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A comparative analysis of intangible assets in LSE- and NGX-listed companies

A research report submitted by
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وَمَا تَوْفِيقِي إِلَّا بِاللَّهِ

“My success can only come from God. In Him I trust, and unto Him I look.”

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Abstract:

Intangible assets (IAs) are increasingly important in modern business. Accordingly, their accounting treatment and disclosure are equally important. Despite this, the accounting standard dealing with IAs has not been substantively revised in decades. The International Accounting Standards Board (IASB) acknowledges this deficiency and is currently working on a project to comprehensively review IA accounting. This thesis contributes to the IASB's project by examining the disclosure, recognition, and measurement of IAs among companies listed on the London Stock Exchange (LSE) and the Nigerian Stock Exchange (NGX) in 2013 and 2023. The study explores the disparities in IA practices between developed and developing economies, focusing on recognised IAs (RIAs) and unrecognised IAs (UIAs). In doing so, the study provides empirical evidence about the extent, type and disclosure of RIAs and UIAs in a developed and developing economy.

The thesis uses a quantitative content analysis of LSE and NGX companies' 2013 and 2023 financial statements. Findings reveal that both LSE- and NGX-listed companies exclusively use the cost model for IA measurement, suggesting that the restrictions imposed by IAS 38 before the revaluation model can be adopted is very limiting. LSE-listed companies exhibit a more structured and compliance-driven approach to IA reporting, with goodwill being the most frequently disclosed RIA. In contrast, NGX-listed companies disclose fewer RIAs but report UIAs more extensively, particularly in relation to brand-building expenditures. This appears to be driven by regulatory challenges and a lack of expertise in RIAs recognition.

The research recommends that the IASB reduce the restrictions on the use of the revaluation model for IAs. In addition, it should consider adopting standardised IA classifications and mandate the disclosure of useful UIAs. Finally, industry-specific guidance and tools for emerging economies would be helpful to improve IA reporting.

Contents:

1. Introduction 10
1.1. Background: 10
1.2. Research questions: 11
1.3. Method and delimitations: 12
2. Literature review 13
2.1. Agency theory: 13
2.2. Value relevance of IAs: 14
2.3. The increasing importance of IAs: 16
2.4. Accounting for IAs under IFRS: 16
2.5. IAs in developed and developing countries: 20
2.6. IAs and company size: 23
2.7. Industry factors impacting IAs: 24
2.8. UIAs: 25
2.9. Conclusion: 27
3. Method 28
3.1. Overview: 28
3.2. Population: 28
3.3. Sample: 28
3.4. Data Collection: 29
3.5. Data Analysis: 30
3.5.1. Research question 1 to 5: 30
3.5.2. Research question 6: 31
3.6. Ethics: 33
3.7. Validity, reliability, assumptions and limitations: 33
4. Findings 36
4.1. The types and values of RIAs used and disclosed by LSE- and NGX-listed companies: 37
4.1.1. The types of RIAs used and disclosed: 37
4.1.2. The value of RIAs: 42
4.2. The types of UIAs disclosed by LSE- and NGX-listed companies: 44

4.3. The characteristics (listing, size and industry) of companies disclosing UIAs: 48
4.4. Results from inferential testing:.....52
4.4.1. Mann-Whitney U results when grouped by exchange: 52
4.4.2. Kruskal-Wallis results when grouped by company size:.....54
4.4.3. Kruskal-Wallis results when grouped by industry: 61
4.4.4. Mann-Whitney U results when grouped by time:.....70
4.5. The MTB value ratio: 71
4.6. Value relevance results:.....75
4.6.1. Regression results by exchange: 75
4.6.2. Regression results by industry: 81
4.6.3. General recommendations: 90
5. Conclusion, recommendations and areas for future research.....91
5.1. Conclusion:.....91
5.2. Limitations:.....97
5.3. Future research: 98
6. References:.....100
7. Appendix A: Content analysis: Disclosure checklist and coding.....106

Table of abbreviations:

Term	Description
AI	Artificial Intelligence
CS	Computer Software
CSR	Corporate Social Responsibility
GDP	Gross Domestic Product
GBP	Great British Pounds
IA/s	Intangible Asset/s
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
LSE	London Stock Exchange
MTB	Market-To-Book
NGX	Nigerian Stock Exchange
N/A	Not applicable
R&D	Research and Development
RIA/s	Recognised intangible asset/s
ROA	Return on Assets
ROE	Return on Equity
SOFP	Statement of Financial Position
SPSS	Statistical Package for the Social Sciences
TAs	Total Assets
UIA/s	Unrecognised intangible asset/s
UKEB	United Kingdom Endorsement Board
US	United States of America
USD	United States Dollar

List of tables and appendices:

Table number	Description
Table 1	UIAs and their related IAs class
Table 2	The number of companies in each industry per exchange
Table 3	Statistical tests
Table 4	RIAs breakdown
Table 5	Company disclosures of IAs:
Table 6	UIAs expense breakdown
Table 7	UIA classes
Table 8	UIAs breakdown per industry
Table 9	Mann-Whitney U test results when grouped by exchange
Table 10	Kruskal-Wallis test results when grouped by company size on the LSE
Table 11	Kruskal-Wallis test results when grouped by company size on the NGX
Table 12	RIAs on the LSE by company size
Table 13	RIAs on the NGX by company size
Table 14	Kruskal-Wallis test results when grouped by industry on the LSE
Table 15	Kruskal-Wallis test results when grouped by industry on the NGX
Table 16	RIAs per industry
Table 17	The types of RIAs held by each industry on the LSE
Table 18	The types of RIAs held by each industry on the NGX
Table 19	Mann-Whitney U test results when grouped by time on the LSE
Table 20	Mann-Whitney U test results when grouped by time on the NGX
Table 21	Kruskal-Wallis test results related to the MTB value ratio when grouped by company size
Table 22	Results from a Spearman's Rho correlation test

Table 23	Kruskal-Wallis test results when grouped by companies' RIAs to TAs ratio
Table 24	Kruskal-Wallis tests results relating to UIAs and MTB value gap when grouped by companies' total carrying amount of UIAs
Table 25	Model 1's regression results
Table 26	Model 2's regression results
Table 27	Model 3's regression results
Table 28	Model 4's regression results
Table 29	Summary of regression findings by exchange and time
Table 30	Model 1's results when grouped by industry
Table 31	Model 2's results when grouped by industry
Table 32	Model 3's results when grouped by industry
Table 33	Model 4's results when grouped by industry
Table 34	Summary of regression results by exchange and industry
Appendix A	Content analysis: Disclosure checklist and coding

List of figures:

Figure number	Description
Figure 1	The relative carrying amounts of each RIA class on each exchange
Figure 2	The average RIAs to TAs on each exchange
Figure 3	The average number of UIA classes per company per industry
Figure 4	The average number of UIA classes per company size
Figure 5	The average ratio of total RIAs to TAs per company size
Figure 6	The average ratio of development expenditure (RIAs) over TAs on the LSE
Figure 7	The average number of RIA classes per company size
Figure 8	The average ratio of RIAs to TAs per industry
Figure 9	The average number of RIA classes per industry for 2013 and 2023
Figure 10	Breakdown of the carrying amount of RIAs held by each industry on the LSE
Figure 11	Breakdown of the equity contribution from each industry on the LSE
Figure 12	Breakdown of the carrying amount of RIAs held by each industry on the NGX
Figure 13	Breakdown of the equity contribution from each industry on the NGX

1. Introduction

1.1. Background:

Intangible assets (IAs) are increasingly becoming core components of companies' business models (AASB, 2022; Chen, 2018; IASB, 2022a; Lev, 2018a; UKEB, 2024b). For example, IAs comprise 57.49% of AstraZeneca PLC's total assets (TAs). Despite their importance, the standard dealing with IAs, International Accounting Standards 38 (IAS 38), has not been substantially updated since its first publication in 1998 (AASB, 2022; Francis & Schipper, 1999; IASB, 2020; Lev, 2018a, 2018b; UKEB, 2024b). The result is an increasing disparity between a company's market value and net book value (Canibano et al., 2014; Goebel, 2019; Marzo, 2013; Negash, 2003; Yallwe & Buscemi, 2014). While International Financial Reporting Standards (IFRS) acknowledge that financial statements are not intended to equate to a company's market value (IASB, 2019a, para 1.7), the differential between the net asset value in IFRS financial statements and market value has raised criticisms that IA accounting is inadequate for users' needs (AASB, 2022; Gelb, 2002; Lev, 2018a; UKEB, 2024c). For example, Wyatt and Abernethy (2008) argue that IFRS is losing value relevance due to the lack of recognition of IAs (Lev, 2018a, 2018b). The growing disconnect highlights the urgent need to update accounting standards to better reflect the economic reality of modern businesses (AASB, 2022), ensuring that financial statements provide more relevant and useful information to primary users (IASB, 2019a; Lev, 2018a, 2018b).

According to IFRS, IAs are identifiable, non-monetary assets without physical substance. IAs include intellectual property rights, licenses, trademarks, patents, brand names and goodwill. Recognised IAs (RIAs) meet specific criteria under IAS 38, such as identifiability, control and the generation of future economic benefits (IASB, 1998), and are recorded on the balance sheet. Unrecognised IAs (UIAs) are potential assets (current expenses) that do not meet the recognition criteria of IAS 38 and, therefore, are not recorded on the balance sheet (Mehnaz et al., 2024). These UIAs include assets that lack reliable cost data, are challenging to identify as separable assets or fail the IFRS criteria for future economic benefit. Examples of UIAs include donations, sponsorships or community expenses; advertising or marketing expenses; research and development (R&D) expenses; IT, ICT, or software expenses; and entertainment or business expenses (Mehnaz et al., 2024).

At present, the prior literature has focused on assessing the value relevance of IAs (Al-Hamadeen et al., 2017; Ondari-Okemwa, 2011; Wyatt, 2011; Wyatt &

Abernethy, 2008; Yallwe & Buscemi, 2014); whether IAS 38 meets users' needs (Lev, 2018a; UKEB, 2024b, 2024c); and has placed focus on *developed* countries (Dutz et al., 2012; Goebel, 2019; Radonic et al., 2021; Van Criekingen et al., 2022). While there has been some research on the use of IAs by companies, an in-depth analysis of what IAs are used by companies and whether this differs between developed and developing economies is researched to a limited extent. To address this gap, this paper conducts an exploratory analysis of the IAs used and disclosed by companies listed on the London Stock Exchange (LSE) and the Nigerian Stock Exchange (NGX). This analysis aims to provide insights into the variations in IAs use and disclosure practices across different economic contexts, thereby contributing to the existing literature and informing the IASB's pipeline project to improve IAs accounting and disclosure. The scope of the pipeline project includes disclosure of UIAs, the scope of IAS 38, the definition of IAs and the recognition criteria for internally generated IAs (IASB, 2022a, para 37; 2022b, 2024a; UKEB, 2024b, para 5). The United Kingdom Endorsement Board (UKEB, 2024b) has also added IAs' disclosures to its agenda, corroborating the importance of further research on IAs.

Regulatory commentators often argue that regulations suitable for developed economies may not be suitable for developing economies, although many companies in developing countries adopt IFRS for the preparation of their financial statements (Gingrich et al., 2018; IFRS, 2024). This paper contributes to the existing literature by providing an overview of the use and disclosure of IAs in contrasting economies (Al-Hamadeen et al., 2017; Radonic et al., 2021; Tunyi et al., 2019). The research may enhance the understanding of how factors (such as company size and industry) influence the disclosure of IA. This contribution may assist the IASB by providing a base for the development of a new IA accounting standard (IASB, 2022a, 2024).

1.2. Research questions:

The research is exploratory and answers the following questions:

1. What are the types and values of RIAs used and disclosed by LSE- and NGX-listed companies?
2. What types of UIAs are LSE and NGX companies disclosing, if any?
3. What are the characteristics (exchange, industry, size) of companies that are disclosing UIAs?
4. Are there statistically significant differences in the use and disclosure of RIAs when grouped by:
    a. Developed versus developing countries;
    b. Market capitalisation;

c. Industry; and
d. Between 2013 and 2023?

5. Are there significant differences in the market-to-book (MTB) ratios of companies when grouped by their IAs/total assets (TAs) ratio?
6. Are IA-related disclosures value relevant?

1.3. Method and delimitations:

A quantitative method (content analysis) was employed to gather data from the audited financial statements of a sample of LSE and NGX companies (Davis, 2008; Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021; Yallwe & Buscemi, 2014). The data was analysed using descriptive and inferential statistics (see Section 3) (Malola & Maroun, 2019).

The study has two delimitations. First, the study focuses on companies consistently listed between 2013 and 2023. Companies listed or delisted at any point during this period were excluded to ensure consistency in the data set and reduce the impact of market entry or exit distorting the data. Second, the primary listing status of dual-listed companies was used to categorise these companies. The delimitation allowed the researcher to confine this research to countries that require the use of IFRS standards when issuing financial statements, which could affect the data and findings.

2. Literature review

The literature review begins with a discussion of the key theoretical frameworks that underpin this research, namely agency and value relevance theory (RQ 6). This is followed by a discussion of the increasing importance of IAs over the past few decades and their impact on the MTB value ratio of companies (RQ 5). Sections 2.4 discusses the current accounting for IAs under IFRS and potential issues stemming from certain requirements (RQ 1). Section 2.5; 2.6 and 2.7 highlight potential differences between developed and developing economies; companies of different sizes and companies within different industries from prior research (RQ 4). This is followed by Section 2.8 which discusses prior research related to the investment and disclosure of UIAs (RQs 2 and 3).

2.1. Agency theory:

IAS 38, implemented in 1998, largely follows the objectives of prudence and stewardship (Panda & Leepsa, 2017; Ravenscroft & Williams, 2009). Prudence involves exercising caution to avoid overstating assets and incomes while not understating expenses and liabilities (IASB, 2019a, para 2.16). Stewardship, grounded in the principles of agency theory, refers to the responsibility of management to primary users of financial statements (AASB, 2022; IASB, 2019a, para 3.2; Ravenscroft & Williams, 2009). Agency theory addresses the relationship between principals and agents due to the separation of ownership and control of an entity. The separation of ownership and control leads to information asymmetries between agents and principals, as agents have a more complete knowledge and understanding of asset existence and expenditure compared to principals due to their closer involvement in the daily operations of the entity (Shapiro, 2005; Wyatt & Abernethy, 2008). Information asymmetries may lead to potential costs, referred to as agency costs, which may arise due to agents' objectives (for example, compensation maximisation) being misaligned with principals' objectives (for example, profit maximisation) (Lev, 2018b). Effective monitoring, such as through the use of annual financial statements, reduces agency costs (Beleneşi et al., 2016; Shapiro, 2005).

Due to the increasing prevalence and importance of IAs in the information age, weaknesses in IAs reporting reduces principals' ability to understand companies' complete financial position and performance. This may impact the capital allocation decisions made by users of financial statements (Francis & Schipper, 1999; Watts & Zimmerman, 1978). Consequently, exploring recognised as well as identified and disclosed but unrecognised IAs and comparing their use across developed and developing countries is important and worthy of research (IASB, 2022a; Radonic et al., 2021).

2.2. Value relevance of IAs:

Value relevance refers to the degree to which financial information affects market prices and influences investment decisions (Beisland, 2009). This relevance may extend to IAs due to the crucial role they play in a company's value proposition and competitive advantage (Marzo, 2013; Mehnaz et al., 2024). The unique characteristics of IAs, such as their intangible nature and potential future economic benefits, raise questions about their effective representation and reporting in financial statements (Dahmash et al., 2009).
Studies suggest that RIAs and UIAs may be value relevant by providing insights into a firm's innovation, brand equity, and intellectual capital (Nichita, 2019; Oliveira et al., 2010; Wyatt, 2011). RIAs, often more transparent on balance sheets than UIAs, include acquired assets such as patents or trademarks that meet specific recognition criteria (IASB, 1998), providing primary users with a clearer view of a company's future economic potential. UIAs, however - such as R&D expenses or unique organisational knowledge - often elude traditional reporting despite being vital to the long-term competitive advantage of the reporting entity (Mehnaz et al., 2024; Wyatt, 2011).

Research indicates that markets react positively to disclosures about IAs (both RIAs and UIAs), recognising these as future earnings drivers. For example, Dahmash et al. (2009) show that companies with higher IAs disclosures exhibit better stock performance, as investors perceive IAs as indicators of growth potential. This is further supported by Oliveira et al. (2010), who argue that investors use both financial statements and additional disclosures on IAs to gauge company innovation and market positioning, contributing to more informed investment decisions (Wyatt, 2011).

The complexity surrounding IAs' value relevance is especially pronounced in technology and knowledge-driven sectors where IAs are integral to revenue growth (Oliveira et al., 2010). Mehnaz et al. (2024) argue that UIAs can influence market valuation significantly in these sectors, given their potential to drive future cash flows. Therefore, exploring the reporting practices for IAs, including both recognised and unrecognised categories, is critical to understanding how they impact market behaviour and valuation, particularly as the global economy increasingly places greater value on intellectual capital and innovation (Beisland, 2009; Wyatt, 2011).

Ohlson (1995) developed an accounting-based valuation model to determine the value relevance of IAs. This study uses this model as a base to investigate the value relevance of IAs. The model states that a firm's market value is a function of

earnings and the book value of equity. Three models were employed by Oliveira et al. (2010) to understand the value relevance of IAs. These models are replicated in this study and are discussed in more detail below.

$$\textbf{Model 1: } P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$$

Where:

P_{it} = the stock price of company i four months after the end of year t (to reflect the market's reaction to the announcement of the financial statements and financial information (FCA, 2014, DTR 4.1.3)).

BV_{it} = the book value of equity per share of company i at time t.

E_{it} = the total comprehensive income per share of company i at time t.

ε_{it} = residuals

Consistent with prior research (Al Jifri & Citron, 2009; Dahmash et al., 2009; Mehnaz et al., 2024; Oliveira et al., 2010), the book value of equity is separated from the value of RIAs to determine the value relevance of components of IAs, including identified IAs and goodwill.

$$\textbf{Model 2: } P_{it} = b_0 + b_1(BV - IA)_{it} + b_2 E_{it} + b_3 IIA_{it} + b_4 G_{it} + n_{it}$$

Where:

$(BV - IA)_{it}$ = the book value of equity less the carrying amount of RIAs per share of company i at time t.

IIA_{it} = the identifiable IAs per share recognised in the SOFP of company i at time t.

G_{it} = the goodwill per share recognised in the SOFP of company i at time t.

n_{it} = residuals.

Model 3 expands on Model 2, further disassembling the value of RIAs into the components of trademarks and other rights, development expenditure and other RIAs (Oliveira et al., 2010).

$$\textbf{Model 3: } P_{it} = c_0 + b_1(BV - IA)_{it} + c_2 E_{it} + c_3 G_{it} + c_4 IP_{it} + c_5 RD_{it} + c_6 OIA_{it} + z_{it}$$

Where:

IP_{it} = the intellectual property and other rights (trademarks and other rights (Section 2.4)) recognised on the SOFP of company i at time t.

RD_{it} = the development expenditures recognised on the SOFP of company t at time t.

OIA_{it} = other IAs per share (excluding those disassembled above) of company i at time t.

z_{it} = residuals.

2.3. The increasing importance of IAs:

In recent years, many accounting stakeholders have argued that the significance of investing in IAs has grown in companies, with IAs playing a vital role in many modern businesses (IASB, 2022a, para 35; 2024a; Lev, 2018a, 2018b; Van Criekingen et al., 2022). For example, between 2013 and 2023, Shell PLC and AstraZeneca PLC's percentages of RIAs to TAs went from 1.23% to 6.62% and 46.56% to 57.49%, respectively. Lev (2018a) illustrates that the increase in investments in IAs versus tangible assets from 1977 to 2014 has increased substantially. More recent studies indicate that the carrying amounts of IAs have grown at an average rate of 8% annually between 2011 and 2021 (Chen, 2018; UKEB, 2024b).

Academics have noted significant differences between the market value and book value of equity, ascribing the difference to the value of UIAs (Goebel, 2019; Lev, 2018b; Marzo, 2013; Negash, 2003). The lack of IAs recognition has impacted share prices and earnings relevance negatively (Lev, 2018b). The association has been challenged by research that identifies multiple variables contributing to the difference between the book value of equity and market value (Nichita, 2019). Jenkins and Upton (2001) noted market psychology as one of the factors affecting the difference between the book value of equity and the market value. Further arguments against the MTB fallacy include the fact that the book value of equity relies on some assets (including IAs) measured using the historical cost method rather than fair market value (Jenkins & Upton, 2001). While part of the difference could be attributed to the market consideration, some instances do stem from accounting fallacies (Marzo, 2013). Even if all currently recognised assets were appraised at their market value and factors such as market psychology were considered, there would still be a discrepancy between the market and book value of equity. This discrepancy suggests the relevance of UIAs that generate benefits for the entity (Marzo, 2013). Previous research indicates that an average of 32% of the MTB value gap is associated with cumulative R&D costs undertaken by an entity (Canibano et al., 2014). This highlights the need for proactive changes to address IA standard deficiencies (Lev, 2018b) and the possibility of at least disclosing UIAs, as the IASB is considering (IASB, 2022a, 2024a).

2.4. Accounting for IAs under IFRS:

RIAs are defined as identifiable non-monetary assets that lack physical substance (IASB, 1998). Identifiability presents a significant challenge in recognising IAs due to the lack of documentary evidence supporting the existence of the RIAs. For

example, a company's internally generated brand reputation, despite contributing to value creation, may not qualify as an RIA under IFRS because these assets lack contractual or legal evidence to establish their separability and control (IASB, 1998). As companies expand, they frequently invest in various RIAs and UIAs, often without deliberate strategic intent. The result is that entities become unsure of the IAs they possess (Jenkins & Upton, 2001). Wyatt and Abernethy (2008) propose that accounting for IAs should begin with identifying and separately reporting the investments an entity makes in IAs, especially those of an unrecognised nature. Such complementary disclosure requirements could reduce information asymmetry and ensure that all information regarding IAs, whether expensed or capitalised, is disclosed (Wyatt & Abernethy, 2008).

IAS 38 requires that RIAs be initially recognised at cost. Separately purchased RIAs are straightforward to identify and measure for recognition, as clear transaction prices reflect their acquisition costs. Internally generated IAs are often challenging to identify and measure individually. This difficulty arises from the absence of observable market transactions and the complexities of differentiating development costs from research or operational expenses. As a result, these assets are frequently unrecognised and undisclosed (IASB, 1998; UKEB, 2024b). Research-phase costs are expensed as the probability of them contributing to future economic benefits has not yet been established (IASB, 1998). Once R&D projects enter the development phase and specific criteria are met, all future costs may be capitalised until the RIAs are complete and ready for use. Often, the research phase accounts for a large proportion of the R&D expenditure, but these costs are expensed and not capitalised even if they eventually lead to successful projects that enter the development phase (UKEB, 2024b).

The main classes of IAs observed in this study are goodwill, brand names, computer software (CS), customer relationships, development expenditure, exploration assets, licenses and franchises, trademarks and rights and “other” IAs. Each of these classes may comprise costs that qualify as RIAs or expensed costs. The exception is goodwill, which is explicitly excluded from being classified as an UIA. This exclusion reflects its unique nature as an acquired asset arising from mergers and acquisitions, where its value is linked to the anticipated future earnings of the acquired entity (IASB, 1998). Exploration assets, often disclosed under RIAs, are particularly notable due to the inherent uncertainty during their research phase, as outlined in IFRS 6 by the IASB (2004). During this phase, expenditures related to exploration assets are categorised under RIAs due to their exploratory and developmental nature. Once exploration costs are deemed successful and resources are proven, these costs are typically reclassified to

property, plant, and equipment, reflecting the tangible nature of the resulting assets. This classification approach ensures that RIAs are disclosed consistently with their current and future economic contributions, facilitating more accurate reporting and valuation.

Lev (2018b) has made efforts to suggest improvements to IAs accounting, linking IAs to the matching principle (Canibano et al., 2014; Lev, 2018a). Entities continually invest in IAs, intending to generate future economic benefits that may extend over multiple periods (Wyatt & Abernethy, 2008). Primary users are interested in the accounting return generated, with profit being a significant figure in financial statements (Lev, 2018a, 2018b). The inherent subjectivity of recognising and measuring IAs presents challenges in matching expenditures to future economic benefits (Penman, 2023). The mere expensing of IAs-related expenditures may lead to unmatched revenues and distorted profitability trends. However, capitalising these IAs expenditures leads to uncertainties surrounding the amortisation rate to be applied against future incomes (Penman, 2023).

Penman (2023, page 9) argues that the matching principle is only possible under certainty and that accounting for IA-related expenditures should lead to the “best mismatching”. This suggests that in the absence of perfect alignment, accounting treatments should aim to minimise the extent of mismatching by adopting an approach that most accurately reflects the timing and magnitude of economic benefits derived from IAs. This may involve carefully weighing the decision to expense or capitalise IAs-related expenditures while balancing the need for relevance and faithful representation. Addressing these complexities is essential for enhancing the capitalisation requirements under IAS 38 to provide more meaningful insights into an entity's financial performance.

UKEB (2024b) highlight the differing accounting treatments for RIAs arising from organic and inorganic growth. Under IAS 38, RIAs acquired via inorganic growth are recognised at their fair value as part of the purchase price allocation process during a business combination. This treatment increases the asset base without directly affecting profit figures (UKEB, 2024b, para 3.36). Conversely, RIAs developed through organic growth, such as internally generated brands, are often expensed (at cost) and excluded from the balance sheet due to the challenges of reliably measuring their future economic benefits. The above disparities between organic and inorganic growth in accounting treatment have significant implications for financial performance metrics, which can lead to lower Return on Asset (ROA) ratios in companies that inorganically grow when compared to entities relying on organic growth (FRC, 2019; Lev, 2018b; Mehnaz et al., 2024). This inconsistency

has led to calls for expanding the definition of IAs (Eckstein, 2004; Lev, 2018a), a change the IASB is actively considering (IASB, 2022a, 2024a). Addressing the disparities in growth methods would allow for the recognition of internally generated RIAs currently overlooked by IAS 38, enhancing the comparability of financial statements (AASB, 2022).
The IASB allows for either the cost or revaluation models to be used in the subsequent measurement of IAs. The revaluation model is, however, only applicable where an active market exists for the IA (IASB, 1998). The revaluation model is less common due to the uniqueness of RIAs in an entity and the lack of active markets for many IAs (FRC, 2019; Lev, 2018b; Martins & Alves, 2010; Mehnaz et al., 2024). In line with changes to the Conceptual Framework (2019), standard-setters are questioning the appropriateness of the 'active market' requirement of the revaluation model (IASB, 2024b, para 8; 2024c).

RIAs may have finite and indefinite useful lives. RIAs with a finite useful life will be amortised in line with the consumption of the economic benefits of the IA over time and tested for impairment only when an indicator is present. RIAs with indefinite useful lives are not amortised but are tested for impairment annually (IASB, 1998). Unlike amortisation, which reflects a systematic and gradual consumption of economic benefits, impairment testing captures the consumption of economic benefits that may occur more abruptly and inconsistently over time. This ensures that the asset is not measured at an amount that exceeds the future economic benefits that are expected to be received from that IA.

Gelb (2002) argues that primary users of entities with significant levels of IAs rely on non-financial information for additional accounting disclosures. For instance, high-growth technologically based companies may find supplementary qualitative disclosures, such as the progress of R&D activities, more useful to depict the fast pace of change within the industry to their users (Mehnaz et al., 2024). These instances depict the inadequacies prevalent in current disclosure requirements, highlighting the need for improved IAS 38 disclosures.

Because of identified weaknesses with IAS 38, the IASB are in the process of a comprehensive review of the standard (IASB, 2022a, 2022b, 2024a). Expected changes include the enhancement of disclosures and review of the scope, definition and measurement requirements, including expanding on when the revaluation method can be adopted (IASB, 2022a, 2022b, 2024a). This research will empower the IASB with relevant information to inform, for example, whether they should require the disclosure of UIAs and what types of UIAs could be disclosed.

2.5. IAs in developed and developing countries:

Prior studies related to IAs have focused on issues developed countries face in recognition and presentation of IAs, neglecting the perspectives of developing countries (Al-Hamadeen et al., 2017; Radonic et al., 2021). The use of IAs and related disclosures may differ between developed and developing countries (Al-Hamadeen et al., 2017; Radonic et al., 2021). Such differences may include the level of spending (Dutz et al., 2012), the extent of use (Ondari-Okemwa, 2011) and the relevance of the use and disclosure of IAs to primary financial statement users in developing countries' financial statements (Tunyi et al., 2019). For instance, scientific R&D costs averaged 269 billion United States Dollars (USD) of the Gross Domestic Product (GDP) in the United States (US) and less than 6 billion USD of the GDP in Brazil between the years 2000 and 2008 (Dutz et al., 2012). This depicts the stark difference between investments in IAs made by developed and developing countries. Dutz et al. (2012) identified similar differences in developing and developed countries over a broad range of IAs. IAs such as brand equity were raised as a significant difference in expenditure in the US and Brazil, with brand expenditures representing 2.53% and 0.86% of the GDP in the US and Brazil, respectively (Dutz et al., 2012). Ondari-Okemwa (2011) states that developing countries have yet to react to the strategic importance of IAs, which may explain the differences identified. Tunyi et al. (2019) extended the discussion of the relevance of IFRS adoption in African countries, stating that “weak institutions and enforcement mechanisms” negatively impact adopting IFRS standards. As a result, companies adopting IFRS may not allocate sufficient funds to apply and implement these standards appropriately. The issues identified in Africa and other developing economies may result in a decrease in the use, identification and disclosure of IAs (Al-Hamadeen et al., 2017).

The contribution of various industries to the GDP can provide valuable insights into the development and disclosure of IAs across different regions, especially when contrasting exchanges like the LSE and the NGX (see Section 2.7). For instance, Nigeria's services sector, which contributes approximately 58.76% of its GDP (NBS, 2024), plays a significant role in its economic development. The country’s oil and gas and consumer goods industries also contribute substantially to GDP, with exploration assets becoming an increasingly vital part of Nigeria’s growing IA landscape. In contrast, the LSE is marked by a more diversified economy, with significant contributions from technology, financial services, and industrial sectors, where IAs like intellectual property, software, and brand equity are integral to company valuations (UKEB, 2024b). This contrast underscores the differing maturity levels in IAs' growth and investment between developed and developing economies. While IAs in developed economies like the UK are central to driving

innovation - particularly in sectors like technology - developing economies such as Nigeria are only beginning to recognise the growing importance of IAs such as licenses and contracts in resource extraction and other industries (Tunyi et al., 2019).

In recent years, IAs have been a supporting activity for entities' operations in developing countries, resulting in increased expenditures on IAs (Tunyi et al., 2019). IAs may create a competitive advantage by using brand names and proprietary technologies due to the unique nature of IAs (Andonova & Ruíz-Pava, 2016; Beleneşi et al., 2016). A key difference between developing and developed countries is the shortage of expertise in identifying and valuing IAs (Ondari-Okemwa, 2011). Academics question whether current standards are applicable in developing countries because of technical capability shortages (Al-Hamadeen et al., 2017; Tunyi et al., 2019). This results in decreased disclosure of RIAs (Al-Hamadeen et al., 2017), as companies face increasing challenges in meeting the stringent requirements of IAS 38 without sufficient legal frameworks to support the recognition and measurement of these assets. Difficulties in obtaining relevant patents, such as lengthy processes and lack of understanding, may be more prevalent in developing countries than their developed counterparts due to weaker institutions (such as government and regulatory bodies) often underlying developing economies (Tunyi et al., 2019).

UKEB (2023) states that IAS 38 is more compliance-orientated than principles-based, prohibiting the capitalisation of certain expenditures. Companies listed on the LSE may strictly adhere to these rules and may provide limited complementary qualitative information to potentially streamline financial reporting and reduce costs associated with producing financial information (IASB, 2019a). However, this approach can limit the scope of information provided, as firms might not include qualitative disclosures about IAs that do not meet IAS 38’s capitalisation criteria (UKEB, 2024a). In contrast, companies in developing countries may adopt more voluntary disclosure practices to address unique economic contexts and meet primary users' information needs (Zaini, 2017). By offering qualitative insights, these firms may mitigate information asymmetry between investors and management, primarily where transparency around IAs, such as customer relationships or proprietary processes, can support investor decision-making (Agyei-Mensah, 2019). Research suggests that providing narrative disclosures helps investors understand the potential of expensed IAs, even when formal recognition is not possible under IAS 38, thus fostering a more comprehensive view of the company’s value creation (Ramanna & Sletten, 2009).

Goebel (2019) suggests that country-specific considerations affect the extent of IAs disclosures. Factors range from legislation and traditions to auditor conservatism and technological progress (Agyei-Mensah, 2019; Al-Hamadeen et al., 2017; UKEB, 2024a). For instance, Nigeria may have lower technological progress compared to the UK but has abundant natural resources available (Shobowale, 2022). These natural resources may attract foreign investors to enable access to the rights to these natural resources, allowing NGX-listed companies to potentially recognise more exploration-related IAs. As exploration-related RIAs may attract investment, NGX-listed companies may disclose information more granularly to satisfy shareholders' need for information (Dancaková et al., 2022; UKEB, 2024a).

Research has indicated that entities in developing countries have more recently started to invest substantially in IAs, when compared to historical investment rates, as developing countries began to realise the strategic importance of IAs (Tunyi et al., 2019). The increasing investments made by developing economies emphasise the need for companies to be able to disclose IAs investments in a standardised manner to increase comparability (AASB, 2022). Although there is a need for more detailed disclosure, consistency between companies should be prioritised. Entities in developed countries have efficient processes in place to recognise IAs legally (Goebel, 2019) and, consequently, recognise IAs in their financial statements. For example, the UK healthcare industry has stringent tests for entities to determine the progress of new drugs. Companies can recognise these new drugs as IAs when these tests have been passed successfully. Legal processes in developing countries may not be as advanced as those that offer the same effect (that is, to recognise an IA) in developed countries (Librarian, 2024). Developing countries are growing rapidly, and larger investments are being made in IAs (Dutz et al., 2012). The improvements made by IASB to IAS 38 should benefit entities in all economies to ensure that useful information is provided to users (Goebel, 2019; Radonic et al., 2021).

The Nigerian accounting environment is shaped by a developing institutional framework, influenced by a mix of international standards and local regulatory dynamics. Since the adoption of IFRS in 2012, Nigerian listed companies have been required to report in line with global norms, including IAS 38 for IAs. However, enforcement and compliance challenges persist due to institutional weaknesses such as limited regulatory oversight, inconsistent audit quality, and a lack of technical expertise among preparers and users of financial statements (Tunyi et al., 2019). These factors contribute to varying interpretations and applications of accounting standards, particularly in complex areas like IAs. Cultural influences,

such as high-power distance and low transparency in corporate governance, may further contribute to managerial discretion in financial reporting, reinforcing agency conflicts and hindering consistent IA recognition and disclosure

2.6. IAs and company size:

UKEB (2024a) noted key differences in disclosure methods depending on the size of the reporting entity. Size is measured based on market capitalisation. The largest companies contained the highest carrying amounts of RIAs (UKEB, 2024b). Companies with access to funding to acquire business combinations are often favoured by IAS 38 as the identifiability criterion is met easily (UKEB, 2024b, para 2.58). UKEB's 2024 study shows positive correlations between acquisition activities and the recognition of IAs (Lev, 2018a). The analysis displays that the focus on recognising IAs will likely increase as entities seek inorganic growth (UKEB, 2024b).

Additionally, it was found that larger companies are more likely to aggregate asset classes (UKEB, 2024b, para 2.59), typically reporting three or fewer individual RIA classes. The aggregation of RIA classes by larger companies could reflect the company's confidence and expertise in managing diverse assets under broader categories, simplifying reporting processes. This approach may also highlight the materiality of individual RIA classes to the firm, suggesting that while these assets are significant, detailed disclosure of RIAs is not deemed critical to the company's financial communication strategy (Lev, 1968). The lack of granular disclosures may limit possible competitive advantage (UKEB, 2024b).

The UKEB's (2024b) study suggests that smaller entities possess RIAs representing a substantial proportion of their TAs, averaging more when compared to larger companies. Further key differences are noted as smaller companies are more likely to have internally generated RIAs and a wider variety of RIAs than their larger counterparts (UKEB, 2024b, para 2.59). Lev and Radhakrishnan (2003) highlight how early-stage investments in IAs by smaller, presumably early growth stage companies, particularly in R&D and advertising, positively impact future revenue growth and competitive positioning. The presence of internally generated RIAs may emphasise the extent of the use of RIAs in smaller companies' business models (Al-Hamadeen et al., 2017; Wyatt & Abernethy, 2008). Business acquisitions often include IAs, which can result in acquiring entities recognising significant amounts related to IAs, even when the acquiree has not capitalised the IAs (Gelb, 2002). Revealing that these IAs existed before the acquisition but were unrecorded in the financial statements (UKEB, 2024b).

Smaller companies often face difficulties in identifying the full scope of IAs they are creating due to limited resources and experience (Bush & Chui, 2022). In such cases, they may look to larger competitors for guidance on RIA disclosures, such as asset classification methods and reporting details. Research by Cañibano et al. (2000) suggests that standardising IAs' reporting practices, particularly in classification and disclosure granularity, could benefit smaller firms by providing a framework to improve IAs' visibility and comparability across companies. Larger companies with established IAs disclosure practices thus serve as informal benchmarks, helping smaller firms adopt similar frameworks to communicate value more effectively and foster investor confidence (Bush & Chui, 2022).

2.7. Industry factors impacting IAs:

Certain industries utilise IAs more widely than others (Chen, 2018; UKEB, 2024b). Knowledge-based industries often have more IAs than other industries (Al-Hamadeen et al., 2017; Barth & Clinch, 1998; Goebel, 2019). Healthcare, technology and consumer-related companies are among the companies with the highest percentage of RIAs to TAs (UKEB, 2024b). Radonic et al. (2021) state that IA use is significant in the technology industry as companies strive to create the newest and best technology available on the market (Wyatt & Abernethy, 2008). However, there are concerns that these companies may be unable to recognise IAs due to strict capitalisation requirements currently in IAS 38 (Section 2.4) (Mehnaz et al., 2024). UKEB (2024b) noted the technology industry as holding merely 5% of the carrying amount of the total IAs recognised on the LSE. Moreover, the largest technology company (Alpawave IP Group PLC) currently listed on the LSE has no RIAs presented in its financial statements.

IAs may play a more significant role in the healthcare industry, as business models often revolve around the patenting of medical drugs (Mehnaz et al., 2024; UKEB, 2024b). For instance, the healthcare industry invests more than any other industry in producing intellectual property (Mikulic, 2024). The process in the healthcare industry follows specific documentation procedures during the development of medical advancements (Eckstein, 2004; Newsad et al., 2014). These procedures comply with the development phase requirements of internally generated RIAs outlined in IAS 38 (UKEB, 2024b, para 2.55). The processes allow for greater recognition of R&D assets. If research is conducted to allow for the same in other industries, an assumption could be that more IAs would be recognised. Prior studies have highlighted key differences between industries to emphasise improvements needed by IAS 38 (Al-Hamadeen et al., 2017; Dutz et al., 2012; UKEB, 2024b). Assessing significant differences between industries could offer guidance to the IASB while improving IAS 38 under the current pipeline project

(IASB, 2022a, 2024a). These findings underscore the importance of industry-specific considerations in recognising and disclosing IAs, highlighting areas for improvements in IAS 38 (FRC, 2019).

UKEB's 2024 study results reveal that IAs investments are made due to their importance in their respective industry. For instance, the resource-related industry has a majority of exploration-related IAs (Al-Hamadeen et al., 2017). Differences arise in how IAs are reported between industries based on their importance to a company's business model (Wyatt & Abernethy, 2008). For instance, by law (Basel III and Basel II), companies in the financial sector of the LSE and NGX are required to hold a significant amount of highly liquid assets to ensure they meet the demand of bank users' cash requirements in a 30-day period (Fadun, 2013; Le et al., 2023). Due to laws such as the aforementioned, financial sector companies may focus disclosures on highly liquid investments and place less focus on IAs disclosures. Such variations can lead to less comparable financial statements, emphasising the need for standardised disclosure practices (FRC, 2019; Lev, 2018a). These insights can inform ongoing efforts to improve IAS 38, enhancing the transparency and comparability of financial reporting.

2.8. UIAs:

As stated in Section 2.4, strict capitalisation requirements result in numerous IA-related investments being expensed. Companies often choose not to separately disclose expenditures on UIAs, as the cost of providing detailed information is perceived to outweigh the potential benefits of this information to primary users (UKEB, 2024c). As such, companies have a certain amount of discretion when disclosing expense line items on their financial statements. In line with prior studies (Mehnaz et al., 2024), certain expenses are associated with UIAs, namely donations, sponsorships or community expenses; advertising or marketing expenses (Chauvin, 1993); R&D expenses; IT, ICT, or software expenses; and entertainment or business expenses (Mehnaz et al., 2024). Table 1 below provides guidance on the specific types of expenses and UIAs class these expenses relate to.

Corporate Social Responsibility (CSR), often called donations, is prevalent worldwide. CSR has been and is used to address socio-economic and general development issues in less developed countries (Amaeshi et al., 2006). In some developing countries, like Nigeria, CSR is not an option but a compulsory expense companies must incur. The resource-related industry in Nigeria enacted legislation for mandatory CSR in 2007 (Minerals and Mining Act; 2007), 2010 (Local Content Act; 2010), and 2021 (Petroleum Industry Act; 2021). The only other industry to

follow suit was the financial industry, in which the Central Bank of Nigeria issued a Code of Corporate Governance in 2014 to aid areas such as financial inclusion and community development. Apart from these pieces of legislation, other companies are incentivised to donate, as the Companies Income Tax Act section 25 allows companies to deduct donations made to public benefit organisations in Nigeria (Company Income Tax Act; 1961). Due to the increased legislation enacted (and tax benefits) within the period of review, there is an expectation that CSR-related expenses will rise between 2013 and 2023. Due to the increased importance of development in these developing countries, CSR and donations may be separately disclosed as individual line items in expense notes.

Table 1: UIAs and their related IAs class

Expense type	Related UIAs	Reasoning
Donations, sponsorships or community expenses	Brand Names	Donations and related expenses have been classified as brand names, as they are made to the general public and can impact all stakeholders, not just customers (Mehnaz et al., 2024).
Advertising or marketing expenses	Brand Names	Advertising and related costs are classified as BN as they help in enhancing brand value and recognition (Joshi & Hanssens, 2010).
R&D, research or development expenses	Development expenditure	R&D costs are classified as capitalised development because they represent investments in future capabilities and products (Mehnaz et al., 2024).
IT, ICT, or software expenses	CS	IT, ICT, or software expenses are classified under CS as they represent technology and infrastructure investments (Mehnaz et al., 2024).
Entertainment or business expenses	Customer Relationships	Entertainment or business expenses are categorised under customer relationships, as these activities aim to improve relationships with customers or other business stakeholders (Mehnaz et al., 2024).

In addition to the above, additional expenses may relate directly to an expected IAs class. For instance, if license costs are disclosed as an expense, they relate to unrecognised licenses (without further information).

In recent conceptual framework updates, accountant conservatism – traditionally grounded in prudence (Section 2.1) - has been replaced by a focus on neutrality (IASB, 2019a; Panda & Leepsa, 2017; Zhong & Li, 2017). The reasoning was that

the two concepts may be incompatible (Mora & Walker, 2015; Wagenhofer, 2015). Accountants may be conservative in avoiding capitalising expenses related to IAs, as they may not meet the capitalisation requirements. This approach should not prevent accountants' attempts to capitalise and disclose IAs-related expenditures. Despite concerns over proprietary costs (Wyatt, 2011), aggregated IA disclosures can reduce information asymmetry while protecting sensitive details (AASB, 2022; Wyatt, 2011; Wyatt & Abernethy, 2008). For instance, a company may disclose an RIA under the class title ‘other’ under current disclosure requirements without indicating what this RIA may be. If the IASB changes disclosure requirements, companies may be mandated to disclose whether the IA is operational, investment-based or financing-based. Disclosing that the IA is operational and in the development phase can provide primary users with insights into the sensitivity of the information while presenting the financial information linked to these economic decisions. Due to the conservative approach accountants take, expensing IAs-related expenditures may increase.

2.9. Conclusion:

In summary, the reviewed literature underscores the growing prominence and complexity of IAs in contemporary financial reporting. While agency theory highlights the role of information asymmetry and stewardship in IA disclosure, value relevance theory emphasizes the importance of IAs in influencing market valuations. Existing studies reveal that IAS 38 may inadequately capture the economic substance of IAs, particularly in developing economies and across diverse industries. Moreover, disparities in IA recognition practices based on company size, sector, and jurisdiction point to a misalignment between current standards and the evolving business environment. These insights collectively shape the research questions by identifying the need to investigate not only the types and extent of RIAs and UIAs disclosed but also the contextual factors - such as exchange, size, and industry - that influence disclosure practices. This synthesis justifies a comparative, context-driven approach to exploring IA reporting on the LSE and NGX.

3. Method

3.1. Overview:

This is a quantitative study that used content analysis to collect data (Beleneşi et al., 2016; Goebel, 2019; Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021). Data was analysed using inferential (including Mann-Whitney U, Kruskal-Wallis and regression analysis testing) and descriptive statistics (Malola & Maroun, 2019).

3.2. Population:

The population consists of all companies listed on the LSE (1 137 companies) and NGX (134 companies) that were continuously listed during the period 2013 to 2023 (Malola & Maroun, 2019). Dual-listed entities were categorised into the relevant exchange based on their primary listing. The 2013 and 2023 financial years were chosen to evaluate whether there are significant differences in IAs disclosures over time (Lev, 2018a; UKEB, 2024b). Numerous researchers noted significant differences between the balances of RIAs over the past decades (Section 2.3). To update their argument, the 2023 financial year was chosen to display the most recent balances of RIAs. The 2013 financial year was chosen to ensure that there is a sufficient amount of data available for data collection while simultaneously depicting any differences over a large period of time (10 years).

Comparing the LSE and NGX allows for the analysis of IAs reporting across highly contrasting economic and regulatory landscapes. The LSE, classified as a “developed” market, adheres to stringent IFRS requirements, while the NGX, classified as a “standalone” market by the MSCI, reflects the reporting practices of a developing economy with unique regulatory challenges (MSCI, 2024). This approach enables the study to capture both the mature IAs disclosure practices on the LSE and the application of IAs standards within a developing context on the NGX. Such a comparison provides insight into the relevance of IAs' reporting standards across economic contexts and contributes to a broader understanding of IAs' disclosure beyond emerging markets alone.

3.3. Sample:

Stratified random sampling (using market capitalisation) was used (Davis, 2008; Leedy & Ormrod, 2016). The population was split into four quartiles, and 25 companies were selected from each quartile. The largest companies were labelled as the “first quartile” while the smallest were labelled as the “fourth quartile”. This ensured an adequate spread of companies to generalise differences over the population (UKEB, 2024b). A sample of 100 companies from each stock exchange

was selected. Where data could not be obtained for a sampled company, a replacement company from the same industry and quartile was selected. One hundred companies were analysed from the LSE. However, only 86 companies were analysed on the NGX[1]. The final sample used has adequate representation of industry (according to the percentage of each industry present and market capitalisation in the population) (Table 2) and company size (due to the stratification) (UKEB, 2024b).

As with Al Jifri & Citron (2009) and Oliveira et al. (2010), for research question 6 only, companies with negative equity book values (before and after adjustments) were excluded. More details are provided in Section 3.5.2.

3.4. Data Collection:

The collection instrument was developed in the form of a checklist (Appendix A) and was used to address research questions 1 to 5. (Beleneşi et al., 2016; Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021). Five LSE and five NGX companies' financial statements were read in detail to identify IAs and IAs disclosure. IAS 38's reporting requirements and the prior literature were used to develop the data collection instrument. Examples of data collected include disclosed UIAs, whether the RIAs have an indefinite or definite useful life, the class of IAs, and impairment disclosures as per IAS 36 (Appendix A). Generic information was also captured, such as entity name, industry, financial year-end and market capitalisation (Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021).

Entities were classified into seven broad industry groups based on Johannesburg Stock Exchange classifications (JSE, 2024; Mehnaz et al., 2024): consumer-related; resource-related; financial and real estate; infrastructure and utilities; healthcare; technology; and industrial. Industries were further condensed (into the groups: consumer-related, basic materials and industrials, healthcare, technology and other, and financial and real estate) to possibly identify if further groupings may identify any significant differences that were not picked up in prior data analysis. These groupings were established based on each groups expected tendency to utilise and invest into IAs. No companies were excluded in the further aggregation of companies into the condensed groupings. The number of companies analysed per industry per exchange is noted in Table 2. The unit of

[1] NGX-listed companies that did not meet the research criteria were excluded from the sample, as their financial statements for either the 2013 or 2023 financial years (or both) were unavailable. To address this limitation, the sample was expanded to include all NGX-listed companies, resulting in 86 companies with financial statements available for both the 2013 and 2023 financial years being analysed.

account will be each IAs class disclosed by an entity (Nardhamuni et al., 2022). The information was obtained directly from the audited financial statements obtained from the respective company's website and the EquityRT/IRESS database (Van Zijl & Hewlett, 2021).

Table 2: The number of companies in each industry per exchange

Industry	Number of companies on the LSE	Number of companies on the NGX
Consumer	19	29
Financial	18	32
Resource	12	13
Healthcare	13	3
Technology	13	3
Industrials	13	5
Infrastructure	12	1

Data collected by the researcher was scored to facilitate data analysis (see Appendix A) (Beleneşi et al., 2016; Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021). For instance, 'Industry' was classified as nominal data and captured from 1 to 7 (in no particular order). Company size was classified as ordinal data and will be captured from 1 to 4, with 1 being the largest 25% and 4 being the smallest 25% of companies according to market capitalisation (Leedy & Ormrod, 2016).

Information collected was then condensed in line with Section 3.5.1. Further data collected included share price data for each company four months after the financial year end.

3.5. Data Analysis:

3.5.1. Research question 1 to 5:

SPSS was used to conduct descriptive and inferential statistical analyses. Descriptive statistics (mode, median, mean, range) and graphical representations were used to provide a summary and comprehensive understanding of the dataset as a whole (Leedy & Ormrod, 2016) and answer research questions 1-3.

Inferential statistics were used to determine if there were statistically significant differences in the use and disclosure of IAs answering research questions 4 and 5 (Leedy & Ormrod, 2016). To determine the appropriate inferential tests, the normality of the data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests (Malola & Maroun, 2019). The untabulated results from the Kolmogorov-

Smirnov and Shapiro-Wilk tests indicated that the data was not normally distributed. As such, non-parametric Kruskal-Wallis (where more than two independent variables) and Mann-Whitney U tests (where there are only two independent variables) were performed as per Table 3 (Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021). Due to the large sample selected (see Section 3.3), a moderate significance level may be chosen. As the research is of an exploratory nature, the researcher has chosen a 5% significance level to identify significant differences within the data set. This is in line with other exploratory research papers within the accounting research field (Malola & Maroun, 2019).

Table 3: Statistical tests

Independent variable	Test variable/s	Relationship tested | Research question	Test
Listing	Percentage of IAs over total assets. Useful life by class of IAs. Carrying amount of IAs. Percentage of additions (other than from business combinations) to the closing balance of each IAs class of each company. Percentage of additions through business combinations to TAs.	To determine whether the test variables differ between developed and developing economies | Research question 5a	Mann-Whitney U
Size		To determine whether the test variables differ depending on size | Research question 5b	Kruskal-Wallis
Industry		To determine whether the test variables differ depending on the industry | Research question 5c	Kruskal-Wallis
Year		To determine whether the test variables differ depending on the year | Research question 5d	Mann-Whitney U

3.5.2. Research question 6:

Regression analysis was used to determine the value relevance of IAs and answer research question 6 (Mehnaz et al., 2024; Oliveira et al., 2010). Companies with negative equity book values or negative equity book values after adjustments (see Models 2 – 4) were excluded from the data (Al Jifri & Citron, 2009; Oliveira et al., 2010). The financial sector was also excluded in line with prior research.

Oliveira et al. (2010)'s Models 1 to 3 were used in the analysis and are as follows:

$$\textbf{Model 1: } \mathbf{P_{it}} = \boldsymbol{\alpha_0} + \boldsymbol{\alpha_1 BV_{it}} + \boldsymbol{\alpha_2 E_{it}} + \boldsymbol{\varepsilon_{it}}$$

Where:

P_{it} = the stock price of company i four months after the end of year t (to reflect the market's reaction to the announcement of the financial statements and financial information (FCA, 2014, DTR 4.1.3)).

BV_{it} = the book value of equity per share of company i at time t.

E_{it} = the total comprehensive income per share of company i at time t.

ε_{it} = residuals

Consistent with prior research, the book value of equity is separated from the value of RIAs – giving rise to distinct components such as identified IAs and goodwill (Dahmash et al., 2009; Mehnaz et al., 2024; Oliveira et al., 2010).

$$\textbf{Model 2: } \mathbf{P_{it}} = \boldsymbol{b_0} + \boldsymbol{b_1}(\boldsymbol{BV - IA})_{it} + \boldsymbol{b_2 E_{it}} + \boldsymbol{b_3 IIA_{it}} + \boldsymbol{b_4 G_{it}} + \boldsymbol{n_{it}}$$

Where:

$(BV - IA)_{it}$ = the book value of equity less the carrying amount of RIAs per share of company i at time t.

IIA_{it} = the identifiable IAs per share recognised in the SOFP of company i at time t.

G_{it} = the goodwill per share recognised in the SOFP of company i at time t.

n_{it} = residuals.

Model 3 expands on Model 2, further disassembling the value of RIAs into the components of trademarks and other rights, development expenditure and other RIAs (Oliveira et al., 2010).

$$\textbf{Model 3: } \mathbf{P_{it}} = \boldsymbol{c_0} + \boldsymbol{b_1}(\boldsymbol{BV - IA})_{it} + \boldsymbol{c_2 E_{it}} + \boldsymbol{c_3 G_{it}} + \boldsymbol{c_4 IP_{it}} + \boldsymbol{c_5 RD_{it}} + \boldsymbol{c_6 OIA_{it}} + \boldsymbol{z_{it}}$$

Where:

IP_{it} = the intellectual property and other rights (trademarks and other rights (Section 2.4)) recognised on the SOFP of company i at time t.

RD_{it} = the development expenditures recognised on the SOFP of company t at time t.

OIA_{it} = other IAs per share (excluding those disassembled above) of company i at time t.

z_{it} = residuals.

Models 1 to 3 had a total of 321 observations. One hundred and sixty-five on the LSE (86 in 2013 and 79 in 2023) and 156 on the NGX (82 in 2013 and 74 in 2023) due to negative book values of equity/book value of equity less RIAs.

Additionally, model 2 was adjusted to include the effects of advertising due to the perception that advertising and marketing costs are value relevant (Chauvin, 1993; Oliveira et al., 2010; Shah et al., 2009). This gave rise to the testing under Model 4.

$$\textbf{Model 4: } \mathrm{P}_{it} = \boldsymbol{d_0} + \boldsymbol{d_1}(\boldsymbol{BV - IA + AD})_{it} + \boldsymbol{d_2 E_{it}} + \boldsymbol{d_3 IIA_{it}} + \boldsymbol{d_4 G_{it}} + \boldsymbol{d_5 AD_{it}} + \boldsymbol{j_{it}}$$

Where:
$(BV - IA + AD)_{it}$ = the book value of equity less the carrying amount of RIAs with advertising/marketing expenses added back per share of company i at time t.
AD_{it} = advertising/marketing expenses disclosed in any location of the financial statements per share of company i at time t.
j_{it} = residuals.

Model 4 had a total of 327 observations. One hundred and sixty-seven on the LSE (86 in 2013 and 81 in 2023) and 160 on the NGX (82 in 2013 and 78 in 2023) due to negative book value of equity less RIAs plus advertising/marketing costs.

3.6. Ethics:

The study uses publicly available data. Consequently, per the Wits non-medical Human Research Ethics Committee requirements, an ethics waiver was obtained.

3.7. Validity, reliability, assumptions and limitations:

The assumptions for the Mann-Whitney U and Kruskal Wallis tests were met. The tests (Table 3) require the following assumptions to be met: all dependent variables were measured at a continuous level. The dependent variables were all continuous (Appendix A). The number of groups present in the independent variables was determined in the data collection process (see Section 3.4). These independent variables were all categorical variables (Urdan, 2022). The Mann-Whitney U tests were used to test independent variables with only 2 categorical groups (Subheading 3.5.1).

The Kruskal-Wallis test was used to test independent variables with more than 2 categorical groups. Assumption 3, which refers to the independence of observations, is satisfied as dual-listed entities were categorised based on their primary listing (see Subheading 3.2). For cumulative testing (for instance, total

RIAs over TAs), data was condensed into single line items, meeting the independence assumption. Lastly, all observations were independent, meaning that the information gathered from one listed entity's annual reports had no bearing on the information gathered from another.

To ensure the validity and reliability of our regression analysis, we assessed all key assumptions. Linearity was confirmed through scatterplots and residual diagnostics, verifying an appropriate relationship between earnings/book value of equity and the share prices. Autocorrelation was tested using the Durbin-Watson statistic, showing no significant serial correlation in the residuals. The researcher examined heteroscedasticity through residual plots and formal tests, applying robust standard errors where necessary to account for any variance inconsistencies. The raw data were found to be normally distributed, supporting the reliability of our regression estimates. Outliers were carefully evaluated, and the financial sector (which had a low carrying amount of RIAs and high share prices) was removed to prevent undue influence on the model.

IAs were grouped and recoded into aggregated variables to mitigate multicollinearity issues within the regression analysis, combining related subcategories to simplify the analysis (Farrar & Glauber, 1967). For instance, IA classes (Section 2.4) monetary values were combined based on models 1-4. By reducing the number of independent variables and ensuring that the remaining IA classes capture distinct aspects of the data, this approach minimised collinearity and enhanced the interpretability of the regression results (Mason & Perreault Jr, 1991). Simplifying variables in this manner addressed potential statistical complications and aligned with theoretical considerations, ensuring that the derived models remain robust and practically meaningful. Collectively, these diagnostic checks confirm that the assumptions of regression analysis were adequately met, ensuring the robustness of our findings.

Pilot testing of the content analysis was performed to increase the validity of the study by ensuring that practical issues identified in the data collection process were identified and resolved upfront (Davis, 2008; Leedy & Ormrod, 2016). Furthermore, only audited financial statements were used (Nardhamuni et al., 2022; Van Zijl & Hewlett, 2021). These results were obtained directly from the company’s website. The same researcher was used to capture the data to eliminate the risk of intercoder variability (Van Zijl & Hewlett, 2021). The two supervisors reviewed a sample of the data collected.

This study on the use and disclosure of IAs is subject to the following assumptions:

- It is assumed that the financial statements analysed in the study accurately represent the financial position and performance of the entities. Any inaccuracies or misrepresentations could impact the reliability of the data and subsequent analysis (Eckstein, 2004; UKEB, 2024b).
- The study assumes that auditors provide unbiased and objective opinions on the financial statements, including the treatment of IAs (UKEB, 2024b).

4. Findings

The findings begin with an overall discussion of the key results from each section. This is followed by a discussion of the findings on the types and values of RIAs reported by companies listed on the LSE and the NGX (RQ1). Sections 4.2 (RQ2) and 4.3 (RQ3) discuss the types of UIAs disclosed by companies and identify the types of companies that disclose UIAs. Section 4.4 (RQ 4) highlights the statistical differences identified during the data analysis when grouped by categories per research question 4. This is followed by Section 4.5 (RQ 5), which depicts results from the inferential tests on the MTB value ratio. Finally, Section 4.6 (RQ 6) examines the value relevance of IAs.

Overall, LSE companies reported more instances of RIAs and there was a good spread of IAs among the different RIA categories compared to NGX companies (Section 4.1). NGX companies reported, on average, half as many RIAs compared to LSE companies, with CS (61%) and goodwill (15%) RIAs being the most common IAs on the NGX (Section 4.1). In addition, there was little change in the number of LSE companies disclosing RIAs from 2013 to 2023 (86% and 87%, respectively). Unexpected in the current knowledge-based economy, the percentage of NGX companies disclosing RIAs decreased from 87% to 77% from 2013 to 2023, respectively.

Companies listed on the LSE appear to be more compliance-focused, reporting less voluntary information, such as UIAs, than those listed on the NGX. LSE-listed companies disclosed research expenses most prevalently (69 instances), while NGX-listed companies reported only 4 instances of research expenses. Conversely, NGX-listed companies provided a more thorough disclosure of advertising and donation costs (Section 4.2).

NGX-listed companies exhibited more flexible voluntary reporting practices, leading to a higher disclosure rate of UIAs than LSE-listed firms. The largest companies on the NGX reported the most instances of UIAs disclosed in financial statements, indicating that company size impacts reporting on this exchange. Conversely, the LSE's smallest companies disclosed the highest proportion of UIAs than all other LSE-listed companies. This suggests that smaller companies may have materiality thresholds that encourage more detailed reporting (see Section 4.3). In addition, healthcare accounted for 26% of disclosed UIA instances on the LSE, while on the NGX, the consumer and financial sectors comprised 70% of disclosed UIAs. These variations underscore the influence of sector-specific factors on UIA reporting practices.

4.1. The types and values of RIAs used and disclosed by LSE- and NGX-listed companies:

4.1.1. The types of RIAs used and disclosed:

A total of 788 instances of RIA classes were captured (569 on the LSE and 219 on the NGX). All RIA classes were measured under the cost model. On the LSE, 68% of RIA instances related to assets with finite useful lives, and 28% related to assets with indefinite lives, consisting mainly of goodwill, trademarks, and brand names (Table 4). Approximately 3% of RIA classes mixed finite and infinite IAs in the same category of IAs, and 1% of these instances did not directly or indirectly state which useful life was applied.

On the NGX, the majority (76%) of RIA classes were disclosed as having finite useful lives. Twenty-two percent of RIA instances related to RIAs with indefinite useful lives mainly consisted of goodwill and development expenditure (an IA class (Section 2.4)). There were no RIA classes that mixed finite and indefinite RIAs in the same category, and only 2% of RIA classes did not state directly or indirectly which useful life was applied. Similar to the LSE, no RIAs were measured using the fair value model. The finding that neither companies listed on a developed nor standalone market utilise fair value for IA measurement is significant when juxtaposed against the increasing use of fair value by the IASB (IASB, 2024c; UKEB, 2024a).

These findings emphasise the absence of the revaluation model in measuring RIAs. The finding also suggests that the current criteria for applying the revaluation model to RIAs may be overly restrictive (IASB, 2024b, para 8; 2024c). For instance, the fair value model's requirement for an active market may be unrealistic due to the unique nature of each IA. Considering the growing emphasis on fair value models within the Conceptual Framework (2019) and among UK stakeholders (UKEB, 2024a), standard-setters may need to reconsider these requirements to improve the relevance of IA information provided to users of financial statements.

At present, measurement under the cost model is reliable but conservative. Fair value measurement may reflect the underlying economic value of RIAs more effectively by incorporating market-based valuations (UKEB, 2024a). To balance reliability with relevance, standard-setters could consider relaxing the active market requirement for the revaluation model (IASB, 2024c). While relaxing these restrictions could encourage fair value measurement, caution is necessary given the inherent challenges and susceptibility to manipulation associated with valuing

RIAs. IFRS 13, in substance, suggests that it is possible to determine the fair value for most, if not all, assets. The primary difference is the extent to which fair values are based on quoted, observable inputs or unobservable inputs. For example, goodwill impairment requires the determination of the fair value of complex assets or groups of assets. Under these circumstances, it is questionable whether the restrictive nature of IAS 38, with regard to the revaluation model, is still appropriate (Mehnaz et al., 2024; Oliveira et al., 2010). Alternative approaches, such as hybrid models combining historical cost with periodic fair value updates, may provide a middle ground. In Nigeria, alternative approaches such as proxy benchmarks or hybrid models could address fair valuation difficulties where IAs may be less common as opposed to the UK (Negash, 2004). These changes would also align with the international trend toward fair value measurement, providing more relevant information and improving primary users' decision-making ability (IASB, 2024c; UKEB, 2024a). This method could enhance transparency and comparability, addressing primary users' concerns about the conservative nature of cost-based measurements while maintaining reliability where market-based valuations are not feasible (UKEB, 2024a).

The number of instances of RIAs has increased from 260 in 2013 to 309 in 2023 on the LSE (Table 4). Goodwill was the most common IAs on the LSE over the period under review, while CS was the most common IA disclosed on the NGX. Although the number of goodwill occurrences was common, the results of the descriptive statistics relating to the carrying amount portray pertinent findings (Section 4.1.2). The increase in the number of occurrences of IAs may suggest that the requirements of IAS 38 are being applied to a broader range of IAs as companies change their methods of value creation (Wyatt, 2011). The prevalence of the "other" RIA class highlights terminology variability among LSE-listed companies (Table 4). LSE-listed companies used the “other” category for numerous reasons: (1) aggregated RIAs acquired through business combinations, (2) IAs specific to their operations, and (3) IAs that may not be individually material to the business entity (see Section 4.4.3). This may hinder the comparability of information of companies listed in the UK (UKEB, 2024a, para 2.32). While there have been increases in the number of IA classes over time, there have been no statistically significant differences in the carrying amount of IAs recognised in financial statements over time (Section 4.4.4).

LSE-listed companies disclosed various unique, company-specific RIAs, some explicitly categorised and others more vaguely described. For instance, a professional football company recognised player contracts as RIAs, and a healthcare company disclosed ‘porcine genetics technology’ as an RIA.

Approximately 13% of companies provided no information about the 'other' class of IAs. Such broad and vague classifications may indicate that the entity does not want to disclose entity-specific information, which could result in proprietary costs if too much detail is disclosed (Wyatt, 2011). This finding could also be due to these figures being immaterial (quantitatively and qualitatively), which would lengthen financial statements with no valid reason (see Section 4.4.2). While the objective of IAS 38 is to provide useful information on IAs, proprietary information may not be disclosed in the manner prescribed due to its sensitive nature. The 'other' class of RIAs is discussed in more detail under Section 4.4.2.

Table 4: RIAs breakdown

	LSE			**NGX**		
	2013	**2023**	**Difference**	**2013**	**2023**	**Difference**
Description	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change
RIAs class breakdown						
Goodwill	**62 | 24%**	**66 | 21%**	4 | 6%	17 | 16%	17 | 15%	0 | 0%
General/Other/Aggregated	50 | 19%	55 | 18%	5 | 10%	9 | 9%	5 | 4%	-4 | -44%
Brand Names	14 | 5%	20 | 6%	6 | 43%	0 | 0%	1 | 1%	1 | 100%
Computer Software	39 | 15%	57 | 18%	18 | 46%	**64 | 61%**	**69 | 61%**	5 | 8%
Customer Relationships	27 | 10%	37 | 12%	10 | 37%	1 | 1%	2 | 2%	1 | 100%
Development Expenditure	25 | 10%	33 | 11%	8 | 32%	2 | 2%	4 | 4%	2 | 100%
Exploration Assets	10 | 4%	10 | 3%	0 | 0%	5 | 5%	7 | 6%	2 | 40%
Licenses and Franchises	12 | 5%	14 | 5%	2 | 17%	4 | 4%	3 | 3%	-1 | -25%
Trademarks and Other Rights	21 | 8%	17 | 6%	-4 | -19%	3 | 3%	6 | 5%	3 | 100%
Total	260 |100%	309 | 100%	49 | 19%	105 |100%	114|100%	9 | 9%

Standard-setting bodies could consider standardising RIA classifications within category titles such as those planned to be enacted under IFRS 18 (Deloitte, 2024). This approach may provide useful information, possibly reduce agency costs and should be explored by the IASB. Under these classifications, RIAs may be classified as operational, investment-based, or finance-based. Operational RIAs may be RIAs that are used to support the entity's core operations and contribute directly to the generation of operating revenues or the enhancement of operational efficiency. For example, a retail company's use of self-developed software that provides customers with tailored suggestions for buying products enhances their operations via increased sales. This software could be classified

as an operational RIA. Investment-based RIAs would consider RIAs such as goodwill and any RIAs acquired through business combinations. Investment-based RIAs would be those RIAs that contribute to future economic benefits of the company that would be independent from the company's operational activities. Financing-based RIAs may be unlikely and have been included in the suggestion due to consistency. Financing-based RIAs could apply if a company issues debt tied to intellectual property, such as future royalties. This might allow companies to disclose company-specific RIAs more comparatively while minimising potential proprietary and agency costs (AASB, 2022; IASB, 2024c).

On the NGX, the total instances of RIAs have increased from 105 in 2013 to 114 in 2023 (Table 4). Similar to LSE-listed companies, more RIA instances paired with fewer companies disclosing RIAs (Table 5) were due to some companies recognising multiple CS RIAs, accounting for 61% of the total instances on the NGX. CS was the most common IAs recognised and disclosed on the NGX, the majority of NGX-listed companies only having CS on their IAs disclosure note. The

Table 5: Company disclosures of IAs:

	LSE	NGX	Total
Number of companies	100	86	186
IAs disclosure breakdown			
2013			
IAs type	Number of companies | Percentage of exchange total		Number of companies
Recognised	84 | 84%	68 | 79%	152
Unrecognised	16 | 16%	54 | 63%	70
Both [2]	14 | 14%	43 | 50%	57
None	14 | 14%	7 | 8%	21
Total	100 | 100%	86 | 100%	186
2023			
IAs type	Number of companies | Percentage of exchange total		Number of companies
Recognised	84 | 84%	66 | 77%	150
Unrecognised	26 | 26%[3]	74 | 86%	100
Both	22 | 22%	60 | 70%	82
None	12 | 12%	6 | 7%	18
Total	100 | 100%	86 | 100%	186

[2] "Both" refers to companies that disclosed both RIAs and UIAs and were included in these respective figures. This is why the total is not purely the sum of the figures in the table.
[3] Refer to Sections 4.2 and 4.3.

NGX had an average of 0.94 CS IAs per company in 2013 and 1.04 CS IAs in 2023 (0.39 and 0.59 in 2013 and 2023, respectively, on the LSE). Eight companies stopped disclosing CS during the review period. This finding may suggest that companies may opt for leasing off-the-shelf packages instead of purchasing or developing CS in-house. For the remaining companies, the commonality of CS may be due to the ease in capitalising costs related to acquiring software licenses. CS packages are easy to measure and easily meet the criteria of being separately identifiable, allowing them to be capitalised (Eckstein, 2004). Accordingly, companies capitalised these costs with little difficulty in 2013 and 2023 when applicable.

In the current knowledge-based economy (Oliveira et al., 2010), companies increasingly rely on advanced CS systems not only for daily operations but also for strategic initiatives like data analytics, cybersecurity, and customer engagement (EY, 2020). Looking to the future, the IASB may need to consider the policy implications surrounding emerging technologies, particularly Artificial Intelligence (AI). AI investments are likely to increase as companies develop or acquire AI tools for predictive analytics, customer service, and operational automation (Berdiyeva et al., 2021). Specifically, because AI has the ability to “learn”, it may be able to enhance its value as it is used and develops. This may make it sufficiently unique to warrant specific treatment within IAS 38 (EY, 2020).

During data capturing, it was noted that one NGX company mistakenly expensed costs related to CS and subsequently corrected the treatment retrospectively (Exhibit 1). This example may indicate that additional training and illustrative examples are required to assist these economies in classifying and disclosing RIAs. The IASB should consider the impact of appropriate training and qualified accountants on IAs recognition. Any amendments to IAS 38 should be accompanied by relevant training videos and illustrative examples ranging from simple to complex. The IASB should also consider creating a parallel guidance framework tailored to emerging markets. This could include simplified disclosure templates, examples of voluntary UIA disclosures that reflect commonly expensed items in developing contexts (e.g., CSR donations), and translated or regionalised support material. Providing this guidance may allow preparers of financial information to recognise all IAs applicable to their respective company.

Exhibit 1:

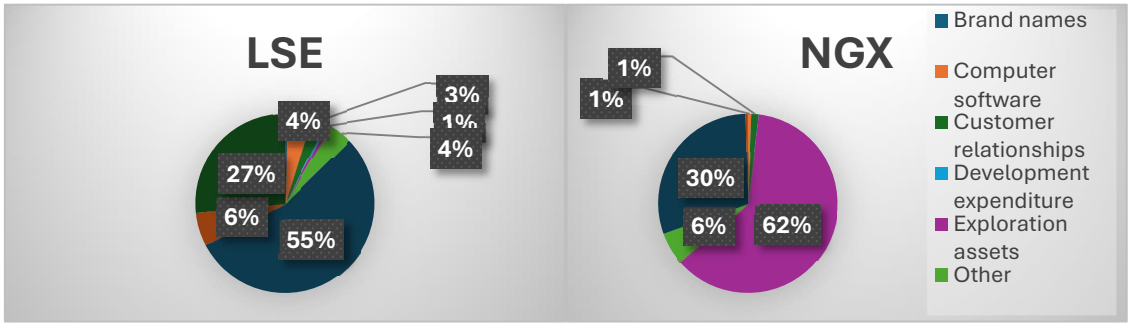
> The amounts recognized by the company as intangible assets represent cost of computer softwares with finite useful life acquired in years 2008, 2010 and 2011. The softwares have since acquisition been put into use but the costs were then expensed hence the reclassification from retained earnings. Amortisation which commenced during the year took into consideration earlier years charges which were recognized in retained earnings. While amortization charges in the subsidiary company's accounts which were lumped together with depreciation on property, plant and equipment in previous years are reclassified. The current period charge will occur over the remaining period of the estimated economic useful life of the softwares.

In conclusion, while NGX-listed companies can partially leverage IAS 38 for RIAs related to resources, business combinations, and CS, there remain gaps in expertise for accounting and reporting more complex IAs that may lead to agency costs (Al-Hamadeen et al., 2017; Tunyi et al., 2019). Current illustrative examples under IAS 38 primarily address issues such as determining the useful lives of IAs, which, while relevant, are insufficient to address the complexities associated with modern IAs. These examples, introduced when IAS 38 was published in 1998, have remained largely unchanged. Consequently, they may be inadequate for the types of IAs associated with current business practices and models.

4.1.2. The value of RIAs:

Notably, on average, RIAs represented approximately 25% of the value of LSE-listed companies' TAs, while IAs represented just 2.5% of the TAs on the NGX. Goodwill was the most significant IAs class, accounting for 55% of the total RIAs carrying amount in the LSE-listed companies (48% in 2023 and 69% in 2013) (Figure 1). The substantial carrying amount of goodwill signals its importance to contemporary business models as evidenced by 47% of companies disclosing it separately on their SOFP (Boennen & Glaum, 2014). On the NGX, exploration assets were dominant, accounting for 62% of the carrying amount of RIAs. The high carrying amount of exploration assets depicts the dependence of the Nigerian economy on the natural resources present in the country (Shobowale, 2022).

Figure 1: The relative carrying amounts of each RIA class on each exchange

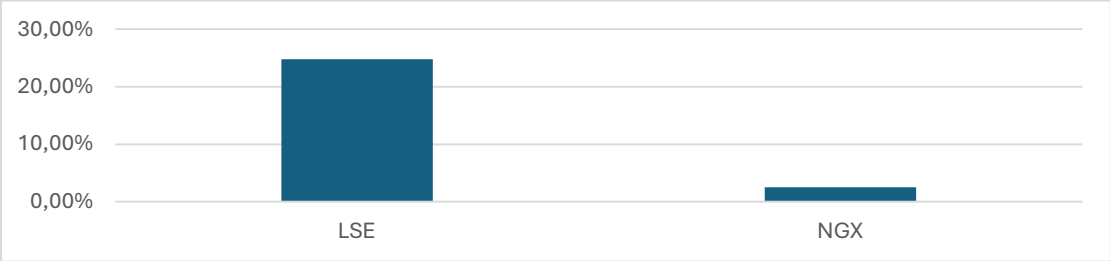


On the LSE, 23% of the goodwill items recognised were impaired in either 2013 or 2023. Whereas 12% of all other RIAs were impaired. Impairment losses represented, on average, 37% of the opening carrying amount of goodwill in 2023 (18% in 2013), with 3 instances of more than 80% of the opening balance of goodwill. Goodwill accounting remains contentious due to its indefinite useful life and reliance on subjective impairment tests. This finding may provide evidence that the IASB's tentative decision not to re-introduce goodwill amortisation is undesirable (IASB, 2019b).

At present, impairment indicates irregular consumption of the economic benefits expected from goodwill (Section 2.4). Primary users ordinarily have a more negative perception of amounts classified under impairment compared to amounts classified under amortisation. This negative connotation associated with the word "impairment" compared to "amortisation" may provide less useful information to primary users, who may react negatively to any impairment disclosed in financial statements. For instance, creditors may view a recent impairment as a negative indicator of a subsidiary and deny financing opportunities, whereas yearly amortisation amounts may not result in this challenge. The information provided under the heading of impairment is useful, especially in the case of goodwill, which may indicate that a subsidiary's assets may be impaired. Amortisation may provide a more systematic approach to reflect the consumption of economic benefits. Amortisation and yearly impairment testing may be the middle ground to measure goodwill. This approach could systematically reduce the balance of goodwill with any impairment, providing useful information about a subsidiaries' assets that may reduce information asymmetry and potential agency costs. Although there are many concerns regarding the estimation of goodwill amortisation, this recommendation should be considered in addition to arguments made by the IASB to potentially reintroduce the amortisation of goodwill (IASB, 2019b).

The average RIAs to TAs ratio on the NGX was a tenth of the same ratio on the LSE (2.48%/24.81%) (Figure 2). This may indicate (a) that developing economies may not have the same access to the variety of RIAs that developed economies have, or (b) that a lack of appropriately skilled and qualified technical accountants leads to some IAs capable of being recognised going unrecognised (Ondari-Okemwa, 2011) or a combination of (a) and (b).

Figure 2: The average RIAs to TAs on each exchange



The most significant RIA class on the NGX was exploration assets, whose total carrying amount individually represented 62% (56% in 2023 and 81% in 2013) (followed by goodwill with 30%) of the total carrying amount of all RIAs (Figure 1). Accounting for exploration assets is specific (Section 2.4) and not available to other intangible investments. Exploration assets are internally generated and can still be recognised as IAs, this is not the case for other internally generated IAs. For example, investments that accompany CS – that are proven to be useful to an entity – may not be recognised in a company's financial statements due to the internally generated nature (Eckstein, 2004). This contrasts the recognition and measurement between RIA classes. A suggestion from these findings may be that the IASB should reconsider capitalisation requirements for specific assets to assist companies in capturing a more realistic value of their assets. For instance, the IASB could reconsider capitalising costs related to customer loyalty programs under IAS 38. In the retail and airline sectors, loyalty programs are key drivers of customer retention and long-term revenue growth. Companies often incur significant costs in developing loyalty systems, integrating them with e-commerce platforms, and marketing them to attract participants. Despite their potential to generate long-term economic benefits, many of these costs are expensed under IAS 38. Allowing such costs to be capitalised and amortised could better reflect the program's contribution to future cash flows and improve the alignment of accounting with economic reality.

The increasing amount of exploration assets and goodwill may be indicative of business combinations occurring frequently in Nigeria to enable companies to access the natural resources present in the country (Shobowale, 2022). This will be discussed in more detail in Section 4.4.3 below.

4.2. The types of UIAs disclosed by LSE- and NGX-listed companies:

The NGX had the majority of UIAs in the sample, with the most common expenses incurred but not capitalised being advertising costs (Table 6). There were 41 and 66 instances of advertising costs identified in 2013 and 2023, respectively, on the NGX (Table 6). There was a decrease in the percentage contribution of advertising

to UIAs between 2013 and 2023, mainly due to donations being more prevalent, increasing by 40 instances in 2023 compared to 2013 (Table 6). The number of instances of advertising has increased due to many companies disclosing marketing-related costs per segment/division for budgeting purposes (PWC, 2023). In the LSE, marketing costs equated to 20% and 25% of the total instances of UIAs analysed in 2013 and 2023, respectively (Table 6). Advertising costs may be prevalent due to the size of these amounts, often being quantitatively material. This frequent disclosure of marketing-related costs could be driven by the need for transparency regarding brand-building expenditures (PWC, 2023), which, while not capitalised as IAs, are critical to maintaining competitive market positions and driving revenue growth across various sectors (Joshi & Hanssens, 2010).

Table 6: UIAs expense breakdown

	LSE			**NGX**		
	2013	**2023**	**Difference**	**2013**	**2023**	**Difference**
Description	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change
Adverting expenses	12 | 20%	17 | 25%	5 | 42%	**41 | 45%**	**66 | 29%**	25 | 61%
Donations	1 | 2%	1 | 1%	0 | 0%	14 | 15%	54 | 24%	40 | 285%
Development expenditure	**38 | 62%**	**31 | 46%**	-7 | -18%	1 | 1%	3 | 1%	2 | 200%
Entertainment or business expenses	2 | 3%	1 | 1%	-1 | -50%	12 | 13%	37 | 16%	25 | 208%
Other	6 | 10%	7 | 10%	1 | 17%	12 | 13%	26 | 12%	14 | 116%
Software expenses	2 | 3%	11 | 16%	9 | 450%	11 | 12%	39 | 17%	28 | 255%
Total	61 |100%	68 |100%	7 | 11%	91 | 100%	225 | 100%	134 | 147%

An increasing amount of donations was noted on the NGX. Donations represented 15% of the instances of UIAs in 2013, compared to approximately a quarter of all instances in 2023 (24% (Table 6)). The costs are common due to mandatory CSR contributions being enacted between the period of review (the Petroleum Industry Act in 2021 and the Code of Corporate Governance in 2014) and the related tax benefits for companies in Nigeria (Section 2.8). Consequently, the CSR and tax benefits enacted have resulted in companies (1) donating more often, (2) donating larger amounts, and (3) disclosing this information more frequently.

LSE-listed companies disclosed 61 and 68 instances of UIAs in 2013 and 2023, respectively, mainly due to advertising and software expenses. Development expenditures, representing research costs, constituted 62% and 46% of total UIA instances on the LSE in 2013 and 2023, respectively. The decrease may reflect

greater scrutiny of research activities. This could have led to more selective investments in development projects, as these investments (1) may not be successful and (2) may not be recognised (UKEB, 2024b).

This divergence in expenditure types between the NGX and LSE reflects not only differing regulatory environments but also contrasting economic and strategic priorities (Al-Hamadeen et al., 2017; Radonic et al., 2021). While NGX-listed companies appear to prioritise CSR-driven activities and brand building, LSE-listed entities may be shifting toward digital transformation and maintenance, as seen in the rise in software expenses and substantial spending on development. Software expenses rose significantly in both markets, with a 16% share of UIA instances on the LSE (3% in 2013) and 17% on the NGX in 2023 (12% in 2013). This trend mirrors the increasing reliance on digital tools and platforms across industries.

Table 7 below illustrates the UIA classes related to the expenses identified. On the LSE, the classification of UIAs has evolved significantly between 2013 and 2023, reflecting shifts in strategic priorities and economic focus. Table 7 illustrates these changes, highlighting a decline in brand names and a notable increase in computer software, indicative of growing digital transformation efforts.

Table 7: UIA classes

	LSE			NGX		
UIAs	**2013**	**2023**	**Difference**	**2013**	**2023**	**Difference**
Description	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change	Number of instances in the year | Percentage of year total		Change in the number of instances | Percentage change
Brand names	14 | 23%	18 | 26%	4 | 29%	**56 | 62%**	**120 | 53%**	64 | 114%
Computer software	2 | 3%	11 | 16%	9 | 450%	10 | 11%	39 | 17%	29 | 290%
Customer relationships	2 | 3%	1 | 2%	-1 | -50%	12 | 13%	38 | 17%	26 | 216%
Development expenditure	**38 | 62%**	**31 | 46%**	-7 | -18%	1 | 1%	3 | 1%	2 | 200%
Exploration assets	4 | 7%	3 | 4%	-1 | -25%	1 | 1%	1 | 0%	0 | 0%
Other	1 | 2%	2 | 3%	1 | 100%	3 | 3%	6 | 3%	3 | 100%
Licenses and franchises	0 | 0%	1 | 2%	1 | 100%	8 | 9%	17 | 8%	9 | 113%
Trademarks and other rights	0 | 0%	1 | 2%	1 | 100%	0 | 0%	1 | 0%	1 | 100%
Total	61 | 100%	68 | 100%	7 | 11%	91 | 100%	225 | 100%	134 | 147%

The analysis of UIAs on the NGX highlights a notable increase in the disclosure of brand names and customer relationships between 2013 and 2023. Customer

relationships grew substantially, increasing from 12 to 38 instances over the same period. This trend reflects an evolving focus on IAs directly contributing to customer loyalty and revenue generation as companies may be more capable now to measure and monetise customer loyalty. Companies have reliable systems to gather data and measure customer loyalty through analytical measures. Information can be accessed by companies through loyalty programmes (such as club cards) or social media engagement. Moreover, the growing prevalence of licenses and franchises, which increased from 8 to 17 instances, suggests an expansion of operational models that rely on franchising agreements and licensing arrangements. The increase in franchising agreements may be due to increased economic growth and development within Nigeria, with movement away from smaller local companies to larger multinationals that rely on franchising agreements. This shift underscores the strategic emphasis on leveraging IAs to sustain and enhance business operations (Radonic et al., 2021).

The lack of detailed disclosure around UIAs may suggest that accountants are cautious (KPMG, 2021), opting not to capitalise costs that, on the surface, do not meet the recognition criteria. This conservative approach highlights the challenges in applying IAS 38 in situations where the economic benefits of IAs, such as future cash flows, are uncertain or difficult to quantify. Consequently, this may lead to a systematic underreporting of IAs, increasing agency costs and limiting transparency in financial statements.

While IAs-related expenditures, such as advertising and donations, may maintain competitive positioning, these expenses are often not disclosed. Even if certain expenditures, such as marketing, licensing, and CSR-related costs, are not capitalised or quantitatively material, they may be qualitatively material because they signal strategic investments in brand development and long-term corporate growth (Joshi & Hanssens, 2010). These disclosures provide users of financial statements with insights into the company's focus on building intangible value through reputation and customer relationships, which are increasingly crucial in modern business contexts (Joshi & Hanssens, 2010; UKEB, 2024a). Given this importance, the IASB should consider mandatory reporting requirements for specific expenditures that contribute to UIAs to enhance the relevance and comparability of financial information for primary users (PWC, 2023; UKEB, 2024a).

The IASB could enhance the applicability of IAS 38 by providing focused training for accountants on its revised guidelines. This training would clarify the revised criteria for capitalisation, emphasising circumstances where uncertainty around

future economic benefits should not automatically lead to expensing IAs-related expenditure. Enhanced training could foster a more refined application of IAS 38, encouraging consistent and transparent disclosure practices even in complex cases involving IAs (IASB, 2024c; KPMG, 2021). This initiative could reduce the conservative tendency to under-recognise RIAs, ultimately leading to reduced agency costs by financial statements that may more accurately reflect the value of IAs-intensive companies, thereby improving comparability and investor insights into long-term value creation (UKEB, 2024a).

4.3. The characteristics (listing, size and industry) of companies disclosing UIAs:

The following section explores the characteristics of companies disclosing UIAs on the LSE and NGX, highlighting differences in disclosure practices between the two exchanges. It examines the types of UIAs disclosed as well as the industries and the size of companies reporting UIAs.

The LSE contained 129 instances of UIAs in total (2013 and 2023), of which approximately half (53% (69/129)) were related to development costs. On the NGX, there were 316 instances of UIAs, with only 4 instances relating to development costs. Only one LSE-listed company disclosed why these expenditures were not capitalised, briefly mentioning that the generation of future economic benefits was uncertain (Exhibit 2). LSE-listed companies may be more compliance-orientated (UKEB, 2024a), disclosing less voluntary information compared to NGX-listed companies as displayed in Table 6 (Adelopo, 2011; Goebel, 2019). LSE-listed companies would not necessarily use resources to measure and disclose information not required by law and regulation. Whereas NGX-listed companies may disclose more voluntary information due to a multitude of reasons such as increasing investor confidence, competitor differentiation, regulatory anticipation, primary user relations and reducing agency costs. The disclosure of these expenses may be useful to investors in making decisions about the reporting entity (UKEB, 2024a, para 2.67). A potential recommendation from this finding, as previously mentioned in Section 4.2, could be that the IASB should mandate disclosures for IAs-related expenditures as opposed to making them voluntary, meeting primary users' information requirements (UKEB, 2024a, para 3.19).

Exhibit 2:

> The directors do not consider that any Research and Development intangible assets have been created in 2023 or the prior year on the basis that it is uncertain whether the intangible assets will generate future cash flows.

In contrast to the LSE, NGX-listed companies may be more flexible when disclosing expenses (UKEB, 2024a). This could be to aid the analysis of the companies' financial information or to improve primary users' relations by having more disaggregated information. As a result, NGX-listed companies had an evenly spread variety of UIA classes compared to LSE-listed companies (Table 6). NGX-listed companies also disclosed multiple line items for the same expenses to assist users in understanding why expenditures were incurred (Exhibit 3). For instance, advertising costs classified under operational expenses or cost of sales would indicate to users that these expenditures are directly linked to generating revenue or supporting core business functions. In contrast, advertising costs disclosed under other expenses may signal to users that these expenditures are ancillary, irregular, or linked to broader strategic initiatives rather than routine operational activities. This differentiation in classification helps users assess the purpose and strategic implications of advertising expenditures more effectively, enhancing transparency and decision-making insights thereby reducing agency costs.

Exhibit 3:

7(ii) Selling and distribution expenses		₦'000	₦'000
Advertisement and Publicity		2,024	910

Notes to the Financial Statements - Continued

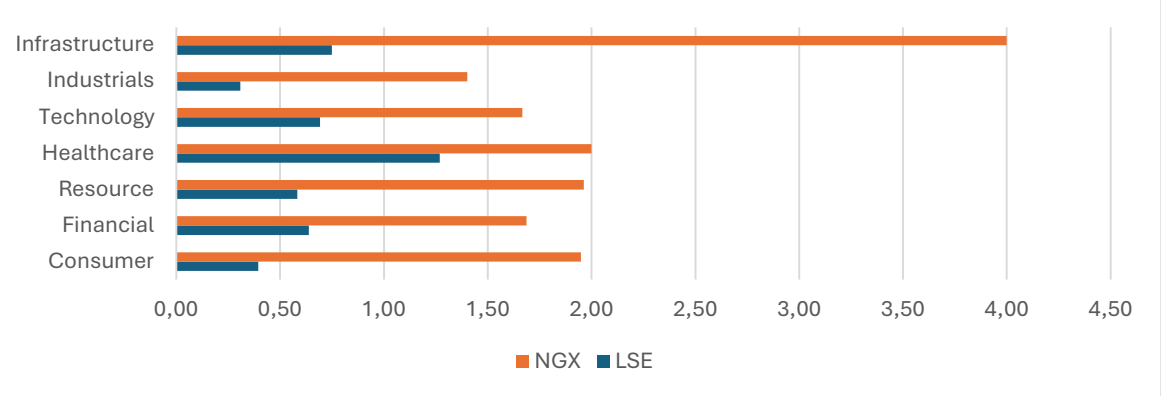
7(iii) Administrative expenses	Notes	₦'000	₦'000
Advertisement & Publicity		1,100	647

The healthcare industry held the highest average UIA classes per company on the LSE with 1.27 classes per company, as expected, given the industry's focus on innovation (Figure 3). On the NGX, the infrastructure and utilities industry held the highest average of UIA classes per company at 4 UIAs per company (Figure 3). The infrastructure and utilities industry operates in a highly regulated field where licensing and technology may play a pivotal role. It was expected that the healthcare industry should have the most RIAs and UIAs, however, the healthcare industry on the NGX may be less capable of researching medical developments compared to the similar industries in the UK and other developed countries. Taking into consideration the IA intensive nature of these industries, it is likely that some of their numerous IA investments did not meet IAS 38's criteria to be capitalised

and therefore increased the amount of UIAs within each industry. For instance, not all investments made by healthcare companies are successful, leading to them being expensed. This finding may further emphasise the strict requirements currently in IAS 38, as industries that average the most RIAs hold the most UIAs as well (UKEB, 2024b).

Most industries on the NGX held, on average, more than 1.5 UIAs per company (Figure 3). Further analysis reveals that consumer-related and financial industries held the majority of UIAs, accounting for 70% of all recorded instances on the NGX (Table 8). The infrastructure and utilities industry accounted for only a few companies and therefore did not hold a significant percentage of UIAs on the NGX. Notably, brand names constituted the majority of UIAs within these sectors, representing 60% of each total. This trend highlights the potential significance of advertising and donations in driving the value of these companies.

Figure 3: The average number of UIA classes per company per industry



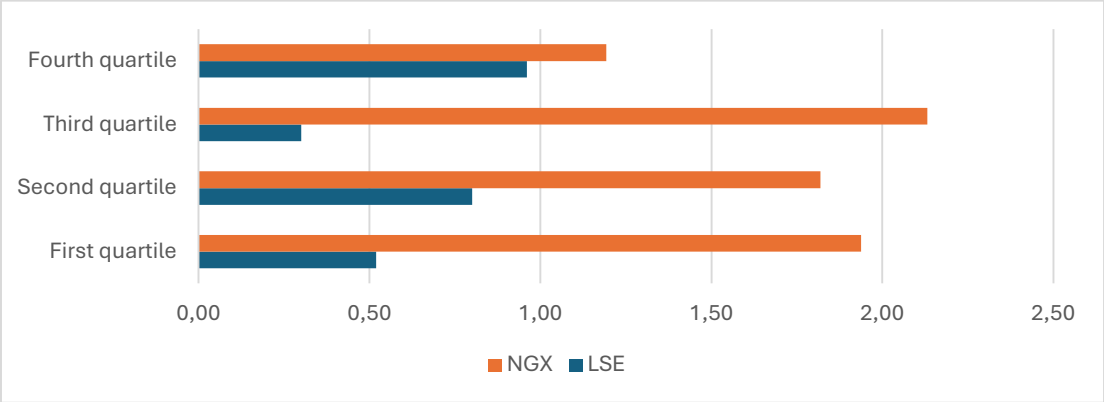
The LSE exhibited a more balanced distribution of UIAs across industries, with the industrial sector being an exception, showing a relatively low percentage (Table 8). This could be due to the industrial sector's labour-intensive nature, requiring only a limited use of IAs, as the focus tends to be on tangible assets.

Table 8: UIAs breakdown per industry

	LSE	NGX
UIAs class	Number of UIAs instances | Percentage of industry total	
Consumer-related	15 | 12%	**113 | 36%**
Financial and real estate	23 | 18%	108 | 34%
Resource-related	14 | 11%	51 | 16%
Healthcare	**33 | 26%**	12 | 4%
Technology	18 | 14%	10 | 3%
Industrials	8 | 6%	14 | 4%
Infrastructure and utilities	18 | 14%	8 | 3%
Total	129 | 100%	316 | 100%

The data analysed using market capitalisation shows stark differences between the LSE and NGX. On the LSE, the fourth quartile (the smallest set of companies) had the highest average, at 0.96 UIA classes per company. On the NGX, the fourth quartile had the lowest average, at 1.19 UIAs per company (Figure 4). This finding may suggest that companies listed on the LSE consider materiality more than their NGX counterparts. Smaller companies, in particular, may have expenses that exceed materiality thresholds and, therefore, require separate disclosure. Additionally, this finding could highlight the significance placed on UIAs by larger companies on the NGX. Larger companies often attract significant attention due to their substantial contributions to their national economies (Al-Hamadeen et al., 2017). As such, the disclosure patterns observed on the NGX may reflect efforts to adopt more transparent reporting practices to reduce agency costs. These findings underline the need for more comprehensive and detailed disclosures of IA-related investments, potentially enhancing the usefulness of the information already provided in financial statements.

Figure 4: The average number of UIA classes per company size



4.4. Results from inferential testing:

The following subsections will discuss the results from the inferential statistics conducted in line with Section 3.5. These tests were designed to determine if there are any significant differences in RIA reporting based on groupings.

4.4.1. Mann-Whitney U results when grouped by exchange:

Results from the inferential tests depict significant differences in the test variables between the two exchanges. These results are included in Table 9 below

Table 9: Mann-Whitney U test results when grouped by exchange

	The percentage of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
U statistic	26595.000	25240.000	19742.000
Z	9.133	7.816	4.045
Aysmp. Sig. (2-tailed)	<0.001**	<0.001**	<0.001**

*Significant at a 5% level.

**Significant at a 1% level.

Statistically significant differences were noted in the carrying amount of RIAs to TAs, total carrying amount of RIAs and additions through business combinations when companies were grouped by their exchange. It was noted that companies on the NGX had a lower ratio of RIAs to TAs, total carrying amount of RIAs, percentage of additions through business combinations over TAs and percentage of the carrying amount of licenses over TAs. This may be due to the finding that developing countries may still be struggling to find the strategic importance related to IA investments (Tunyi et al., 2019). For instance, these companies would not be

as focused on obtaining RIAs such as trademarks when profitability and going concern issues are present. These issues may be applicable due to 24.41% (21/86) of companies in the NGX sample having negative comprehensive income or negative book value of equity for the 2023 financial year. As a result, RIAs may be less important in developing countries, resulting in lower RIAs to TAs ratios on the NGX.

As mentioned previously (Section 4.2 and Table 6), NGX-listed companies had a variety of IAs-related expenses. Expenditures related to licenses are often expensed. On the LSE, companies have been and still are capitalising expenditures related to the acquisition of licenses (Table 9). As a result, there was a statistically significant difference between the licenses capitalised on the LSE compared to the NGX. On the LSE, these costs were capitalised, whereas the NGX had many UIAs related to licenses (Section 4.2). This finding may indicate the lack of expertise available to NGX-listed companies as costs that ordinarily should be capitalised (in the absence of additional information) seem to be expensed (Ondari-Okemwa, 2011).

NGX-listed companies may be more traditional, being less service based compared to LSE-listed companies, and comprise mainly of physical assets used in the operations of these entities. These companies often focus on operational efficiency and asset utilization rather than innovation or brand development which further limits the generation and recognition of IAs. The accounting outcomes may reflect a more conservative approach to financial reporting we prepare this prioritised tangible asset recognition due to greater measurability and auditability under IAS 38 (Tunyi et al., 2019). This emphasis on physical capital results in a low proportion of IAs relative to Tas, particularly where internally generated IAs are either expense or inadequately measured under current accounting practices.

The IASB may consider providing additional guidance or introducing mandatory disclosure requirements for companies to explain why certain expenditures fail to meet the recognition requirements under IAS 38 (Wyatt & Abernethy, 2008). These disclosures could provide valuable insights into the challenges of applying IAS 38 and improve transparency between principals and agents. While additional guidance may serve as a foundation for a more beneficial update to the standard that would allow preparers to recognise more IAs that may lower the MTB value gap (Section 4.5).

Lastly, developed countries have access to perform business combinations, resulting in previous UIAs becoming RIAs in the form of goodwill (Section 4.4.3)

(UKEB, 2024b). In contrast, developing countries may face limitations in performing business combinations at the same scale due to (1) larger companies from other countries acquiring target companies due to increased resource availability and stronger currencies or (2) resource constraints limiting NGX-listed companies' buying capacity (Al-Hamadeen et al., 2017). As larger companies may have the ability to acquire many more smaller companies that might be able to have numerous UIAs, smaller companies would not necessarily be able to acquire as many companies smaller than them due to cash constraints (UKEB, 2024b). Merger and acquisition-related accounting often garners significant attention, leading to extensive efforts to identify and measure IAs transferred during these processes (UKEB, 2024b). However, similar internally generated IAs, such as customer relationships and development expenditure, in companies not part of acquisitions are often overlooked. The IASB could consider mandating annual disclosures related to historical IAs-related investments (that is, cumulative UIAs) to (1) streamline accounting processes during acquisition accounting and (2) provide companies with the opportunity to identify UIAs that may now be eligible for recognition retrospectively.

The untabulated results from the Mann-Whitney U tests of the remaining test variables (Section 3.5) revealed no statistically significant differences between the exchanges.

4.4.2. Kruskal-Wallis results when grouped by company size:

Results from the inferential tests depict significant differences in the test variables between the quartiles on the two exchanges. These results are included in Tables 10 and 11.

Table 10: Kruskal-Wallis test results when grouped by company size on the LSE

	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
H statistic	11.542	22.562	9.752
df	3	3	3
Aysmp. Sig. (2-tailed)	0.009*	<0.001**	0.021*

*Significant at a 5% level.

**Significant at a 1% level.

The results identified significant differences (at different levels of significance (Table 10)) in the carrying amounts of RIAs, the ratio of RIAs to TAs and the ratio of additions through business combinations over TAs (Table 10). As expected, companies with the ability to invest in subsidiaries may benefit from inorganic growth, allowing for UIAs in the subsidiary to be RIAs in the parent company (UKEB, 2024b). This finding suggests that as companies seek inorganic growth, their asset base will increase through acquisition-related IAs.

Table 11: Kruskal-Wallis test results when grouped by company size on the NGX

	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
H statistic	12.467	38.375	11.685
df	3	3	3
Aysmp. Sig. (2-tailed)	0.006**	<0.001**	0.009*

*Significant at a 5% level.

**Significant at a 1% level.

Kruskal-Wallis test results identified significant differences in the ratio RIAs to TAs, the total carrying amount of RIAs and the percentage of additions through business combinations over TAs when grouping the companies by size (all at different levels of significance) (Table 11). A pairwise comparison identified that the results from the first quartile were statistically significantly different from the other quartiles on the NGX in terms of the total carrying amount of RIAs held and additions through business combinations. The fourth quartile had a statistically significant reading. Descriptive statistics confirm these findings. Smaller companies that do not have the financial ability to acquire subsidiaries might not be able to increase their RIAs due to the strict capitalisation requirements on internally generated IAs, even when their parent company may (UKEB, 2024b).

Prior articles indicate that larger companies may have (1) the resources to acquire subsidiaries (UKEB, 2024b) and (2) hold a level of expertise that would enable them to identify, measure and recognise IAs (Bush & Chui, 2022; Ondari-Okemwa, 2011). A recommendation for the IASB could be to develop illustrative examples, through consultation with RIAs-intensive firms, to provide tailored support for smaller companies to help them identify, measure, and disclose RIAs. This approach would reduce complexity and provide practical support to smaller entities that may lack the resources or expertise of larger companies, thereby improving the comparability and reliability of IA reporting across all company sizes.

Acquisition-related RIAs are initially measured at fair value (IASB, 1998), while purchased and internally generated IAs are always measured at cost (Section 4.1.1). As a result, companies participating in business combinations may have RIAs at fair value, which could potentially be higher the amount if the RIAs would be measured under the cost model. A recommendation for the IASB could be to expand the use of the revaluation model for IAs, leveraging valuation methods already employed during current business combinations (Section 4.1.1). To support this, the IASB could mandate that companies disclose the valuation methods used to assess IAs during current acquisitions. If these methods generate reliable and useful information for acquired IAs, they could similarly address fair value concerns for other (internally developed or separately purchased) RIAs. Applying these methods more broadly could enhance comparability and improve the relevance of IA reporting in financial statements.

Similar results were noted on the NGX and the LSE when grouped by size. This is a notable finding as regardless of the exchange, the same patterns are observed based on size. This may be indicative of the way companies view IAs. Initial investments in younger (smaller) firms are key to establishing themselves within the market (Lev & Radhakrishnan, 2003). Thereafter, investment rates steadily decrease. In the case of larger established companies, investment rates may be low, but consistent acquisitions may lead to substantial balances of RIAs held.

As found in prior studies (UKEB, 2024b), smaller companies possess IAs that represent a significant portion of their TAs compared to larger companies (Figure 5). The fourth quartile also had the most RIAs under development expenditure (an internally generated RIA) on the LSE (36%), representing, on average, 13.37% of TAs (approximately 30% of the carrying value of RIAs in the fourth quartile) (Figure 6). This finding may indicate that smaller companies have internally generated and purchased RIAs that are more pivotal in their business models, as these RIAs represent a larger proportion of their assets compared to larger companies (Al-Hamadeen et al., 2017). Another possible reason could be that high investments in IAs in the early stages of companies allow for faster sustainable growth (Corrado et al., 2005; Lev & Radhakrishnan, 2003). The figure related to the average ratio of development expenditure (RIAs) over TAs on the NGX has been excluded as the balances per quartile depict negligible results.

Figure 5: The average ratio of total RIAs to TAs per company size

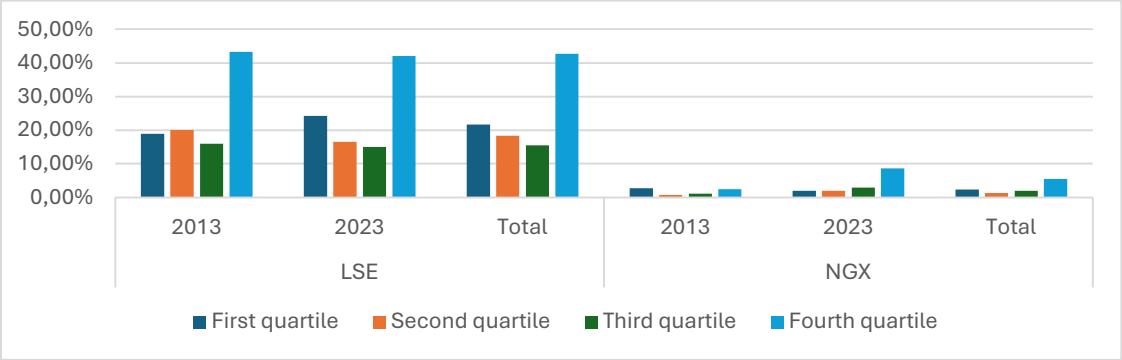
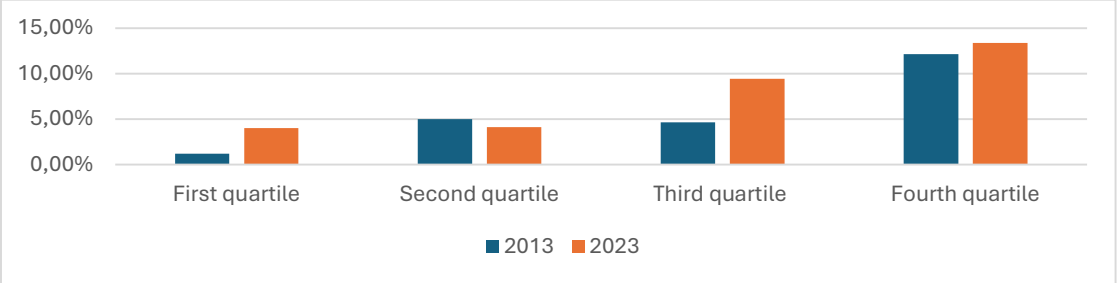
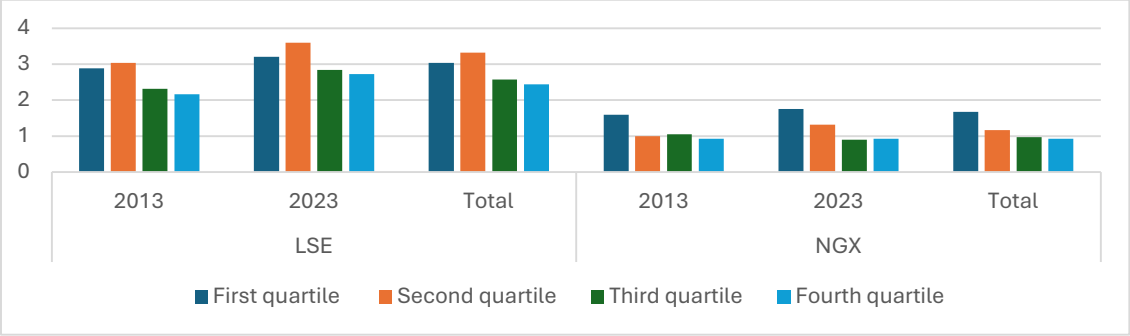


Figure 6: The average ratio of development expenditure (RIAs) over TAs on the LSE



For both LSE and NGX companies, the largest companies (the first quartile) had on average, more RIA classes per company (3.14 on the LSE and 1.67 on the NGX) compared to the smallest companies (the fourth quartile) (2.44 on the LSE and 0.92 on the NGX) (Figure 7). This finding contradicts UKEB (2024b), which found that larger companies would be more likely to aggregate RIA classes and, therefore, have fewer distinct RIA classes disclosed. Although larger companies may aggregate RIA classes, they still have, on average, more RIAs than smaller companies.

Figure 7: The average number of RIA classes per company size



Second-quartile companies hold the highest number of RIA classes on the LSE (3.32 RIA classes per company (Figure 7)), which can be linked to strategic and operational dynamics. Second-quartile companies may disclose disaggregated information to increase investor confidence, reduce information asymmetry and attempt to compete with the largest quartile of companies. In contrast, the second quartile on the NGX did not exhibit the same result. This could be due to the difference between the capabilities between the top two quartiles in each exchange. On the LSE, the difference between the size of companies in different quartiles is slight compared to the NGX, where the largest companies are much larger than the companies included in the second quartile. This has been displayed in the data collected, where on the NGX, the second quartiles' average market capitalisation equated to a mere 4% of the average market capitalisation of the largest quartile. In contrast, on the LSE, the second quartile's average market capitalisation equated to 40% of the largest quartile's market capitalisation.

Second quartile companies often have more diversified operations compared to smaller firms but lack the sheer scale of the largest corporations.(Nichita, 2019). As a result, they are more likely to invest actively in various RIAs to establish competitive advantages in niche markets. Academic insights suggest that mid-sized firms often operate in dynamic environments where adaptability and resource optimisation are critical, driving a reliance on RIAs (Wyatt, 2011; Wyatt & Abernethy, 2008). Moreover, the relative agility of second quartile companies compared to large companies enables second quartile companies to expand and invest in a variety of RIAs (Nichita, 2019; Wyatt & Abernethy, 2008). The result is that second quartile companies classify their RIAs under distinct categories in their financial reports. This trend aligns with the findings of Wyatt (2011) where it was noted that RIAs are pivotal for value creation, particularly in companies striving to optimise their market positioning while managing resources judiciously. These companies may also be in the growth phase of their lives. As such, these companies may be actively investing for growth and expansion.

The aggregation of RIA classes in larger companies noted in previous studies could be due to the increased cost versus the perceived benefit of disclosing RIAs more granularly (Section 2.6) (IASB, 2019). As borrowers and lenders do not ordinarily allow for RIAs to be pledged as security, the financial incentive to disclose RIA information granularly decreases thereby increasing potential agency costs. To understand whether companies are using materiality thresholds to drive the level of aggregation, TAs were used to calculate a materiality figure for each company. In line with auditing guidelines and to ensure consistency, a percentage of 1.5% was chosen to determine the materiality amount. For instance, the largest

company in our sample of LSE-listed companies had a TAs balance of GBP 2.4 billion. This amount was then multiplied by 1.5% to equate to GBP 36 million. This amount was compared to (1) each company's total RIA carrying amount and (2) the individual carrying amount of each RIA in each company. The results reflect that materiality persuades companies' disclosure practices for RIAs disclosed under the “other” RIAs class. This is in accordance with IAS 1, which allows for companies to aggregate financial information. For LSE-listed companies, 31% of RIAs categorised as “other” in quartiles 1 and 2 (20.5% in quartiles 3 and 4) were individually less than the materiality figure. The above finding could indicate that materiality thresholds reduce the granularity of reporting of different-sized companies on the LSE (UKEB, 2024c).

While acknowledging the importance of quantitative materiality (Deloitte, 2024), operational RIAs may be qualitatively material due to their critical role in generating future economic benefits and maintaining competitive advantages. For example, RIAs such as proprietary technology can form the backbone of a company’s core operations, making their disclosure vital for primary users to evaluate operational efficiency and long-term sustainability. Introducing mandatory, detailed disclosures for operational IAs could significantly improve financial statements' transparency, comparability, and decision-usefulness. Such measures would provide primary users valuable insights into how specific IAs drive revenue and support strategic objectives. In the absence of these disclosures, primary users may struggle to fully understand the operational risks and value drivers of larger entities, ultimately weakening the quality of financial analysis and leading to potential agency costs (Wyatt & Abernethy, 2008). These considerations underscore the need to revisit current disclosure requirements for operational RIAs, balancing cost-efficiency with delivering relevant and decision-useful information.

Larger companies on the LSE and NGX have a wider variety of RIAs than smaller companies (Tables 12 and 13) (UKEB, 2024b, para 2.59). Goodwill and exploration assets have been identified as a common RIA in the largest companies on the NGX (Table 13). Nigeria, as a resource-rich country, allows companies that extract and process these resources to achieve exponential growth (Shobowale, 2022). These companies thereafter have the resources to acquire subsidiaries that would allow these companies to recognise goodwill more often and have a greater balance of RIAs compared to smaller companies.

Table 12: RIAs on the LSE by company size

RIAs class	First quartile [4]	Second quartile[5]	Third quartile[6]	Fourth quartile[7]
	Number of instances per quartile | Percentage of quartile total			
Goodwill	**36 | 24%**	33 | 20%	**30 | 23%**	**29 | 24%**
General/Other/Aggregated	32 | 21%	**38 | 23%**	24 | 19%	11 | 9%
Brand Names	8 | 5%	11 | 7%	8 | 6%	7 | 6%
Computer Software	28 | 18%	25 | 15%	21 | 16%	22 |18%
Customer Relationships	15 | 10%	20 | 12%	20 | 16%	9 | 7%
Development Expenditure	8 | 5%	16 | 10%	13 | 10%	21 | 17%
Exploration Assets	3 | 2%	8 | 5%	0 | 0%	9 | 7%
Licenses and Franchises	7 | 5%	3 | 2%	7 | 5%	9 | 7%
Trademarks and Other Rights	15 | 10%	12 | 7%	6 | 5%	5 | 4%
Total	152 | 100%	166 | 100%	129 | 100%	122 | 100%

Table 13: RIAs on the NGX by company size

RIAs class	First quartile	Second quartile	Third quartile	Fourth quartile
	Number of instances per quartile | Percentage of quartile total			
Goodwill	22 | 21%	4 | 8%	3 | 8%	5 | 21%
General/Other/Aggregated	7 | 7%	0 | 0%	2 | 5%	5 | 21%
Brand Names	1 | 1%	0 | 0%	0 | 0%	0 | 0%
Computer Software	**56 | 52%**	**41 | 80%**	**28 | 76%**	**8 | 33%**
Customer Relationships	1 | 1%	0 | 0%	0 | 0%	2 | 8%
Development Expenditure	3 | 3%	1 | 2%	2 | 5%	0 | 0%
Exploration Assets	10 | 9%	0 | 0%	2 | 5%	0 | 0%
Licenses and Franchises	4 | 4%	3 | 6%	0 | 0%	0 | 0%
Trademarks and Other Rights	3 | 3%	2 | 4%	0 | 0%	4 | 17%
Total	107 | 100%	51 | 100%	37 | 100%	24 | 100%

The smallest quartile of companies on the LSE disclosed the least instances of the RIAs class 'other' (Table 12). A possible reason could be smaller companies' potential inability to identify, measure and recognise RIAs if these RIAs do not fall into a common RIAs class (Bush & Chui, 2022). As a result, smaller companies may not be recognising costs that are eligible to be RIAs. Smaller companies' disclosures may reflect a narrower scope, focusing on widely recognised and standardised IA categories to comply with reporting standards. This limitation suggests that smaller firms prioritise operational necessities over more complex IA identification due to lower resource availability, potentially leading to more practical disclosure practices, which may be less useful (o financial statement users (Bush

[4] The first quartile refers to the largest set of companies on the respective exchange.
[5] The second quartile refers to the second largest set of companies on the respective exchange.
[6] The third quartile refers to the third largest set of companies on the respective exchange.
[7] The fourth quartile refers to the smallest set of companies on the respective exchange.

& Chui, 2022). Similarly, the NGX as a whole had 14 instances of the use of the 'other' class of RIAs (9 instances in 2013 (9% of the instances in 2013) and 5 instances in 2023 (4% of the instances in 2023) (Table 4)), mainly due to aggregating numerous immaterial classes.

The untabulated results from the remaining inferential tests suggest no statistically significant differences between the test variables when grouped by market capitalisation on each exchange.

In conclusion, smaller companies rely more heavily on IAs relative to their overall asset base. In comparison, larger companies frequently record the highest carrying amounts of IAs due to acquisitions, which allow them to recognise previously unrecorded IAs within acquired entities at fair value. Establishing a more consistent treatment between internally generated or purchased IAs and acquired IAs would enable improved comparability across companies of various sizes and growth strategies, enhancing financial statement usefulness and reducing agency costs for investors evaluating organic versus inorganic growth.

4.4.3. Kruskal-Wallis results when grouped by industry:

Results from the inferential tests depict significant differences in the test variables between the industries on the two exchanges as follows. These results are included in Tables 14 and 15 below

Table 14: Kruskal-Wallis test results when grouped by industry on the LSE

	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
H statistic	56.826	20.291	14.761
df	6	6	6
Aysmp. Sig. (2-tailed)	<0.001**	0.002*	0.022*

*Significant at a 5% level.
**Significant at a 1% level.

Kruskal-Wallis test results have identified significant differences in the LSE in the ratio of total RIAs to TAs, the post hoc pairwise test identified differences particularly between the financial industry and all other industries (Table 14). Results from the Kruskal-Wallis tests on the NGX suggest significant differences in the ratio of total RIAs to TAs. The post hoc pairwise test identified that the significant differences were between the technology industry and other industries on the NGX (Table 15).

Table 15: Kruskal-Wallis test results when grouped by industry on the NGX

	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
H statistic	20.341	21.340	8.245
df	6	6	6
Aysmp. Sig. (2-tailed)	0.002*	0.002*	0.221

*Significant at a 5% level.

**Significant at a 1% level.

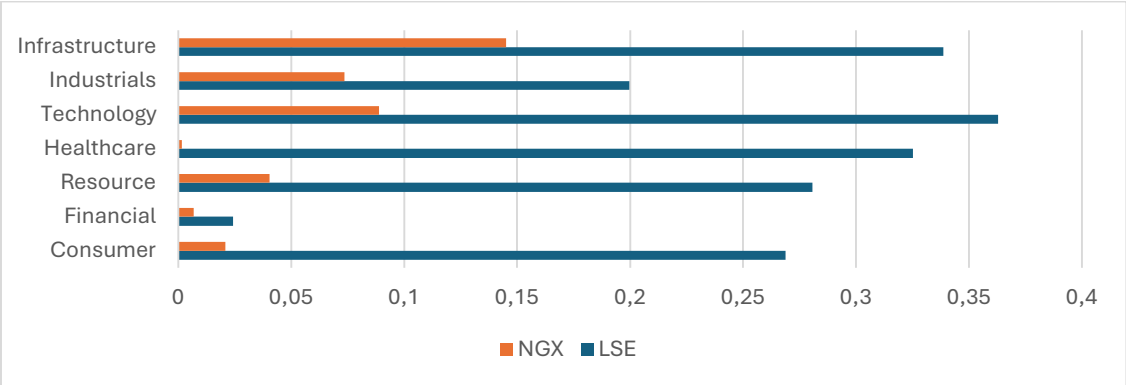
The financial industry has the lowest average cumulative IAs to TAs ratio – averaging 3% on the LSE and 1% on the NGX (Figure 8). The low cumulative IAs are expected as the financial industry contains high investments in high-quality liquid assets on the LSE and NGX (Fadun, 2013; Le et al., 2023). The financial industry requires high-quality liquid assets to ensure stability, liquidity, and compliance with regulatory frameworks designed to safeguard financial systems (Fadun, 2013). Assets, such as cash and other easily tradable instruments, play a critical role in maintaining adequate liquidity buffers (Le et al., 2023). These buffers are essential for mitigating liquidity risks during periods of financial stress.

These findings may suggest that RIAs are less important in financial companies, as these entities predominantly hold tangible assets such as real estate holdings and financial instruments. Consequently, financial companies' asset profile and reporting focus may inherently result in lower recognition and reliance on IAs. The IASB may consider primary users' views on what information is most significant, minimising disclosures in industries that do not place importance on IAs.

The technology industry had the highest average cumulative IAs to TAs ratio on the LSE at 36% and the second-highest average on the NGX at 9% (Figure 8). Similarly, the healthcare industry exhibits a comparable reliance on RIAs, driven by significant investments in patents, research and development, and innovation. In the technology industry on the NGX, development expenditure (internally generated RIAs) accounted for 81% of total instances, which indicates that the industry heavily relies on IAs. This reliance highlights the critical role of IAs in driving value creation within the technology sector (UKEB, 2024b; Wyatt & Abernethy, 2008). The high cumulative RIAs to TAs ratio underscores the sector's dependence on these assets to maintain competitive advantages and foster innovation (Goebel, 2019). Considering the strict capitalisation requirements in place in IAS 38, there is a possibility that expenditures related to specific RIAs in the technology are currently expensed. This emphasises the need for industry-

specific guidance to allow for IA-intensive industries to capture a better reflection of the assets and potential economic inflows due to their investments.

Figure 8: The average ratio of total RIAs to TAs per industry



The infrastructure and utilities sector often exhibits a high ratio of IAs to TAs due to the nature of their operations and asset composition (Figure 8). A significant portion of their IAs base arises from long-term operating licenses, regulatory permits, and concessions, which are critical for the provision of essential infrastructure and utility services (Tables 16 and 17). These rights, often granted by governments or regulatory bodies, represent valuable economic resources (Nassar et al., 2014). Furthermore, many utility companies hold exclusive franchise agreements granting monopolistic rights within specific geographic regions. Such agreements are typically recognised as IAs under IAS 38 (Wyatt, 2005). Additionally, mergers and acquisitions are common in these industries, often resulting in goodwill, which forms a substantial part of IAs' portfolios (Table 17) (UKEB, 2024b). The adoption of advanced technologies, such as smart grids, renewable energy systems, and proprietary maintenance software, further contributes to the recognition of IAs (Goebel, 2019). These factors align with the resource-based view, which emphasises the role of IAs in sustaining competitive advantages (UKEB, 2024a).

Table 16 provides a breakdown of RIAs in each industry. The number of instances of IAs varies between industries. The financial and healthcare industries on the NGX and the industrials industry on the LSE had no change in the number of RIAs between the 2013 and 2023 financial years. Although there was a change in the number of RIAs per industry between the period of review, the slight decrease in investment resulted in no percentage change during the period of review. From the remaining industries, only the resource-related industry on the NGX had a decrease in the number of RIAs, while this had no impact on the carrying amount of RIAs held by this industry (Figure 12). The change was attributable to one

company derecognising a RIA related to the “other” RIA class. All other industries disclosed more instances of RIAs in 2023 compared to 2013.

Table 16: RIAs per industry

	LSE			NGX		
Industry	**2013**	**2023**	**Difference**	**2013**	**2023**	**Difference**
	Number of instances in 2013 | Percentage of year total	Number of instances in 2023 | Percentage of year total	Change in the number of instances | Percentage change	Number of instances in 2013 | Percentage of year total	Number of instances in 2023 | Percentage of year total	Change in the number of instances | Percentage change
Consumer-related	**48 | 18%**	**55 | 18%**	7 | 15%	28 | 27%	29 | 25%	1 | 4%
Financial	24 | 9%	28 | 9%	4 | 17%	**38 | 36%**	**38 | 33%**	0 | 0%
Resource-related	18 | 7%	20 | 6%	2 | 11%	16 | 15%	15 | 13%	-1 | -6%
Healthcare	42 | 16%	56 | 18%	14 | 33%	2 | 2%	2 | 2%	0 | 0%
Technology	36 | 14%	51 | 17%	15 | 42%	8 | 8%	13 | 11%	5 | 63%
Industrials	49 | 19%	49 | 16%	0 | 0%	10 | 10%	13 | 11%	3 | 30%
Infrastructure and utilities	43 | 17%	50 | 16%	7 | 16%	3 | 3%	4 | 4%	1 | 33%
Total	260 | 100%	309 | 100%	49 | 19%	105 | 100%	114 | 100%	9 | 9%

In 2023, the healthcare and technology sectors on the LSE disclosed more RIAs, as anticipated in the current knowledge-driven economy (Oliveira et al., 2010). Similarly, the technology sector on the NGX exhibited the most notable growth, with a 63% increase in RIA disclosures from 2013 to 2023. This trend suggests that these industries have developed processes and practices better aligned with the capitalisation criteria of IAS 38 (Section 2.7), enabling them to recognise more IAs. It is also likely that these entities invested in more RIAs compared to companies in other exchanges as it aligns with their business practices.

Differences were identified in the average number of RIA classes by industry in Figure 9 below. Based on these results, there are similarities between the exchanges based on the industry. These findings between industries suggest that the composition of assets in companies is industry-specific, reflecting distinct business models and growth strategies across sectors such as those factors identified in Section 2.7 (Radonic et al., 2021). As companies expand, IAs will likely become even more significant, particularly in sectors where technology and intellectual capital are key drivers of success.

Figure 9: The average number of RIA classes per industry for 2013 and 2023



Some IA-intensive industries on the LSE, such as the healthcare industry, may be able to capitalise all their IAs-related expenditure as opposed to other industries that may find the application of IAS 38's requirements challenging (Section 2.6) (Mehnaz et al., 2024). As mentioned above, the healthcare industry has a high percentage of RIAs relative to their TAs (Figure 8). In 2023, the healthcare industry contributed 20% (Figure 10) of the carrying amount of all RIAs, a relatively high percentage considering that the healthcare industry only contributed 9% (Figure 11) to the total net asset value in 2023.

Figure 10: Breakdown of the carrying amount of RIAs held by each industry on the LSE

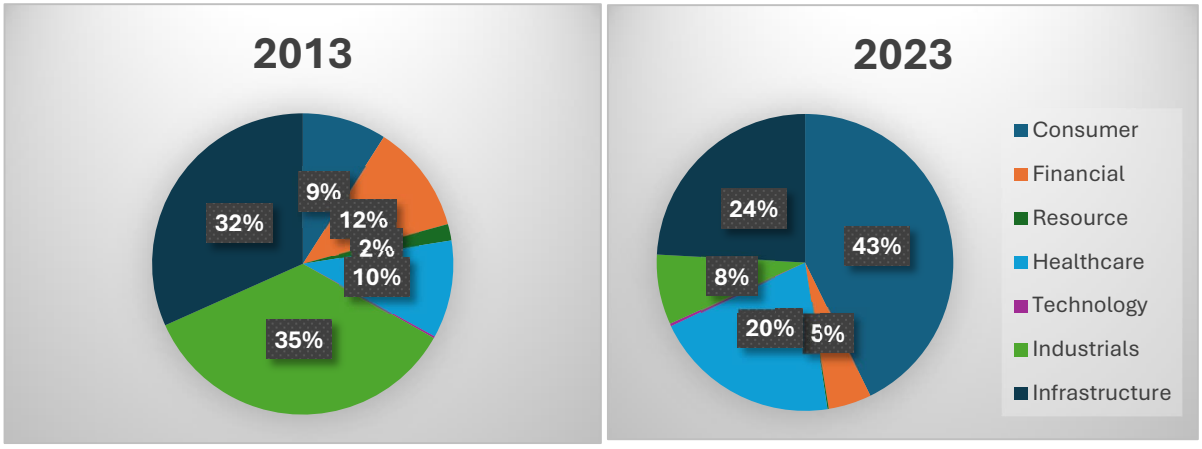
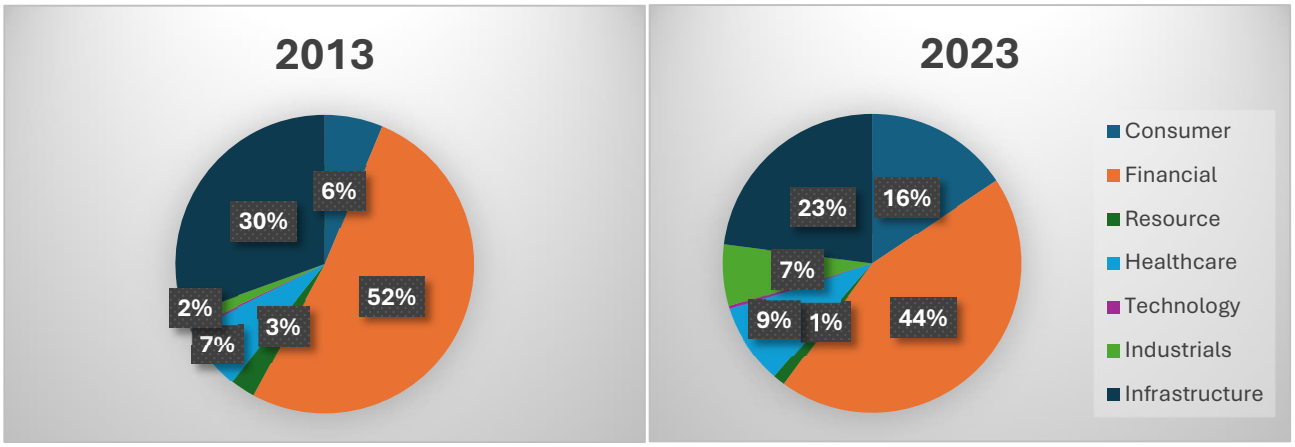


Figure 11: Breakdown of the equity contribution from each industry on the LSE



The industrial industry contributed 35% of the carrying amount of RIAs on the LSE in 2013 (Figure 10) while only contributing a mere 2% of the net asset value (Figure 11). The stark contrast between these figures may be due to increased acquisition activity in the industrial sector during 2013. The difference between the industrial and healthcare industries in the types of RIAs held (Table 17). In 2023, the healthcare sector's trademarks and other rights accounted for 59% of the total carrying amount of RIAs. In contrast, the industrial sector's RIAs were predominantly influenced by goodwill, which constituted 85% of their carrying amount. These findings suggest that much of the recognised IAs carrying amount in the industrials sector arises from inorganic growth through business combinations (UKEB, 2024b).

The discrepancy between industries' contribution to the RIAs carrying amount compared to their equity contribution likely stems from the fact that many internally generated RIAs, such as R&D, do not meet the recognition criteria under IAS 38 due to difficulty proving the expectation of future economic benefits. This discrepancy is further illustrated by the finding that an entity subsequently capitalised previously incorrectly expensed costs and then refer to Exhibit 1. As a result, significant portions of RIAs could remain unrecognised on the balance sheets, potentially understating the value of company assets within innovation-driven sectors like technology (Mehnaz et al., 2024). This under-recognition may limit the ability of financial statements to fully reflect the economic reality of some industries' reliance on RIAs and increase agency costs, raising concerns about the usefulness of financial information in IAs-intensive industries (IASB, 2024c).

Table 17: The types of RIAs held by each industry on the LSE

LSE	Consumer	Financial	Resource	Healthcare	Technology	Industrials	Infrastructure
RIAs class breakdown	Number of RIA instances | Percentage of industry total						
Goodwill	24 | 23%	13 | 25%	6 | 16%	20 | 20%	22 | 25%	22 | 22%	21 | 23%
General/Other/Aggregated	22 | 21%	12 | 23%	5 | 13%	18 | 18%	7 | 8%	20 | 20%	21 | 23%
Brand Names	11 | 11%	5 | 10%	0 | 0%	2 | 2%	8 | 9%	5 | 5%	3 | 3%
Computer Software	13 | 13%	14 | 27%	5 | 13%	16 | 16%	13 | 15%	12 | 12%	23 | 25%
Customer Relationships	11 | 11%	7 | 13%	2 | 5%	8 | 8%	13 | 15%	17 | 17%	6 | 6%
Development Expenditure	10 | 10%	1 | 2%	1 | 3%	16 | 16%	16 | 18%	7 | 7%	7 | 8%
Exploration Assets	0 | 0%	0 | 0%	18 | 47%	0 | 0%	0 | 0%	0 | 0%	2 | 2%
Licenses and Franchises	1 | 1%	0 | 0%	1 | 3%	8 | 8%	3 | 3%	3 | 3%	10 | 11%
Trademarks and Other Rights	11 | 11%	0 | 0%	0 | 0%	10 | 10%	5 | 6%	12 | 12%	0 | 0%
Total	103 | 100%'	52 | 100%	38 | 100%	98 | 100%	87 | 100%	98 | 100%	93 | 100%

Due to the above findings, the IASB may need to reassess the recognition criteria in IAS 38, particularly for industries where IAs play a critical role in value creation. Given the high reliance on internally generated IAs in the healthcare and technology sectors, more adaptable capitalisation guidelines could help balance the financial representation of internally generated RIAs with purchased RIAs. By enabling a more consistent treatment of IA-related costs, particularly for costs such as R&D, the IASB could reduce disparities between companies that acquire RIAs and those that develop them. This approach would enhance the relevance of financial information for IAs-intensive sectors, ultimately aligning reporting standards with the evolving economy (Bush & Chui, 2022; UKEB, 2024b).

On the NGX, the resource-related industry accounted for 88% and 92% of the total carrying amount of RIAs in 2013 and 2023, respectively (Figure 12). The resource-related industry contained 67% of the total exploration assets recognised on the NGX (Table 18). Nigeria possesses various natural resources in abundance (Shobowale, 2022), attracting substantial foreign investments into the country. These large investments allow NGX-listed companies to invest heavily in exploration assets that align with investor expectations. This finding may suggest that significant foreign investments often prompt companies to recognise IAs that align with the specific demands of shareholders (UKEB, 2024a).

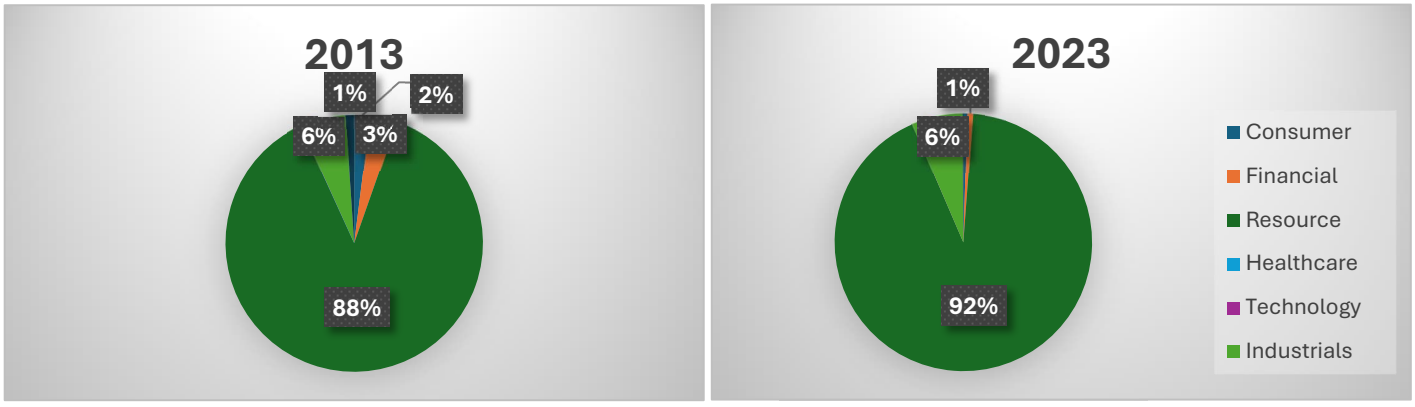
The recognition of exploration assets could demonstrate compliance with investor priorities, particularly in resource-rich industries. Furthermore, this trend – of investment in IAs aligned with investors' goals - highlights the role of external financing in shaping asset recognition practices, particularly in industries where capital-intensive exploration and development are key to future profitability

Table 18: The types of RIAs held by each industry on the NGX

NGX	Consumer	Financial	Resource	Healthcare	Technology	Industrials	Infrastructure
RIAs class breakdown	Number of RIA instances | Percentage of industry total						
Goodwill	8 | 14%	17 | 22%	4 | 13%	0 | 0%	1 | 5%	2 | 9%	2 | 29%
General/Other/Aggregated	3 | 5%	5 | 7%	3 | 10%	0 | 0%	0 | 0%	3 | 13%	0 | 0%
Brand Names	1 | 2%	0 | 0%	0 | 0%	0 | 0%	0 | 0%	0 | 0%	0 | 0%
Computer Software	38 | 67%	53 | 70%	12 | 39%	3 | 75%	17 | 81%	8 | 35%	2 | 29%
Customer Relationships	1 | 2%	0 | 0%	0 | 0%	0 | 0%	0 | 0%	2 | 9%	0 | 0%
Development Expenditure	2 | 4%	1 | 1%	2 | 6%	0 | 0%	0 | 0%	1 | 4%	0 | 0%
Exploration Assets	0 | 0%	0 | 0%	8 | 26%	0 | 0%	0 | 0%	3 | 13%	1 | 14%
Licenses and Franchises	0 | 0%	0 | 0%	2 | 6%	0 | 0%	3 | 14%	0 | 0%	2 | 29%
Trademarks and Other Rights	4 | 7%	0 | 0%	0 | 0%	1 | 25%	0 | 0%	4 | 17%	0 | 0%
Total	57 | 100%	76 | 100%	31 | 100%	4 | 100%	21 | 100%	23 | 100%	7 | 100%

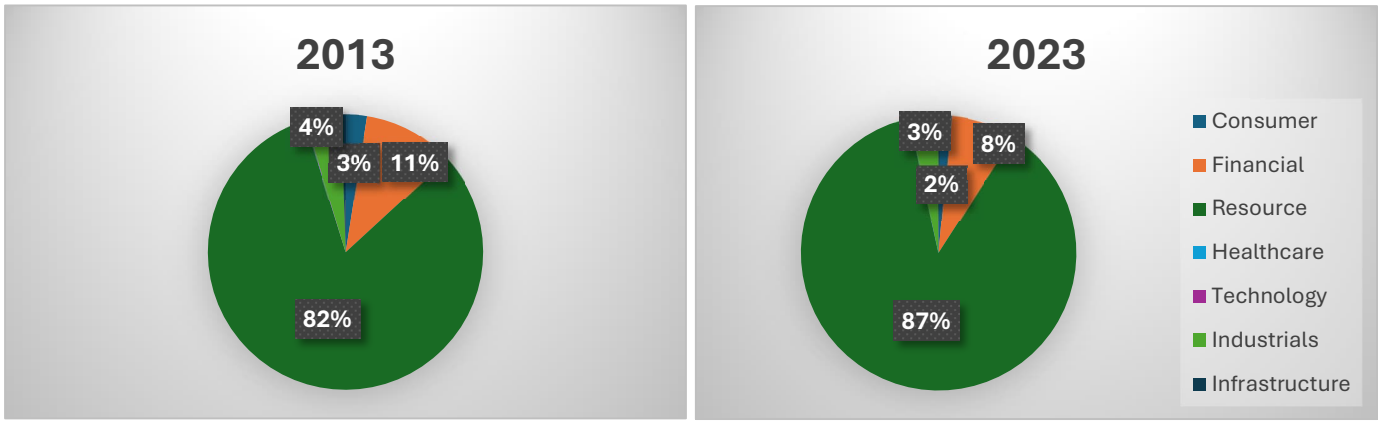
(Dancaková et al., 2022). Given that the resource-related industry has a high contribution to the total equity (82% and 87% in 2013 and 2023, respectively (Figure 13)), it is unsurprising that this industry contributes most of the RIAs. The IASB should consider the information needs of primary users when revisiting the presentation and disclosure provisions of IAS 38 to decrease possible agency costs (UKEB, 2024a).

Figure 12: Breakdown of the carrying amount of RIAs held by each industry on the NGX



The reduced contribution of the consumer-related and industrial industries to the carrying amount of RIAs and net value asset value in 2023 compared to 2013 likely reflects the diminished relative size and influence of these sectors within the broader economic landscape (Figures 12 and 13). This decline may stem from structural shifts in Nigeria's economy, where industries such as technology and telecommunications have experienced faster growth, increasing their share of the total carrying amount of RIAs (Ranjan, 2023).

Figure 13: Breakdown of the equity contribution by each industry on the NGX



The consumer-related and industrial sectors have faced prolonged challenges, including reduced consumer spending power due to high inflation, currency devaluation, and slower recovery from economic recessions (Adeoye, 2024). These factors have likely constrained revenue growth and profitability, leading to lower asset accumulation. Furthermore, intensified competition and tighter margins in these sectors may have limited opportunities for significant investments in innovation or capacity expansion, further contributing to their reduced comparative net asset value (Oladipo et al., 2023). Consequently, these trends emphasise the need for more nuanced industry reporting frameworks that classify RIAs into operational, investment, and financial categories (Section 4.1.1). This would enable primary users to better assess the shifting dynamics across industries and their relative contributions to total net asset value.

Surprisingly, LSE-listed companies had more exploration assets than NGX-listed companies. Specifically, in the resource-related industry, LSE-listed companies had 18 exploration assets. In contrast, NGX-listed companies had 8 exploration assets disclosed, which accounted for 47% and 26% of the instances of RIAs in the resource-related industry on the LSE and NGX, respectively. However, the NGX held a significant amount of exploration assets relative to their TAs. This finding was expected given the abundance of resources in Nigeria compared to the UK (Shobowale, 2022).

A less visible but conceptually important finding across certain traditional industries, such as technology, industrials and infrastructure, is the presence of embedded intangible value within tangible assets. In these sectors, firms often deploy machinery, infrastructure or physical systems that are enhanced by proprietary technology, customized designs or internally developed processes. Under IAS 38, these embedded intangibles are not separately recognized and are

instead subsumed within the carrying value of tangible fixed assets. This accounting treatment obscures the strategic role that intangible innovation plays even in asset-heavy industries where competitive advantage increasingly stems from intellectual enhancements to physical capital. This finding suggests a need to revisit the boundary between tangible and IA classification particularly as industrial sectors undergo digital transformation and incorporate more intellectual capital into their operational infrastructure.

Grouping industries into the four categories revealed no other statistically significant differences in any of the other test variables. No other statistically significant differences were identified between industry groupings on each exchange.

These findings may reflect the current applicability and limitations of IAS 38 across different industries (Al-Hamadeen et al., 2017; Barth & Clinch, 1998; Goebel, 2019). This discrepancy could suggest that specific industries, such as technology, are better positioned to recognise IAs and have an incentive to disclose IAs under IAS 38 due to the nature of their operations and the relative ease of attributing measurable economic benefits to their IAs (Al-Hamadeen et al., 2017). Conversely, the financial industry's lower levels of RIAs on the LSE may highlight sector-specific challenges. These observations underscore the need for IAS 38 to better accommodate the unique characteristics of IAs across industries, potentially through more tailored guidance or industry-specific reporting frameworks.

4.4.4. Mann-Whitney U results when grouped by time:

The results from inferential testing reveal no significant differences between the financial periods of 2013 and 2023 (Tables 19 and 20).

Table 19: Mann-Whitney U test results when grouped by time on the LSE

LSE	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
U statistic	5015.000	5595	4646.000
Z	0.037	1.485	-1.215
Aysmp. Sig. (2-tailed)	0.971	0.145	0.224

*Significant at a 5% level.

**Significant at a 1% level.

Table 20: Mann-Whitney U test results when grouped by time on the NGX

LSE	The ratio of RIAs to TAs	Total carrying amount of RIAs	Percentage of additions through business combinations over TAs
U statistic	3566.500	3672.500	3663.000
Z	-0.406	-0.079	-0.253
Aysmp. Sig. (2-tailed)	0.685	0.937	0.800

*Significant at a 5% level.

**Significant at a 1% level.

The lack of variation over the review period may underscore the persistent inadequacies of IAS 38 in its current form (Section 2.4). The standard appears inadequately suited to effectively account for the assets of a knowledge-based economy (Oliveira et al., 2010). AI and other emerging technologies are increasingly driving corporate value but may be inadequately represented in financial statements. While updated guidance, amendments, and interpretations within the framework of current standards may provide some relief, these incremental changes are unlikely to address the broader challenges.

A comprehensive overhaul, like the one currently being undertaken by the IASB (IASB, 2022a, 2024), must be robust and forward-looking to capture the evolving value of IAs effectively. As highlighted by numerous researchers (Lev, 2018a, 2018b; Van Criekingen et al., 2022), such reform should aim to align accounting practices with the realities of modern economic structures, ensuring that financial statements remain relevant and useful for primary users. This would include recognising the dynamic nature of IAs and providing clearer criteria for their identification, measurement, and disclosure.

Based on these findings, a recommendation to the IASB would be to expand the scope of IAS 38 to better address the unique characteristics and valuation challenges of IAs in a knowledge-based economy. This could involve introducing specific guidance on emerging asset classes, such as intellectual property derived from data analytics.

4.5. The MTB value ratio:

An independent Kruskal-Wallis test identified a statistically significant difference in the distribution of the MTB ratio across company size categories on the NGX (Table 21). No statistical differences were identified on the LSE.

Table 21: Kruskal-Wallis test results related to the MTB value ratio when grouped by company size

	LSE	NGX
H statistic	0.475	22.284
df	3	3
Aysmp. Sig. (2-tailed)	0.924	<0.001**

*Significant at a 5% level.

**Significant at a 1% level.

A Spearman's rho correlation test revealed a moderate positive correlation between company size and MTB ratio, which was statistically significant.

Table 22: Results from a Spearman's Rho correlation test

Research question | Variables | Exchange	Correlation
5 | Market capitalisation code and MTB ratio | LSE and NGX	ρ=0.355**

*Significant at a 5% level.

**Significant at a 1% level.

The relationship identified (Table 22) suggests that as companies grow their revenue and asset base, their MTB ratios tend to increase, likely due to several interrelated factors. These 3 factors are discussed in the paragraphs that follow.

(1) The perception of the market has an impact on the MTB of the reporting entity. Larger firms are often viewed more favourably by investors due to their established track records, strong brand recognition, and overall stability (Jenkins & Upton, 2001). This favourable perception may stem from the belief that larger companies possess operational resilience and governance structures that enhance their attractiveness to the market.

(2) Economies of scale also contribute to the higher MTB ratios observed among larger firms. By leveraging their size, these companies can reduce production costs and improve operational efficiency, thereby driving profitability, which the market tends to reward with higher valuations (Fama & French, 1992).

(3) The lower perceived risk associated with larger firms is a key determinant of this positive correlation. Established companies typically benefit from risk diversification due to their broad product or service portfolios and extensive geographical reach, making them less susceptible to sectoral or regional economic shocks (Chan et al., 2001). This reduced risk profile aligns with investors' preference for stability and consistency, often leading to higher valuation multiples.

These findings highlight that larger firms' higher MTB ratios are not solely attributable to their recognised or unrecognised IAs but reflect a confluence of factors, including market perception, operational efficiencies, and risk diversification. Thus, the MTB ratio is a composite measure of a firm's market valuation, influenced by its IAs and ability to leverage size-based advantages effectively.

An independent Kruskal-Wallis test was conducted to determine if there were differences in the MTB ratio across different groupings of companies by their IAs to TAs ratio (Table 23).

No statistical differences were identified on the NGX. The results showed statistically significant differences in the MTB ratio across the IAs to TAs categories on the LSE. This finding suggests that developed markets may perceive these IAs as contributing to value creation (Oliveira et al., 2010), thus increasing market value for companies with higher IA concentrations. The higher MTB ratios in companies with greater proportions of IAs could reflect investor confidence in the potential of these assets to generate future earnings (Chan et al., 2001). Therefore, the market seems to reward firms with substantial IAs, viewing them as more likely to deliver long-term value (Lev, 2000).

Table 23: Kruskal-Wallis test results when grouped by companies' RIAs to TAs ratio

	LSE	NGX
H/U statistic[8]	15.058	2428.000
df/Z	2	0.315
Aysmp. Sig. (2-tailed)	<0.001**	0.753

*Significant at a 5% level.

**Significant at a 1% level.

Of the companies that disclosed UIAs, an independent Kruskal-Wallis test was conducted to assess whether the MTB ratio differs across categories of the cumulative UIAs (for the current year and prior year) (Table 24).

[8] Coding of the data resulted in only two categories for the ratio of RIAs to TAs on the NGX – therefore a Mann-Whitney U test was performed on the NGX.

Table 24: Kruskal-Wallis tests results relating to UIAs and MTB value gap when grouped by companies' total carrying amount of UIAs

	LSE		NGX	
	2013	2023	2013	2023
H statistic	0.193	1.905	4.364	2.519
df	2	2	2	2
Aysmp. Sig. (2-tailed)	0. 908	0. 386	0.113	0.284

*Significant at a 5% level.

**Significant at a 1% level.

The tests on both exchanges revealed no statistically significant differences (Table 24). This finding may indicate that the markets may be unwilling to consider UIA-related investments in the valuation of a company, contrary to the treatment of R&D costs, which are considered in company valuations at present (Canibano et al., 2014). This may indicate that current-year UIA investments might not be impacting the market value of an entity by creating value (Marzo, 2013). This implies that investments in IAs, particularly those not recognised on the balance sheet, may not be perceived as value-generating by the market. Instead, the market may only recognise these expenditures once their future economic benefits become more apparent, leading to a lag in the reflection of UIA investments in the company's market valuation (Canibano et al., 2014; Marzo, 2013). These perceptions are also driven by the entrenched knowledge created by the IFRS standards where only certain IAs are recognised. A change in the standard could change user perceptions and the items that are considered when valuing an entity.

From an agency theory perspective, this disconnect between UIAs and their recognition in financial statements can exacerbate information asymmetry. Agents generally have a greater understanding of the costs incurred by the company and whether they would be value-generating (Shapiro, 2005). Principals may lack the necessary information to assess managerial decisions around such expenditures, potentially leading to inefficient valuation and increased monitoring costs (Marzo, 2013).

The average MTB ratio for LSE-listed companies is 7.19 and 3.06 for NGX-listed companies. The MTB ratio decreased from 10.85 to 3.53 and 3.83 to 2.22 between 2013 and 2023 on the LSE and NGX, respectively. In line with prior studies (Mehnaz et al., 2024), high MTB ratios may suggest that these markets consider that there is a greater value than what is recognised in the financial statements for our sample companies. This gap may be a result of UIAs, such as those mentioned in this study (Section 2.7) and others (such as unrecognised human, relational and structural capital (Mehnaz et al., 2024)). A possible reason for the decrease in the

MTB ratio may be due to increased acquisitions, which result in RIAs measured at fair value on the acquisition date rather than the cost price. As a result, users of the financial statements would not need to adjust the carrying amount of RIAs, and the MTB would decrease.

Based on these findings, several recommendations can be proposed for the IASB to consider. First, mandating disclosures related to UIAs could enhance comparability across companies and reduce agency costs. Currently, some companies may not disclose UIAs, limiting transparency and making it challenging for investors to assess these assets consistently when making buy, sell, or hold decisions. By establishing mandatory UIAs disclosures, investors would have greater insight into a company's IAs base, which could improve investment decision-making (Section 4.2). Second, the IASB might consider easing the requirements to use fair value models, such as IFRS 13 (see Section 4.1.1), within IAS 38 to address the MTB gap. While fair value models can offer more relevant financial information, they also introduce challenges due to the unique characteristics of IAs (Mehnaz et al., 2024). These considerations could help the IASB develop balanced guidelines that address both the usefulness and practicality of IAs' reporting, which may, in turn, lower the current MTB value gap.

4.6. Value relevance results:

The structure of this section is as follows. Section 4.6.1 examines the regression results per exchange. Subsequently, Section 4.6.2 examines the regression results per industry per exchange. Each model (Section 3.5.1) is discussed individually, and then an overall conclusion is given on which model's explanatory power was best to capture the share price variance of a company in relation to their disclosure of IAs.

4.6.1. Regression results by exchange:

Model 1 examines the relationship between a company's book value of equity and total comprehensive income with its share price. This model evaluates the extent to which financial statement figures, such as the book value of equity and total comprehensive income, influence a company's share price by measuring their statistical relationship with the share price of that company. Model 1 follows the Ohlson (1995) model, which assumes that a firm's market value is a function of the book value of equity and earnings (total comprehensive income).

$$\textbf{Model 1: } \mathbf{P_{it}} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$$

Model 1 was examined on the LSE and NGX, the results from each year are displayed in Table 25 below.

Table 25: Model 1's regression results

Exchange	Year	Significant variable/s	Beta	R^2 value	F - value	Model p-value	t-value
LSE	2013	N/A	N/A	0.03	1.16	0.31	N/A
LSE	2023	Book value of equity**	82.24	0.50	37.89	<0.001**	8.70
		Earnings**	-221.63				-8.70
NGX	2013	N/A	N/A	0.38	14.17	<0.001**	N/A
NGX	2023	N/A	N/A	0.74	66.51	<0.001**	N/A

*Significant at a 5% level.

**Significant at a 1% level.

The results from Model 1 reveal that both the book value of equity and earnings had poor explanatory power for LSE-listed companies' share prices in 2013 at only 3% in total (Table 25). Interestingly, Model 1's explanatory power improved greatly from 3% to 50% on the LSE from 2013 to 2023. In addition, the book value of equity and total comprehensive income were significant for the LSE in 2023 only. The explanatory power of the model also increased from 2013 to 2023 for companies listed on the NGX, with the explanatory power increasing from 38% to 74%. It was noted that the results on the NGX yielded a significant result without any variables being identified as significant. A possible reason for this could be the aggregation of industries within the model. To provide more accurate results, industries were split and then tested against all the models (see Section 4.6.2).

The results provided in Table 25 will be used as a basis and compared to the results from Models 2-4 set out in Tables 26-28 below to determine whether IA-related disclosures are value relevant.

Model 2 builds on Model 1 by disaggregating the book value of equity into three key components. These variables are the book value of equity less RIAs, identifiable IAs and goodwill. This model evaluates whether these additional IA components improve the explanatory power of financial statements in predicting share prices. By separating goodwill and other identifiable IAs, this model captures the growing significance of RIAs in modern financial reporting.

$$\textbf{Model 2: } \mathrm{P}_{it} = b_0 + b_1(BV - IA)_{it} + b_2 E_{it} + b_3 IIA_{it} + b_4 G_{it} + n_{it}$$

Model 2 was examined on the LSE and NGX, the results from each year are displayed in Table 26 below.

Table 26: Model 2's regression results

Exchange	Year	Significant variable/s	Beta	R^2 value	F - value	Model p-value	t-value
LSE	2013	Book value of equity less RIAs**	18.38	0.18	3.80	<0.001**	-24.48
		Goodwill**	37.26				196.26
LSE	2023	Book value of equity less RIAs**	46.38	0.78	63.24	<0.001**	5.73
		Goodwill**	183.23				12.16
NGX	2013	Earnings**	143 659.37	0.58	15.13	<0.001**	2.96
		Goodwill*	-27 651.72				-2.23
NGX	2023	Goodwill**	24 906.48	0.80	43.39	<0.001**	3.36
		Identifiable IAs**	9 994.87				-3.40

*Significant at a 5% level.

**Significant at a 1% level.

The results displayed in Table 26 indicate that disaggregating the book value of equity into components of RIAs improves the explanatory power of financial information in determining a company's share price. Like Model 1, the explanatory power of Model 2 improved in 2023, with Model 2's R^2 increasing for LSE-listed companies from 18% to 78% from 2013 to 2023. Results on the NGX depict a strong explanatory power of 58% and 80% in 2013 and 2023, respectively. The increase in the explanatory power and the significance of goodwill is an indication of the importance of IAs in the determination of a company's share price.

Goodwill was a significant determinant of the share price of a company in both LSE- and NGX-listed companies in 2013 and 2023. Goodwill was a positive indicator on the LSE over both years and on the NGX in 2023. This may indicate that companies undergoing inorganic growth may seem more successful due to strong industry positioning, competitive strength and the growth of the company (Mehnaz et al., 2024; UKEB, 2024b). A possible reason for goodwill identified as a negative indicator of a company's share price in 2013 could be due to Nigeria's recent adoption of IFRS in 2012. Hence, users may have been unfamiliar and unsure of the accounting measurement for goodwill under IFRS (Tunyi et al., 2019). NGX-listed companies' identifiable IAs were significant positive determinants of companies' share prices in 2023 but not in 2013, reinforcing the growing role of goodwill and identifiable IAs (mainly CS (Table 4)) in share price determination in recent years.

Model 3 further refines Model 2 by disaggregating identifiable IAs into specific categories, such as trademarks, development expenditure, and other rights. This model aims to assess whether the granularity of IA disclosures enhances the value relevance. Model 2 tests whether investors place different levels of importance on

various IA components when evaluating a company's financial health and future performance.

$$\textbf{Model 3: } P_{it} = c_0 + b_1(BV - IA)_{it} + c_2 E_{it} + c_3 G_{it} + c_4 IP_{it} + c_5 RD_{it} + c_6 OIA_{it} + z_{it}$$

Model 3 was examined on the LSE and NGX, the results from each year are displayed in Table 27 below.

Table 27: Model 3's regression results

Exchange	Year	Significant variable/s	Beta	R^2 value	F - value	Model p-value	t-value
LSE	2013	Earnings* Other	164.20	0.38	7.07	<0.001**	79.91
		Book value of equity less RIAs**	-52.30				16.30
		Goodwill**	97.32				22.19
		Trademarks**	-126.81				41.80
		Development expenditure*	1 053.99				445.04
		Recognised IAs**	171.52				50.94
LSE	2023	Book value of equity less RIAs**	47.42	0.78	42.93	<0.001**	5.86
		Goodwill**	172.18				172.18
NGX	2013	Earnings*	148 463.54	0.59	10.10	<0.001**	2.47
NGX	2023	Book value of equity less RIAs**	25719.21	0.87	46.52	<0.001**	4.56
		Goodwill**	140 090.42				5.88
		Trademarks**	-4 279 840,18				-4.67

*Significant at a 5% level.

**Significant at a 1% level.

The results displayed in Table 27 indicate that disaggregating identifiable IAs into specified classes (as mentioned above) improves the explanatory power of companies' share prices. Like Models 1 and 2, the explanatory power of the model remained weaker in 2013 compared to 2023 for both the LSE (38%) and the NGX (59%). The explanatory power of the model improved by 40% for LSE-listed companies and 28% for NGX-listed companies from 2013 to 2023.

On the LSE in 2013, multiple IA-related variables were significant positive determinants of companies' share price of a company, including goodwill, development expenditure, and other RIAs. LSE-listed companies had a vast array of IAs disclosed in 2013 (Table 4), allowing investors the ability to use this information to make buy, hold or sell decisions in relation to those companies'

shares. Trademarks and other rights were the only class of RIAs to be a significant negative indicator of companies' share prices. This may be due to approximately 14% (44/305) of the trademarks and other rights RIA class being impaired in 2013. By 2023, only goodwill remained as a significant indicator of companies' share prices. As mentioned in Section 4.1, a larger array of IAs was disclosed in 2023 compared to 2013 on the LSE (Table 4). However, the fact that goodwill remained significant in 2023 suggests a refined investor focus on goodwill (UKEB, 2024b).

On the NGX, no IA-related variables significantly influenced share price in 2013. In 2023, goodwill and trademarks became significant determinants of companies' share prices, underscoring the increasing importance of specific IAs in valuation. Goodwill, like Model 2, was identified as a significant positive indicator of companies' share prices. Trademarks and other rights were identified as a significant negative indicator of companies' share prices. Given that the trademarks and other rights increased by 100% during the period of review. The extremely negative indication with NGX companies' share prices may be indicative of primary users' focus on natural resources (see Section 4.1) (Shobowale, 2022).

Model 4 extends Model 2 by incorporating advertising and marketing expenses into the valuation framework. As advertising costs contribute to brand recognition and customer loyalty (Chauvin, 1993; Oliveira et al., 2010; Shah et al., 2009), this model tests whether the inclusion of advertising expenses improves the explanatory power of share price fluctuations. Model 4 helps to determine whether markets perceive advertising expenditures as valuable investments or as non-value-adding expenses.

$$\textbf{Model 4: } \mathrm{P}_{it} = d_0 + d_1(BV - IA + AD)_{it} + d_2 E_{it} + d_3 IIA_{it} + d_4 G_{it} + d_5 AD_{it} + j_{it}$$

Model 4 was examined on the LSE and NGX, the results from each year are displayed in Table 28 below.

Table 28: Model 4's regression results

Exchange	Year	Significant variable/s	Beta	R^2 value	F - value	Model p-value	t-value
LSE	2013	Book value of equity less RIAs plus advertising costs**	57.16	0.21	3.66	<0.01*	-3.12
		Goodwill**	114.36				3.08
		Advertising**	57.43				3.14
LSE	2023	Book value of equity less RIAs plus advertising costs**	45.71	0.78	50.91	<0.001**	5.64
		Goodwill**	187.76				12.01
		Advertising**	-45.78				-5.65
NGX	2013	Earnings*	143 888.04	0.58	11.83	<0.001**	2.92
		Goodwill*	-27 699.06				-2.21
NGX	2023	Goodwill**	80 329.07	0.80	34.29	<0.001**	3.13
		Identifiable IAs*	-31 469.40				-2.90

*Significant at a 5% level.

**Significant at a 1% level.

Model 4's results approximate those found in Model 2 and Model 3 (Tables 26-28). The exception is the relationship found between advertising costs and company share prices. Advertising costs were found to have a significant negative impact on the share price in 2023 and a significant positive impact in 2013 on the LSE. This may indicate that advertising expenditure plays a role in share price determination alongside traditional financial metrics (Chauvin, 1993; Oliveira et al., 2010; Shah et al., 2009). Advertising is generally perceived as a beneficial cost incurred by entities (Chauvin, 1993). However, excessive expenditures set out for advertising may be identified as wasteful due to (1) diminishing returns on increased advertising costs; (2) the negative impact on profitability (by adding to the expenses incurred by the entity); (3) an unknown return on investment as incomes due to advertising cannot easily be identified and (4) possible misallocations of capital (Chauvin, 1993).

The results from the above regression analyses, per exchange and year, are summarised in Table 29. Model 3, by disaggregating different classes of IAs, explained a large portion of the share price variance in 2023 on both exchanges, indicating that information related to RIAs is value relevant. The addition of advertising costs into the regression analysis reduced the explanatory power of Model 3 and approximated the results of Model 2. This may indicate the lack of detail associated with UIA-related disclosures, emphasising the need for mandatory reporting of detailed UIA information (see Sections 4.2 and 4.3).

Table 29: Summary of regression findings by exchange and time

Exchange | Year	Model	R^2	E_{it} [9]	BV_{it} [10]	$(BV2)_{it}$ [11]	G_{it} [12]	IIA_{it} [13]	IP_{it} [14]	RD_{it} [15]	OIA_{it} [16]	$(BV3)_{it}$ [17]	AD_{it} [18]
LSE | 2013	1	0.03	-	-	-	-	-	-	-	-	-	-
	2	0.18	-	-	**	**	-	-	-	-	-	-
	3	0.38	*	-	**	**	-	**	*	**	-	-
	4	0.21	-	-	-	**	-	-	-	-	**	**
LSE | 2023	1	0.50	**	**	-	-	-	-	-	-	-	-
	2	0.78	-	-	**	**	-	-	-	-	-	-
	3	0.78	-	-	**	**	-	-	-	-	-	-
	4	0.78	-	-	-	**	-	-	-	-	**	**
NGX | 2013	1	0.38	-	-	-	-	-	-	-	-	-	-
	2	0.58	**	-	-	**	-	-	-	-	-	-
	3	0.59	*	-	-	-	-	-	-	-	-	-
	4	0.58	*	-	-	*	-	-	-	-	-	-
NGX | 2023	1	0.74	-	-	-	-	-	-	-	-	-	-
	2	0.80	-	-	-	**	**	-	-	-	-	-
	3	0.87	-	-	**	**	-	**	-	-	-	-
	4	0.80	-	-	-	**	**	-	-	-	-	-

*Significant at a 5% level.

**Significant at a 1% level.

4.6.2. Regression results by industry:

To examine the effects of IAs in specific industries, the regression testing was expanded to cover individual industries within the dataset.

Model 1 examines the relationship between a company's book value of equity and total comprehensive income with its share price. This model evaluates the extent to which financial statement figures, such as the book value of equity and total comprehensive income, influence a company's share price by measuring their statistical relationship with the share price of that company. Model 1 follows the Ohlson (1995) model, which assumes that a firm's market value is a function of the book value of equity and earnings (total comprehensive income).

[9] Earnings per share
[10] Book value of equity per share
[11] Book value of equity less RIAs per share
[12] Goodwill per share
[13] Identifiable IAs per share
[14] Trademarks per share
[15] Research and development expenditure per share
[16] Other RIAs per share
[17] Book value of equity less RIAs plus advertising per share
[18] Advertising per share

Model 1: $\mathbf{P_{it}} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$

Model 1 was examined on the LSE and NGX, the results from each industry set are displayed in Table 30 below.

Table 30: Model 1's results when grouped by industry:

Exchange	Industry	Significant variable/s	Beta	R^2 value	F - value	Model p-value	t-value
LSE	Consumer-related	N/A	N/A	0.01	0.15	0.85	N/A
	Basic materials and industrials	Book value of equity**	82.38	0.84	90.21	<0.001**	82.38
	Other industries (excluding the financial sector)	Book value of equity**	-13.23	0.46	31.53	<0.001**	-6.75
		Earnings**	821.25				7.79
NGX	Consumer-related	N/A	N/A	0.04	0.50	0.61	N/A
	Basic materials and industrials	Book value of equity**	-85 317.91	0.71	9.69	0.01*	-4.33
		Earnings**	491 083.79				4.32
	Other industries (excluding the financial sector)	Book value of equity**	77 133.72	1	3 543,71	<0.001**	84.18
		Earnings**	-407 129.91				-84.18

*Significant at a 5% level.

**Significant at a 1% level.

The book value of equity was a significant variable consistently in most industries as expected and identified in Section 4.6.1 above (Oliveira et al., 2010). The book value of equity and earnings had the lowest impact on the consumer-related industry. The results provided in Table 30 will be used as a basis and compared to the results from Models 2-4 set out in Tables 31-33 below to determine whether IA-related disclosures are value relevant.

Model 2 builds on Model 1 by disaggregating the book value of equity into three key components. These variables are the book value of equity less RIAs, identifiable IAs and goodwill. This model evaluates whether these additional IA components improve the explanatory power of financial statements in predicting share prices. By separating goodwill and other identifiable IAs, this model captures the growing significance of RIAs in modern financial reporting.

Model 2: $\mathbf{P_{it}} = b_0 + b_1(BV - IA)_{it} + b_2 E_{it} + b_3 IIA_{it} + b_4 G_{it} + n_{it}$

Model 2 was examined on the LSE and NGX, the results from each industry set are displayed in Table 31 below.

Table 31: Model 2's results when grouped by industry:

Exchange	Industry	Significant variable/s	Beta	R^2 value	F -value	Model p-value	t-value
LSE	Consumer-related	Earnings*	112.70	0.24	2.23	0.09	2.25
		Goodwill*	148.90				2.30
		Identifiable IAs*	-51.85				-2.69
	Basic materials and industrials	Book value of equity less RIAs**	36.36	0.96	174.42	<0.001**	3.58
		Goodwill**	173.11				10.91
	Other industries (excluding the financial sector)	Earnings**	313.89	0.82	80.79	<0.001**	4.09
		Book value of equity less RIAs**	63.69				5.18
		Goodwill**	-159.89				-6.41
		Identifiable IAs**	328.00				9.98
NGX	Consumer-related	N/A	N/A	0.12	0.70	0.60	N/A
	Basic materials and industrials	Earnings*	474 418.23	0.84	7.88	0.01*	3.34
	Other industries (excluding the financial sector)	Book value of equity less RIAs**	82 684.74	1	61 991.59	<0.001**	221.43
		Goodwill**	254 407.91				24.53
		Identifiable IAs**	-331 685.48				-8.18

*Significant at a 5% level.

**Significant at a 1% level.

The results displayed in Table 31 indicate that disaggregating the book value of equity into components of RIAs improves the model's explanatory power of companies' share prices. The biggest difference in explanatory power between Models 1 and 2 was identified in other industries (healthcare, technology, and infrastructure and utilities), with Model 2 having a 36% increase in explanatory power compared to Model 1. Identifiable IAs were identified as significant positive determinants of companies' share prices. Goodwill was identified as a negative indicator of the share price for this industry group. As expected, these industries place focus on innovation, and as such, shareholders would be most interested in IA-related information other than goodwill (see Section 2.7) (Al-Hamadeen et al., 2017; Barth & Clinch, 1998; Goebel, 2019).

The basic materials and industrials sector displayed statistically significant results on the LSE, with goodwill being identified as a significant positive indicator of companies' share prices. As previously discussed (see Section 4.4.3), these sectors place focus on business acquisitions; hence, goodwill would be a significant determinant of the share price. Model 2, through the disaggregation of goodwill, accounted for 82% and 84% of the share price variance on the LSE and NGX, respectively, for the basic materials and industrial sectors.

The explanatory power of Model 2 in the consumer-related industry increased as well, from 1% in Model 1 to 24% in Model 2. Like the basic materials and industrials sector (mentioned above), goodwill was a positive indicator of companies' share prices due to the importance placed on business acquisitions. Identified IAs were identified as significant negative indicators of companies' share prices, which may be due to a negative indication provided by trademarks and other rights identified in Model 3 below.

Results from the consumer-related and basic materials and industrials industry sectors on the NGX displayed no significant variables related to IA information. However, Model 2's explanatory power increased the explanatory power observed in Model 1. This indicates that although no individual variable significantly influenced companies' share prices, the inclusion of IAs-related information was value relevant.

Other industries (healthcare, technology, and infrastructure and utilities) on the NGX displayed significant results in Model 2. Goodwill was identified as a significant positive indicator and identifiable IAs were identified as a significant negative indicator of companies' share price. From the results displayed in Table 31, the results depict a great reliance on IA-related information disclosed due to large beta coefficients. This may indicate an over-reliance placed on IA information by emerging markets due to the lack of detailed information (see Section 4.1). The results displayed relating to the other industries should be considered with caution as the number of companies in this industry sector that met the predetermined requirements was few (Section 3.3).

Model 3 further refines Model 2 by disaggregating identifiable IAs into specific categories, such as trademarks, development expenditure, and other rights. This model aims to assess whether the granularity of IA disclosures enhances the value relevance. Model 2 tests whether investors place different levels of importance on various IA components when evaluating a company's financial health and future performance.

$$\textbf{Model 3: } P_{it} = c_0 + b_1(BV - IA)_{it} + c_2 E_{it} + c_3 G_{it} + c_4 IP_{it} + c_5 RD_{it} + c_6 OIA_{it} + z_{it}$$

Model 3 was examined on the LSE and NGX, the results from each industry set are displayed in Table 32 below.

Table 32: Model 3's results when grouped by industry:

Exchange	Industry	Significant variable/s	Beta	R^2 value	F -value	Model p-value	t-value
LSE	Consumer-related	Trademarks*	-54.90	0.24	1.40	0.25	-2.29
	Basic materials and industrials	Book value of equity less RIAs**	42.17	0.97	143.64	<0.001**	4.30
		Goodwill**	170.84				11.51
		Development expenditure*	1 140.59				2.775
	Other industries (excluding the financial sector)	Earnings*	231.66	0.86	71.68	<0.001**	3.28
		Book value of equity less RIAs**	74.78				6.43
		Goodwill**	-185.52				-7.75
		Trademarks**	320.24				10.72
		Other RIAs**	510.80				10.24
NGX	Consumer-related	N/A	N/A	0.16	0.60	0.73	N/A
	Basic materials and industrials	Earnings*	-22 914.98	0.86	4.25	0.09	-0.399
	Other industries (excluding the financial sector)	Book value of equity less RIAs**	82 684.74	1	45 526.57	<0.001**	232.40
		Goodwill**	254 407.91				25.75

*Significant at a 5% level.

**Significant at a 1% level.

The results displayed in Table 32 indicate that disaggregating identifiable IAs into specified classes (as mentioned above) improves the explanatory power of companies' share prices. The results reveal marked differences in the information considered by the market in determining the share price between the LSE and the NGX. On the LSE, investors incorporate detailed nuances of IA components into their valuation frameworks. The findings from model 3's results approximate those found in model 2. The exception to this is that the significant positive indicators of

the share price for the basic materials and industrials industry now included development expenditure. This may be due to investments in regulated business areas (Al-Hamadeen et al., 2017; Barth & Clinch, 1998). For instance, the generation of environmentally friendly extraction methods for natural resources would be seen as a favourable indicator of the company's long-term profitability. As a result, these expenditures may be recognised as an IA and may be a significant positive indicator of a company's share price within this industry.

Model 3's results in the consumer-related industry identified trademarks and other rights as a significant negative indicator of companies' share prices. This may be due to consumer-related industry users' primary concern on profitability and market share growth (Chauvin, 1993; Shah et al., 2009). Another possible reason for this finding could be due to the frequent impairments impacting the trademarks and other rights carrying amounts in the consumer-related industry. Impairments, in the year of review, equated to approximately 42% of the closing balance of trademarks and other rights in the consumer-related industry.

The use of disaggregated information assisted users of the other industries (healthcare, technology, and infrastructure and utilities sectors) category on the LSE as model 3's explanatory power was greater than that of model 2 for this set of industries. This finding implies, as expected (see Section 2.7), that a granular approach to recognising different types of IAs provides a more accurate reflection of a firm's underlying economic potential (UKEB, 2024b).

In contrast, the NGX results indicate that while individual IA components do influence market valuation in other industries (healthcare, technology, and infrastructure and utilities industries), their impact is less distinct compared to the LSE. This has been noted due to no RIA-related disclosures being identified as significant indicators in Model 3 compared to Model 2 (which noted identifiable IAs as a significant indicator). Conventional financial metrics, such as earnings and the book value of equity, seem to play a more dominant role in emerging market companies' share price valuations. This finding may be attributable to the lack of skill present in these economies to utilise more nuanced information (Al-Hamadeen et al., 2017; Tunyi et al., 2019). The reliance on aggregated figures rather than detailed subcategories suggests that investors in these markets might not be integrating the diverse contributions of IAs into their investment decisions.

Consistent with the general findings of this thesis, NGX companies and their investors may not be as developed with regard to their use, recognition, disclosure and interpretation of IA information when compared to the LSE (Al-Hamadeen et

al., 2017; Tunyi et al., 2019). This can be seen by the influence of a few RIA categories on the share prices of these companies. The differences in the use of IA-related information may further emphasize the need for educational programs by the IFRS Foundation to ensure emerging markets are upskilled to utilise the information IFRS requires. This is particularly important as IAs are increasingly becoming key to business operating models (Lev, 2018a; Oliveira et al., 2010).

Model 4 extends Model 2 by incorporating advertising and marketing expenses into the valuation framework. Since advertising costs contribute to brand recognition and customer loyalty (Chauvin, 1993; Oliveira et al., 2010; Shah et al., 2009), this model tests whether the inclusion of advertising expenses improves the explanatory power of share price fluctuations. Model 4 helps to determine whether markets perceive advertising expenditures as valuable investments or as non-value-adding expenses.

$$\textbf{Model 4: } \mathrm{P}_{it} = d_0 + d_1(BV - IA + AD)_{it} + d_2 E_{it} + d_3 IIA_{it} + d_4 G_{it} + d_5 AD_{it} + j_{it}$$

Model 4 was examined on the LSE and NGX, the results from each industry set are displayed in Table 33 below.

Based on Table 33, the results approximate those found in Tables 31 and 32 (Models 2 and 3). On both exchanges, the inclusion of advertising costs resulted in a statistically significant negative indicator of a company's share price in other industries (healthcare, technology, and infrastructure and utilities) on both exchanges. This suggests that these companies' shareholders would not necessarily prefer these companies to allocate capital resources to advertising costs. Given the innovative nature of these industries, this finding is expected (see Section 2.7) (Barth & Clinch, 1998; Goebel, 2019).

Model 4's explanatory power was greater than Model 2's explanatory power for the consumer-related industry. Although advertising costs were not identified as a significant indicator of companies' share prices, their inclusion aided users in making investment decisions in relation to the consumer-related industry's share prices and increased the explanatory power of Models 2 and 3 by 3%. This may be due to the importance of brand-building within the consumer-related industry (Chauvin, 1993; Oliveira et al., 2010; Shah et al., 2009). Advertising costs may add to the perceived value of the company, whereas trademarks and other rights - which may be related to advertising costs - could be related to business

acquisitions alone. Hence, importance is placed solely on advertising costs to determine the extent to which these companies are building their brand names.

Table 33: Model 4's results when grouped by industry:

Exchange	Industry	Significant variable/s	Beta	R^2 value	F -value	Model p-value	t-value
LSE	Consumer-related	Goodwill*	193.05	0.27	2.09	0.09	2.59
		Identifiable IAs*	-48.00				-2.47
	Basic materials and industrials	Book value of equity less RIAs plus advertising costs*	35.86	0.96	135.69	<0.001**	3.44
		Goodwill**	172.67				10.70
	Other industries (excluding the financial sector)	Book value of equity less RIAs plus advertising costs*	80.39	0.85	82.37	<0.001**	6.79
		Earnings**	254.51				3.59
		Goodwill**	-192.97				-8.07
		Identifiable IAs**	362.15				11.74
		Advertising costs**	-80.19				-6.78
NGX	Consumer-related	N/A	N/A	0.12	0.53	0.75	N/A
	Basic materials and industrials	N/A	N/A	0.86	6.16	0.03*	N/A
	Other industries (excluding the financial sector)	Book value of equity less RIAs plus advertising costs**	82 642.03	1	48 928.12	<0.001**	218.28
		Goodwill**	256 374.74				24.09
		Identifiable IAs**	-348 448.98				-7.84
		Advertising costs**	-83 070.61				-150.26

*Significant at a 5% level.

**Significant at a 1% level.

Overall, Model 3 proved to be the best model to explain the variance in the share price across companies in each industry (Table 34). Model 3 proved that the breakdown of RIA-related information may assist users in making investment decisions in certain industries better than others. For instance, on the LSE, this model is not as useful for the consumer-related industry as in the basic materials and industrial industry. Enhancing the granularity of IA disclosures in developed markets appears to add to the value relevance of financial information for

investors, while emerging markets may benefit more from guidance to identify, measure and disclose IAs.

Table 34: Summary of regression results by exchange and industry

Exchange | Industry	Model	R^2	E_{it} [19]	BV_{it} [20]	$(BV2)_{it}$ [21]	G_{it} [22]	IIA_{it} [23]	IP_{it} [24]	RD_{it} [25]	OIA_{it} [26]	$(BV3)_{it}$ [27]	AD_{it} [28]
LSE | Consumer-related	1	0.01	-	-	-	-	-	-	-	-	-	-
	2	0.24	*	-	-	*	-	-	-	-	-	-
	3	0.24	-	-	-	-	-	*	-	-	-	-
	4	0.27	-	-	-	*	*	-	-	-	-	-
LSE | Basic materials and industrials	1	0.84	-	**	-	-	-	-	-	-	-	-
	2	0.96	-	-	**	**	-	-	-	-	-	-
	3	0.97	-	-	**	**	-	-	*	-	-	-
	4	0.96	-	-	-	**	-	-	-	-	*	-
LSE | Other industries (excluding the financial sector)	1	0.46	**	**	-	-	-	-	-	-	-	-
	2	0.82	**	-	**	**	**	-	-	-	-	-
	3	0.86	*	-	**	**	-	**	-	**	-	-
	4	0.85	**	-	-	**	**	-	-	-	*	**
NGX | Consumer-related	1	0.04	-	-	-	-	-	-	-	-	-	-
	2	0.12	-	-	-	-	-	-	-	-	-	-
	3	0.16	-	-	-	-	-	-	-	-	-	-
	4	0.12	-	-	-	-	-	-	-	-	-	-
NGX | Basic materials and industrials	1	0.71	**	**	-	-	-	-	-	-	-	-
	2	0.84	*	-	-	-	-	-	-	-	-	-
	3	0.86	*	-	-	-	-	-	-	-	-	-
	4	0.86	-	-	-	-	-	-	-	-	-	-
NGX | Other industries (excluding the financial sector)	1	1	**	**	-	-	-	-	-	-	-	-
	2	1	-	-	**	**	**	-	-	-	-	-
	3	1	-	-	**	**	-	-	-	-	-	-
	4	1	-	-	-	**	**	-	-	-	**	**

*Significant at a 5% level.

**Significant at a 1% level.

[19] Earnings per share
[20] Book value of equity per share
[21] Book value of equity less RIAs per share
[22] Goodwill per share
[23] Identifiable IAs per share
[24] Trademarks per share
[25] Research and development expenditure per share
[26] Other RIAs per share
[27] Book value of equity less RIAs plus advertising per share
[28] Advertising per share

4.6.3. General recommendations:

Overall, the findings of Sections 4.6.1 and 4.6.2 indicate that IA-related information is relevant. Although the level of relevance of IAs differs between industries, this reflects the diverse roles IAs play depending on sector-specific characteristics. These variations demonstrate the need for more tailored disclosure practices to improve the comparability of firms within the same industry. The IASB should adopt a classification framework that categorises IAs into *operational, investment, and financing* RIAs, as set out in Section 4.1. Such an approach would align reporting with the economic roles of IAs, providing investors with clearer insights into their value and ensuring greater consistency, comparability and transparency across industries (IASB, 2019a; UKEB, 2024a).

5. Conclusion, recommendations and areas for future research

5.1. Conclusion:

This study provides a comparative analysis of RIAs and UIAs between companies listed on the LSE and the NGX in 2013 and 2023. In doing so, it offers insights into the disparities in recognition, disclosure, and valuation practices. The findings reveal key differences shaped by developed and developing economies' economic, regulatory, and operational contexts (Al-Hamadeen et al., 2017; Tunyi et al., 2019; UKEB, 2024a).

This study highlights that IA reporting reflects broader institutional maturity, regulatory emphasis, and industry composition. While the LSE shows higher recognition of RIAs due to regulatory compliance and acquisition activity, the NGX demonstrates the critical role of voluntary disclosure and the relevance of UIAs in resource-driven and CSR-oriented contexts. These insights reveal that a single accounting model under IAS 38 may inadequately reflect the economic reality of companies in different economies. A reimagined approach must integrate both quantitative and narrative disclosures, allowing comparability without penalising context-specific practices.

Research question 1 was addressed in Section 4.1. Companies on the LSE demonstrated a broader and more systematic approach to disclosing RIAs compared to NGX-listed entities (UKEB, 2024a). Goodwill and CS emerged as the most prevalent classes of RIAs across both exchanges, with a notable dominance of CS on the NGX. The exclusive use of the cost model for RIAs highlights the conservative nature of current practices, given the restrictive criteria for applying the revaluation model under IAS 38 (IASB, 2024c; UKEB, 2024a). IFRS 13, in substance, suggests that it is possible to determine the fair value for most, if not all, assets. The primary difference is the extent to which fair values are based on quoted, observable inputs or unobservable inputs. For example, goodwill impairment requires the determination of the fair value of complex assets or groups of assets. Under these circumstances, it is questionable whether the restrictive nature of IAS 38, with regard to the revaluation model, is still appropriate (Mehnaz et al., 2024; Oliveira et al., 2010).

Fair value measurements of IAs, such as goodwill impairments or business acquisition-related RIAs, often involve significant managerial discretion that may create potential agency conflicts where agents may overstate IA values (Beleneşi et al., 2016; Shapiro, 2005). Information asymmetry between agents and principals at present, such as the lack of detailed fair valuation information, can lead to

suboptimal investment decisions made by principals or increased monitoring costs to assess the impact of excluded or adjusted input information. Adopting approaches, such as those disclosure practices applied under IFRS 13, may lead to decreased agency costs. This could ensure that detailed valuation information is provided to support RIA carrying amounts in the financial statements.

Section 4.2 addressed research question 2. NGX-listed companies tend to provide disclosure about more types of UIAs and in multiple sections of the notes to their financial statements. This reflects the voluntary reporting practices shaped by local regulatory and economic contexts (Al-Hamadeen et al., 2017; Radonic et al., 2021). Common UIAs included advertising (both LSE- and NGX-listed companies) and research expenses (primarily LSE-listed companies), suggesting significant investments in brand-building and developmental activities that do not meet the recognition criteria of IAS 38.

The findings from Section 4.2 suggest that agency concerns are present in the current reporting practices in developed and developing economies. Agents may exercise their judgement in the recognition and disclosure of RIAs. Information related to expensed costs are often excluded from the financial statements (Al-Hamadeen et al., 2017; Radonic et al., 2021). As a result, there is an increase in information asymmetry due to withheld information and conservative reporting practices (Beleneşi et al., 2016; Shapiro, 2005). This may result in increased monitoring costs and a lack of comparability across markets. Strengthening governance mechanisms and enhancing disclosure requirements could help mitigate these agency-related distortions, ensuring a more transparent and principal-relevant reporting of IAs.

Section 4.3 addressed research question 3. The study revealed that larger NGX-listed companies and smaller LSE-listed firms disclose UIAs more frequently, driven by attempts at more transparent reporting. Materiality thresholds also impacted reporting practices related to UIAs, resulting in the aggregation of expenses within companies' statements of comprehensive income (PWC, 2023). The healthcare and technology sectors on the LSE prioritised UIA disclosures of research costs given their innovation-driven nature (Barth & Clinch, 1998; Goebel, 2019) (Section 2.7). The consumer and financial sectors lead the NGX, which is focused on brand building and in line with their business models.

Section 4.4 addressed research question 4 (a–d), uncovering notable differences in IA-related variables when grouped by exchange, company size, and industry. The results demonstrate that companies listed on the LSE exhibited significantly

higher levels of RIAs than their NGX counterparts, reinforcing the notion that firms in developed economies benefit from stronger regulatory frameworks, greater expertise in IA valuation, and more structured reporting environments (Agyei-Mensah, 2019; Al-Hamadeen et al., 2017; UKEB, 2024a). This divergence suggests that IAS 38's recognition criteria may disproportionately disadvantage firms in developing markets, where economic activities rely heavily on IA-driven growth strategies that remain largely unreported under current IFRS frameworks (Shobowale, 2022). Consequently, the limited recognition of IAs on the NGX could distort market valuations, making it harder for investors to assess the "true value" of these companies and potentially leading to mispriced equity securities.

Beyond exchange-level differences, company size emerged as another critical factor influencing IA recognition and disclosure. Larger companies report significantly higher carrying amounts of RIAs, primarily due to acquisition-driven growth strategies where goodwill and acquired trademarks dominate IA balances (UKEB, 2024b). This contrasts with smaller firms, which show a higher reliance on internally generated IAs - assets that often fail to meet IAS 38's strict recognition criteria (UKEB, 2024b). These findings indicate that the current standard favours firms engaged in inorganic growth, while organically growing businesses, especially those investing in R&D and brand development, may struggle to reflect the economic value of their investments in financial statements (Wyatt & Abernethy, 2008). The implication is a potential bias in financial reporting, where companies pursuing inorganic growth appear stronger in terms of asset base and profitability than those focusing on innovation and internal development. This could mislead investors and creditors, influencing capital allocation decisions in favour of acquisition-heavy firms at the expense of those driving value creation through organic strategies.

Industry-level analysis further highlights the sector-specific impact of IA recognition. Knowledge-intensive industries, such as technology and healthcare, exhibit higher RIA balances on the LSE, reflecting the formalisation of IA-driven business models where patents and software play a central role and can be recognised, at least at cost (Wyatt, 2005). However, despite their reliance on IAs, technology firms have lower RIA-to-TA ratios than expected, indicating that a significant portion of innovation-related spending may remain off technology companies' SOFP due to the restrictive capitalisation criteria of IAS 38 (UKEB, 2024b; Wyatt & Abernethy, 2008). The implication is a growing disconnect between accounting standards, modern business models and economic reality, where industries driving value through intellectual capital and customer engagement may feel confined with regards to how faithfully they can represent that strategy and

value creation in financial statements. This potentially distorts investor perceptions, risk assessments, and capital allocation decisions across sectors.

The absence of significant differences in IA recognition between 2013 and 2023 further underscores IAS 38's failure to evolve alongside the knowledge-based economy (Oliveira et al., 2010). Despite the increasing dominance of intangibles in corporate value creation, the standard fails to reflect the economic phenomenon of modern business models and strategies completely, limiting its usefulness in financial decision-making. Put differently, IAS 38 caters more to traditional "brick and mortar" businesses (Lev, 2018a, 2018b; Van Criekingen et al., 2022). The revisions to IAS 38 should allow a broader scope of IAs to be recognised. In addition, the IASB needs to "future-proof" IAS 38 to ensure, for example, that AI and other technologies of the future will be adequately accounted for and presented in financial statements.

Research question 5 was addressed in Section 4.5. Statistically significant differences were identified between the MTB value ratio and the groupings of companies by their total RIAs to TAs ratios on the NGX. Suggesting factors such as market perception, economies of scale and lower perceived levels of risk impacting larger companies' share prices. No statistically significant differences were identified in the LSE. Additional testing performed on groupings of companies' UIAs proved unfruitful. Additional Spearmans Rho tests suggest that the MTB value ratios of companies increase as companies grow their revenue and asset base. This may indicate that only a part of the MTB value gap is attributable to IAs (recognised and unrecognised), while the remaining difference in the MTB value gap may be due to market sentiment and other behavioural finance factors. Additionally, RIAs are carried at cost in companies' financial statements while their market values increase with no corresponding adjustment in companies' financial statements (Jenkins & Upton, 2001). If an adjustment is made to the revaluation requirements, as mentioned in this study, the MTB value gap could decrease.

Research question 6 was addressed in Section 4.6. Value relevance results, which align with those of Mehnaz et al. (2024), between time frames on each exchange reveal that (1) IA-related disclosures are more relevant in 2023 than in 2013 and (2) goodwill was most commonly identified as a significant positive indicator of companies' share prices. Hence, IA-related information is value relevant and useful to users of the financial statements when making investment decisions.

Further regression analyses, grouped by industry, revealed distinct patterns in how IAs contribute to share price predictions. Similar to the regression results over time,

goodwill consistently emerged as a significant positive predictor of companies' share prices for the majority of industries. While other industries (healthcare, technology, and infrastructure and utilities) on the LSE identified goodwill as a negative indicator and other IA classes as a positive indicator. The relationship between IAs and share prices depends heavily on the economic environment, industry characteristics, and specific company contexts (Chen, 2018; UKEB, 2024b). This underscores the importance of understanding these factors to accurately assess how IAs influence share prices.

The following core recommendations are brought forward for the IASB's attention. Firstly, a key limitation of current IA accounting standards is the restrictive requirement for an active market in order to apply the revaluation model. This limitation has resulted in no RIAs being found that are measured at fair value. Arguably, this limitation is not justified, given the importance placed on fair values in more IFRS updates (IASB, 2024c; UKEB, 2024a). Many IAs, such as internally developed brands and proprietary technologies, do not have readily observable market prices but still hold significant value. Relaxing this requirement would facilitate broader adoption of revaluation model measurement for RIAs, allowing financial statements to better reflect the economic value of RIAs (UKEB, 2024a; IASB, 2024c). As mentioned by Mehnaz et al. (2024) and Oliveira et al. (2010), this could be done by aligning the valuation methods with those present under IFRS 13. By permitting alternative valuation approaches, such as proxy benchmarks or hybrid models, standard-setters can enhance the relevance of IA reporting while maintaining reliability in financial measurement.

Secondly, to improve the 'usefulness' of IA reporting, mandatory detailed disclosures should be expanded to include both RIAs and UIAs (Lev, 2018a; Wyatt, 2011). This includes requiring firms to disclose IA classifications, valuation methods, and their contributions to economic benefits. This may aid in identifying current issues faced by companies in recognising IAs in their SOFP. Enhanced disclosure requirements would also help mitigate information asymmetry and agency costs by providing companies' financial statement users with a clearer understanding of intangible-driven value creation within the company.

Thirdly, to further improve the usefulness of IA-related information across industries and economies, IA classifications should be standardised. Categorising IAs into operational, investment-based, and financing-based classifications would provide a more structured approach to IA reporting (AASB, 2022; UKEB, 2024b). Such standardisation may reduce poor IA disclosure on the grounds that the related information is proprietary and should be protected. Moreover,

standardisation improves the consistency of IA disclosures, enabling investors and analysts to make more informed comparisons between companies across industry sectors and jurisdictions.

Fourthly, recognising the challenges faced by developing economies in IA reporting, tailored support mechanisms should be introduced to improve the recognition, measurement and disclosure practices (Radonic et al., 2021). These could include simplified disclosure frameworks and targeted training programs to enhance IA recognition practices. By addressing the resource and expertise constraints that often limit IA reporting in developing markets (Al-Hamadeen et al., 2017; Tunyi et al., 2019), these initiatives would enable companies in emerging economies to align with global best practices while ensuring that IA disclosures remain practical and useful in their local contexts. For implementation, a tiered compliance framework could be introduced: high-capacity entities would follow existing IAS 38 principles with enhanced disclosures, while lower-capacity entities in developing economies could begin with simplified IA recognition thresholds and gradually adopt full compliance. Additionally, the IASB could develop sectoral benchmarks for IA disclosure to assist entities in aligning with best practices without incurring excessive compliance costs. At the very least, this thesis provides more empirical evidence that accounting standards setters must pay close attention to the limitations and ability of developing economies to operationalise their accounting standards.

Lastly, as investments in AI and other emerging technologies grow, accounting standards must evolve to address the complexities of recognising and measuring these assets. AI-related expenditures, for example, do not always meet the current recognition criteria for RIAs but are becoming increasingly critical to business models (Mehnaz et al., 2024; Oliveira et al., 2010). Clear guidance on when and how emerging technology investments should be capitalised or disclosed is necessary to ensure financial statements remain relevant in an era of rapid technological advancement. Standard-setters should proactively consider these changes to prevent further disconnects between financial reporting and the economic realities of modern businesses.

The IASB should consider to prioritising training programmes in developing countries, this could firstly enhance the IA reporting practices to ensure that IAS 38 is applied in a consistent manner globally. Thereafter, the IASB should prioritise mandatory detailed reporting of both UIAs and RIAs. This should be followed by mandatory disclosures related to the valuation techniques of other RIAs (such as goodwill) which could offer assistance in determining possible valuation techniques

that could be implemented and applied to other RIAs when relaxing the revaluation model's requirement for an active market. Thereafter, a priority for the IASB may be the effects of categorising IAs in the operational, investment-based and financing-based post the IFRS 18 implementation. Lastly, the IASB could be perform forward looking research to counteract potential future issues that may arise during the emergence of newer complicated technologies.

By addressing these recommendations, the IASB can modernise IAS 38 to reflect the realities of the knowledge-based economy, ensuring that financial reporting remains relevant, transparent, comparable and ultimately useful across diverse economic contexts. Such improvements would empower primary users with better insights into the economic significance of IAs, fostering more informed decision-making, capital allocation and ultimately reducing agency costs.

5.2. Limitations:

This study is subject to the following limitations. Firstly, the study focuses exclusively on the LSE and NGX contexts. As a result, the findings may not represent the disclosure practices of companies listed on other exchanges. This limitation affects the generalisability of the study, as the conclusions drawn from these two exchanges may not apply to a broader range of global exchanges. Secondly, there are inherent sectoral differences between Nigeria and the UK, which may influence IAs' disclosure patterns. Given Nigeria's concentration in resource-based industries and the UK's diverse economic structure (Shobowale, 2022; Statista, 2024; Statistics, 2024), IAs reporting practices may vary based on the predominant industries within each country rather than solely on the country or its classification as developing or developed. As such, while this study provides insights into IAs reporting on the LSE and NGX, these findings may apply more to markets with similar sectoral compositions. Future research could expand this analysis to other exchanges with differing sectoral influences to enhance the generalizability of the results. Thirdly, as mentioned in Section 3.3 (and footnote 1), the sample drawn from the NGX consisted of only 86 companies in comparison to 100 companies' data collected on the LSE. This disparity in sample sizes introduces a potential imbalance in the (statistical) comparisons presented in the findings of this study between the two exchanges. Specifically, the greater volume of data from the LSE may yield more stable in representative trends while the smaller NGX sample may limit the generalizability of the findings or exaggerate the influence of outliers within the data set. As such any comparative insights should be interpreted with caution as the unequal sample sizes may bias the results in favour of patterns more prevalent or detectable in LSE data.

5.3. Future research:

Future research could explore sector-specific differences in IA recognition and disclosure, particularly in industries where IAs play a critical role, such as technology and healthcare. These sectors invest heavily in intellectual property, R&D, and proprietary technologies, yet current accounting standards may not fully capture their economic value (Chen, 2018; UKEB, 2024b). A deeper qualitative (and/or quantitative) industry-level analysis could reveal how sectoral characteristics influence IA reporting in conjunction to this research and whether certain industries would benefit from tailored disclosure requirements or modified recognition criteria.

The rapid emergence of new technologies, including AI and blockchain, presents additional challenges for IA accounting. Future research should investigate how these innovations impact the recognition, measurement, and disclosure of IAs (EY, 2020). Given the increasing investments in AI-driven assets and digital infrastructures, accounting standards may need to evolve to provide clearer guidelines on when and how such expenditures should be capitalised. Exploring potential updates to existing frameworks, such as IAS 38, could ensure that financial reporting remains relevant in an era of digital transformation.

Further research could also examine the impact of policy-driven disclosure requirements, such as Nigeria's mandatory CSR expenses, on IA reporting (Amaeshi et al., 2006). Many developing economies impose similar obligations, which may indirectly affect how companies classify and disclose UIAs related to brand-building and customer relationships. Understanding the extent to which such policies influence financial reporting could provide valuable insights for regulators considering similar frameworks in other jurisdictions.

While the recommendation to standardise IA classifications into "operational, investment-based, or finance-based" is innovative, this report does not address the practical challenges of implementing such a system, particularly for companies in developing markets with limited accounting resources (Tunyi et al., 2019). This is an potential area for future research.

This thesis suggests that the skills and competencies of accountants may play a key role in IA reporting (Al-Hamadeen et al., 2017; Tunyi et al., 2019). Further research is required to specifically test this suggestion and investigate the extent and determinants of such limitations.

Finally, evaluating the feasibility and acceptability of standardised IA classifications, as proposed in this study, would be a valuable area for future research (see Section 4.1). Standardisation efforts could enhance IA information comparability and reduce proprietary costs associated with IA disclosures (Wyatt, 2011). Research could explore whether categorising IAs into operational, investment-based, and financing-based classes improves financial statement clarity. By addressing these areas, future studies could contribute to the ongoing refinement of IA accounting standards.

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7. Appendix A: Content analysis: Disclosure checklist and coding

Company code Nominal	Year Continuous	Year code Continuous	Country of incorporation Nominal	Primary listing Nominal	Presentation currency Nominal	Year-end Nominal	Exchange rate at year-end date Ratio	Currency change to listing currency Ratio	Industry Nominal	Industry code Nominal	Simplified Industry code for SPSS Nominal	Total assets R'000 Ratio	Current assets R'000 Ratio
SPN23	2023	2	Nigeria	NGX	NGN	2023/12/31	R 0,021	NGN 1,000	Real Estate	2	4	NGN 207 161,15	NGN 60 254,46

Non-current assets R'000 Ratio	Total liabilities R'000 Ratio	Current liabilities R'000 Ratio	Non-current liabilities R'000 Ratio	Total equity/NAV R'000 Ratio	Total equity/NAV in industry norm Ratio	Revenue for the year CY R'000 Ratio	Revenue for the year PY R'000 Ratio	Profit for the year CY R'000 Ratio	Profit for the year PY R'000 Ratio
NGN 146 906.69	NGN 83 261.44	NGN 80 850.95	NGN 2 410.49	NGN 123 899.71	NGN 123 899.71	NGN 51 844.16	NGN 45 216.21	NGN 6 585.35	NGN 6 083.90

Total amortisation and depreciation expense for the year CY R'000 Ratio	Total amortisation and depreciation expense for the year PY R'000 Ratio	Number of shares Ratio	Share price at co's year-end Ratio	CAL: market value (R) Ratio	Market value code Ordinal	Market to book value ratio Continuous	Asset class Nominal	Asset class code Continuous	Simplified Asset class code Continuous
NGN 1 161.55	NGN -	45000000	NGN 0.20	NGN 9 000 000.00	4	0.07	Brand names - unrecognized	11	9

If general/not disclosed/aggregated - additional notes Nominal	Disclosed separately in SoFP Nominal	Disclosed separately in SoFP Code Continuous	Asset value O/B R'000 Ratio	Asset value C/B R'000 Ratio	Total movement in asset value R'000 Ratio	IA/TA% Continuous	Cumulative IA CA Continuous	cumulative IAs/TAs % Continuous	IA/TA% code Continuous	Asset measurement model Nominal	Overall FV level classification (if applicable) Nominal
N/A	0-No	0	NGN -	NGN -	NGN -	0.00000%	0.00	0.00%	1	N/A	N/A

Definite/indefinite useful life Nominal	Maximum useful life (Years) Ratio	Minimum useful life (Years) Ratio	Average Useful life (Years) Ratio	Change in estimated useful life Nominal	Old useful life (Years) Ratio	New useful life (Years) Ratio	Residual value R'000 Ratio	Change in estimated residual value Nominal	Old residual value R'000 Ratio	New residual value R'000 Ratio	Amortization method Nominal	Amortization method code Continuous	If other, what is the amortization method based on Nominal	Change in amortization method Nominal	Old amortization method Nominal	New amortization method Nominal
Not disclosed	0	0	0	No	0	0	NGN -	No	NGN -	NGN -	Not applicable	0	N/A	No	Not applicable	Not applicable

Auditors report: KAM or misstated Nominal	Auditors report: KAM or misstated Code Continuous	KAM copy-pasted Nominal	KAM classification Nominal	Audit firm 1 Nominal	Audit firm 2 Nominal	Audit opinion Nominal	Reason for adverse/qualified opinion Nominal
Not applicable	0	N/A	N/A	Baker Tilly	N/A	Unqualified	N/A

Was an indicator of impairment identified Nominal	Was an indicator of impairment identified Code Continuous	Was any impairment then recognised Nominal	Was any impairment then recognised Code Continuous	Amortization CY R'000 Ratio	Amortization PY R'000 Ratio	Additions? Nominal	Additions Code Continuous	Additions CY (at cost) R'000 Ratio	Additions CY/ Asset CB Continuous	Additions PY (at cost) R'000 Ratio	Reason for impairment Nominal	Impairment CY R'000 Ratio
No	0	No	0	NGN -	NGN -	No	0	NGN -	0.00%	NGN -	N/A	NGN -

Impairment Yes/No Code Continuous	Impairment PY R'000 Ratio	Impairment method - VIU or FV Nominal	Discount rate (%) (average if multiple) Ratio	Reason for impairment reversal Nominal	Impairment reversal CY R'000 Ratio	Impairment reversal PY R'000 Ratio	Prior period error? Nominal	Notes to prior period error Nominal	Disposal? Nominal	Disposal Code Continuous	Disposal CY (at carrying amount) R'000 Ratio	Disposal PY (at carrying amount) R'000 Ratio	Disposal CY (at cost) R'000 Ratio	Disposal PY (at cost) R'000 Ratio
0	NGN -	Not applicable	0.00%	N/A	NGN -	NGN -	No	N/A	No	0	NGN -	NGN -	NGN -	NGN -

Additions trough business combinations? Nominal	Additions trough business combinations? Code Continuous	Addition through business combinations CY (at fair value) R'000 Ratio	Addition through business combinations PY (at fair value) R'000 Ratio	Disposal through business combination? Nominal	Disposal through business combination? Code Continuous	Disposal of a business CY (at carrying amount) R'000 Ratio	Disposal of a business in PY (at carrying amount) R'000 Ratio	Classified as HFS R'000 Ratio	Exchange rate differences CY R'000 (+/-) Ratio
0-No	0	NGN -	NGN -	0-No	0	NGN -	NGN -	NGN -	NGN -

Exchange rate differences CY R'000 (+/-) Ratio	Reason for exchange differences CY Nominal	Exchange rate differences PY R'000 (+/-) Ratio	Reason for exchange differences PY Nominal	IA fully amortised but still is used Nominal	IA fully amortised but still is used Code Continuous	IA fully amortised but still is used (Cost) CY R'000 Ratio	IA fully amortised but is used (Cost) PY R'000 Ratio	Hyperinflationary economy restatements CY R'000 (+/-) Ratio	Hyperinflationary economy restatements PY R'000 (+/-) Ratio	Group level Sub research costs - recognized as IA in the group R'000 Ratio
NGN -	N/A	NGN -	N/A	0-No	0	NGN -	NGN -	NGN -	NGN -	NGN -

Unrecognized IA Nominal	Unrecognized IA CY Ratio	Unrecognized IA CY R'000 Ratio	Unrecognized IA CY / TAs R'000 Ratio	Unrecognized IA CY / Profit R'000 Ratio	Description of Unrecognized IA CY	If other, description of Unrecognized IA CY Nominal	Unrecognized IA PY R'000 Ratio	Description of Unrecognized IA PY Nominal	If other, description of Unrecognized IA PY	Research costs CY R'000 Ratio	Research costs PY R'000 Ratio
1-Yes	NGN 4 282,28	R 89,93	2,07%	65,03%	1-Donation, sponsors	N/A	NGN -	0-None	N/A	NGN -	NGN -

Other movements CY R'000 Ratio	Description for other movements CY Nominal	Other movements PY R'000 Ratio	Description for other movements PY Nominal	Subsequent expenditure capitalized CY R'000 Ratio	Subsequent expenditure capitalized PY R'000 Ratio	Internally generated or purchased Nominal	Internally generated or purchased Code Continuous	Revaluation CY R'000 Ratio	Revaluation PY R'000 Ratio	CGU? Nominal
NGN -	N/A	NGN -	N/A	NGN -	NGN -	N/A	0	NGN -	NGN -	0-No

Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	Key assumptions for impairment Nominal	If other, description of key assumptions for impairment Nominal	Profit or loss on disposal (+/-) R'000 Ratio
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NGN -

Total effect on P/L for the year (+/-) R'000 Ratio	Total effect on OCI for the year (+/-) R'000 Ratio	Total movements R'000 Ratio	Difference R'000 Ratio	Notes Nominal	Complied with IAS 8 disclosures Nominal	Complied with IAS 8 disclosures Code Nominal	Reason why company did not comply with IAS 8 disclosures Nominal	Reason why company did not comply with IAS 8 disclosures Nominal	Reason why company did not comply with IAS 8 disclosures Nominal
NGN -	NGN -	NGN -	NGN -	N/A	Yes	1	N/A	N/A	N/A

Please note that the information provided is fictional and is provided for the demonstrated use of the disclosure checklist.