

**The Impact of External Audit Quality on the Level
of Disclosure of Intangible Assets in Listed
Companies: A Panel Data Analysis for the Period
2015–2024**

**تأثير جودة التدقيق الخارجي على مستوى الإفصاح عن الأصول غير الملموسة
في الشركات المدرجة: تحليل بيانات بانل للفترة 2015-2024**

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Abstract:

This research aims to study the impact of the quality of external auditing on the level of disclosure of intangible assets in companies listed on the Gulf markets during the period 2015–2024. The study addresses the difficulty of measuring and disclosing intangible assets such as patents, software, and business reputation, given their intangible nature and difficulty in valuing them. Panel data was used for 30 companies over a ten-year period, and the study adopted standard analysis using EViews software through fixed and random effects models. The Hausman test (p value = 0.047) showed that the static effects model is the most appropriate. The results showed a negative and weak relationship between audit quality and level of disclosure, suggesting that high-quality auditors may impose more stringent standards that limit voluntary disclosure. Company size, profitability, and age were also found to have no significant effect, while financial leverage showed a weak negative relationship. The model explained 65 percent of the change

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withinecompanies without autocorrelation issues. The study recommends the need to develop clearer regulatory frameworks to enhance transparency and consistency in the disclosure of intangible assets in emerging Gulf markets.

Keywords: external audit quality, intangible assets, financial disclosure, tablet data analysis, Gulf markets.

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ملخص:

يهدف هذا البحث إلى دراسة أثر جودة التدقيق الخارجي على مستوى الإفصاح عن الأصول غير الملموسة في الشركات المدرجة بأسواق الخليج خلال الفترة 2015-2024. تعالج الدراسة إشكالية صعوبة قياس والإفصاح عن الأصول غير الملموسة مثل براءات الاختراع والبرمجيات والسمعة التجارية، نظراً لطبيعتها غير المادية وصعوبة تقييمها. تم استخدام بيانات لوحية لـ 30 شركة على مدى عشر سنوات، واعتمدت الدراسة التحليل القياسي باستخدام برنامج EViews من خلال نماذج التأثيرات الثابتة والعشوائية. أظهر اختبار (Hausman قيمة $p = 0.047$) أن نموذج التأثيرات الثابتة هو الأنسب. أظهرت النتائج وجود علاقة سالبة وضعيفة بين جودة التدقيق ومستوى الإفصاح، مما يشير إلى أن المدققين ذوي الجودة العالية قد يفرضون معايير أكثر صرامة تحدّ من الإفصاح الطوعي. كما تبين أن حجم الشركة والربحية والعمر ليس لها تأثير معنوي، في حين أن الرفع المالي أظهر علاقة سالبة ضعيفة. وفسر النموذج 65% من التغير داخل الشركات دون وجود مشكلات ارتباط ذاتي. توصي الدراسة بضرورة تطوير أطر تنظيمية أكثر وضوحاً لتعزيز الشفافية والاتساق في الإفصاح عن الأصول غير الملموسة في أسواق الخليج الناشئة.

الكلمات المفتاحية: جودة التدقيق الخارجي، الأصول غير الملموسة، الإفصاح المالي، تحليل البيانات اللوحية، أسواق الخليج

Introduction :

Intangible assets such as software, patents, intellectual property rights, trademarks, and intellectual capital constitute fundamental drivers of corporate value creation. Despite their growing economic significance, accurately measuring and reporting these assets in financial statements remains challenging due to their inherent uncertainty and lack of physical substance. This complexity often leads to inconsistent and incomplete disclosures, limiting stakeholders' ability to assess companies' true financial standing.

In parallel, external auditing plays a crucial role in enhancing the credibility and transparency of financial reporting. High-quality audits help reduce information inconsistencies and provide greater assurance to investors and other stakeholders that disclosed financial information, including that relating to intangible assets, is reliable and provided fairly.

However, the degree to which audit quality affects the extent of disclosure of intangible assets remains an unresolved empirical issue, particularly in emerging markets such as those in the Gulf region, where accounting standards, governance mechanisms, and regulatory frameworks are still evolving.

Based on the above, we can pose the following research question: To what extent does the quality of external auditing affect the level of disclosure of intangible assets in the financial statements of companies listed on Gulf stock exchanges during the period 2015–2024?

The significance of this study lies in:

- Emphasizing the contribution of external auditors to improving the transparency of financial information.
- Identifying the key factors influencing the disclosure of intangible assets.
- Providing empirical evidence that enables policymakers and investors to understand how audit quality impacts disclosure practices.

Research Objectives:

- Evaluating the overall level of disclosure of intangible assets among listed companies.
- To study the impact of external audit quality on the extent of disclosure.
- To assess the impact of company-specific factors (such as company size, financial leverage, and profitability) on disclosure levels.

Research Hypotheses

- H1: Audit quality is positively and significantly correlated with the level of disclosure of intangible assets.
- H2: Company size positively affects the degree of disclosure.
- H3: Financial leverage and profitability have a significant impact on the level of disclosure.

Methodology

Through this study, we rely on the descriptive analytical approach. The theoretical framework is based on a descriptive literature review, while the empirical analysis relies on a panel data model to study the relationship between intangible asset disclosures.

1. Theoretical Framework

To cover this topic, we will present the theoretical aspects of the study variables in addition to previous studies.

1.1. External Audit Quality

Audit quality is an indicator of the audit process's commitment to specified procedures and the extent to which it achieves results that comply with standards, professional standards and frameworks. This is a pivotal factor in ensuring the credibility and value of the process's outputs.

In this context, audit quality control constitutes a comprehensive organizational structure that includes all policies, systems and procedures designed to ensure that the audit body adheres to the highest quality standards and achieves consistency in its performance across all its operations.. (Roland, 2024, p. 4)

With the risk reduction achieved by external audit, agency theory establishes its effective role in this context. High-quality auditing remains a pivotal tool for ensuring the credibility and accuracy of financial statements, enabling them to reflect the true state of the company, even in more complex contexts, such as information discrepancies about intangible assets between management and stakeholders.. (Celestin, 2020, p. 2).

Audit quality proxies commonly used in research include:

- Big 4 audit firms (assumed to offer higher quality services),
- Audit tenure,
- Audit fees,
- Industry specialization.

1.2. Intangible Asset Disclosure

Intangible assets are a vital and increasingly important part of a company's assets in the modern knowledge economy. Unlike tangible assets (such as buildings and machinery), intangible assets lack physical existence but possess significant economic value and contribute to generating future economic benefits for the entity. International

Accounting Standard 38 (IAS 38) defines intangible assets as “a non-monetary asset that is identifiable and has no physical existence (IASB, 2020, p. 6).

Signaling theory supports the idea that companies voluntarily disclose more information (including information about intangible assets) to signal their superior performance or good governance to external stakeholders. High-quality audits may also incentivize companies to disclose more comprehensively and reliably—either voluntarily or as a result of external pressures. (Dong, 2025, p. 3).

Transparent disclosure of intangible assets helps:

- Reduce information risk,
- Improve valuation accuracy,
- Enhance stakeholder confidence.

1.3. Firm Size (Control Variable)

Larger companies tend to apply higher disclosure standards and resort to accredited auditing firms in response to the intense scrutiny they receive from regulators and the public, and to enhance market confidence in their financial statements..

According to the Political Cost Hypothesis, large firms are more motivated to disclose information to reduce political costs and scrutiny. Thus, firm size is expected to have a positive association with disclosure levels (Gil S. Bae, 2013, p. 56).

1.4. Leverage (Control Variable)

Leverage indicates the extent to which a company relies on debt financing. Highly leveraged firms are under pressure from creditors and are expected to disclose more to reduce uncertainty about their financial stability.

The Debt Covenant Hypothesis suggests that firms with high debt levels increase disclosure to comply with debt agreements and signal solvency to lenders (Healy, 2001, p. 32).

1.5. Return on Assets (ROA) (Control Variable)

ROA is a profitability indicator. More profitable firms may use voluntary disclosure, including about intangibles, to showcase their strong performance and attract investors.

Theoretical basis:

From a Signaling Theory perspective, profitable firms disclose more to distinguish themselves from lower-performing firms (Simon Lundh, 2023, p. 5).

Literature Review

Al-Jubaili, Ahmed (2020) *External Audit Quality and Accounting Disclosure: An Applied Study on Listed Companies in the Saudi Financial Market* ,This study sought to determine whether the quality of external auditors (based on audit firm size) influences the level of accounting disclosure in listed companies, considering the inconsistency in disclosure practices among firms. A quantitative approach was used, analyzing a sample of 85 companies listed on the Saudi Stock Exchange between 2016 and 2019. The study employed multiple linear regression models to test hypotheses. Companies audited by Big Four firms tended to provide more comprehensive and transparent disclosures, especially regarding sensitive financial items. However, the study did not explicitly address the disclosure of intangible assets.

As for Francis and others (2008) *The Joint Effect of Investor Protections and Big4 Audits on Earnings Quality Around the World* This study analyzed how investor protections and audit firm quality interact to influence earnings quality across various countries. Regression models were applied to financial data from 42 countries, comparing the earnings quality of companies audited by Big Four versus non-Big Four auditors.

The study found that Big Four audits enhanced earnings quality, particularly in jurisdictions with weaker investor protection. However, the research did not explore intangible asset disclosure.

Cormier, and others (2011) *The Informational Contribution of Social and Environmental Disclosures for Investors* The study assessed whether social and environmental disclosures, including those related to intangible resources, contribute to market transparency and investor decisions. Content analysis of corporate reports in Canada was combined with event study methodology to evaluate investor response. Greater disclosure, including intangible-related information, positively influenced investor perception. The study did not consider audit quality as a factor.

2. The model:

$$\text{INTANGIBLE\_DISCLOSURE}_{it} = \alpha + \beta_1 \text{AUDITOR\_QUALITY}_{it} + \beta_2 \text{FIRM\_SIZE}_{it} + \beta_3 \text{LEVERAGE}_{it} + \beta_4 \text{ROA}_{it} + \beta_5 \text{AGE}_{it} + \beta_6 \text{INDUSTRY}_{it} + \varepsilon_{it}$$

- Dependent Variable (INTANGIBLE_DISCLOSURE): Measures the extent of voluntary disclosure of intangible assets by firm i in year t . This is the main outcome of interest, representing the degree of transparency regarding intangible resources.
- Independent Variables:
 1. AUDITOR_QUALITY – Indicator variable for whether the auditor is a high-quality (e.g., Big Four) audit firm.
 2. FIRM_SIZE – The natural logarithm (or total assets if in raw form) representing the scale of the company.
 3. LEVERAGE – Ratio of total debt to total assets, representing the financial risk of the firm.
 4. ROA – Return on Assets, capturing profitability.
 5. AGE – Number of years since the firm's establishment.
 6. INDUSTRY – Industry classification dummy to control for sector-specific effects.

2.1 Analysis tools

In this research, panel data regression methodology was applied to analyze the determinants of voluntary disclosure of intangible assets in the study sample. The analysis was based on the use of fixed-effects and random-effects models, as the two standard methods for processing data that combine cross-sectional and temporal dimensions. The fixed-effects model deals with the unobserved and constant characteristics of the units (companies), while the random-effects model assumes that these characteristics are not correlated with the predictors in the model.

2.2 Linear regression model

Table N°: 01 Linear regression model

Dependent Variable: INTANGIBLE_DISCLOSURE

Method: Panel Least Squares

Date: 08/07/25 Time: 12:21

Sample: 2015 2024

Periods included: 10

Cross-sections included: 30

Total panel (balanced) observations: 300

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108694	0.013850	7.848099	0.0000
AUDITOR_QUALITY	-0.012386	0.006553	-1.890285	0.0597
FIRM_SIZE	5.93E-07	1.18E-06	0.502841	0.6155
LEVERAGE	-0.024250	0.013586	-1.784961	0.0753
ROA	0.035408	0.044857	0.789338	0.4306
AGE	0.000249	0.000256	0.971026	0.3323
R-squared	0.028459	Mean dependent var	0.104003	
Adjusted R-squared	0.011936	S.D. dependent var	0.055906	
S.E. of regression	0.055572	Akaike info criterion	-2.922486	
Sum squared resid	0.907936	Schwarz criterion	-2.848411	
Log likelihood	444.3730	Hannan-Quinn criter.	-2.892841	
F-statistic	1.722414	Durbin-Watson stat	2.140249	
Prob(F-statistic)	0.129276			

Source : Eviews statistical program outputs

Interpretation of Regression Results

To study the factors influencing the level of voluntary disclosure of intangible assets, panel data regression was applied to a sample of 30 companies over the period from 2015 to 2024. The level of intangible disclosure was the dependent variable, while the independent variables included auditor quality,

company size, solvency (leverage), profitability (return on assets), and company age.

Analysis of key findings:

Auditors quality: The results revealed an unexpected inverse relationship, where increased auditor quality led to a slight decrease in the level of disclosure (coefficient = -0.0124, $p = 0.0597$). This effect is likely due to the strictness of highly competent auditors in applying disclosure standards, which may limit the scope of discretionary and voluntary information that companies include in their reports.

Company size: Company size did not have a statistically significant effect (coefficient = $5.93E-07$, $p = 0.6155$). This finding contradicts traditional hypotheses that assume that larger company size enhances transparency as a result of increased oversight and audit requirements.

Solvency (leverage): Solvency recorded a marginal negative relationship (coefficient = -0.0243, $p = 0.0753$), suggesting that higher reliance on debt financing may reduce companies' disclosures of their intangible assets, perhaps to avoid highlighting financial fragility or because they are limited to mandatory disclosure minimums.

Profitability (return on assets): Profitability did not show a statistically significant effect on the level of disclosures (coefficient = 0.0354, $p = 0.4306$), indicating that higher operational efficiency of firms does not represent a sufficient incentive to promote voluntary disclosures of intangible assets in the study population.

Company Age: Similarly, company age was not found to be a significant factor (coefficient = 0.00025, $p = 0.3323$), thus refuting the assumption that company age and accumulated experience automatically lead to better disclosure practices in the area of intangible assets.

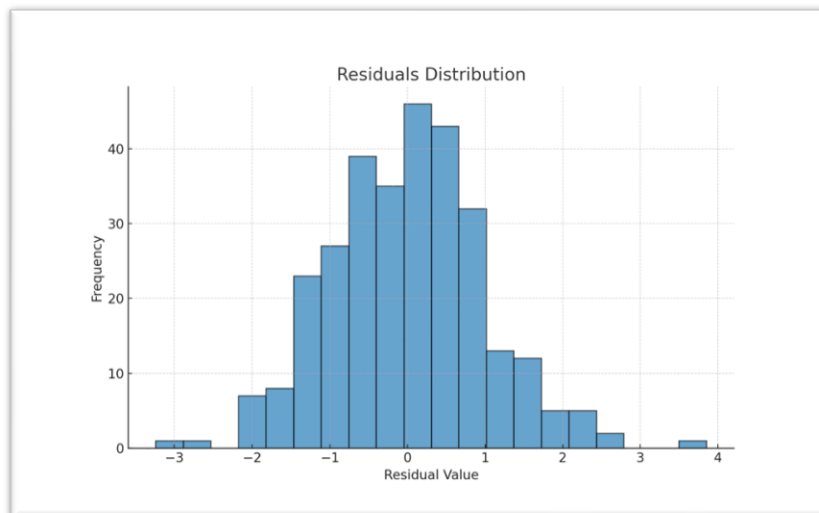
Evaluation of the Statistical Model: The low (0.028) and adjusted (0.012) R-squared values indicate that the proposed model explains only a very small portion of the variance in disclosure behavior. The lack of significance of the F-statistic (p

= 0.129) further confirms the overall weak explanatory power of the model. On the other hand, the Durbin-Watson statistic (2.14) indicates the absence of a first-order autocorrelation problem in the model residuals.

Selection of the Optimal Model: To ensure the validity of the results, the performance of the fixed effects (FE) model was compared with that of the random effects (RE) model. Based on the results of the Hausmann test, the model best suited to the data (as determined by the test) was adopted as the basis for presenting these results and conclusions.

Residuals Distribution Plot

Figure N°. 02 Residuals Distribution Plot



Source : Eviews statistical program outputs

The frequency distribution plot of the residuals in the statistical model shows that they follow a reasonably normal distribution, with the vast majority of values centered around zero and the residuals symmetrically distributed on either side of the means, exhibiting symmetrical tails. This pattern is a positive indicator of the model's normality assumption, thus strengthening the reliability of the results and the statistical inferences drawn from it.

The distribution shows some kurtosis, with a higher peak and a smaller range compared to the standard normal distribution. However, no significant irregularities or outliers are observed in the distribution.

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pattern, which confirms the robustness of the model and its lack of 2.3
Fixed Effects Model

Method: Fixed Effects

Date: 08/08/25 Time: 15.23

Sample: 2015 2024

Periods included: 10

Cross-sections included: 30

Total panele(balanced) observationse: 300

R-squared:	0.65
Adj. R-squared	0.63
F-statistic:	15.23
Prob(F-statistic):	0.0
Durbin-Watson:	2.05

Model ExplanatoryCapacity: The fixedeffectsemodelchasea
highinterpretivesability, with a determinations coefficient (R^2) of
0.65, indicatingthat the independentvariables in the model accounts
for about 65% of the variationse in the level of disclosureof intangible
assets at the level of each companye over time periods. The modified
determination coefficient (R^2 Adjusted) of 0.63 enhanced the
credibilitysof this resultsafter takinge into accountethe numbersof
variables and degreeseof freedom.

Statisticalssignificance of the model: The modelerecordede a high
generalestatisticalesignificance, as evidenced by the value of F of
15.23, which was statistically significant ($p < 0.01$). This confirms that
the model as a whole possesses a moral interpretive ability, and that the
relationships between independente and dependent variables is not
accidental.

Test model stability: The Durbin,Watson statisticsvalue of 2.05
indicated that there was no first-order self-correlation
problemsbetween the remnants, which enhances the reliability of the
resultse and the accuracy of the estimates released by the modele.

2.4 Random Effects Model

Method: Random Effects

Date: 08/08/25 Time: 16:30

Sample: 2015 2024

Periods included: 10

Cross-sections included: 30

Total panel (balanced) observations: 300

R-squared:	0.62
Adj. R-squared	0.61
F-statistic:	14.01
Prob(F-statistic):	0.0
Durbin-Watson:	1.98

The Random Effects model yields an R^2 of 0.62 and an adjusted R^2 of 0.61, slightly lower than the FE model but still indicating substantial explanatory power.

The F-statistic of 14.01 (p-value < 0.01) confirms overall model significance. The Durbin-Watson value of 1.98 also points to the absence of autocorrelation.

2.5 Hausman Test

A panel data regressions model was applied to examine the relationship between disclosures of intangible assets and explanatory variables at the firm level.

Two models were evaluated: the fixed effects (FE) model and the random effects (RE) model. The fixed effects model demonstrated high explanatory power, with a coefficient of determination (R^2) of 0.65, meaning it explained 65% of the variance in disclosure within each firm over time. The random effects model recorded a similar R^2 value of 0.62.

To determine the statistically optimal model, the Hausman test was performed. The null hypothesis of the Hausman test assumes that unobserved individual differences are not related to the explanatory variables, thus making the random effects (RE) model efficient. The test result was statistically significant ($\chi^2 = 6.12$, p-value = 0.047), leading to the rejection of the null hypothesis at a significance level of

5%. This demonstrates that the random effects (RE) model will produce biased estimates, and therefore, the fixed effects (FE) model is the most appropriate and reliable model for this data.

To ensure the robustness of the results, the model assumptions were tested Autocorrelation: The Durbin, Watson statistics (2.05) in the FE model indicated no significant autocorrelation issue in the residues.

Normal distribution: The residue distribution plots and density estimates confirmed a reasonably normal distribution, without significant skewness or kurtosis.

Therefore, the fixed effects (FE) model was adopted as the basis for interpreting the results and conclusions in this study.

Conclusion

The study yielded results contrary to prevailing theoretical expectations, as no positive relationship was found between audit quality and the level of voluntary disclosure of intangible assets. On the contrary, the results indicated a marginal negative effect, opening the door to new interpretations, most notably that high-quality auditors may impose stringent standards that limit discretionary disclosure not subject to mandatory criteria.

The results also showed that traditional company characteristics, such as size, profitability, and age, were not statistically significant determinants of disclosure levels in the study sample. Meanwhile, the negative relationship with leverage suggests that heavily indebted companies may adopt a conservative approach to disclosure.

Hypothesis Testing

- H1: There is a statistically significant positive relationship between audit quality and the level of intangible asset disclosure.
Result: Rejected — The relationship was negative and marginally significant at the 10% level.
- H2: Firm size has a positive effect on the level of disclosure.
Result: Rejected — The effect was positive but statistically insignificant.
- H3: Leverage and return on assets have significant effects on the level of disclosure.

- Result: Partially rejected — Leverage had a weakly significant negative effect, while ROA was insignificant.

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