Drivers of Blockchain Adoption in Dividend Distribution in the Nigerian Exchange Group

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Abstract

This research investigates the factors influencing the Adoption of Blockchain Technology for Dividend Distribution (ABT) within firms in the Nigerian context. Utilizing a survey-based approach with a sample of 182 respondents, the study employs a comprehensive set of predictors including Stakeholders' Perceptions (SP), Perceived Ease of Use (PEU), Perceived Usefulness (PU), Institutional Pressures (IP), and Regulatory Support (RS). Methodologically, the research addresses the issue of multicollinearity through Ridge Regression, offering a robust technique for more reliable estimates. Our findings reveal that SP, PEU, PU, and RS are significant positive drivers for ABT, while IP was not significant. Interestingly, the interaction of RS and SP was also significant, indicating a moderating effect. The research contributes to the theoretical landscape by highlighting the nuanced role of institutional and regulatory factors in technology adoption. On a practical level, the study suggests that policymakers, particularly the Securities and Exchange Commission (SEC) and the Nigerian Exchange Group (NGX), should reevaluate existing regulations to foster technology adoption. Moreover, stakeholders, such as the Association for the Advancement of the Rights of Nigerian Shareholders, should engage more in influencing positive perceptions. This study fills an important gap in the literature by being among the first to explore these dynamics within the African context, specifically focusing on dividend distribution.

Keywords: *blockchain technology, Unclaimed Dividend, Technology Acceptance Model, Ridge Regression*

1.0 INTRODUCTION

1.1 Background of the Study:

The financial landscape in Nigeria, like many emerging economies, is a crucial engine of economic growth, facilitating capital allocation, savings mobilization, and the exchange of goods and services. At the core of this financial ecosystem are the listed companies, whose financial practices,

such as dividend distribution, significantly influence market dynamics and by extension, the broader economy.

Dividend distribution is a fundamental practice through which companies share a portion of their profits with shareholders. Traditionally, this process in Nigeria has been executed through conventional means characterized by manual processes, intermediaries, time delays, and, on occasion, errors. These conventional methods have increasingly shown their limitations, particularly in the face of the growing issue of unclaimed dividends. Statistics from Securities and Exchange Commission (2023) Nigeria shows a growth trend of unclaimed dividends in the Nigeria capital market. SEC reported that the value of unclaimed dividend in Nigeria had grown from a figure of 80 billion naira in 2012 to 160 billion naira in 2021. This figure speaks volume of the problem at hand. The trend is depicted in figure 1 below:

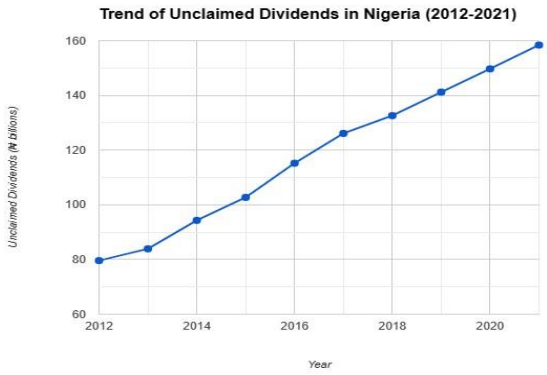


Figure 1: Unclaimed dividend Chart

The world at moment is experiencing unprecedented growth and innovation in the digital technology space and blockchain is one of such innovations that is impact every phase of human endeavour. Blockchain Technology (BT) is known for its unique characteristics of decentralized ledger, transparency and immutability and thus presents a novel paradigm for distribution of dividend, among many other possible uses in the field of finance and accounting. Yang (2019) studied the application of Blockchain Technology (BT) in the Maritime industry, the result of the study shows that BT has positive impact on customs processes and its adoption enhances transparency and accountability. It further shows that, using smart contracts, the adoption of BT helps reduce paperwork and eliminate human errors. Parung (2019) argue that the use of BT in sustainable supply chain management helps in enhancing the sustainability of supply chain management, addressing environmental, economic, and social dimensions, while also acknowledging potential challenges and disadvantages. Furthermore, Wu et al. (2021) examined BT adoption strategy for fresh food supply chain industry and found that some key success factor for BT adoption is consumer acceptance, rate of product deterioration and costs traceability.

Going by the foregoing, BT has the potentiality to streamlining processes, reducing costs, enhancing transparency, and fostering trust among stakeholders, blockchain technology could

provide a viable solution to the challenges currently faced in dividend distribution. The Nigerian financial market, with its unique regulatory framework and market dynamics, presents a distinctive milieu for exploring the perception and adoption of blockchain technology for dividend distribution among listed companies. While globally the adoption of blockchain in financial processes is gaining traction, its acceptance and application in the Nigerian context, especially for dividend distribution, remain largely unexplored.

1.2 Statement of the Problem:

The persistent issue of unclaimed dividends in Nigerian listed companies underscores a significant challenge within the existing dividend distribution framework. The SEC's report highlighting a whopping NGN 160 billion in unclaimed dividends as of December 2021 delineates a dire need for innovative solutions to address the operational inefficiencies and bureaucratic bottlenecks inherent in the traditional dividend distribution processes.

The existing challenges not only lead to delayed payments and high operational costs but also erode trust among shareholders and other stakeholders. Additionally, the lack of transparency and real-time tracking exacerbates the problem, leaving a substantial amount of dividends unclaimed year after year.

Blockchain technology emerges as a potential beacon of hope in addressing these challenges. Its promise lies in automating dividend distribution processes, ensuring real-time tracking, reducing operational costs, and significantly mitigating the chances of dividends going unclaimed. However, despite the potential benefits harboured by blockchain technology, its adoption in the Nigerian financial sector, particularly for dividend distribution, appears to be nascent.

Moreover, there seems to be a paucity of comprehensive understanding and empirical studies exploring the perceptions towards blockchain technology and the readiness for its adoption among Nigerian listed companies. This scenario underscores a compelling need to delve into the perceptions and adoption of blockchain technology for dividend distribution among Nigerian listed firms. Unravelling the current perceptions, the level of adoption, and the challenges faced in adopting blockchain technology for dividend distribution could offer invaluable insights. These insights may not only inform policy formulation and encourage technological innovation but also contribute to enhancing the efficiency and transparency of dividend distribution processes in Nigeria, thereby potentially reducing the amount of unclaimed dividends.

This study endeavours to bridge this knowledge gap, providing a nuanced understanding of the interplay between blockchain technology and dividend distribution in the Nigerian context, and laying the foundation for future research and policy recommendations in this sphere.

1.3 Objectives of the Study:

The primary aim of this research is to elucidate the perceptions and adoption of blockchain technology for dividend distribution among Nigerian listed companies. The specific objectives are:

1. To assess the influence of Stakeholders' Perceptions (X_1) on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in listed firms of the Nigerian Exchange Group (NGX).
2. To examine the effect of Perceived Ease of Use (X_2) on the ABT in listed firms of the NGX.
3. To investigate the impact of Perceived Usefulness (X_3) on the ABT in listed firms of the NGX.
4. To evaluate how Institutional Pressures (X_4) affect the ABT in listed firms of the NGX.

5. To analyse the role of Regulatory Support (X_5) in influencing the ABT in listed firms of the NGX.
6. To study the moderating effect of Regulatory Support (X_5) on the relationship between Stakeholders' Perceptions (X_1) and the ABT in listed firms of the NGX.

2.0 LITERATURE REVIEW

2.1 CONCEPTUAL REVIEW

The Conceptual Review aims to delineate key foundational concepts central to this study, primarily focusing on Blockchain Technology and Dividend Distribution.

2.1.1 Blockchain Technology: Blockchain technology is a decentralized and distributed digital ledger used to record transactions across many computers so that any involved record cannot be changed retroactively, without the alteration of all subsequent blocks. This technology allows multiple parties to have simultaneous access to a constantly updated digital ledger that cannot be altered (Narayanan et al., 2016).

Core Features:

Decentralization: Unlike centralized systems, blockchain operates on a decentralized network of computers, eliminating the need for a central authority or intermediary (Zohar, 2015).

Transparency: All transactions on the blockchain are visible to all participants in the network, promoting transparency and trust among users (Tapscott & Tapscott, 2016).

Immutability: Once a transaction is recorded on the blockchain, it cannot be altered or deleted (Catalini & Gans, 2016).

Types of Blockchain: Public Blockchains: Open to anyone and are decentralized with no single entity in control (e.g., Bitcoin blockchain). Private Blockchains: Restricted to specific users and are centralized to some extent. Consortium Blockchains: Operated by a group of trusted entities that share the consensus process.

Applications in Finance: Blockchain has found myriad applications in the financial sector including smart contracts, supply chain finance, asset tokenization, and indeed, dividend distribution (Mougayar, 2016).

2.1.2 Dividend Distribution: Dividend distribution entails all processes of sharing and sending a portion of profits or reserves of a firm to its shareholders, having hitherto declared same at its annual general meeting. Dividend can either be distributed in the form of cash, Stock or property dividend; it serves the purpose of providing income to an investor on a regular basis and does influence investment decisions of firms, (Baker and Wurgler). Traditionally, dividend distribution in Nigeria used to be a cumbersome process of issuing cheques and dividend warrants to shareholders, but this has been migrated to an electronic payment system.

2.1.3 E-Dividend: this entails electronic bank transfers of dividends to shareholders of a firm, replacing the traditional practice of sending dividend warrants through mail. It is a system that facilitates the electronic deposit of cash dividends into an investor's chosen bank account, rather than utilizing bank cheques. By crediting dividends directly to a bank account, shareholders can access their funds in the most expedient manner, (Adeoye, 2023).

2.1.4 Unclaimed Dividend: Unclaimed dividends refer to dividends that have been declared and distributed by a company to its shareholders but have not been claimed or received by them; it could also be defined in line with SEC as dividend due to shareholders which has been paid by the company but remained unclaimed by the beneficiaries for more than 15 months after payment date (Okafor & Ugochukwu, 2021; (Awa et al., 2023). These dividends remain uncollected due to various reasons, such as shareholders not being aware of the dividend payment, issues in the payment process, or outdated shareholder contact information. Unclaimed dividends are an important issue in financial management, as they represent financial assets that have not reached their intended recipients, (Emoarehi et al., 2022).

2.2 EMPIRICAL REVIEW

The integration of blockchain technology into financial operations has garnered considerable attention in recent research, with a focus on its potential to revolutionize various aspects of financial management, including dividend distribution. This empirical review aims to blend insights from studies in supply chain management with the specific context of addressing unclaimed dividends in Nigeria, highlighting the broader implications of blockchain adoption in financial processes.

Yang's (2019) study on the adoption of blockchain in supply chain management, particularly in the maritime sector, illuminates how this technology enhances transparency, efficiency, and security in sustainable and fresh product supply chains. These findings, though primarily focused on logistics, have profound implications for financial processes, especially concerning dividend distribution. The ability of blockchain to streamline complex procedures, mitigate costs, and uphold both security and transparency resonates deeply with the essential needs of an efficient dividend distribution system. This parallel suggests that the strengths blockchain demonstrates in supply chain management could be effectively translated to address similar challenges in the financial domain, offering a promising solution for optimizing dividend distribution.
Parung (2019) delves into the diverse roles of blockchain in enhancing sustainable strategies within supply chain management. He emphasizes the positive influence of blockchain across environmental, economic, and social spheres of supply chains. From an environmental perspective, Parung points out how blockchain aids in minimizing the use of transportation and resources, thereby reducing environmental damage. Economically, the study shows blockchain's effectiveness in boosting operational efficiency, both in terms of cost and time, which can lead to substantial savings. Socially, the adoption of blockchain enhances a company's image, showcasing its dedication to sustainability and transparency. Nonetheless, the study also sheds light on the potential drawbacks of blockchain in these contexts, such as risks supplying chain sustainability. These insights underline the necessity for a careful and balanced approach in deploying blockchain technology.

Furthermore Beck, et al. (2018), posit that blockchain has the potential to lower transaction expenses and boost efficiency in financial procedures. This suggests that blockchain could similarly transform dividend distribution processes, potentially addressing the challenge of unclaimed dividends. By applying blockchain's transparent and efficient ledger system, financial institutions could more effectively track and distribute dividends, reducing the incidence of

unclaimed dividends. Similarly, Catalini and Gans (2016) discuss the cost-saving potential of blockchain in financial transactions, which can be extrapolated to the context of dividend distribution. This indicates that blockchain could offer a more cost-effective means for companies to distribute dividends, ensuring that shareholders receive their due payouts more efficiently and reliably.

In a contrasting manner, Wu et al. (2021) examines the strategic implementation of blockchain technology in the fresh product supply chain (FPSC). Wu's analysis focuses on contrasting the effectiveness of blockchain adoption in FPSC under various scenarios: a baseline where blockchain is not used, and three separate scenarios where either the supplier, the 3PL, or the e-tailer spearheads the development of a blockchain-based traceability system (BTS). A key finding of the study is that integrating blockchain into the FPSC is not universally advantageous. The decision's effectiveness hinges on several factors: consumer receptivity to non-blockchain products, the deterioration rate of fresh products, and how the costs of implementing traceability are allocated among FPSC members. Interestingly, Wu notes that any FPSC member, regardless of their position or influence, can lead the BTS initiative. For maximizing the overall profits of the FPSC, the study suggests that the FPSC's leader should take charge of the BTS construction, coordinated through a two-part tariff contract. Wu's research offers significant insights, guiding FPSCs in making informed decisions about adopting blockchain technology.

However, the adoption of blockchain in financial processes, including dividend distribution, faces several challenges. Studies have highlighted concerns about regulatory compliance, technological infrastructure, and cybersecurity (Zohar, 2015). These challenges mirror those observed in the adoption of blockchain in supply chain management, such as the need for sector-wide coordination and overcoming barriers related to stakeholder awareness and data privacy.

This empirical review underscores the growing interest in blockchain technology's potential to transform financial processes, including dividend distribution. While there is a notable gap in empirical research specifically focused on blockchain technology for dividend distribution and its impact on unclaimed dividends, the insights from related fields suggest a promising avenue for future research and practical applications. This study aims to address this gap, exploring how the lessons learned from blockchain adoption in supply chain management can be applied to resolve the persistent problem of unclaimed dividends in financial settings like Nigeria.

2.3 THEORETICAL REVIEW

The theoretical grounding of this study encompasses several theories that elucidate the adoption of technology, stakeholders' perceptions, and the dynamics within the financial market, particularly regarding dividend distribution. These theories collectively provide a robust framework for dissecting the potential adoption of blockchain technology for dividend distribution among Nigerian listed companies.

2.3.1 Stakeholder Theory:

Stakeholder theory, propounded by Freeman, et al. (2023), posits that organizations should consider the interests of all stakeholders in their decision-making processes. This theory provides

a framework to understand the perceptions and intentions of various stakeholders concerning blockchain adoption for dividend distribution.

Hypothesis H_1: Stakeholders' Perceptions (X_1) have no significant influence on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in firms of the NGX.

2.3.2 Technology Acceptance Model (TAM):

The Technology Acceptance Model (TAM) proposed by Davis (1989), is crucial to understanding the adoption of blockchain technology for dividend distribution. TAM posits that perceived ease of use and perceived usefulness significantly impact users' decisions to adopt and use new technology. In the context of this study, TAM provides a lens to assess how the perceived ease of use and perceived usefulness of blockchain technology influence stakeholders' intention to adopt this technology for dividend distribution in Nigerian listed companies.

Hypothesis H_2: Perceived Ease of Use (X**2**) has no significant effect on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in firms of the NGX.

Hypothesis H_3: Perceived Usefulness (X_3) has no significant impact on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in firms of the NGX.

2.3.3 Institutional Theory:

Institutional Theory, as articulated by Freeman cited in Chhina, et al. (2023) underscores the role of institutional pressures in moulding organizational behaviour and decisions. In the context of blockchain adoption for dividend distribution, institutional pressures from regulatory bodies, industry norms, and peer companies may significantly impact the decision to adopt blockchain technology among Nigerian listed companies.

Hypothesis H_4: Institutional Pressures (X_4) have no significant effect on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in firms of the NGX.

2.3.4 Regulatory Support and Moderation Theory:

The role of regulatory support in technology adoption is an area that has gained substantial attention in academic research. It becomes even more critical in sectors that are heavily regulated, such as financial markets. Regulatory bodies can either facilitate or hinder the adoption of new technologies through their policies, guidelines, and oversight functions. This holds especially for blockchain technology, which inherently has characteristics capable of disrupting conventional financial transactions and reporting systems (Tapscott & Tapscott, 2016). The idea of moderation suggests that the influence of one variable on another can vary based on the degree of a third variable. In this context, Regulatory Support (X5) could act as a moderating variable between Stakeholders' Perceptions (X1) and the Adoption of Blockchain Technology for Dividend Distribution (ABT). Regulatory support could amplify or attenuate the influence of stakeholders' perceptions on technology adoption. This is in line with the Moderation Theory, which suggests that external variables can affect the strength and direction of the relationship between the independent and dependent variables (Baron & Kenny, 1986).

Hypothesis H_5: Regulatory Support (X_5) has no significant influence on the Adoption of Blockchain Technology for Dividend Distribution (ABT) in firms of the NGX.
Hypothesis H_6: Regulatory Support (X_5) does not moderate the relationship between Stakeholders' Perceptions (X_1) and the ABT in firms of the NGX.

2.3.6 Theoretical Contribution and Research Gap:
A thorough scrutiny of the available literature and an initial delve into empirical studies reveal a notable research void in the examination of blockchain technology for dividend distribution among Nigerian listed companies. The key points below accentuate the discerned research gap: Absence of Empirical Data: There's a conspicuous lack of empirical data regarding the assimilation and ramifications of blockchain technology for dividend distribution within the financial market sphere of Nigeria. The deficiency of published research, especially those probing into how blockchain technology could ameliorate the issue of unclaimed dividends among Nigerian listed companies, marks a substantial gap in comprehension.
Context-Centric Insights: Though there's an escalating corpus of literature on blockchain technology and its fiscal applications on a global scale, insights tailored to the Nigerian context are scarce. The distinct market dynamics, regulatory structure, and technological backbone in Nigeria call for empirical examinations to unravel the potential and hurdles of blockchain technology in this setting. Perception and Adoption Landscape: The terrain of perceptions, readiness, and the degree of adoption of blockchain technology for dividend distribution among Nigerian listed companies remains largely uncharted. This gap widens to include a lack of awareness regarding the elements that could sway the adoption or rejection of blockchain technology for dividend distribution in this milieu.
Effect on Unclaimed Dividends: The quandary of unclaimed dividends is notably acute in the Nigerian financial market. Nonetheless, there's an empirical evidence deficit on how blockchain technology could possibly alleviate this issue by refining dividend distribution procedures and bolstering transparency and trust among stakeholders. Regulatory and Policy Impact: The literature seems to be lacking in regulatory and policy implications of adopting blockchain technology for dividend distribution in Nigeria. Gaining insight into the regulatory scenario and its effect on blockchain adoption is pivotal for guiding policy and practice.
Technological Framework and Capability: The extent of technological infrastructure and capability to embrace blockchain technology for dividend distribution among Nigerian listed companies is yet another facet that lacks empirical scrutiny. Advice for Effective Incorporation: There's a shortfall in practical advice, grounded in empirical discoveries, on how blockchain technology could be proficiently incorporated into the dividend distribution mechanisms of Nigerian listed companies.
The spotlighted research gap furnishes a persuasive premise for this study to furnish nuanced, context-centric insights regarding the perceptions, adoption, and potential repercussions of blockchain technology on dividend distribution among Nigerian listed companies. By bridging this gap, the study endeavours to cultivate a more profound understanding that could steer policy, practice, and subsequent research ventures, thus propelling the enrichment of knowledge in this field both within the Nigerian ambit and possibly beyond.

3.0 Research Methodology

The methodology section elucidates the procedures and techniques that will be utilized to achieve the objectives of the study. This research adopts a quantitative research paradigm to explore the perceptions and possibilities of adopting blockchain technology for dividend distribution among Nigerian listed companies.

3.1 Research Design

The study will employ a cross-sectional survey research design. This design is chosen for its effectiveness in collecting data from a large sample at a single point in time, which is suitable for assessing the perceptions and adoption levels of blockchain technology among the stakeholders.

3.2 Population and Sample

The population for this study comprises stakeholders in the Nigerian capital market, including investors, stockholders, regulators, finance professionals, and technology professionals associated with Nigerian listed companies. A purposive sampling technique will be used to select participants who have a significant understanding and involvement in dividend distribution processes and blockchain technology. The sample size will be determined using a statistical formula for finite populations.

3.3 Data Collection Methods

Primary data will be collected using a structured online questionnaire administered via Google Forms. The questionnaire will consist of closed-ended questions designed using a Likert scale to quantify the responses concerning stakeholders' perceptions and the adoption of blockchain technology for dividend distribution. The questionnaire will be distributed to the selected participants via email and other online platforms.

3.4 Data Analysis Approach:

Upon the collection of the data, it will be cleaned, coded, and entered into a statistical software package for analysis. The analysis will proceed in two stages to rigorously examine the relationships between the independent and dependent variables, as well as to explore the moderating effect of regulatory support.

Stage 1: Model 1 (Without Interaction Term)

The first stage involves constructing a Multiple Linear Regression model without the interaction term to assess the direct effects of the independent variables on the dependent variable. This model can be represented as:

$$Y=\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+\beta 5X5+\epsilon \qquad \text{Equation (1)}$$

Where:

Y represents the Adoption of Blockchain Technology for Dividend Distribution,
$\beta 0$ is the intercept,
$\beta 1, \beta 2, \beta 3, \beta 4, \beta 5$ are the coefficients of the independent variables,
X_1 is Stakeholders' Perceptions,
X_2 is Perceived Ease of Use,
X_3 is Perceived Usefulness,
X_4 is Institutional Pressures,
X_5 is Regulatory Support
ϵ is the error term.

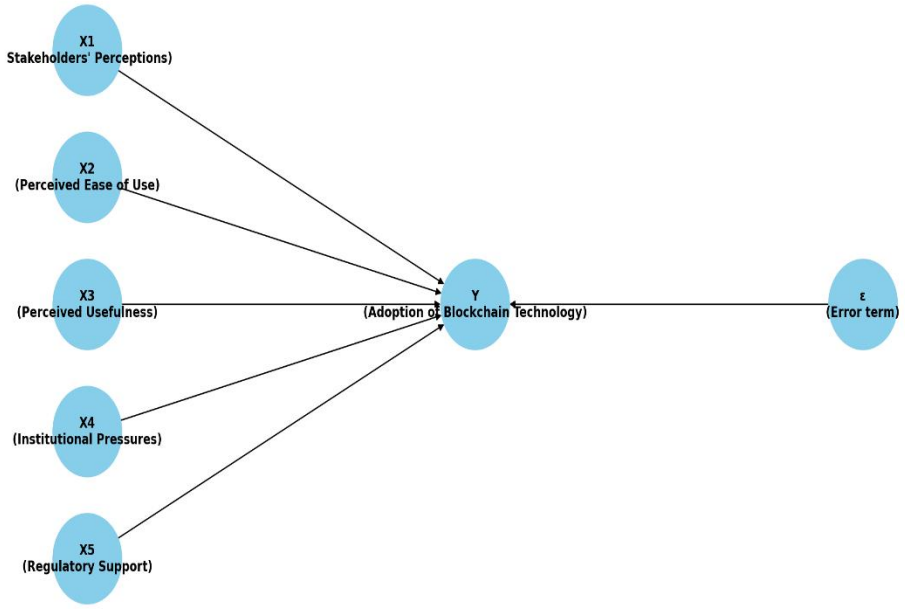


Figure 2: Model 1 (Without Interaction Term)

Stage 2: Model 2 (With Moderation Term)

The second stage involves constructing another Multiple Linear Regression model that includes the interaction term to examine the moderating effect of Regulatory Support on the relationship between Stakeholders' Perceptions and the Adoption of Blockchain Technology for Dividend Distribution. This model can be represented as:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_1 X_5 + \varepsilon$ Equation (2)

Where:

Y represents the Adoption of Blockchain Technology for Dividend Distribution,

β_0 is the intercept,

$\beta 1, \beta 2, \beta 3, \beta 4, \beta 5$ are the coefficients of the independent variables

X_1 is Stakeholders' Perceptions,

X_2 is Perceived Ease of Use,

X_3 is Perceived Usefulness,

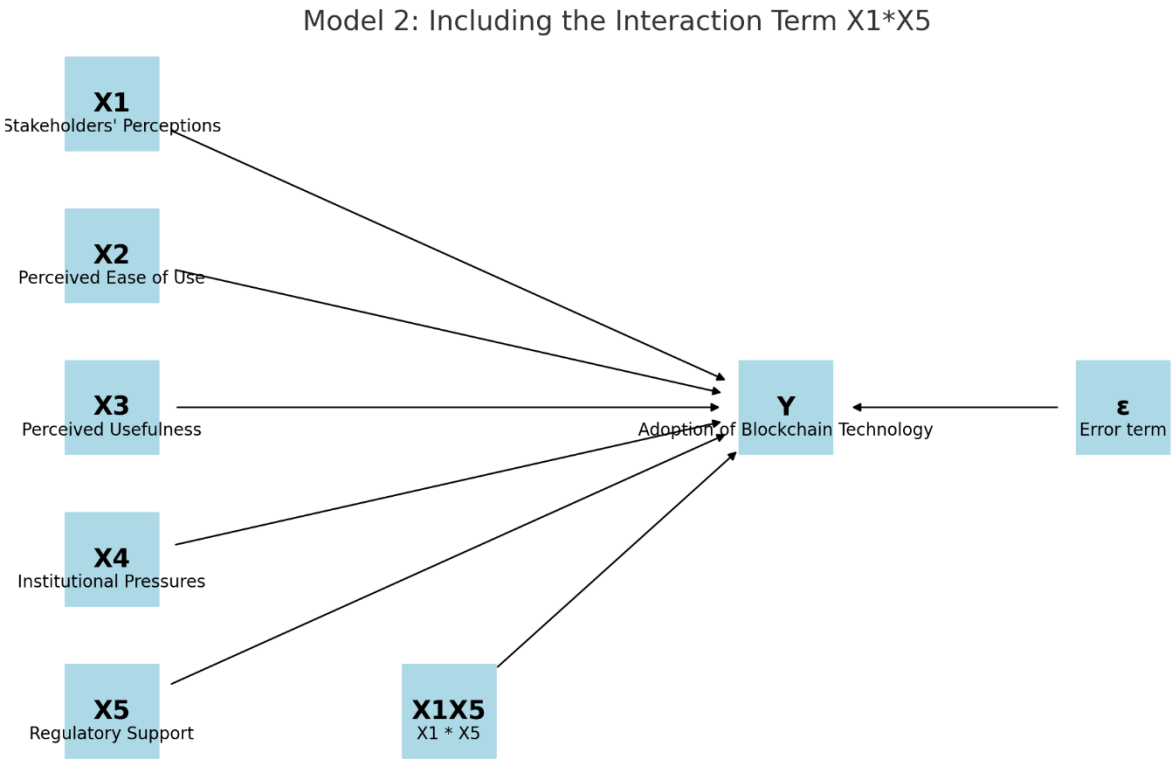
X_4 is Institutional Pressures,

X_5 is Regulatory Support,

$\beta_6 X1 X_5$ represents the interaction term for the moderating effect of Regulatory Support on Stakeholders' Perceptions,

ε is the error term.

Figure 3: Graphical Representation of Model 2



3.4 Ethical Considerations:

The research will adhere to ethical guidelines in terms of ensuring the confidentiality and anonymity of the participants. Informed consent will be obtained from all participants before administering the questionnaire. Additionally, the research will ensure transparency in reporting the findings and acknowledge any limitations and biases that may affect the results.

3.5 Limitations

Recognizing the possible shortcomings of the study is essential. These shortcomings could include biases in sampling, biases related to self-reported data in surveys, and the complexity of accurately reflecting the subtle aspects of attitudes towards technology adoption, (Krumpal, 2013). Despite these challenges, thorough attention was given to the formulation of the research design and methodology to ensure the validity and reliability of the results.

4.0 RESULT AND DISCUSSION

4.1 Descriptive Statistics

The summary statistics below show the measures of central tendency, measure of dispersion and the shape of the dataset distribution.

Table 1: Descriptive Statistics

Variable	Mean	Minimum	Maximum	Count	Skewness	Kurtosis
Adoption BT for Dividend (Y)	**4.40**	**2.0**	**5.0**	**182**	**-1.23**	**0.89**
Stakeholders' Perceptions (X1)	**3.57**	**1.0**	**5.0**	**182**	**-0.98**	**0.76**
Perceived Ease of Use (X2)	**4.44**	**2.0**	**5.0**	**182**	**-1.35**	**1.10**
Perceived Usefulness (X3)	**4.30**	**2.0**	**5.0**	**182**	**-1.25**	**1.02**
Institutional Pressures (X4)	**2.87**	**1.0**	**5.0**	**182**	**0.74**	**-0.40**
Regulatory Support (X5)	**4.43**	**3.0**	**5.0**	**182**	**-0.85**	**-0.59**

The descriptive statistics presented in Table 1 give a detailed overview of the factors affecting the adoption of blockchain technology in dividend distribution. The data reveals a high acceptance level, with an average adoption rate (Y) of 4.40. This strong inclination towards the technology is further supported by the mean values for 'Perceived Ease of Use (X2)' at 4.44 and 'Perceived Usefulness (X3)' at 4.30, indicating that the technology is both user-friendly and deemed beneficial, key drivers for its broader adoption. In terms of data distribution, the majority of variables show negative skewness, except for 'Institutional Pressures (X4)', suggesting that most responses are clustered towards the higher end of the scale. The kurtosis values for most variables are around zero, pointing to a platykurtic distribution, which indicates less pronounced tails in the data distribution. These statistical metrics are crucial in providing a deeper understanding of each variable and lay the groundwork for the upcoming inferential statistical analysis, thereby enriching the overall context and depth of the study.

4.2 Correlation Analysis

The correlation analysis reveals the degree of linear relationship between the independent variables (X1, X2, X3, X4, X5) and the dependent variable (Y), as well as among the independent variables themselves. The correlation coefficients range from -1 to 1, where a value closer to 1 indicates a strong positive correlation, a value closer to -1 indicates a strong negative correlation, and a value around zero indicates no correlation.

The heatmap, Figure 1, visually represents these correlation coefficients. A darker shade of color implies a stronger correlation. Quantitatively, the correlation matrix elucidates these relationships further:

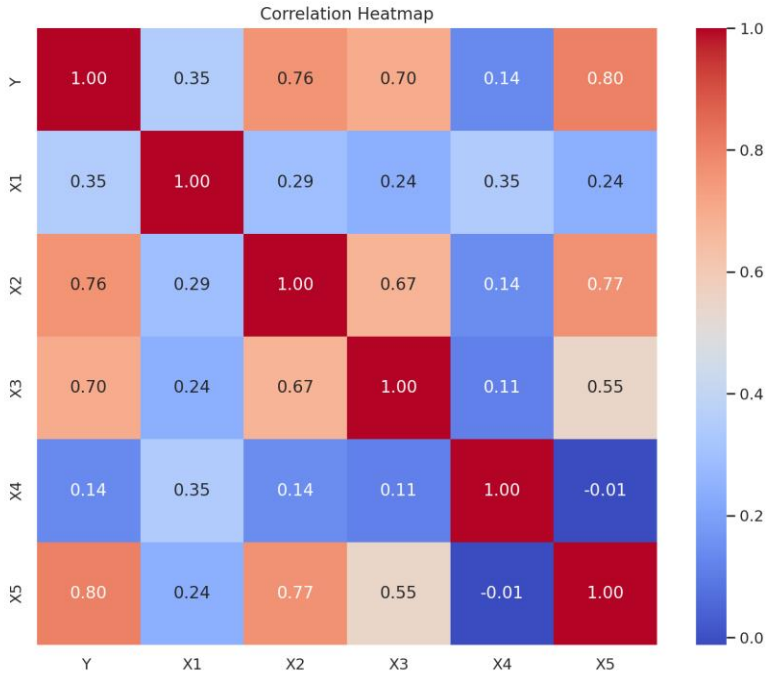


Figure 4 Correlation Heatmap

I. The strongest correlation is observed between the dependent variable Y (Adoption of Blockchain Technology for Dividend) and X5 (Regulatory Support), with a correlation coefficient of 0.804.
II. The variable X2 (Perceived Ease of Use) also shows a strong correlation with Y, having a coefficient of 0.761.
III. X3 (Perceived Usefulness) has a correlation coefficient of 0.696 with Y, indicating a significant positive relationship.
IV. X1 (Stakeholders' Perceptions) and X4 (Institutional Pressures) show relatively lower correlations with Y, having coefficients of 0.35 and 0.137, respectively.

Among the independent variables:

V. X2 and X5 have the strongest correlation with a coefficient of 0.766, which suggests possible multicollinearity.
VI. X4 (Institutional Pressures) shows the least correlation with other variables, even having a slightly negative correlation with X5.

The correlation matrix provides pivotal insights into the relationships between the variables, which is integral for the subsequent regression analyses. The high correlation between some of the independent variables suggests the need for further tests to assess multicollinearity.

4.3 Multiple Regression Analysis

4.3.1 Multiple Regression Analysis

The multiple regression model yielded statistically significant results, with an F-value of 113.97 and a p-value less than 0.0001. This indicates that the independent variables collectively have a significant impact on the dependent variable, which is the Adoption of Blockchain Technology for Dividend Distribution.

4.3.2 Goodness-of-Fit Measures

R^2 (R-squared) = 0.764

Adjusted R^2 = 0.7573

The R-squared value suggests that approximately 76.4% of the variance in the dependent variable is explained by the model.

Table 2: Regression Coefficients and Statistics

Variable	Coefficient	Std. Error	t-value	p-value	95% Confidence Interval
Stakeholders' Perceptions ($X1$)	0.0709	0.0299	2.36	0.019	0.0117, 0.1301
Perceived Ease of Use ($X2$)	0.1172	0.0658	1.78	0.077	-0.0126, 0.2469
Perceived Usefulness ($X3$)	0.2767	0.0462	5.99	<0.001	0.1855, 0.3678
Institutional Pressures ($X4$)	0.0439	0.0294	1.49	0.138	-0.0142, 0.1020
Regulatory Support ($X5$)	0.5906	0.0653	9.05	<0.001	0.4617, 0.7194
Constant ($\beta 0$)	-0.3079	0.2065	-1.49	0.138	-0.7155, 0.0996

4.3.3 Multicollinearity Diagnosis:

The Variance Inflation Factor (VIF) was used to check for multicollinearity:

Mean VIF: 2.02

Highest VIF: Perceived Ease of Use (X_2) with a VIF of 3.26

Based on the commonly accepted threshold of VIF > 5 for problematic multicollinearity, the model appears to be free from severe multicollinearity issues.

4.3.4 Robust Standard Errors:

Robust standard errors were computed to ascertain the model's sensitivity to heteroskedasticity. The coefficients remained largely consistent, suggesting that heteroskedasticity was not a significant concern in this model.
The results also serve as a basis for further analyses, including Ridge Regression, to address the limitations identified.

4.3.5 Limitations:

The limitations of the multiple regression analysis primarily centre around concerns of multicollinearity among the predictor variables. Although the Variance Inflation Factor (VIF) for most variables did not exceed the generally accepted threshold of 5, the mean VIF of 2.02 and the highest individual VIF of 3.26 for "Perceived Ease of Use" signal potential multicollinearity issues. Additionally, the p-values for some variables like "Perceived Ease of Use" and "Institutional Pressures" hovered close to the significance level, further raising concerns about the stability of the regression coefficients. The correlation matrix also revealed a high degree of correlation between certain predictor variables, such as a coefficient of 0.7665 between "Regulatory Support" and "Perceived Ease of Use." Given that multicollinearity can distort the individual contributions of each predictor and make the model unstable, a more robust methodological alternative in the form of Ridge Regression was employed to mitigate these issues and improve the reliability of the results.

4.4 Ridge Regression Analysis

The occurrence of multicollinearity in our multiple regression analysis required the implementation of Ridge Regression as a corrective step. This technique, initially proposed by Hoerl and Kennard (1970), effectively tackles multicollinearity by incorporating a penalty term (α) into the least squares estimation. The ideal value for this regularization parameter (α) was determined to be around 0.098, ascertained through a grid search cross-validation process.

4.4.1 Model Specifications:

For a Ridge Regression approach, penalty term is added to adjust the multiple regression model. To solve the problem of multicollinearity, a regularization term, alpha α, was introduced.
The model for this study is represented as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 (X_1 \times X_5) + \alpha \sum_{i=1}^{5} \beta_i^2 + \varepsilon \quad \text{Equation (3)}$$

Here: all variables definition remains same as in section 3.4

4.4.2 Empirical Results:

The coefficients for each of the variables for the model is as follows:

Table 3: Ridge Regression Coefficients of the variables

Variable	**Coefficient**
Stakeholders' Perceptions (X_1)	0.769
Perceived Ease of Use (X_2)	0.111
Perceived Usefulness (X_3)	0.311
Institutional Pressures (X_4)	0.057
Regulatory Support (X_5)	1.123

Variable	Coefficient
Interaction Term ($X_1 \times X_5$)	−0.163

From the ridge regression coefficient table above, Regulatory Support (X5), Stakeholders' Perception (X1) and Perceived Usefulness (X3) have positive influence on the Adoption of Blockchain Technology (Y) for Distribution of Dividend. Additionally Perceived Ease of Use (2) and Institutional Pressures (X4) have positive but minimal influence on the dependent variable, Adoption of Blockchain Technology (Y) for Distribution of Dividend. The combined effect of Stakeholders' Perceptions (X1) and Regulatory Support (X5) resulted in a negative coefficient of -0.163, which means that there is a moderating effect of Regulatory Support (X5) on the relationship between Stakeholders' Perceptions (X1) and the adoption of blockchain technology for dividend distribution (Y). this means that as Regulatory Support increases, the positive influence of Stakeholders' Perceptions (X1) on Y decreases. The interaction term further suggests that stronger regulatory support diminishes the influence of stakeholders influence on adoption of blockchain technology for dividend distribution.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion:

The study provides insightful and robust evidence on the factors influencing the adoption of blockchain technology for dividend distribution. Regulatory Support emerges as the most potent factor, followed by Stakeholders' Perceptions and Perceived Usefulness. The interaction between stakeholders' perceptions and regulatory support adds an additional layer of complexity to this decision-making process. The study's findings have significant implications for policymakers (like SEC and the NGX), firm managers, and other stakeholders in the financial and technology sectors. The outcome of this study underscores the need for supportive regulatory environments and positive stakeholder perceptions to facilitate the adoption of innovative technologies like blockchain in financial processes.

5.2 Recommendations

Based on the findings, the following recommendations are made:

1. **Regulatory Focus**: Given the significant impact of Regulatory Support on technology adoption, it is imperative for policymakers to prioritize creating a supportive legal framework to facilitate the adoption process. Specifically, regulatory bodies like the Securities and Exchange Commission (SEC) and the Nigerian Exchange Group (NGX) should take the lead in this aspect.
2. **User Experience**: Companies should focus on improving the ease of use of blockchain technology platforms. Simplified user interfaces and more intuitive controls can enhance the Perceived Ease of Use, thereby promoting adoption.
3. **Stakeholder Engagement**: Stakeholders' perceptions play a vital role; hence, companies should engage in transparent communication and perhaps educational programs to foster positive perceptions towards the technology. In this regard, engagement with shareholder associations such as the Association for the Advancement of the Rights of Nigerian Shareholders, Proactive Shareholders Association, and Independent Shareholders Association can be highly beneficial.

4. **Cost-Benefit Analysis**: Given that Perceived Usefulness also impacts adoption, a detailed cost-benefit analysis should be conducted to provide stakeholders with tangible data on the advantages of adoption, thereby enhancing their perception of its usefulness.

5.2 Future Research

Future studies might consider alternative approaches such as Lasso Regression or Elastic Net Regression to enhance the robustness of these results. Moreover, extending the research to various industries and geographical areas could offer a broader perspective on the applicability of the results.

References

Adeoye, E. A. (2023). E-Dividend and investment performance in stock market among the Nigeria deposit money banks. *International Journal of Science and Research*, *12(3)*, SR23319212942.

Awa, M. U., Osuka, B., & Otiwu, K. C. (2023). Unclaimed dividends and performance of the fixed income market in Nigeria. *IIARD International Journal of Banking And Finance Research*, *9*(3), 265–277. https://doi.org/10.56201/ijbfr.v9.no3.2023.pg265.277

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51(6)*, 1173–1182.

Beck, R., Müller-Bloch, C., & King, J. L. (2018). Blockchain technology in business and information systems research. *Business & Information Systems Engineering, 59(6),* 381-384.

Catalini, C., & Gans, J. S. (2016). Some simple economics of the blockchain. Rotman School of Management Working Paper No. 2874598.

Chhina, S., Chadhar, M., Firmin, S., & Tatnall, A. (2023). Understanding Blockchain Adoption from an Institutional Theory perspective.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13(3),* 319-340.

Emoarehi, E., Iyoha, F. O., & Adetula, D. T. (2022). Incidence of unclaimed dividends: A panel data analysis of the role of quoted companies in Nigeria. *Wseas Transactions on Business and Economics, 20, 80–91*. https://doi.org/10.37394/23207.2023.20.9

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & de Colle, S. (2023). The problems that stakeholder theory tries to solve. In *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics* (pp. 3-27). Cham: Springer International Publishing.

Hoerl, A. E., & Kennard, R. W. (1970). Ridge regression: Biased estimation for nonorthogonal problems. *Technometrics*, *12*(1), 55-67.

Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & quantity*, *47*(4), 2025-2047.

Mougayar, W. (2016). The business blockchain: Promise, practice, and application of the next Internet technology. John Wiley & Sons.

Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). Bitcoin and cryptocurrency technologies: a comprehensive introduction. Princeton University Press.

Okafor, S., & Ugochukwu, H. (2021). Unclaimed dividend and market value of listed firms in Nigeria Stock Exchange. *Social Science Research Network*. https://doi.org/10.2139/ssrn.3993780

Parung, J. (2019). The use of blockchain to support sustainable supply chain strategy. IOP Conference Series, 703(1), 012001. https://doi.org/10.1088/1757-899x/703/1/012001

Securities and Exchange Commission. (2023). Unclaimed dividends trend in Nigeria. [Graph]. Retrieved from https://sec.gov.ng/

Tapscott, D., & Tapscott, A. (2016). Blockchain revolution: How the technology behind Bitcoin is changing money, business, and the world. Penguin.

Wu, X., Fan, Z., & Cao, B. (2021). An analysis of strategies for adopting blockchain technology in the fresh product supply chain. *International Journal of Production Research, 61(11),* 3717–3734. https://doi.org/10.1080/00207543.2021.1894497

Yang, C. (2019). Maritime shipping digitalization: Blockchain-based technology applications, future improvements, and intention to use. Transportation Research Part E: *Logistics and Transportation Review, 131, 108–117*. https://doi.org/10.1016/j.tre.2019.09.020

Zohar, A. (2015). Bitcoin: Under the hood. Communications of the ACM, 58(9), 104-113.