



Corporate Risk Management Disclosure and Investor Confidence in Listed Pharmaceutical Firms in Nigeria

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Abstract

Every organisation is exposed to different categories of risks in an attempt to achieve its corporate objectives. Management's efforts to mitigate such risks are crucial for the survival of these entities. However, how the disclosure of those risks affects investors in the capital market is of great concern. Therefore, this study is conducted to examine the extent to which corporate risk management disclosure affects investors' confidence in pharmaceutical firms in Nigeria. The corporate risks in this study were proxied by financial risk, business risk, operational risk, regulatory risk and strategic risk, while the investor's confidence was proxied by market capitalisation. The population of the study comprised seven (7) pharmaceutical firms listed on the floor of the Nigerian Exchange Group, of which the entire seven firms were adopted for the study using the census sampling technique. The data for the study were extracted from the published financial statements of the selected firms for the period of 2015 to 2024 using content analysis through the disclosure checklist developed by the researcher. The data were analysed using descriptive statistics, correlation and regression with the aid of STATA version 10. The

results of analyses revealed that business risk disclosure (p -value = 0.0088), operational risk disclosure (p -value = 0.0031) and strategic risk disclosure (p -value = 0.0143) showed a positive and significant relationship with market capitalisation; while financial risk disclosure (p -value = 0.4634) and regulatory risk disclosure (p -value = 0.1734) showed no significant relationship with market capitalisation. Therefore, the study concluded that corporate risk management disclosure influences investors' behaviour in pharmaceutical firms in Nigeria. The study recommended that pharmaceutical firms should not only engage in risk mitigation but should also disclose more information on corporate risk management, as such transparency will attract investors to the firms

Keywords: corporate risk management, investor's confidence, market capitalisation

Introduction

Investors rely on information disclosed in financial statements and annual reports to assess the state of health, risk exposure and future prospects of corporate entities. In listed pharmaceutical firms, this reliance is particularly strong because the sector operates within a sensitive health-related environment where product quality, regulatory compliance, foreign-exchange exposure, research expenditure, supply-chain stability and public confidence can influence corporate survival (Linsley & Shrives, 2006; Ibrahim & Aboud, 2022; Khandelwal et al., 2023). Corporate risk management disclosure therefore becomes an important communication mechanism through which management explains the risks confronting the firm and the measures adopted to anticipate, manage and mitigate those risks. When such disclosure is clear, credible and sufficiently detailed, investors are better positioned to evaluate whether the firm can protect shareholders' wealth and sustain market value (Okpo & Aruwa, 2021; Li et al., 2025).

Every business is exposed to different forms of risks in the course of carrying out its legitimate activities. Pharmaceutical firms are not exempted from this reality; they are exposed to financial risks arising from liquidity pressure, interest-rate changes, exchange-rate volatility, credit exposure and solvency threats (Marta, 2021; Pakdelan et al., 2021). They also face business risks arising from competition, changing consumer preference, product-substitution threats, technological change, weak distribution channels and uncertain demand for products (Campbell et al., 2014; Ibrahim & Aboud, 2023). In addition, regulatory, operational and strategic risks may arise from regulatory sanctions, product defects, import dependence, supply disruption, litigation, reputational damage, poor environmental practice and ineffective long-

term strategy (United Nations Conference on Trade and Development, 2017; Latif et al., 2022; Yusuf & Dagunduro, 2024). These risks may affect earnings, continuity and market perception if they are not disclosed and managed properly.

The importance of risk disclosure has increased because investors now demand information that goes beyond historical profit figures. Financial statements provide useful accounting information, but they may not fully explain the uncertainties that surround future performance. Annual report narratives, directors' reports, governance reports, notes to the accounts and risk management sections are therefore used by firms to communicate both the existence of risks and the responses adopted by management (Beretta & Bozzolan, 2004; Elzahar & Hussainey, 2012; Miihkinen, 2012). Risk disclosure is thus expected to reduce information asymmetry between managers and investors. It gives external users the opportunity to evaluate whether the firm is aware of major threats and whether such threats are being addressed in a manner that protects future value (Healy & Palepu, 2001; Moumen et al., 2015; Hellman, 2018).

In the pharmaceutical sector, the risk environment is complex because firms depend on imported active pharmaceutical ingredients, foreign-currency stability, regulatory approvals, quality-assurance systems, effective warehousing, research and product-development capacity, distribution networks and stable consumer purchasing power. A weakness in any of these areas may affect profitability and market valuation. For example, foreign-exchange instability can increase the cost of imported inputs; product quality failure can create regulatory and reputational risk; supply-chain disruption can reduce sales volume; and weak strategic planning can reduce competitiveness (Dobler et al., 2011; Shad et al., 2019). Investors may therefore attach considerable importance to how pharmaceutical firms disclose these risks in their annual reports.

Investor confidence refers to the degree of trust investors place in a firm, its financial stability, its management credibility and its capacity to generate sustainable returns. In the capital market, confidence is often reflected in the willingness of investors to buy, hold or value the shares of a company. This study adopts market capitalisation as the proxy for investor confidence because market capitalisation captures the value placed on the firm by the market and reflects investors' aggregate response to published information (Okolie & Jeroh, 2022; Miloš & Miloš, 2022; Okpo & Aruwa, 2021).

Corporate risk management disclosure is measured by five variables, namely financial risk disclosure, business risk disclosure, regulatory risk disclosure, operational risk disclosure and strategic risk disclosure. These variables are important because pharmaceutical firms operate in a sector where financial exposure, market conditions, regulatory compliance, internal processes, production systems, product safety, supply-chain control and strategic positioning

can directly affect market perception (Mokhtar & Mellett, 2013; Lechner & Gatzert, 2018; Khandelwal et al., 2023). The five-variable framework enables the study to capture the financial, commercial, compliance, operational and strategic dimensions of corporate risk communication.

Financial risk disclosure focuses on disclosure of the extent to which a firm reports information on liquidity, credit, solvency, interest-rate, foreign-exchange and price risks (Marta, 2021; Pakdelan et al., 2021). Business risk disclosure focuses on disclosure of risks from competition, customers, technology, product quality and market conditions (Campbell et al., 2014; Hassan, 2014). Regulatory risk disclosure covers disclosure of information on statutory compliance, regulatory sanctions, product registration, quality standards, litigation, governance compliance and reputational exposure arising from regulatory failure (United Nations Conference on Trade and Development, 2017; Latif et al., 2022). Operational risk disclosure covers process failure, system weakness, supply disruption, regulatory sanctions, quality-control failure and human error (Mokhtar & Mellett, 2013; Yusuf & Dagunduro, 2024). Strategic risk disclosure covers disclosure of long-term risks connected with corporate strategy, expansion, innovation, market positioning and sustainability (Lechner & Gatzert, 2018; Shad et al., 2019). Together, these variables provide a comprehensive disclosure framework for analysing investor confidence in pharmaceutical firms.

The problem of this study arises from the continuing uncertainty about whether corporate risk management disclosure improves investor confidence in listed pharmaceutical firms in Nigeria. Prior empirical studies on risk disclosure examine profitability, return on assets, return on equity, Tobin's Q or cost of capital. These measures are useful, but they may not directly capture investor confidence in the capital market (Pakdelan et al., 2021; Marta, 2021; Khandelwal et al., 2023). Market capitalisation is more closely linked to investors' response because it reflects the market value assigned to the firm.

The empirical evidence is also mixed. Some studies indicate that risk disclosure reduces information asymmetry and improves firm value, while others report negative or insignificant effects because investors may interpret extensive risk disclosure as evidence of serious exposure (Jain & Raithatha, 2022; Latif et al., 2022; Ibrahim & Aboud, 2022). The direction of the relationship may depend on the type of risk disclosed, the quality of disclosure, the industry context, the method of measurement and the period covered. This inconsistency makes it necessary to test the relationship in the Nigerian pharmaceutical sector using a five-variable disclosure model.

This study was conducted to ascertain the effect of corporate risk management disclosure on investors' confidence in listed pharmaceutical firms in Nigeria with the specific objectives of determining the effect of financial risk disclosure, business risk disclosure,

regulatory risk disclosure, operational risk disclosure, and strategic risk disclosure on market capitalisation of listed pharmaceutical firms in Nigeria.

Review of Related Literature

Conceptual framework

The conceptual framework of this study is built on the relationship between corporate risk management disclosure and investor confidence. Corporate risk management disclosure is represented by five explanatory variables: financial risk disclosure, business risk disclosure, regulatory risk disclosure, operational risk disclosure and strategic risk disclosure. Investor confidence is proxied by market capitalisation

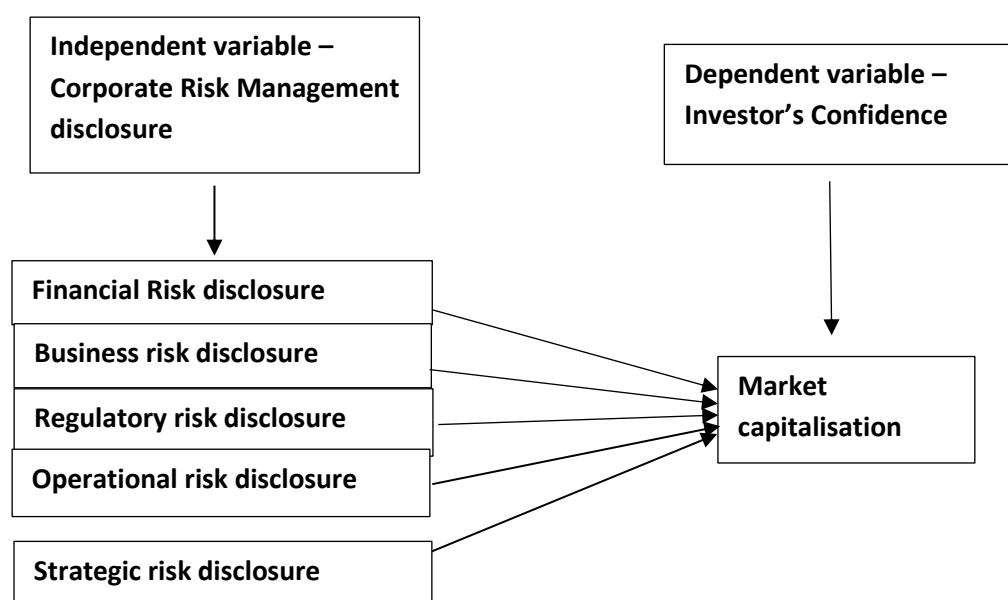


Figure 1 – Interrelationships of variables

Source - Conceptualisation by the researcher (2026).

Concept of Corporate Risk Management Disclosure

Corporate risk management disclosure refers to the communication of information about risks that may affect a firm's operations, profitability, value and continuity. It also includes information on the strategies, systems and controls adopted by management to identify, assess, monitor and mitigate those risks. In annual reports, risk management disclosure may appear in the directors' report, corporate governance report, notes to the financial statements, risk

management section, sustainability report and management commentary (Beretta & Bozzolan, 2004; Linsley & Shrives, 2006; Ibrahim & Aboud, 2022).

Risk disclosure is important because it gives external users insight into management's awareness of uncertainty. Investors cannot observe every internal decision of management. They therefore rely on the content of published reports to judge whether the firm understands its environment and whether the firm has put measures in place to protect future performance (Healy & Palepu, 2001; Miihkinen, 2012; Hellman, 2018). This is especially important for pharmaceutical firms because they operate in a sector where regulatory, operational, health and market risks may arise suddenly.

Corporate risk management disclosure can be mandatory or voluntary. Mandatory risk disclosure is required by accounting standards, laws and regulatory guidelines, while voluntary risk disclosure goes beyond minimum requirements and is often used by firms to provide additional assurance to investors (Marta, 2021; United Nations Conference on Trade and Development, 2017). The combination of mandatory and voluntary disclosure determines the richness of information available to the market.

The quality of risk disclosure may depend on specificity, quantification, time orientation and balance. A disclosure that merely states that a firm faces risk may be less useful than a disclosure that identifies the source of the risk, explains its possible effect and states the mitigation strategy. Investors are likely to value disclosure that is firm-specific, forward-looking and connected to strategic decisions (Beretta & Bozzolan, 2004; Miihkinen, 2012; Ibrahim & Aboud, 2022).

The relationship between corporate risk management disclosure and investor confidence is based on the assumption that investors value transparency. When firms disclose risk information clearly, investors are better informed about the uncertainties surrounding the firm and the measures adopted by management. This can reduce information asymmetry and improve market confidence (Healy & Palepu, 2001; Moumen et al., 2015). However, the relationship is not necessarily positive in all cases. Risk disclosure may also increase investor concern where it reveals serious threats or weak mitigation. Investors may interpret extensive disclosure as a warning sign if the disclosed risks are severe, recurring or poorly managed. The effect of disclosure therefore depends on the type of risk, the quality of explanation and the credibility of mitigation strategies (Jain & Raithatha, 2022; Latif et al., 2022).

Operational risk disclosure may influence confidence through process and quality-control information. Strategic risk disclosure may influence confidence through long-term growth and sustainability information (Marta, 2021; Mokhtar & Mellett, 2013; Lechner & Gatzert, 2018).

The combined disclosure model provides a more comprehensive explanation of investor confidence. It recognises that investors do not evaluate pharmaceutical firms from only one risk

angle. Instead, investors consider financial stability, business prospects, regulatory legitimacy, operational reliability and strategic direction (Okpo & Aruwa, 2021; Ibrahim & Aboud, 2022; Khandelwal et al., 2023). This justifies the five-variable model adopted in this study.

The conceptual model, therefore, provides a testable explanation of market capitalisation. It does not assume that corporate risk management disclosure automatically improves investor confidence. Rather, it provides a logical basis for testing whether the disclosed risk information of listed pharmaceutical firms is associated with market value in Nigeria (Jain & Raithatha, 2022; Latif et al., 2022).

Financial risk disclosure

Financial risk disclosure covers information relating to liquidity risk, credit risk, solvency risk, interest-rate risk, foreign-exchange risk, price risk and other monetary exposures (Marta, 2021; Pakdelan et al., 2021). Pharmaceutical firms in Nigeria are likely to face financial risk because many raw materials, active pharmaceutical ingredients, equipment and packaging materials may be imported or priced in foreign currency. Exchange-rate instability can therefore affect production cost, pricing decisions and profitability.

Liquidity risk disclosure is relevant because investors want to know whether firms can meet short-term obligations as they fall due. Credit risk disclosure is also important where firms sell products on credit or hold receivables from distributors and customers. Solvency disclosure shows whether the firm has the capacity to meet long-term obligations. These disclosures help investors assess whether the firm can continue operations without financial distress (Marta, 2021; Pakdelan et al., 2021).

Financial risk disclosure may influence investor confidence positively where it demonstrates that management understands the firm's exposure and has adopted adequate controls. Such disclosure can reduce uncertainty and allow investors to price the firm more accurately (Okpo & Aruwa, 2021; Ibrahim & Aboud, 2022). However, it may influence confidence negatively where the disclosed financial risks appear severe or poorly managed. Financial risk disclosure is included as a separate variable because it is directly connected with market value. Investors may reward firms that provide transparent information on financial exposure, especially in a sector affected by foreign exchange volatility and working-capital pressure. Adegbite and Lawal (2026) highlighted that transparent corporate risk disclosure significantly strengthens investor confidence and stabilises market values. Financial risk disclosure may influence confidence through liquidity and solvency information. However, the extent of influence cannot be determined with certainty. Thus, in order to address this gap, the first hypothesis of this study is postulated as follows:

H01: Financial risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

Business risk disclosure

Business risk disclosure refers to information on uncertainties arising from the firm's market, customers, products, competition, technology, product quality, distribution channels and overall commercial environment. It explains the threats that may affect the firm's ability to generate sales and maintain profitability (Campbell et al., 2014; Hassan, 2014; Ibrahim & Aboud, 2023). In pharmaceutical firms, business risk may arise from intense competition, price regulation, counterfeit products, changing consumer demand, imported alternatives and weak purchasing power.

Business risk disclosure is important because investors are interested in the sustainability of revenue. A firm may have strong current earnings, but such earnings may not be sustainable if the firm faces serious competitive threats, obsolete products or weak distribution networks. By disclosing business risks, management provides investors with information needed to understand the commercial environment in which the firm operates (Moumen et al., 2015; Campbell et al., 2014). The disclosure of business risk may also reveal management's strategic awareness. For example, a pharmaceutical firm may disclose risks relating to research and development, product registration, market expansion, product recall, customer concentration and distribution constraints. Such information helps investors evaluate whether the firm can adapt to environmental changes (Campbell et al., 2014; Hassan, 2014). Business risk disclosure may influence confidence through market and product information. The second hypothesis is postulated as follows:

H02: Business risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

Regulatory risk disclosure

Regulatory risk disclosure refers to information on the firm's exposure to laws, rules, standards, statutory requirements, product-registration obligations, governance codes, quality standards, litigation, sanctions and compliance expectations that may affect operations and value. It differs from a broad regulatory risk category because it focuses specifically on compliance-related uncertainty and the consequences of failing to meet regulatory expectations (United Nations Conference on Trade and Development, 2017; Latif et al., 2022; Khandelwal et al., 2023).

In pharmaceutical firms, regulatory risk is particularly important because the industry deals with products that affect human health. Weak product registration, quality-control failure,

unsafe disposal practice, poor governance compliance, regulatory non-compliance or reputational damage may reduce public trust and attract sanctions. Investors may therefore pay attention to how firms disclose and manage regulatory risks (Mokhtar & Mellett, 2013; Yusuf & Dagunduro, 2024).

Regulatory risk disclosure can improve legitimacy by showing that the firm is aware of its responsibilities to regulators, customers, shareholders and wider stakeholders. It may also help investors evaluate the firm's exposure to sanctions, litigation, compliance costs and reputational damage. This is important because modern investors increasingly consider governance and compliance information when making decisions (Ntim et al., 2013; United Nations Conference on Trade and Development, 2017). The disclosure of regulatory risk may also reduce uncertainty around sustainability. A pharmaceutical firm that discloses quality standards, regulatory inspections, product-registration requirements, compliance policies and governance practices may signal that it is better positioned to maintain stakeholder support (Linsley & Shrives, 2006; Ibrahim & Aboud, 2022). Regulatory risk disclosure may influence confidence through compliance, product-registration and governance assurance. However, where regulatory disclosures reveal serious weaknesses, investor response may be negative. The extent of the influence of regulatory disclosure on market capitalisation has not been right determined by past researchers. Therefore, in order to address the uncertainty gap, a third hypothesis of the study is postulated as follows:

H₀₃: Regulatory risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

Operational risk disclosure

Operational risk disclosure refers to information on risks arising from internal processes, systems, people, supply chain, production, quality control and compliance operations. Operational risk is important in pharmaceutical firms because production failure, poor storage, ineffective quality assurance, supply-chain disruption and regulatory non-compliance can directly affect sales, reputation and survival (Mokhtar & Mellett, 2013; Oliveira et al., 2011). Operational risk differs from general business risk because it focuses on internal processes and execution. A firm may have a good strategy and strong market demand, yet still fail if production systems are weak or if quality-control procedures are ineffective. Disclosure of operational risk therefore helps investors to understand whether the firm has adequate internal capacity to produce, store and distribute safe pharmaceutical products (Mokhtar & Mellett, 2013; Yusuf & Dagunduro, 2024).

Operational risk disclosure may include information on manufacturing processes, quality-control systems, product recall procedures, staff competence, technology systems, warehouse management, supply-chain risks, regulatory inspections and internal control weaknesses. These disclosures are useful because they show whether the firm has systems that support consistent performance (Oliveira et al., 2011; Yusuf & Dagunduro, 2024).

Investors may react positively to operational risk disclosure where it indicates strong controls and proactive mitigation. They may react negatively where the disclosure reveals serious weaknesses in production, supply chain or compliance systems. The direction of the relationship may therefore depend on the content and tone of disclosure (Lechner & Gatzert, 2018; Ibrahim & Aboud, 2022).

H₀₄: Operational risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

Strategic risk disclosure

Strategic risk disclosure refers to information on risks arising from strategic choices, product development, expansion decisions, market positioning, innovation, diversification, capital investment and long-term sustainability. Strategic risk disclosure is important because investors do not only assess present performance; they also assess whether the firm has a credible path for future growth (Lechner & Gatzert, 2018; Shad et al., 2019).

In the pharmaceutical sector, strategic risk may arise from failure to innovate, failure to secure product registration, inability to compete with imported brands, weak expansion decisions, poor pricing strategy, inadequate research and development, dependence on a narrow product line and failure to respond to changing health needs. Disclosure of these risks helps investors understand the firm's long-term prospects (Shad et al., 2019; Khandelwal et al., 2023).

Strategic risk disclosure may influence investor confidence because it communicates management's awareness of future threats and opportunities. A firm that discloses strategic risk and explains its mitigation plans may be perceived as forward-looking and transparent. Conversely, a firm that provides vague strategy disclosure may be perceived as less prepared for future challenges (Lechner & Gatzert, 2018; Ibrahim & Aboud, 2022).

Strategic risk disclosure also supports market valuation because market capitalisation incorporates expectations about future earnings. Investors may assign higher value to firms whose disclosures show coherent strategy, innovation capability and resilience. The absence of strategic risk disclosure may increase uncertainty and reduce confidence (Moumen et al., 2015; Shad et al., 2019). Consequently, the last hypothesis for this study is postulated as follows:

H05: Strategic risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

Investor confidence

Investor confidence is the level of trust investors have in a firm's capacity to protect capital, manage risk, generate sustainable earnings and deliver future value. It is influenced by financial performance, governance quality, disclosure transparency, risk exposure, industry conditions and market sentiment. In listed firms, investor confidence is reflected in investors' willingness to buy, hold or value the shares of the company (Okpo & Aruwa, 2021; Miloš & Miloš, 2022). Investor confidence is forward-looking. It is not limited to current profit. Investors may show low confidence in a profitable firm if they believe that the profit is not sustainable or that management is not transparent about risk. In the same way, investors may show confidence in a firm with temporary performance challenges if they believe that the firm has strong risk controls and a credible long-term plan (Moumen et al., 2015; Hellman, 2018).

In pharmaceutical firms, investor confidence may depend on regulatory compliance, product quality, financial stability, manufacturing capacity, availability of raw materials, innovation, and market demand. Risk disclosure can affect confidence because it provides information on these conditions. Investors may use disclosed risk information to judge whether the firm is reliable and whether its future earnings are sustainable (Khandelwal et al., 2023; Yusuf & Dagunduro, 2024). This study uses market capitalisation as a proxy for investor confidence. Market capitalisation is suitable because it reflects the market value of the firm based on share price and number of shares outstanding. It captures the collective judgement of investors about the firm's current and future prospects (Okolie & Jeroh, 2022; Okpo & Aruwa, 2021).

Market capitalisation

Market capitalisation is the market value of a company obtained by multiplying the market price per share by the number of ordinary shares outstanding. It is a market-based measure because it depends on share price, which reflects investor demand and market expectations. A higher market capitalisation may indicate stronger investor confidence, while a lower market capitalisation may indicate weak investor confidence or unfavourable market perception (Watson & Head, 2013; Okolie & Jeroh, 2022).

The use of market capitalisation is appropriate for this study because investor confidence is reflected in market behaviour. Investors respond to information by buying, selling or holding shares. When investors believe that a firm is transparent and capable of managing risks, their demand for the shares may increase and market value may rise. Where investors



perceive risk disclosure as weak or alarming, market value may decline (Healy & Palepu, 2001; Okpo & Aruwa, 2021). Market capitalisation is also relevant because the study focuses on listed pharmaceutical firms. Listed firms have share prices that are observable in the capital market. This makes it possible to connect annual-report disclosure with market valuation. The study therefore uses market capitalisation as the dependent variable to capture investor confidence (Okolie & Jeroh, 2022; Miloš & Miloš, 2022).

Theoretical framework

Agency theory

Agency theory was promoted by Jensen and Meckling in 1976. The theory explains the relationship between shareholders as principals and managers as agents. It assumes that managers may pursue personal interests when monitoring is weak and when they possess superior information. This creates agency conflict and information asymmetry. Disclosure is therefore one way through which managers reduce information asymmetry and assure shareholders that they are acting in the interest of owners (Jensen & Meckling, 1976; Eisenhardt, 1989).

This theory explains how corporate risk management disclosure can reduce the information gap between managers and investors. Managers know more about liquidity pressures, operational weaknesses, regulatory issues, product-quality problems and strategic challenges than external investors. When management discloses such information, investors may be better able to evaluate the firm and may develop stronger confidence in the credibility of the firm. In listed pharmaceutical firms, agency problems may arise because managers control information about risk exposure and mitigation. Investors may fear that management will withhold unfavourable risk information. Risk disclosure can therefore serve as a monitoring and accountability mechanism.

Signaling theory

Signaling theory was propounded by Spence in 1973. The theory explains how parties with superior information communicate quality to parties with less information. In corporate reporting, firms may use voluntary disclosure to signal transparency, competence, stability and future prospects to investors (Spence, 1973; Healy & Palepu, 2001). A firm that discloses risk information may be signaling that it understands its exposure and has nothing to hide from stakeholders.

The theory explains that investors cannot directly observe all internal risk management processes. They therefore rely on signals contained in annual reports. Corporate risk disclosure may signal financial transparency, process control; long-term preparedness, compliance

strength and governance responsibility (Linsley & Shrives, 2006; Marta, 2021; Ibrahim & Aboud, 2022). Where investors interpret disclosure as a positive signal of credibility and preparedness, market confidence may improve. Where investors interpret disclosure as evidence of serious exposure, confidence may weaken. The theory therefore supports the empirical testing of the five disclosure variables (Spence, 1973; Ibrahim & Aboud, 2022).

Methodology

The study employed an ex-post facto research design because it relied on historical data that have already occurred and cannot be manipulated by the researcher. The population of the study consists of seven pharmaceutical firms listed on the Nigerian Exchange Group during the period covered by the study. The study adopted census sampling, where all listed pharmaceutical firms with complete data for the period 2015 to 2024 were included in the study. Secondary data were extracted mainly from annual reports and audited financial statements of listed pharmaceutical firms through content analysis using a personal checklist developed by the researcher. The data were analysed with descriptive statistics, correlation analysis and panel regression analysis using E-views statistical package.

Model specification

This study is concerned with the objective of determining the relationship of corporate risk management disclosure (CRMD) with investor confidence (INVC). Corporate risk management disclosure was represented by financial risk disclosure (FRD), business risk disclosure (BRD), regulatory risk disclosure (RRD), operational risk disclosure (ORD) and strategic risk disclosure (SRD). Therefore the functional models of the relationship is stated as follows:

$$INVC = f(CRMD) \dots\dots\dots (i)$$

$$MCAP = f(FRD, BRD, RRD, ORD, SRD) \dots\dots\dots (ii)$$

The econometric model is specified as:

$$MCAP = \beta_0 + \beta_1 FRD + \beta_2 BRD + \beta_3 RRD + \beta_4 ORD + \beta_5 SRD + \mu \dots\dots\dots (iii)$$

Where:

MCAP = Market capitalisation

FRD = Financial risk disclosure.

BRD = Business risk disclosure.

RRD = Regulatory risk disclosure.

ORD = Operational risk disclosure.

SRD = Strategic risk disclosure.

β_0 = The intercept;

$\beta_1 - \beta_5$ = Coefficients;
 μ = the error term.

The values of β_0 , β_1 , β_2 , β_3 , β_4 and β_5 were obtained from the results of regression analysis. The signs and significance of the coefficients were used to determine the direction and strength of the relationship between each explanatory variable and market capitalisation.

Data analysis

Various statistical techniques were utilized in the analysis of data presented and generated for the study. These include descriptive statistics, regression assumption tests and panel multiple regression analysis. The results from the panel multiple regression analysis were used in the testing of the research hypotheses which had been stated earlier.

Descriptive statistics

This was conducted to understand the behaviour of the data using various statistics including mean, standard deviation, skewness, and kurtosis. The result for the descriptive statistics analysis is as presented in Table 3 below:

Table 3 - Descriptive statistics results

	MCAP	FRD	BRD	RRD	ORD	SRD
Mean	0.118211	0.565692	0.674385	0.599385	0.000321	0.018532
Median	0.113674	0.465000	0.570000	0.540000	0.002052	0.013245
Maximum	0.083823	3.230000	2.470000	4.230000	0.019462	0.088929
Minimum	0.001003	0.130000	0.110000	0.110000	-0.179932	0.001143
Std. Dev.	0.021819	0.357233	0.384520	0.529247	0.022126	0.014910
Skewness	-1.213186	3.542932	1.863129	4.778724	-6.419098	1.883562
Kurtosis	11.11187	25.28582	8.339468	32.50585	47.10521	7.400791
Jarque-Bera	388.3197	2962.198	229.6392	5210.509	11429.65	181.7735
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	2.367415	73.54000	87.67000	77.92000	-0.041721	2.409136
Sum Sq. Dev.	0.061411	16.46239	19.07340	36.13315	0.063152	0.028678
Observations	130	130	130	130	130	130

Source: Researcher's computation using E-views 10.0 (2026)

The table above shows that the mean of market capitalisation, financial risk, business risk, regulatory risk, operational risk and strategic risk of listed pharmaceutical firms in Nigeria have mean scores of approximately 0.0182(1.82%), 0.565 (56.5%), 0.6743 (67.4%), 0.5993 (59.9%), 0.00032 (0.032%) and 0.0185 (1.85%) respectively. The median values obtained for market capitalisation, financial risk, business risk, regulatory risk, operational risk and strategic risk of listed pharmaceutical firms in Nigeria were approximately 0.01367 (1.36%), 0.465 (46.5%),

0.5700 (57%), 0.5400 (54%), 0.002 (0.2%) and 0.0132 (1.32%) respectively. These constituted the middle values for the distributions of these variables under the period covered in this study (2015-2024).

In terms of variability or dispersion in the distribution of these variables – market capitalisation, financial risk, business risk, regulatory risk, operational risk and strategic risk of listed pharmaceuticals in Nigeria – the standard deviations obtained were 0.0218, 0.3572, 0.3845, 0.5292, 0.0221 and 0.0149, respectively. Similarly, the skewness values obtained for these variables were -1.2131, 3.5429, 1.8631, 4.7787, -6.4190 and 1.8835. This quantifies the asymmetry of the distributions. In addition, the Kurtosis values obtained for market capitalisation, financial risk, business risk, regulatory risk, operational risk and strategic risk of listed pharmaceutical firms in Nigeria were given as approximately 11, 25, 8, 32, 47 and 7 respectively. Since the values of the kurtosis are greater than zero (0), it indicates a leptokurtic distribution, hence the presence of outliers in the data.

Regression assumption tests

The suitability of the data was assessed by conducting series of regression assumption tests. These tests include normality test, multicollinearity test and heteroscedasticity test.

Normality test

This test measures whether the distribution of the observed data are consistent with a normal distribution.

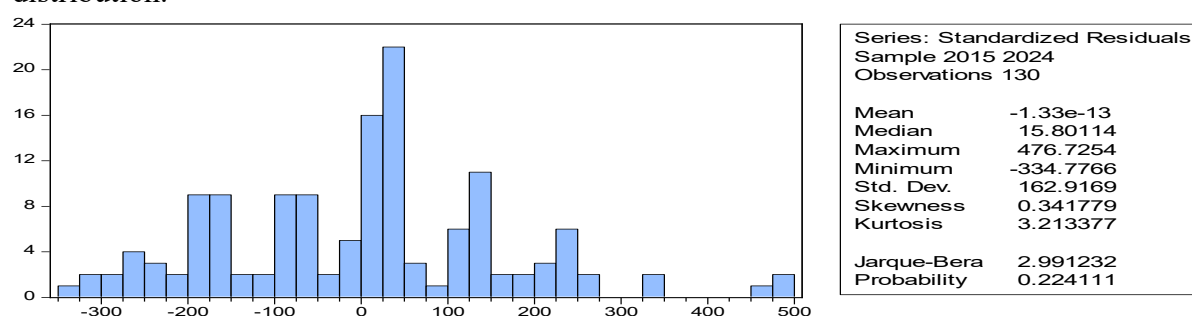


Fig. 4 - Jarque-Bera Normality test results

Source - E-views 10.0 Output (2026)

A significant Jarque-Bera test result implies that the data does not follow a normal distribution. On the other hand, a non-significant result indicates that there is insufficient evidence to reject the assumption of normality. If the p-value associated with the Jarque-Bera test is below a predetermined significance level ($p < 0.05$), then we reject the null hypothesis and conclude that

the data do not follow a normal distribution. With a p-value of 0.224111, there is sufficient evidence to accept the null hypothesis, thus concluding that the data were normally distributed.

Multicollinearity test

In examining the association among the variables, the study employed the Spearman Rank Correlation Coefficient (correlation matrix), and the results are presented in the table below:

Spearman's rank correlation matrix

	MCAP	FRD	BRD	RRD	ORD	SRD
MCAP	1.000000					
FRD	-0.121182	1.000000				
BRD	-0.275016	0.020190	1.000000			
RRD	-0.075502	0.031398	0.013385	1.000000		
ORD	0.160243	0.010055	-0.258366	-0.018248	1.000000	
SRD	0.190810	-0.042672	-0.125670	-0.095425	0.443876	1.000000

Source: Researcher's computation using E-views 10.0 (2026)

The correlation analysis showed that all independent variables over the period under study have coefficients lesser than 0.80, respectively confirming the absence of multicollinearity issues.

Heteroscedasticity test

Cross-section dependence/ Heteroscedasticity test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	140.6759	91	0.1347
Pesaran scaled LM	2.644477		0.0282
Pesaran CD	0.504661		0.6138

Source: Researcher's computation using E-views 10.0 (2026)

The statistics and probability value associated with the Breusch-Pagan LM test, otherwise known as the Breusch-Pagan-Godfrey test, help determine whether there is evidence of heteroscedasticity in the regression model. A low p-value ($p < 0.05$) suggests evidence against the null hypothesis in favour of the alternate hypothesis, which indicates the presence of heteroscedasticity in the regression model. With a p-value of 0.1347, there is sufficient evidence

to accept the null hypothesis, thus concluding that the predictor variables in the regression model were homoscedastic.

Regression analysis

The results of multiple panel regression analysis are presented in table 4 below:

Table 4 - Panel multiple regression result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.014058	37.00629	12.64794	0.0000
FRD	0.176954	36.40231	-1.735380	0.4634
BRD	0.905170	36.42570	-4.255456	0.0088
RRD	0.505315	21.66246	1.368408	0.1734
ORD	0.682420	18.96724	-5.322490	0.0031
SRD	0.284754	27.56189	-3.623521	0.0143
R-squared	0.718716	Mean dependent var		528.5231
Adjusted R-squared	0.692930	S.D. dependent var		164.4633
S.E. of regression	164.7040	Akaike info criterion		13.07433
Sum squared resid	3689327.	Schwarz criterion		13.15838
Log likelihood	-911.2033	Hannan-Quinn criter.		13.10849
F-statistic	0.864659	Durbin-Watson stat		0.804006
Prob(F-statistic)	0.461191			

Source: Researcher's computation using E-views 10.0 (2026)

Based on the outcome of the analysis, the coefficient of the variables were extracted to form the multiple regression line as written below:

$$\text{MCAP} = 0.0141 + 0.17670\text{FRD} + 0.9052\text{BRD} + 0.5053\text{RRD} + 0.6824\text{ORD} + 0.2848\text{SRD} + \mu$$

The regression line indicates that financial risk disclosure (FRD), business risk disclosure (BRD), regulatory risk disclosure (RRD), operational risk disclosure (ORD) and strategic risk disclosure (SRD) have positive impact on market capitalisation (MCAP). The intercept (0.014058) represents the expected market capitalisation (MCAP) when all risk disclosure

variables are zero. The error term (μ) captures the variation in MCAP that is not explained by the model. The above model suggests that the disclosure of financial risk, business risk, regulatory risk, operational risk and strategic risk is crucial for improving market capitalisation of listed pharmaceutical firms in Nigeria.

Test of Hypotheses

Each of the hypotheses postulated in this study was tested based on the result obtained from the panel multiple regression analysis shown in Table 4 above.

Hypothesis One: Financial risk disclosure has no significant relationship with market capitalization of listed pharmaceutical firms in Nigeria.

From the result in table 4 above, the t-cal of 1.7353 is less than the t-tab given at T0.05,13. Hence, the null hypothesis, which states that financial risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria, is retained, thus accepted. The null hypothesis was further accepted given that at T0.05,13, its probability value (p-value = 0.4634) is greater than 0.05.

Hypothesis Two: Business risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

For business risk disclosure, the t-cal of 4.2554 is greater than the t-tab given at T0.05,13. Hence, the null hypothesis, which states that business risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria, fails to hold, thus rejected. The null hypothesis is further rejected given that at T0.05,13, its probability value (p-value = 0.0088) is less than 0.05.

Hypothesis Three: Regulatory risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

For regulatory risk disclosure, the t-cal of 1.3684 is less than the t-tab given at T0.05, 13. Hence, the null hypothesis, which states that regulatory risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria, holds and is thus accepted. The null hypothesis was further accepted given that at T0.05,13, its probability value (p-value = 0.1734) is greater than 0.05.

Hypothesis Four: Operational risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

For operational risk disclosure, the t-cal of 5.3224 is greater than the t-tab given at T0.05,13. Hence, the null hypothesis, which states that operational risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria, fails to hold and is thus rejected. The null hypothesis is further rejected given that at T0.05,13, its probability value (p-value = 0.0031) is less than 0.05.

Hypothesis Five: Strategic risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria.

With regard to strategic risk, the t-cal of 3.6235 is greater than the t-tab given at T0.05,13. Hence, the null hypothesis, which states that strategic risk disclosure has no significant relationship with market capitalisation of listed pharmaceutical firms in Nigeria, fails to hold and is thus rejected. The null hypothesis is further rejected given that at T0.05,13, its probability value (p-value = 0.0143) is less than 0.05.

Discussion of Findings

The results of data analysis in table 4 shows the model summary of the results of analysis of the relationship between corporate risk disclosure management disclosure and market capitalisation of pharmaceutical firms in Nigeria. From the table, the adjusted coefficient of determination stood at 0.6929. This signifies that the overall variation in the corporate risks management disclosure, which is the independent variable, will result in a 69.29 percent change in market capitalisation (dependent variable) of the firms. Stated succinctly, a change in the corporate risk management disclosure will account for a 69.29 percent change in the market capitalisation of pharmaceutical firms in Nigeria. This finding is consistent with the findings of Mwenda and Ibrahim (2023), who found that risk management disclosure was relevant to the firm's profitability. Moreover, it also corroborates the earlier finding of Khandelwal et al. (2023) that there is a positive association between corporate risk disclosure and firm value and the findings of Okpo and Aruwa (2021), who found a significant positive relationship between risk disclosure and investors' behaviour.



Discussions of Findings

Financial risk disclosure and market capitalisation

The results of the data analysis of the test of hypothesis show that there is a significant positive relationship between financial risk disclosure and market capitalisation of pharmaceutical firms in Nigeria. The result implies that increasing the disclosure of financial risk will lead to an increase in the market value of the firm and ultimately lead to an increase in the confidence of investors in the firm. This finding is in line with the prior findings of Agbana (2024), who found that there is a weak correlation between credit risk and liquidity risk and return on assets and concluded that credit risk has largely minimised its significant impact on the financial performance of quoted deposit money banks in Nigeria.

Business risk disclosure and market capitalisation

The result of data analysis and test of hypothesis indicate that there is a significant positive relationship between business risk disclosure and investors' confidence in pharmaceutical firms in Nigeria. The result indicates that an increase in business risk disclosure will lead to a corresponding increase in the market capitalisation. This finding is not consistent with the findings of a prior study by Adegbalet al. (2025), who found that the introduction of business risk disclosure has a negative impact on total risk and further suggested that an increase in business risk disclosure contributes to a reduction in the firm's cost of capital.

Regulatory risk disclosure and market capitalization

The results of data analysis of the test of hypothesis show that there is no significant positive relationship between regulatory risk disclosure and market capitalisation of pharmaceutical firms in Nigeria. The result implies that increasing the disclosure of regulatory risk will not lead to increase in the market capitalisation of the firms. This finding is in line with the prior findings of Agbana (2024), who found that there is a weak correlation between credit risk and liquidity risk and return on assets and concluded that credit risk has largely minimised its significant impact on the financial performance of quoted deposit money banks in Nigeria.

Operational risk disclosure and market capitalisation

The results of data analysis and the test of hypothesis show that there is a significant positive relationship between operational risk disclosure and market capitalisation of pharmaceutical firms in Nigeria. The results imply that an increase in the disclosure of operational risks in the annual reports of pharmaceutical firms will result in an increase in the market capitalisation of the firms. This finding is consistent with the findings of Subramanian et al. (2023), who found that voluntary risk disclosure has a significant positive relationship with the share price.



Strategic risk disclosure and market capitalization

The results of data analysis of the test of hypothesis show that there is no significant positive relationship between strategic risk disclosure and market capitalisation of pharmaceutical firms in Nigeria. The result implies that increasing the disclosure of strategic risk will not lead to increase in the market capitalisation of pharmaceutical firms in Nigeria. This finding is in line with the prior findings of Agbana (2024), who found that there is a weak correlation between credit risk and liquidity risk and return on assets and concluded that credit risk has largely minimised its significant impact on the financial performance of quoted deposit money banks in Nigeria.

Conclusion

The results of the analysis of data and the findings of this study reveal that there is a significant positive relationship between the variables used to proxy the independent variables (corporate risk disclosure) and the variable used to measure the dependent variable (investor confidence) of pharmaceutical firms in Nigeria. Based upon these findings, this study therefore concludes that the corporate risk management disclosure influences investors' behaviour of pharmaceutical firms in Nigeria.

Recommendations

Based on the findings of the study and the conclusion drawn therefrom, various recommendations have been proffered.

- i. Pharmaceutical firms should endeavour to disclose information on the vulnerability in the operating environment of the firms in order to endear the firms to investors.
- ii. Vulnerability in the foreign exchange rate and liquidity position of pharmaceutical firms should be disclosed on a timely basis. This is because pharmaceutical firms usually rely on foreign exchange for their raw materials.
- iii. Information relating to the regulatory risks, such as governance and political environment, should be disclosed appropriately.
- iv. Pharmaceutical firms operating in Nigeria should strive to disclose their compliance with regulatory rules in order to increase investors' perception of their firms.
- v. Pharmaceutical firms should, from time to time, strive to disclose their long-term strategies which place them at a competitive advantage over their peers in the industry.



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