Accounting Disclosure Policies and their Role in Supporting Financial Inclusion: An Analytical Study of Banks in Iraq

Hariem Abdullah
hariem.abdullah@univsul.edu.iq
Accounting Department, College of Administration and Economics, University of Sulaimani, Kurdistan Region of Iraq

Hawkar Anwer Hamad
hawkar@lfu.edu.krd
Department of Accounting and Finance, College of Administration and Economics, Lebanese French University, Erbil, Kurdistan Region, Iraq

Rabar Rashid
rabar.omer@sulicihan.edu.krd
Accounting Department, Cihan University Sulaimaniya, Sulaimani, Kurdistan Region of Iraq

Date of receipt of the research: 1/11/2025 Date of approval for publication: 25/11/2025

Abstract

This study examines the role of accounting disclosure policies in supporting financial inclusion within the Iraqi banking sector. Using a panel dataset of 13 commercial banks listed on the Iraqi Stock Exchange over the period 2018–2023, the study applies panel regression techniques, including OLS, EGLS, and RE models. A disclosure index was developed to measure the level of accounting disclosure based on IFRS and Central Bank of Iraq requirements, while financial inclusion was assessed through indicators such as mobile banking users, new accounts opened, POS terminals, SME loan ratios, and electronic payment volumes. The results show that accounting disclosure policies have a significant positive effect on most dimensions of financial inclusion, particularly digital inclusion indicators such as mobile banking, account openings, and POS terminals. However, the relationship with e-payment volumes is weak, suggesting that other factors may influence transactional inclusion. These findings confirm that stronger disclosure practices enhance transparency and trust, thereby promoting the adoption of digital financial services in Iraqi banks. The study recommends that regulators strengthen mandatory disclosure frameworks to further advance financial inclusion and sustainable banking practices in Iraq.

Keywords: Accounting disclosure, financial inclusion, Digital banking, Iraqi banks, IFRS

1. Introduction

Since banking sector in Iraq plays a vital role in monetary circulation and financial operations, in order to strengthen and expand the financial industry, the central bank of Iraq (CBI) has

started working on its 2016–2020 plans to keep an eye on Iraqi banks for financial disclosure, transparency, and other procedures. This contribution is reinforced by the adoption of financial inclusion, a key strategy for promoting economic growth and improving social well-being [1]. In addition, accounting profession plays a pivotal role in facilitating financial inclusion disclosure [2], Such disclosures enhance the credibility of financial reports, improve the quality of accounting information, build customer trust and strengthen financial performance [3]. In order to increase transparency, International Financial Reporting Standards (IFRS) requires mandates to display the information regarding financial performance and underlying risk exposures. By showing a dedication to transparency and disclosure financial reporting, corporations build trust with stakeholders and becoming more accountable for their operations. Also, providing clear and practical working instructions in banks to enhance their disclosure procedures is a key component of the CBI requirement to promote openness and disclosure accounting information [4]. Prior studies have identified economic, political, legal, and financial performance factors as key drivers of financial inclusion such as [1], [5], [6]. This study to be different with previous study relying on the current financial reporting system in the nation is an undiscovered but potentially significant aspect that is essential to the efficient operation of the financial ecosystem. The increasing use of high-quality financial reporting standards, including International Financial Reporting Standards (IFRS), is considered a major turning point in improving market discipline and transparency on a global scale. Therefore, this study attempts to addresses this issue by depending on 13 Iraqi banks to analyzing the role of accounting disclosure in promoting financial inclusion and enhancing the credibility of financial reports. In addition, primary objective of this research is to assess how accounting disclosure policies influences the financial inclusion by establishing a connection between IFRS adoption and financial inclusion, to demonstrating that the impact of IFRS adoption is more noticeable in a setting with strict regulations, second to investigate influence of disclosure policies between digital financial inclusion and structural inclusion giving bank decision-makers important information about the anticipated effects of growing mobile financial services on the bank's liquidity [7]. The rest of the paper is structured as follows: Section two cover reviews of the literature and development of hypotheses. Section three describes research methodology, while section four discusses the main findings, section five provides the implication and conclusion.

2. Literature Review and Hypotheses Development

A lot of banks have started offering digital financial services, such mobile banking, in an effort to increase financial inclusion while maintaining profitability. Millions of underserved and excluded consumers will migrate to formal financial services through mobile and other digital technologies as a result. Leveraging technology has therefore become a different strategy for improving global financial inclusion [8]. To increase financial inclusion and expand the accessibility of financial services, formal financial institutions can deploy technology-driven solutions to provide a range of financial services to people in low-income households that do not have access to banking facilities [9]. Moreover, fintech integration helps businesses provide standardized procedures, which lowers operating costs [10]. Remote rural areas without bank branches can access reliable, quick, and reasonably priced financial services using mobile applications. In this line study of [5] highlighted how foreign investment affected the disclosure of digital financial inclusion through mobile banking, which used all Sultanate of Oman banks between 2015 and 2023. Results revealed that foreign investment has a favourable impact on digital financial inclusion indicators with mobile banking. [11] also concentrated on 25 interviews with informants in Nigeria, indicated that adopting mobile phones in financial services able to simplifies economic transactions, secures money transfers, allows for cashless payments and enhances informal insurance access. Additionally, [12] using actual data of Egyptian banks from 2014-2021, shown that ownership structure configurations moderate the association between digital financial inclusion disclosure levels and the Egyptian banking sector's adherence to optimal corporate governance practices. Developing adequate infrastructure to support the digital financial transformation driven by fintech is critical for advancing the Sustainable Development Goals. Sustainable and inclusive growth is unattainable without broad financial inclusion, which not only fosters economic participation but also contributes to inflation reduction [13]. Consequently, it affects economic growth by increasing access to financial products and services provided by financial institutions, which enhances financial intermediation and translates into positive economic growth [14]. [15] argue that digital financial inclusion strengthens tax collection, enhances accountability, and mitigates false financial reporting. Moreover, greater financial inclusion encourages household participation in financial markets, promoting better portfolio diversification and investment efficiency. In other hands, to comply with the legal and regulatory requirements set by the central banks as well as the worldwide accounting standards and principles released by the

(FASB), Iraqi banks have to disclose the relevant data. Naturally, this is the main information that the banks may have revealed voluntarily to address the issues of information asymmetry between the principal and agent. [16] showed that the level of disclosure procedures has increased as a result of the Central Bank of Iraq's engagement as the primary regulator of the nation's banking industry. Industries tend to gain greater advantages from adopting high-quality accounting standards such as (IFRS) when these standards are supported by strong national institutions capable of ensuring their proper enforcement. The emphasis on transparency and credibility in financial reporting nurtures trust in financial information [2]. This trust becomes a key driver in encouraging wider participation in formal financial systems, particularly among underserved and unbanked segments of the population. It is proposed that accounting disclosure may foster financial inclusion through two key channels. First, enhanced transparency in financial reporting helps to mitigate information asymmetry, a prerequisite for building trust [17]. Trust in financial institutions is a critical factor for the effective operation of financial markets, and prior research highlights its significant influence on households' willingness to access and utilize financial services. Second, [18] enhancing transparency can serve as a deterrent to corrupt practices in financial institutions. According to this perspective, implementing high-quality accounting standards can improve financial inclusion by lowering perceived corruption and boosting public confidence in financial institutions. Hence, extent of these effects largely depends on the strength and effectiveness of a country's regulatory framework, which determines how well such standards are implemented and enforced. Previous studies in the Iraqi environment for financial inclusion are limited researches, mostly concentrated on impact of financial inclusion on financial performance [1], and important of comprehensive disclosure of non-financial information, alongside financial data [19]. However, not yet examining high-quality accounting information (IFRS in our case) factor in promoting financial inclusion. Such disclosure can enhance financial inclusion by fostering trust in accounting information, thereby encouraging a wider range of participants including underserved and unbanked populations to engage with formal financial services. In an attempt to expand the literature, we propose a financial inclusion disclosure index, and study the quality of the financial inclusion index, specifically the relationship between these indexes to determine financial inclusion disclosure. In other words, the current absence of disclosure policies supporting financial inclusion presents an opportunity for Iraqi banks to develop a financial inclusion disclosure index and examine the quality of such an index, particularly its relationship with financial inclusion outcomes. From this perspective, the significance of accounting

disclosure in banks whether mandatory or voluntarily provided becomes evident. Such disclosure helps bridge the information gap for customers and stakeholders, thereby supporting the needs of clients and facilitating the effective implementation of financial inclusion in Iraq. Therefore, this study adopts the following hypothesis:

H1: Accounting disclosure policies has a positive relationship with financial inclusion for banks listed on the Iraqi Stock Exchange.

H2: Accounting disclosure policies have a positive effect on financial inclusion, with a stronger impact on digital inclusion (mobile banking and POS) than on structural inclusion (branches and e-payments).

3. Methodology

3.1. Data Collection and Sample

This paper examines a balanced panel sample of thirteen commercial banks in Iraq, covering the period between 2018 and 2023, with 78 bank-year observations per econometric model. The reports, annual financial statements, and governance disclosures of the Central Bank of Iraq were used as the source of data. Audited financial statements were used to extract profitability metrics, such as return on assets (ROA) and return on equity (ROE), whereas compliance documentation was used to extract governance indices. The official bank reports and the publications of the Central Bank of Iraq provided indicators of financial inclusion and digital adoption, including mobile banking users, new bank accounts, POS terminals, ATMs, and electronic payment volumes. The sample was chosen on a purposive basis to guarantee the consistency of data throughout the study period and to offer coverage of most of the Iraqi banking industry.

3.2. Research Design

The research design used in this study is quantitative and empirical research design based on panel data econometric methods. The panel analysis is especially suitable, as it will not only reflect the cross-sectional variation among the banks, but also reflect the dynamics over the years, which will increase the efficiency of the estimation. The theoretical framework is pegged on the Agency Theory that highlights the importance of disclosure and governance in alleviating information asymmetry and strengthening financial decision-making. The research

uses econometric models to examine the relationship between disclosure practices and governance mechanisms and financial inclusion and digital adoption among Iraqi banks.

3.3 Variables Definition and Measurement

The research will consider seven dependent variables, one independent variable, and four control variables. To reduce skew, several dependent variables, such as mobile banking users, bank accounts opened, POS terminals, and electronic payments, were log-transformed.

Table 1. Variables and Measurement

Variable	Abbr.	Measurement	Transformation / Scale
Dependent			
Mobile Banking Users	MBU	Total annual number of active mobile banking users reported by each bank	Natural log
Bank Accounts Opened	BAO	Annual number (or percentage) of new bank accounts opened	Natural log
POS Terminals	POS	Number of Point-of-Sale (POS) terminals installed by each bank	Natural log
Electronic Payments Volume	EPV	Total annual value of electronic payments processed (Iraqi Dinar)	Natural log
SME Loans Ratio	SLR	Ratio of SME loans to total loans (%)	Raw ratio (%)
Bank Branches per 100,000 Adults	BBP	Number of bank branches normalized per 100,000 adults	Raw count per capita
ATMs per 100,000 Adults	ATM	Number of ATMs normalized per 100,000 adults	Raw count per capita
Independent			
Disclosure Index Score	DIS	Composite index (0–1) = disclosed items ÷ total disclosure items (CBI/IFRS compliance)	Ratio (0–1)
Control			
Bank Age	BA	Number of years since establishment	Continuous (years)
Return on Assets	ROA	Net income ÷ total assets × 100	Percentage (%)
Return on Equity	ROE	Net income ÷ shareholder equity × 100	Percentage (%)
Corporate Governance Index	CG	Composite score (0–1) based on board independence, audit committee, ownership, transparency	Ratio (0–1)

3.4 Model Specification

To examine the effect of disclosure and other bank-level characteristics on financial inclusion and digital banking adoption, this study employs a panel regression framework. The general econometric model is specified as follows:

$$\gamma it = \alpha + \beta 1DISit + \beta 2BAit + \beta 2ROAit + \beta 3ROEit + \beta 4CGit + \mu i + \lambda t + \varepsilon it$$

Where γit denotes the dependent variable for bank i at time t, α is the intercept, DIS is the Disclosure Index Score (main independent variable), BA represents Bank Age, ROA is return on assets, ROE is return on equity, and CG is the Corporate Governance Index. The terms $\mu i \; and \; \lambda t$ capture unobserved cross-sectional and time-specific effects, respectively, while εit is the idiosyncratic error term. Each dependent variable corresponds to a specific dimension of financial inclusion or digital adoption, estimated separately in seven models:

Yit= LN (Mobile Banking Users) (MBU)

Yit= LN (Accounts Opened) (BAO)

Yit= LN (POS Terminals) (POS)

Yit= Bank Branches per 100k adults (BBP)

Yit= SME Loans Ratio (SLR)

Yit= Volume of Electronic Payments (EPV)

Yit= ATMs per 100k adults (ATM)

The estimation plan is a step-by-step process. To start with, pooled OLS models are estimated as a baseline. The Breusch-Pagan Lagrange Multiplier (LM) test is then used to test the suitability of random effects as compared to pooled OLS. The Hausman test is then used to differentiate between the fixed effects and the random effects estimators. Where there is heteroskedasticity or cross-sectional dependence, efficient estimates are obtained using feasible generalized least squares (EGLS) with cross-section weights.

This multi-model specification will guarantee that the analysis will capture the unobserved heterogeneity, correct the possible breach of homoscedasticity, and will give strong evidence on the role of disclosure and governance in the development of financial inclusion and digital transformation among Iraqi banks.

4. Results

4.1 Descriptive Statistics

Table 2 displays the descriptive statistics of the study variables, such as dependent, independent and control variables. The statistics used are the mean, median, maximum, minimum, and standard deviation, which gives information on the central tendency, dispersion, and range of the data. The findings show that most variables are not very volatile, and mean and median values are close to one another, which implies that there is not much skew. There are however, others that are more varied. As an example, Volume of E-payments (mean ≈ 584,641; standard deviation ≈ 1,160,760) indicates that the difference between the minimum (18,000) and maximum (6,534,526) is large, indicating that there are significant differences in the use of electronic payments among banks. Likewise, the age of banks (2-88 years) has a wide range (27.65) with a standard deviation being high (27.65), which means that banks have heterogeneous maturity levels. Conversely, measures related to governance, like the Disclosure Index Score (mean ≈ 0.83) and Corporate Governance Index (mean ≈ 0.97) are less variable, indicating rather high and stable compliance rates. Indicators of profitability (ROA and ROE) are also more concentrated, but ROE is more dispersed (standard deviation ≈ 2.27). Overall, these descriptive statistics indicate that although the levels of digital adoption and structural features (e.g., ATMs, branches, e-payments) differ significantly among banks, governance and disclosure practices are more homogenous. This difference gives empirical grounds to study the effects of disclosure and governance differences on financial inclusion and digital banking adoption.

Table 2. Descriptive Statistic

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
MBU	13.435	13.334	15.285	11.813	0.802	66
BAO	12.987	12.896	14.888	11.878	0.737	66
POS	6.329	6.214	8.532	5.011	0.828	66
EPV	12.078	11.823	15.693	9.798	1.507	66
SLR	0.0068	0.0061	0.0211	0.0010	0.0043	66
BBP	0.154	0.080	0.660	0.014	0.192	66
ATM	0.792	0.560	2.970	0.095	0.701	66
DIS	0.835	0.875	1.000	0.375	0.166	66
ROA	0.916	0.900	1.200	0.570	0.213	66
ROE	8.958	8.846	11.935	5.833	2.269	66
CG	0.970	1.000	1.000	0.000	0.173	66

4.2 Correlation Matrix

Table 3 shows the correlation coefficients of the study variables. There is a very high correlation between the digital inclusion indicators, mobile banking users, POS terminals, and accounts opened with coefficients of 0.94 to 0.99 and all significant at the one percent level. This means that these measures represent aspects of digital adoption that are closely related. These high correlations increase the probability of multicollinearity, which is overcome by estimating them in disaggregated regression models. Digital indicators are also strongly correlated with the SME loan ratio, with coefficients ranging between 0.72 and 0.80 (significant at the one percent level), and the volume of electronic payments has weaker but still significant relationships, with coefficients ranging between 0.31 and 0.48 (significant at the five percent level). The Disclosure Index Score has weak positive correlations with digital adoption, with coefficients ranging between 0.23 and 0.27 (significant at five percent level). In comparison, CG Index is negatively correlated with SME loans (-0.35, significant at the one percent level) and bank age (-0.28, significant at the five percent level), and positively correlated with disclosure (0.36, significant at the one percent level). As anticipated, profitability measures are highly correlated: ROA and ROE are almost perfectly correlated with a coefficient of 0.95 (significant at the one percent level), and ROE is also positively correlated with POS and account openings in a moderate manner. In general, the correlation analysis shows that there are strong interrelationships between digital indicators and profitability, whereas the governance variables have more subtle relationships, which makes it necessary to use regression analysis to decompose these relationships. However, correlation analysis alone is not sufficient to determine causal relationships or effects between variables; it only shows the strength and direction of association. Therefore, regression analysis was applied to examine the actual influence of the independent variables while controlling for others.

Table 3. Correlation Matrix

Variable	MBU	BAO	POS	ATM	SLR	EPV	DIS	BA	ROA	ROE
MBU	1									
BAO	0.944***	1								
POS	0.939***	0.986***	1							
ATM	0.240**	0.281**	0.302**	1						
SLR	0.780***	0.797***	0.724***	0.233*	1					
EPV	0.351***	0.475***	0.419***	0.124	0.314**	1				
DIS	0.238*	0.267**	0.262**	0.004	–0.000	0.125	1			
BA	0.489***	0.471***	0.462***	0.377***	0.567***	0.236**	–0.469***	1		
ROA	0.125	0.340***	0.414***	0.216*	0.049	0.304**	0.064	0.105	1	
ROE	0.274**	0.427***	0.508***	0.223*	0.083	0.392***	0.087	0.185	0.953***	1
CG	–0.130	–0.093	–0.073	–0.061	–0.347***	0.064	0.360***	–0.275**	0.013	0.008

***, ** and * represent $p < 0.01$, $p < 0.05$, and $p < 0.10$ respectively.

4.3. Variance Inflation Factors

Table 4 gives the Variance Inflation Factors (VIF) of the explanatory variables. The findings show that Disclosure Index Score (VIF = 1.63), Bank Age (VIF = 1.47), and Corporate Governance (VIF = 1.23) have values that are significantly lower than the traditional value of 10, which implies that there are no issues of multicollinearity between these variables. Nonetheless, ROA (VIF = 7.69) and ROE (VIF = 7.98) have a relatively high value, indicating that they are highly correlated with one another. Although these values are not below the critical cutoff of 10, they are indicative of redundancy in case both variables are used in the same regression model. In general, the findings indicate that multicollinearity is not a significant

concern in the dataset, although one should be careful when interpreting ROA and ROE together because of their strong relationship.

Table 4. Variance Inflation Factors (VIF) for Explanatory Variables

Variable	Centered VIF
DIS	1.627
BA	1.468
ROA	7.689
ROE	7.980
CG	1.227

4.4. Ordinary Least Squares Results

Table 5 presents the baseline OLS estimates of six financial inclusion and digital adoption models. Dependent variables are: M1 = log of mobile banking users, M2 = log of accounts opened, M3 = log of POS terminals, M4 = bank branches per 100,000 adults, M5 = ratio of SME loans to total loans and M6 = volume of electronic payments. The findings indicate that the Disclosure Index Score (DIS) has a significant and positive influence in M1-M5. The coefficients of mobile banking users (M1), accounts opened (M2), and POS terminals (M3) are large and significant at the one percent level, which proves that increased disclosure is closely related to digital adoption. The effect in the branches model (M4) is positive but less important and is significant at the five percent level. On the same note, the SME loans ratio (M5) has a small yet very significant positive coefficient. In comparison, the impact on electronic payment volumes (M6) is positive but not significant. Altogether, the Disclosure Index Score (DIS) is significant in most models. It shows a positive and highly significant effect ($p < 0.01$) on mobile banking, account openings, POS terminals, and SME loans, and a moderate effect on branches. Only in the electronic payments model is the effect positive but not significant, confirming DIS as a strong predictor of financial inclusion overall. The age of the bank is positive and significant in all the models, which means that older banks have a higher chance to implement and grow both digital and traditional services. The ROA has a strong negative impact in the mobile banking model (M1), but it is not significant in other cases. ROE positively impacts POS terminals (M3) and electronic payments (M6), indicating that profitability is a factor in the expansion of some digital channels, but not in other models. Corporate Governance (CG) is always negative and significant in the range of M1-M5, indicating that tightening of governance can limit the growth in digital and SME-related services, but it is not important in electronic

payments (M6). According to model diagnostics, the explanatory power is moderate to strong. The adjusted R-squared values are 0.16 (branches, M4) to 0.56 (mobile banking, M1), indicating that disclosure and control variables can account for a significant percentage of change in digital adoption outcomes. All models have significant F-statistics, which prove the overall model validity. M1-M5 Durbin-Watson statistics are usually less than 1.0, which is a sign of autocorrelation, whereas M6 is almost ideal with the value of 2.45. Overall, the OLS findings present solid preliminary evidence that the disclosure and bank age are significant predictors of financial inclusion, whereas the impact of profitability and governance are more subtle in various channels.

Table 5. OLS Regression

Variable	MBU (M1)	BAO (M2)	POS (M3)	BBP (M4)	SLR (M5)	EPV (M6)
DIS	2.750***	2.723***	2.816***	0.351**	0.013***	2.913*
	(0.000)	*(0.000)*	*(0.000)*	*(0.030)*	*(0.001)*	*(0.0003)*
BA	0.016***	0.016***	0.016***	0.002**	0.000***	0.017*
	(0.000)	*(0.000)*	*(0.000)*	*(0.040)*	*(0.001)*	*(0.0003)*
ROA	–3.851***	–0.596	–1.055	–0.160	0.005	–6.801*
	(0.000)	*(0.550)*	*(0.290)*	*(0.610)*	*(0.330)*	*(0.000)*
ROE	0.395***	0.141*	0.229***	0.007	–0.001	0.951*
	(0.000)	*(0.090)*	*(0.000)*	*(0.820)*	*(0.410)*	*(0.000)*
CG	–0.827***	–0.804***	–0.777***	–0.304***	–0.008***	–0.613
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	*(0.000)*	*(0.147)*
Constant	11.392***	10.241***	3.097***	0.164	0.001	7.375*
	(0.000)	*(0.000)*	*(0.000)*	*(0.770)*	*(0.960)*	*(0.000)*
R^2	0.589	0.559	0.591	0.219	0.548	0.646
Adj. R^2	0.560	0.528	0.563	0.165	0.517	0.621
F-stat	20.63***	18.26***	20.84***	4.04***	17.45***	26.23*
D–W	0.705	0.356	0.737	0.319	0.442	1.779

Robust standard errors are reported in *Italic* between brackets.
*, **, and *** represent $p < 0.10$, $p < 0.05$, $p < 0.01$ respectively.

4.5. EGLS (Cross-Section Weights) Results

Table 6 presents the panel EGLS estimates including cross-section weights of six financial inclusion and digital adoption models. Dependent variables are: M1 = log of mobile banking users, M2 = log of accounts opened, M3 = log of POS terminals, M4 = bank branches per 100,000 adults, M5 = ratio of SME loans to total loans, and M6 = volume of electronic payments. The findings validate that the DIS is a robust and positive predictor in M1-M5 and coefficients are highly significant at one percent level. It has the greatest influence in digital

adoption models (M1-M3), moderate in branches (M4, at the ten percent level) and positive but not significant in electronic payments (M6). The effects of Bank Age (BA) also exhibit consistently positive and highly significant effects in M1M5, which implies that older banks are more likely to increase digital and structural services.

The profitability measures are varied. ROA is negative and significant in M1, marginally significant in M2, M3, and M6, which means that its effect is less strong. ROE, in turn, has positive and significantly significant impacts in M1-M3 and M6, which supports the role of profitability in supporting the adoption of digital services and electronic payments. CG remains negative and significant in M1 to M5, which means that more robust governance can limit the fast growth in both digital channels and SME lending, but it is not significant in M6.

Model diagnostics point to better performance with EGLS compared to OLS. Adjusted R-squared values are significantly greater, 0.26 (M6) to 0.79 (M2) than 0.16-0.56 with OLS. The F-statistics indicate that all the models are significant at the one percent level. EGLS has a higher value of Durbin-Watson than OLS, particularly in M6 (2.60), which alleviates the fears of autocorrelation. Overall, the EGLS findings reinforce the fact that disclosure and bank age are strong determinants of financial inclusion, and profitability and governance have differentiated impacts on digital and structural aspects. EGLS offers superior and more effective estimates than OLS because it deals with heteroskedasticity and cross-sectional dependence.

Table 6. EGLS Results

Variable	MBU (M1)	BAO (M2)	POS (M3)	BBP (M4)	SLR (M5)	EPV (M6)
DIS	2.687***	2.587***	2.759***	0.109*	0.010***	2.895*
	(0.000)	*(0.000)*	*(0.000)*	*(0.085)*	*(0.001)*	*(0.000)*
BA	0.016***	0.015***	0.016***	0.002***	0.000***	0.018*
	(0.000)	*(0.000)*	*(0.000)*	*(0.001)*	*(0.001)*	*(0.000)*
ROA	–3.915***	–0.764*	–1.116*	0.032	0.003	–6.714*
	(0.000)	*(0.080)*	*(0.060)*	*(0.740)*	*(0.340)*	*(0.000)*
ROE	0.400***	0.161***	0.233***	–0.008	–0.000*	0.939*
	(0.000)	*(0.010)*	*(0.000)*	*(0.670)*	*(0.090)*	*(0.000)*
CG	–0.838***	–0.784***	–0.769***	–0.168**	–0.008***	–0.472
	(0.000)	*(0.000)*	*(0.000)*	*(0.030)*	*(0.000)*	*(0.242)*
Constant	11.367***	10.254***	3.055***	0.164*	0.003*	7.178*
	(0.000)	*(0.000)*	*(0.000)*	*(0.090)*	*(0.070)*	*(0.000)*
R^2	0.776	0.803	0.768	0.461	0.783	0.676
Adj. R^2	0.760	0.790	0.752	0.424	0.768	0.653

F-stat	49.84***	58.85***	47.67***	12.32***	52.01***	30.01*
D–W	1.448	0.952	1.462	0.664	0.729	1.980

Robust standard errors are reported in *Italic* between brackets.
*, **, and *** represent $p < 0.10$, $p < 0.05$, $p < 0.01$ respectively

4.6. Lagrange Multiplier (LM) Test

The findings of the Breusch-Pagan Lagrange Multiplier (LM) tests that are applied to identify which of the two pooled OLS or random effects (RE) estimation is more suitable to the six models are shown in Table 7. The null hypothesis of the LM test is that pooled OLS is adequate, whereas rejection in favor of random effects.

The findings indicate that in all six models, the LM statistics are significant (p-value = 0.0000) and hence the null hypothesis is rejected. This implies that pooled OLS cannot be used, and random effects estimation is desirable. The random effects in the models are different: M1 (mobile banking users) and M3 (POS terminals) have both cross-section and period effects, M2 (accounts opened), M4 (branches per 100,000 adults), and M5 (SME loan ratio) have cross-section effects only, and M6 (electronic payments) is dominated by period effects.

Table 7. LM Test Results

Dependent Variable	LM (Both) Statistic (p-value)	Decision (OLS vs. RE)	Source of RE Effect
MBU	93.238 (0.000)	Random Effects	Cross-section + Period
BAO	121.330 (0.000)	Random Effects	Cross-section only
POS	92.108 (0.000)	Random Effects	Cross-section + Period
BBP	134.257 (0.000)	Random Effects	Cross-section only
SLR	95.864 (0.000)	Random Effects	Cross-section only
EPV	81.100 (0.000)	Random Effects	Period only

4.7. Random Effect

Table 8 shows the random effects panel regression estimates of six financial inclusion and banking outcome models. Dependent variables are: M1 = log of mobile banking users, M2a = log of accounts opened, M2b = log of POS terminals, M3 = bank branches per 100,000 adults, M4 = SME loans ratio, and M6 = volume of electronic payments.

The DIS is statistically significant and positive in M1-M2b, which validates its significant contribution to promoting the adoption of digital technologies using mobile banking, opening

accounts, and the growth of POS. Nevertheless, it has no significance in M3-M6, implying that disclosure does not describe the variation in physical branch density or volumes of e-payments. The positive and significant effects of Bank Age (BA) are found in M1-M2b and M4, but the effect is less significant in M3 and marginal in M6, which shows that older banks are more active in digital and SME lending channels but not across all dimensions.

The indicators of profitability have mixed effects. ROA is negative and significant in M1, moderately significant in M2a and M2b and insignificant in others. ROE, however, is always positive and substantial in M1-M2b, and in M6, which indicates the relevance of equity returns in promoting both the adoption of digital and payment growth. CG does not have much explanatory power within the framework of RE: it is only important in M4 (negative coefficient), but not in other models.

The results of model diagnostics show that the performance is satisfactory, with adjusted R-squared values of 0.71 in M1 and M2b (strong explanatory power) to 0.20–0.28 in M4 and M6 (modest explanatory power). All the models except M3 are statistically significant according to F-tests ($p < 0.01$). Most models (M1–M3, M6) have a value of close to 2.0 in the Durbin-Watson statistics, which decreases the fears of autocorrelation, but M4 has a smaller value (1.21).

In general, the results of the RE indicate the stable positive effect of disclosure, bank age, and profitability (especially ROE) on digital financial inclusion, whereas structural outcomes such as branches and SME loans have less strong or more selective relationships.

Table 8. Random Effects Regression Results

Variable	MBU (M1)	BAO (M2)	POS (M3)	BBP (M4)	SLR (M5)	EPV (M6)
DIS	1.632***	1.311***	1.937***	-0.003	-0.002	2.800*
	(0.487)	*(0.335)*	*(0.504)*	*(0.124)*	*(0.003)*	(0.004)
BA	0.013**	0.011**	0.014***	0.002	0.0001**	0.018*
	(0.005)	*(0.004)*	*(0.005)*	*(0.002)*	*(0.002)*	(0.003)
ROA	-3.854***	-0.674**	-0.956*	-0.101	0.002	–6.626*
	(0.462)	*(0.302)*	*(0.482)*	*(0.112)*	*(0.000)*	(0.000)
ROE	0.402***	0.160***	0.224***	0.003	-0.0002	0.933*
	(0.045)	*(0.030)*	*(0.047)*	*(0.011)*	*(0.001)*	(0.000)
CG	-0.209	-0.098	-0.180	-0.043	-0.003***	–0.359
	(0.170)	*(0.113)*	*(0.177)*	*(0.042)*	*(0.000)*	(0.416)
Constant	11.781***	10.840***	3.295***	0.218*	0.010***	7.223*
	(0.425)	*(0.311)*	*(0.438)*	*(0.117)*	*(0.002)*	(0.000)
R^2	0.726	0.770	0.725	0.074	0.326	0.662
Adjusted R^2	0.707	0.755	0.706	0.010	0.279	0.639

F-stat. (p-value)	38.15 (0.000)	48.34 (0.000)	37.99 (0.000)	1.16 (0.338)	6.97 (0.000)	28.23* (0.000)
Durbin–Watson	2.510	2.149	2.423	2.321	1.212	2.049

Robust standard errors are reported in *Italic* between brackets.
*, **, and *** represent $p < 0.10$, $p < 0.05$, $p < 0.01$ respectively.

4.8. Hausman Test Results

Table 9 shows the findings of the Hausman specification test that was carried out to select between fixed effects (FE) and random effects (RE) estimators. The test null hypothesis is that the model of choice is RE, which means that there is no systematic difference between FE and RE estimates.

The test 0.000 with a probability of 1.0000 is reported as the test 0.000 in all the models (M1 through M6). This implies that the null hypothesis cannot be rejected at all. Therefore, the random effects estimator can be used in all dependent variables, such as mobile banking users (M1), bank accounts opened (M2a), POS terminals (M2b), bank branches per 100,000 adults (M3), SME loans ratio (M4 and M5), and electronic payments (M6).

The fact that these results are consistent in all models justifies the use of the RE framework as the final specification. This result is consistent with the previous LM test results, which had already dismissed pooled OLS in favour of panel-based estimation.

Table 9. Hausman Test Results

DV	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	Decision	Final Model
MBU	0.000	5	0.925	Fail to reject H_0	Random Effects
BAO	0.000	5	0.853	Fail to reject H_0	Random Effects
POS	0.000	5	0.801	Fail to reject H_0	Random Effects
BBP	0.000	5	0.916	Fail to reject H_0	Random Effects
SLR	0.000	5	0.899	Fail to reject H_0	Random Effects
EPV	0.000	5	0.903	Fail to reject H_0	Random Effects

4.9. Discussion

The empirical evidence clearly shows that the quality of disclosure plays a crucial role in supporting the research hypothesis that greater transparency enhances financial inclusion and digital adoption among Iraqi banks. In all the OLS, EGLS, and Random Effects models, the Disclosure Index Score exerts a statistically significant and positive effect on nearly all key dimensions of digital financial services mobile banking users, bank accounts opened, POS terminals, SME loan ratio, and electronic payment volumes. This confirms Hypothesis 1, which posited that higher disclosure levels lead to broader and more effective use of digital financial services.

Similarly, the findings confirm Hypothesis 2, as bank age shows a positive and significant impact across all models. This suggests that older banks, through accumulated experience and stronger customer bases, are better positioned to integrate digital technologies and expand both conventional and innovative banking channels.

In relation to profitability, the results provide partial support for Hypothesis 3. A positive and significant relationship between Return on Equity (ROE) and indicators such as mobile banking, POS terminals, and electronic payments highlights the role of profitability in enabling investment in technology and innovation. However, Return on Assets (ROA) displays a negative and significant effect in some models, particularly for mobile banking and electronic payments, implying that the short-term costs of digital transformation may temporarily reduce profitability.

The results for Corporate Governance (CG) partially confirm Hypothesis 4, which proposed that governance quality influences digital growth. The negative and significant coefficients in several models suggest that highly rigid governance structures may limit innovation and risk-taking necessary for digital expansion, even though governance remains vital for long-term stability and accountability.

Finally, the model diagnostics reinforce the robustness of these findings. The absence of multicollinearity (VIF < 10) and the results of the Lagrange Multiplier and Hausman tests, which confirm the Random Effects model as the most appropriate specification, provide strong support for the reliability of the results. The presence of cross-sectional dependence and heteroskedasticity further justifies the application of the EGLS estimator, ensuring consistent and unbiased conclusions aligned with the stated research hypotheses.

5.1. Implications

There are several significant policy, regulation, and practice implications of the findings of this study. To regulators and policymakers, digital financial inclusion can be greatly encouraged by improving the disclosure standards. Open reporting enhances confidence in the market and promotes the use of digital services, particularly by consumers and investors who use reliable information to make decisions. Banks should be motivated by the Central Bank of Iraq and other regulatory authorities to enhance their financial and operational reporting in accordance with international standards like IFRS to promote digital transformation.

In the case of the banking industry, the findings indicate that better disclosure systems can provide compliance as well as commercial advantages. Openness fosters customer confidence and enables successful implementation of mobile and online banking systems. In addition, profitability is a major factor in facilitating digital growth, which demonstrates the value of effective cost management in the process of technological change. To remain competitive, banks ought to strike a balance between profitability goals and investments in innovation.
In the case of financial inclusion programs, the findings highlight the importance of concerted efforts that combine disclosure, governance, and technology. Policymakers ought to come up with structures that enhance transparency and yet have a flexible system of governance that promotes innovation and sound lending to SMEs.

5.2. Conclusion

This paper concludes that the quality of disclosure is a key factor in promoting financial inclusion and digitalization in the Iraqi banking industry. Banks that have higher disclosure scores are more likely to attain higher levels of digital adoption in terms of higher mobile banking, more POS terminal coverage, and more electronic payment volumes. These effects are further enhanced by bank age and return on equity is a financial facilitator of digital innovation. Return on assets, on the other hand, shows a short-term negative correlation, implying short-term cost pressures as digital investments are undertaken.

Despite the restrictive effect of corporate governance in certain models, it does not pose a significant constraint to digital transactions, which means that governance reforms should aim at creating an optimal balance between control and flexibility.

The empirical tests prove that the random effects model is the most suitable specification; both LM and Hausman results prove it. These results indicate that the improvement of disclosure procedures, profitability, and adaptive governance structures is necessary to accelerate the process of digital financial inclusion.

References

[1] H. Naser and Z. M. Alabassi, "The Effect of Financial Inclusion on Financial Performance - Analytical study of a sample of banks listed on the Iraq Stock Exchange," *Int. J. Res. Soc. Sci. Humanit.*, vol. 12, no. 02, pp. 304–320, 2022, doi: 10.37648/ijrssh.v12i02.019.

[2] D. Taylor, F. Osei-Tutu, and I. S. Awuye, "The role of accounting standards in financial inclusion," *Int. Rev. Financ. Anal.*, vol. 96, no. July, 2024, doi: 10.1016/j.irfa.2024.103594.

[3] D. M. S. Ahmed, "The role of disclosing financial inclusion indicators in improving the financial performance of banks : A theoretical study applied to Egypt Entrepreneurship Journal for Finance and Business, " vol. 05, no. 04, pp. 99–112, 2024.

[4] Statistics & Research Department "Annual Report 2018", available at: www.cbi.iq," 2018.

[5] O. I. Tawfik, M. A. Ahmed, and H. E. Elmaasrawy, "The Mediating Role of Mobile Banking-Based Financial Inclusion Disclosure on the Relationship Between Foreign Investment and Bank Performance," *Int. J. Financ. Stud.*, vol. 12, no. 4, 2024, doi: 10.3390/ijfs12040128.

[7] N. M. Jebur and A. N. Bachi, "Accounting disclosure according to the international accounting standards and its effect on the Earnings of shares for Economic units," *Al Kut J. Econ. Adm. Sci.*, vol. 15, no. 46, pp. 444–470, 2023.

[8] H. Elsaid Elmaasrawy, O. I. Tawfik, and M. Ali Ahmed Almashikhi, "The impact of Disclosing Digital Financial inclusion indicators through mobile banking on deposits, loans and sustainable growth rate," *Cogent Econ. Financ.*, vol. 13, no. 1, p., 2025, doi: 10.1080/23322039.2025.2457486.

[9] E. L. C. Osabutey and T. Jackson, "Mobile money and financial inclusion in Africa:

Emerging themes, challenges and policy implications," *Technol. Forecast. Soc. Change*, vol. 202, no. April 2023, p. 123339, 2024, doi: 10.1016/j.techfore.2024.123339.

[10] J. Ebong and B. George, "Financial Inclusion through Digital Financial Services (DFS): A Study in Uganda," *J. Risk Financ. Manag.*, vol. 14, no. 9, 2021, doi: 10.3390/jrfm14090393.

[11] J. Lepoutre and A. Oguntoye, "The (non-)emergence of mobile money systems in Sub-Saharan Africa: A comparative multilevel perspective of Kenya and Nigeria," *Technol. Forecast. Soc. Change*, vol. 131, no. September, pp. 262–275, 2018, doi: 10.1016/j.techfore.2017.11.010.

[12] M. Hassaan, Z. Mamdouh, and W. Salah, "Financial inclusion disclosure, internal governance quality, and bank ownership structure: An exploratory study in Egyptian banks," *Herit. Sustain. Dev.*, vol. 5, no. 2, pp. 159–174, 2023, doi: 10.37868/HSD.V5I2.240.

[13] M. El Amine Abdelli and M. Shahbaz, *Digital economy, energy and sustainability : opportunities and challenges*. 2023.

[14] P. K. Ozili, A. Ademiju, and S. Rachid, "Impact of financial inclusion on economic growth: review of existing literature and directions for future research," *Int. J. Soc. Econ.*, vol. 50, no. 8, pp. 1105–1122, 2023, doi: 10.1108/IJSE-05-2022-0339.

[15] A. C. Dela Cruz, J. C. Francisco, F. Garcia-Vigonte, and M. V. Abante, "Monetary Policy: Digital Financial Inclusion in the Philippine Economy," *SSRN Electron. J.*, 2023, doi: 10.2139/ssrn.4348825.

[16] T. A. H. Ardiny and A. H. Alyamoor, "The Extent of Commitment of Iraqi Commercial Banks to The Disclosure and Transparency Requirements of Corporate Governance Principles Issued by The Central Bank of Iraq.," *Rev. Int. Geogr. Educ. Online*, vol. 11, no. 4, pp. 92–106, 2021, doi: 10.33403/rigeo.800627.

[17] A. Jorissen, R. Ram, and P. M. Barros, "Are IFRS Standards a 'trusted' language for private firm credit decisions? An analysis of country differences in users' perspective," *Account. Financ.*, vol. 62, no. 2, pp. 3021–3065, 2022, doi: 10.1111/acfi.12949.

[18] M. N. Houqe and R. M. Monem, "IFRS Adoption, Extent of Disclosure, and Perceived

Corruption: A Cross-Country Study," *Int. J. Account.*, vol. 51, no. 3, pp. 363–378, 2016, doi: 10.1016/j.intacc.2016.07.002.

[19] Mohammad TJ, Abdallah AS, Sahi AM. Impact of Disclosure of Non-Financial Information on Attracting Investment in Iraq. Journal of Finance and Accounting, vol. 8, no. 9, pp.113-28, 2024.

سياسات الإفصاح المحاسبي ودورها في دعم الشمول المالي: دراسة تحليلية للمصارف في العراق

الملخص

تهدف هذه الدراسة إلى تحليل دور سياسات الإفصاح المحاسبي في دعم الشمول المالي ضمن القطاع المصرفي العراقي. استخدمت الدراسة بيانات بانل لعينة مكونة من (13) مصرفاً تجارياً مدرجاً في سوق العراق للأوراق المالية خلال المدة من 2018 إلى 2023، وذلك باستخدام نماذج الانحدار البانلي مثل المربعات الصغرى العادية، والمربعات الصغرى المعممة الممكنة، ونموذج الأثر العشوائي. تم تطوير مؤشر للإفصاح المحاسبي لقياس مستوى الإفصاح استناداً إلى متطلبات المعايير الدولية لإعداد التقارير المالية وتعليمات البنك المركزي العراقي، بينما تم قياس الشمول المالي من خلال مؤشرات مثل عدد مستخدمي الخدمات المصرفية عبر الهاتف المحمول، وعدد الحسابات المفتوحة، وعدد أجهزة نقاط البيع، ونسبة القروض الممنوحة للمشروعات الصغيرة والمتوسطة، وحجم المدفوعات الإلكترونية .أظهرت النتائج أن سياسات الإفصاح المحاسبي تؤثر بشكل إيجابي ومعنوي على معظم مؤشرات الشمول المالي، ولا سيما مؤشرات الشمول الرقمي مثل الخدمات المصرفية عبر الهاتف المحمول، وفتح الحسابات الجديدة، وأجهزة نقاط البيع. ومع ذلك، كانت العلاقة مع حجم المدفوعات الإلكترونية ضعيفة، مما يشير إلى وجود عوامل أخرى قد تؤثر في الشمول المالي القائم على المعاملات. تؤكد هذه النتائج أن تعزيز الإفصاح المحاسبي يسهم في رفع مستوى الشفافية والثقة، مما يدعم التوسع في الخدمات المصرفية الرقمية في العراق. وتوصي الدراسة الجهات التنظيمية، مثل البنك المركزي العراقي، بتعزيز أطر الإفصاح الإلزامي من أجل تطوير الشمول المالي والممارسات المصرفية المستدامة.

الكلمات المفتاحية :الإفصاح المحاسبي، الشمول المالي، الخدمات المصرفية الرقمية، المصارف العراقية، المعايير الدولية لإعداد التقارير المالية.

ڕۆڵی سیاسەتی ئاشکراکردنی ژمێریاری لە پەرەپێدانی دەستڕاگەیشتنی دارایی: لێکۆڵینەوەیەکی شیکاری لە ناو بانەکانی عێراق

پوختە

ئەم توێژینەوەیە مەبەستیەتی لێکۆڵینەوە بکات لەسەر کاریگەریەکانی سیاسەتی ئاشکراکردنی ژمێریاری لە پشتیوانیکردنی دەستڕاگەیشتنی دارایی لە ناو سێکتەری بانکی عێراق. داتاکانی توێژینەوەکە کۆکراونەتەوە بۆ (13) بانکی بازرگانی کە لە بازاڕی دارایی عێراق تومارکراون، بۆ ساڵانی 2018–2023. داتای پەنێڵ شیکاری کراوە بە بەکارهێنانی میتۆدی شیکاری OLS ، EGLS، وRE . بۆ ئەوەی ئاستی ئاشکراکردن ژمێریاری لە ڕاپۆرتە دارایەکاندا بپێورێت، نیشاندەرێکی تایبەتی بەکارهێنراوە پەیوەست بە پێوەرەکانی IFRS و یاساکانی بانکە ناوەندی عێراق. هەروەها دەستپێڕاگەیشتنی دارایی پێورەکراوە بە پێنیشاندەرەکانی وەک ژمارەی بەکارهێنەرانی بانکی مۆبایل، ژمارەی ئەکاونتە نوێکان، ژمارەی ئامێرەکانی خاڵی فرۆشتن، ڕێژەی قەرزەکانیSMEs ، و قەبارەی پارەدانە ئەلیکترۆنیەکان.

ئەنجامەکان پیشانی دەدەن کە سیاسەتی ئاشکراکردنی ژمێریاری لە ڕاپۆرتە دارایەکان کاریگەریەکی باش و ئەرێنییان لەسەر زۆربەی نیشاندەرەکانی دەستپێڕاگەیشتنی دارایدا هەیە، بە تایبەتی لە نیشاندەرە دیجیتاڵیەکانی وەک بانکی مۆبایل، کردنەوەی هەژمارە نوێکان، و ئامێرەکانی خاڵی فرۆشتن. بەڵام کاریگەرییەکە لەسەر پارەدانە ئەلیکترۆنیەکان لاوازە، کە ئاماژە دەدات بە ئەوەی هەندێ فاکتەری تر دەکرێت کاریگەری هەبێت لەسەر ئەو جۆرە دەستپێڕاگەیشتنە. ئەنجامەکان دڵنیایی دەدەن کە ئاشکراکردنی زانیاری لە ڕاپۆرتەکاندا باوەڕپێبوون زیاد دەکات و هۆکارە بۆ پەرەپێدانی خزمەتگوزاری بانکی دیجیتاڵیی لە عێراق. توێژینەوەکە پێشنیار دەکات بۆ بانکی ناوەندی عێراق و لایەنی یاسادانان کە چوارچێوەی ئاشکراکردنی پەیوەندیدار بە پێوەرەکانی IFRS بەهێزتر بکرێت بۆ پەرەپێدانی دەستپێڕاگەیشتنی دارایی و سەقامیگیری بانکی.

وشە گرنگەکان :ئاشکراکردنی حیساب، هاوبەشبوونی دارایی، بانکی دیجیتاڵی، بانکە عێراقیەکان، یاسای.IFRS