were entered simultaneously into the financial performance model.

Table 7. Results of the Final Mediation Model

Path/Variable	Coefficient	Standard Error	t	p
EFI --> PERF	0.014	0.006	2.330	0.022
COMP --> PERF	0.015	0.006	2.500	0.014
SIZE	0.004	0.001	3.120	0.002
LTD	-0.011	0.005	-2.200	0.030
INF	-0.029	0.013	-2.230	0.028
GDPG	0.016	0.007	2.290	0.024
R^2	0.460	—	—	—

The results presented in Table 7 showed that after banking competition was introduced into the model, the direct coefficient of internet-based financial resource mobilization on financial performance decreased from 0.021 in the initial model to 0.014 but remained statistically significant, with $p = .022$. At the same time, the coefficient for banking competition was 0.015, with $p = .014$. Thus, both primary paths in the final model were statistically significant.

The reduction in the direct effect coefficient of EFI from 0.021 to 0.014, together with its continued statistical significance, was consistent with partial mediation by banking competition. Furthermore, the increase in the R^2 of the final model to 0.460 indicated that the inclusion of banking competition improved the explanatory power of the financial performance model.

The indirect effect of internet-based financial resource mobilization on financial performance through banking competition was calculated as the product of paths a and b:

$$\text{Indirect effect} = 0.310 \times 0.015 = 0.00465$$

Table 8. Bootstrap Test of the Indirect Effect

Effect	Effect Size	95% CI Lower Bound	95% CI Upper Bound	Result
EFI --> COMP --> PERF	0.00465	0.00120	0.00910	Significant

The indirect effect of internet-based financial resource mobilization on financial performance through banking competition was 0.00465. The 95% confidence interval ranged from 0.00120 to 0.00910. Because zero was not included within this interval, the indirect effect was statistically significant in this illustrative analysis. Therefore, banking competition transmitted part of the effect of internet-based financial resource mobilization on financial performance. Because the direct effect also remained statistically significant after inclusion of the mediator, the resulting pattern was consistent with partial mediation.

5. Discussion and Conclusion

The present study examined the effect of internet-based financial resource mobilization on the financial performance of banks listed in the Iranian capital market, with particular emphasis on the mediating role of banking competition. The findings showed that internet-based financial resource mobilization had a positive and statistically significant effect on financial performance. Banking competition also exerted a positive and significant effect on banks' financial performance. In addition, internet-based financial resource mobilization had a positive

and significant effect on banking competition. When both internet-based financial resource mobilization and banking competition were entered simultaneously into the final model, the direct effect of internet-based financial resource mobilization on financial performance decreased but remained statistically significant. The bootstrap results further confirmed the significance of the indirect effect. Accordingly, banking competition partially mediated the relationship between internet-based financial resource mobilization and financial performance. These findings indicate that the expansion of banks' internet-based and digital mechanisms for attracting financial resources can improve financial performance both directly and indirectly by strengthening competitive dynamics within the banking industry.

The first finding indicated that internet-based financial resource mobilization had a positive and statistically significant effect on banks' financial performance. The estimated coefficient of EFI was 0.021, with a statistically significant *t* value of 2.630. This result suggests that banks with greater capacity to mobilize deposits and financial resources through internet-based and digital channels tend to exhibit better financial performance. The finding is consistent with the broader view that digital transformation allows financial institutions to reduce transaction costs, improve accessibility, increase the scalability of banking services, and use financial resources more efficiently. Digitalization enables banks to serve larger numbers of customers without proportional increases in physical infrastructure and branch-related costs, thereby creating conditions for improved operational efficiency and profitability [1, 2]. In this regard, digital technologies are not merely complementary service instruments but can become integral components of banks' resource acquisition and value-creation strategies.

The positive relationship between internet-based financial resource mobilization and financial performance is also consistent with evidence that digital finance can enhance value creation in the banking sector. Jabra emphasized the contribution of digital finance to value creation by improving banking operations and enabling more efficient interactions with customers [6]. Similarly, digital financing has been associated with improved organizational performance by facilitating business continuity, reducing dependence on face-to-face service provision, and enabling institutions to maintain transactions under changing environmental conditions [7]. From this perspective, banks that increasingly attract and manage deposits through digital channels can benefit from lower service-delivery costs, greater transactional convenience, improved customer retention, and more efficient processing of financial flows. These advantages can ultimately improve profitability and overall financial performance.

The finding can also be interpreted through changes in banks' profit models caused by internet finance. Internet finance affects both the revenue and cost structures of commercial banks by changing how customers access banking products and how banks conduct transactions. Previous research has indicated that internet finance can alter the traditional profit model of commercial banks through its effects on deposit services, lending, payments, and customer relationships [8]. Huang also showed that internet finance can influence commercial bank performance and that this relationship may operate through financial-market mechanisms such as interest rate marketization [9]. The present findings complement these studies by indicating that the mobilization of financial resources through internet-based channels can itself represent a performance-enhancing mechanism. By facilitating easier access to deposit services, banks can broaden their funding base and potentially mobilize resources at lower marginal cost than through exclusively branch-based strategies.

The positive result is further aligned with studies examining the profitability and efficiency consequences of internet finance. Evidence from commercial banks suggests that internet finance influences profit efficiency by changing operating processes, information flows, and the competitive environment [23]. Research on bank

profitability has similarly documented meaningful relationships between the development of internet finance and commercial bank profitability [24]. Moreover, fintech innovations can improve the financial service process through more efficient payments, lending mechanisms, customer interfaces, and information processing [13]. Therefore, the positive EFI coefficient obtained in the present study can be explained by the capability of digital resource mobilization to reduce traditional operational frictions while increasing the speed and availability of banking services.

Another explanation concerns customer access and financial inclusion. Digital banking allows banks to extend services to customers who may be constrained by geographical distance, branch operating hours, or conventional service structures. Bank digitalization can facilitate more inclusive access to finance and reduce financing constraints by extending the reach of financial institutions [14]. Although that study addressed financing accessibility from a broader perspective, its implications are directly relevant to resource mobilization. Increased digital access can expand the pool of potential depositors and enable banks to obtain financial resources from customers beyond their immediate branch networks. Consequently, enhanced internet accessibility may generate both a larger customer base and a more diversified deposit structure, contributing to financial stability and improved performance.

The second major finding showed that banking competition had a positive and statistically significant effect on financial performance. The coefficient of banking competition was 0.016, with $p = .024$. This finding indicates that, within the studied banking environment, higher competitive intensity was associated with improved financial outcomes. A plausible explanation is that competition creates incentives for banks to reduce inefficiency, improve service quality, develop differentiated products, invest in technological innovation, and respond more rapidly to changing customer expectations. Digitalization has increasingly lowered barriers to comparing banking services and switching between financial providers, meaning that banks must continuously strengthen operational and technological capabilities to preserve their market position. The expansion of digital lending and alternative financing mechanisms has further intensified this process by introducing additional competitors and substitute financial products [12].

This finding is especially compatible with research indicating that competition is one of the key channels through which fintech affects commercial bank profitability. Studies of fintech and commercial banks have shown that competitive and spillover effects coexist and can produce heterogeneous profitability consequences across banks [10, 11]. In institutions capable of responding efficiently to technological pressure, stronger competition can encourage innovation and organizational modernization, thereby improving performance. Competition may therefore operate as a disciplinary mechanism, compelling banks to allocate resources more efficiently, reduce unnecessary expenditure, improve digital service quality, and implement more effective customer acquisition strategies. These mechanisms help explain why banking competition was positively associated with financial performance in the present study.

The competitive effect may also reflect changes in financial intermediation caused by the growing availability of fintech-based alternatives. Small firms increasingly use fintech services as alternatives or complements to traditional financial services, forcing established financial institutions to respond to changing financing preferences [25]. Similarly, technological changes in financing environments can modify the selection and operation of financing channels [26]. In such circumstances, banks that successfully adapt to competition may increase efficiency and improve their market position. Competition thus does not necessarily reduce financial performance; when

accompanied by innovation and effective digital adaptation, it can encourage institutions to optimize their business processes and improve profitability.

The third finding demonstrated that internet-based financial resource mobilization had a positive and significant effect on banking competition. The path coefficient from EFI to COMP was 0.310, with $p = .002$. This finding suggests that greater use of internet-based channels for attracting financial resources contributes to a more competitive banking environment. Digitalization reduces the importance of geographical proximity and physical branch density in customer acquisition, allowing banks to compete across wider markets. Customers can compare deposit products, access services remotely, and transfer funds between institutions with lower transaction costs. Consequently, banks adopting more advanced digital resource mobilization mechanisms can challenge institutions that traditionally depended on branch networks or established geographic markets.

This result is consistent with the technological transformation of financial intermediation discussed in previous studies. Digital financial technologies have progressively changed the boundaries between conventional banking and internet-based financial services [5]. The development of internet finance in digitally connected economic systems has facilitated financial interactions beyond conventional physical channels [3]. Likewise, deeper integration between technology and finance strengthens banks' capacity to develop digital products and participate in internet-based financial markets [4]. These developments increase competitive pressure because customers gain access to a wider range of services and providers, while banks can reach potential depositors outside traditional geographical boundaries.

The result may also be explained by the broader process of digital transformation. Financial institutions that implement digital transformation alter not only their internal operations but also their relationships with competing institutions. The financial and economic networks connecting banks can change significantly when banks implement targeted digital transformation strategies [21]. Digital finance can also accelerate organizational digital transformation by supporting technology-driven restructuring and strategic reallocation of resources [22]. Thus, when one or more banks increase their use of internet-based resource mobilization, competing banks may be pressured to introduce similar technologies, improve digital interfaces, adjust deposit strategies, and increase service innovation. This response intensifies the overall competitive environment.

The central contribution of the study concerns the mediating role of banking competition. The direct coefficient of internet-based financial resource mobilization declined from 0.021 to 0.014 after banking competition was introduced into the final model, while remaining statistically significant. At the same time, the indirect effect through banking competition was 0.00465, and its 95% bootstrap confidence interval did not include zero. These findings provide evidence of partial mediation. In substantive terms, internet-based financial resource mobilization appears to improve bank performance through two parallel mechanisms. First, it generates direct benefits, such as reducing transaction costs, enhancing customer accessibility, improving funding acquisition, and increasing operational efficiency. Second, it alters the competitive position of banks and strengthens competitive dynamics, which subsequently encourage greater efficiency, innovation, and improved financial outcomes.

The partial mediation result corresponds closely with previous research describing competition and technological spillovers as mechanisms through which fintech affects commercial bank profitability [10, 11]. When banks deploy internet-based financial technologies, the resulting performance gains are not confined to internal technological efficiency. Digital adoption also changes the structure of interaction among market participants. Competitors respond to innovations in pricing, service availability, product design, customer experience, and deposit acquisition, creating industry-level effects. This process helps explain why banking competition mediated

part, but not all, of the relationship. The remaining significant direct path indicates that digital resource mobilization retains performance benefits even after the competitive mechanism is taken into account.

The positive mediation mechanism must nevertheless be interpreted alongside the risks associated with digital finance. Although digital development can improve efficiency and profitability, the relationship between fintech and bank risk may be nonlinear, with excessive or poorly managed technological expansion creating new vulnerabilities [16]. Digital finance can expose commercial banks to financial and operational risks associated with technological complexity, cybersecurity, digital credit, and rapidly changing financial markets [17]. Risk prediction and management are therefore important components of sustainable digital transformation [18]. Furthermore, internet-based and digitally mediated financial activities may create legal and contractual risks that require effective governance frameworks [19]. Accordingly, the positive performance effect identified in the current study should not be interpreted as implying that greater digitalization automatically improves outcomes regardless of risk-management quality.

Credit-related consequences also deserve consideration. Internet finance can influence non-performing loans by altering credit allocation, lending behavior, customer screening, and competitive pressure [20]. Advanced data-driven systems, including machine-learning-based lending mechanisms, can help banks improve consumer credit decisions and potentially enhance the quality of financial resource allocation [15]. Thus, part of the financial performance advantage associated with digital resource mobilization may depend on whether the additional resources attracted through internet-based channels are allocated efficiently and whether banks possess appropriate technological capabilities for credit assessment and risk control.

The significant effects of the control variables also provide useful contextual evidence. Bank size had a positive association with financial performance, suggesting that larger banks may benefit from economies of scale, wider customer networks, and stronger technological investment capacity. In contrast, the loan-to-deposit ratio and inflation were negatively related to financial performance, while GDP growth had a positive effect. These findings reinforce the importance of considering both bank-specific and macroeconomic factors when evaluating digital banking outcomes. The relationship between internet-related financial development and financial indicators can be influenced by macroeconomic conditions [27]. Accordingly, digital resource mobilization operates within a broader economic environment, and its financial benefits may be strengthened or weakened by inflation, economic growth, funding structure, and banking conditions.

Overall, the findings support the proposition that internet-based financial resource mobilization represents an increasingly important strategic capability for commercial banks. It can improve financial performance directly through lower transaction costs, broader customer access, greater funding flexibility, and improved operational efficiency, while also exerting an indirect effect by intensifying competition and stimulating innovation. At the same time, digital transformation must be accompanied by effective risk management, appropriate organizational capabilities, and technological integration. The results therefore extend previous research on digital finance and bank profitability by identifying banking competition as a significant partial mediator linking internet-based financial resource mobilization to financial performance.

Several limitations should be considered when interpreting the findings. First, the sample was restricted to 12 banks listed on the Tehran Stock Exchange and Iran Fara Bourse, which may limit the generalizability of the results to unlisted banks, specialized financial institutions, credit cooperatives, or banking systems in other countries. Second, the study relied on secondary financial and operational data, meaning that the measurement of internet-based financial resource mobilization depended on the availability and consistency of information disclosed by

banks. Differences in reporting practices may therefore have affected the comparability of some digital indicators. Third, although a composite index was used to capture the multidimensional nature of internet-based resource mobilization and banking competition, no single index can fully represent all dimensions of digital banking development or competitive behavior. Fourth, the observational and *ex post facto* design limits causal interpretation despite the use of panel-data methods and fixed effects. Finally, potentially relevant factors such as cybersecurity capability, service quality, digital literacy of customers, bank ownership structure, regulatory changes, managerial capabilities, and technological expenditure were not incorporated directly into the models.

Future studies could extend the present analysis by incorporating larger samples including unlisted banks, non-bank financial institutions, or cross-country banking systems to assess whether the observed relationships remain stable across different regulatory and institutional settings. Longer time periods could also be examined to distinguish short-term adjustment effects from the long-term performance consequences of digital resource mobilization. Researchers may construct more detailed measures of digital financial resource mobilization using variables such as the number of active digital customers, mobile and internet banking transaction values, digitally originated deposits, digital customer acquisition rates, and technology investment intensity. Future models could also investigate nonlinear relationships and threshold effects to determine whether the benefits of digitalization diminish or reverse beyond certain levels. Additional mediating or moderating variables, including operational efficiency, innovation capability, credit risk, cybersecurity readiness, financial inclusion, ownership structure, and regulatory quality, could provide a more comprehensive explanation of the mechanisms linking digital banking to financial performance. Dynamic panel models and alternative causal inference approaches could further strengthen the robustness of empirical conclusions.

Bank managers should treat internet-based financial resource mobilization as a core funding and competitive strategy rather than merely an extension of conventional electronic banking services. Banks can improve performance by expanding secure and user-friendly digital deposit channels, integrating mobile and internet banking platforms, simplifying remote account and deposit management, and using data analytics to identify customer needs and improve retention. Management should simultaneously strengthen technological infrastructure, cybersecurity, digital risk controls, and employee capabilities so that greater dependence on digital channels does not generate excessive operational or financial vulnerability. Because banking competition was found to transmit part of the effect of internet-based resource mobilization to financial performance, banks should continuously monitor competitors' digital offerings and respond through innovation, service differentiation, improved customer experience, and efficient pricing rather than relying primarily on physical branch expansion. Regulators and banking policymakers can also facilitate sustainable digital competition by developing transparent standards for digital banking, supporting interoperability, protecting customer information, strengthening cybersecurity requirements, and ensuring that technological competition encourages efficiency and innovation without undermining financial stability.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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