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Enterprise Risk Management (ERM) Practices and Financial Performance: Evidence from Listed Insurance Firms in Nigeria

Kurumsal Risk Yönetimi (ERM) Uygulamaları ve Finansal Performans: Nijerya'da Listelenen Sigorta Firmalarından Kanıtlar

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ABSTRACT

This study examined the Enterprise Risk Management (ERM) Practices on the performance of insurance firms in Nigeria. The study used panel and correlational designs in investigating the effect of ERM Practices measured by strategy and operations objectives of the Committee of Sponsoring Organisation (COSO) on the financial performance of insurance firms measured by Tobin's Q. Secondary data obtained from the annual financial statements of the insurance firms for the periods of 2018-2022 were used in the analysis. The study used panel data regression model to estimate the relationship. The findings revealed the existence of a positive significant effect of strategic objectives on the financial performance of insurance firms in Nigeria. However, a negative significant effect of operational objective on the financial performance of insurance firms in Nigeria was documented. The study recommended that insurance firms in Nigeria should continue to ensure full conformity to the provision of COSO components while carrying out their business operation. They should also re-strategize and monitor their financial performance outcomes in line with their established objectives in order to attain the holistic application of ERM strategic objectives in the overall business operations.

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ÖZ

Bu çalışma, Nijerya'daki sigorta şirketlerinin performansına ilişkin Kurumsal Risk Yönetimi (ERM) Uygulamalarını inceledi. Çalışmada, Sponsor Kuruluş Komitesi'nin (COSO) strateji ve operasyon hedefleri ile ölçülen ERM Uygulamalarının, Tobin's Q ile ölçülen sigorta şirketlerinin finansal performansı üzerindeki etkisinin araştırılmasında panel ve korelasyonel tasarımlar kullanılmıştır. İkincil veriler, şirketin yıllık mali tablolarından elde edilmiştir. Analizde 2018-2022 dönemlerine ait sigorta şirketleri kullanılmıştır. Çalışmada ilişkiyi tahmin etmek için panel veri regresyon modeli kullanılmıştır. Bulgular, stratejik hedeflerin Nijerya'daki

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sigorta şirketlerinin finansal performansı üzerinde olumlu ve anlamlı bir etkisinin varlığını ortaya koydu. Ancak operasyonel hedefin Nijerya'daki sigorta şirketlerinin mali performansı üzerinde olumsuz ve anlamlı bir etkisi olduğu belgelendi. Çalışma, Nijerya'daki sigorta şirketlerinin ticari faaliyetlerini yürütürken COSO bileşenlerinin sağlanmasına tam uygunluğu sağlamaya devam etmeleri gerektiğini önerdi. Ayrıca, ERM stratejik hedeflerinin genel iş operasyonlarında bütünsel olarak uygulanmasını sağlamak için, finansal performans sonuçlarını kendi belirledikleri hedefler doğrultusunda yeniden stratejilendirmeli ve izlemelidirler.

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1. INTRODUCTION

Firm financial performance is the most crucial aspect in the analysis of organisation's financial health (Singh, Tabassum, Darwish & Batsakis, 2017) because the value of a firm is an essential measure of the shareholders' wealth. Performance has generally been regarded as the main driver for achieving firm's strategic goals. High level performance supports corporate entities in streamlining the pattern of resource allocation for complex market share and sustained business survival. An important aspect of every economy is the efficient performance of financial service firms operating within the realm of the financial sector (Prasad, 2021). Globally, firm performance has become a related concept with enormous consideration by both academic researchers, strategic managers, investors, and regulators. This is mainly due to the important role they play in providing supporting environment for individuals and corporate entities to overcome economic uncertainty, thereby intensifying the degree and magnitude of both national and global investment (Salim 2023; Choi, Choi, Myers, & Ziebart, 2019).

It is a known fact that the world is characterized with full of uncertainties and risks. Generally, individuals, businesses, large corporate entities face different types and levels of risks. Insurance is regarded as a financial product that reduces or eliminates the cost of loss or the impact of loss caused by different types of risks (NAICOM, 2019; Gupta, Owusu, & Wang, 2023). In addition to protecting individuals and businesses from a variety of potential risks, the insurance industry also makes a significant contribution to the overall economic growth of a country by providing stability for business operations and generating long-term financial resources for industrial projects (Eladly, 2022; NAICOM, 2018). Importantly, Global Insurance Industry maintained steady growth from 2017 as total premiums increased by 3.0% to $5.3tn in 2018, thereafter crossed to $6.3tn mark in 2019, representing 7.2% of Global GDP. Among other things, the insurance sector encourages personal savings and creates jobs for millions of people, especially in countries where savings and employment are important (Kanu, 2021).

However, the performance of insurance industry in Nigeria has been deprived, as the industry lags behind its peers in terms of penetration and density of key indicators (NAICOM, 2020). In 2017, insurance premiums increased by 15.5%, a 5-year high. However, the industry continues to lag behind its peers in terms of penetration density which 0.5% compared to South Africa (12.9%), Kenya (2.8%), Angola (0.8%) and Egypt (0.6%) respectively (Daniel, 2020). Nigerian insurance industry stood as US$6.2, which is still weaker than South Africa (US$762.5), Kenya (US$40.5), Angola (US$30.5) and Egypt (US$22.8). It is observed that Nigerian insurance firms have poor market valuations, with price-to-book ratio of 0.43%, while South Africa (1.99%), Egypt (1.65%) and Kenya (0.64%) (Kanu, 2021). Thus, this variation raises some important questions among scholars in Nigeria. The slow growth rate in the performance of the Nigerian insurance firms were attributed largely to the problems of poor risk management practices (NAICOM, 2020). Therefore, for any firm to achieve better performance, sound risk management is inevitable.

Moreover, financial crisis across world economies have made business environment extremely unpredictable, making Traditional Risk Management (TRM) methods unable to effectively manage risk exposure (Prasad, 2021). Similarly, TRM method has been criticized by its inability to consider the interrelatedness of multiple types of risks undertaking by the financial service institutions (Daniel, 2020). In fact, scholars such as Kanu (2021) and Prasad (2021) believe that TRM is a risk management method based on silos, which does not offer institutions the opportunity to view the risk exposure of the entire enterprise. Therefore, the inefficiency associated with the traditional concept of risk has become a catalyst for the evolution of Enterprise Risk Management (ERM) as an alternative risk management mechanism. According to PwC (2018), ERM approach gives the institutions an opportunity to clearly understand the interaction of different types of risks.

ERM is a process designed to identify likely events that may influence the corporate entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (Mahat, Pandey, & Thapa, 2023). According to the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004), it is a process, affected by an entity's board

of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. In other words, ERM is a process that enables business organizations to assess, control, exploit, finance and monitor exposures from all sources to improve firm performance and enhance its value (Pangestuti, Muktiyanto, & Geraldina, 2023).

Thus, there is gap in literature in terms of both variable coverage and methodology. Insurance is a business of managing risk, the management of which has direct bearing on its performance and value. These necessitate conduct of a study that will cover the overall ERM objectives and also to investigate the effects of ERM on the performance and value of insurance firms in Nigeria. It is on this note that this study examined the effect of ERM on performance and value of the Nigerian insurance firms.

Based on the aforementioned problems and gaps identified, the following research questions are raised

i. To what extent does ERM strategic objective affect the performance of listed Insurance firms in Nigeria?
ii. To what extent does ERM operational objective affect the performance of listed Insurance firms in Nigeria?

Based on the research questions developed, the general objective of this study is to examine the effect of ERM on the financial performance of insurance firms in Nigeria, while the specific objectives of the study are:

i. To determine the effect of ERM strategic objective on the performance of listed Insurance firms in Nigeria.
ii. To determine the effect of ERM operational objective on the performance of listed Insurance firms in Nigeria.

To achieve the stated objectives, the following hypotheses are formulated in null form:

i. H01: ERM strategic objective has no significant effect on the performance of listed Insurance firms in Nigeria.
ii. H02: ERM operational objective has no significant effect on the performance of listed Insurance firms in Nigeria.

The study of ERM and performance of listed insurance firms using the COSO ERM objectives is relatively a new area of research in Nigeria.

Although previous studies have examined the value relevance of ERM in developed economies, there are few empirical studies on ERM and performance in developing economies such as Nigeria.

2. REVIEW OF RELATED EMPIRICAL LITERATURE

2.1. Firm Performance

The value of a firm is an essential measure of the shareholders' wealth. Firm financial performance is one of the most important variables in management research and arguably the most important indicator of organizational position. By its nature, performance measurement is a diverse subject. While some have represented ex post analysis to reveal performance, others have represented ex ante analysis. Moreover, there are several definitions, selections and categorization of appropriate performance employed by researchers to study the performance of financial institutions such as the work of Salim (2023), Eladly (2022), Kim and Rasia (2001), Sarita, Zandi and Shabi (2012), Sufian (2008), Brissimis, Delis and Papanico (2008), Vshih, Zhang and Liu (2006), and Micco, Panazzaand Yenez (2004). They were of the view that performance in an organization can be measured in terms of market shares, efficiency, ownership and human resource management.

Currently, there is no consensus concerning the selection of an appropriate set of measures which account for firm performance and value (Chakravarthy, 1986); it is unlikely, however, that any indicator of performance could sufficiently capture firm performance (Daily & Dalton, 1992). It is common to see several indices used because organizations legitimately seek to accomplish a variety of objectives, ranging from financial profitability to effective asset utilization and high stockholder returns (Hofer, 1983). There are basically two broad groups of performance measures. The accounting measures which is drawn from the accounting systems used by firms to track their internal affairs and the market measures which relate to the share prices and dividend streams observed in the operations of the financial markets (Devinney, Richard, Yip & Johnson, 2005).

2.2. Enterprise Risk Management (ERM)

Risk refers to an uncertain future event which could influence the achievement of the organization's strategic, operational and financial objectives. Enterprise Risk Management (ERM) is a process of strategically managing risk. ERM can be interpreted in different ways from one profession to another, based on the needs and priorities in managing different types and magnitude of risks. For instance, Standard and Poor (2013) defined ERM as a holistic risk management process that adequately controls unexpected losses within the framework of cost-benefit optimization analysis. Based on this definition, the goal of ERM is to minimize risk as much as possible to the extent of maximization of benefits. The definition recognizes the fact that often in minimizing cost, there is a high tendency of foregoing benefits (that is the risk-return trade-off), hence the corporate objective is to have a holistic risk management strategy that will optimize that trade-off (cost-benefit).

The International Organisation for Standardization (ISO3100:2009) defines ERM as Coordinated activities to direct and control an organization about risk. These activities include identifying risks, analyzing risk treatment options, selecting the best response, implementing risk mitigation and controls and monitoring results, and revise as necessary.

COSO (2004:2) defines ERM as a process, effected by an organization's board of directors, management, and other employees, which is applied in strategy setting and throughout the entity, and is designed to identify likely events that may influence the entity and manage risks to be in accordance with its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. This definition identifies the role of management and other personnel in providing reasonable assurance regarding the achievement of the entity's objectives. It has also emphasized the role of employee involvement throughout the entire process of ERM implementation and enforcement.

2.3. ERM Strategic Objective

Strategy is viewed as the way an organization positions itself in the market place relative to its competitors. When executing its strategy, a firm tries to develop a competitive advantage over participants in the same industry (Porter, 2008). This competitive advantage should lower a firm's overall risk of failure, and thus increase a firm's performance and value. All firms in the same sector compete for the sales opportunities (market share) in the same industry. Thus, high sales by firm i relative to the industry's average sales means firm i is outperforming its average competitors.

Tseng (2007) observed that strategy can be viewed as the firm's ability to reduce its systematic risk relative to that of its competitors. This is because a significant benefit of ERM is to diversify away threats by managing a portfolio of risks arising from all sources. Therefore, ERM can be deemed as firms applying a diversification strategy to managing risks. In this regard, Thompson (1984) measures the performance of diversification strategy by the reduction in systematic risk, or beta. The rationale behind this measure is that the systematic risk from the market model describes a firm's undiversified risk, and a more successful diversification strategy can diversify more risks to reduce undiversified risk by managing a firm's total risk portfolio.

2.4. ERM Operational Objective

Operation refers to productivity or operating efficiency (Gordon, Loeb, & Tseng 2009), which entails maximizing output with a given level of input or minimizing input for any given level of production. It is the proportion of input to output within the process of a firm's operations (Banker, Datar & Kaplan, 1989; Gordon, Loeb, & Tseng 2009); thus, more production for a certain level of input or less input for a certain level of production means better operating efficiency. It is reasonable to expect that higher operating efficiency should lower a firm's overall risk of failure, and thus increase its performance and value.

Efficiency is categorized into technical and allocative. Allocative efficiency relates to the extent to which resources are being allocated to use with the highest value in a firm. A firm is technically efficient if it generates an amount of outputs using the smallest amount of inputs and considers it efficient if it is using the right mix of inputs to produce its output. A firm is said to be cost-efficient if it is both allocative and technically efficient (Mester, 1997). When measuring the efficiency of financial institutions, a key decision to be made is which efficiency concept to use. Three most important economic efficiency concepts are currently being used namely, cost, profit, and alternative profit efficiency (Berger & Mester, 1997). According to McWilliams and Smart (1993), firms that operate efficiently can exploit their competitive advantage and earn sustainable profits for a more extended period thereby establishing a sustainable competitive advantage.

2.5. ERM Strategic Objective and Firm Financial Performance

Strategy is viewed from the competitive advantage that a firm has over its competitors. In this regard, Mzoughi, Bahri, and Ghachem (2008) studied the effect of competitive advantage on organizational performance in different industries in Tunisia. They measured competitive advantage by the dimensions of price, quality, and time to market, innovation, and reliability of delivery. In addition, financial performance and market performance were measuring elements for organizational performance. The findings show that, from the aspects of competitive capability, only time to market has a positive effect on financial performance.

Hosseini and Sheikhi (2012) investigated the effect of competitive capability on firm performance under environmental uncertainty conditions. Their findings show that competitive capability measured by the ability to achieve cost leadership, and product differentiation, has a direct positive effect on customer satisfaction, financial performance, and firm value.

Using a sample of 664 publicly traded micro and nanotechnology firms in the United States of America (USA) surveyed from the fall of 2003 through the spring of 2004, Newbert (2008) found that corporate strategy that triggers competitive advantage is related to firm value. The study used an ordinary least square regression as the technique of analysis. The findings of this study may not apply to the Nigerian insurance sector for at least two reasons. First, the insurance industry faces a different risk exposure that requires examination in the industry context. Second, the study used primary data based on responses of the senior executives of the sample firms, and ERM strategy is a long-term strategy that needs studying over time.

2.6. ERM Operational Objective and Firm Financial Performance

The literature that explored the relationship between operational efficiency and firm performance and value are scanty too. Below are some of the empirical reviews from the previous studies that investigated the effect of operational efficiency and firm performance and value.

Grace, Leverty, Philips, and Shimpi (2010) used survey data from insurers that have ERM programs to perform an efficiency analysis on firm profitability. The paper used

samples of 1567, 1616, and 1606 companies in 1989, 1990, and 1991, respectively, which were analyzed using multivariate logistic regression. The study found evidence that ERM leads to lower expenses and an increase in profitability. The findings of the study may lack retention into the present-day analysis, because it is overtaken by events. In addition, the period covered was the time when ERM implementation and the extent to which its programs implemented were optional, which means that the result could be spurious.

Gill, Biger, and Mand, (2014) examined the impact of operational efficiency on the future performance of Indian manufacturing firms. Pearson's bivariate correlation analysis and multiple regression techniques were employed to analyze data from a sample of 244 manufacturing firms listed on the floor of the Bombay Stock Exchange for the period 2008 to 2012. Operational efficiency was measured by cash conversion cycle, operating expenses, operating cash floor, and asset turnover. The findings showed that a long cash conversion cycle negatively affects future performance, operating expenses to sales revenue also adversely affects future performance, operating cash flow positively impacts future performance, and asset turnover also has a positive impact on future performance.

2.7. Theoretical Framework

This study found the Modern Portfolio Theory to be relevant in establishing the linkage between ERM and firm performance.

2.8. Modern Portfolio Theory

Markowitz (1952, 1959) is considered the father of the modern portfolio theory who formulated the portfolio problem as a choice of the mean and variance of a portfolio of assets. The modern portfolio theory can be connected to ERM because ERM holds a portfolio view of risks, and considers the interactions between risks. The concepts of the modern portfolio theory can be theorized beyond just financial risks to include risks of all kinds, namely beyond a portfolio of investments to the entire collection of risks that an organization faces (CAS, 2003). An enterprise can be thought of as a collection of risky activities with each activity having risk and expected return. Therefore, "investments" in the modern portfolio theory are treated as equal to "risky activities" in an enterprise. An enterprise risk manager should always assume and operate like a "fund manager" and set portfolio targets as well as risk limits. This will ensure proper portfolio diversification and optimal returns (Lam, 2003). Also, Lam (2003) opined that one of the seven ERM components is considered portfolio management. The portfolio management accumulates exposure of risk, incorporates the diversification effects, and monitors the concentrations of risks against risk limits (Zhao, 2014).

The study will also adopt this theory because it presents a comprehensive platform for explaining the adoption of ERM and its potential impact on the insurance firm's financial performance.

3. MATERIALS AND METHODS

This study adopted the panel and correlational designs. Panel design was adopted because of the fact that data for the study were collected over a time period for a number of firm observations (Kumar, 2005). The study specifically collected data relating to ERM and performance from 2018-2022. Similarly, the choice of correlational design is necessitated by the fact that the study intends to establish the existence and nature of relationships, associations, and interdependence between variables of study (Punch, 2008). Specifically, the choice of the designs are necessitated by the nature of the study. Therefore, the designs provide a platform that enables the study to establish the direction and magnitude of relationship between ERM practice and performance of listed insurance firms in Nigeria.

The population of this study consists of all the 27 Insurance firms listed at the Nigerian Exchange Group (NGX) as of 31st December 2022. The study employed all the listed Insurance firms that made up the population as its sample. However, for an insurance company to be part of the sample, certain criteria must be met.

The population of this study consists of all the 27 Insurance firms in Nigeria listed by Nigerian Exchange Group (NGX) as of 31st December 2022. The insurance industry was chosen for the study because first; the insurance industry is in the business of risk management and they are at the forefront of implementing ERM, second; in order to control for differences that might arise from regulatory and market differences across industries and third; the choice of all the listed Insurance Firms on the floor of NGX by this study is informed by the need to make generalizations that will cover the entire Nigerian insurance industry.

3.1. Sample Size and Sampling Technique

The study employs all the Insurance firms that made up the population as its sample. Given the research design, this study uses secondary data from the financial statements and annual reports of the nineteen (19) insurance firms from 2018 to 2022. This period (2018 - 2022) is covered because of the fact that only the information or data in the financial statements of these firms within these periods will provide the researcher with relevant data needed for analysis. The research uses secondary data because all the relevant information needed for data analyses is available in the Annual Reports of the insurance firms. The relevant information was collected from the Annual Reports of the insurance firms submitted to the Nigerian Exchange Group, which has evidence that the insurance firms have implemented ERM. This approach has been used in past literature (see, e.g., Liebenberg & Hoyt, 2009; Hoyt & Liebenberg, 2017; Golshan & Rasid, 2012).

Annual reports of insurance companies were cross-checked with the compliance records of NAICOM to ensure the accuracy and reliability of all data collected.

The model that examines the hypothesis of the study is specified as follows:

$$FP_{it}=\alpha_{it}+\beta_1 ST_{it}+\beta_2 OP_{it}+\mu_{it}$$

Where:

FP	Firm Performance
ST	ERM Strategic Objective
OP	ERM Operational Objective
μ	Error term
α	Intercept
β_1 to β_5	Parameters to be estimated for the various explanatory and control variables in the model
it	i- represents the individual firm and t- represents the time

Table 1 below shows how variables used in the study were measured as well as their sources.

within the period of the study. Moreover, the table indicates that the ERM strategic objective maintained a positive and strong correlation of 0.7651 with ERM operational objective, revealing that as ERM strategic objective increases, the ERM operational objective also increases, vice versa.

4.1. Descriptive Statistics of Dependent Variable and Panel Regressors

This study performed the descriptive analysis of the regressors in the panel relationship estimated by the study. Table 3 presents the descriptive statistics analysis of the variables as follows:

It can be observed from Table 3 above that the mean of the insurance firm's financial performance measured by Tobin's q within the period of the study stood at approximately 64. However, the standard deviation revealed at approximately 639.76 indicates a high dispersion of individual insurance firms' financial performance within the period of study. The existing dispersion is further justi-

Table 1. Measurement of variables and sources

Variable	Acronym & type	Measurement	Source
Firm performance/ Tobin's Q	FP dependent	To be calculated as (market value of equity + book value of liabilities) / (book value of assets)	Hoyt, Moore and Liebenberg (2008), Hoyt and Liebenberg (2009)
ERM strategic objective	ST independent	To be calculated as the turnover of firm i less average industry turnover divided by the standard deviation of turnover of all firms in the same industry.	Tseng (2007), Gordon *et al.,* (2009)
ERM operational objective	OP independent	To be calculated as turnover divided by total asset.	Tseng (2007), Gordon *et al.,* (2009)

Source: Author's Compilations, 2023

4. RESULT AND DISCUSSION

Table 2 above depicts the correlation matrix analysis. As it can be observe from the table, the correlation between firm performance proxied by Tobin's q, which is the dependent variable used by this study, and ERM strategic objective is 0.0156. This shows a weak and positive association of the insurance firm's financial performance with ERM strategic objective. The table also indicates a positive and strong correlation of 0.0016 between the observation of insurance firm's financial performance and ERM operational objective

fied by the wide variability between the minimum Tobin's of -3534.46 and the maximum of 5568.47. The skewness of 6.73 implies that the distribution of Tobin's q has a longer right tail and is thus positively skewed. The kurtosis of 65.86 shows that the observation displays leptokurtosis of peakedness at the surface around the mean of the distribution. The Jarque-Bera value of 13758.37 which is strongly significant at the 1% level indicates that the observation of the insurance firms' financial performance in the insurance industry in Nigeria is not normally distributed.

Table 2. Correlation matrix

	Firm value	ERM strategic objective	ERM Operational objective
Firm value	1		
ERM strategic objective	0.0156	1	
ERM operational objective	0.0016	0.7651	1

Source: Researcher's compilations from eviews output, 2023

Table 3. Descriptive statistics of dependent variable and panel regressors

	Firm Value	ERM Strategic Objective	ERM Operational Objective
Mean	64.432	0.430	0.754
Std. Dev.	639.764	1.785	1.002
Maximum	5568.472	7.576	7.492
Minimum	-3534.461	-2.436	0.8108
Skewness	6.732	3.490	8.339
Kurtosis	65.857	14.535	74.585
Jarque-Bera	13758.37***	681.438***	17822.01***
Observation	95	95	95

*, **and*** imply significance at the 10%, 5% and 1% levels respectively.
Source: Eviews output, 2023

The table also reveals that the ERM strategic objective has a mean value of approximately 0.4 over the period, indicating that, on average, the insurance firms are fairly successful in their strategic objective throughout the study since a measure of whether or not a firm had a success in its strategy is the number of standard deviations its turnover deviates from the industry turnover. This further stresses the importance of considering other sources of turnover outside premiums. On the other hand, the standard deviation of approximately 1.79 reveals the presence of relatively high dispersion in the individual insurance firm observation of turnover around the average insurance industry turnover. Additionally, the minimum value for the ERM strategic objective of approximately -2.44 and the maximum of 7.58 also supports the presence of variation in the observation. The respective skewness and excess kurtosis values of 3.49 and 14.54 are symbolic of positive skewness and sharp peakedness at the surface of the distribution of the ERM strategic objective respectively. The Jarque-Bera value of 681.00 which is strongly and statistically significant at the 1% level implies that the observation of ERM strategic objective does not follow a normal distribution.

It can also be observed from the table that the mean value of the ERM operational objective stood at approximately 0.75 during the period of the study. This signifies that on average, the industry lacks operational efficiency due to the fact that the output-input ratio value is below 1. Additionally, the standard deviation is approximately 1.002, indicating a relatively low level of dispersion of the individual insurance firms in operational efficiency around the average industry operations. The difference between the minimum value of 0.7108 and a maximum of approximately 8.339 revealed a small variability in the distribution. The skewness of 8.34 shows that the distribution has a longer right tail and hence, is positively skewed, while the kurtosis of 74.585 signifies that the distribution exhibits peakedness at the surface of the distribution. The Jarque-Bera value of 17822.01 which is strongly significant at the 1% level shows that the observation is not normally distributed.

4.2. Presentation and Interpretation of Regression Result

Table 4. Panel regression results for effect of erm on performance of insurance firms in Nigeria

Variable	Coefficient	t-statistics
Constant	-40843.25	-13.4713***
ERM Strategic Objective	314.21	3.5142**
ERM Operational Objective	-202.53	-3.1527**
R-squared	0.6228	
Adjusted R-squared	0.5724	
Durbin-Watson	1.7251	
F-statistics	7.8341***	

*,**and*** imply significance at the 10%, 5% and 1% levels respectively.
Source: Eviews output, 2023

From Table 4 above, it can be observed that the constant, measured by the average value of the dependent variable, is approximately -40843.25 with a corresponding t-statistics of -13.4713 which is strongly significant at the 1% level. It can also be seen from the table that the ERM strategic objective has a coefficient of approximately 314.21 and a corresponding t-statistics of 3.5142 which is significant at 5% level. This result revealed that strategy as a risk management technique has a positive effect on performance. This suggests that a percentage increase in ERM strategic objective in terms of turnover will result in an approximately 314.21 increase in the financial performance of insurance firms in Nigeria. Also, the significance of the coefficient of ERM strategic objective submits that the observed effect of ERM strategic objective on the financial performance of insurance firms in Nigeria is statistically realistic.

Additionally, the table indicates the coefficient of ERM operational objective to be -202.53, and a t-statistic of -3.1527 which is statistically significant at the 5% level. This suggests that the ERM operational objective has a negative

Table 5. Summary of hypotheses

Hypothesis	Variables	Coefficient	t-Statistic	Findings
H1	ERM Strategic Objective	314.21	3.5142**	Supported
H2	ERM Operational Objective	-202.53	-3.1527**	Not Supported

*,**and*** imply significance at the 10%, 5% and 1% levels respectively.
Source: Eviews output, 2023

effect on the financial performance of insurance firms in Nigeria. It also shows that a percentage increase in the ratio of output relative to the input will result in a -202.53 decrease in the financial performance of insurance firms in Nigeria. Similarly, the significance of the coefficient reveals the importance of ERM operational objective as a determinant of firm financial performance in Nigeria's insurance industry. However, this is contrary to apriori expectation and the reason could be as a result of high operational costs in the insurance industry.

The adjusted R^2 value of approximately 57.24% reveals the explanatory power of adding more regressors in the model, that is, the control variable. Similarly, the Durbin-Watson statistics of 1.7251 is not far away from the value of two as to create room for suspecting the possibility of positive autocorrelation in the residuals of the estimated model. Similarly, the F-statistics of 7.8341 which is strongly significant at the 1% level is reveals the fitness of the model, and does not suffer from any form of misspecification.

4.3. Test of Hypotheses

This study carried out its test of hypotheses on the effect of the ERM COSO variables on the financial performance of insurance firms in Nigeria. Two variables were identified as measures of ERM. The summary results of the test of hypotheses for each of the variables are presented in table 4.3 as follows:

4.4. ERM Strategic Objective and Performance of Insurance Firms in Nigeria

The first hypothesis of this study states that ERM strategic objective has no significant effect on the performance of listed Insurance firms in Nigeria. It can be seen from Table 5 above that the ERM strategic objective has a coefficient of approximately 314.21 and a corresponding t-statistics of 3.5142 is significant at the 5% level. The significance of the coefficient suggests the rejection of the null hypothesis. Therefore, the test of hypothesis suggests that ERM's strategic objective has a significant effect on the performance of insurance firms in Nigeria.

4.5. ERM Operational Objective and Performance of Insurance Firms in Nigeria

The second hypothesis of this study states that the ERM operational objective has no significant effect on the performance of listed Insurance firms in Nigeria. The Table 5 above exposed that the coefficient value of -202.53, and a t-statistics of -3.1527 for ERM operational objective were revealed to be statistically significant at 5% level. This necessitates the rejection of the null hypothesis that ERM operational objective has no significant effect on the performance of insurance firms in Nigeria. However, given the negative sign of the coefficient which contradicts the apriori expectation established by theory, the hypothesis will be accepted, suggesting that the ERM operational objective has no significant effect on the performance of insurance firms in Nigeria.

5. CONCLUSION

This study investigated the effect of ERM on the financial performance of insurance firms in Nigeria. Based on the results from the tested hypotheses, the study offers the following conclusions as follows:

Firstly, the study concludes that ERM strategic objective has a significant positive effect on the performance of insurance firms in Nigeria. This affirms the existence of a significant positive effect of ERM strategic objective on performance of insurance firms in Nigeria accepting the fact that insurance firms in Nigeria are putting significant efforts in the efficient application of their available resources through the best utilization of risk management strategies within and outside their business domain.

Secondly, the study also concludes the existence of a negative effect of ERM operational objectives on the performance of insurance firms in Nigeria. Nevertheless, this may be attributed largely because insurance firms in Nigeria have not been reaping the full advantage of the readily insurance market available to them; in addition to the high rate of operational cost incurred which might result in the negativity in the causal effect.

Based on the findings, Nigerian insurance firms should ensure full conformity to the provision of COSO ERM components while carrying out their business operation. They should also re-strategize and monitor their performance outcomes in line with their established objectives, as this can only be attained through the holistic application of ERM strategic objectives in the overall business operations.

As regards operational efficiency which has a negative significant effect, insurance firms should strategize to ensure that employees are putting up the best of their skills in an innovative form that will ensure efficiency in operation. Additionally, insurance firms should ensure continuous advancement of new products and services that will serve the teeming population in the country. Through the

economics of large-scale output, costs are expected to be minimized.

Future studies should consider the replication of the same studies in other critical sectors in Nigeria. As modern businesses cannot do without the activities of insurance businesses, similar studies should be carried out to examine the extent of the application of ERM COSO objective variables leads to improved performance of firms in the manufacturing sector.

Additionally, future studies should also consider the integration of survey questionnaires in addition to the secondary data obtained from the financial reports of the individual firms.

Finally, future studies should consider the role of financial sector regulation on the effect of ERM on the performance of firms operating in the financial service sector in Nigeria.

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REFERENCES

Abere, O. J., & Saka, T. S. (2022). Enterprise risk management in the Nigerian insurance industry. *BOHR International Journal of Advances in Management Research*, *2*(1), 22–28. [CrossRef]

Adesunkanmi, O. S., & Oluwasola, A. F. (2022). Moderating effect of internal control activities on risk assessment and performance of insurance companies in Nigeria. *Gusau International Journal of Management and Social Sciences*, *5*(1), 18–26.

Ahmed, I. (2016) *The moderating effects of board equity ownership on the relationship between enterprise risk management practices and the performance of financial institutions in Nigeria.* [Doctorial thesis], School of Economics, Finance and Banking, College of Business, Universiti Utara Malaysia, 163–187.

Alawattegama, K. K. (2018a). The Effect of Enterprise Risk Management (ERM) on Firm Performance: Evidence from the Diversified Industry of Sri Lanka, *Journal of Management Research 10*(1), 75–93. [CrossRef]

Alawattegama, K. K. (2018b). The impact of enterprise risk management on firm performance: Evidence from Sri Lankan banking and finance industry. *International Journal of Business and Management, 13*(1), 225–237. [CrossRef]

Ayodele, T. & Alabi, R. O. (2023). Risk management in Nigeria banking industry. *Research Journal of Finance and Accounting, 5*(2), 131–136.

Baxter, R., Bedard, J. C., Hoitash, R., & Yezegel, A. (2013). Enterprise risk management program quality: Determinants, value relevance, and the financial crisis. *Contemporary Accounting Research*, *30*(4), 1264–1295. [CrossRef]

Beasley, M. S., Clune, R., & Hermanson, D. R. (2019). Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of Accounting and Public Policy*, *24*(6), 521–531. [CrossRef]

Callahan, C., & Soileau, J. (2017). Does enterprise risk management enhance operating performance?. *Advances in Accounting*, *37*, 122–139. [CrossRef]

Choi, J. H., Choi, S. H., Myers, L. A., & Ziebart, D. (2019). Financial statement comparability and the informativeness of stock prices about future earnings. *Contemporary Accounting Research,* 36(1), 389–417. [CrossRef]

COSO (2004). *Enterprise risk management*,1–17. http://www.hcca-info.org/portals/0/pdfs/resources/conference_handouts/compliance_institute/2011/102-2.pdf Accessed on Dec 23, 2024.

COSO, (2012). Enterprise Risk Management: Review of ERM. *Risk Management*, 1–21.

Court, D. & Loch, M. (1999). Capturing the Value. *Advertising Age, 70*(46), 46–48. [CrossRef]

Dabari, I. J., & Saidin, S. (2015). Current State of Enterprise Risk Management Practices in the Nigerian banking industry. *Journal of Business and Management*, *17*(6), 27–33.

Daniel, O. (2020). Modelling risk management in banks: Examining why banks fail. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, *76*.

Fadun, O. S. (2013). Promoting "enterprise risk management" adoption in business enterprises : Implications and challenges, *2*(1), 69–78.

Farrell, M., & Gallagher, R. (2015). The valuation implications of enterprise risk management maturity. *Journal of Risk and Insurance*, *82*(3), 625–657. [CrossRef]

Florio, C., & Leoni, G. (2017). Enterprise risk management and firm performance: The Italian case. *The British Accounting Review, 49*(1), 56–74. [CrossRef]

Fraser, J. R. S., & Simkins, B. J., (2007). Ten common misconceptions about enterprise risk management. *Journal of Applied Corporate Finance, 19*(4), 75–81. [CrossRef]

Ghazali. Z. & Manab, N. A. (2013). Enterprise risk management and value creation: Initial findings amongst non-financial public listged companies in Malaysian bourse. *Asian Economic and Financial Review, 3*(7), 913–922.

Gill, A., Singh, M., Mathur, N., & Mand, H. S. (2014). The impact of operational efficiency on the future performance of Indian manufacturing firms. *International Journal of Economics and Finance 6*(10), 259–269. [CrossRef]

Hosseini, S. M. & Shiekhi, N. (2012). An empirical examination of competitive capability's contribution toward firm performance: Moderating role of perceived environmental uncertainty. *International Business Research, 5*(5), 116–131. [CrossRef]

Hoyt, R. E., & Liebenberg, A. P. (2017). The value of enterprise risk management. *Journal of Risk and Insurance, 78*(4), 795–822. [CrossRef]

Idris, A. & Manab, N. A. (2016). Influence of enterprise risk management framework implementation and board equity ownership on firm performance in nigerian financial sector: An initial finding. *Journal of Business and Management, 18*(1), 61–68.

International Monetary Fund (IMF). (2013). *Nigeria: Financial sector stability assessment*. International Monetary Fund. [CrossRef]

ISO31000. (2010). Risk Management Principles and Guidelines. http://www.iso.org/iso/home/standards/iso31000.htm Accessed on Dec 23, 2024.

Jaccard, J., Guilamo-Ramos, V., Johansson, M., & Bouris, A. (2006). Multiple regression analyses in clinical child and adolescent psychology. *Journal of Clinical Child and Adolescent Psychology, 35*(3), 456–479. [CrossRef]

Kakanda, M. M., Salim, B., & Chandren, S. A. (2021). Corporate governance, risk management disclosure and firm performance: A theoritical and empirical review perspective. *Asian Economic and Financial Review, 7*(9), 836–845. [CrossRef]

Kanu, K. (2021). Impact of enterprise risk management (ERM) on firm performance: Evidence from the diversified industry. *Journal of Management Research 11*(1), 101–121.

Lam, J. (2014). *Enterprise risk management: from incentives to controls*. John Wiley & Sons. [CrossRef]

Mahat, N., Pandey, S., & Thapa, B. S. (2023). Enterprise Risk Management and Institutional Performance of Life Insurance Companies in Nepal. *The Batuk*, *9*(1), 10–23. [CrossRef]

Malik, M. F., Zaman, M., & Buckby, S. (2020). Enterprise risk management and firm performance: Role of the risk committee. *Journal of Contemporary Accounting & Economics*, *16*(1), Article 100178. [CrossRef]

Nasir, N. (2018). *Effect of enterprise risk management on firm value: Empirical evidence from non-financial firms in Pakistan* [Master's thesis]. Capital University of Science and Technology.

National Bureau of Statistics (2018). *Nigerian gross domestic product report.* Q4, 1-141.

National Insurance Commission. (2012). *National insurance commission guideline for developing a risk framework for insurers and reinsurers in Nigeria*. National Insurance Commission.

National Insurance Commission. (2018). *Insurance Industry Annual Report*. National Insurance Commission. https://nicgh.org/wp-content/uploads/2020/01/2018-NIC-Annual-Report.pdf Accessed on Dec 23, 2024.

National Insurance Commission. (2019). *Insurance industry annual report*. National Insurance Commission. https://home.treasury.gov/system/files/311/2019_FIO_Annual_Report.pdf Accessed on Dec 23, 2024.

National Insurance Commission. (2020). *Insurance industry annual report*. National Insurance Commission (NAICOM) fact book. https://www.iii.org/sites/default/files/docs/pdf/insurance_factbook_2020.pdf Accessed on Dec 23, 2024.

Ogbonna, K. S., Akwam, O. P., Okonkwo, I. V., Okaro, C. O., & Adigwe, P. K. (2023). Financial technology and performance of financial institutions in sub-Saharan African economies:
2005-2021. *African Banking and Finance Review Journal*, *1*(1), 83–99.

Oluwaleye, T. O., Ajemunigbohun, S. S., & Abiodun, K. E. (2023). Underwriting operations and financial performance: Evidence from non-life insurance firms in Nigeria. *Business Economic, Communication, and Social Sciences Journal, 5*(3), 167–176. [CrossRef]

Pagach, D. & Warr, R. (2007). *An empirical investigation of the characteristics of firms adopting enterprise risk management,* Working paper, North Carolina State University.

Poon, A. E., Roslan, N. H., Othman, J., Anuar, A., & Nejad, M. Y. (2022). The Effect of Enterprise Risk Management (ERM) Implementation on SMEs Performance in Malaysia. *Malaysian Journal of Social Sciences and Humanities*, *7*(4), Article e001460. [CrossRef]

Price Water House Coopers (2018). Global top 100 companies by market capitalisation. Report, http://www.pwc.com/gx/en/audit-services/capital market/publications/top100 market capitalisation.jhtml Accessed on Dec 23, 2024.

Quon, T. K., Zeghal, D., & Maingot, M. (2012). Enterprise Risk Management and Firm Performance. *Procedia - Social and Behavioral Sciences*, *62*, 263–267. [CrossRef]

Ramlee, R., & Normah, A. (2015) Panel data analysis on the effect of establishing the enterprise risk management on firms'performance. *Proceedings of 4th European Business Research Conference* 9 - 10 April 2015, Imperial College, London

Razali, A. R., & Tahir., L. M. (2011). Review of the literature on enterprise risk management. *Business Management Dynamics*, *1*(5), 08–16. [CrossRef]

Salim, S. (2023). Promoting firm performance via board of directors effectiveness: A study of financial services companies In New Orleans. *Journal of Management, Accounting, General Finance and International Economic Issues*, *3*(1), 16–31. [CrossRef]

Sayilir, Ö. & Farhan (2017). Enterprise risk management and Its effect on firm value in Turkey, *9*(1), 86–99. [CrossRef]

Soring, A. (2018). The Long-Term Relationship between Enterprise Risk Management and Bank Performance: The Missing Link in Nigeria. *Banks and Bank Systems*, *13*(1), 128–138. [CrossRef]

Tahir, I. M., & Razali, A. R. (2011). The relationship between enterprise risk management (ERM) and firm value: Evidence from Malaysian public listed companies. *International Journal of Economics and Management Sciences*, *1*(2), 32–41.

Tseng, C. (2007). *Internal control, enterprise risk management, and firm performance*. Simth School of Business.

Usman O. A. (2009). Scale economies and performance evaluation of insurance market in Nigeria. *Social Science Journal 4*(1),1–11.

Wada, N. A., Naja'atu, B.R., & Dandago, K. I. (2023). Risk committee and risk disclosure quality: Evidence from listed insurance firms in Nigeria. *Journal of Accounting Research, Organization and Economics*, *6*(2), 162–182. [CrossRef]

World Bank. (2013). *Financial sector assessment program* update. World Bank. https://openknowledge.worldbank.org/entities/publication/cd7aecf5-c8b4-5988-a52c-dafec1a6c068 Accessed on Dec 23, 2024.

Yang, S., Ishtiaq, M. and & Anwar (2018). Enterprise risk management practices and firm performance, the mediating role of competitive advantage and the moderating role of financial literacy. *Journal of Risk and Financial Management*, *11*(32), 1–17. [CrossRef]

Yazid, A. S., Razali, A. R., & Hussin, M. R. (2011). Determinants of Enterprise Risk Management (ERM): A Proposed Framework for Malaysian Public Listed Companies. *International Business Research*, *5*(1), 80–86. [CrossRef]

Zou, X. & Hassan, C. H. (2017). Enterprise risk management in China: The impacts on organisational performance. *International Journal of Economic Policy in Emerging Economies, 10*(3), 226–239. [CrossRef]