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ORIGINAL ARTICLE

Motor insurance business portfolio and the gross premium of insurance industry: A case of Nigeria

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Abstract

Purpose of the Research: This study examines the contribution of motor insurance business to the gross premium income of Nigeria insurance industry. **Methodology:** The research design used for this study is *ex-post-facto* design. Ordinary least square (OLS) regression model used to analyze the secondary data extracted from statistical bulletin of the Central Bank of Nigeria (CBN) from 1981 to 2011, and Nigeria Insurers Association (NIA) digest from 2012 to 2018. The population for this research is the entire quoted insurance companies in Nigeria. The sample size for the study is 38 years (from 1981 to 2018). **Findings:** The result of the findings shows that insurance premium of motor has no significant effect on insurance gross premium of Nigeria. In the same vein, insurance premium income of general accident has no significant effect on gross premium income of insurance companies in Nigeria. **Implications:** The government and insurance regulatory bodies should develop more strategies to ensure high compliance to third-party motor insurance buying in Nigeria. **Originality:** The originality of study is no doubt because there are very few of studies on motor insurance in Nigeria.

Key words: Fraud, general accident insurance, gross premium, motor insurance, risk
JEL Classifications: G22

INTRODUCTION

Every car owner is at risk of collision on the road and other associated risks, either while on motion or parked; hence, the need for owning motor insurance coverage is imperative for all car owners. This is because motor insurance has the potential to be a powerful tool in managing the liability caused by motorist to other road users. Motor insurance policy is the coverage purchased for road vehicles such as cars, buses, lorries, trucks, vans, motorcycles, and any form of motorized road vehicles. With no doubt, if any vehicle owner owns this policy, it will be preventing from bearing the whole costs of losses arising from property damage and/or bodily injury emanating from traffic collisions as a result of his or her negligence. Furthermore, when theft of vehicle arises, motor insurance coverage allows insurance company to offset a significant portion of the costs of buying new vehicle.

There are common types of motor insurance policies in Nigeria with their merits and demerits. When accidents happen, it is usually not about who is wrong or right, but

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about who is left after the accidental event. However, if the driver happens to be involved in any motor vehicle crash and he or she is among those that are survived, then he/she needs to be thankful. However, while he/she is at it and sustained injury or damages, the thought of who will be liable for the damages is usually the next stage of the incident.

Although car crashes are not the only risk that is associated with car owners, they may be exposed to other risks that are in most cases why people get their motor vehicles insured. These other incidents include car theft, damage resulting from attempted theft, fire damage, and so on. Majority of motor vehicle owners do not take cognizance of this as they are not compulsorily required under the law.

Statement of the Problem

Motor insurance products being one of the six compulsory insurance policies in Nigeria are widely patronized, with regard to a large population of over 180 million citizens with nearly 70% of the population being youth that can engage in one or more activities that can drive the economy and stimulate the growth of insurance and any other financial services. However, despite these enormous potentials available to be tap for growth and sustainability, the insurance sector in Nigeria is still crawling and struggling to survive. According to Onyeka (2018), the insurance sector has remained relatively stagnant in Nigeria with less than 1 million people having any form of insurance cover. However, Middle East Insurance Review (2020) establishes that the Nigerian insurance sector is losing millions of naira in foregone premiums worth of 9.64 m vehicles owners with fake motor insurance papers or is uninsured. Moreover, the few who had genuine insurance covers failed to renew their contract when the motor insurance policy expired. On this note, this study is carried out to investigate the influence of motor insurance business on the income of insurance industry in Nigeria. Hence, the specific objectives are: To determine the effect of motor insurance premium income on the insurance gross premium income in Nigeria and to examine the contribution of general accident insurance premium income on the insurance gross premium income in Nigeria.

Research Hypothesis

H_1: The premium income of motor insurance business has no effect significantly on the gross premium income of Nigerian insurance industry.

H_2: General accident insurance premium income has not contributed significantly to the Nigerian insurance industry gross premium income.

Literature Review

Insurance

Insurance can be seen as a legal contract where the policyholder transfers potential risk to the underwriter who promises to indemnify the insured on a loss suffered (Mutua, 2014). Then, little amount of money called premium is paid by the insured as consideration for the promise. In any economy insurance companies are a crucial part of the financial sector and are significant players in the global capital markets (Chepkoech and Rotich, 2017). Insurance is a form of an agreement in which one party (the insured) makes payments periodically called premiums to another party (the insurance company) who agrees to indemnify the insured a defined sum (claim payment or benefit) at the point of a specific loss (Anderson and Brown, 2005).

Motor insurance

According to Murcko (2013), car insurance cover is absolutely necessary for whoever drives a car on the roads. Despite some forms of motor vehicle insurance are compulsory by law, this insurance policy is very essential for the growth and safety of the society. Potentially, the associated costs with an accident, whether repair costs or cost of replacement of the motor vehicle or other properties, or medical bills of the third-party, can lead the vehicle owner to bankruptcy. Therefore, the risk of being a motor owner without adequate motor insurance policy coverage will be too enormous to experience if the liability arises.

Types of Motor Insurance Available in Nigeria

The types of motor insurance cover available in the insurance market are:

i. The act only car insurance policy;
ii. The third party only policy;
iii. Third party, fire, and theft cover; and
iv. The comprehensive insurance.

The Act Only Car Cover

This insurance cover is often called the third-party liability cover or motor third party insurance. This is what is mandatory under law for all motor vehicle owners in Nigeria, and it adequately covers the any liability incurred by the vehicle owner for third-party death or disability, damage to third party's property or loss as a result of negligence act of the policy purchaser. Merit of this cover is that it protects the insured in the event of a crash without recourse to if the driver was the faulty one or not, while the disadvantage of this policy is limited to car crash or collision induced damage.

The Third Party Only Cover

This insurance cover only caters for third-party damages that were caused by the insured's negligence. It covers both collision and non-collision damages, as well as theft, fire, or loss associated to the insured party but will not cover any of this for the insured person's car or property. The benefit of this cover is that all the advantages of this policy are reaped by the third party for damage, loss, death, and disability for which the insured is liable. However, the disadvantage is that it does not cover any damage or loss sustained by the insured.

Third Party, Fire, and Theft Cover

This policy gives the third party as well as the policyholder the same protection in the event of a collision causing damage, while it is inclusive of redeemable claims in the event of motor vehicle theft or fire for the insured. In the event of damage as a result of attempted theft, the insured could also file claims. The advantages of this cover are that both the insured and third party are covered during an accident. Furthermore, the insured additionally could make claims for loss, vandalism, fire, or car theft. However, the third party cover is limited to damage resulting from accidents in this policy.

The Comprehensive Insurance

This is like an umbrella package for motor vehicle risks. It is usually considered the best of the insurance policies as it ensures that the car owner is catered for in the event of damage from both collision and non-collision sources. It also protects the car owner against attempted theft resulting in damage, fire, vandalism, and many more. This cover is very advantageous as it offers a lot of benefits that the third party motor insurance policy does not cover. Again, it is also not limited to collision induced damages like third-party insurance cover. Nevertheless, comprehensive coverage is the motor vehicle insurance contract with the most expensive premium.

Motor Insurance Business in Nigeria

One of the compulsory insurance products in Nigeria is the motor insurance policy. This becomes obligatory for vehicle owners by Insurance Act, 2003, under Motor Third Party Insurance – section 68 of the act. Notably, Section 68 (1) of the Act states that: Nobody shall use, or cause, or give permission to any other person to use a motor vehicle on a road, unless he or she insured with an underwriter licensed under this act, a liability which he or she may thereby incur as a result of causing damage to the third parties' property. Furthermore, Middle East Insurance Review (2020) noted in their article that The Federal Roads Safety Corps (FRSC) Act in Nigeria requires a vehicle on Nigerian roads to have at least a third party motor insurance cover or comprehensive insurance policy of 10% of the value of the vehicle. Despite the compulsory pronounced by Section 68 (1) of the Act for Motor Third Party Insurance and its implementation at different levels of the law, many more things are still to be done as there are enormous potential in motor vehicle insurance business in Nigeria which are yet unexploited. In 2009, to increase penetration rates in motor insurance business, the National Insurance Commission (NAICOM) being the apex regulator of insurance industry in the country launched the Market Development and Restructuring Initiative (MDRI) program to enforce and encourage compulsory insurance coverage and eliminate counterfeit third party motor insurance certificate in the country (PWC, 2015).

Only 2.5 millions of motor insurance documents out of about 12.5 million registered vehicles in Nigeria had been captured as at June 2014, and stored in the database, which can be verified by law enforcement agents through computer devices. This reveals that nearly 10 million motor vehicles in the economy are not with genuine motor insurance policy during 2014. Despite the low rates of compliances, the statistics with regard to motor insurance transactions provided by the underwriters revealed that motor insurance business experiences more than 50% increase over the preceding year's data particularly in third party transactions (PWC, 2015).

According to Ogembe, 2016, one of the senators of the federal republic of Nigeria, expressed that only 4 million vehicles are properly covered by registered insurance companies, out of the 16 million motor vehicles in the economy. This means that, only 25% of these vehicles are covered by genuine insurers, while the remaining 75% are driving their motor vehicles with fake third-party motor insurance certificates. This indicates that motor insurance business in Nigeria is experiencing low penetration drastically. And this calls for vibrant marketing strategies on the part of regulatory bodies and stakeholders in the industry to capture these uninsured vehicles in the database, and ensure their compliance to third-party motor insurance cover genuinely.

Middle East Insurance Review (2020) averred that, out of the 12 million registered vehicles on Nigerian roads only 2.36 million have original motor insurance papers, while about 9.64 m vehicles uninsured as at July 31, 2020. The 2.36 m insured motor vehicles are genuinely registered on the platform of Nigerian Insurance Industry Database (NIID) by their respective insurance companies. However, one of the main issues bedeviling business of motor insurance in Nigeria is the problem of fake motor insurance certificates. It is estimated that, out of eight motor certificates it is only one or two that is genuine (Ewherido, 2018). Section 68(4) of the Insurance Act 2003 provides for a fine of N 250,000, or one-year imprisonment, or both as the penalty for the violators. Furthermore, the staff of the Federal Roads Safety Corps (FRSC) pursuant to section 10(4)(l) FRSC Act is empowered to arrest and prosecute owners of motor vehicles with fake driving or insurance papers.

Motor insurance business has really contributed to the premium growth of Nigeria insurance industry. Figure 1. below depicts its income generated in the industry.

Motor Insurance Coverage and Road Accident Risks

Nigeria as one of the third war countries has been struggling to engage in infrastructural development such as roads, rural electrification, irrigation systems, and other valuable things that are positively driving her economic growth. Consequentially, this has increases risk exposures in the

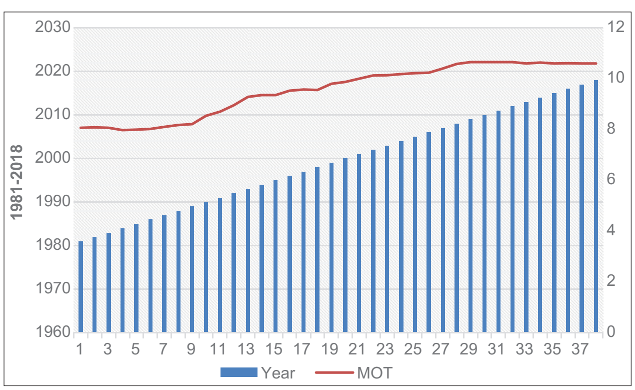

Figure 1: Nigeria motor insurance premium income
Source: Soye and Momoh, 2020

economy in all ramifications. Ajemunigbohun and Oreshile (2014) reported that drivers' attitude on Nigeria's roads has been an unpleasant experience compared to driving cultures in some other developed economies. According to the authors, government on their part had made series of efforts to minimize the number of road accidents experienced by the citizens, year in year out. According to the economic commission for Africa (ECA, 2011), more than 1.2 million people are dying every year worldwide by road accidents, 65% of deaths involved foot-travelers of which children death account for 35%. According to the study, every year around 50 million people are injured and a lot of them are disabled. Ajemunigbohun and Oreshile (2014) noted that, the driving attitudes of motorists in Nigeria are still put to question with respect to the huge motor accident risks they are exposed to.

Motor Insurance Business and Risk of Fraud

In spite of different technological breakthroughs to detect frauds, fraud claims are still very evident in the insurance sector and other similar business sectors (Ernst and Young, 2012). This necessitates quick initiation of mitigation measure once there is a reasonable suspicion of deceitful by the insured to prevent the fraudulent risk.

According MacRae (2011) mitigation is aimed at the action that is meant to reduce the level of fraud, the amount associated with the fraud losses, and the stress, and cost required to recover back or correct the effect of the fraudulent activity. The activities at this stage are intended to identify and understand losses that happened despite the prevention, detection, and mitigation stage measures. Basically, the onus of responsibilities to obtain adequate evidence and information to prevent the furtherance of fraudulent activity lies on the insurance business' stakeholders, if the industry must grow, especially in Nigeria. Salaton et al. (2019) opine that there are many common motor insurance fraudulent claims that hamper the growth and sustainability of insurance business, these include withholding the material facts at the time of formation of the contract, misrepresentation of information at the point of claim, rip-offs, accidents staging, exaggeration of damages, and backdating of covers.

General Accident Insurance

General accident insurance is policy that provides coverage for an individual or group of people that seek to provide money to themselves or to their beneficiaries in the event that they suffered partial, or total physical disability, or injury in a fortuitous accident that is triggered by an accidental event. For an instance a professional footballer may insure his or her legs against any injury that can affect his or her economic activities and financial income while playing football.

However, Asinobi and Ojo (2014) stated that in spite of an extraordinary growth in insurance covers, these areas that includes public liability insurance, personal accident policy, burglary protection insurance, travel insurance, and cash in transit policy, are sometimes purchased when the situation warrants it. Therefore, they are not purchased often, and annual renewals are not guaranteed. However, this class of business still helps to boost the industry despite its low patronage by the insuring public. Figure 2. below reveals its contribution to the premium income of Nigeria insurance companies.

Empirical Review of other Related Literature

Salaton et al. (2019) carried out research to examine the influence of macro-economic factors, institutional factors, and individual factors on motor insurance fraud risks among insurance companies in Kenya. The study adopted three theories which include: Fraud management lifecycle; anomie; and conflict theory. The findings of the study reveal that macro-economic factors and individual factors were founded to influence the motor insurance fraud risk significantly, while institutional variables did not have significant influence on risks of fraud among insurance companies in Kenya. The study recommended that insurers should be more watchful in times of hard economic periods as the macro-economic factors were found to have a statistically significant relationship with motor insurance fraud risks.

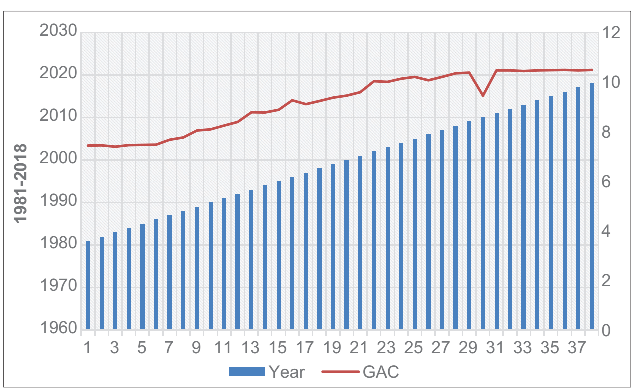

Figure 2: Nigeria general accident insurance premium income
Source: Soye and Momoh, 2020

Bali (2018) carried out study on the impact of De-tariffing on the general Insurance business, focused on private motor area, using descriptive analysis. The study concludes that a rate issue is likely to come up in the motor insurance business as a result of tariff deregulation. Likewise, naturally deregulation will lead to a drop in rates as players in the business cut rates to attract new business, keep the existing ones, lose premium, and trying to increase rate typically deregulation leads to a fall in rates as players cut rates to attract business, lose money and raise rates again. Consequentially, this leads to a boom, and busted cycle. The findings shown that private car not exceeding 1000cc has reveal increase in premium rate after de-tariffing cumulatively. Furthermore, private cars exceeding 1000cc, but not exceeding 1500 cc, revealed slight drop in premium rate.

Kitunzi et al. (2016) investigated how awareness influences the usage of third-party motor insurance in Kampala district, using cross-sectional of both qualitative and qualitative methods. The results showed that 8 out of 10 drivers in Kampala are uninformed of this type of insurance, with 95.3% of them do not have knowledge about their rights, as the insured's and, 87.8% of them do not know their obligations when involved in the insured perils accident. And many of the driver's encountered accidents have not submitted claims to their insurance companies for compensation.

METHODOLOGY

A research design can be referring to as a plan to guide the procedure of research by arranging how a study will be carried out from the research objective to the outcomes. It is a comprehensive design used to collect and analyze data in order to improve the understanding of a particular topic (Abutabenjeh, 2018). The design adopted for this study is *ex post facto* research design. According to Isangedighi et al. (2004) *ex post facto* design can be seen as a systematic empirical inquiry, which does not allow the researcher to have direct control on the independent variables because they have been already manipulated. The ordinary least square (OLS) regression model is used to analyze the secondary data extracted from Central Bank of Nigeria (CBN) statistical bulletin from 1981 to 2011, and Nigeria Insurers Association (NIA) digest from 2012 to 2018 basically to examine how motor insurance portfolio has contributed to the gross premium income of non-life insurance companies in the country. Least square technique is chosen because it will help to establish empirical relationship between the variables that are considered for the study. The study population is the entire quoted insurance in Nigeria. The sample size for the study is 38 years (from 1981 to 2018).

ANALYSIS/DISCUSSION

Measurement of Variables

Table 1 below shows the details of how the variables considered for this study is being measured:

Mode Specification

For this study, multiple regression analysis is to be used, and the model for this analysis is:

$$IGP = F(a_0 + MOT_1X_1 + GAC_2X_2 + \epsilon \ldots\ldots..)$$

Where:
IGP= Insurance gross premium
a_o = Autonomous
x_1 = Motor insurance premium income (MOT)
x_2 = General accident premium income (GAC)
e = is error term.

Unit Root Test

The unit root analysis is a pre-test performed before the regression analysis. This was done to establish the stationary properties of the variables chosen for the research.(Table 2)

Normality Test

Normality is carried out to determine whether the data do not follow a normal distribution. The Jarque-Bera stands at the point of 1.299995 with the associated $P < 0.522047$. Since the $P > 0.05\%$ level of significance, the decision of the study is to fail to reject the null hypothesis because the research has no enough evidence to say the data do not follow a normal distribution. This indicates that the data are normally distributed, and it shows a sign of a good regression line.

Regression Analysis

Linear regression analysis is applied to estimates how much the experimental variable (Y) changes when the two explanatory variables (x_1 and x_2) change one unit independently, and the associations between dependent and independent variables can be established.

$$Y = a_0 + b_1x_1 + b_2x_2 + \ldots\ldots.. + b_nx_n$$

$$IGP = a_0 + b_1MOT_1 + b_2\mathrm{GAC}_2 + \ldots\ldots.. + b_nx_n$$

$$IGP = -9.3344827_0 + 0.841894_1 MOT_1$$
$$+1{,}157029_2\mathrm{GAC}_2 + \ldots\ldots.. + b_nx_n$$

The multivariate regression equation above reveals the impact of motor insurance premium income (LMOT) and general accident insurance premium income (LGAC) on the Nigeria insurance gross premium (LIGP). From the regression Table 3, the sign of the coefficient of MOT and GAC is positive. This implies that LIGP increases by 0.84%, with a percent increase in the business of motor insurance in the industry. Furthermore, the insurance industry in Nigeria will experience an increase of 1.16% in its gross premium income (LIGP). In relations to magnitude, every N1 Million investment in motor insurance class of business increases to N 841,894 increase in LIGP. Every N1 Million investment in general

Table 1: Measurement of dependent and independent variables

Notation	Dependent variable	Description	Independent variables	Description
Y	Insurance Gross premium	Log of gross premium		
x_1			Motor insurance premium	Log of Mot. premium
x_2			General Accident premium	Log of Gen. premium

Table 2: Unit root table

Variables	ADF t-statistic at the difference	ADF t-statistic value	5% critical value	Probability	Order of integration
MOT	1st	−3.846467	−2.945842	0.0057	1(1)
GAC	1st	−9.053660	−2.945842	0.0000	1(1)
IGP	1st	−6.035674	−2.945842	0.0000	1(1)

accident insurance will on average lead to N 1,157,029 increase in LIGP.

The regression Table 3 reveals that R-square is 0.892585. This indicates that 89.26% of Y (LIGP) jointly explained by the two explanatory variables (LMOT and LGAC). The remaining 10.74% variation of Y can be explained by other variables not considered by this study, such as life insurance Marine and other businesses.

The statistical significance of the coefficients of the explanatory variables, which could be established from the Standard Error, T-Statistic, and the probability value of each coefficient, the results show that GDP is statistically significant and INT is not statistically significant.

The F-statistic value is 145.4203 with the associated 0.000 probability is significant at 1% level of significance. This shows that the two independent variables have jointly, strongly, and positively affected the Nigeria insurance industry's gross premium within this period of study. That is, the overall goodness of fit of the model is satisfactory.

Post-hoc Diagnostics

Heteroscedasticity test

From the results of Breusch-Pagan-Godfreytest, the study rejected heteroscedasticity of disturbances hypotheses and accepted homoscedasticity, since the $P = 0.1994$ of Fisher's F-statistics is >0.05 significance level. Therefore, in line with the above model and judging by the probability value of the observed R-squared, the residuals for the model show that they are homoscedastic in nature.

Testing of Hypotheses

Motor insurance

Motor insurance in Nigeria requires everyone operating a motor vehicle on Nigeria roads to purchase insurance to ensure some compensation to those sustained injury or damages in an automobile accident. Imperatively, the motor insurance policies should be readily and sufficiently available across the country for easy access and business growth in the insurance sector. Faure (2006) argued that compulsory insurance, such as motor insurance, may make the government to depend on the insurance market and also create more issues than cure, if insurance is not sufficiently available.

The result of the findings shows that motor insurance premium (LMOT) has no effect on the gross premium income of insurance industry (LIGP) in Nigeria. Table 3 shows that LMOT has affected the gross premium income (LIGP) insignificantly with $P = 0.2395$ (>0.05) level of significant. Therefore, we accept hypothesis 1 which states that motor insurance business premium income has no significant effect on the gross premium income of insurance industry in Nigeria.

General Accident Insurance

Accident insurance covers accidental death, and also, the dismemberment that involves the payment of a particular sum of money on the death or injury of the policyholder. The result of the regression shows that general accident insurance (LGAC) has contributed to the gross premium income of insurance industry (LIGP) in Nigeria, but not significant.

Table 3: Least square analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	−9.334827	1.516317	−6.156251	0.0000
LMOT	0.841894	0.703614	1.196528	0.2395
LGAC	1.157029	0.619409	1.867955	0.0702
R-squared	0.892585	Mean dependent var		9.374661
Adjusted R-squared	0.886448	S.D. dependent var		2.289159
S.E. of regression	0.771391	Akaike info criterion		2.394413
Sum squared reside	20.82652	Schwarz criterion		2.523696
Log likelihood	−42.49384	Hannan-Quinn criter.		2.440411
F-statistic	145.4203	Durbin-Watson stat		0.661401
Prob(F-statistic)	0.000000			

Table 3 reveals that LGAC has affected LIGP insignificantly with $P = 0.0702$ (>0.05) level of significant. Therefore, we accept hypothesis 1 which says general accident premium income has no significant effect on the gross premium income of insurance industry in Nigeria.

CONCLUSION

Section 68 (1) of Nigeria Insurance Act 2003 making third party motor insurance policy and compulsory for every owner of vehicle is one of the strategies to ensure that the public is guaranteed some contingency plan should any unfortunate happen. This study examines how motor insurance business premium has influence the income of insurance business in Nigeria. Thus, the finding of the study shows that motor insurance business premium statistically has no significant effect on the gross premium income of insurance companies in Nigeria. Furthermore, general accident insurance premium has no significant effect on the gross premium income of insurance industry in the country.

Hence, the study recommended that government should intensify enforcement on buying of motor insurance policies, as this will not only boost premium income but also would increase the contribution of insurance industry to economic development and growth. The insurance stakeholders in Nigeria should strongly embrace technology that could help to create enabling environment to drive their businesses efficiently.

CONFLICT OF INTEREST

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