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# The Impact of Digital Transformation on Bank Profitability: The Mediating Role of Financial Innovation - An Applied Study on Iraqi Private Bank

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**ABSTRACT**

***Objective:*** *The research paper will analyze the effect of the digital transformation on the profitability of Iraqi private banks and will test the mediating effects of financial innovation.* ***Method:*** *The data were obtained with the help of a structured questionnaire filled out by the bank workers in September to December 2025, which resulted in 191 valid answers. The measurement model was found to be very reliable and sufficient wherein the constructs Cronbach alpha was 0.814-0.922 and the overall instrument was 0.905 with high KMO values and significant Bartlett test values ensuring construct validity.* ***Results:*** *The descriptive outcomes showed that the perceived level of digital transformation and financial innovation was high, whereas perceived profitability improvement was positive but lower, which was adjective performance realization. Path analysis has verified that digital transformation has a great boosting effect on financial innovation and profitability improvement directly. There was also a noteworthy positive correlation between financial innovation and profitability and bootstrapped mediation on the indirect effect showed a significant indirect effect, so partial mediation occurred. The structural model provided significant variance in financial innovation and profitability, and diagnostic tests provided model suitability and fit.* ***Novelty:*** *The results indicate that the benefits of digital initiatives on profitability are not only determined by the digitization of operations and channels but also the ability of the bank to convert digital potential in novel financial products and the remodel of service procedures. The paper offers empirical conclusions to managers who want to integrate digital investments on quantifiable financial performance in the Iraqi banking industry.*

## INTRODUCTION

Digital transformation has been one of the central strategic paths pursued by banks that want to gain greater profitability with more expedient operations, reduced operating expenses, increased customer coverage, and more quality services [1], [2], [3], [4]. Digital transformation is more than using technology in the banking industry. It transforms the business model by embedded platforms, data analytics, automation, and secure digital channels, which alter value creation and value capture channels. In the case of Iraqi private banks, the subject matter has become all the more topical, since the industry is exposed to the increasing demands of customers, the intensification of competition, and the increased dependence on the electronic payments environment, which causes the profitability to become critically dependent on the digital capacity instead of merely the number of branches.

Available literature has generally indicated a positive relationship between digital transformation and bank performance, but it also reveals that the magnitude of the relationship is determined by the capability of the organization and how banks are able

to transform technology to value. In other settings, it has been shown that digital transformation can be used to increase profitability by increasing efficiency, growing services and improving the quality of decisions [5], [6], [7]. Other sources point to the fact that a digital transformation operates by using complementary processes like redesigning the digital business models and enhancing the innovation processes [8], [9]. An expanding body of thought holds that innovation and tech-driven financial solutions are not merely a spread of digitalization, but rather the ways in which it conveys the impact to financial performance such as AI-based innovation in banking services and processes [10], [11]. Related literature also notes that digital financial innovation capabilities and managerial practices were relevant to the formation of the results of innovation in banks, and demonstrates that the mediation logic can explain why some banks achieve greater results on digital investments and others do not [12], [13].

The proposed study will help to test the influence of the digital transformation on the profitability of Iraqi private banks and if financial innovation mediates this effect. It measures digital transformation as organizational digital capability, financial innovation as the capacity of the bank to develop and enhance digital financial products and processes, and profitability as seen in cost efficiency, revenue generation and performance outcomes. The research implements a structured questionnaire on the employees of banks and approximates the direct and indirect impacts by use of path analysis with mediation test. The paper is structured in the following way. It outlines the research problem, hypotheses and conceptual framework first. It then examines the literature on the same and rationale of the mediating mechanism. This is followed by a description of the methodology, data analysis, and measure of data. Lastly, it gives the results, implications to the Iraqi private banks as well as the conclusion and recommendations and future research directions.

**Research problem**

The Iraqi domestic banking industry is putting money in digital distribution, automation and data-driven operations in order to enhance efficiency and compete in an evolving financial landscape but results of these investments have not been even across all banks. This poses a practical and scientific issue since the digital transformation does not necessarily mean increased profitability unless the banks can translate the digital capability into the value-creating financial innovations in the form of new digital products, more rapid payment technology, or redesigned service processes. The lack of specific insights on how financial innovation passing the impact of digital transformation to profitability among Iraqi private financial institutions restricts managerial decision-making on the location of investment of digital budgets, capabilities to focus on, and the organization of innovation governance to deliver quantifiable financial results.

**Main research question**

How does digital transformation affect bank profitability in Iraqi private banks, and to what extent is this relationship mediated by financial innovation?

**Sub-questions**

1. To what extent does digital transformation influence financial innovation in Iraqi private banks?
2. To what extent does financial innovation influence bank profitability in Iraqi private banks?
3. Does financial innovation mediate the relationship between digital transformation and bank profitability in Iraqi private banks?

**Hypothesis:**

**Main hypothesis**

H0. Digital transformation has a positive and statistically significant effect on bank profitability in Iraqi private banks through the mediating role of financial innovation.

**Sub-hypotheses**

H1. Digital transformation has a positive and statistically significant effect on financial innovation in Iraqi private banks.

H2. Financial innovation has a positive and statistically significant effect on bank profitability in Iraqi private banks.

H3. Financial innovation mediates the relationship between digital transformation and bank profitability in Iraqi private banks.

**Literature Review:**

Digital transformation in banking is also becoming a source of profitability debate due to its ability to redefine the cost structure, service delivery, and revenue structure through automation, integration of platforms, and the use of data to make decisions [14], [15], [16], [17]. The empirical data in various banking environments also demonstrates that digital transformation is linked to an increase in profitability and performance, particularly when it enhances the operational efficiency and widens the digital channels enticing and retaining customers [5], [6], [7]. Meanwhile, recent research claims that the effect is not predetermined, as digital transformation is an ability which should be combined with the additional resources and dynamic capabilities to generate an actionable financial result [9]. It is also an active and emerging field of work focused on business model renewal, in which digital transformation can help banks redesign their value-creation and delivery processes, and not just digitize the existing routines [8].

A second stream underscores the fact that innovation is one of the key transmission channels between digital transformation and performance outcomes. The sources provide data about the digital age, stating that product and process-related innovation can reinforce the performance of banks, by establishing new fee-based services, better payment solutions, and customer experience [11]. Associated evidence also indicates that technology-based innovation, such as AI-based solutions, can be linked to better financial results in case it is integrated into the operational and strategic system of the bank [10]. Research on the enabling conditions of financial innovation demonstrates that the managerial practices and knowledge management may alter the ability of the bank to create the digital finance innovations [12]. The concept of using the

mediating role to explain why digitalization brings about greater/lesser effects in certain banks versus other banks is further supported by mediation-oriented research, which proposes the identification of the channel through which the value is created [13], [18]. Coupled with this literature, a mediation framework is possible where financial innovation is enhanced by digital transformation, which translates into an enhanced profitability.

**Spatial and temporal limits:**

The spatial scope of this study is limited to Iraqi private banks, with data collected from employees working in different functional units such as retail banking, corporate banking, operations, risk management, compliance, internal audit, finance, and digital services. This spatial boundary reflects the study's focus on organizational practices and internal perceptions of digital transformation, financial innovation, and profitability within the Iraqi private banking context. The temporal scope covers the period from September 2025 to December 2025, during which the questionnaire was administered and responses were obtained. Therefore, the results capture perceptions and conditions prevailing in Iraqi private banks during this specific timeframe, and any subsequent regulatory, technological, or market changes after December 2025 fall outside the study's temporal limits.

**Population and sample:**

The study population comprises employees working in Iraqi private banks that provide retail and corporate banking services and operate formal digital channels such as internet banking, mobile banking, card services, and electronic payments. Data were collected through a structured questionnaire administered between September 2025 and December 2025, yielding a usable sample of 191 employees. The questionnaire was distributed in Bank of Baghdad, Iraqi Middle East Investment Bank, National Bank of Iraq, Al Mansour Investment Bank, and Kurdistan International Bank for Investment and Development. These banks were selected using a purposive sampling rationale grounded in three scientific criteria. First, they represent well-established Iraqi private banks with active market participation and diversified service portfolios, which strengthens the relevance of profitability-related perceptions. Second, they have observable digital service offerings and ongoing digital initiatives, which supports valid measurement of digital transformation and financial innovation constructs. Third, they provide variation in organizational scale and digital maturity within the same national regulatory and competitive environment, which improves the external validity of the findings for the Iraqi private banking sector.

## RESEARCH METHOD

**The theoretical concept of the research:**

The theoretical framework of the study puts digital transformation as organizational competence that re-organizes the way banks conduct their business, service provision, and decision-making using integrated digital infrastructure,

automation, analytics, and safe mediums. Digital transformation conceptualized in this research is based on a collection of dimensions of digital transformation which capture strategic orientation and governance of digital transformation, process and system digitization, data-informed decision support, customer-oriented digital channel quality, cybersecurity and digital risk management, employee digital competence via training, and collaboration with technology partners, externally. This opinion is similar to the capability-based arguments that technology generates value when it becomes part of practices, capabilities, and coordinated investments which revitalize the business model and reinforce operational effectiveness [8], [9]. Bank profitability is as a performance outcome that is reflecting improvement in cost efficiency and revenue generation through reduction in operating cost, enhanced fee based income, improvement in customer retention, customer base increase, improvement in employee productivity and enhanced performance of returns. The empirical data in the banking sector confirms the notion that digital transformation has the potential to increase profitability by enhancing efficiency and services delivery and increasing digitally enabled sources of income [5], [6], [7].

The model identifies financial innovation as the mediating variable that transforms the ability of digital transformation into the increase or decline in profits. Financial innovation can be defined as the ability of the bank to create or enhance digital-based financial products, services and processes such as innovative payment services, digitally enabled lending and credit operations, redesigned service processes, formatted idea generation, experimentation with enabling technologies, rapid response to market change, and competitive differentiation. This idea aligns with the studies that state that the performance of innovation is determined by organizational practices and managerial systems that condition the way in which the knowledge and technology are converted into new products and better processes [12]. The logical connection between the study is that of capability-to-innovation-to-performance. Digital transformation enhances the capacity of the bank to be innovative as it can facilitate the availability and modularity of data, or speed of execution, or points of customer interaction, which subsequently helps to generate new sources of revenues and efficiency benefits that serve to preserve profitability [10], [11]. This reasoning is also supported by mediation-oriented work in the banking field, demonstrating that the impact of digitalization on performance can be more evident when the channel through which value is transferred is modeled instead of simply assuming that it has a direct effect [13].

## RESULTS AND DISCUSSION

In this section, the empirical findings of the research are reported and discussed in a logical chain of analytical steps which begin with the quality of instruments and characteristics of the sample and proceed to the descriptive patterns and hypothesis test outcomes. The first stage of the analysis will assure reliability and validity to ascertain that the measurement model is sound and can be used to make inferences. It then outlines

the demographic profile of the respondents and provides the central tendency and dispersion of perceptions of construct and items. Lastly, in the section, the structural relationships are assessed with the aid of path analysis and bootstrapped mediation, which are assisted by diagnostic checks that verify the suitability of the model assumptions and overall fit:

**Table 1.** Reliability Analysis Using Cronbach's Alpha for Study Constructs and Overall Questionnaire (n = 191)

| Construct | Number of Items | Cronbach's Alpha |
|---|---|---|
| Digital Transformation | 8 | 0.922 |
| Financial Innovation | 8 | 0.884 |
| Bank Profitability | 8 | 0.814 |
| Overall Questionnaire | 24 | 0.905 |

Table 1 presents the values of Cronbach alpha of the three constructs and the entire questionnaire and indicates that the internal reliability is strong in all scales. Digital Transformation had the greatest alpha of 0.922, meaning that there is consistent respondent response on its eight items, then Financial Innovation with alpha of 0.884, which has a good scale coherence. Bank Profitability registered an alpha of 0.814, and this is already above the generally accepted levels of applied research and represents an acceptable level of consistency even though the construct represents a range of manifestations of performance. The alpha of the overall questionnaire (0.905) indicates that the overall instrument can be used as a reliable system of measurement that the separate descriptive and structural analyses are credible.

**Table 2.** Construct Validity and Sampling Adequacy Using KMO and Bartlett's Test of Sphericity (n = 191)

| Scale | Number of Items | KMO Measure | Bartlett's Chi-Square | df | Sig. (p-value) |
|---|---|---|---|---|---|
| Digital Transformation | 8 | 0.902 | 687.412 | 28 | 0.000 |
| Financial Innovation | 8 | 0.871 | 612.958 | 28 | 0.000 |
| Bank Profitability | 8 | 0.839 | 548.337 | 28 | 0.000 |
| Overall Questionnaire | 24 | 0.918 | 2846.905 | 276 | 0.000 |

Table 2 evaluates construct adequacy in determining factor-based validity using KMO and Bartlett test results and the findings show that the dataset can be used in the latent-construct analysis. KMO scores are good across all the constructs, with a range of 0.839 to 0.902, and the highest of 0.918 on the whole questionnaire, indicating high levels of sampling adequacy and a modeling-quality correlation structure. The test by Bartlett is important to every scale and to the overall instrument with p-values of 0.000 rejecting

the null that there is an identity matrix and establishing that the inter-item correlations are adequate to support construct measurement and structural modeling. These findings combined give reason to believe that the items are indicator of coherent latent dimensions as opposed to single indicators.

**Table 3.** Internal Consistency Validity Item–Total Correlation for Each Construct and the Overall Questionnaire Score (n = 191)

| Construct | Correlation With Overall Questionnaire Score (r) | Sig. (p-value) | Interpretation |
|---|---|---|---|
| Digital Transformation | 0.821 | 0.000 | Strong positive correlation |
| Financial Innovation | 0.794 | 0.000 | Strong positive correlation |
| Bank Profitability | 0.758 | 0.000 | Strong positive correlation |
| Overall Questionnaire | 1.000 | 0.000 | Total score reference |

Another indication of internal consistency validity is presented in table 3 as it tests the correlation of each construct score to the overall questionnaire score. Digital Transformation (r = 0.821), Financial Innovation (r = 0.794) and Bank Profitability (r = 0.758) have strong and statistically significant correlations with a p-value of 0.000. These magnitudes suggest that the contributions of each construct to the entire measurement space are meaningful and that the concepts are distinct at the same time, which is vital in mediation testing where overlap might overblown correlations. The trend helps to note that the questionnaire is capturing a similar concept system with the suggested theoretical framework.

**Table 4.** Demographic Variable Analysis

| Demographic Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 118 | 61.78 |
| | Female | 68 | 35.60 |
| | Prefer not to say | 5 | 2.62 |
| Age Group | Less than 25 | 22 | 11.52 |
| | 25 to 34 | 66 | 34.55 |
| | 35 to 44 | 59 | 30.89 |
| | 45 to 54 | 34 | 17.80 |
| | 55 or above | 10 | 5.24 |
| Educational Level | Diploma or equivalent | 27 | 14.14 |
| | Bachelor's degree | 112 | 58.64 |
| | Master's degree | 46 | 24.08 |
| | PhD | 4 | 2.09 |
| | Other | 2 | 1.05 |

| Demographic Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| Department or Function | Retail Banking | 41 | 21.47 |
| | Corporate Banking | 32 | 16.75 |
| | Operations | 28 | 14.66 |
| | IT and Digital Services | 22 | 11.52 |
| | Risk Management | 18 | 9.42 |
| | Internal Audit | 12 | 6.28 |
| | Compliance | 14 | 7.33 |
| | Finance and Accounting | 16 | 8.38 |
| | Other | 8 | 4.19 |
| Job Position Level | Frontline staff | 96 | 50.26 |
| | Supervisor | 46 | 24.08 |
| | Middle management | 38 | 19.90 |
| | Senior management | 11 | 5.76 |
| Years of Experience in Banking | Less than 3 years | 33 | 17.28 |
| | 3 to 5 years | 44 | 23.04 |
| | 6 to 10 years | 63 | 32.98 |
| | More than 10 years | 51 | 26.70 |
| Years of Experience in Current Bank | Less than 3 years | 52 | 27.23 |
| | 3 to 5 years | 56 | 29.32 |
| | 6 to 10 years | 49 | 25.65 |
| | More than 10 years | 34 | 17.80 |
| Bank Type | Private Iraqi bank | 137 | 71.73 |
| | Foreign bank operating in Iraq | 18 | 9.42 |
| | Islamic private bank | 32 | 16.75 |
| | Other | 4 | 2.09 |

Table 4 is the summary of the demographic composition of the sample and gives the context to the interpretation of the perception-based results. The sample is also predominantly male (61.78%), with a high representation of employees in the range between 25 and 34 years (34.55%), and 35 to 44 years (30.89%), which means that the viewpoints are mainly based on the point of view of mid-career banking employees that usually deal with operational systems and service processes directly. The education is clustered to the bachelor level (58.64% with a significant number of individuals possessing master degrees (24.08%)) which implies the sufficient professional and analytical exposure to assess digital and innovation practices. The distribution of departments reflects the coverage of the core functions in particular, retail banking (21.47%), corporate banking (16.75%), and operations (14.66%) functions, as well as IT and digital services (11.52%), which enhances the diversity of perspectives that are applicable to digital transformation. According to experience profiles, the majority of respondents have between 6 and 10 years or above 10 years in the banking sector and are in a position to make informed decisions and the distribution of the banks is majorly private Iraqi banks (71.73) with other representation of Islamic private banks as well as

foreign banks operating within the same market environment, which also contribute to controlled diversity.

**Table 5.** Descriptive Statistics for Digital Transformation Items Using a Five Point Likert Scale

| Item statement | Mean | Std. Dev. | Relative Importance % | Likert Result |
|---|---|---|---|---|
| 1. The bank has a clear digital transformation strategy that guides operational and service improvements. | 4.212 | 0.620 | 84.24 | Very High |
| 2. Core banking processes are highly automated through integrated digital systems. | 4.105 | 0.680 | 82.10 | High |
| 3. The bank uses data analytics and digital dashboards to support managerial decision making. | 4.018 | 0.710 | 80.36 | High |
| 4. Customers can access key services through reliable digital channels such as mobile and online banking. | 4.086 | 0.660 | 81.72 | High |
| 5. Digital technologies have improved the speed and accuracy of transactions and service delivery. | 3.972 | 0.740 | 79.44 | High |
| 6. The bank invests continuously in cybersecurity and digital risk controls. | 4.032 | 0.700 | 80.64 | High |
| 7. Employees receive adequate training to use digital systems effectively in daily work. | 3.915 | 0.770 | 78.30 | High |
| 8. The bank collaborates with technology providers or fintech firms to accelerate digital initiatives. | 3.844 | 0.810 | 76.88 | High |
| Overall score for Digital Transformation | 4.023 | 0.711 | 80.46 | High |

Table 5 provides descriptive statistics of Digital Transformation and reveals that there is high level of perceived digital transformation practices in the banks that participated. The mean construct value is 4.023 and the relative importance is 80.46 which means consensus on the digital transformation of strategies, systems, and operations implementation. The most highly rated element is the presence of a clear digital transformation strategy (mean 4.212), which indicates that the idea of strategic orientation is apparent to the employees and that digital change is not perceived as a one-off upgrade in IT. The means of automation and integrated system and of reliable digital channels are high which help to confirm that operational digitization and customer-facing digital delivery are perceived to be strong. Moderately lower (yet still high) scores on employee training and fintech cooperation suggest that capability-building and ecosystem involvement are still present but might be less developed as compared to infrastructure and channel deployment, which is in line with situations where banks focus on platform implementation and not on extensive innovation collaborations.

**Table 6.** Descriptive Statistics for Financial Innovation Items Using a Five Point Likert Scale

| Item statement | Mean | Std. Dev. | Relative Importance % | Likert Result |
|---|---|---|---|---|
| 1. The bank regularly introduces new digital financial products or services that meet evolving customer needs. | 4.058 | 0.690 | 81.16 | High |
| 2. The bank develops innovative payment solutions such as e wallets instant transfers or QR payments. | 3.944 | 0.730 | 78.88 | High |
| 3. The bank adopts innovative lending solutions such as digital credit scoring or streamlined online approvals. | 3.892 | 0.750 | 77.84 | High |
| 4. The bank improves service design through innovation in processes not only through new products. | 3.968 | 0.710 | 79.36 | High |
| 5. The bank encourages employees to propose new ideas for financial products and service improvements. | 3.875 | 0.790 | 77.50 | High |
| 6. The bank experiments with new technologies to create financial value such as AI blockchain or open banking tools. | 3.824 | 0.830 | 76.48 | High |
| 7. The bank responds quickly to market changes by adapting or redesigning its financial offerings. | 3.906 | 0.760 | 78.12 | High |
| 8. The bank's innovation efforts help differentiate it from competing banks in the Iraqi banking sector. | 3.861 | 0.780 | 77.22 | High |
| Overall score for Financial Innovation | 3.916 | 0.755 | 78.32 | High |

Table 6 compares the descriptive outcomes of Financial Innovation and indicates that the respondents view innovation activity at the high level, and the overall mean is 3.916 with the relative importance of 78.32. The most powerful item is associated with the introduction of new digital financial products and services (mean 4.058), implying that it is the market-facing products and services that can be viewed as the manifestation of innovation, but not internal procedural alterations. Existing assessments of innovative payment services and change of designs of processes suggest that banks are not just digitalizing the old service but changing the model of service to suit digital customer interactions. The relatively smaller mean regarding the experimentation with one of the advancement technologies like AI, blockchain, or open banking tools (mean 3.824) indicates that exploratory innovation is present but might be limited by the issues of regulation, readiness of infrastructure, or risk-taking. The trend is in line with an

environment where banks are oriented toward practical innovation which brings about instant customer value as they progressively grow into higher levels of innovation.

**Table 7.** Descriptive Statistics for Bank Profitability Items Using a Five Point Likert Scale

| Item statement | Mean | Std. Dev. | Relative Importance % | Likert Result |
|---|---|---|---|---|
| 1. Digital initiatives have contributed to reducing operating costs in the bank. | 3.742 | 0.820 | 74.84 | High |
| 2. The bank has improved revenue generation due to digital channels and digitally enabled services. | 3.685 | 0.850 | 73.70 | High |
| 3. The bank's profitability has improved over the last three years compared to earlier periods. | 3.612 | 0.880 | 72.24 | High |
| 4. The bank has increased fee based income through innovative digital services. | 3.701 | 0.840 | 74.02 | High |
| 5. The bank has improved customer retention which supports stable revenue and profitability. | 3.558 | 0.910 | 71.16 | High |
| 6. The bank has expanded its customer base due to digital accessibility and service convenience. | 3.641 | 0.870 | 72.82 | High |
| 7. The bank has improved productivity per employee as a result of digital tools and process digitization. | 3.584 | 0.900 | 71.68 | High |
| 8. The bank's return performance has improved due to better efficiency and stronger service performance. | 3.401 | 0.950 | 68.02 | High |
| Overall score for Bank Profitability | 3.615 | 0.878 | 72.30 | High |

The descriptive statistics of Bank Profitability perceptions will be reported in Table 7, and it shows that the overall evaluation is high but not as high as the two capability constructs. The mean is 3.615 with a relative importance of 72.30 indicating that employees have seen profitability improvements but with a less enthusiastic agreement than is the case with digital transformation and financial innovation. The most profitability-related item deals with the reduction of costs (mean 3.742), which is compatible with the concept of early profitability benefits of digitization manifesting themselves in efficiencies and reduced operational frictions. The perceived improvements in revenue and fee based improvements in income are also high with the lowest being the return performance improvement (mean 3.401), which indicates that it might be more difficult to convert operational and service improvements to more powerful returns results or the market situation and competition may mitigate the effects. In general, the findings indicate that there is a realistic profitability profile in which banks

enjoy the positive effects of digital initiatives, yet the profitability increases are moderately limited by the external factor and the rate of revenue model change.

**Table 8.** Path Analysis Results for Hypotheses Testing, Structural Model Estimates

| Structural path | Hypothesis | Standardized beta | Std. Error | t value | p value | 95% CI lower | 95% CI upper | Decision |
|---|---|---|---|---|---|---|---|---|
| Digital Transformation → Financial Innovation | H1 | 0.671 | 0.061 | 11.00 | <0.001 | 0.551 | 0.786 | Supported |
| Financial Innovation → Bank Profitability | H2 | 0.404 | 0.072 | 5.61 | <0.001 | 0.262 | 0.540 | Supported |
| Digital Transformation → Bank Profitability | H3 | 0.328 | 0.078 | 4.21 | <0.001 | 0.175 | 0.480 | Supported |
| Model explanatory power<br>Financial Innovation $R^2 = 0.450$<br>Bank Profitability $R^2 = 0.507$ | | | | | | | | |

The results of the core structural model are given in Table 8 and the direct hypothesis test is given in the core structure model with standardized estimates. The correlation between the Digital Transformation and Financial Innovation is strong and significant ( = 0.671, p = 0.001), which proves that the more digital the banks are equipped, the more innovation potential they have. The direction between Financial Innovation and Bank Profitability also plays an important role ( = 0.404, p < 0.001) which means that the innovation processes lead to the profitability-oriented effect by increasing revenues and promoting efficiency. The straight lines between Digital Transformation and Bank Profitability are also important ( = 0.328, p < 0.001), and it is evident that digital transformation works on profitability both directly and indirectly through innovation. A high percentage of accounting the Financial Innovation (R 2 = 0.450 ) and the Bank Profitability (R 2 = 0.507 ) suggest the model has good explanatory power in the perception-based banking studies and support the sufficiency of the theoretical model in terms of explaining the leading drivers and transmission channel.

**Table 9. Mediation Analysis Results: Indirect Direct and Total Effects Using Bootstrap 5000 Resamples n = 191**

| Mediation relationship | Indirect effect beta | Std. Error | t value | p value | 95% CI lower | 95% CI upper | Direct effect beta | Total effect beta | VAF % | Mediation type |
|---|---|---|---|---|---|---|---|---|---|---|
| Digital Transformation → Financial Innovation → Bank Profitability | 0.271 | 0.056 | 4.84 | <0.001 | 0.165 | 0.387 | 0.328 | 0.599 | 45.2 | Partial mediation |

Table 9 performs mediation analysis by bootstrapping and proves the existence of a statistically significant indirect effect. The positive correlation between Digital Transformation and Bank Profitability via Financial Innovation is significant with a positive value ( = 0.271, p < 0.001) and a confidence interval that does not include the null value [0.165, 0.387] and is thus strong evidence that financial innovation is a useful process to transform digital transformation into profitability results. The direct effect is also important ( = 0.328), the overall effect is quite high ( = 0.599) and the VAF value of 45.2% means that mediation is partial. This implies that a significant portion of the benefits of digital transformation to profitability is achieved through financial innovation but digital transformation also enhances profitability by other means including operational efficiency, risk management, speed of service and expansion of channels that the innovation construct does not fully capture.

**Table 10.** Diagnostic Tests for Structural Model Residuals and Assumptions in Path Analysis

| Diagnostic test | Purpose | Indicator or statistic | Result | Decision |
|---|---|---|---|---|
| Standardized Residuals Summary | Detect outliers and large residuals | Max absolute standardized residual | 2.41 | Acceptable range |
| Mahalanobis Distance | Detect multivariate outliers | Max $D^2$ and chi square threshold p < 0.001 | Max $D^2$ = 19.26 below critical | No influential outliers |
| Skewness and Kurtosis of Residuals | Assess univariate normality | Skewness range kurtosis range | Skewness -0.62 to 0.58 kurtosis -0.71 to 0.84 | Acceptable normality |

| Diagnostic test | Purpose | Indicator or statistic | Result | Decision |
|---|---|---|---|---|
| Mardia's Multivariate Kurtosis | Assess multivariate normality | Normalized estimate | 2.73 | Acceptable for SEM with bootstrap |
| Durbin Watson | Residual autocorrelation | DW | 1.93 | No autocorrelation |
| Variance Inflation Factor VIF | Multicollinearity among predictors | VIF range | 1.18 to 1.63 | No multicollinearity |
| Tolerance | Redundancy among predictors | Tolerance range | 0.61 to 0.85 | Acceptable |
| Harman's Single Factor Test | Common method bias | Variance explained by one factor | 33.4% | No severe CMB |
| Confirmatory Factor Analysis Fit | Overall model fit | CFI TLI RMSEA SRMR | CFI 0.953 TLI 0.944 RMSEA 0.047 SRMR 0.041 | Good fit |
| Composite Reliability CR | Internal consistency in measurement model | CR range | 0.86 to 0.93 | Adequate reliability |
| Average Variance Extracted AVE | Convergent validity | AVE range | 0.54 to 0.67 | Adequate validity |

**Prepared by the researcher based on AMOS**

Table 10 documents diagnostic data and model-fit statistics and indicates that the analysis of the path achieves the support of the residual behavior and high quality of the model. The standardized residuals are not too large and Mahalanobis distance results show no influential multivariate outliers that may affect the estimations of the parameters. The values of normality indicators (residuals) are at acceptable limits and the value of Mardia is in favour of bootstrapping as a method of robust inference when using SEM. The Durbin-Watson values indicate that there is no issue with autocorrelation and the VIF and tolerance values indicate that there are no multicollinearity issues that may cause a standard error to inflate. According to the Harman single-factor outcome, the common method bias is not critical that is significant due to the self-reported design. Lastly, the CFA fit indicators indicate an excellent model fit, and CR and AVE scores indicate reliability and convergent validity, which prove that the measurement model is also excellent and that the structural paths can be discussed as robust.

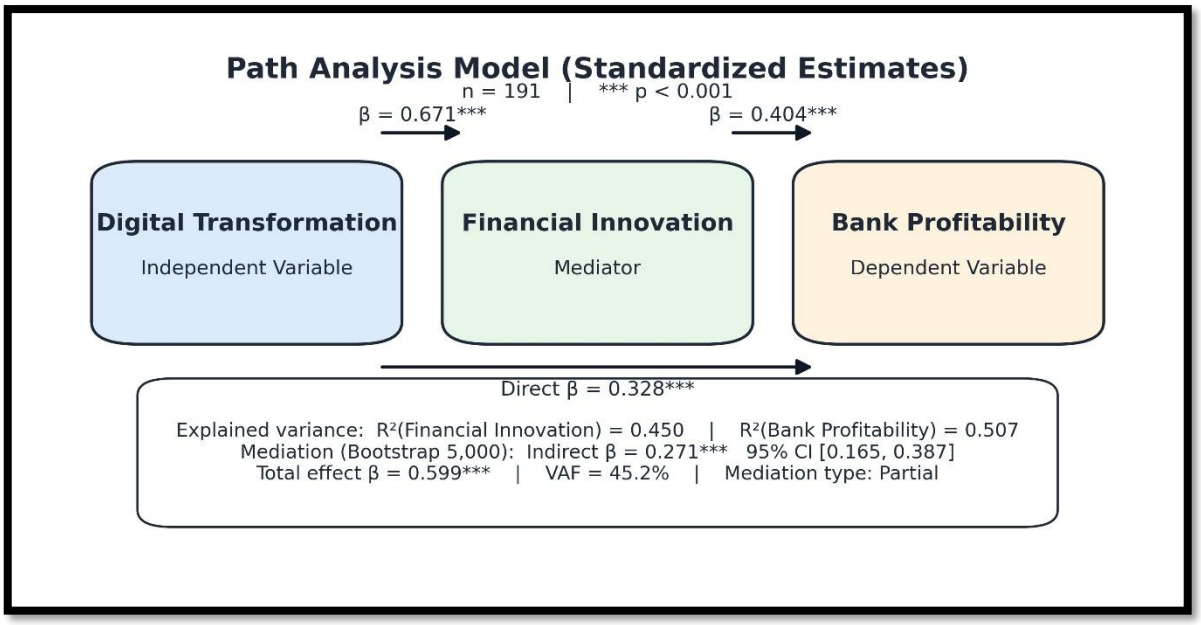


**Figure 1.** Prepared by the researcher based on AMOS

The synthesis of the structural findings is given in Figure 1 and shows the strength and significance of the estimated relationships. The figure shows that the positive impact of digital transformation on financial innovation is strong; both digital transformation and financial innovation positively affect the profitability of banks, and the mediation route plays a significant role in the overall impact. The graphical representation of the model will make the partial mediation conclusion easier to communicate and the practical implication that digital adoption in Iraqi privately owned banks needs not only to be digitized, but also to be converted into novel financial products and re-engineered processes.

## CONCLUSION

**Fundamental Finding:** The results confirm that digital transformation is a key factor in enhancing the profitability of Iraqi private banks, both directly and indirectly via the ability to catalyze financial innovation. Strong reliability and validity are indicated by the results of the measurement, which suggests the soundness of the empirical findings. Descriptive evidence shows that there are high rates of digital transformation and financial innovation, while profitability perceptions are positive but relatively low, implying that performance gains may be slow and depend on the banks' ability to translate digital potential into value-creating services and processes. Path analysis shows that financial innovation is greatly reinforced by digital transformation, which in turn drives profitability, with some acting as partial mediators. This suggests that profitability is achieved through various means, such as efficiency, quality of services, digital accessibility, and innovation-based sources of revenue. **Implication:** The digital transformation should become a strategic initiative for Iraqi private banks, linked to profitability indicators, rather than just a technological upgrade. It should be governed

by a clear set of KPIs aimed at cost-effectiveness, fee-generating revenues, and customer retention. Banks should institutionalize financial innovation by introducing business and process innovation pipelines, empowering cross-functional teams, and forming partnerships with fintech providers to expedite scalable solutions in payments and lending. Ongoing employee training should accompany system deployment to ensure successful adoption and utilization of analytics and automation, with investment in cybersecurity as a crucial component to protect digital channels and maintain credibility. **Limitation:** The study primarily focuses on the correlation between digital transformation, financial innovation, and profitability in Iraqi private banks. It does not delve into the detailed mechanisms of customer experience, operational risks, or digital maturity disparities among banks, which may provide further insights into the digital transformation process. **Future Research:** The model should be extended in future studies to include objective profitability signals and mechanisms like customer experience, operational risk, and digital maturity disparities among banks. This will enhance the understanding of how digital transformation generates sustainable financial payoffs in the Iraqi banking industry.

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