European Journal of Accounting, Auditing and Finance Research
Vol.13, No. 2, pp.,103-122, 2025
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Effect of Intangible Assets on Market Value of Listed Manufacturing Firms in Nigeria

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doi: https://doi.org/10.37745/ejaafr.2013/vol13n2103122 Published March 15, 2025

Citation: Otung A.U., Ibok N.I., Umoren A. and Nsentip E.B. (2025) Effect of Intangible Assets on Market Value of Listed Manufacturing Firms in Nigeria, *European Journal of Accounting, Auditing and Finance Research*, Vol.13, No. 3, pp.,103-122

Abstract: *The study examined the effect of intangible assets on market value of listed manufacturing firms in Nigeria. The study adopted an Ex-post facto research design. The population of the study comprised of the listed consumer goods companies, listed industrial goods companies, quoted oil and gas firms and the listed healthcare entities in Nigeria from (2013-2023). This study employed analytical software of SPSS and Microsoft excel for the analysis. The secondary data collected were analyzed using descriptive statistics, correlation, and regression analysis. The results of the regression analysis revealed that three major intangible assets- goodwill, software, and research & development (R&D) significantly influenced the market capitalization of the firms. Goodwill had a positive and significant effect on market capitalization, explaining 69.1% of the changes in firm value. This indicated that firms with higher goodwill tend to have higher market capitalization. Software had a negative and significant effect on market capitalization, contributing to a 22.9% decline in firm value. This suggested that higher investment in software could reduce market capitalization, possibly due to maintenance costs or inefficiencies in software utilization. Research and Development (R&D) also had a negative and significant effect, contributing to a 23.8% decrease in market capitalization. It was thus concluded that intangible assets have significant effect on market value of listed manufacturing firms in Nigeria. The recommendations made included that firms should focus on projects that have clear market potential and can generate immediate value.*

Keywords*:* Intangible assets, goodwill, software, research and development, market value, market capitalization

INTRODUCTION

In the modern global economy, intangible assets, have become increasingly critical in defining the value and competitive edge of firms. These assets, which include patents, trademarks, software, copyrights, brand equity, goodwill, research and development (R&D), represent non-physical resources that can generate significant economic benefits

for businesses. Unlike tangible assets such as machinery and buildings, intangible assets that are non-physical in nature, yet they play a pivotal role in enhancing a firm's innovation, brand reputation, and overall market position (Suhrab & Muhammad, 2022). Cosmulese *et al.* (2021) opined that most businesses have changed the structure of their resources and investment assets as a result of the numerous advancements and developments brought about by competition in the investment business environment. This has increased the benefit of sharing intangible assets in terms of boosting return and enhancing financial performance. Businesses all over the world have begun to include new types of assets in their financial statements, such as franchises, goodwill, branding, e-marketing, and other intangible assets. Because of the speed at which technology is developing, businesses are being forced to use more automated processes to do their duties (Akpan, 2019). Intangible assets (IA) are growing and becoming increasingly important with the digital and technological revolution. Intangible assets, such as goodwill, research and development, patents, brands, and trademarks, are resources that will bring future economic benefits to firms, especially in an era where the industrial sector is undergoing significant changes from the modern era driven by tangible assets such as natural resources, land, fields, buildings, machinery, factories to being driven by Intangible assets such as brands, know-how, patents, and databases. In the literature, Intangible assets are defined in various ways. There are two categories of IA: ones that can be distinguished separately, like copyright and patents, and those that cannot be distinguished from a company from other assets, like experience, skills, and administrative efficiency (Lopes & Rodrigues, 2007). Uwuigbe *et al*. (2017) and Ying, *et al.* (2019) state that IA are non-current assets that differ from physical assets such as patents, copyrights, trademarks, brands, software, and capitalized research and development. Intangible investment also involves human capital expenses such as training and development, R&D, and market development expenses (Akintoye, 2019; Arash, 2021). Learning and growth are the basis of IA in the company, so intangible assets are involved in all levels of a value chain in business (Mohanlingam & Nguyen, 2021).

In Nigeria, the manufacturing sector is a vital component of the economy, contributing significantly to employment and Gross Domestic Product (GDP). However, Nigerian manufacturing firms face unique challenges in managing and leveraging their intangible assets effectively. Factors such as regulatory changes, market volatility, and varying levels of technological advancement add layers of complexity to the management of intangible assets (Uwuigbe *et al.*, 2017). Empirical research specific to this context is limited, leaving a gap in understanding how intangible assets impact market value in the Nigerian manufacturing sector. For example, Akintoye (2019) explored the impact of intangible assets on corporate performance in selected Nigerian manufacturing firms, finding that firms with higher investments in intangible assets tended to perform better financially. Regulatory bodies in Nigeria should consider mandating the use of the revaluation model for PPE measurement in financial reporting to enhance the credibility of financial information at all times as opined by (Aluya & John,2024). Similarly, (Emeneka & Okerekeoti. 2022) identified a positive relationship between intangible asset management

and firm performance in Nigeria, emphasizing the need for better regulatory frameworks and management practices.

The problem emerges from the complexities involved in accurately valuing and reporting intangible assets within the context of Nigerian manufacturing firms. Traditional accounting practices often fall short in capturing the true economic value of these assets, leading to potential undervaluation and misrepresentation of a firm's financial health (Aluya & John, 2024; Buzinskiene, 2021; Jacob & Kornom-Gbaraba, 2022). This inadequacy can adversely affect investor confidence and decision-making, as well as the firm's ability to secure financing and attract investment. Moreover, the Nigerian manufacturing sector operates within a dynamic and sometimes volatile economic environment, characterized by regulatory changes, market fluctuations, and varying levels of technological advancement. These factors compound the difficulties in managing and leveraging intangible assets effectively. Additionally, the lack of standardized guidelines and best practices for recognizing, measuring, and reporting intangible assets further exacerbates these challenges, leading to inconsistencies and inefficiencies in financial reporting. Empirical evidence specific to Nigerian manufacturing firms is sparse, limiting the understanding of how intangible assets impact firm value in this context. There is a pressing need for comprehensive research to explore this relationship, providing insights that can inform better management practices and policy development tailored to the Nigerian market. In view of this, the following hypothesis were formulated for this study in their null form.

Ho_1: There is no significant effect of goodwill on market capitalization of listed manufacturing firms in Nigeria.
Ho_2: There is no significant effect of Software on market capitalization of listed manufacturing firms in Nigeria.
Ho_3: There is no significant effect of Research & development on market capitalization of listed manufacturing firms in Nigeria.

REVIEW OF RELEVANT LITERATURE

Conceptual framework

Intangible assets

Intangible assets have always been present in a company's operations. The first recorded mentioning of intangibles can be found in 1896 by Lawrence R. Dicksee and Kenneth Galbraith for the term intellectual capital in 1969 (Bontis, 1996). It has only been in the last couple of decades that this field has skyrocketed into prominence (Serenko & Bontis, 2004). The importance of disclosing information related to intangibles has also grown significantly. Research dealing with intangibles suffers from one fundamental problem: the lack of common terminology. The applied concepts are all differently labelled and every researcher or practitioner who develops a new definition wants to establish his own

terminology (Bontis, 1996). Some of the definitions as to what intangibles exactly are, which is both useful (i.e. an exhaustive array of terms encompasses the complex nature of the concept), and harmful (i.e. no consensus leads to confusion). It is unclear whether the primary terms used are arranged in a synonymous or hierarchical manner, since neither literature nor practice has managed to find a common and clear differentiation (Wgaria, 2005).

Computer software, patents, copyrights, film studios, significant client lists, corporate franchises and fishing rights are typical examples. It is a crucial component of IAS 38 standards. The main goals of IAS 38's intangible asset standards are to establish the fundamental circumstances under which an item of an intangible asset should be recognized in accounting to establish how and when an item of an intangible asset should be measured and to clarify the item's disclosure requirements (Hassan *et al.,* 2019). When assessing the measurement of a company's intangible assets internationally, additional complexity arises due to differences in international accounting standards. While global accounting standards generally agree on the capitalization of acquired intangibles, the treatment of internally-generated assets requires closer examination. While under U.S. GAAP development costs are usually expensed, under IFRS some research and development (R&D) costs can be capitalized when the underlying asset likely provides future economic benefits to a company and the costs can be reliably measured (Peter *et al.,* 2017).

Goodwill

Goodwill, sometimes referred to as corporate reputation, is one of the main components of intangible assets appearing in the statement of financial position. For many years, the view that corporate reputation positively impacts firm performance has been documented. Reputation is an intangible asset it is increasingly seen as a driver of sustainable competitive business and corporate advantages (Roberts & Dowling, 2002; Mishra & Suar, 2010; Neville *et al.,* 2005; Eberl & Schwaiger, 2005). According to IFRS 3, goodwill is the difference between the aggregate of the fair value of the consideration in a business combination at the acquisition date and the net amounts of the identifiable assets acquired and the liabilities assumed at the acquisition date. The changing economic environment of the 1980s resulted in a large merger wave, thereby increasing the amount of goodwill on company's audited financial statements. As a result, the goodwill gained increased attention with the growing importance of intangibles in company operating assets (Nnado & Ozouli, 2016). An opportunity to make goodwill a clearer accounting object is offered by the International Financial Reporting Standards 3 (IFRS3) on business combinations. Different from its predecessor International Accounting Standard (IAS) 22, IFRS 3 involves the disclosure of goodwill by requiring firms to supply a qualitative description of the factors in goodwill. This regime has been supported by the introduction of mandatory use of IFRS within the European Union. IFRS 3 can be considered an attempt to open the "black box" of goodwill (Bugeja & Gallery, 2016).

Software

Software as used in this study, is measured as the cost of capitalized computer software divided by the number of ordinary shares. Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and application software which is used by users to accomplish specific tasks. Alfredson *et al.* (2009) categorize these intangible assets as technology-based intangible assets (patented technology or computer software). The importance of computer software in the manufacturing sector is that it aids the computerization of inventory management and production process. More specifically, this software includes development costs that are directly attributable to the design and testing of identifiable and unique software products such as "Oracle ERP Application" that are used for inventory management and in running the production process. According to IAS 38, cost on computer software is expenditure which can be recognized as an intangible asset in the statement of financial position. This has improved the value relevance of computer software which has been established in some studies. Specifically, (Aboody & Lev,1998) find that the software asset reported on the statement of financial position is associated with share prices.

Research & development

Research and development (R&D) is a term to describe the effort a company devotes to the innovation, and improvement of its products and processes. It is the set of innovative activities undertaken by corporations or governments in developing new services or products, and improving existing ones. Research and development constitute the first stage of development of a potential new service or the production process (Emeneka, 2022). The proper use of R&D expenditure can ensure operating efficiency with the help of new technology, innovation and production strategies and therefore increase the firm performance and firm value. Research and development have been the key factors of progressing through creativity and inventions. R&D have positive feedback equally forward through investment and expanding the efficiency of growth and development and it tends to increase organization and firms value, performing possibility of powering existing product and new development product. R&D is one of the phenomena's subjects that assist firms and organizations system in case of competition of market locally and internationally with improving company performance (Gamayuni, 2023). Hunady *et al.* (2019) and Jin et al. (2018) contributed that R&D could impact the firm's capability and the way of managing production in the market especially in case of producing new product with lower cost, analyzing weakness points and doing priorities which is a step forward for the firms to reach brighter paths and bring new product markets area (Budur *et al.*, 2018). Research and Development closely affects firm value, (Makrominas, 2017) is particularly focused on the relationship between research and development with firm work as well as in the production process and evaluating market and customer form worldwide. Business firms and organizations are competing in case of manufacturing new products this is the way of sustaining firms to aim the target completely. Research and development positively affect companies' performance as most studies such as (Mansuri, 2016; Piekkola, 2016; Usman *et al.*, 2017) shows that research and development is more effective

and impact the firms value positively than service, because inventions only become true through research and development and through this, the companies are able to increase price of the product and give the product more value thereby guarantee their future with this vision. Research and development leads to increase production and reduce cost of production.

Market value

Value of an entity could either be in form of book value or market value. Market value, as a concept, cut across many disciplines. This is because it is found in various field of study (Kumar, 2015). In pure science, there are different meaning of market value; in management science, there are diverse meaning of market value and in social science, there are also different views of market value (Suresh & Sengottaiyan, 2015). The focus of this study is on management views of market value of which accounting is one of the sub-fields of interest of management science. According to (Purwohandoko, 2017), the market value of any entity is very crucial to the various stakeholders of the company. This is because of the fact that the two goals of financial management are profit maximization and wealth maximization. Ogbuigwe, John and Aluya (2024) highlighted the critical importance of effective cash flow management in driving investment performance and profitability, which in turn improves firm's value through increases investor confidence. Both profit maximization and wealth maximization are two drivers that warrant the growth of market value of any company. This is to say that when there is any improvement in profitability of a company, the value of such company is certain to be improved as well. John, Aluya and Ogbuigwe (2024) stressed that firms should consider their size when making financing decisions and adjust their strategies accordingly for enhanced financial stability, growth prospects, and overall success. Firms in Nigeria should prioritize efficient accounts receivable management by implementing effective credit policies at all times as opined by Ogbuigwe, Aluya and John (2025). The general objective or goal of a company is to raise the market value. Improvement in market value usually represent the prosperity of the owners who are the equity shareholders. The improvement in market value of a company is of focus to the investors. This simply means that the prosperity level of the investors is usually derivable from the standpoint of improvement in firm value. Also, market value implies performance indicator to a manager of company.

The main idea of market value is value creation, which means that a firm should add value to its resources to sustain them. If a firm cannot create value, then its existence is purposeless (Kraaijenbrink & Spender, 2014). Thus, two important issues emerge. Firstly, the generation of profit is an extremely crucial issue for a firm because this profit reflects a company's efforts for sustainability. Secondly, firm value is an effective method to measure value creation and related profit. This measurement can be done by comparing the market value of total assets to its book value, which is the core of firm value. The general objective or goal of a company is to raise the market value. Improvement in market value usually represent the prosperity of the owners who are the equity shareholders (John, Aluya & Ogbuigwe, 2024). The improvement in market value of a company is of focus to

the investors. This simply means that the prosperity level of the investors is usually derivable from the standpoint of improvement in firm value. Also, firm value implies performance indicator to a manager of company. From the investor's perspective, firm value is associated with increase in stock price and as well as other attributes captured on the financial statement of companies (Harsha et al., 2018).

Market capitalization

Market Capitalization (Market Cap) is the most recent market value of a company's outstanding shares. The Market Cap is equal to the current share price multiplied by the number of shares outstanding (Ying, 2019). Suhrab and Muhammad (2022) posit that investing community often uses market capitalization value to rank companies and compare their relative sizes in a particular industry or sector. To determine a company's market cap, simply take its current market share price and multiply the figure by the total number of shares outstanding. Moreover, small-cap companies tend to show higher growth potential than their larger counterparts and, as such, are likely to provide investors with more opportunities for capital gains. Alves and Martins (2014) state that great information asymmetry is inherent in companies with many intangible assets. Thus, managers should be encouraged to disclose information that is as accurate as possible to capital markets about intangible assets may obtain a positive response from the capital market. When investors do not know the fair value of intangible assets, they cannot accurately assess the price of shares issued on the market, and any clear information about investments in intangible assets is not available (Okoye *et al.*, 2019).

Theoretical framework

A theoretical framework establishes a vantage point, a perspective, set of lenses through which the researcher views a research problem. With this understanding in mind, some theories relating intangible assets to firm value are discussed in the following subsections.

Resource-based view theory by Edith Penrose (1959)

The Resource-based view theory, examines how a firm's unique resources and capabilities can lead to competitive advantage, superior financial performance and value. The evolution of the Resource-Based View (RBV) originates from Penrose's pioneering idea presented in the 1950s in her book 'The theory of the growth of the firm', where a firm is described as a pool of resources that should be organized into its best uses to create grounds for firm success (Penrose, 1995). The RBV is based on the thought that tangible and intangible resources and the capability to coordinate those assets or inputs of production in a strategically successful way (Helfat & Peteraf, 2003) form the grounds for competitiveness in the dynamic business environment. The role of company managers is crucial to firm- level competitiveness since their perceptions of the environmental circumstances dictate the selection of resources to be exploited, developed, and protected (Fahy, 2020). In addition, in structuring the firm-level resource portfolio, managers should also be able to make successful decisions on strategic resource divestments (Sirmon et al., 2007). Homogeneously distributed and or unstable differences in resources do not provide a company with sustainable abnormal returns (Barney, 1991). This holds true for stable as

well as dynamic markets (Barney et al., 2001; Fiol, 2001; Eisenhardt & Martin, 2000), where the ability to continuously change and adapt (and find opportunities to generate abnormal returns) is regarded as a firm resource. This is similar to the ability to protect the resources and employ resources in a stable market such as human capital, or organizational capital. A company is not necessarily required to secure sustainable competitive advantages, but must be able to secure a constant path of temporary advantages in a dynamic market (Fiol, 2001; Barney et al., 2001).

Signaling theory by Michael Spence (1973

The signal theory assumes that financial figures are a communication tool for signaling trends in the market in as much as they are able to provide help to investors by making them appreciate the real value of firms. The development of the signaling theory is to clarify the information asymmetry in the labor market. Specifically, signals are understood as 'activities or attributes of individuals in a market which, by design or accident, alter the beliefs of, or convey information to, other individuals in the market' (Spence, 1974) while the sender must choose how the signal should be communicated (Connelly et al., 2011), the receiver must decide about the interpretation of the received signal (Drover et al., 2018), signaling theory relates to intangible assets by explaining how firms communicate quality, reliability and other valuable attributes to external stakeholders, such as investors, customers and employees. The investors particularly focus on the stock rates. Value relevance studies provide empirical evidence on financial numbers association with the predicted value of the securities market, where financial information is said to have value relevance if the financial information can be used to predict the company's market share price. Where market share prices become published information signals are sent to investors in making investment decisions. Investors can also understand the factors affecting company's stock price and anticipate the trend of price changes, thus, making the necessary decisions to buy or not to take stock.

Empirical framework

Dragomir (2024) examined the impact of intangible capital on firm productivity in the technology and health care sectors. The aim of study was to assess the impact of structural capital intensity and utilization on firm profitability in an international setting: the European Union countries, plus Norway, Switzerland and the United Kingdom. The indicators are calculated based on financial data downloaded from the Refinitiv Eikon database. Two financial ratios are used as proxies for the intensity and utilization of structural capital. The balanced panel consists of 625 companies from 25 countries, over the period from 2013 to 2022. The panel includes financial information on two industries that are considered innovation-oriented, namely technology and healthcare. Alternative model specifications are proposed to test the robustness of the basic model, including dynamic models (with lagged dependent variables). The present study indicates that a higher proportion of structural capital (intangible assets, excluding goodwill) is a negative factor for company profitability in the technology and healthcare sectors. There is no indication that a more intense use of intangible assets and more investments in R&D positively contribute to company profitability in the respective industries, for a large

sample of listed companies. A higher proportion of intangible assets, as reported in financial statements, is possibly related to inefficiencies in the management of structural capital. The inverse relationship between profitability and investments in intangible assets is likely due to failures in cost accounting. Limitations and future research propositions are provided in the conclusions.

Elkemali (2024) examined the effect of intangible and tangible investments on future earnings volatility within the European financial market context from 2019 to 2023. Drawing from International Accounting Standards (IAS) 16 and 38, the researcher examined the intricate relationship between fixed assets, expenses, and the uncertainty surrounding forthcoming earnings. To investigate the hypothesis, the researcher employed regression analyses. Our analysis reveals that intangible assets, often associated with heightened uncertainty and risk, contribute to increased earnings volatility compared to capital expenditures. Furthermore, we find that capitalizing intangible assets serves to alleviate uncertainty, resulting in lower earnings volatility compared to expensing them. Our exploration of industries' effects further reinforces these findings, with the effect of intangible and tangible investments on earnings volatility being more pronounced in high-tech industries than in low-tech industries. Additionally, our robustness test, utilizing goodwill as a proxy for intangible assets and property, plant, and equipment as a proxy for tangible assets, yields consistent results, further bolstering our findings.

Mehnaz *et al.* (2024) examined the disclosure of recognized and unrecognized intangibles: evidence from New Zealand from 2016 to 2023. The researchers in their study examined the reporting of intangible assets and the disclosures on intellectual capital activities by listed companies and public benefit entities in New Zealand and assessed the usefulness of these disclosures. Using regression analysis, the researchers compared trends in intangible asset disclosure frequency, we note that the most common is capitalized software costs, followed by goodwill. For intellectual capital, we find that qualitative disclosures are more prevalent than quantitative, with disclosure on relational capital being the most frequent. In addition, we find that intangible assets are value relevant, and more intellectual capital disclosures increase the value relevance of goodwill. Finally, we consider intangible reporting by public benefit entities and show that while the rate of intangibles capitalized is similar, they are of less relative economic importance. Overall, our findings provide evidence of divergence in intangible categorization practice, highlight the absence of reporting digital technologies and call for improved disclosure criteria for recognized and unrecognized intangibles

Michael *et al.* (2024) examined the impact of measuring intangible capital with market prices. Accounting standards prohibit internally created knowledge and organizational capital from being disclosed on firm balance sheets. As a result, balance sheets exhibit downward biases that have become exacerbated by increasing levels of intangible investments. To offset these biases, researchers must estimate the value of these off-balance sheet intangibles by capitalizing prior flows of research and development (R&D) and selling, general, and administrative (SG&A). In doing so, a set of capitalization

parameters must be assumed (i.e., the R&D depreciation rate and the fraction of SG&A that represents a long-lived asset). We estimate these parameters using market prices from firm exits and use them to capitalize intangibles for a comprehensive panel of firms from 2019 to 2023. We then use a series of validation tests to examine the performance of our intangible capital stocks versus those developed from commonly used parameters. On average, our estimates of intangible capital are 15% smaller than estimates from status quo parameters while exhibiting larger variation across industry. Intangible capital stocks derived from exit price parameters outperform existing measures when explaining market enterprise values and identifying human capital risk. Adjusting book values with exit-based intangible capital stocks markedly attenuates well-documented biases in market-to-book and return on equity ratios while increasing the precision of the high-minus-low asset pricing factor. We conclude that our capitalization parameters create intangible stocks that perform equal to or better than status quo measures in various applications.

Panern and Suwansin (2024) examined the effects of intangible assets and all components of intangible assets on Thai-listed companies' firm value and performance. The aggregate value of intangible assets and three components of intangible assets, namely identifiable intangible assets (IIA), goodwill (GW), and research and development (R&D), were used as test variables. Firm value, measured by Tobin's Q, and two measurements of firm performance, return on assets (ROA) and return on equity (ROE), were used as dependent variables. The final sample includes 3,701 observations for ten years from 2012 to 2021 in Thailand. Ordinary least square (OLS) was employed to test the hypotheses. Estimated results show that the aggregate value of intangible assets affects firm value positively. When the aggregate value of intangible assets was classified into three components, IIA positively impacted firm value. In contrast, GW and R&D positively impacted both firm value and performance. We further separated our observations into two groups based on the intangible-intensive profile. We confirmed that the positive impacts of IIA, GW, and R&D on firm value and performance were higher for IIP firms than for non-IIP firms. The findings highlight that internal processes and unique, inimitable resources drive a firm's success. Intangible assets collectively contribute to value creation. For executives, prioritizing intangible assets can enhance performance and competitiveness. Investors should focus on intangible assets, particularly R&D, when evaluating stocks. This study contributes to the literature by clarifying the role of intangible assets in firm performance and value, particularly concerning intangible-intensive profiles.

Ebe et al. (2023) examined the effect of intangible assets on the firm performance of selected consumer manufacturing companies listed in Nigeria. The study employed secondary data of the sampled 15 companies out of a population consisting of 20 selected consumer goods manufacturing companies listed in Nigeria using a purposive sampling technique over 11 years from 2011 to 2021. Descriptive statistics and inferential analysis were adopted in the data analysis. The study revealed that intangible assets had a positive and significant effect on earnings per share (EPS) and the return on shareholders' funds (SHF). The study concluded that the firm performance of selected consumer goods

manufacturing companies in Nigeria was significantly affected by IAS 38 intangible assets.

Gamayuni (2023) studied the effect of intangible asset, financial performance and financial policies on the firm value in Indonesia from 2017 to 2022. The purpose of the study was to test empirically the relationship between intangible assets, financial policies, and financial performance to the firm value at going-public company in Indonesia. Path analysis was used to ascertain the relationship between intangible assets, financial policies, financial performance, and firm value at going-public company in Indonesia in the year 2017 to 2022. This study also provides empirical evidence that Intangible assets, financial policies, financial performance have significant influence to the firm value simultaneously. Intangible assets have no significant influence to financial policies, but has positive and significant influenced to financial performance (ROA) and firm value. Debt policies and financial performance (ROA) influenced firm value positive and significant. Financial statements limitation in measuring and disclosing intangible assets is the cause of significant difference between book value equity and market value equity. Measurement and disclosure of intangible assets (intellectual capital) precisely and accurately is very important, because intangible assets have a positive and significant effect to the firm value. Accounting standards should be concerned about this. We recommend that public companies must use fair value approaches in assessing the value of asset in order to improve earnings quality and relevancy of financial statements. Several types of intellectual capital that cannot be classified as intangible assets should be disclosed in the disclosure of financial statements. It is required a standardization of intellectual capital disclosure as part of the intangible assets that are not presented in the balance sheet, in order to provide more comparability between companies so can be beneficial for analysts and investors as an indicator of future potential firms. Currently there are no standardization of IC disclosure. The Financial Accounting Standards as well as Indonesian Financial Accounting Standards have not made a rule for such standardization.

Husni *et al.* (2023) studied the influence of intangible assets disclosures on business performance of the Palestinian stock exchange. The purpose of this research was to determine how intangible asset declarations affected manufacturing companies listed on the Palestine Exchange in terms of performance throughout the years [2017-2022]. The study sample consisted of 13 industrial companies listed on the Palestinian Stock Exchange, and in order to verify the study hypotheses, a descriptive analytical approach was followed. Several statistical methods were used, such as random effect analysis. After conducting the required tests, the results of the tests showed that the intangible assets do not have an effective impact on the performance of the companies that were studied, as the relationship was negative and it was not proven that the intangibility of assets had any positive results. However, it was found that leverage has a positive effect on the performance of these companies. The study recommended that the approaches for service and industrial companies should be improved and developed to enhance the level of performance in accordance with developments that occurred in the financial market. Contribution/ Originality: The findings of this study support businesses in all economic

sectors in demonstrating the added value that asset diversification, particularly with regard to intangible assets, provides. The originality of this study stems from the fact that it reflects the development of the harnessing of resources in developing countries to achieve good financial performance Akpan (2021) evaluated the effect of intangible asset on market value added of listed ICT firms in Nigeria from 2011 to 2019. The independent variables of interest which are employed in other to ascertain the possible effect on market value added include; technology based intangible assets, market related intangible assets and human capital efficiency. To test the hypotheses the researcher adopts the hierarchical regression technique. The results from the study reveal that market related and technology-based intangible assets have positive significant effects on market value added, while human efficiency has insignificant effect on market value added of ICT firms in Nigeria.

Summary of empirical review and gap in literature

Academicians and researchers have evaluated the effect of intangible assets as a whole on market value, financial performance and profitability in various sectors across developed and developing countries including Nigeria. Some of these sectors include the banking sector, technological sector, industrial goods sector and consumer goods sectors, health sector and oil and gas sector. Only a few studies evaluated the effect of intangible assets on firm value in Nigeria with barely a hand full focusing on the manufacturing sector. Other studies available adopted various variables for intangible assets such as goodwill, software, intellectual property, exploration cost. The effect of intangible assets on firm value is a growing concern to researchers as there appear to be limited empirical literature in this area especially in Nigeria with most of these studies being anchored on stewardship theory as well as agency theory. Hence, to fill the gap in literature, the present study on effect of intangible assets on market value was conducted using goodwill, trademarks, software, patent right and research & development and firm size as a control variable on profitability for the period 2013-2023 and anchored on the resource-based dependency theory.

METHODOLOGY

This study adopted an *Ex-post facto* research design. The ex-post facto research design hinged on two major reasons: First, the study relied on historic accounting data obtained from financial statements of the sampled companies. The population of the study comprised of the listed consumer goods companies, listed industrial goods companies, quoted oil and gas firms and the listed healthcare entities in Nigeria. The listed consumer goods companies, industrial goods companies, oil and gas and healthcare entities in Nigeria as at 31st December, 2023 were twenty (20), thirteen (13), twelve (12) and eleven (11) respectively and made up the listed manufacturing companies on the floor of the Nigerian Exchange Group (NXG) considered by the researchers in this present study. In this case, the population of this study was fifty-six (56) listed manufacturing companies in Nigeria. Thirty (30) listed manufacturing companies were drawn and sampled for the study from the four sectors considered in the present study. This study employed analytical software of SPSS and Microsoft excel for the analysis. The secondary data collected were analyzed using descriptive statistics, correlation, and regression analysis.

In order to test the three hypotheses formulated in the study and to achieve the objectives of the research, the following model will be formulated.

Market value = f (Intangibles Assets) ……..……..…… (i)

Mv = f (GDW, SFT, R&D) ……..…… (ii)

$Mv_{it} = \beta_0 + \beta_1 GDW_{it} + \beta_2 SFT_{it} + \beta_3 R\&D_{it} + £_{it}$…….…….... (iii)

Where:

β_0, β_1, β_2, β_3, β_4 β_5 and β_6 are coefficients which will be obtained from the analysis of data.

Mv	=	Market value
GDW	=	Goodwill cost
SFT	=	Software cost
R&D	=	Research and development expenditure
β_0	=	Model intercept
β_1-B_3	=	Coefficients to be estimated
i	=	Period of the study
t	=	Firms under study
$£_t$	=	Stochastic error term

Table 3.1 Operationalization of variables

S/N	Variables	Code	Measurement	Sources
1	Market value	Mv	Market capitalization: share price x total number of outstanding shares	Roy 2016
2	Goodwill	GDW	Excess of the purchase price over market value of the identifiable net assets of the acquired business.	Akpan (2019)
3	Software	SFT	Expenditure on acquisition and installation.	Gu and Lev (2011)

Source: Researchers' Compilation (2024).

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Data analysis

Descriptive Statistics

The data set was subject to descriptive analysis. The descriptive statistics used in this study include the following; mean, minimum, maximum and standard deviation. The result of the descriptive analysis is presented in Table 4.1

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Market Cap (₦)	330	3,000,000.0	9,065,549,939,460.0	228,894,124,198.915	837,982,344,071.1921
Goodwill (₦'000)	330	.0	248,700,000.0	4,194,013.077	22,215,679.7473
Software (₦'000)	330	.0	4,954,604.0	107,576.506	414,958.1686
R&D	330	.0	21,644,325.0	149,681.254	1,422,403.5201
Valid N (listwise)	330				

Source: Researcher's Computation (2024).

The number of observations of 330 means that 30 companies were used for the analysis covering a period of 2013 to 2023 (11 years) each. The number of observations was the same for all the variables of the study. The firm value which was measured with market capitalization has a minimum value of N3,000,000 with a maximum value of N9,065,549,939,460 respectively. The average market capitalization for the selected companies was N288,894,124,198.91 with a standard deviation of N837,982,344,071.19. The standard deviation shows the degree of dispersion Most of the companies did not record goodwill in their financial statements for the period 2013 through 2023 that is why the minimum value for goodwill is zero. The maximum value of goodwill on the other hand was N248,700,000,000 with an average value of N4,194,013,017 for the sampled firms. The standard deviation of goodwill was N22,215,679,747 respectively.

The carrying amount of software in the annual reports of most of the selected firms was zero, thus the minimum value of zero for software. The maximum value of software reported by the selected companies for the period under review was N4,954,604,000. The average software cost was N107,576,506 with a standard deviation of N414,958,168 respectively. The research and development cost had a minimum value of zero for the period under review. The maximum research and development cost was N21,644,325,000 while the average was N149,681,254 respectively. The standard deviation of the research and development cost of the sampled companies was N1,422,403,520.

Test of Hypotheses

The research hypotheses were tested in this section of the study in line with the regression model. The result of the regression analysis is presented in Table 4.2.

Table 4.2 Regression Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.771[a]	.595	.570	168294242332.4943	.461
F	Sig.				
23.511	.000				
		Std. Error	Beta	t	Sig.
	(Constant)	-975473642984.398		-5.341	.000
	GOODWILL	135735690757.223	.691	6.715	.000
	SOFTWARE	-283631.983	-.229	-2.747	.008
	R&D	-163788340.749	-.238	-2.781	.007

Source: Researcher's Computation (2024)

Hypothesis One

The null hypothesis one states that there is no significant effect of goodwill on market capitalization of listed manufacturing firms in Nigeria. Based on the decision rule of the study, the null hypothesis one of the study was rejected and the alternate accepted because the p-value of 0.000 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 6.715 is greater than the critical value of t which was 1.967. Therefore, there is a significant effect of goodwill on market capitalization of listed manufacturing firms in Nigeria

Hypothesis Two

The null hypothesis two states that there is no significant effect of Software on market capitalization of listed manufacturing firms in Nigeria. Based on the decision rule of the study, the null hypothesis two of the study was rejected and the alternate accepted because the p-value of 0.008 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 2.747 is greater than the critical value of t which was 1.967. Therefore, there is a significant effect of Software on market capitalization of listed manufacturing firms in Nigeria.

Hypothesis Three

The null hypothesis three states that there is no significant effect of Research & development on market capitalization of listed manufacturing firms in Nigeria. Based on the decision rule of the study, the null hypothesis three of the study was rejected and the alternate accepted because the p-value of 0.007 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 2.781 is greater than the critical value of t which was 1.967. Therefore, there is a significant effect of Research & development on market capitalization of listed manufacturing firms in Nigeria.

DISCUSSION OF FINDINGS

Goodwill and market capitalization

The result of the analysis of hypothesis one indicated that goodwill has significant effect on market capitalization of listed manufacturing firms in Nigeria. The result of the analysis in Table 4.5 shows a beta coefficient for goodwill of 0.691 (p-value = 0.000) which implies that 69.1% of the changes in market capitalization is accounted for by goodwill. The positive influence shows that more goodwill increases the market capitalization. The finding is in line with the finding of Yusuf *et al*. (2022) examined the effect of intangible assets on the value of manufacturing companies listed on the Indonesia Stock Exchange in 2020 during the covid-19 pandemic. Research results showed that asset on form such as: goodwill, license/franchise, brand, rights copyrights, patents, software, recipes, formulas, models, designs, and prototypes have influence positive and significant to Mark Company Manufacturers Listed on the IDX in 2020.

Software and market capitalization

The result of the analysis of hypothesis two indicated that software has significant effect on market capitalization of listed manufacturing firms in Nigeria. The result of the analysis in Table 4.5 shows a beta coefficient for goodwill of -0.229 (p-value = 0.008) which implies that -22.9% of the changes in market capitalization is accounted for by software. The negative influence shows that more investment in software decreases the market capitalization. The finding is in line with the finding of Imeokparia and Okere (2023) examined software accounting cost and financial performance of manufacturing firms in Nigeria. The research delved into the intriguing relationship between the financial performance of Nigerian manufacturing enterprises and the costs associated with cloud accounting. The research findings were striking, revealing a significant negative influence of maintenance costs on the return on equity of the chosen manufacturing enterprises in Nigeria. As a result, their study concluded that a successful cost management system is imperative for manufacturing businesses to achieve sustained profitability, highlighting the need for prudent financial strategies in the face of evolving technological advancements in the accounting domain.

Research and development and market capitalization

The result of the analysis of hypothesis three indicated that research and development have significant effect on market capitalization of listed manufacturing firms in Nigeria. The result of the analysis in Table 4.5 shows a beta coefficient for Research and development of -0.238 (p-value = 0.007) which implies that -23.8% of the changes in market capitalization is accounted for by research and development. The negative influence shows that more investment in research and decreases decreases the market capitalization. The finding is in line with the finding of Ferdaous and Rahman (2017) who examined the effect of research and development (R & D) on firm performance in the pharmaceutical industries in Bangladesh. The study found that intangible assets had a positive and significant effect on earnings per share (EPS). In addition, the study also revealed that the rise in high performance had an inverse relationship with shareholders' wealth (SHW). The findings also agree with Buzinskiene (2022) who studied the assessment of the recognition for research and development costs as intangible assets the paper studies the accounting of recognition of research and development costs as intangible assets of Lithuanian companies from 2019-2021. Using the descriptive analysis, this study aims to reveal the possibilities of recognizing research and development costs as intangible assets in accounting. Their results of the study showed that companies have various types of research and development costs, but they are not considered suitable for recognition as intangible assets in the statement of financial position

CONCLUSION AND RECOMMENDATIONS

This study examined the effect of incorporeal assets on the market value of listed manufacturing firms in Nigeria. The results of the regression analysis revealed that three major intangible assets—goodwill, software, and research & development (R&D)—significantly influenced the market capitalization of the firms. Goodwill had a positive and

significant effect on market capitalization, explaining 69.1% of the changes in firm value. This indicates that firms with higher goodwill tend to have higher market capitalization. Software had a negative and significant effect on market capitalization, contributing to a 22.9% decline in firm value. This suggests that higher investment in software could reduce market capitalization, possibly due to maintenance costs or inefficiencies in software utilization. Research and Development (R&D) also had a negative and significant effect, contributing to a 23.8% decrease in market capitalization. This reflects the challenges companies may face in converting R&D investments into immediate financial gains. The hypotheses related to patents and trademarks could not be tested due to insufficient data, which prevented further analysis. The overall model explained 57% of the variation in market capitalization among the firms, indicating that incorporeal assets, as a group, significantly influence the market value of listed manufacturing firms in Nigeria. This is consistent with similar studies conducted in other regions, such as Indonesia, Nigeria, and Lithuania, which emphasize the importance of intangible assets in driving firm value. Based on the findings of the study, the following recommendations were made;

i. Manufacturing firms should strive to maximize the positive effects of goodwill on market capitalization by maintaining strong relationships with customers, enhancing their brand image, and effectively managing reputation.
ii. Given the negative effect of software on market capitalization, companies should evaluate the cost-benefit relationship of software acquisitions and management. Implementing cost-effective software solutions and minimizing maintenance costs could help firms avoid the decline in value associated with excessive software investments.
iii. To improve the effectiveness of R&D, firms should focus on projects that have clear market potential and can generate immediate value. Strengthening the connection between R&D activities and commercialization efforts could turn these investments into tangible financial gains.

REFERENCES

Aboody, D., & Lev, B. (2000), Information asymmetry, R&D, and insider. The context of Banglad gains, *Journal of Finance*, 55(60) 2747-2766

Akintoye, J. D. (2019). Earnings quality and growth of listed firms in Nigeria. *International Journal of Research and Methodology in Science, 5*(1), 73-82.

Akpan, D. C. (2019). Intangible assets disclosure and market value added of ICT firms in Nigeria. *AKSU Journal of Management Sciences, 6*(2), 114-131.

Aluya, S. & John, E. (2024). Property, plant and equipment measurement and financial reporting quality of manufacturing firms in Nigeria. *International Journal of Research & Innovation in Social Science, 8*(7), 2222-2232.

Alves, S., & Martins, A. (2014). The impact of intangible assets on financial and governance policies: A simultaneous equation analysis. *Journal of Applied Finance and Banking, 4*(1): 61-89

Arash, A. (2021). The impact of intangible assets on firm performance: Evidence from an emerging economy. *Iranian Journal of Accounting, 5*(2):61-77.

Bontis, N. (1996). "There's a price on your head: managing intellectual capital strategically." Business Quarterly, 60(4), 40-47.

Bugeja, M., & Gallery, N. (2016)."Is corporate social responsibility information value-relevant? Evidence from Australia's top 100 publicly listed companies." *Australian Accounting Review, 26*(2), 161-175.

Buzinskiene, R., & Rudyte, D. (2021). The impact of intangible assets on the company's market value. *Montenegrin Journal of Economics, 17*(2): 59-73.

Cosmulese, C., Socoliuc, M., & Ciubotariu, M. (2021). Empirical study on the impact of evaluation of intangible assets on the market value of listed companies. *Asian Journal of Finance and Accounting, 24(*1), 84-101.

Dragomir, V. (2024). The impact of intangible capital on firm profitability in the technology and health care sectors. *International Journals of Financial Studies, 12*(1): 5-17.

Ebe, C. O., Salawu, R. O., & Aguguom, T. A. (2023). IAS 38 intangible assets and firm performance: Empirical evidence from selected consumer goods manufacturing companies listed in Nigeria. *International Journal of Innovative Research and Scientific Studies, 6*(3), 570-577.

Eberl, M., & Schwaiger, M. (2005). "Corporate reputation: Disentangling the effects on financial performance." *European Journal of Marketing, 39*(7/8), 838-854.

Elkemali, T. (2024). Intangible and tangible investments and future earnings volatility. *Journal of Economies, 12*(6), 125-132

Emeneka, O. L., & Okerekeoti, C. U. (2022). The intangible assets innovation and firm value of quoted consumer goods manufacturing firms in Nigeria. *Journal of Accounting and Financial Management, 8*(7), 225-234.

Gamayuni, R. R. (2023). The effect of intangible asset, financial performance and financial policies on the firm value. *International Journal of Science and Technology Research, 4*(1), 202-212.

Gu, F., & Lev, B. (2011). Intangible assets: Measurement, drivers, and usefulness. Boston University School of Management Accounting, 110–124.

Hassan, M., Asad, M., & Hameed, R. M. (2019)."Impact of intellectual capital on financial performance: A comparative study of Pakistani banks." *Journal of Intellectual Capital, 20*(5), 631-651.

Hunady, J., Pisat P., & Durcekova, I. (2019). Business R&D expenditure in the ICT sector. Effects on business Performance Indicators. *Asian Journal of Finance and Accounting, 5*(1): 519-530

Husni, S., Mohammad, A., Montaser, H., & Anas, B. (2023). The influence of intangible assets disclosures on business performance. Asian Development Policy Review 11(3):

Jacob, C., & Kornom-Gbara, M. (2022). Effect of tangible and intangible assets structure on the performance of high and low levered quoted manufacturing firms in Nigeria. *Advance Journal of Education and Social Sciences, 7*(10): 12-27.

Jin, Z., Shang, Y., & Xu, J. (2018). The impact of government subsidies on private R&D and firm performance: Does ownership matter in china's manufacturing industry? *Sustainability*, 10(3), 18-32.

John, E., Aluya, S. & Ogbuigwe, M. (2024). Financing decisions and financial stability: Moderating effect of firm size of listed industrial goods firms in Nigeria. *International Journal of Research & Innovation in Social Science, 8*(8), 3384-3401.

Lopes, P. T., & Rodrigues, L.L. (2007). Accounting for financial instruments: an analysis of the determinants of disclosure in the Portugese stock exchange. *The International Journal of Accounting, 4(2),* 25-56.

Mansuri, B. B. (2016). Emerging issues in accounting for intangible assets. *International Journal of Economics, Commerce and Management*, *4*(1), 608-614.

Mehnaz, L., Scott, T., & Zang, Z. (2024). The disclosure of recognized and unrecognized intangibles: Evidence from New Zealand. *Australian accounting Review, 52*(1):1-30.

Michael, E., Ryan, H., & Sean, W. (2024). Measuring intangible capital with market prices. *Journal of Management Sciences, 3*(10): 34-50

Mishra, S., & Suar, D. (2010). Does corporate social responsibility influence firm performance of Indian companies? *Journal of business ethics*, *95*(4), 571-601.

Mohanlingam, S., & Nguyen, L. (2021). The effects of intangible assets on financial performance and financial policies of listed technology firms in Thailand. *Asian Journal of Business and Accountancy, 5*(11),97-119.

Neville, B. A., Bell, S. J., & Mengüç, B. (2005)."Corporate reputation, stakeholders and the social performance-financial performance relationship." *European Journal of Marketing*, 39(9/10), 1184-1198.

Nnado, A. C., & Ozouli, L. I. (2016)."Corporate reputation and financial performance of listed firms in Nigeria. *Journal of Accounting and Taxation*, *8*(4), 38-44.

Ogbuigwe, M., John, E. & Aluya, S. (2024). Cashflow management and investment performance: A panel data analysis of Quoted Industrial Goods Firms in Nigeria. International Journal of Humanities Social Science and Management, 4(5), 613-627

Ogbuigwe, M., Aluya, S. & John, E. (2025). Effect of cash conversion cycle on financial performance of listed consumer goods firms in Nigeria. International Journal of Humanities Social Science and Management, 5(1), 170-185.

Okoye, P. V. C., Offor, N., & Manukaji, I. J. (2019). Effect of intangible assets on the performance of quoted companies in Nigeria. *International Journal of Innovative Finance and Economics Research*, *7*(3): 58-66.

Owolabi, S. A., & Anaekenwa, A. T. (2016). Value paradox: Accounting for intangible assets. *Unique Journal of Business Management Research*, *3*(1): 22-31.

Panern, I., & Suwansin, N. (2024). Intangible assets, firm value and performance. Does intangible intensive matters? *Cogent Economics & Finance*, *12*(10), 25-48.

Peters, R. H., & Taylor, L. A (2017). Intangible capital and the investment-q relation. *Journal of Financial Economics, 123*(2): 251-272.

Piekkola, H. (2016). Intangible investment and market valuation. *Revised Income Wealth Journal, 30*(62): 28–51.

Roberts, P. W., & Dowling, G. R. (2002). "Corporate reputation and sustained superior financial performance." *Strategic Management Journal, 23*(12), 1077-1093.

Roy, A. (2016). Corporate governance and firm performance: A study of Indian listed firms. *Metamorphosis: A Journal of Management Research, 15*(1), 12-24.

Suhrab, K., & Muhammad, M. (2022). Impact of intangible assets on market value of firms: Evidence from Pakistana Stock Exchange, *Journal of Economic Sciences 1*(2): 97-108.

Usman, M., Shaique, M., Khan, S., Shaikh, R., & Baig, N. (2017). Impact of R&D investment on firm performance and firm value: Evidence from developed nations (G-7). *Revista de Gestão Finanças E Contab*, 7(1), 302–321.

Uwuigbe, U., Uwuigbe, O., & Daramola, P. (2017). Corporate governance and quality of financial statements: A study of listed Nigerian banks. *Asian Economic and Financial Review*, 7(4), 462-477.

Ying, C. L., Jing, Y. Z., & Hui, Z. M. (2019)."Intellectual capital and its impact on firm performance: Evidence from the Chinese automotive industry." *Journal of Intellectual Capital*, *20*(6), 871-891.