ISRG Journal of Economics, Business & Management (ISRGJEBM)

ISRG PUBLISHERS
Abbreviated Key Title: Isrg J Econ Bus Manag
ISSN: 2584-0916 (Online)
Journal homepage: https://isrgpublishers.com/isrgjebm/
Volume – II Issue - V (September - October) 2024
Frequency: Bimonthly

EFFECTIVENESS OF MOTOR, MARINE AND AVIATION, AND FIRE INSURANCE ON MANUFACTURING COMPANIES' SUSTAINABLE PERFORMANCE IN NIGERIA

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| **Received:** 06.07.2024 | **Accepted:** 10.07.2024 | **Published:** 04.10.2024

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Abstract

The research investigated the effectiveness of motor, marine, aviation, fire insurance on manufacturing companies' sustainability in Nigeria for 7 years (2008-2019), using ready-made data (ex-post facto design) and multiple regression technique as the research design and inferential statistical analysis. Respectively. The collection of data from both the Central Bank of Nigeria (CBN) statistical Bulletin and Nigeria Insurers Association reports. The research observed that insurance policies have a strongly significant and direct associative effectiveness with GDP of Nigerian manufacturing commercial enterprises. In conclusion, the sustainable performance is directly and significantly influenced by the insurance premiums in Nigerian manufacturing commercial enterprises, which reportedly advise the manufacturing companies to be prudently implementing some obligatory policies that will improve their operational and sustainable activities. Based on the outcomes, the recommendations suggest that the Nigerian quoted manufacturing commercial enterprises should prudently operate in line with both memorandum and articles of association' documents as well as regulatory' directive in such a way to leverage the internal and external guidelines.

Keywords: *Motor Insurance, Marine and Aviation Insurance, Fire insurance, Manufacturing Companies, Sustainable Performance, Insurance.*

DOI: 10.5281/zenodo.13888678

1. Introduction

In any economic growth and development, United Nations (2005) opined that insurance sector as part of the financial institutions serves as the backbone of any financial service sector (banking and securities through which general insurance settings have tremendously and significantly increased the income driven as well as price increment across whole insurance boards (Todd, 2024). And, international trade has enhanced almost 100% reliance on different trade financial forms (Van Weersch, 2019 cited in Darlap *et al.*, 2022) with the widespread technique so as to financially support insurance purchase through transportation insurance (Sokolovska, 2016). During transportation, the insurance of cargo or consignment has covered different risks namely theft, bodily injury loss, and property damage (Marvintoledo, 2024), which foster the growth of economy as well as enhance the people' life quality and assist the safeguarding of manufacturing engagement on financial interests (Zuno General Insurance Limited [ZGIL], 2023). Meanwhile, the good-in transit is usually protected by insurance of cargo transportation from the geographical destination point of origin (Marvintoledo, 2024), which efficiently cover marine risks namely theft, fire, collisions, sinking, and damage (ZGIL, 2024).

Structurally, the drivers for long-run growth has been benefitting from universally insurable risk expansion through the gradually protected reduction of emerging manufacturing markets as well as its industrialised countries (Moralee, & Bennie, 2023) through risk transfer mechanisms as transportation insurance of goods, vessels and manufacturing as well as service businesses (Souza, 2023). The world's exportation values from commercial services has upwardly shown a positively increasing trend between 2006 and 2018 for almost US$3 trillion and US$4.5 trillion respectively (World Trade Organisation [WTO], 2019 cited in Abasiakan, Sani, & Obiezue, 2021), which the Nigerian insurance industry has experienced increasing claim settlement by the operators in terms of net claim payment amounted to N100 billion at N305 exchange rate per dollar. The Nigerian economic growth has experienced rapid economic expansion, which leads to unexpected downsizing losses from newly exposed risks as a result of in the past especially during recession, COVID-19 pandemic (Nwafor, 2017) as well as costs increment from claims affect the profitable sustainability of almost all the insurance companies and industry at large (Todd, 2024). The general objective is to investigate the effectiveness of transportation insurance policies on manufacturing enterprises' performance in Nigeria.

While specific objective is to investigate the significant associative effectiveness between total premium and claims of marine, aviation and motor insurance, and GDP of manufacturing enterprises in Nigeria. The hypotheses for the research are stated below;

HO1: Motor Insurance coverage has no significant associative effect with the GDP of Manufacturing enterprises.

HO2: Marine and aviation Insurance coverage has no significant associative effect with the GDP of Manufacturing enterprises.

HO3: Fire Insurance coverage has no significant associative effect with the GDP of Manufacturing enterprises.

2. Literature Review

The adapted theories for this study are objectively explained for evaluating transportation insurance and manufacturing enterprises within the ambient of insurance industry namely shiftability theory, risk return theory

The company's liquidity preservation is embraced for the assets of investors' cash purchased during speculation horizontal period. In additional to this, the manufacturing business's liabilities would create more liquidity on its security assets' marketability and transferability returns. Also, the firm's liquidity is highly secured with liquid assets for marketability. Meanwhile, liquidity assets would measure financial stability through cash solvency margin of insurance firms (Nwankwo, 1992). Markowitz was the pioneering postulator of risk return theory, which described insurance as a risk management mechanisms as a risk taking mechanism for orienting business profitable firm for the assumption of professional risk so as to maximize performance if and only if the assumption of insurance businesses with higher risks should be having a higher turnover due to underwriting procedural and experienced adequacy (Chen, 2023).

Oloyede, Folorunsho and Ogamien (2023) investigated the Nigerian economic growth from insurance impact for 36 years (19860-2020), adopting short run ordinary least square (OLS) model so as to utilize the Real Gross Domestic Product (RGDP) from Insurance's Total Premium income and Total Claim payment, as well as Total Investment and Inflationary trending Rate. The outcomes showed that there was non-significant associative impact between Total Claim payment, as well as Total Investment and Inflationary trending rate, and economic growth while Total Premium income has significantly effective association on economic growth. Therefore, the recommendation suggested that insurance products should be mandatorily made to all individual citizens and commercial enterprises so as to substantially stimulate economic growth sustainability.

Lyndon (2019) asserted the association between Nigerian insurance industry and economic growth exploration for 17 years (2001-2017), adopting descriptive statistics and multiple regression technique. Insurance investment, premium, and claims positively impacted GDP. The research recommendation suggested that Insurance policies should be mandatorily recommended for individual person and business organisations, as well transparency of fund management by the insurers through the enforcement by regulators.

Abasiakan, Sani, and Obiezue (2017) investigated the determinants of commercial services Nigerian international trade for 28 years (1981-2017), using the short- and long-run of ARDL methodological relationships between the variables integration. Empirically, results showed that determinants of commercial services revealed to significantly determine the Nigerian international trade. The research recommendation suggested that insures' policies should be enhanced to globally improve technology and skill-oriented services so as to create employment opportunities for the teaming populations.

Ahmad, Kaliappan, and Ismail (2017) examined the determinants of service export in selected developing Asian countries for 28 years (1985-2012). The research employed an analysis of static linear panel data on annual data. The major result revealed that the services and communication facilities of foreign income, exchange rate, foreign direct investment (FDI), the value added were

DOI: 10.5281/zenodo.13888678

statistically and significantly positive associated to services exports. While, real exchange rate was not in all the chosen Asian developing countries.

Oluoma (2017) investigated the insurance market activity' Impact and Nigerian economic growth for 26 years (1987-2012), employing ex-post facto design and annual cross-section data through the Nigerian Central Bank CBN) Statistical Bulletin and National Insurance Commission (NAICOM and Nigerian Insurers Association (NIA). The Descriptive statistics and Ordinary Least Square (OLS) regression model were employed as inferential statistical tools. The outcomes indicated that life insurance penetration and insurance density had positively and significantly impactful on Nigerian economic growth. While, the penetration of total insurance and non-life insurance had positively non-significant impactful on Nigerian economic growth. The recommendation suggested that government policies should be focused towards insurance sector so as to attracting rural settlements in order to boost savings and encourage availability of funds for real invested sector.

Olayungbo & Akinlo (2016) examined the dynamic interactions between insurance and economic growth in eight African countries for 44 years (1970-2013), using the varying parameter of a Bayesian Time's Vector Auto-regression modelling approach with the volatility of stochastic method was adopted to be used for analyzing the short-term and the long-term between the interested parameters. Adopting the penetration of insurance for measuring the economic growth, they found positively association for Egypt, while positively and negatively short-term and long-term effects respectively are found for Kenya, Mauritius, and South Africa. From otherwise, effective negativity was revealed for Algeria, Nigeria, Tunisia, and Zimbabwe. There should be sound implementation for financial reformations for widely insurers' coverage so as to efficiently have a proactive recommendation for insurance industrial development across all the selected African nations.

However, the research gap is observed from the previous studies, which make the authors to empirically use marine, aviation and motor insurance total premium and claims on GDP of Manufacturing sectors in Nigeria as the independent and dependent variables respectively.

3. Methodology

The research employed ex-post facto design to deduce the secondary data from the Nigeria Insurers Association Insurance Digest and Central Bank of Nigeria (CBN) statistical bulletin. Also, multiple regression technique was adapted as inferential statistics so as to examine the associative effects of transportation insurance on economic growth by randomly selected all insurance companies and all manufacturing companies in Nigeria as the sample size (Popoola, 2023).

The multiple regression technical model is specifically stated below (Oluoma, 2017);

$$MGDP = (MIP, MAIP, FIP) - - - - - - - - - - - - - - 1$$

$$MGDP = \beta0 + \beta1MIP + \beta2MAIP + \beta3FIP + \xi - - - - - - 2$$

Where;

MGDP = Manufacturing Gross Domestic Product

MIP = Motor Insurance Premium

MAIP = Marine and Aviation Insurance Premium

FIP = Fire Insurance Premium

ξ = Unexpected Variable

The coefficients of the variables ($\beta0 - \beta3$) were measured by using the multivariate least square statistics.

4. Result and Discussions

The outcomes from the generated data are presented below;

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Motor Insurance Premium	12	38118474.00	45215143.00	41758626.3333	2647925.82761
Marine and Aviation Insurance Premium	12	16727575.00	25034920.00	20463828.8333	2391046.93058
Fire Insurance Premium	12	15618399.00	41333475.00	26336484.4167	8410104.17319
Manufacturing Gross Domestic Product	12	3369.71	6684.22	5343.1867	1346.70632
Valid N (listwise)	12				

Source: Authors' Computation, 2024 through SPSS 22.

The summary of the descriptive statistical analysis with the total observations of 12. The outcomes of mean, and standard deviation are 41758626.33 and 2647925.83, 20463828.833 and 2391046.93, 26336484.42 and 8410104.17, & 5343.19 and 1346.71 for Motor Insurance premium, Marine and Aviation Insurance premium, Fire insurance premium, and Manufacturing Gross Domestic Products respectively.

The minimum and maximum also reveal the value of 38118474.00 and 45215143.00, 16727575.00 and 25034920.00, 15618399.00 and 41333475.00, & 3369.71 and 6684.22 for Motor Insurance premium, Marine and Aviation Insurance premium, Fire insurance premium, and Manufacturing Gross Domestic Products respectively.

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Table 2: Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	0.844[a]	0.713	0.605	845.96	0.713	6.625	0.015

Source: Authors' Computation, 2024 through SPSS 22.

Table 3: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	**(Constant)**	4913.777	4224.385		1.163	0.278
	Motor Insurance Premium	-4.694E-5	0.000	-0.092	-0.391	0.706
	Marine and Aviation Insurance Premium	-6.843E-5	0.000	-0.122	-0.390	0.707
	Fire Insurance Premium	0.000	0.000	0.899	3.087	0.015

Source: Authors' Computation, 2024 through SPSS 22.

From the general model summary, there is positively significant association between transportation insurance and Nigerian manufacturing companies with 0.015 lesser than 0.05 significant level. Meanwhile, the efficient determination of r-square (R^2) reveals 71.30% variations in transportation insurance effect as an explanatory parameter, whereas the adjusted r-square (R^2) still reveals increasing percentage of 60.50% variation transportation insurance as an explanatory variable. The F-change and probability (Sig.) have shown 6.625 and 0.015 respectively, which is directly strong significant association between transportation insurance and sustainability of Nigerian manufacturing commercial enterprises, revealing good fitness association between the explanatory and explained parameters (variables).

Also, the representative results revealed Fire Insurance premium (FIP) shows a directly significant effect by the explained parameter of (B, Sig.) as (0.000, 0.015) respectively. Motor Insurance premium (MIP) and Marine and Aviation Insurance premium (MAIP) show indirectly non-significant effect on Nigerian manufacturing commercial enterprises by the explained parameter of (B, Sig.) as (-4.694E-5, 07.6 & -6.843E-5, 0.707) respectively.

Discussion of Findings

Generally, the outcomes show that Motor Insurance premium, Marine and Aviation Insurance premium, and Fire insurance premium do have an indirectly and directly significant associative effect respectively with Manufacturing commercial enterprises' Gross Domestic Products, which the research has similar result with the previous research (Lyndon, 2019; Oluoma, 2017; Olayungbo & Akinlo, 2016) as a result of an directly associative effect. Although, some authors have revealed contrary assertions with the outcomes of this research (Oloyede, Folorunsho, & Ogamien, 2023). Likewise, the Strong R-square value as well as the significant of F-change has made the suggestion that the model employed may have good fitness for the data, which indicates that the model may be sufficiently captured the data. The incremental outcome process across the Nigerian manufacturing commercial enterprises within the economy will embrace to the sales of fire, motor, marine and aviation insurance policies by insurance firms (Oloyede, Folorunsho, & Ogamien, 2023; Lyndon, 2019).

5. Conclusion and Recommendations

The research investigated the effectiveness of motor, marine, aviation, fire insurance on manufacturing companies' sustainability in Nigeria for 7 years duration from 2008 to 2019. The research observed that insurance policies have a strongly significant and direct associative effectiveness with GDP of Nigerian manufacturing commercial enterprises. In conclusion, the sustainable performance is directly and significantly influenced by the insurance premiums in Nigerian manufacturing commercial enterprises, which reportedly advise the manufacturing companies to be prudently implementing some obligatory policies that will improve their operational activities. Based on the outcomes, the recommendations suggest that the Nigerian quoted manufacturing commercial enterprises should prudently operate in line with both memorandum and articles of association' documents as well as regulatory' directive in such a way to leverage the internal and external guidelines.

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