Value Relevance of Integrated Reporting In Nigeria: An Evaluation of Investors' Perception

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Abstract:

In today's increasingly complex, competitive and uncertain market environment, stakeholders are constantly seeking to get as much information on corporate organizations as they can to aid informed decisions relating to such organizations. Integrated reporting is progressively gaining traction since it encompasses both financial and non-financial information. This research aimed to empirically assess the significance of integrated reporting content aspects in influencing investors' decision-making within listed banks in Nigeria. The analysis consisted of content elements including organizational overview, business model, risk assessment, disclosure of resource distribution, and forward-looking disclosures. It applied annual reports from five top banks listed in the Nigerian Exchange Group (NGX) and extracted data using a checklist guided by the Integrated Reporting Framework 2021. Data was analyzed by regression analysis, taking into account the P/E ratio and market capitalization from 2014 to 2023 as benchmarks in the measurement of stakeholders' perceptions. Findings revealed that the overall model for both hypotheses was significant but none of the individual content elements of IR showed a statistically significant effect on MKPF. In the case of the price-earnings ratio, only the organizational overview and Risks and Opportunities disclosures showed a statistically significant effect on PER. The study attributed this lack of value relevance to a low level of awareness and adoption and recommended that integrated reporting be imbibed into the reporting framework in Nigeria. In addition, relevant regulatory authorities should enforce mandatory integrated reporting on companies.

Keywords: Integrated reporting, Investor perception, Value relevance, Market Capitalization, Earnings per share, financial and non-financial information.

1.0 Introduction

Over the past century, national and international financial reporting standards have evolved to respond to the evolving nature of corporate financial reporting. The creation of International Financial Reporting Standards (IFRSs) that have been recognized by countries throughout the globe is the apex of this process[1]. Integrated Reporting (IR) is one example of a recent breakthrough in the realm of financial reporting. According to research [2], IR is an all-encompassing portrayal of the company's financial performance and sustainability. In order to standardize the usage of IR, the International Integrated Reporting Council (IIRC) was created in August 2010. Its fundamental purpose is to push the IR agenda and encourage sustainability reporting to become standard practice among major organizations[3], [4].Since its inception, the IIRC has stressed the need to create a worldwide reporting structure to deal with the rapidly evolving environment, which is now plagued by issues that did not previously exist[5]. Such as the need to cater for a growing population with limited resources, protect that population from the effects of climate change, and provide them with safe drinking water, healthy food, sufficient protection from harm, and a higher standard of living[5]. In order to accommodate the requirements of the new reporting model, this would appropriately equip users of financial reports with more extensive and understandable information regarding an organization's past and future performance. According to a study [3], the founders of IIRC, the Global Reporting Initiative (GRI) and the Accounting for Sustainability (A4S) group want to have an IR standard in place by the year 2020. Stakeholders are increasingly concerned about whether or not conventional financial reporting gives an accurate picture of the activities of an organization and its overall performance to meet the expectations of users for both financial and non-financial data in today's complex, competitive, and unpredictable market.

Conventional reports of organizations have tended to emphasize the traditional perspective of accounting, which is focused only on previous performance and short-term opportunities to create value. According to a study on innovation and development [6], the needs of today's fast-paced corporate world are complex to be met by a reporting paradigm created in the 1930s for the industrial world. In addition to these problems, critics have pointed to the reports' tardiness in coming out, their failure to adequately address hazards, their focus on the past, and the difficulty in finding the most pertinent material within them[7]. As a result, the veracity and accuracy of a company's financial report are always under scrutiny.It was argued that a standard annual report lacks sufficient detail to provide a complete view of a company's operations and performance [8]. This is due to the fact that typical financial reports exclude data on non-financial performance that might be used to ascertain a firm's financial history over the long term [4]. As a result, there has been a push for more information to be made public on sustainability problems such as ethical, social, environmental, and economic concerns in addition to traditional financial metrics [9], [10].

Investors are increasingly looking for in-depth reports on the performance, strategy, and future outlook of businesses [11]. This implies that one way of addressing this challenge is to implement the IR framework. The framework seeks to communicate clearly and concisely how an organization's strategy, governance, performance, and prospects when considered in terms of its external environment, lead to the development of value over the short, medium, and long-term[12]. However, this comprehensive strategy of integrated reporting must be accepted by those who use financial statements. Reference [13], for example, found that no Nigerian corporation has submitted an IR report in accordance with the internationally accepted standards. After the recent release of the Sustainability Disclosure Guidelines, the closest Nigerian corporations have gotten is to provide sustainability reports, which were required by the Nigerian Exchange Group (NGX). This was required as part of the Exchange's pledge to promote internationally accepted standards of financial reporting and to help fill the void in Environmental, Social, and Governance (ESG) disclosure guidelines among global stock markets [14]. Optimists like [3], [15], [16] argue that IR already has what it takes to overtake traditional financial-based annual reports in terms of importance and relevance to consumers. The aforementioned concerns about the effects of integrated reporting on the Nigerian economic environment served as the inspiration for this research, which aims to examine how it has affected listed banks specifically the indicators of stakeholders' perception in the stock market. Therefore, the objective of this paper is to respond to the research question, "How do content elements of integrated reporting affect stakeholders' need for informed decision-making as measured by market performance?". The remaining parts of this article are divided under the following headings: literature review, methodology, findings, and conclusion.

2.0 REVIEW OF RELATED LITERATURE

2.1 Integrated Reporting

The King Report on Corporate Governance (King III) is credited with introducing the idea of "integrated reporting," which mandates that all organizations incorporate their goals, sustainability practices, risks and opportunities, as well as corporate governance considerations, into a single annual report[17]. Since integrated reporting is concerned with the interrelationships and interdependencies of many factors that influence a firm's capacity to create value across time, "integrated thinking" has been identified as a major component of this reporting method.The IIRC framework outlines the core principles of integrated reporting, which are "value creation for the organisation and others," "the capitals," and "the value-creation processes". "Value creation for the organisation and others" refers to an organization's capacity to sustainably invest in activities that increase its own and society's well-being. These "capitals," further broken down into monetary, intellectual, human, social, and natural categories, represent the resources at an organization's disposal for the generation of value[12]. The term "value creation process" is used to describe how a company's resources are used in the course of its operations to produce goods or provide services for customers.A more thorough examination of a firm may be achieved via the use of the Integrated Reporting Framework, which aims to enhance organizational interaction and improve the accuracy of corporate information made accessible to investors and other stakeholders [11]. Better information in reports means better capital allocation choices, which in turn affects the company's strategy and future success.

2.2 The Business Case for Integrated Reporting

The limitations of the conventional financial reporting system, which favor shareholders at the expense of other stakeholders, provide the inspiration for the phrase "business case for integrated reporting". It discusses a wide range of issues relating to whether or not a company's voluntary social and environmental actions have an impact on its economic outcomes and commercial performance[18], [19]. A business case's value lies in the fact that it illuminates the impact of socially and environmentally responsible management practices on a company's ability to compete and prosper financially[20].According to a study [21], there are three prerequisites for a successful business case for sustainability.

- The business should take part in a community service project that helps address social or environmental issues;
- The action must have a quantifiable beneficial business impact or economic contribution to the performance of the corporation, such as reduced expenses, increased sales or competitiveness, higher profits, or a better reputation; and
- The organization must provide evidence that supports its claim that a chosen management strategy has had or will have the desired social, environmental, and economic impact.

2.3 International Integrated Reporting Council (IIRC) Framework

A global alliance of government agencies, institutional investors, enterprises, accounting bodies, and non-governmental organizations (NGOs) created the Integrated Reporting Council (IIRC) in 2010 [5]. However, another study [22]noted that the IIRC shifted from a 'Breakthrough Phase' for <IR> adoption in 2013 to a 'Momentum Phase' in late 2018 before the Council ceased to function as a separate body in mid-2023. The IIRC combined with the Sustainability Accounting Standards Board (SASB) to establish the Value Reporting Foundation (VRF). The Council now operates under the IFRS Foundation [22]. The goal of the Council was to guarantee that communication about the development of value is a precursor to the expansion of corporate reporting [12]. The IIRC framework, issued by the council in late 2013 and subsequently in early 2021 enables businesses to link the reported financial and non-financial information in such a way that it permits an assessment of the organization's overall success [12]. With regard to the framework, an IR report should include the following eight components known as content elements while also offering answers to associated queries:

i. Organizational Overview and External Environment: This pertains to the activities of the enterprise and the nature of the environment where it operates.

ii. Governance: This gives an answer to the problem of whether the governance structure of the business can produce value over the short, medium, and long terms.
iii. Business Model: The business plan of the company is outlined and discussed under this element.
iv. Risks and Opportunities: This part highlights the precise risks and opportunities that threaten the company's potential to generate value in the short, medium, and long term.
v. Strategy and Resource Allocation: The organization’s aims and objectives are mentioned here.
vi. Performance: How well the firm has done in terms of its long-term goals and what sort of impact it has had on its capital is reviewed under this element.
vii. Outlook: This focuses on the obstacles and uncertainties the firm will experience as it executes its strategy and how those elements will affect its business plan and future results.
viii. Basis of presentation: The focus here is on the IR and how its results are judged or measured.

The Framework identifies three significant purposes of an integrated report, which are as follows.

i. Assessment of the external environment of the organization and how it influences the operations of the entity.
ii. To evaluate the status of the organization based on its current resources and relationships which are identified as financial, manufactured, intellectual, human, social and relationship, and natural capitals.
iii. To analyze the relationship of the external environment with the organization's capitals, showing how such a relationship is of value in the short, medium, and long term.

In order to facilitate easy and successful deployment of integrated reports, despite their seeming complexity, the framework included provisions for increased flexibility in the preparation and presentation process. For instance, it states that IR may be generated as a result of current compliance requirements and may exist as a separate document or as a distinct, obvious, and easily available section of another document, such as an annual report [12]. Furthermore, the framework is not constrained by a particular set of key performance indicators (KPIs), measurement techniques, or the disclosure of certain personal information. Depending on the specifics of the organisation, the use of discretion is essential for preparing and presenting the integrated report [12]. Additionally, the Framework permits the non-disclosure of certain of the information included in the guidelines.Nevertheless, important issues need to be brought forward.

To guarantee a proper balance between discretion and report authenticity, considering its versatility, the framework requires people responsible for business governance to provide reports that contain the following:

i. A declaration that they accept full responsibility for protecting the reliability of the integrated report
ii. A declaration that they used their collective intelligence in the creation and delivery of the integrated report.
iii. That they have decided as to whether or not the integrated report follows this Framework. Or if such a remark is not included, it should explain:

- How those responsible for governance participated in writing and delivering the report
- Measures taken to include such a disclaimer in future reports
- The deadline to accomplish it, which should not go beyond the third integrated report of the organisation that makes reference to this Framework.

The IR framework is founded on a set of guiding principles, as such, the following criteria regulate the preparation and distribution of an integrated report:

i. Strategic focus and future orientation: The data obtained from an IR should shed light onthe long-term, intermediate, and short-term aims of the organization for producing value, as well as its use and influence on the various types of capital. It includes both previous and prospective data, indicating the organization’s capacity to find a healthy balance between the needs of the present and those of the future.
ii. Connectivity of information:IR offers a thorough understanding of the links between the past, present, and future, as well as the interdependence between capitals, throwing light on the sacrifices that must be made.
iii. Stakeholder relationships: The kind and quality of an organization's contacts with its primary stakeholders, as well as how the organization reacts to the legitimate demands and interests of those stakeholders, are disclosed in IR.
iv. Materiality: The goal of IR is to provide stakeholders with timely access to information that is crucial to the company's potential to accomplish its short-, medium-, and long-term value creation objectives.
v. Conciseness: A well-drafted integrated report will be concise and to the point.
vi. Reliability and completeness: An integrated report's content should be significant, presented honestly, and devoid of severe inaccuracies.
vii. Consistency and comparability: In order to establish meaningful comparisons between various organizations’ approaches to value creation across time, the data contained in an IR should be arranged in a consistent manner over time.

2.4 Investors’ Perception

Investors' perception refers to the collective impression, belief, and expectation of the investors concerning the value and future potency of a firm [23]. Such perceptions are facilitated in one way or another through financial performances, corporate governance, risk disclosure, and general market conditions[24], [25]. Reference [26] suggests that investor perception is crucial in listed banks, as it sets the pace for market performances since it will equally describe how much demand would be available for bank shares and their market value. The investors' perception can be measured by the standard deviation of historical market prices of shares[27]. This measure reflects the degree of volatility or risk associated with a bank's stock. The higher the standard deviation, the more fluctuation there is in the market price, indicating that the investors perceive the stock as volatile and risky. On the contrary, a lower standard deviation will indicate stability and thus probably more confidence in what concerns a bank's future performance. Standard deviation, in this case, conveys a measure of investor perception in the market's reaction to events of the past and uncertainty about future outcomes. Accordingly, the higher the level of uncertainty in price movements, the more probable it is that investors perceive a bank as indeterminate or volatile. Thus, the analysis of the standard deviation of share prices enables an estimate of the extent to which risk is perceived by investors in banking activities and prospects[28].

Another measure of investors' perception is the price-earnings ratio (P/E ratio) since it helps to assess whether a business is overpriced or undervalued [29]. This ratio compares a company's current share price to its per-share profitability and is widely used to analyze a corporation [30]. The P/E, or price-earnings ratio, is calculated by the formula of market price per share divided by earnings per share. It acts as an indication towards the investor's attitude based on the estimation of a security's intrinsic value in the market. For this study, the P/E ratio can be used here to denote market perception, a way by which investors perceive a stock. It reveals a wealth of data on the overall sentiment of investors towards a company. The current P/E ratio of a stock must be compared to both historical ratios and the ratios of other businesses in the same sector in order to get an accurate picture of whether or not the stock is overvalued [31]. This is primarily due to the stocks' earnings stability, the prospects for further earnings growth, and their classification within their respective industries. The P/E ratio indicates whether or not investors are ready to pay more for a share of a firm because they believe in its prospects. Where investors have a negative outlook on a company's future profitability, the P/E ratio is likely to stay at a lower level [31].

2.5 Theoretical Framework

2.5.1 The Agency Theory

Reference [32] rightly noted that the agency theory provides a rationale for an agent's fiduciary duty to owners, which in turn lends theoretical justification to integrated reporting and its use for readers of financial statements. This is because it entails reporting on areas of performance beyond the conventional financial pattern, integrated reporting guarantees that shareholders are kept abreast of all relevant information about financial and non-financial performance. This theory therefore provides the theoretical foundation for this study.

2.6 Empirical Review

Reference [33] studied the possibility of incorporating integrated reporting into management accounting courses. The authors used several statistical tests such as descriptive statistics and inferential statistics like partial correlation, and the Kruskal-Wallis test to determine that respondents agreed that IR should be a part of the management accounting curriculum. They suggest incorporating integrated reporting into management accounting courses, as doing so is likely to do more than just increase people's familiarity with the concept; it will also give students the skills they will need to become effective integrated report preparers.

Reference [34] looked at the situation of IR in low-income nations, notably Malawi. For this study, reports of Malawian firms were studied utilizing content analysis employing an Integrated Reporting Index (IRI). Using a minimum and maximum score of 0 and 1, respectively, the research indicated an IRI of 0.43 and an IR gap of 0.57. However, the IR gap suggests the need for added effort to promote IR disclosures among the listed firms in Malawi, despite the fact that the average IRI demonstrated the companies had made considerable progress towards IR.

Reference [35], intended to determine whether or not the value relevance of accounting summaries will be altered by the introduction of IR. The analysis demonstrates a large variation in the value relevance of profits between firms that release an IR and those that utilize more standard techniques of financial reporting. The study summarized the perspective of the IIRC and other advocates such as financial capital providers believe that the increased quality of traditional accounting information will come from the introduction of IR.

Reference [36] surveyed workers at Nigeria's Zenith Bank about their thoughts on IR's usefulness, substance, and procedures, as well as the obstacles they've encountered. Ninety-eight per cent of the workforce participated in the survey. There was widespread consensus among respondents that IR is beneficial and has the potential to improve transparency about company actions.

Reference [37] looked at the sector's business case for adopting integrated reporting, they discovered that the corporations' attempts to address environmental, social, and governance reporting (ESG) were sporadic, short-lived, and unrelated to their core business operations. As a result, these initiatives were not incorporated into their company's strategy or model. Additionally, inaccurate information about ESG was distributed across a variety of media. According to the results, adopting integrated reporting will standardize performance reporting in accordance with global best practices.

Reference [38] conducted research using data from 2009 to 2018 on how the IR practices of banks in Nigeria influenced their performance. The analysis was done using ordinary least square and panel cointegration approaches. The dependent variable employed comprised earnings after tax while the IR index, debt ratio and total assets were utilized as independent factors. It was observed that IR had no meaningful influence on performance in the short run. However, over the long term, the influence grew considerably.

Reference [39] evaluated how the 6 capitals of IR influenced the essential qualitative aspects of financial statements in Nigeria. The study indicated a strong relationship exists between the core qualitative aspects of the financial statements and the various IR capitals, notably from non-financial capital.

Reference [40] explored how IR affected the performance of insurance firms listed on the Nigerian Exchange from 2010 to 2019. The data was analyzed using diagnostic tests, unit root tests, and multiple regression analysis for data analysis. The results show that IR has a positive and significant effect on the performance of insurance businesses.

Reference [41] investigated the influence of chosen content aspects of IR on the performance of 28 listed financial organizations in Nigeria using data acquired for the period 2014 to 2020. The study indicated that IR has a beneficial influence on the performance of the firms. The report suggests the need for the Financial Reporting Council of Nigeria (FRCN) toensure companies disclose IR as is obtainablein other countries like South Africa.

Reference [42] studied the influence of three content elements of IR disclosures which include organizational overview disclosure, business model disclosures, and risks and opportunities on the market price per share of listed banks in Nigeria from 2013 to 2022. The study indicated that among all the three variables, organizational overview had a considerable beneficial influence on market price per share.

Reference [43] examined the extent and quality of integrated reporting practices in 18 European Union (EU) countries during the period of 2013 to 2020. The balanced scorecard (BSC) was used to develop a checklist to measure the information content of integrated reports. The study found that integrated reporting quality increased during the study period from 49.3% at inception to 77% in 2020. It was noted that financial disclosures had the most effect in the integrated reports before learning and growth disclosures. The sector with the most disclosure is the utility sector while Spain and France ranked highest among the EU countries. The least-ranked countries are Austria and Hungary.

Reference [44] approached the study from a historical perspective of IR in different jurisdictions. The study examined the challenges of implementing IR and further suggested ways of improving disclosures. The methods employed involve a review of previous literature to obtain insights into the history of corporate reporting and IR. The study found that IR remains at the nascent stage and at various stages in different countries. It was recommended that stakeholders should make efforts to harmonize the level of implementation globally.

Reference [45] investigated the relationship that exists between the number of integrated reports and the welfare of EU countries. The study adopted action research in addition to statistical and critical analysis of previous studies. The findings show that a high correlation exists between countries' wealth and the number of integrated reports. The wealthiest countries showed the highest level of IR disclosure. The study further noted a significant difference due to the date of joining the EU showing that most of the reports belong to countries that joined the EU before 2004 than countries that joined the EU in 2004 or later and a few are yet to adopt IR.

Reference [7] examined academic research efforts on IR in the Area of Business using a systematic literature review. The study conducted a bibliometric analysis of 268 articles published in the Web of Science database in 2011–2019. The findings show that 77.6% of the studies were conducted in developed countries which include countries like Italy, South Africa, Australia, the United Kingdom, and the United States. The study noted the limited studies in emerging economies.

The empirical review has identified a gap in the literature. It shows that even though studies on integrated reporting have been carried out from a number of aspects, including its integration into the curriculum, impact on financial performance, and challenges to its adoption, the relevance of IR's value for market indices especially in emerging countries such as Nigeria has only been sparsely studied. While a few previous studies have focused on general or non-financial sectors, developed economies, or even historical and theoretical aspects of IR implementation, none specifically investigate the influence of IR content elements on market performance metrics such as market capitalization and price-earnings ratio in Nigerian banks. These gaps thus provide the call for further investigation needed to derive context-specific insights with respect to the association that may exist between IR disclosures and market-based outcomes in Nigeria.Based on these gaps and the literature reviewed, two hypotheses are formulated.

H0: Integrated reporting (IR) has no significant effect on the market capitalization of banks listed onthe Nigerian Exchange Group.

H0: Integrated reporting (IR) has no significant effect on the price-earnings ratio of banks listed onthe Nigerian Exchange Group.

3.0 Methodology

The study employed the content analysis method to get data for this study. Five top listed banks known as FUGAZ(First Bank, UBA, GT Bank, Access Bank and Zenith Bank) were selected for this study. Stakeholders were limited to investors and the price-earnings ratio was used as a proxy for investors' perception. A disclosure score from a disclosure list adopted from the five content elements of the IR Framework was used to measure integrated reporting. The scores were regressed against market capitalization and price-earnings ratio to determine the effect of IR on market performance. The study employed secondary data, eliminating the need for ethical approval as no direct human participation was involved. The checklist used for content analysis was derived from the Integrated Reporting Framework (2021) which shows the items expected under each content element, and market performance data were obtained from annual reports and online market databases (Investing.com). The number of items disclosed for each content element in the various annual reports was recorded. The use of reputable data sources supports the validity and reliability of the results and ensures transparency and adherence to ethical standards.The data was analyzed using descriptive statistics and panel regression analysis. The Hausman test was employed to determine the suitability of fixed or random effects models before proceeding with the regression. Furthermore, the correlation test was employed to ascertain the relationship among the variables to check for multicollinearity.

The regression models below are formulated for the study:

MCAP=f(IR)...........…………………………………………………………Equation 3.1
P/E=f(IR)................…………………………………………………………Equation 3.2
MCAP= β0 + β1OEE + β2BMD+ β3DRO + β4RAS + β5OD + ε ....Equation 3.3
PER= β0 + β1OEE + β2BMD+ β3DRO + β4RAS + β5OD + ε ....…. Equation 3.4

Where: MCAP =market capitalization; PER = Price-earnings ratio; IR=Integrated Reporting; β0=Constant; β1=Coefficient;ε=error term; Organisational Overview and External Environment (OEE), Business Model (BMD), Risks and Opportunities (DRO), Strategy and Resource Allocation (RAS), and Outlook (OD)

4.0 Result and Discussions

4.1 Data Analysis
4.1.1 Descriptive Statistical Analysis

Table 1Descriptive Statistics

	MCAP	PER	OEE	BMD	DRO	RAS	OD
Mean	23.42500	0.020405	6.880000	4.120000	5.680000	4.740000	5.440000
Median	24.39500	0.005800	7.000000	4.000000	5.000000	4.000000	6.000000

Maximum	26.12000	0.262170	8.000000	9.000000	9.000000	9.000000	8.000000
Minimum	17.60000	0.000630	5.000000	1.000000	4.000000	1.000000	1.000000
Std. Dev.	2.688850	0.043390	0.872248	2.335529	1.476897	2.371687	1.981136
Observations	50	50	50	50	50	50	50

The table above provides descriptive statistics for the variables in the model, with market performance (MKPF) having a mean of 2.38 and a standard deviation of 1.69, indicating some variation around the mean. The average values for the independent variables—OEE, BMD, DRO, RAS, and OD—are between 4 and 7, with OEE being the highest at 6.88. These descriptive statistics implies that while MKPF shows moderate variation, the independent variables (OEE, BMD, DRO, RAS, and OD) exhibit relatively consistent average values, with OEE being the most prominent, suggesting potential stability in these factors across the sample.

Table 2Correlation Matrix

Correlation							
Probability	BMD	DRO	MCAP	OD	OEE	PER	RAS
BMD	1.000000						

DRO	0.952091	1.000000					
	0.0000	-----					
MCAP	0.038022	0.174627	1.000000				
	0.7932	0.2252	-----				
OD	0.689652	0.767521	0.469692	1.000000			
	0.0000	0.0000	0.0006	-----			
OEE	0.458021	0.381479	-0.137659	0.196518	1.000000		
	0.0008	0.0063	0.3404	0.1714	-----		
PER	0.489425	0.522907	0.230364	0.384939	0.341409	1.000000	
	0.0003	0.0001	0.1075	0.0058	0.0152	-----	
RAS	0.904730	0.861367	0.072693	0.559086	0.606119	0.399888	1.000000
	0.0000	0.0000	0.6159	0.0000	0.0000	0.0040	-----

The correlation matrix reveals a significant multicollinearity problem between the variables BMD, DRO, and RAS, with very high correlation coefficients (0.952 and 0.904, respectively). This multicollinearity can distort regression estimates, making it difficult to isolate the individual effects of these variables on the dependent variable. To address this issue, Principal Component Analysis (PCA) was employed to transform the correlated variables into uncorrelated principal components, reducing the risk of multicollinearity. The newly generated table below now includes the principal components (PC1_, PC2_, and PC3_), which capture the underlying variance of the original correlated variables while mitigating the multicollinearity problem.

Table 3: Correlation Matrix After Transformation

Correlation							
Probability	MCAP	PER	PC1_	PC2_	PC3_	OEE	OD
MCAP	1.000000						

PER	0.230364	1.000000					
	0.1075	-----					
PC1_	0.098058	0.486660	1.000000				
	0.4981	0.0003	-----				
PC2_	-0.128105	-0.213622	-3.74E-16	1.000000			
	0.3753	0.1363	1.0000	-----			
PC3_	0.434052	0.043145	5.21E-17	2.06E-15	1.000000		
	0.0016	0.7661	1.0000	1.0000	-----		
OEE	-0.137659	0.341409	0.496722	0.443076	-0.034233	1.000000	

	0.3404	0.0152	0.0002	0.0013	0.8134	-----	
OD	0.469692	0.384939	0.694840	-0.355594	0.145148	0.196518	1.000000
	0.0006	0.0058	0.0000	0.0113	0.3145	0.1714	-----

The correlation table after performing Principal Component Analysis (PCA) shows significant improvements in addressing the multicollinearity problem, especially between the variables BMD, DRO, and RAS. In the original table, BMD and DRO exhibited a very high correlation of 0.952, and RAS was also strongly correlated with both BMD and DRO. However, after applying PCA, the correlation between the newly generated principal components (PC1, PC2, and PC3) is much lower, with PC1 (representing BMD) and PC2 (representing DRO) showing a very small correlation (near zero) of -3.74E-16. This transformation successfully decouples the collinearity that existed between the original variables, which should lead to more reliable regression results.However, PC3 (which represents RAS) reveals some issues. It shows a very high correlation with the other components, especially with PC1 and PC2, as evidenced by the near-zero correlation between PC1 and PC3 (5.21E-17) and the similarly high correlation of 2.06E-15 with PC2. Additionally, the t-statistics and probability values for PC3 suggest it does not provide meaningful variance in the model. As a result, PC3 (RAS) will be removed from the model before running the panel regression to ensure the results are not affected by this issue. This will ensure that the analysis will focus on the independent effects of PC1and PC2 which are now free from multicollinearity concerns.

4.2 Test of Hypotheses

4.2.1 Hypothesis One – Effect of IR on market capitalization of listed banks in Nigeria.

Table 4 Regression of IR on Market Cap

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		602.814991	4	0.0000
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21.84120	2.113801	10.33266	0.0000
PC1_	-0.251096	0.331646	-0.757121	0.4533
PC2_	-0.285485	0.565208	-0.505098	0.6162
OD	0.174410	0.118033	1.477643	0.1471
OEE	0.092299	0.280780	0.328723	0.7440
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.960800	Mean dependent var		23.42500
Adjusted R-squared	0.953151	S.D. dependent var		2.688850
S.E. of regression	0.581989	Akaike info criterion		1.916818
Sum squared resid	13.88715	Schwarz criterion		2.260982
Log likelihood	-38.92045	Hannan-Quinn criter.		2.047878
F-statistic	125.6155	Durbin-Watson stat		1.985042
Prob(F-statistic)	0.000000			

The Hausman test results indicate that a fixed effects model is more appropriate than a random effects model due to the significant cross-sectional differences, with a Chi-sq statistic of 602.81 and a p-value of 0.0000. The coefficients for the explanatory variables (PC1, PC2, OD, and OEE) are not statistically significant, with p-values well above 0.05, suggesting that integrated reporting practices (IR) do not significantly impact market capitalization (MCAP) in this model. The Durbin-Watson statistic of 1.985042 indicates no significant autocorrelation in the residuals. Given these findings, we reject the null hypothesis (H0: IR does not improve market capitalization) and conclude that integrated reporting does not significantly affect market capitalization in the sample of Nigerian listed banks. Additionally, the Durbin-Watson statistic of 1.98 suggests that there is no substantial autocorrelation in the residuals, as values near to 2 suggest no autocorrelation. Based on these data, the null hypothesis is accepted which means that integrated reporting content elements do not significantly influence market capitalization of listed banks in Nigeria.

4.2.2Hypothesis Two – Effect of IR on price-earnings ratio of listed banks in Nigeria.

Table 5 Regression of IR on Price-Earnings Ratio

Correlated Random Effects - Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		7.224078	4	0.1245
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.089612	0.057361	-1.562233	0.1252

PC1_	0.009480	0.004830	1.962558	0.0559
PC2_	-0.044755	0.016921	-2.644908	0.0112
OD	-0.001811	0.004059	-0.446027	0.6577
OEE	0.017422	0.007722	2.256051	0.0290
	Effects Specification			
			S.D.	Rho
Cross-section random			4.63E-09	0.0000
Idiosyncratic random			0.035182	1.0000
	Weighted Statistics			
R-squared	0.352943	Mean dependent var		0.020405
Adjusted R-squared	0.295427	S.D. dependent var		0.043390
S.E. of regression	0.036421	Sum squared resid		0.059692
F-statistic	6.136417	Durbin-Watson stat		1.910253
Prob(F-statistic)	0.000498			

The Hausman test indicates that the random effects model is appropriate for this analysis, as the Chi-sq statistic of 7.22 with a p-value of 0.1245 is greater than 0.05. In terms of the explanatory variables, PC1 (with a p-value of 0.0559) and OEE (with a p-value of 0.0290) are marginally significant, while PC2 (p-value 0.0112) is statistically significant, and OD (p-value 0.6577) is not significant. The Durbin-Watson statistic of 1.910 indicates no major concerns with autocorrelation.Among the variables, OEE and PC2have a significant effect on PER.Thus, the null hypothesis is accepted stating that Integrated reporting does not significantly affect the price-earnings ratio of listed banks in Nigeria.

4.3 Discussion of Findings

The findings provide a contextual view of integrated reporting (IR) and its effect on market performance in Nigeria. While studies[33] emphasize the importance of incorporating IR into management accounting and corporate practices, the results of this study show that none of the IR content elements (OEE, BMD, RAS, and OD) significantly affect the market capitalization (MCAP) or price-earnings ratio (PER) of the banks. This aligns with the study[38], which found that IR does not significantly influence the short-term performance of banks but could have long-term effects. The finding also agrees with another study[42]who noted that organizational overviewand external environmentdo not havea significant positiveeffect on historical marketprice.The correlation between certain IR elements and market performance in a study[40] contrasts with the results here, suggesting that the impact of IR on financial performance may vary across sectors. Ultimately, this study concludes that IR does not significantly impact market performance, supporting the null hypothesis. The findings suggest that the lack of a significant impact of IR on market performance could be attributed to low awareness and understanding of IR among investors and banks in Nigeria. As IR is not yet mandatory and its benefits are not widely recognized, both investors and banks may be slow to adopt it, limiting its potential to influence market capitalization and financial performance. This low level of adoption may hinder the expected benefits of integrated reporting in enhancing transparency and investor confidence.

5.0 Conclusion

This study focused on the value relevance of IR content elements with respect to investors. Investors' viewpoints were measured using market capitalization and price-earnings ratio. The findings reveal that IR does not significantly influence market capitalization or price-earnings ratio in the Nigerian banking sector. Apart from organizational overview disclosures which showed a positive significant relationship and Risks and Opportunities showing a negative significant relationship with price-earnings ratio, none of the IR content elements were found to have a strong, statistically significant effect on market performance. This shows a low degree of knowledge and acceptance of IR among investors and banks in Nigeria which in turn adds to its limited impact. Based on these findings, it is recommended that the Nigerian government and regulatory agencies, such as the FRCN, prioritize activities to improve awareness and knowledge of IR among both banks and investors. Additionally, the introduction of stand-alone integrated reports for all listed companies, especially banks, should be supported to improve the quality and consistency of disclosures, boost investor trust, and align Nigerian business organizations with global best practices in corporate reporting.

Statement of Competing Interests

The authors have no competing interests.

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