# REINSURANCE UTILISATION AND PERFORMANCE OF NON-LIFE BUSINESS IN THE NIGERIAN INSURANCE INDUSTRY: A MIXED METHODS APPROACH

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## Abstract

*Reinsurance arrangement is fundamental to insurance companies' operations because it serves as a major risk management mechanism often used to cushion loss experience. Despite the benefits of reinsurance to insurance companies, scholars from recent school of thought had queried its use. The thrust of their argument is that reinsurance utilisation may be costly, uneconomical, and on the long run erodes insurers' performance. This among others provides need to investigating the impact of reinsurance utilisation on the performance of non-life business in the Nigerian insurance market. This study employed mixed method research design, a pragmatist paradigm that allows combination of qualitative and quantitative approaches within different phases of the research process. While the quantitative study made use of financial performance measures through data obtained from the annual accounts of all the forty one (41) non-life insurance companies operating in Nigeria from 2006 to 2015, the qualitative study measured the non-financial performance through semi-structured interview from heads of reinsurance department of non-life insurance companies in Nigeria. The study used profitability PT (ROA and ROE) as surrogates of financial performance while reinsurance dependence RD (RCR and RDCP) was used to denote reinsurance utilisation. For the quantitative approach, longitudinal descriptive research design was employed while the qualitative employed exploratory research design. The quantitative study adopted regression analysis using logarithmic transformation of model while the qualitative study adopted thematic content analysis. The findings of the study established statistical significant influence between dependent variable (performance) and independent variable (reinsurance utilisation) since the p-value of the partial regression coefficients is less than 0.05. The qualitative results validated the findings of the quantitative study. It is therefore recommended that non-life insurance companies in Nigeria should develop other risk management mechanisms apart from reinsurance protection and at the same time improve their overall performance (both financial and non-financial). If these are pursued, it will simultaneously increase their retention threshold and risk appetite and on the long run reduce the rate at which reinsurance will be utilised.*

**Keywords:** Reinsurance, Reinsurance utilisation, Reinsurance dependence

## 1. INTRODUCTION

Every sphere of life endeavour is faced with one risk or the other. These risks are so numerous and affect everyone either as individuals, corporate organisations, society or nation as a whole. Hence, risk is an uncertainty concerning loss, injury or gain (Loomba, 2014). This assertion presumes that the thrust of risk from insurance point of view includes unpredictability, adverse deviation, uncertainty and possibility of unfortunate occurrence which are all linked to economic losses. Though, unpredictability of risk may not be eradicated, it may however be reduced or managed. The process of managing risk is known as risk management. Insurance therefore is seen as the driving force of modern or formal risk management because it seeks to discover the source, from which risk may emanate, evaluates its impact on an organization or individual and apply appropriate treatment to it (Loomba, 2014; Oluoma, 2014).

What distinguishes insurance business from other financial intermediation mechanisms according to De Casteris (2005) is that it operates in an inverse cycle. This suggests that insurance companies form an expectation of future risks before they can be accepted (Lelyveld, Liedorp & Kampman, 2011). Therefore, performance of these expectations to the insured depends highly on the amount of financial security, law of large numbers, solvency that is accrued to insurance companies and availability of reinsurance protection. In order to manage these expectations, insurance companies further transfer part or all the risk to another risk bearer who possesses more financial capabilities through an arrangement known as reinsurance. Just as no modern economy can survive without a virile insurance market, no insurance company can survive without an organized reinsurance system (Upreti, 2013; Oluoma, 2014).

However, despite the importance of reinsurance arrangement to insurance companies, recent schools of thought led by Chen, Hamwi and Hudson (2001) have queried its use. The school of thought proposes that utilisation of reinsurance may be costly, uneconomical, reduce insurance company's efficiency and on the long run affect their performance (Iqbal, Rehman & Shahzad, 2014; Zahiyah, Modh &Radzuan, 2013; Chang & Jeng, 2015). This study therefore focuses on the utilisation of reinsurance and its likely effect on the performance of insurance companies in Nigeria.

### 1.1 Statement of the Problem

Reinsurance is a risk management technique and a form of protection for insurers, by virtue of its nature and function, is a major source of risk financing to insurance companies. However, as beneficial as reinsurance is and despite it's widely usage by Nigerian insurance companies, they substantially remain underperforming. As at 2017, twenty five (25) out of fifty eight (58) registered insurance companies in Nigeria have commenced recapitalisation process due to inability to assume large risk despite their heavy reliance on reinsurance arrangements (Khaliq, 2017). This however proves the assertion of Chen, et al. (2001) that frequent reinsurance dependence is an indication that an insurance company is not performing optimally and in essence faces insolvency risks which may affect its operation on the long run. A less solvent insurer is not financially buoyant to underwrite large unexpected losses (Obalola & Abass, 2016), and in covering for this short fall, an insurer tends to use more reinsurance arrangements. More importantly, the high rate of ceded business may sharply be traced to their low underwriting capacity which is often affected by low performance either financially or non-financially.

### 1.2 General Objective

The aim of this study is to examine the impact reinsurance utilisation on the performance of non-life companies in the Nigerian insurance industry.
Specific Objectives

i. Investigate the effect of reinsurance dependence on the profitability of non-life insurance companies in Nigeria.

ii. Examine whether there is relationship between reinsurance practices and customers' satisfaction in non-life insurance business in Nigeria.

### 1.3 Research Questions

i. What is the effect of reinsurance dependence on profitability of non-life insurance companies in Nigeria?

ii. What is the relationship between reinsurance practices and customers' satisfaction in non-life insurance business in Nigeria?

### 1.4 Significance of the Study

The study aims to combine both financial and non-financial performance measures to determine the impact of reinsurance utilisation by adopting quantitative and qualitative techniques respectively. This study will be useful to insurance companies who constantly have been transferring particular risk exposures over a period of years without necessarily increasing their capital. Also, regulatory and self-regulatory bodies within the insurance industry can benefit from this research.

## 2. LITERATURE REVIEW

### 2.1 Definitions of concepts

#### *2.1.1 The Vagueness of Reinsurance*

International Association of Insurance Supervisors **(**IAIS) (2006) defines reinsurance contract as "an arrangement between a party known as (re-insurer) and another party (insurer or cedant) to indemnify against losses on one or more contracts issued by the cedant in exchange for consideration (premium). Reinsurance arrangement covers the liability which an insurer had undertaken under its own contract of insurance with its policyholder (Irukwu, 2001). In essence reinsurance business is a vague secondary market for insurance risks because it is hardly known outside insurance sector (Plantin, 2006; Oluoma, 2014). Though, risk assumed from the insured is transferred to the reinsurer by the insurer, there is no contractual relationship between the insured and reinsurer (Santosh & Upinder, 2007).

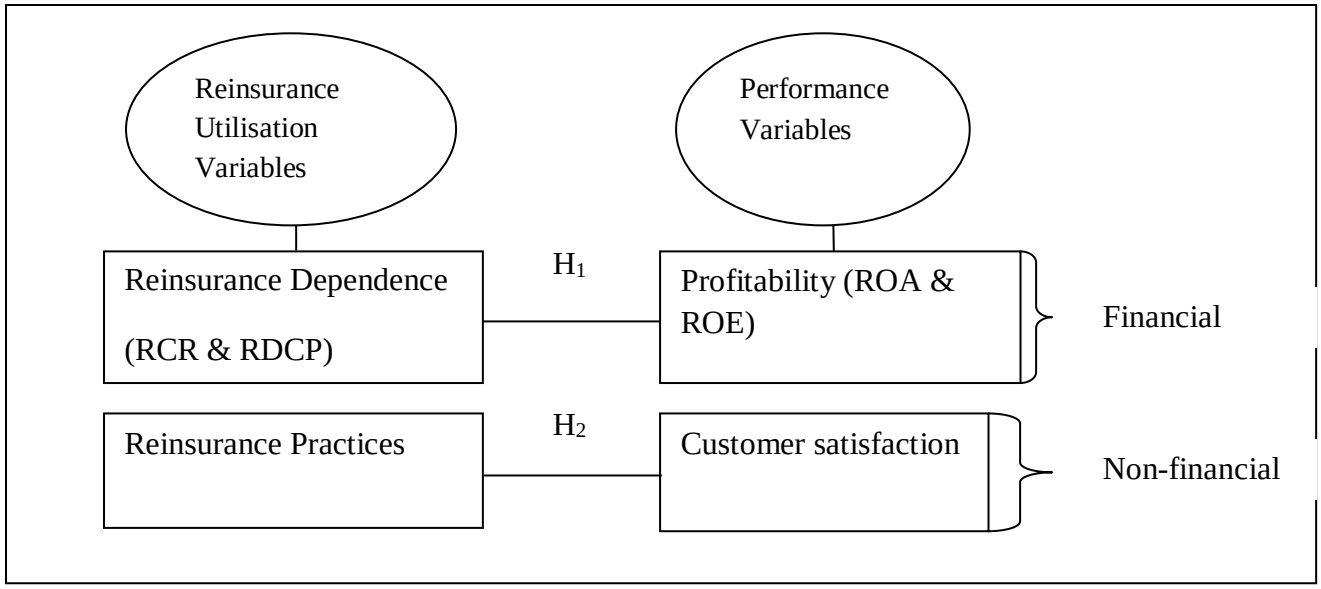
*2.1.2 Reinsurance Utilisation*

Reinsurance utilisation (RU) is a decision to purchase reinsurance by an insurer not only for the apparent current condition of risk assumed but also its future conditions (Desjardins & Dionne, 2017). The decision to reinsure can be seen as a specialised form of risk finance that may further lead to the relaxation of regulatory constraint on the ratio of capital to insurance, underwriting capacity, expected bankruptcy costs, and capital management decision (Garven &Tennant, 2003). This study conceptualizes reinsurance utilisation (RU) into reinsurance dependence (RD). Reinsurance dependence shows the potential exposure of insurance companies to the collectability problems of reinsurance (Cummins et al., 2012; Iqbal & Rehman, 2014). It is further divided into Ratio of Ceded Reinsurance (RCR) and Reinsurance Dependence Ceded Premium (RDCP). RCR reflects the volume of reinsurance transactions between insurers and reinsurers (Burca & Batrinca, 2014) while RDCP measures the degree of reinsurance concentration and reinsurance exposure of insurance companies (Cummins et al., 2012; Lee & Lee, 2012; Iqbal & Rehman, 2014 & Iqbal et al., 2014).

## 2.2 Performance

Performance of a business entity is very important because it leads to its survival (Ricardo& Wade, 2001). It is arguably the most important indicator of organisational success (Gavrea & Stegerean, 2011). Though, there is lack of consensus among researchers concerning universally acceptable definition of performance, this study conceptualizes performance as a set of financial and non-financial indicators which offer information on the degree of achievement of desired results (Lebans & Eurkel, 2006). While the financial indicators are objective, non-financial indicators are subjective (Malgwi & Dahiru, 2014). The financial indicators adopted for the study include profitability measured as Return on Assets (ROA) and Return on Equity (ROE) (Tulsian, 2014).

**Figure 1**
Conceptual Framework




Source: Researchers' design

## 2.3 Theoretical Framework

Several theories have been proposed in the economics and financial literature to explain the interaction between reinsurance utilisation and performance. Some of the theories include the expected-utility theory, capital structure theory, ruin theory and corporate demand theory. However, this study is hinged on the Corporate Demand Theory (CDT).

The theory was propounded by Mayers and Smith (1990) and later expanded and supported by Adiel (1996) and Plantin (2006). CDT explains the motives for an insurer to purchase or utilise reinsurance and also contains the premises for the positive and negative aspect of reinsurance. The theory proposes that utilisation of reinsurance is beneficial on the short run while it's over reliance on reinsurance means that the risk undertaken by an insurer is low and may be at huge cost (Lee & Lee, 2012; Froot, 2001). Short run benefits of reinsurance include risk sharing, risk hedging, and reduction in loss volatility, increase in underwriting capacity, spread of assumed risks to mitigate agency problems, improved earnings to reduce expected taxes and the provision of real advisory services (Hoerger, Sloan & Hassan, 1990; Adiel, 1996; Redja, 2004; Cole & McCullough, 2006; Adams, Hardwick & Zou, 2008). On the other hand, reinsurance can be expensive and may lead to long term costs which include insufficient retained premium, increase in reinsurance premium, low profitability, and lower retention capacity. Major indicator to the high cost of reinsurance on the long run according to Plantin (2006), Lee and Lee (2012), and Cummins et al (2006) is linked to performance of insures.

## 2.4 Review of Empirical Studies

Earlier scholars like Redja (2013), Cummins and Weiss (2002), Cummins (2007), Zeng (2005), Vaughan and Vaughan (2014) had theorized the positive impact reinsurance utilisation has on the financial performance of insurance companies. The premise of their propositions is based on the fact that reinsurance market is basically a pure risk. Cummins, Dionne, Gagne and Nouira (2008) examine the impact of reinsurance on insurers' costs and insurers' underwriting risk. The study samples Five Hundred and Fifty Four (554) property liability insurance firms reporting to National Association of Insurance Commissioners (NAIC) for a fourteen (14) year period of 1995 through 2003 in USA. The authors prove that the essence of reinsurance is to manage insurer's expected costs of financial distress, stabilizing sources of finding decreasing expected taxes by exploiting the convex structure of tax code, and gaining comparative advantage in real service production, maximization of expected utility and assists in effective claims handling. In a related study, Cummins, Feng and Weiss (2012) examine reinsurance counter party relationships and firm performance in the United States of American property and liability insurance industry. The study aims to identify the firm characteristics that lead to a higher level of utilisation, exposure, and concentration in reinsurance counterparties. Their findings support the prior studies that reinsurance is a primary source of interconnectedness within the insurance industry. However, another stream of research and study share a divergent view to the impact of reinsurance utilisation on insurance companies. The central of this argument focuses on the fact that reinsurance utilisation may be costly, uneconomical, and reduce insurers' efficiency, expose likelihood of primary insurer's solvency. Some of the scholars in this school of thought include; Chen, et al, (2001), Garven and Tennant (2003), Cole and McCullough (2006), Cummins et al (2008), Lee and Lee (2012), Iqbal and Rehman (2014a), Iqbal, Rehman and Shahzad (2014) and Chang and Jeng (2015).
The negative impact of reinsurance to insurance companies is highlighted by Lee and Lee (2012). They examine the determinants of insurer retentions for property-liability insurance companies in the Taiwan insurance industry. The essence of the study is to investigate the

relationship between reinsurance utilisation decision and insurers performance using panel data on Taiwan property liability insurers from 1999 to 2009. Consistent with the expected underinvestment, bankruptcy cost argument and risk-bearing hypotheses, the study proves that insurers that are more profitable are better to absorb large unexpected losses and therefore less affected by the underinvestment problem. Their findings reveal that insurance companies' performance and reinsurance are interdependent. This assertion was derived by proving that insurance companies with higher return on assets (ROA) tend to utilise less reinsurance and vice–versa. Iqbal and Rehman (2014) carried out a study on reinsurance analysis and its impact on the performance of non-life insurance companies in Pakistan. The study examines whether reinsurance practice positively affects the performance of non-life insurers in Pakistan or conversely has any negative effect on them. The study adopts three econometric models of Pooled Regression Models (PRM), Fixed Effect Model, and the Random Effect Model. Findings reveal that performance of insurance companies is vulnerable to dependence and exposure on reinsurance because it increases the loss ratio of insurance firms under review. The study opines that whether insurers are financially stable or not, they should reduce their exposure to reinsurance because it exposes them to the potential risk of declined performance. However, this study fails to proffer solutions into why reliance on reinsurance does not have any impact on the expense ratio of insurers and what measures to be taken by insurers with higher utilisation of reinsurance and subsequently reduce insolvency risk. A more explicit work is carried out by Iqbal, et al (2014), they investigate analysis of change in profitability due to reinsurance utilisation and leverage levels of non-life insurance sector of Pakistan. The authors argue that reinsurance utilisation may be beneficial to insurer but on the flip side, it may be expensive and result in insolvency of insurers. The study reveals that increased utilisation of reinsurance arrangement will decrease profitability because leverage level has a significant negative impact on the profitability.

## 3. METHODOLOGY

### 3.1 Research Design

This study employed mixed method research design to examine the impact of reinsurance utilisation on the performance of non-life insurance companies in Nigeria. The objective of combining the two approaches is to preserve the strengths and reduce the weaknesses in both approaches. With this approach, primary method (qualitative) is embedded within the predominant secondary method (quantitative). For the quantitative approach in this study, longitudinal descriptive research design for aggregate industry data comprising of forty one (41) non-life insurance companies was employed while the qualitative approach employed exploratory research design.

### 3.2 Population of the Study

The population of the study comprises all forty one (41) licensed non-life insurance companies operating in Nigeria as at 1st of January, 2016 (National Insurance Commission, 2016).

### 3.3 Sampling size and Sampling Design

For the quantitative method, a census of the forty one (41) registered general insurance companies in Nigeria as at 1st of January, 2016 was conducted. However, for the qualitative

method, semi structured interview was adopted with ten (10) insurance companies using the stratified sampling technique. The companies were group into two strata market leaders and market laggards. The market leaders are the top ranked non-life insurance companies based on the Gross Premium Written (GPW) while the laggards are the least ranked non-life insurance companies based on their GPW as documented by Nigerian Insurer's Association (NIA), a self-regulatory body in the industry. The target respondents were the heads of reinsurance unit in the department of technical or operations. The respondents were ten in number.

### 3.4 Data Collection methods

Two sets of data were collected for this study; secondary data and primary data. For the secondary study, aggregate industry data comprising of forty one (41) non-life insurance companies operating in Nigeria were gathered for a period of 2006-2015. For the primary data, semi structured interview was adopted.

### 3.5 Model Specification for Quantitative Data

$$P = f(RU) \quad \text{(i)}$$

Where $RU$ is Reinsurance Utilisation and $P$ is Performance
Breaking down the independent variable ($RU$) further into ($RD$)
Breaking down the dependent variable ($P$) further into ($PT$)

$$PT = f(RD) \quad \text{(ii)}$$

$$PT = f(RCR, RDCP) \quad \text{(iia)}$$

### 3.6 Model Equation

$$PT = a_1 + b_1(RCR) + b_2(RDCP) + \mathcal{E} \quad \text{(iii)}$$

Due to inconsistent in raw data, the above models were transformed using **logarithmic transformation of model as** follows:

$$\log_e PT = a_1 + b_1 \log_e(RCR) + b_2 \log_e(RDCP) + \mathcal{E} \quad \text{(iv)}$$

**Table: 1**
Definition of Internal Determinants Variables (Proxies) for Quantitative Study

| S/n | Variables | Proxy | Measurement | Variable |
|---|---|---|---|---|
| 1. | Reinsurance Dependence | RD=RCR & RDCP | RCR= Reinsurance Ceded/ Net Premium Written. Reinsurance Dependence= Ceded Premium/Total Asset | Independent |
| 2. | Profitability | PT=ROA ,ROE | ROA=PAT/Total Assets ROE=PAT/Shareholders' Equity. | Dependent |

### 3.7 Methods of Data Analysis

The quantitative study used multiple regression models, using logarithmic transformation of modelwhile the qualitative study adopted thematic analysis using thematic content analysis.

## 4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

**Hypothesis 1**
**The regression coefficient of LOG_PT**
$\log_e PT = b_0 + b_1 \log_e(RCR) + b_2 \log_e(RDCP) + \mathcal{E}$

**Table: 2**
Dependent Variable: LOG_PT

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 4.49E-15 | 1.95E-15 | 2.301367 | 0.0549 |
| **LOG_RCR** | **2.73E-15** | **1.60E-15** | **1.710829** | **0.1309** |
| **LOG_RDCP** | **1.13E-4** | **4.43E-6** | **2.26E+15** | **0.0000** |
| **R-squared** | **0.965000** | Mean dependent var | | -1.833609 |
| **Adjusted R-squared** | **0.931000** | S.D. dependent var | | 1.172622 |
| S.E. of regression | 1.205020 | Sum squared resid | | 1.00E-29 |
| F-statistic | 4.330000 | Durbin-Watson stat | | 2.236162 |
| **Prob(F-statistic)** | **0.008000** | | | |

Researchers' Computation

**Hypothesis 2**

**Table: 3**
Reinsurance practices and Customers' satisfaction

| | | Count | Column N % |
|---|---|---|---|
| Reinsurance Practices that lead to customers' satisfaction. | Claims reimbursement between 3 to 7 days. | 08 | 80% |
| | Claims reimbursement between 14 to 20 days. | 02 | 20% |
| | Simplicity of contract. | 05 | 50% |
| | Quick response time to notification of claims. | 07 | 70% |
| | Expertise advice to technical claims. | 06 | 60% |
| | Service delivery. | 04 | 40% |
| | Total | 10 | 100.0% |

Source: Field Survey, 2018

**Table: 4**
Frequency table on reinsurance practices and customers' satisfaction

| | | Responses | | Percent of Cases |
|---|---|---|---|---|
| | | N | Percent | |
| Reinsurance Practices that lead to customers' satisfaction. | Claims reimbursement between 3 to 7 days. | 08 | 25% | 80% |
| | Claims reimbursement between 14 to 20 days. | 02 | 6.25% | 20% |
| | Simplicity of contract. | 05 | 15.63% | 50% |
| | Quick response time to notification of claims. | 07 | 21.88% | 70% |
| | Expertise advice to technical claims. | 06 | 18.75% | 60% |
| | Service delivery. | 04 | 12.5% | 40% |
| Total | | 32 | 100.0% | 320% |

Source: Field Survey, 2018

### 4.1 Discussion of Findings

The result of hypothesis 1 reveals the influence of reinsurance dependence on profitability of non-life insurance companies in Nigeria. The finding of the study presents the p-value of 0.008000. Thus, the null hypothesis is rejected. This however means that reinsurance dependence (measured with RCR and RDCP) has a high degree of influence on the profitability level of non-life insurance companies in Nigeria. This outcome is similar to the findings of Cole and McCullough (2006), and Iqbal and Rehman (2014b). A further check reveals that RCR as one of the indicators of reinsurance dependence does not influence profitability of non-life insurance companies in Nigeria at p-value of 0.13019 while RDCP, another indicator of reinsurance dependence influences profitability at p-value of 0.0000. What this implies is that RCR which measures the degree to which an insurance company utilizes reinsurance on the short run through proportional treaty (quota share and surplus share) is only suited to limiting the risk of random fluctuation and risk of change across an entire portfolio (Oluoma, 2014). Its major disadvantage is that it does not help to balance portfolio because it does not limit the exposure posed by peak risks. RDCP on the other hand has a strong and significant influence on profitability on the long run because it is based on policy limit, non-proportional treaty and specified net line retention governed by Minimum Deposit Premium (M&D) as determined by loss experience over a long period of time. Qualitative result further asserts that the quantitative result that reinsurance utilisation influences the profitability of non-life insurance companies in Nigeria. However, interviewees identified huge reinsurance utilisation with energy and special risk. This is however due to the volume of premium required in the process of transferring the risk which affects the bottom line of non-line insurance companies in Nigeria. This finding is in consonance with theoretical framework adapted for this study.

Hypothesis 2, respondents believe that there is a relationship between reinsurance practices like claims payment time lag, simplicity of contract, quick response time to notification of claims, expertise advice to technical claims and service delivery. The respondents assert that prompt claims payment is the highest reinsurance practice indicator used measure customers' satisfaction in the Nigerian insurance market. Responses from interviewees show that they get quick reimbursement from reinsurer with between 3 to 7 days. This however makes insurance companies pay the insured on time and in the end satisfied with

insurance service rendered since there is no contractual relationship between reinsurer and insured or customer.

### 4.2 Conclusion

The findings of the study established the statistical significant relationship between reinsurance utilisation and performance of non-life insurance companies in Nigeria. The findings of this study reveal that non-life insurance companies perform relatively low because they rely heavily on reinsurance protection as their main source of risk management technique. The study also stated the importance of non-financial financial performance indicators like customers satisfaction, claims management procedures, time lag and so on. The findings in the study further underline the importance of increased shareholders' fund and improved performance so that insurance companies can increase their risk appetite vis-a-vis increase in their performance (financial and non-financial). Most importantly, insurance companies must not remain on the same threshold or retention over a long period of time.

In order to ensure that non-life insurance companies in Nigeria perform significantly so that they can reduce considerably their reinsurance utilisation, it therefore recommended that they should not only focus on the financial ratios alone but also special attention must be given to non-financials because of the intangibility nature of insurance products.

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