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RISK UNDERWRITING PROCESS AND SUSTAINABILITY OF NON-LIFE INSURANCE COMPANIES IN NIGERIA

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Abstract

Insurance companies try to strike a balance between policyholder wants and business sustainability goals by carefully evaluating risks and setting prices. Insurance underwriting process in Nigeria faces several challenges that hinder its effectiveness and sustainability. The study examined the influence of risk underwriting process on sustainability of non-life insurance companies in Nigeria. A descriptive research design was adopted for the study through the administration of questionnaire. The population of the study comprised employees of non-life insurance companies in Nigeria and purposive sampling technique was used to select 200 employees from top ten insurance companies. 184 copies of questionnaire returned were administered for the study. The study used both descriptive and inferential statistics of linear regression to test the hypotheses at 5% level of significant of the study. The hypothesis result revealed that risk survey has significant effect on sustainable underwriting of non-life insurance companies in Nigeria at F= 42.804; R= 0.436, R^2= 0.230, Adj.R^2 = 0.186, t= 4.543, P(0.000) <0.005). Also, risk pricing significantly influences sustainable underwriting of non-life insurance companies

Keywords: Risk underwriting, Risk survey, Risk pricing, Risk selection, Underwriting Process and Sustainable Underwriting

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at F= 10.843; R= 0.237, R^2= 0.156, Adj.R^2 = 0.151, t= 8.573, P(0.001) <0.005). Finally, risk selection contributes positively but insignificant to sustainable underwriting of non-life insurance companies at F= 24.146; R= 0.342, R^2= 0.117, Adj.R^2 = 0.112, t= 12.662, P(0.000) <.05). The study concluded that there is positive and significant relationship between risk survey, risk pricing, and sustainable underwriting, while there is positive but insignificant relationship between risk selection and sustainable underwriting of non-life insurance companies in Nigeria. The study recommended that insurance risk pricing, risk survey and risk selection should be strengthened in order to increase sustainable underwriting of non-life insurance industry in Nigeria.

Introduction

Insurance companies, as legal entities, safeguard against financial losses stemming from unforeseen events that impact policyholders. Underwriting risks taken in order to effectively manage insurance risk is one of the many activities that make up an insurance company's operations (Toshmurzaevich 2020). In order to maintain financial stability and profitability, the underwriting process entails analyzing risks, projecting possible losses, establishing premiums, and assembling policy terms. Insurance companies try to strike a balance between policyholder wants and business sustainability goals by carefully evaluating risks and setting prices. In return for payment of a predetermined sum, known as a premium, they extend this protective cover. By consolidating similar risks, insurance firms convert the uncertainty surrounding individual events into foreseeable outcomes that may affect any member of the insured group. When assessing these risks, insurance companies consider varying levels of potential profit, and they may impose different terms and conditions, such as levying additional premiums, setting exclusions, or implementing waiting periods, to ensure the overall risk profile of their portfolio remains balanced; these concepts are noticeable in non-life insurance processes (Mourmouris & Poufinas 2023). The term non- life insurance also known as general insurance, provides coverage for various risks and perils that are not related to the life of an individual. It includes a broad range of insurance products designed to protect against financial losses resulting from events such as accidents, property damage, liability, and health issues (Iyodo, 2020). Unlike life insurance, which pays out a benefit upon the death of the insured or after a specified period, non-life insurance covers specific risks for a certain period. Despite problems such as limited awareness, technology developments are enhancing accessibility and trust, pointing to future growth in the field.

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In Nigerian environment however, peculiar challenges non-related to those in ideal insurance systems persist (Okiche, Adibe et al. 2022). Technological advancements are yet to seep into every corner of the society thereby resulting in more localized problems than what most parts of the developed world face. There is a dearth of modern facilities and technology to unravel the full potential of the insurance industry(Inyang and Okonkwo 2021). This results in very little advancement in the underwriting industry. The co-joined problem of lack of professionals and facilities cascades into the finances, scaring investors away. This seriously hampers growth in the insurance sector. An essential component of the non-life insurance business is the underwriting procedure, which allows insurers to appraise and analyze the risks posed by possible policyholders prior to providing insurance policies (Oyetayo, 2020). The process entails evaluating many elements, including the probability of a claim materializing, the possible intensity of the claim, and the risk profile of the applicant. Based on these evaluations, the right premium is then determined. Nigerian insurance companies confront a number of obstacles in the insurance underwriting process; from fraud activities and technology constraints, to risk assessment and regulatory compliance. In order to overcome these obstacles, insurance companies, regulators, legislators, and other stakeholders must work together to create an environment that is supportive of sustainable underwriting procedures that efficiently serve the needs of Nigerian customers while safeguarding the insurance sector's long-term stability and viability (Banjo & Anyamaobi, 2022).

Nigeria's insurance underwriting has changed dramatically over time, mirroring the expansion and advancement of the nation's insurance sector. Colonial-era insurance companies that primarily served the interests of foreign enterprises and expatriates operating in Nigeria had a significant historical influence on Nigerian insurance underwriting methods. After Nigeria gained independence in 1960, there was a period of indigenization and growth in the insurance sector as local insurance companies were established to meet the demands of the populace. In order to improve underwriting competence through training and development programs, insurers have adopted sophisticated risk assessment methodologies, leveraged technology for data analytics, and increased the sophistication of the underwriting process.

Statement of the Problem

In Nigeria, sustainability of insurance companies is been threatened by continued weaknesses in underwriting practices, notwithstanding regulatory reforms and increasing market competition. These obstacles have manifested in poor underwriting results, rising claims ratios, declining profitability, and solvency pressures, which undermine insurers' capacity to achieve sustainable performance (National Insurance Commission [NAICOM], 2022; Swiss Re Institute, 2023). A major concern has to do with

the effectiveness of risk surveying practices among Nigerian insurance companies. Risk surveying is expected to provide accurate and comprehensive information on the nature, magnitude, and likelihood of potential losses before risk acceptance. However, many insurers operate with insufficient field surveys, limited technical expertise, and inadequate use of modern risk inspection tools, leading to incomplete risk information and adverse selection (Ojo & Adeusi, 2021). Weak risk surveying practices increase insurers' exposure to poorly understood risks, thereby heightening underwriting losses and threatening long-term sustainability. In addition, deficiencies in risk assessment processes have continued to constrain the ability of Nigerian insurers to properly evaluate and classify risks. In practice, many insurers still rely on conventional and judgment-based assessment methods that fail to adequately capture the probability and severity of losses, particularly in a volatile economic and regulatory environment (Adebayo et al., 2023). Risk pricing, in addition remains a critical challenge in the Nigerian insurance industry. Risk-based pricing is essential for aligning premiums with underlying risk exposure and ensuring underwriting profitability. However, empirical evidence suggests that premium rates in Nigeria are often influenced by intense competition, price undercutting, and weak actuarial support rather than sound risk-based considerations (Olayungbo & Akinlo, 2022). Inadequate risk pricing results in under-pricing of risks, erosion of underwriting margins, and reduced capacity to absorb unexpected losses, thereby weakening insurers' financial resilience and long-term sustainability.

Despite the strategic importance of underwriting to insurers' survival, empirical evidence on how these specific underwriting components influence sustainability outcomes remains limited and fragmented. This gap underscores the need for a systematic investigation into the effect of the underwriting process particularly risk surveying, risk assessment, and risk pricing on the sustainability of insurance companies in Nigeria.

Objectives of the study

The general objectives of the study are to examine the impact of insurance underwriting process on sustainability of non-life insurance companies in Nigeria, while the specific objectives of the study are to:

i. determine the influence of risk survey on sustainability of non-life insurance companies in Nigeria;
ii. examine the impact of risk pricing on sustainability of non-life insurance companies in Nigeria; and
iii. ascertain the effect of risk selection on sustainability of non-life insurance companies in Nigeria.

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Research Questions

The undernoted research questions were put forward to achieve the objectives of the study:

i. What is the influence of risk survey on sustainable underwriting of non-life insurance companies in Nigeria?
ii. How does risk pricing impact sustainable underwriting of non-life insurance companies in Nigeria?
iii. To what degree does risk selection affect sustainable underwriting of non-life insurance companies in Nigeria?

Research Hypotheses

The under-noted research hypotheses were formulated in nullity for the purpose of the study:

$\boldsymbol{H_{01}}$: Risk surveying has no significant influence on sustainability of non-life insurance companies in Nigeria;

$\boldsymbol{H_{02}}$**:** There is no significant effect of risk pricing on sustainability of non-life insurance companies in Nigeria; and

$\boldsymbol{H_{03}}$**:** Risk selection has no significant effect on sustainability of non-life insurance companies in Nigeria.

Literature Review

Literature review has to do with review of relevant concepts, theories and empirical studies relating to the research title and which can assist the study in proffering solution to the research questions.

Risk Underwriting Process

Risk underwriting process is a fundamental aspect of the insurance industry, serving as the mechanism through which insurers evaluate the risk of insuring a person, asset, or entity. It begins when an applicant submits a request for insurance coverage, providing necessary information about themselves or the asset they wish to insure. This initial phase, known as application intake, involves the collection of data, which is crucial for the underwriter's assessment (Rejda & McNamara, 2020). The type of information required varies depending on the type of insurance but typically includes personal details, details about the subject matter of insurance, financial information, and specific details related to the risk being insured (Harrington & Niehaus, 2015). This data forms the basis upon which the underwriter will assess the potential risk and determine the terms of the insurance policy. Once the application is received, the underwriter begins the process of risk evaluation. This involves analyzing the information provided to determine the

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likelihood of a claim being made. In property insurance, for example, the underwriter would consider factors like the location of the property, its construction, and the presence of protective measures such as fire alarms or security systems (Vaughan & Vaughan, 2017). The goal at this stage is to gauge the level of risk associated with insuring the applicant and determine whether this risk falls within the insurer's acceptable range.

The next step in the underwriting process is risk classification, where the underwriter categorizes the applicant into a specific risk class. Risk classification allows insurers to group individuals or assets with similar risk profiles, enabling more standardized pricing and policy terms (Outreville, 2013). For instance, in auto insurance, applicants may be classified based on their driving record, age, gender, and the type of vehicle they drive. Individuals in higher-risk categories, such as young drivers or those with a history of accidents, are likely to face higher premiums. This classification is critical because it ensures that the premiums charged are commensurate with the level of risk, thereby maintaining the financial viability of the insurer (Dorfman & Cather, 2013). With the risk classification in hand, the underwriter proceeds to determine the premium that will be charged for the insurance policy. The premium calculation is based on a combination of factors, including the risk classification, the amount of coverage requested, and the duration of the policy (Cummins & Venard, 2007). This calculation is also influenced by the underwriter's overall risk appetite, market conditions, and regulatory requirements. The underwriter must strike a balance between setting a premium that is competitive in the market and one that adequately covers the risk. If the premium is too low, the insurer risks financial losses; if it is too high, the applicant may seek coverage elsewhere.

Once the underwriting decision is made, the underwriter prepares the insurance policy, which is a legal contract between the insurer and the policyholder. This document outlines the coverage provided, the premium to be paid, and the obligations of both parties (Vaughan & Vaughan, 2017). It also includes the terms and conditions set during the underwriting process. After the policy is issued, it is typically reviewed by the insurer's legal and compliance teams to ensure that it meets all regulatory requirements and aligns with the company's risk management strategy (IAIS, 2018).

Sustainability of Insurance Companies

The sustainability of insurance companies is crucial in ensuring their long-term ability to protect individuals, businesses, and assets against unforeseen events. General insurers which cover property, liability, auto, and health face unique challenges that distinguish them from life insurers. Their sustainability hinges on effective risk management, adequate capital reserves, and responsiveness to changing environmental, economic, and social conditions (Swiss Re Institute, 2021). Because non-life insurance deals with short-term policies and more frequent claims, it requires a dynamic approach to pricing,

underwriting, and claims management. A key factor in the sustainability of insurers is their ability to manage claims frequency and severity. Natural disasters, accidents, and other perils can result in sudden surges in claims. Insurers must anticipate such events and price their policies accordingly, ensuring that premiums are sufficient to cover future liabilities (Cummins & Weiss, 2014). Proper underwriting is essential to balance profitability and affordability, setting premiums too low risks financial instability, while excessively high premiums may drive customers away.

Risk Underwriting Process and Sustainability of Non-life Insurance Companies

An efficient and transparent underwriting process can foster trust, drive market growth, and improve the reputation of the insurance sector. This connection between underwriting and image promotion can be explored through several key aspects (Yusuf, Ajemunigbohun et al. 2017). In a market such as Nigeria, where public trust in insurance companies may be somewhat low due to past issues of claim denials and subpar service delivery, an efficient underwriting process guarantees that risks are accurately assessed and appropriately priced. In this regard, insurers can give fair premiums that reflect actual risk levels by using advanced risk assessment techniques and leveraging data analytics. Akinlo and Apanisile (2014) in their study revealed that trust in the insurance sector in Nigeria is closely linked to the perceived fairness and reliability of underwriting practices. When policyholders perceive that they are being charged fair premiums and that their risks are well-understood, they are more likely to trust and interact with insurance providers.

A customer's first direct interaction with an insurance company is often the underwriting process. A smooth and customer-centric underwriting experience can greatly improve customer satisfaction and, as a result, the industry's image. Alhassan and Fiador (2014) state that customer satisfaction in the Nigerian insurance market is a critical determinant of overall industry perception. Efficient underwriting processes that are transparent, quick, and responsive to customer needs can reduce friction and foster positive experiences. This can be accomplished by utilizing technology like artificial intelligence (AI) and machine learning, which can streamline the underwriting process and make it faster and more accurate. When customers have a positive initial experience, they are more likely to develop a positive relationship with the insurance company (Oluwaleye, Ajemunigbohun et al. 2023). The connection between an effective insurance underwriting process and the promotion of a positive insurance image in Nigeria is multifaceted. Accurate risk assessment, enhanced customer experience, fraud reduction, technological integration, and adherence to regulatory and ethical standards all play vital roles in this dynamic. By focusing on these areas, the Nigerian insurance industry can improve its reputation, foster public trust, and drive market growth. As the industry continues to

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evolve, ongoing efforts to refine underwriting practices will be essential for sustaining and enhancing the positive image of insurance in Nigeria.

Risk Survey and Sustainability

A risk survey is a crucial tool for non-life insurance companies because it forms the foundation of the underwriting process and directly supports long-term sustainability. A risk survey involves a comprehensive assessment of the potential hazards a policyholder may face, enabling insurers to tailor coverage to the client's specific exposures (Harrington & Niehaus, 2004). By evaluating the nature of operations, assets, and risk management practices, insurers gain valuable insights into the likelihood and severity of future claims. This process enhances underwriting accuracy, ensures proper premium setting, and prepares insurers for potential losses (Swiss Re Institute, 2019).

Sustainability in insurance is strongly linked to the ability of insurers to effectively assess, select, and manage risks (Cummins & Venard, 2007). Non-life insurers face an evolving risk landscape marked by natural catastrophes, industrial accidents, and emerging technological threats. Effective risk surveys help categorize and quantify these risks, allowing insurers to determine appropriate deductibles, coverage limits, and premiums (Rejda & McNamara, 2020). For instance, in property insurance, risk surveys typically evaluate fire safety systems, structural integrity, and environmental hazards. These assessments enable insurers to recommend mitigation measures that reduce claim likelihood and enhance operational resilience for both insurers and policyholders (Vaughan & Vaughan, 2018).

Risk surveys are also essential in liability insurance, where potential claims arise from operational or legal exposures. Through detailed assessments such as inspections of safety protocols, employee training, and regulatory compliance insurers can understand the client's risk profile and design policies that avoid unexpected claim volatility (Dickson & Gigli, 2019). These processes support the insurer's long-term sustainability by minimizing exposure to catastrophic or unforeseen liabilities. Overall, effective risk surveys enhance underwriting quality, strengthen risk management practices, support reinsurance decision-making, and allow insurers to respond proactively to emerging risks such as climate change, cyber threats, and technological disruptions (Geneva Association, 2020).

Risk Selection and Sustainability

Risk selection is a fundamental aspect of the underwriting process and directly influences the sustainability of insurance companies. It involves evaluating and classifying risks before deciding whether to accept, modify, or decline coverage (Harrington & Niehaus, 2004). Sustainable insurers must align their risk acceptance decisions with their risk

appetite and financial capacity; failure to do so may result in high loss ratios or reduced market competitiveness (Cummins & Doherty, 2006). For example, in property insurance, risk selection requires careful evaluation of property characteristics, geographical exposures, and the likelihood of natural catastrophes (Vaughan & Vaughan, 2018).

Effective risk selection balances profitability with claim obligations an essential factor in ensuring long-term financial sustainability. Insurers rely on premium income to fund operations, pay claims, and maintain solvency. If risks are accepted without adequate assessment or appropriate premium adjustments, the insurer may face severe financial strain in the event of large claims (Rejda & McNamara, 2020). Conversely, excessively strict risk selection may reduce customer acquisition and hinder market growth. This balance is key to maintaining sustainable financial performance.

In today's competitive insurance market, insurers must continuously refine their risk selection strategies to address emerging risks and evolving regulatory standards. Advanced analytics, data-driven underwriting, and technological innovations such as artificial intelligence now play critical roles in improving risk selection accuracy (Swiss Re Institute, 2019). Insurers that invest in these capabilities gain competitive advantages through better pricing, lower loss ratios, and improved sustainability. Overall, risk selection remains a central driver of operational resilience, underwriting profitability, and long-term sustainability for non-life insurers (Geneva Association, 2020).

Risk Pricing and Sustainability

Risk pricing is a core function in insurance and significantly impacts the sustainability of insurance companies. It involves determining appropriate premiums based on the likelihood and potential severity of future claims (Harrington & Niehaus, 2004). Accurate pricing ensures that premiums are sufficient to cover future claims while supporting profitability and solvency. Underpricing exposes insurers to financial distress when claims arise, whereas overpricing may lead to customer attrition and reduced market share (Cummins & Venard, 2007).

Sustainability in insurance depends on maintaining a delicate balance between competitive pricing and adequate risk coverage. When risks are priced correctly, insurers can build sufficient reserves, maintain stable operations, and mitigate the impact of catastrophic events (Rejda & McNamara, 2020). Risk pricing varies across insurance lines: for example, auto insurance considers variables such as driver age, driving history, vehicle type, and location, while property insurance considers factors like structural condition and environmental hazards (Vaughan & Vaughan, 2018). Actuarial models, statistical analysis, and large datasets enhance pricing accuracy and ensure premiums reflect true risk exposure.

In conclusion, risk pricing is essential to the sustainability of non-life insurers. It ensures financial stability, supports competitiveness, and allows insurers to adapt to emerging trends such as climate change, cyber risks, and technological advancements (Geneva Association, 2020). Through sound pricing strategies, effective use of actuarial tools, and adherence to regulatory frameworks, insurers can protect themselves from large losses, maintain profitability, and remain sustainable over the long term.

Demand For Underwriting Theory

The theoretical basis for this study is the demand for underwriting theory. The theory was propounded by Browne and Kamiya in 2009. The theory bothered on conditions in which underwriting tests, which is defined by the accuracy and the cost of the tests, lead to equilibrium where both high risk and low-risk consumers obtain full coverage. Thus, we argue that many underwriting techniques are financially advantageous to insureds whose costs of coverage are lowered by the exclusion of higher risks from insurance pools, and show that underwriting contributes to reducing adverse selection in insurance markets. In practice, applicants for insurance do not pay the costs of underwriting if they do not purchase a policy. The costs of underwriting, including those of individuals who do not purchase insurance, are borne by those who purchase coverage. Depending on the proportion of individuals who are denied coverage or who choose to forego coverage to those who purchase coverage, these costs may not be insignificant. This theory is applicable to this study as the study examines the impact of cost incurred in the process of underwriting on the financial performance measured by profit-after-tax of an insurance firm (Vucetich, Perry & Dean, 2014).

Resourced-Based View Theory (RBV)

The foundations of the RBV theory can be traced from the work of Barney (1986), and Wernefelt (1998), which conceptualize the firm as an administrative organization and a collection of profitable resources; these resources could be categorized as physical, and human. The theory has earned a reputation by contemporaries of combining strategic insights that creates a distinct idea of a complex situation, such as competitive advantage, and organizational and firms' existence. the resourced-based view theory (RBV) is applied to make an argument for the possible relationship between the underwriting process, and sustainability of insurance firms in Nigeria.

In the same vein, in support of the theory, it is stated that the resources could be material resources or human resources, and these resources are based on how they are combined, which can provide the firm with a variety of services. The above-mentioned resources, which are based on the idea of the firm involved, can be used to achieve profitability, irrespective of its application. The inference from the above suggests an insurance

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underwriter can be identified as a human resource, and asset to the insurance firm. Therefore, the ability of an insurance company to recruit a sound underwriter will enhance the productive underwriting functions, thereby leading to the better performance, and profitability of an insurer (Eckert & Gatzert, 2022).

Empirical Review

Empirical review focuses on gathering evidence from studies that utilize data collection, statistical analysis, and empirical methods to draw conclusions. The aim is to synthesize the findings of multiple studies to provide a comprehensive understanding of the topic under investigation.

Al-Zuhairi (2024) analysed underwriting activity and its impact on the profitability ratios of the insurance companies listed in the iraq stock exchange. It is commonly accepted that the success and expansion of insurance companies' underwriting operations, which is indicated by the premiums received from insurance policies, is reflected in their profitability rates. During the period of 2010 to 2021, Iraqi insurance companies in the private sector that are listed on the Iraq Stock Exchange experienced a fluctuation in the increase and noticeable decrease of gross written premiums, which had a negative impact on their profitability ratios. The study investigated the effect of the underwriting activities carried out by all insurance companies that are publicly listed on companies' profitability rates spanning from 2010 to 2021proxy by: rate of return on assets, return on equity, and profit margin. The study employs Data Panel models using Eviews 12 to identify the research samples during the study period. Additionally, the pooled regression model was used to compare the findings and test the hypotheses of the study. In a structured manner, data is collected from the annual reports released by the Iraq Stock Exchange. The statistical examination of the findings reveals that the gross written premium has a significant and positive influence on all of the profitability ratios evaluated. in this study.

Jinadu and Aduloju (2023) focused on impact of risk survey on profitable underwriting of property insurance using selected insurance companies, based on their market share, as sample for the study. The essence of underwriting is to enable insurance companies to determine whether to accept a risk or not and if accepting it the terms and condition of such acceptance. It is pertinent to note that most insurance companies in Nigeria are making underwriting losses due to poor underwriting of risks. The aim of this study is to find out the impact of risk survey on profitable underwriting of property insurance and to investigate the relationship between identified risk exposures and profitable underwriting by insurance companies, etc. The descriptive research method was used in carrying out the study and a total of 355 copies of questionnaires were administered, 343 copies were well completed and returned, and were used for the data. The results from the analysed data showed that there is a positive relationship between risk exposure and

profitable underwriting of risks presented to insurance companies for cover, and that loss exposure could have negative effect on profitable underwriting of risks in property insurance, etc.

Agnes, Koestoer and Sodri (2023) examined social and Environmental Risks Integration into Underwriting of Non-Life Insurance: A Review of Sustainable Finance in Indonesia. Regulation of the Financial Services Authority of Indonesia (POJK) Number 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies was officially enacted for the insurance sector as of 1 January 2020 and requires the insurance sector, including the general insurance sector, to carry out the implementation of sustainable finance into its business activities. This study intends to review the extent of the implementation that has been carried out, particularly in relation to the social and environmental risk management principles. Using a literature review, data specifically related to the underwriting process were gathered and analyzed. Results of this study suggested that even though 86% of 44 respondents from the previous research had already confirmed if principles of social and environmental risk management had been implemented at that time, vast majority of the non-life insurers in Indonesia had not yet executed the said integration into the underwriting process. The sustainable finance implemented by Indonesia's non-life insurance sector is still significantly focused on short-term financial performance rather than the long-term one.

Onyiyechi, Inyang and Bassey (2023) investigated underwriting as a determinant of financial performance of an insurance company in Nigeria drawing evidence from Axa Mansard Insurance Plc. The specific objectives of the study were to examine Underwriting Expenses and Deferred Acquisition Cost as determinants of growth rate of profit-after-tax of AXA Mansard Insurance Plc. Ex-post facto research design was used in the study. Statistical analysis technique applied was Autoregressive Distributed Lag cointegration technique. It was found that underwriting expenses did significantly determine the growth rate of profit-after-tax of AXA Mansard Plc. This was at p-value of 0.0158 which was lower than the level of significance at 0.05. Also, it was revealed that Deferred Acquisition Cost did not significantly determine the growth rate of profit-after-tax of Axa Mansard Plc. This was at p-value of 0.0518 which was higher than the level of significance at 0.05. Based on the findings of the study it was concluded that financial performance of Axa Mansard Insurance Plc was not jointly determined by Underwriting Expenses and Deferred Acquisition Cost.

Al-Kubaisi and Nobanee (2022) proposed that the concept of sustainability presents a variety of opportunities and risks for the insurance industry. The purpose of this study is to examine how sustainability affects insurance company performance. As investors, especially in the life insurance industry, we strive to take on long-term risks that are

proportionate to our long-term resources. ESG policies can help insurance firms attain stability, minimize ESG risks, and increase their long-term profitability. The findings indicated that while governance has no bearing on the performance of insurance companies, there is a favorable association between insurance risks and sustainability practices because of the environmental and social aspects. To ensure chances to generate more sustainable investment returns, the study advises expanding environmental knowledge among insurance businesses and incorporating environmental and social aspects into customer service.

Methodology

The study examined the influence of risk underwriting process on sustainability of non-life insurance companies in Nigeria. The study was carried out in Lagos State. A descriptive research design was adopted for the study through the administration of questionnaire. The population of the study comprised employees of non-life insurance companies in Nigeria and purposive sampling technique was used to select 200 employees from the underwriting section of the top ten insurance companies as the sample size for the study. 184 copies of questionnaire returned were administered for the study. Quantitative analysis was carried out through calculation of the frequencies, means and Standard deviations as this is an appropriate statistical tool as it was aim to show the distribution against each of the variable under investigation for descriptive statistics. The resulting data was presented by using tables, and figures appropriately to aid in making observation, conclusions and recommendations on the problem under study. The study used both descriptive and inferential statistics of linear regression to test the hypotheses at 5% level of significant of the study. Linear regression analysis tool was used to determine the relationship between insurance risk underwriting process (independent variable) proxies by risk survey, risk selection and risk pricing against sustainable underwriting (dependent variable) of non-life insurance companies in Nigeria.

Data Analysis and Results

The under-listed indicated the analysis of data relating to study's research questions. However, analysis of data on demographic questions did not reflect since they have no relevance in the result of findings.

Table 1: Research Question One: What is the influence of risk survey on sustainable underwriting of Non-life insurance companies in Nigeria?

What is the influence of risk survey on sustainable underwriting of non-life insurance companies in Nigeria?	SA	A	UD	D	SD	Mean
Risk surveying is an effective tool to improve profitable underwriting	66 (35.9)	103 (56.0)	11 (6.0)	2 (1.1)	2 (1.1)	4.24

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What is the influence of risk survey on sustainable underwriting of non-life insurance companies in Nigeria?	SA	A	UD	D	SD	Mean
Effective risk survey promotes sustainable underwriting of non-life insurance companies in Nigeria.	90 (48.9)	35 (19.0)	28 (15.2)	16 (8.7)	15 (8.2)	3.92
The level of awareness importance of risk survey for insurance company is very high	119 (64.7)	50 (27.2)	6 (3.3)	7 (3.8)	2 (1.1)	4.48
There are measures to reduce poor risk survey exposure on underwriting of non-life insurance companies in Nigeria.	84 (45.7)	38 (20.7)	28 (15.2)	25 (13.6)	9 (4.9)	3.89
The essence of risk surveys assists insurance companies to appropriately assess proposed risks so as not to provide covers at a loss.	133 (72.3)	34 (18.5)	12 (6.5)	4 (2.2)	1 (0.5)	4.52

Source: Field Survey, (2024)

From table 4.8, 35.9% and 56.0% of the respondents strongly agreed and agreed respectively that risk surveying is an effective tool to improve profitable underwriting while 6.0%, 1.1% and 1.1% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.24, it showed that risk surveying is an effective tool to improve profitable underwriting

Moreover, 48.9% and 19.0% of the respondents strongly agreed and agreed respectively that Effective risk survey promote sustainable underwriting of non-life insurance companies in Nigeria while 15.2%, 8.7% and 8.2% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 3.92, it showed that effective risk survey promotes sustainable underwriting of non-life insurance companies in Nigeria

Furthermore, 64.7% and 27.2% of the respondents strongly agreed and agreed respectively that the level of awareness importance of risk survey for insurance company is very high while 3.3%, 3.8% and 1.1% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.48, it revealed that the level of awareness importance of risk survey for insurance company is very high.

Additionally, 45.7% and 20.7% of the respondents strongly agreed and agreed respectively that there are measures to reduce poor risk survey exposure on underwriting of non-life insurance companies in Nigeria while 15.2%, 13.6% and 4.9% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 3.89, it revealed that there are measures to reduce poor risk survey exposure on underwriting of non-life insurance companies in Nigeria.

Lastly, 72.3% and 18.5% of the respondents strongly agreed and agreed respectively that the essence of risk surveys assist insurance companies to appropriately assess proposed risks so as not to provide covers at a loss. While 15.2%, 13.6% and 4.9% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.52, it disclosed that the essence of risk surveys assists insurance companies to appropriately assess proposed risks so as not to provide covers at a loss.

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Table 2: Research Question Two: How does risk pricing affects sustainable underwriting of non-life insurance companies in Nigeria?

How does risk pricing affects sustainable underwriting of non-life insurance companies in Nigeria?	SA	A	UD	D	SD	Mean
Good risk pricing can enhance performance in profitable underwriting.	74 (40.2)	97 (52.7)	11 (6.0)	2 (1.1)		4.30
Risk pricing will improve the portfolio of property insurance.	126 (68.5)	41 (22.3)	16 (8.7)	1 (0.5)		4.59
The company goal is to enhance sustainability of underwriting.	125 (67.9)	45 (24.5)	5 (2.7)	6 (3.3)	3 (1.6)	4.53
The company integrate new technology into its underwriting process.	101 (54.9)	38 (20.7	32 (17.4)	10 (5.4)	3 (1.6)	4.03
The company has prepared for current trends in insurance underwriting in Nigeria	136 (73.9)	33 (17.9)	6 (3.3)	4 (2.2)	5 (2.7)	4.58

Source: Field Survey, (2024)

From table 4.10, 40.2% and 52.7% of the respondents strongly agreed and agreed respectively that good risk pricing can enhance performance in profitable underwriting while 6.0 and 1.1% of the respondents were undecided and disagreed and respectively to this. With mean value of 4.30, it showed that good risk pricing can enhance performance in profitable underwriting

Moreover, 68.5% and 22.3% of the respondents strongly agreed and agreed respectively that Risk pricing will improve the portfolio of property insurance while 8.7% and 0/5% of the respondents were undecided and disagreed respectively to this. With mean value of 4.53, it showed that Risk pricing will improve the portfolio of property insurance.

Furthermore, 67.9% and 24.5% of the respondents strongly agreed and agreed respectively that the company goal is to enhance sustainability of underwriting while 2.7%, 3.3% and 1.6% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.48, it revealed that the company goal is to enhance sustainability of underwriting.

Additionally, 54.9% and 20.7% of the respondents strongly agreed and agreed respectively that the company integrate new technology into its underwriting process while 17.4%, 5.4% and 1.6% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.03, it revealed that the company integrate new technology into its underwriting process.

Lastly, 73.9% and 17.9% of the respondents strongly agreed and agreed respectively that the essence of risk surveys assist insurance companies to appropriately assess proposed risks so as not to provide covers at a loss while 3.3%, 2.2% and 2.7% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of

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4.58, it disclosed that the company has prepare for current trends in insurance underwriting in Nigeria.

Table 3: Research Question Three: To what extent does risk selection impact sustainable underwriting of non-life insurance companies in Nigeria?

Statement	SA	A	UD	D	`SD	Mean
Risk selection practice is very high among non-Life insurance companies in Nigeria	95 (51.6)	75 (40.8)	8 (4.3)	3 (1.6)	3 (1.6)	4.39
Risk selection enhance the profitability of non-Life insurance companies in Nigeria	138 (75.0)	41 (22.3)	2 (1.1)	3 (1.6)		4.67
Risk selection increase the level of sustainable underwriting of non-Life insurance companies in Nigeria	139 (75.5)	35 (19.0)	1 (0.5)	3 (1.6)	6 (3.3)	4.62
Effective risk selection led to underwriting gains in property of non-Life insurance companies in Nigeria	141 (76.6)	37 (20.1)	1 (0.5)	1 (0.5)	4 (2.2)	4.68
Poor risk selection has adverse impact on efficiency and effectiveness of underwriting of non-Life insurance companies in Nigeria	129 (70.1)	34 (18.5)	9 (4.9)	8 (4.3)	4 (2.2)	4.50

Source: Field Survey, (2024)

From table 4.11, 51.6% and 40.8% of the respondents strongly agreed and agreed respectively that risk selection practice is very high among non-Life insurance companies in Nigeria while 4.3%, 1.6% and 1.6% of the respondents were undecided and disagreed and respectively to this. With mean value of 4.39, it revealed that risk selection practice is very high among non-Life insurance companies in Nigeria

Moreover, 75.0% and 22.3% of the respondents strongly agreed and agreed respectively that Risk selection practice is very high among non-Life insurance companies in Nigeria while 1.1% and 1.6% of the respondents were undecided and disagreed respectively to this. With mean value of 4.67, it showed that risk selection practice is very high among non-Life insurance companies in Nigeria

Furthermore, 75.5% and 19.0% of the respondents strongly agreed and agreed respectively that risk selection increase the level of sustainable underwriting of non-Life insurance companies in Nigeria while 0.5%, 0.5% and 2.2% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.68, it revealed that risk selection increases the level of sustainable underwriting of non-Life insurance companies in Nigeria

Additionally, 76.6% and 20.1% of the respondents strongly agreed and agreed respectively that the company integrate new technology into its underwriting process while 0.5%, 0.5% and 2.2% of the respondents were undecided, disagreed and strongly disagreed

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respectively to this. With mean value of 4.68, it revealed that risk selection increases the level of sustainable underwriting of non-Life insurance companies in Nigeria

Lastly, 70.1% and 18.5% of the respondents strongly agreed and agreed respectively that the poor risk selection has adverse impact on efficiency and effectiveness of underwriting of non-Life insurance companies in Nigeria while 4.9%, 4.3% and 2.2% of the respondents were undecided, disagreed and strongly disagreed respectively to this. With mean value of 4.50, it disclosed that poor risk selection has adverse impact on efficiency and effectiveness of underwriting of non-Life insurance companies in Nigeria.

Hypothesis One:

H_{01}: Risk survey has no significant impact on sustainable underwriting of non-life insurance companies in Nigeria.

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.436[a]	.230	.186	.84364

a. Predictors: (Constant), Risk survey

Table 4.2 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	30.465	1	30.465	42.804	.000[b]
	Residual	129.535	182	.712		
	Total	160.000	183			

a. Dependent Variable: sustainable underwriting

b. Predictors: (Constant), Risk survey

Table 4.3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.857	.409		4.543	.000
	Risk survey	.564	.086	.436	6.542	.000

a. Dependent Variable: sustainable underwriting

Hypothesis One, as outlined, the null hypothesis (H_0) states that risk survey has no significant impact on sustainable underwriting of non-life insurance industry in Nigeria. In other words, it suggests that any observed relationship between risk survey and

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sustainable underwriting is due to random chance or factors other than risk survey. On the other hand, the alternative hypothesis (H_1) suggests that there is a statistically significant relationship between risk survey and Sustainable underwriting of non-life insurance industry in Nigeria. This means that the observed relationship between risk survey and Sustainable underwriting is not due to random chance but rather indicates a true association between the two variables.

The regression analysis results presented support the alternative hypothesis. The coefficient for risk survey is statistically significant ($p < 0.005$), indicating that there is a significant relationship between risk survey and Sustainable underwriting of non-life insurance industry in Nigeria. Additionally, the R-square value of 0.230 suggests that approximately 23.0% of the variance in sustainable underwriting can be explained by risk survey, further supporting the idea of a meaningful relationship between these variables. In conclusion, based on the regression analysis results and the interpretation of Hypothesis One, it can be inferred that risk survey has a statistically significant impact on the sustainable underwriting of non-life insurance industry in Nigeria.

Hypothesis Two

H_{02}: there is no significant impact of risk pricing on sustainable underwriting of non-life insurance companies in Nigeria.

Table 5.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.237[a]	.156	.051	.91087

a. Predictors: (Constant), risk pricing

Table 5.2 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.996	1	8.996	10.843	.001[b]
	Residual	151.004	182	.830		
	Total	160.000	183			

a. Dependent Variable: sustainable underwriting
b. Predictors: (Constant), risk pricing

Table 5.3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.265	.381		8.573	.000
	risk pricing	.281	.085	.237	3.293	.001

a. Dependent Variable: sustainable underwriting

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Hypothesis two, as outlined, the null hypothesis (H_0) states that there is no significant impact of risk pricing on sustainable underwriting of non-life insurance companies in Nigeria. In other words, it suggests that any observed relationship between risk pricing and underwriting is due to random chance or factors other than risk survey. On the other hand, the alternative hypothesis (H_1) suggests that there is a statistically significant relationship between risk pricing and Sustainable underwriting of non-life insurance industry in Nigeria. This means that the observed relationship between risk pricing and Sustainable underwriting is not due to random chance but rather indicates a true association between the two variables.

The regression analysis results presented support the alternative hypothesis. The coefficient for risk pricing is statistically significant ($p < 0.005$), indicating that there is a significant relationship between risk pricing and Sustainable underwriting of non-life insurance industry in Nigeria. Additionally, the R-square value of 0.156 suggests that approximately 15.6% of the variance in sustainable underwriting can be explained by risk pricing, further supporting the idea of a meaningful relationship between these variables.

In conclusion, based on the regression analysis results and the interpretation of Hypothesis two, it can be inferred that risk pricing has a statistically significant impact on the sustainable underwriting of non-life insurance industry in Nigeria.

Hypothesis Three

H_{03}: Risk selection has no significant effect on sustainable underwriting of non-life insurance companies in Nigeria.

Table 6.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.342[a]	.117	.112	.68141

a. Predictors: (Constant), Risk selection

Table 6.2 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.212	1	11.212	24.146	.000[b]
	Residual	84.506	182	.464		
	Total	95.717	183			

a. Dependent Variable: sustainable underwriting
b. Predictors: (Constant), Risk selection

Table 6.3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.392	.268		12.662	.000
	Risk selection	.282	.057	.342	4.914	.000

a. Dependent Variable: sustainable underwriting

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Hypothesis three, as outlined, the null hypothesis (H_0) states that risk selection has no significant effect on sustainable underwriting of non-life insurance company in Nigeria. In other words, it suggests that any observed relationship between risk selection and underwriting is due to random chance or factors other than risk survey. On the other hand, the alternative hypothesis (H_1) suggests that there is a statistically significant relationship between risk selection and Sustainable underwriting of non-life insurance industry in Nigeria. This means that the observed relationship between risk selection and Sustainable underwriting is not due to random chance but rather indicates a true association between the two variables.

The regression analysis results presented support the alternative hypothesis. The coefficient for risk selection is statistically significant ($p < 0.005$), indicating that there is a significant relationship between risk selection and Sustainable underwriting of non-life insurance industry in Nigeria. Additionally, the R-square value of 0.117 suggests that approximately 11.7% of the variance in sustainable underwriting can be explained by risk selection, further supporting the idea of a meaningful relationship between these variables. In conclusion, based on the regression analysis results and the interpretation of Hypothesis three, it can be inferred that risk selection has a statistically significant impact on the sustainable underwriting of non-life insurance industry in Nigeria.

Summary of Findings

The study established a positive relationship between underwriting process and sustainability of non-life insurance companies in Nigeria. The result also showed that the independent variables established a positive relationship with the dependent variable. Major empirical findings and result of hypothesis testing are outlined thus:

Firstly, risk survey has significant effect on sustainable underwriting of non-life insurance companies in Nigeria at 0.05 level of significance ($F= 42.804$; $R= 0.436$, $R^2= 0.230$, $Adj.R^2 = 0.186$, $t= 4.543$, $P(0.000) <0.005$).

Secondly, risk pricing significantly influences the sustainable underwriting of non-life insurance companies in Nigeria at 0.05 level of significance (($F= 10.843$; $R= 0.237$, $R^2= 0.156$, $Adj.R^2 = 0.151$, $t= 8.573$, $P(0.001) <0.005$).

Thirdly, risk selection contributes significantly to the sustainable underwriting of non-life insurance companies in Nigeria at 0.05 level of significance (($F= 24.146$; $R= 0.342$, $R^2= 0.117$, $Adj.R^2 = 0.112$, $t= 12.662$, $P(0.00) <.05$).

Conclusion

From the result of the findings, it can be concluded that there is positive and significant relationship between risk survey and sustainable underwriting of non-life insurance companies in Nigeria. The study affirmed the fact that risk pricing contributes positively

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to sustainable underwriting of non-life insurance companies in Nigeria. Lastly, the study concluded that risk selection contributes significantly to the sustainable underwriting of non-life insurance companies in Nigeria.

This study proved to the fact that insurance underwriting process and sustainability of insurance companies in Nigeria are positively related. This implies that risk survey, risk pricing and risk selection, respectively have significant effect on the sustainable underwriting of non-life insurance companies in Nigeria.

Recommendations

Based on the extensive findings of the study, the following recommendations were made to further enhance the efficacy of sustainability of insurance companies in Nigeria.

a. Pricing survey should be strengthened in order to increase sustainable underwriting of non-life insurance industry in Nigeria;
b. Strengthen efforts towards sustainable underwriting through risk pricing of non-life insurance industry in Nigeria; and
c. Risk selection should be improved on to sustain underwriting of non-life insurance company in Nigeria.

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