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Influential Factors on Disclosure Quality in Annual Banking Reports – A Study of a Group of Banks Active in Algeria

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Abstract:

This study investigates the determinants impacting the quality of disclosure in the annual reports of Algerian banks during 2020-2022. Initially, the research utilizes a disclosure index for Algerian banks, derived through a questionnaire that captures key disclosure elements mandated by sector-specific laws and regulations. Following this, a review of data available on the banks' official websites was performed to gather indicators that represent the independent variables of the study. These variables were then analyzed to ascertain their influence on the disclosure levels within the banks' annual financial statements. The results reveal that the disclosure index of Algerian banks stands at a satisfactory level (69.97%), with the independent variables exhibiting diverse effects on this index.

Keywords: Accounting Disclosure; Annual Reports; Disclosure Index; IAS/IFRS; SCF; Financial Information; Algerian Banks.

Jel Classification Codes: M 41, M 49.

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1. Introduction

The provision of accurate and timely financial information, coupled with robust disclosure practices in annual reports, is vital for the efficacy of financial markets (Pivac, S. et al., 2017). To bolster the financial market, it is crucial to promote a deeper conceptual understanding and enhance transparency in financial statements and annual reports. This ensures that information is disseminated simultaneously and equitably to all stakeholders (Abdullah Al MUTAWAA and Aly M HEWAIDY, 2010).

It is incumbent upon companies to disclose information that enables the assessment of potential risks inherent in their financial statements and financial instruments at the close of each accounting period (Sabrina Pucci, Marco Tutino, 2013). Financial statements play a pivotal role in the decision-making processes of investors. Several studies have demonstrated a significant alignment between accounting and financial management, particularly concerning the tools used for measuring cash flow risks and defining risk indicators (Hopwood, A. G., 2009).

Furthermore, the transparency risk analysis and the adequacy of the accounting principles outlined in IAS/IFRS in delivering qualitative information are instrumental in financial decision-making (Sabrina Pucci, Marco Tutino, 2013). The information contained in these reports assists investors in evaluating the performance and efficiency of banks and other financial institutions, guiding their investment decisions by balancing risk factors with the returns on their financial investments (Hossain, 2008).

The lack of information or disparity in its presentation can deter current and potential investors from engaging in stock investments, rendering the markets ineffective and thus transforming financial information into an obstacle for investment entries and a primary factor in diverting the attention of shareholders and potential investors (Claessens, S. et al., 1993). Financial statements furnish the requisite financial information for gauging risk indicators, profitability, and financial stability, upon which investors base their economic decisions (Sabrina Pucci, Marco Tutino, 2013).

1.1 Study Problem

The primary issue this study addresses is:

- **What are the factors influencing the quality of disclosure in the annual reports of banks active in Algeria?**

To explore this hypothesis, the study relies on various bank characteristics including the bank's age, size, profitability, number of branches, and the nature of bank ownership. Consequently, the main hypothesis of the study is formulated as follows:

1.2 Main Hypothesis:

- **There is a statistically significant effect ($\alpha \leq 0.05$) of the bank's age, size, profitability, number of branches, and nature of ownership on the level of disclosure in the annual reports of banks active in Algeria.**

The import of this research is pivotal in aiding banks to prioritize the essential factors conducive to enhancing the transparency of their annual reports and financial statements. A company's communication strategy must be acutely aware of the foundational elements linked to the structural characteristics of the entity, such as the bank's age, size, profitability, number of branches, and the nature of its ownership. Recognizing these factors is crucial for pinpointing the key areas that require attention in the development of effective channels for the dissemination of financial information, both internally and to external stakeholders.

To fulfil the objectives of this research, the study will be segmented into two distinct phases. The first phase will delve into the existing literature and prior studies to pinpoint the research gap and establish the secondary hypotheses that will be instrumental in testing the primary hypothesis. The subsequent, practical phase will evaluate the disclosure index of the banks being studied. This includes a thorough analysis of the relationship between the independent variables, namely, the bank's age, size, profitability, number of branches, and ownership structure, and the dependent variable, which is the accounting disclosure index of active banks in Algeria. This phase will involve a detailed discussion and analysis of the various findings, aiming to synthesize these insights into coherent conclusions and formulate strategic recommendations.

2. Literature Review and Secondary Hypotheses

2.1. Accounting Disclosure in Banks

Accounting disclosure is the method by which various parties and the general public are informed about the contents of annual reports (Shehata, 2014). It serves as a communication tool that allows the transfer of financial and non-financial information related to the entity to various stakeholders (Owusu-Ansah, 1998), representing the primary source of information for users of annual reports and financial statements (Shehata, 2014). Typically, accounting disclosure in banks is subject to legislative authority (Kolar, I., & Falez, N., 2018), influenced by its economic and legislative environment (Paucan, 2015). Legislative authorities are responsible for setting the laws that regulate the disclosure process and define the elements that must be presented in annual and financial reports. Additionally, the perception of managers regarding the importance of accounting disclosure in the entity and the communication strategy adopted by the entity play crucial roles (Paucan, 2015).

Accounting disclosure is the general output of the process of organizing and managing financial and non-financial information within the entity. It flows in qualitative and quantitative forms from within the entity to various internal and external parties (Etienne Farvaque et al., 2011). It provides timely and appropriate information, enabling stakeholders to make informed decisions that serve their interests and ensure the efficient performance of their decisions. Banks are required to prepare their annual and individual financial statements in compliance with the laws and regulations governing the accounting profession and to exert the appropriate professional effort in their preparation (Kolar, I., & Falez, N., 2018).

In recent years, especially after various crises that affected global financial markets, banks have faced numerous criticisms and accusations, particularly regarding speculation in measurement methods and lack of transparency in presenting and disclosing information (Kolar, I., & Falez, N., 2018). This has led to situations of uncertainty, thus banks are now required to disclose more credibly and adopt more effective communication policies. There are many incentives for banks to disclose information, including reducing market risks and attracting new investors (Ahmed, K. and Nicholls, D, 1994). Although the disclosure in annual reports in the banking sector is somewhat similar to other economic sectors, the content of financial statements and their components differ somewhat from those in other sectors of activity (Kolar, I., & Falez, N., 2018). The Basel Committee (1998) created a guide on transparency for banks, recommending greater attention to the concept of disclosure in their widely-used annual reports and financial statements[1].

Enhancing transparency in the entity reflects the true and fair value of its assets and reduces the costs of obtaining capital in financial markets (Wen-hsin Hsu, Pourjalali Songa, 2018), especially since some entities refrain from disclosing certain information due to its sensitivity and confidentiality, which complicates the comparison process recommended by the conceptual framework of international accounting standards, thereby reducing investment opportunities (Abdullah Al MUTAWAA and Aly M HEWAIDY, 2010). The quality of disclosure reduces the information asymmetry among various parties, contributing to the enhancement of financial information quality and increasing the trading rates of the institution's shares in financial markets, thereby increasing its value (Alves, Canadas, 2015, p67).

Companies that withhold disclosure affect shareholder confidence, find it difficult to attract funds, and thus increase the cost of employed capital. The financial information presented aims to reduce information asymmetry between the preparers of financial statements and annual reports and their users, thus achieving a balance between the marginal cost of preparing information and the additional return expected from its disclosure (Hedi Bouzaoui, 2020).

2.2. Mandatory and Voluntary Accounting Disclosure in Banks

Among the myriad disclosure obligations that entities must fulfill, banks are unique in that they engage in both mandatory and voluntary disclosure practices (Kolar, I., & Falez, N., 2018). Under the auspices of various regulatory bodies, including the Ministry of Finance and bank regulators, banks are required to comply with specific legislations and laws that dictate the production of financial information. Mandatory disclosures comprise a set of elements that banks are compelled to include in their annual reports and financial statements as per the governing regulations (Meek et al., 1995). Nations that enforce stringent rules and standards for regulating

[1] The Basle Committee on Banking Supervision. (1998). Guidance on Bank Transparency

disclosure processes tend to experience fewer financial crises and maintain greater security, largely because they mitigate the excessive risks associated with financial activities (Tadesse, 2006).

However, it is often the case that the elements mandated for disclosure do not provide a comprehensive view of the bank's operations to its stakeholders. Consequently, banks may opt for voluntary or non-mandatory disclosure, which involves the release of additional elements and non-financial information not required by existing legislation. This voluntary disclosure serves to enhance the bank's image and increases the transparency and credibility of its annual reports (Shehata, 2014). Such disclosure might include information on social responsibility and communication policies (Obafemi, 2018), which can significantly aid in reinforcing administrative decisions and improving the comprehensibility of financial reports, thereby facilitating more informed decision-making (Kolar, I., & Falez, N., 2018). Therefore, the practice of accounting disclosure in banks is markedly more effective when it integrates both mandatory and voluntary disclosures, rendering the financial information more actionable and valuable in decision-making processes (Hedi Bouzaoui, 2020).

2.3. Factors Affecting the Level of Disclosure in Banks (Bank Age, Bank Size, Bank Profitability, Number of Branches, and Nature of Bank Ownership)

The investigation into the factors influencing the level of disclosure in banks is prompted by numerous technical and structural peculiarities inherent to this sector. This sector is characterized by a heavy reliance on detailed financial statements and reports, and the trading rate of financial instruments is notably high relative to other sectors. There are distinct practices within the banking sector concerning accounting policies, auditing methods, the formulation of financial statements, and the reporting of risk indicators (Sabrina Pucci, Marco Tutino, 2013), which enhance the informativeness and effectiveness of disclosure practices in banks compared to other sectors.

Extensive research has explored the relationship between both qualitative and quantitative characteristics of banks, such as size, profitability, financial leverage, liquidity, industry type, ownership distribution, and the nationality of the bank and its branches, and the level of disclosure in their annual reports (Kolar, I., & Falez, N., 2018). A notable study by Francis, J., et al. (2009), which spanned 37 countries, demonstrated that industry growth rates positively influence the disclosure index and significantly bolster transparency and governance in financial institutions. Moreover, the market value of the stock plays a crucial role in dictating the level of disclosure in banks; the sensitivity ratio of bank stock prices necessitates the disclosure of an extensive array of financial and non-financial information. This comprehensive disclosure allows analysts to accurately assess the bank's capital structure, thereby facilitating a reduction in its capital costs (Baumann, Nier, 2002).

Numerous studies have delved into the relationship between enterprise characteristics and the level of disclosure in annual reports and their impact on stakeholder decisions (Soliman, M., 2013; Awusu, 1998; Shehata, 2014; Hossain, 2008; Sabrina Pucci, Marco Tutino, 2013; Kolar, I., & Falez, N., 2018). The most frequently examined indicators include age, size, ownership structure, state-owned stock shares, number of branches, leverage, risk indicators, and adherence to international accounting and financial reporting standards.

2.3.1. Bank Age

Senior financial institutions often exhibit superior disclosure practices, presenting critical elements in their annual reports with enhanced clarity due to the wealth of experience they have accrued over the years (Owusu-Ansah, 1998). These institutions have refined their methodologies for generating and organizing financial information within financial statements and annual reports through various phases of their operations, resulting in a more consistent adherence to disclosure standards compared to their nascent counterparts (Abdullah Al MUTAWAA and Aly M HEWAIDY, 2010).

Their seasoned experience has enabled them to craft expert communication policies that ensure public access to necessary information efficiently. Mature institutions not only possess sophisticated organizational capabilities and control over communication techniques, but they have also developed advanced information systems. These systems facilitate the management of costs associated with the production of financial and non-financial information. They disclose information more effectively due to their seasoned communication policies and their interactions with the public and other stakeholders, aiming to maintain their market position and explore new investment opportunities and possibilities for expansion into international markets (Feytimi, O., 2014). On the other hand, younger institutions, still striving to establish a market share and position, often face a communication predicament. This arises from their cautious approach to non-disclosure of certain information they fear might be leveraged by competitors to jeopardize their nascent market position (Owusu-Ansah, 1998). This reluctance can adversely affect their reputation among stakeholders and the public, subsequently impacting the level of disclosure in their financial statements.

H1: There is a statistically significant relationship between the age of the bank and the bank's disclosure index in Algerian banks.

2.3.2 Bank Size

Larger banks generally possess the necessary capabilities and resources to gather, store, analyze, and subsequently disclose and disseminate information. They leverage their experience and infrastructure to develop robust digital information systems that support these processes (Xudang et al., 2018). Previous research has established a positive correlation between the size of a bank and its disclosure index, where the asset value or business volume has been utilized to gauge the size of the institution, with a preference for the asset value metric due to its efficiency (Wallac et al., 1994). There are three principal aspects that underscore the significance of a bank's size in enhancing disclosure levels in financial reports. Firstly, large banks can gather information at a lower cost due to their superior capabilities and advanced information systems. Secondly, as entities often listed on financial markets, large institutions disclose extensive and crucial information beneficial to their users. Lastly, smaller institutions often perceive that greater transparency may render them more susceptible to influence and manipulation by larger entities (Hossain, 2008).

H2: There is a statistically significant relationship between the size of the bank and the bank's disclosure index in Algerian banks.

2.3.3. Bank Profitability

Numerous studies have utilized profitability metrics such as return on assets, return on equity, and turnover ratios to evaluate the extent of disclosure within organizations, focusing on how these financial performance indicators impact mandatory disclosure practices (Abdullah Al Mutawaa and Aly M Hewaidy, 2010). These investigations suggest that an organization's profitability metrics are crucial as they influence the agency costs within the entity.

Management tends to promote transparency for three primary reasons: firstly, to build shareholder trust by providing a transparent and truthful depiction of how the organization is managed, which highlights key profitability metrics in financial reports; secondly, to affirm to shareholders that their investment decisions are sound, underscored by the substantial returns achieved; and thirdly, to diminish agency costs, as comprehensive disclosure about the management's strategies and the returns secured reassures shareholders, prompting them to lessen the monitoring intensity on the management of their investments, thereby reducing agency costs (Kolar, I., & Falez, N., 2018). However, some scholars argue that there is no definitive correlation between an organization's profitability metrics and its level of disclosure (Glaum and Street, 2013), while others (Wallace and Naser, 1995) have observed an inverse relationship between the two.

H3: There is a statistically significant relationship between the profitability index of the bank and the bank's disclosure index in Algerian banks.

2.3.4. Bank Structure and Branches

By the structure of the organization, we mean its collection of branches and agencies. In this case, the organization is compelled to disclose financial statements and annual reports both individually and consolidated. Some studies indicate that the level of disclosure in such organizations is high, due to significant investments in communication infrastructure, which enables them to possess advanced information systems that control the costs of preparing and presenting financial information in their individual or consolidated financial reports (Hossain and Hammami, 2009). An organization with a larger number of branches tends to have higher levels of disclosure (Haniffa and Cook, 2002).

H4: There is a statistically significant relationship between the number of bank branches and the bank's disclosure index in Algerian banks.

2.3.5. Nature of Bank Ownership

This segment examines entities where ownership is entirely or partially state-controlled. These organizations are often compelled to disclose a broad spectrum of information to users of financial reports and the general public. However, they frequently grapple with stringent regulations and legislation that oversee their operations (Kolar, I., & Falez, N., 2018). In the banking sector, key directives from the Ministry of Finance and the Central Bank Governor outline the critical elements that must be included in financial reports.

Nevertheless, there are occasions when these entities may neglect to include non-financial or non-mandatory information despite its significance, resulting in gaps in disclosure within the bank. Research indicates that state-owned or partially state-owned organizations face elevated agency costs due to inherent conflicts of interest. While these entities endeavor to disclose as much information as possible to various stakeholders, they simultaneously must navigate the constraints imposed by relevant regulations and laws. In their efforts to uphold governance principles and transparency, their adherence to disclosure standards is designed to mitigate agency costs (Juhmain, 2013).

H5: There is a statistically significant relationship between the nature of bank ownership and the bank's disclosure index in Algerian banks.

3. Practical Aspect

Utilizing outputs from Eviews 13 software, this study will analyze the correlations between various independent variables, such as bank age, bank size, bank profitability, number of branches, and the nature of bank ownership, and the dependent variables represented by the disclosure index. Initially, we will compute the general disclosure index for the annual reports of the banks under examination. Subsequently, regression analysis will be conducted to assess the impact of the aforementioned variables on the disclosure index in Algerian banks.

3.1 Study Sample

The sample for our study encompasses a total of 10 banks: 4 public, 2 private (foreign entities operating in Algeria), and 4 mixed-ownership banks. We have analyzed the annual reports of these banks over the last three years (2020, 2021, 2022). The rationale behind selecting this particular sample is to explore the changes affecting the disclosure elements in financial statements and annual reports, especially in the wake of Algeria's adoption of the International Accounting Standards (IAS) and the International Financial Reporting Standards (IFRS) in its financial accounting system (SCF). This choice was further informed by the Governor of the Bank of Algeria’s decisions aimed at aligning the accounting practices of Algerian banks and financial institutions with the latest directives from the International Accounting Standards and the enhanced disclosure requirements mandated for banks.

Table 01: Banks Under Study

No.	Bank Name	Code	Ownership
01	Agricultural and Rural Development Bank	BADR	Public
02	Local Development Bank	BDL	Public
03	National Bank of Algeria	BNA	Public
04	People's Credit of Algeria	CPA	Public
05	Gulf Bank Algeria	AGB	Public-Private
06	Societe Generale Bank	SGE	Private
07	BNP Paribas Bank	BNP	Private
08	Al Baraka	Al Baraka	Public-Private
09	TRUST BANK	TRUST BANK	Public-Private
10	ABC BANK	ABC BANK	Public-Private

Source: Prepared by the researcher.

3.2.1. Sample Collection Methods: After visiting the official websites of the banks, most of which unfortunately did not display annual reports except for a few, we resorted to direct communication with the banks and sending questionnaires to their executives.

3.1.3. Disclosure Index Design Method: After reviewing several indices proposed by various researchers and expert offices, we decided to rely on three indices that we believe suit the requirements of our research, in addition to adapting them to the various legislations and laws issued by the Bank of Algeria aimed at developing the accounting system in banks and adapting it to international accounting standards.

Table 02: Sources Used in Preparing Study's Questionnaire List

No.	Source
01	Decision No. 09/04 dated June 23, 2009, which includes the chart of accounts and accounting rules applied to banks.
02	Decision No. 09/05 dated October 18, 2009, which involves the preparation of financial statements for banks and financial institutions and their publication.
03	Standard & Poor's (S&P) Index (2002)
04	AIMR-FAF: Index of Investment Management and Financial Analysis Research Organization
05	CIFAR: Index of the International Center for Financial Research and Analysis

Source: Prepared by the researcher.

3.2. Disclosure Index Calculation in Active Banks in Algeria

3.2.1. Adopted Questionnaire List

First Phase: Preparation of a questionnaire list (about the information that must be disclosed), which contained 148 items (clauses). The question was whether the bank discloses them. The questionnaire consisted of the following axes:

Table 03: Axes of the Questionnaire

Axis No.	Axis Title	Questions No.	Percentage
01	General Information about the Bank	25	16.9%
02	Information about Accounting Policies	26	17.6%
03	Financial Information about the Bank	97	65.5%

Source: Prepared by the researcher.

The content of the questions was about the items disclosed in the annual reports of banks, with the lion's share allocated to financial information, followed by accounting policies, and finally general information.

Second Phase: Determining the method for calculating the disclosure index using a binary branching method (1: Yes, 0: No) with closed questions, where the respondent marks either "Yes" or "No" (Abdullah Al Mutawaa and Aly M Hewaidy, 2010).

Table 04: Disclosure Indices

Year	General Information about the Bank	Information about Accounting Policies	Financial Information about the Bank
	Positive Disclosure = 1	Positive Disclosure = 1	Positive Disclosure = 1
	Negative Disclosure = 0	Negative Disclosure = 0	Negative Disclosure = 0

DIND = ACD ÷ APD
Where: DIND = Disclosure Index in the Bank

ACD = Number of items actually disclosed

APD = Number of items that must be disclosed

Source: (Abdullah Al Mutawaa and Aly M Hewaidy, 2010).

Third Phase: Creation of a table classifying levels of disclosure.

Table 05: Levels of Disclosure

No.	Indicator	Percentage
01	High (Very high level of disclosure)	Above 80%
02	Medium (Acceptable level of disclosure)	60% - 79%
03	Low (Low level of disclosure)	40% - 59%
04	Very Low (Gap in the disclosure process)	Less than 40%

Source: (Samaha, K., and P. Stapleton, 2008).

2.2.3 Table for Measuring Disclosure Indices in Active Banks in Algeria

Table 06: Number and Percentage of Items Disclosed by Algerian Banks (2020-2022)

No.	Bank	Code	Ownership	Disclosure Index	
				No	Yes
01	Agricultural and Rural Development Bank	BADR	Public	%0,21	%0,79
02	Local Development Bank	BDL	Public	0,74	%0,26
03	National Bank of Algeria	BNA	Public	0,31	%0,69
04	People's Credit of Algeria	CPA	Public	0,67	%0,33
05	Algeria Gulf Bank	AGB	Public-Private	%0,3	%0,7
06	Societe Generale Bank	SGE	Private	0,26	%0,74
07	BNP Paribas Bank	BNP	Private	0,25	%0,75
08	Al Baraka	Al Baraka	Public-Private	0,53	%0,47
09	TRUST BANK	TRUST BANK	Public-Private	0,17	%0,83
11	ABC BANK	ABC BANK	Public-Private	0,07	%0,93

Source: Prepared by the researcher based on Excel outputs.

Our study included 10 banks active in the Algerian market with 40% public banks, 20% private banks, and 40% mixed ownership banks. After conducting a survey with 148 questions related to items that must be disclosed in the annual reports of each bank, out of a total of 4440 items, positive disclosures were about 3096.01 items (approximately 69.73%), and negative disclosures were about 1360 items (approximately 30.63%).

This reflects an average disclosure rate of 69.73%, which is generally acceptable considering the accounting environment in which banks in Algeria operate, and the economic environment and business nature in the absence of an effective capital market. The banks surveyed achieved varying disclosure rates, with ABC BANK at a very high rate of 93%, showing overall that the obtained indices are average but very acceptable, approaching an index of 80. However, lower rates were observed like CPA at 33% and Al Baraka at 47%, indicating a gap in their disclosure policy that requires urgent remedial actions.

Table 07: Descriptive Statistics for Independent and Dependent Variables

Statistic	Disclosure Score	Return on Assets	Age	Size	Number of Branches	Ownership
Mean	0.6973	0.9436	33.1000	18.9277	120.2667	2.0000
Median	0.7430	0.8650	31.5000	18.9724	79.5000	2.0000
Maximum	0.9320	2.3400	56.0000	22.6166	340.0000	3.0000
Minimum	0.3310	0.2100	17.0000	14.8047	24.0000	1.0000
Std. Dev.	0.1691	0.6478	13.7272	1.78045	99.2808	0.9097

Source: Prepared by the researcher based on Eviews v.13 outputs.

The descriptive table shows that the mean disclosure index is 0.69 with a standard deviation of 0.1691, considered average and acceptable according to Table 05. The mean bank profitability was 0.9436 with a standard deviation of 0.6478, the mean bank age was 33.1 with a standard deviation of 13.72, and the mean bank size was 18.92 with a standard deviation of 1.78. The average number of branches in the sample was 120 with a standard deviation of 99.28, and the average ownership nature was 2 with a standard deviation of 0.9. The highest value in the sample is 340 representing the number of branches in a bank, while the lowest value is 0.21 representing the return on assets.

3.3 Model Estimation for the Impact of Bank Characteristics on Annual Report Disclosure Levels

To estimate the regression model, we identified independent variables represented by (bank age, bank size, bank profitability, number of bank branches, and nature of bank ownership) and the dependent variable represented by the disclosure index.

Table 08: Independent Variables Used in the Model

Variable Code	Information Type Used for Estimation	Independent Variable
AGE	Number of years of bank's activity up to the study period	Age
SIZE	Logarithm of total bank assets during the study period	Size
ROA	Return on bank assets during the study period	Profitability
NOA	Number of branches affiliated with each bank during the study period	Number of Branches
OWNERS	Nature of bank ownership (public, private, mixed) during the study period	Ownership

Source: Prepared by the researcher.

The dependent variable represented by the disclosure index is referred to in the study by the code: SCORE_DISC.

3.3.1. Correlation Matrix for the Study Model

The correlation matrix presents the relationships between various variables in the study model, allowing us to understand the relationships between dependent and independent variables. In our study, the dependent variable is the bank disclosure index, while the independent variables include: bank age, bank size, bank profitability, number of bank branches, and bank ownership. We prepared the correlation matrix based on three years of data, studying 10 Algerian banks over this period, resulting in 30 observations for this model.

Table 09: Correlation Table Between Dependent and Independent Variables

Variables	SCORE_DISC	ROA	SIZE	AGE	NOA	OWNERS
SCORE_DISC	1.0000					
ROA	-0.3786	1.0000				
	0.0391	-----				
SIZE	0.4709	0.1860	1.0000			
	0.0086	0.3249	-----			
AGE	-0.4318	-0.3301	-0.1605	1.0000		
	0.0172	0.0747	0.3967	-----		
NOA	-0.0661	-0.2945	0.1212	0.6354	1.0000	
	0.7286	0.1141	0.5232	0.0002	-----	
OWNERS	0.2488	0.2638	0.0151	-	-	1.0000

				0.7455	0.8494	
	0.1849	0.1589	0.9367	0.0000	0.0000	-----

Source: Prepared by the researcher based on outputs from Eviews v.13 software.

The Pearson Correlation Coefficient was utilized to ascertain the type and strength of relationships among the study variables, including bank age, bank size, bank profitability, number of branches, and nature of bank ownership. As indicated in Table 09, significant relationships were observed between several study variables at the 5% significance level.

Notably, correlations were identified between the return on assets and the bank's age, as well as between the bank's age, the number of its branches, and its ownership structure. The coefficients for these relationships were as follows: between the number of branches and the nature of ownership, the coefficients were (-0.33), (0.6354), (-0.7455), and (-0.8494). The analysis revealed no significant correlations between the other independent variables, highlighting specific areas where relationships influence disclosure practices and financial outcomes.

3.3.2. Variance Inflation Factor (VIF) and Tolerance Test

The identification of multicollinearity among independent variables is a critical step in ensuring the robustness of regression analyses, accomplished through the calculation of the Variance Inflation Factor (VIF) (Hossain, 2008; Kolar, I., & Falez, N., 2018). To maintain the integrity of the model, it is essential that independent variables do not exhibit significant inter-correlations, which can compromise the validity of the findings.

Multicollinearity is considered problematic when the correlation coefficient surpasses 0.8, or when the VIF exceeds 10. Conversely, the tolerance value, which measures the proportion of variance in a specific independent variable that remains unexplained by other variables in the model, should not drop below 0.1. This test serves as a precaution to ensure that the explanatory power of individual variables is not unduly influenced by their relationships with others in the model.

Table 10: Variance Inflation Factor (VIF) for Study Variables

Variables	VIF	1/VIF (Tolerance)
OWNERS	4.91	**0.2037**
NOA	4.00	**0.2500**
AGE	2.45	**0.4088**
ROA	1.19	**0.8397**
Size	1.18	**0.8507**
Mean VIF		**2.74**

Source: Prepared by the researcher based on outputs from STATA v.17 software.

From analyzing the VIF table for the study's independent variables, we observe that the average VIF is 2.74. The independent variable representing ownership shows the highest value in the model at 4.91, indicating that it does not reach the threshold of 10, meaning there are no highly correlated variables in our study model. The Tolerance values range from 0.2037 to 0.8507, all greater than 0.1, indicating no high multicollinearity in the model and no significant multiple correlations with other variables.

Thus, it can be concluded that the correlation between the independent variables according to the study model does not pose any problems in interpreting the results obtained according to the multiple regression model.

3.3.3. Estimated multiple regression model for studying the impact of independent variables such as bank age, bank size, bank profitability, number of bank branches, and bank ownership nature on the disclosure index.

To achieve the study's objectives, we constructed a multiple linear regression model based on the study by Kolar, I., & Falez, N. (2018). The mathematical formulation of the model was as follows: $SCOR\_DISC_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 NOA_{it} + \beta_5 OWNERS_{it} + \varepsilon_{it}$

Where:

- $SCOR\_DISC_{it}$: Represents the disclosure index of bank i at time t.
- AGE_{it}: Represents the age of bank i at time t.
- $SIZE_{it}$: Represents the size of bank i at time t.
- ROA_{it}: Represents the return on assets at bank i at time t.

- NOA_{it}: Represents the number of branches of bank i at time t .
- $OWNERS_{it}t$: Represents the ownership nature of bank i at time t .
- ε_{it}: Represents the error term.
- β_0،β_1،β_2‘β_3،β_4‘β_5: Represents the model coefficients.

The Ordinary Least Squares (OLS) regression method was used to estimate the above model and analyze the relationship between the study variables: the dependent variable, which is the disclosure index in Algerian banks, and the independent variables represented by bank age, bank size, bank profitability, bank branches, and bank ownership. The panel data model was adopted for several reasons, including the legislative framework in the Algerian environment, which is characterized by legality, reducing the gap of variation between banks and achieving a kind of convergence in disclosure policies among Algerian banks. Additionally, the competition system among banks in Algeria faces a kind of stagnation due to the adopted laws and regulations. Consequently, we obtained the following statistically significant results with P-values less than 0.05 ($p < 0.05$).

Table 11: Regression Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.2909	0.0286	10.1576	**0.0096**
AGE	-0.0092	0.0004	-20.8840	**0.0023**
SIZE	0.0461	0.0014	31.2903	**0.0010**
ROA	-0.1322	0.0085	-15.3943	**0.0042**
NOA	0.0002	1.67E-05	12.1193	**0.0067**
OWNERS	-0.0330	0.0062	-5.30196	**0.0338**

R-squared	**0.9563**	**Mean dependent var**	**1.7329**
Adjusted R-squared	0.9471	**S.D. dependent var**	**1.6721**
S.E. of regression	0.0865	**Sum squared resid**	**0.1799**
F-statistic	105.0393	**Durbin-Watson stat**	**1.0264**

Prob(F-statistic)	0.000000

Source: Prepared by the researcher based on outputs from Eviews v.13

4. Presentation and Analysis of Results Obtained from the Estimated Model and Hypothesis Testing

4.1. Presentation of the Results Obtained from the Estimated Model

The multiple correlation coefficient R-squared reached 0.95, indicating a high level and suggesting that the obtained model can explain the variance between the disclosure index and the other independent variables (bank age, bank size, bank profitability, bank branches, and bank ownership). The value of the Adjusted R-squared reached 0.94. The independent variables of the study (bank age, bank size, bank profitability, bank branches, and bank ownership) are statistically significant with P-Values less than 0.05 ($p<0.05$) influencing the dependent variable, the disclosure index. The coefficients were significant at the following levels:

- Age: 0.0023
- Size: 0.001
- Profitability: 0.0042
- Branches: 0.0067
- Ownership: 0.033

These results indicate that all independent variables significantly explain the dependent variable.

From the multiple linear regression analysis table, we observed the following relationships between the dependent variable (disclosure index) and the independent variables:

1. There is a statistically significant negative effect between the disclosure index and bank age (-0.0092), suggesting that a 1% increase in bank age would decrease the disclosure index by 0.0092, holding other factors constant.

2. There is a statistically significant positive effect of bank size on the disclosure index (0.0461), meaning that a 1% increase in bank size would increase the disclosure index by 0.0461, holding other factors constant.
3. There is a statistically significant negative effect of bank profitability on the disclosure index (-0.1322), indicating that a 1% increase in bank profitability would decrease the disclosure index by 0.1322, holding other factors constant.
4. There is a statistically significant positive effect of the number of bank branches on the disclosure index (0.0002), showing that a 1% increase in the number of branches would slightly increase the disclosure index by 0.0002, holding other factors constant.
5. There is a statistically significant negative effect of the nature of bank ownership on the disclosure index (-0.0330), meaning that a 1% change in ownership nature would decrease the disclosure index by 0.0330, holding other factors constant.

4.2. Analysis of the Results Obtained from the Estimated Model and Hypothesis Testing

The study, encompassing ten Algerian banks from 2020 to 2022, revealed that the average disclosure index in these institutions was 69.73%. The range of disclosure varied significantly among the banks, with the highest being 93% at ABC BANK and the lowest at 33% at People's Credit of Algeria. In total, 3096.01 out of 4440 tested disclosure elements were reported in the annual financial statements of the participating banks.

According to the disclosure measurement framework by Samaha, K., and P. Stapleton (2008), this level of disclosure is categorized as acceptable (60%-79%). This finding is consistent with similar research in the field, including the study by Kolar, I., & Falez, N. (2018) which documented a 63% disclosure level in Slovenian banks, and the research by Abdullah Al MUTAWAA and Aly M HEWAIDY (2010) which noted a 69% disclosure level among mixed Kuwaiti companies. Hossain (2008) also recorded a comparable 69% disclosure index in Indian banks.

The relative uniformity of these results across various regions indicates that Algerian banks are disclosing information at a rate that meets international transparency standards. However, the disclosure index also underscores a significant gap, with 30.63% (1360 elements) remaining undisclosed. This could be attributed to a lack of substantial competition among Algerian banks and the inefficacy of the capital market, highlighted by the fact that only People's Credit of Algeria is listed on the Algerian stock exchange. Such conditions suggest that enhanced disclosure could serve as a pivotal incentive in financial reporting, attracting analysts, investors, and potential investment opportunities, thus playing a crucial role in the decision-making processes related to financial investments and placements.

The study also examined the impact of various factors on the disclosure index, focusing particularly on the age of the banks. Surprisingly, the relationship between a bank's age and its disclosure level was found to be negative, suggesting that older banks are less likely to meet disclosure requirements. This observation raises concerns about the commitment of older Algerian banks to integrating disclosure practices into their strategic and future planning.

Among the findings derived from exploring the relationship between the disclosure index and the factor of bank age, it is evident that this variable exerts a direct influence on the level of disclosure within the financial reports and statements of banks. The model utilized indicated that the average age of the banks considered in the study was 33 years. Notably, the relationship between the bank's age and the disclosure index in banks exhibited a negative correlation, suggesting that the older Algerian banks become, the less they tend to meet disclosure requirements. This trend signals a concerning issue, as it indicates that Algerian banks may not sufficiently prioritize the concept of disclosure within their strategic developmental agendas and their envisioned future systems.

There is substantial scholarly support for this trend, including the study by Kolar, I., & Falez, N. (2018). In contrast, other research works, such as those by Hossain (2008) and Soliman, M. (2013), have refuted the existence of any relationship between bank age and the disclosure index in banks. However, a contrasting perspective is presented in the study by Hossain and Hammami (2009), which identified a positive relationship between the age of an institution and the level of disclosure in its financial reports. **Consequently, this leads to the acceptance of the first sub-hypothesis which posits**

that a statistically significant relationship exists between the bank's age and its disclosure index in Algerian banks.

The variable of bank size exhibits a positive statistical relationship with the level of disclosure among Algerian banks. In this study, the size of the bank was assessed based on the value of assets owned and at the disposal of the bank, suggesting that the resources available to various banks empower them to develop their information systems comprehensively. This development supports the processes of producing, analyzing, and presenting information in their financial reports, which in turn enhances their credibility and transparency levels. The findings of this study align with those from several previous studies, including research by Abdullah Al MUTAWAA and Aly M HEWAIDY (2010), Owusu-Ansah (1998), Wallace and Nacer (1995), Al-Shammari et al. (2007), and Kolar, I., & Falez, N. (2018). **Therefore, the second sub-hypothesis affirming a statistically significant relationship between the size of the bank and the disclosure index in Algerian banks is accepted.**

To evaluate the impact of the profitability variable on the level of disclosure in bank financial reports, we employed the return on assets index, which has been widely used in studies examining the quality of disclosure and its relationship with the profitability of the institution. Notably, Kolar, I., & Falez, N. (2018) utilized this index in their analysis of banks in Slovenia. The findings from our study indicate an inverse relationship between the profitability factor and the disclosure index in Algerian banks, suggesting that higher profitability correlates with a reduced likelihood of disclosing a range of information.

This result contradicts findings from some studies, such as that by Soliman, M (2013), who identified a positive relationship between the profitability variable and the disclosure index, and Juhmain (2013), who found no statistically significant relationship. **Thus, the third sub-hypothesis asserting a statistically significant relationship between the profitability index of the bank and the disclosure index in Algerian banks is accepted.**

Our findings reveal a positive relationship between the number of bank branches and the disclosure index in Algerian banks. With an average of 120 branches per bank in our study, it was observed that a greater number of branches contribute significantly to the increase in disclosed elements and information through the individual financial statements prepared at the bank and branch level, as well as through consolidated financial statements by the central banks. This outcome is supported by many studies, such as Hossain and Hammami (2009), which demonstrated a positive relationship between the number of bank branches and the level of disclosure. However, the study by Kolar, I., & Falez, N. (2018) did not find a statistically significant relationship between the variable number of bank branches and the level of disclosure. **Therefore, the fourth sub-hypothesis stating a significant relationship between the number of bank branches and the disclosure index in Algerian banks is accepted.**

The correlation between the ownership structure of the bank (public, private, mixed) and the disclosure index in the financial reports of Algerian banks was also examined. The model from our study indicates that the nature of this impact is inverse, where it was noted that private banks or those partly owned by the private sector place a greater emphasis on disclosure. This is largely because most private or mixed banks in Algeria are listed on stock exchanges in their countries of origin, which necessitates adherence to disclosure regulations in their individual financial reports before these are integrated into the comprehensive financial reports with the parent banks.

Conversely, public banks demonstrate less concern with the concept of disclosure, as indicated by studies such as Juhmain (2013) and Jalil and Pier (2012), which found that government institutions disclose less information compared to private entities. However, the study by Kolar, I., & Falez, N. (2018) suggested that public banks disclose more than private banks. **Thus, the fifth sub-hypothesis stating that there is a statistically significant relationship between the nature of bank ownership and the disclosure index in Algerian banks is accepted.**

5. Conclusion

This study sought to examine the interrelations between various bank characteristics, namely, age, size, profitability, number of branches, and ownership type, and the disclosure index within the context of Algerian banks. The regulatory framework for disclosure in these banks is predominantly mandatory, governed by legislation and guidelines established by the Ministry of Finance and the Governor of the Bank of Algeria.

The research encompassed a sample of ten Algerian banks, representing public, private, and mixed ownership structures, and spanned from 2020 to 2022. The methodology employed to derive insights involved two primary elements. Firstly, a comprehensive questionnaire was developed, comprising 148 items. Each question corresponded to a specific disclosure element mandated to be included in the financial statements and reports, as stipulated by Algerian disclosure regulations and supplemented by international standards from expert bodies concerned with financial transparency.

This questionnaire was directly administered to the banks involved in the study. Secondly, an extensive analysis of the annual financial statements and reports from these banks was conducted for the years 2020 through 2022. This analysis focused on extracting and examining data pertinent to the indicators and variables that influence the disclosure practices in these financial institutions.

Through meticulous data collection and analysis, this study has yielded several critical findings:

- The statistical model obtained by the study proved that there is a statistically significant relationship between the characteristics of the bank (age, size, profitability, branches, ownership) and the disclosure index in Algerian banks. These effects could be positive or negative.
- Mandatory disclosure characterizes the financial and accounting environment in Algerian banks. The Governor of the Bank of Algeria, along with the Ministry of Finance, works on issuing texts and legislation that move in this direction and also work to adapt the systems of financial information production in Algerian banks to align with international standards, whether in accounting or auditing.
- The level of disclosure in Algerian banks reached 69.73%, meaning that the disclosure rate is generally acceptable and close to the rates according to many studies worldwide.
- The older Algerian banks get, the lower their level of disclosure. Through the analysis of our sample, we find that the older banks in

Algeria (in our study, most of them public, with an average age exceeding 33 years) have weaker disclosure indicators compared to newer banks (mostly private or with mixed ownership), with an average age of less than 33 years.

- Larger banks, in terms of size and capabilities, publish the largest possible amount of information in their annual reports. They possess the organization and means that allow them to control the cost of preparing information. They also have extensive communication strategies and appropriate technology that enables them to share their financial information widely. Hence, the level of disclosure in larger banks is more transparent and abundant, allowing stakeholders to access several data points that help them make decisions. Large banks do not only operate in a specific sector; they have a portfolio of investments and participate in many markets and economies, making the concept of disclosure an important capital element in them. Conversely, smaller banks do not have the necessary capabilities to develop their level of disclosure and often avoid disclosing certain information that they believe could be exploited by larger banks and used against them.

- The extensive branching of Algerian banks, given Algeria's large area, poses a problem in coordinating the disclosure process. We observed that most bank branches do not disclose independently in separate annual reports. Instead, they disclose to central banks, which then prepare consolidated annual reports. This may lead to the omission of a range of information of interest, especially sector-specific information. Additionally, laws and regulations in Algeria sometimes require banks to disclose certain information in separate reports, affecting the overall level of disclosure in Algerian banks.

- Through our study, we noticed that Algerian banks lack an effective communication strategy. The weak internal structuring, the fragility of the information systems used, which are supposed to be primarily responsible for preparing annual reports, and their presentation to various actors and stakeholders, as well as the lack of reports related to auditing, an essential element, often recommended by financial market regulatory bodies to be included in annual reports like in France and the USA, mean that Algerian banks rely merely on the opinion of account auditors.

7. Recommendations

- Regulatory bodies responsible for overseeing banking activities in Algeria are urged to activate measures and laws related to the development of banks' communication systems. They are also encouraged to emphasize the importance of annual reports prepared by banks, in addition to mandating their publication on official websites and standardizing their preparation methodologies. This ensures that interested parties and stakeholders can access these reports for analysis and comparison.
- The public authorities in Algeria, represented by the Ministry of Finance and the Governor of the Bank of Algeria, are called upon to develop standards related to disclosure in Algerian banks. This development should align with the evolution of international standards (IAS/IFRS) and also meet the requirements of the Basel Committee regarding disclosure in annual reports.
- The authority of the Governor of the Bank of Algeria is requested to intervene with public banks to analyze the reasons for their reluctance to disclose their annual reports or the contents therein. This intervention should include establishing monitoring mechanisms that enable the tracking of annual report publication procedures on official websites.
- Banks are advised to publish reports related to profitability indicators and risk indicators in their annual reports. These publications are considered crucial for gaining shareholders' trust and attracting the maximum amount of investments and employed capital.
- Algerian banks should recognize that annual reports serve as a crucial link between their internal activities and external markets, and they represent a standard by which their transparency and efficiency in management are measured.

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