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ANALYTICAL DISCOURSE OF GREEN INSURANCE, INDUSTRIAL POLICY AND ITS EFFECT ON ECONOMIC SUSTAINABILITY IN NIGERIA.

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ABSTRACT

The growing urgency to address environmental challenges has brought about the innovative concept of green insurance and sustainable industrial policies. Economy sustainability in Nigeria is pertinent in the current era of environmental challenges and climate change disruptions. Green insurance has been developed as a response to the imminent global challenge in managing environmental risks that seeks to offer financial protection and handsomely reward initiatives or innovations are anchored on renewable energy and conservative measures that can best introduce resilience to the economy. This paper aims to analyze and in the same vein, deepen the discourse on the role of green insurance and industrial policy in promoting economic sustainability in Nigeria. In this vein, sectors that seek insurance and adopt green processes are better equipped to dampen the magnitude of their loss and thus should be incentivized through an insurance mechanism. For this study, the population consists of the entire insurance companies registered and practicing presently in Nigeria which stands at 57 (as reported by NAICOM, 2023). The sample size was conveniently determined based on the availability of insurance personnel willing to attend to the structured questionnaires designed for the purpose of the research. Ten (10) insurance companies will be conveniently sampled. Data for this study was obtained through the questionnaire distributed to stakeholders in Nigeria's insurance sector, including insurance companies, policyholders, and regulatory bodies, environmental economists, insurance policy designers, and sustainability advocates to understand the unique challenges in implementing green insurance in Nigeria and gather insights on regulatory and market conditions. A cross-sectional approach, integrating descriptive and correlational research designs was employed in analysing the data. The study found that the regulatory framework in place is yet to spur insurers to develop and market green insurance products. Also, increased awareness and education among stakeholders, consumers, and businesses, were identified as being crucial for fostering a culture of sustainability through risk management and insurance functions. The integration of green insurance into Nigeria's financial system

was found to be an essential channel for fostering the operational resilience of economic actors, industrial policy, and sustainable economic growth.

KEYWORDS: *Climate Change, Economic Sustainability, Environmental Risks, Green Insurance, industrial policy*

1. INTRODUCTION

The interplay between environmental sustainability, industrial policy and economic development has gained increasing prominence, particularly in developing nations where climate-related risks are escalating. Nigeria, with its diverse ecosystems and a growing economy heavily reliant on oil, faces unique challenges related to environmental degradation and climate change. Environmental issues such as deforestation, pollution, flooding, and desertification have intensified, threatening livelihoods, infrastructure, and economic stability. In response to these environmental vulnerabilities, green insurance has emerged as a potential tool to mitigate climate risks and foster sustainable development. It represents a crucial intersection between the insurance industry and sustainable development, aimed at mitigating environmental risks and promoting eco-friendly practices.

Green insurance, a relatively new concept in Nigeria is rapidly gaining global traction, integrating environmental objectives with traditional insurance practices to address climate-related risks and induce sustainable practices, Grace (2023). Insurance products are synced to policyholders' risk management practices pro tanto to cover environmental risks and promote sustainable practices. This includes policies that promote eco-friendly behaviors, such as renewable energy investments and reduction of carbon emission. While, Industrial policy is a set of government strategies aimed at stimulating economic development, together these frameworks presents an opportunity to balance economic growth with environmental and social sustainability.

In Nigeria, the propensity for extreme weather gets higher year on year with threats of flash flooding, excessive heat, storms, extremely low temperatures, and declining rainfall that leads to droughts and heat waves, rendering adverse consequences on livelihood and economic sustainability (Oderinde et al., 2022). The intersection between green insurance and economic sustainability is pivotal for Nigeria's long-term development, as the country continues to face environmental degradation and resource-based economic pressures. However, the adoption of green insurance in Nigeria remains limited, underscoring the need for more research on its potential benefits, and implementation challenges. Globally, countries are beginning to transition into low- carbon economies, and this has given rise to the need for insurers to offer products with reduced premiums that support these long-term objectives. (AbdelNour, 2024; Stricker et al., 2022).

To achieve the purpose of this study we evaluate the potential of green insurance and industrial policy as a tool for economic sustainability in Nigeria with the following objectives; analyze the current

landscape of green insurance in Nigeria, including regulatory, industrial policy, and market challenges; examine the potentiality of the relationship between green insurance adoption and the improvement of environmental, social, and governance (ESG) indicators in Nigeria; and, ascertain the level of awareness and trend of green insurance among policyholders, insurance professionals and the population at large. It is imperative to state hypothetically that:

H1: Adopting green insurance does not positively influence the operational resilience of economic actors in Nigeria.

H2: Higher awareness and implementation of green insurance cannot lead to improved environmental, social, and governance (ESG) indicators in Nigeria.

H3: Regulatory support and industrial policy do not significantly impact the development and adoption of green insurance policies in Nigeria.

Through the examination of these identified areas, this study seeks to contribute to the existing research on achieving sustainable development in Nigeria. It also identifies challenges, gaps, and opportunities of integrating green insurance into policy frameworks to support economic resilience. The findings of this study have implications for the insurance business, policymakers and other stakeholders striving to navigate the complexities of the 21st century.

2. LITERATURE REVIEW

Environmental risks are considered unavoidable devil ravaging the stability of economies in this present time, and a measure of curbing the stark and unpleasant marks that they leave behind countries have devised a means of ensuring the protection of individuals' wealth, lives, and the economy at large by the introduction of green insurance and encouraging policyholders to engage in sustainable practices. Studies by the Organization for Economic Co-operation and Development (OECD) highlight that green insurance can help reduce the impacts of climate-related losses, which are particularly significant in vulnerable regions like Nigeria. In the early 2000s, various countries began to develop frameworks for green insurance, with China being a notable example. Belozyorov & Xie, (2021) in their research posit that the Chinese government has initiated a broader environmental strategy aiming to promote green insurance while also seeking to increase the financial support for green projects thereby mitigating the effect of natural disasters. The establishment of green insurance systems in China served as a model for other nations, highlighting the potential for insurance products to contribute to environmental sustainability. Nawaz et al., (2021) believed this initiative in addition to providing a safety net for government and enterprises, economic growth is fostered through the encouragement of investments in sustainable development. This success may easily be attributable to industrial policy and ownership and control of insurance industry by the government of China.

Green insurance has evolved as a response to the increasing awareness and trend of environmental issues and the need for financial mechanisms that support sustainable practices, particularly in sectors vulnerable to climate change, such as agriculture, properties, and industrialization. For instance, agricultural

insurance has helped to reduce the severity of loss impact attributed to crop production through the adoption of friendlier environmental practices, leading to increased financial stability (Mu et al., 2022; Ahmed et al., 2022). This risk transfer effect allows insured farmers to invest in sustainable technologies and practices, ultimately leading to improved agricultural productivity and reduced carbon emissions (Jin et al., 2024).

Green insurance and its relationship with economic stability highlight the critical role that it plays in promoting sustainable practices and mitigating environmental risks, which in turn contributes to economic resilience. The relationship between green insurance and industrial policy is further underscored by the positive impact of green financial development on economic growth. Several studies conducted indicate that the introduction of green insurance products can stimulate economic activity by fostering investments in green projects and technologies which in turn helps enterprises manage risks associated with climate change and natural disasters (Nawaz et al., 2021; Stricker et al., 2022). This not only smoothens financial fluctuations but also enhances the resilience of economies against environmental shocks.

In China, promoting sustainable practices in a variety of industries has been greatly aided by the creation of a methodical policy framework for green finance, which includes green credit, green securities, and green insurance (Zhang & Dong, 2023). This framework promotes the adoption of eco-friendly technologies in addition to helping industries undergo a green transformation. However, the Nigerian economy does not have a specific industrial policy dedicated exclusively to green insurance this is because green insurance is still perceived as relatively new to the economy (CIIN-2023). It has been noted that emerging economies face unique challenges in integrating green insurance due to limited regulatory frameworks, industrial policy, and market infrastructure. In Nigeria, green insurance policies are largely unexplored, literature on sustainable insurance in Africa, such as the report by the African Insurance Organization (2021), indicate that tailored policies could support both environmental resilience and economic development by mitigating the impacts of natural disasters and encouraging eco-friendly behaviour among individuals and businesses. Moreover, the integration of green insurance into broader financial systems through industrial policy is essential for achieving long-term economic stability. (Le, 2024; Lee, 2023) in their study opined that policymakers are getting better enlightened on the need for the creation of regulatory frameworks that promote green finance, including green insurance, to ensure the contribution of financial institutions to sustainable development goals. Le (2024) submits that by aligning financial incentives with environmental objectives, green insurance can drive innovation and encourage businesses to adopt sustainable practices, thereby fostering a more resilient economy.

Concept and Relevance of Green Insurance

The concept of economic sustainability is increasingly recognized as a critical component of sustainable development, emphasizing the need for economic systems to operate in a manner that is not only viable in the short term but also resilient and equitable over the long term.

According to Rosette & Berg (2019), they support the concept of economic sustainability and stated that it is particularly relevant in the context of global challenges such as climate change, resource depletion, and social inequality, which has necessitated a shift towards more sustainable economic practices. This implies that an economically sustainable society seeks to balance economic growth with environmental constraints by developing resilient infrastructure, maintaining biodiversity, and fostering energy efficiency and renewable energy adoption. For developing countries such as Nigeria, where economic growth is often tied to resource-intensive industries (such as oil), the shift toward economic sustainability is critical to reducing vulnerability to external shocks, such as commodity price fluctuations and climate-related disasters.

At its core, economic sustainability involves the integration of economic, environmental, and social dimensions. This triad approach is essential for achieving the Sustainable Development Goals (SDGs), which aim to eradicate poverty, promote inclusive economic growth, and protect the planet (Egas-Posligua, 2024). By providing financial protection against environmental risks, green insurance not only enhances risk resilience but also supports economic stability and growth. This is particularly significant in developing economies, where the introduction of green financial products, including green insurance, has been shown to positively impact economic growth (Nawaz et al., 2021).

Economic Sustainability and ESG Impacts Sustainable economic development in Nigeria, necessitates a balanced approach to environmental, social, and governance (ESG) goals. According to the Sustainable Markets Initiative (2023), insurance plays a crucial role in financing sustainability transitions by covering high-risk green projects and de-risking investments in renewable energy and sustainable technologies. However, the effectiveness of green insurance in promoting economic sustainability is contingent upon the establishment of robust regulatory frameworks, increased awareness, investment in green technology, and effective policy incentives. The development of a comprehensive green financial system, which includes green insurance, is vital for supporting the transition to a sustainable economy (Research on the Impact of Green Finance on Industrial Structure in Shaanxi Province, 2024). Moreover, opportunities exist for the Nigerian insurance industry to grow in alignment with global sustainability trends as indicated by the research of Huang and Lin (2023) which indicated that with appropriate regulatory frameworks and public awareness campaigns, green insurance could catalyse the adoption of sustainable practices across multiple sectors, including agriculture, energy, and real estate.

Risk Management Theory and Green Insurance

The risk management theory has evolved from the conventional risk management practices, which focused on specific risk categories in isolation to a more holistic and integrated approach to dealing with risks in totality. A core foundational aspect of risk management theory is the identification and assessment of risks which lays the groundwork for mitigation of risks. Stricker et al, (2022) posit that effective risk management leads to better insurance uptake decision making, particularly in situations where businesses and individuals face environmental risks. Insurers may promote a sustainable culture by teaching policyholders about the dangers of environmental deterioration and the advantages of green insurance. Since it enables people and businesses to make knowledgeable decisions about their

environmental effect, this educational component is essential for raising the demand for green insurance products. Since, the core duty of insurance is to effectively manage risk, the evolution of green insurance is aligned with its core responsibility of mitigating risks.

By promoting green insurance products, exposure to environmental hazards and climate change risk becomes reduced, and insurers can also encourage the adoption of sustainable practices among policyholders. By educating policyholders about the risks associated with environmental degradation and the benefits of green insurance, insurers can build a culture of sustainability. This educational aspect helps increase the demand for green insurance products, as it empowers individuals and organizations to make informed decisions regarding the environmental impact of climate risks. This aligns with the findings of Liu (2024), who highlight that green insurance not only aids in environmental risk management but also supports the development of green industries and technologies. Thus, risk management principles can facilitate the transition to a low-carbon economy by incentivizing environmentally responsible behaviour.

Institutional Theory

Institutional theory originated in sociology and organizational studies, primarily as a framework to understand how organizations conform to social norms, values, rules, and regulations established within their environment. Its development has roots in the early 20th century, drawing from foundational sociological work by Max Weber – who introduced the idea that organizations and societies are shaped by bureaucratic structures and rationalization, emphasizing that formal rules, hierarchy, and systematic processes in organizations help maintain order and predictability. It focuses on how regulatory frameworks, norms, and policies influence the development and implementation of practices, and this aptly applies to green insurance.

Several literatures support institutional theory as a model to encourage development and sustainability of the economy. Notable scholars like Peters & Simaens, (2020) explored the drivers and barriers to integrating sustainability into corporate strategy, using institutional theory as a framework. They posit that by conforming to the forces of the institutional environment, companies within an industry become more homogeneous in process and structure over time. This homogeneity process is shaped by the following three mechanisms: (a) coercive isomorphism- regulators, which companies depend on for resources, put pressure on them; (b) mimetic isomorphism- companies imitate other market players to reduce cognitive uncertainty; and (c) normative isomorphism- social factors such as media and trade associations put pressure on companies. Likewise, the work of Naumov (2024) considered several studies and submitted that applying institutional constructivism concepts aids sustainable developments through the development of policies on climate change, bio diversity conservation, and natural resource management. As noted by Chiaramonte et al. (2020); Lee & Fung (2023), the reinforcement of institutional pillars is essential for addressing deficiencies which brings a positive impact on the green insurance market. This aligns with institutional theory, which posits that strong institutions can create an enabling environment for sustainable practices. We can therefore surmise that in the context of green insurance, institutional

isomorphism plays a pertinent role through the establishment of regulatory policies and frameworks (coercive) by the Nigerian government which will shape the development of green policies and practices of insurance companies, also through the means of meeting up with societal expectations. Insurance companies are increasingly adopting green insurance policies designed to support environmentally friendly initiatives that help to mitigate climate change risks. (Belozyorov & Xie, 2021; Bressan, 2023) through the study of the China banking and insurance industry believed the emergence of green products resulted in response to coercive pressures from societal expectations and regulatory frameworks to build sustainability.

Sustainability Theory

The origin of sustainable theory can be traced back to the broader concept of sustainable development, which gained traction in the late 20th century. The most significant milestone in this evolution was the publication of the "Brundtland Report" in 1987 by the World Commission on Environment and Development (WCED), titled "Our Common Future". This report defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Gale, 2022). This foundational definition laid the groundwork for subsequent theories and frameworks that sought to integrate economic, environmental, and social dimensions into development practices.

Sustainable theory emphasizes the interconnection of economic growth, environmental protection, and social equity. This holistic approach is essential for addressing the complex challenges of sustainability. The discourse around sustainable theory also includes the debate between weak and strong sustainability as pointed out by Norouzi & Fani (2021) that with the increase of environmental concerns in recent decades, the concept of natural and physical capital, human and social capital has been added to the common literature of economics that weak sustainability typically allows for the substitution of natural capital with human-made capital, while strong sustainability emphasizes the preservation of natural capital as essential for future generations. In this vein, sustainable theory supports the essence of green insurance as part of industrial policy in properly mitigating ecological and climate risk and should be part of cognitive isomorphism.

Several literatures have pointed out the pivotal role of the insurance sector in financial intermediation, which is essential for economic growth. The sector's investments in various industries, including renewable energy and sustainable infrastructure, can stimulate economic activities and create jobs as cited by Onyegbula & Nwoye, (2023). By promoting green insurance, the insurance sector can facilitate investments in environmentally friendly projects, contributing to the national economy and addressing pressing environmental challenges.

Comparative Analysis of Green insurance in Nigeria and other Countries

The Study conducted by Olaniyi et al. (2020) demonstrates that Nigeria's economy, especially in sectors like agriculture, properties, oil, and infrastructure, is vulnerable to climate change impacts, which often lead to

significant economic losses. Green insurance, therefore offer financial protection against these risks, which can help reduce the immediate fiscal strain on affected industrial sectors and communities, thereby fostering stability and sustainability. However green insurance development in Nigeria is been severely hampered by multiple challenges hindering its growth as noted by Okonkwo & Agbaje (2020), Desalegan (2023) who identify poor infrastructure, high premiums, inadequate regulatory frameworks, and limited actuarial data on environmental risks as primary barriers. The authors argue that these challenges create an unfavorable environment for insurers to develop and promote green insurance products.

These difficulties are mirrored in other developing countries, where comparable problems are significant roadblocks to the effective adoption of green insurance programs. In line with findings from other developing nations like Pakistan, where green financial development has been connected to economic growth, studies have shown that the implementation of green insurance has a positive impact on economic growth rates (Nawaz et al., 2021). Countries such as China have made significant progress in their green insurance system by creating models that emphasize the role of local governments and enterprises in promoting green insurance which contrasts with Nigeria's current approach that struggles with political instability and corruption (Belozyorov & Xie, 2021)

To address this gap, several researchers advocate for industrial policy reforms supporting green insurance. Okoye & Akpan (2021), for example, recommend that Nigeria's government and regulatory bodies create industrial policies such as tax reliefs and subsidies for both insurers and policyholders engaging in green insurance. They propose that integrating these measures into Nigeria's broader climate policy framework could create an enabling environment for green insurance to thrive.

Empirical evidence suggests the following strategies to advance green insurance in Nigeria:

- **Increased Awareness and Education:** Public education and awareness campaigns are required to increase green insurance education in Nigeria.
- **Regulatory Reforms and Incentives:** Policy interventions, such as tax incentives, subsidies, and mandatory climate insurance for certain industries, could catalyze growth in green insurance.
- **Support for Actuarial Research:** Investment in data collection and actuarial research is necessary to support accurate risk assessment and pricing, making green insurance more viable for insurers.
- **Private-Public Partnerships:** Collaboration between government, private insurers, and international organizations could provide funding and expertise to establish green insurance in Nigeria.

3. RESEARCH METHODS

The study adopts a cross-sectional approach, integrating descriptive and correlational research designs to explore the relationships between green insurance adoption and economic sustainability indicators. Structured questionnaires were distributed to stakeholders in Nigeria's insurance sector, including insurance companies, policyholders, and regulatory bodies. The survey will capture

perceptions of green insurance, awareness levels, willingness to adopt green insurance products, and perceived economic benefits. Semi-structured interviews will also be conducted with experts, including environmental economists, and sustainability advocates. These interviews aim to understand the unique challenges in implementing green insurance in Nigeria and gather insights on regulatory and market

The study will use purposive sampling for interviews, targeting experts with specialized knowledge in green insurance and sustainability. Stratified sampling will be used to improve the quality of sampling. The sample will include 200 respondents from the insurance sector for surveys for interviews to ensure data adequacy.

Regression analysis was adopted to examine relationships between green insurance adoption and economic sustainability, investment in green initiatives, and risk mitigation benefits beliefs. The study ensures validity through verification of questionnaires by experts. Reliability was achieved by testing with Cronbach alpha; 0.72 was obtained.

4. Data Analysis and Interpretation

Table 4.1 Demographic Information

Variable	Category	Frequency
Gender	Female	72
	Male	119
Age	25-34	101
	35-44	54
	45-54	18
	55 and above	9
Occupation	Government official	9
	Insurance Professional	108
	Others	74
Level of education	Bachelor	109
	Masters	73
	Others (professional qualifications)	9
	Semi-urban	**45**
	Urban	143

Source: Field Survey, 2024.

The study on *Green Insurance and Economic Sustainability in Nigeria* involved a diverse sample of 191 respondents, primarily insurance professionals (108-56.54%), others 74; with 72 females and 119 males. Most respondents were aged 25–34 (101-52,88%), reflecting a youthful demographic, and held bachelor's (109-57.07%) or master's degrees (73). The majority resided in urban areas (143-74,87%), with fewer from semi-urban (45) and rural regions (18).

The demographic data indicates a predominance of educated and urban-based insurance professionals in the sample. This suggests that the perspectives gathered are largely from individuals with a professional understanding of the insurance industry, which may provide informed insights into the readiness of customers to buy into green insurance as a response to reducing climate risk. However, none rural representation implies a gap in understanding how the challenges and opportunities for green insurance adoption in less urbanized areas are perceived.

Table 4.2 Awareness of Green Insurance

Variable	Category	Frequency
Are you familiar with the concept of green insurance?	No	18
	Somewhat	54
	Yes	119

If yes, where did you first hear about green insurance?	Government/NGO programs	9
	Insurance company	45
	Other	27
	Social media	47
	Workplace/Professional Networks	54
How would you rate your understanding of green insurance?	Basic understanding	128
	Knowledgeable	45
	Not Knowledgeable	18
Do you believe green insurance is relevant to addressing climate risk in Nigeria?	Agree	109
	Neutral	36
	Strongly agree	46

Source: Field Survey, 2024.

Table 4.2 shows growing awareness of green insurance, with 119-62.3% respondents familiar with the concept, 54 somewhat familiar, and 18 unfamiliar. Key information sources included workplace networks (54), social media (47), and insurance companies (45). Most respondents (128-67.03%) had a basic understanding, while 45 were knowledgeable, and 18 lacked knowledge. On its relevance to addressing climate risks in Nigeria, 109-57.09% agreed, 46 strongly agreed, and 36 were neutral, highlighting its perceived importance despite limited in-depth understanding.

The high awareness (119-62.3%) respondents familiar with green insurance reflect a growing interest in green insurance, but the lack of in-depth understanding (128-67.02%) respondents with only basic knowledge highlights an educational gap. This limits the ability of stakeholders to advocate for or adopt green insurance effectively. Public awareness campaigns could address these gaps and improve engagement.

Hypothesis one

H0: Higher awareness and implementation of green insurance cannot lead to improved environmental, social, and governance (ESG) indicators in Nigeria.

Independent variable = Awareness and implementation of green insurance

Dependent variable = Improved environmental, social, and governance (ESG)

Table 4.3 Regression output of Awareness and implementation of green insurance on Improved environmental, social, and governance (ESG)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.37
R Square	0.14
Adjusted R Square	0.14
Standard Error	1.26

Observations	191

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	48.84	48.84	30.66	0.00000
Residual	189	301.03	1.59		
Total	190	349.87			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.73	0.36	4.77	0.00	1.01	2.45	1.01	2.45
Awareness and implementation of green insurance	0.91	0.16	5.54	0.00	0.58	1.23	0.58	1.23

The regression analysis conducted for Hypothesis One, which explores whether higher awareness and implementation of green insurance can lead to improved environmental, social, and governance (ESG) indicators in Nigeria, provides insightful results. The correlation coefficient (R) of 0.37 suggests a moderate positive relationship between the awareness and implementation of green insurance and promotion of ESG indicators. The R Square value of 0.14 indicates that approximately 14% of the variation in ESG indicators can be explained by I% of the awareness and implementation of green insurance, signifying a reasonable effect, though not a very high one. The F-value of 30.66, with a p-value of 0.00, demonstrates that the regression model is statistically significant, confirming that the relationship between the variables is not due to chance.

The coefficient for awareness and implementation of green insurance is 0.91, meaning that for each unit increase in awareness and implementation, ESG indicators are expected to improve by 91 units. This coefficient is statistically significant, with a t-statistic of 5.54 and a p-value of 0.00. The confidence interval for this coefficient (0.58 to 1.23) further supports the positive impact of green insurance on ESG indicators.

Based on these findings, the null hypothesis (H0) cannot be accepted and the study finds reasonable evidence that higher awareness and implementation of green insurance do indeed lead to improved ESG indicators in Nigeria. This highlights the potential of green insurance as an effective tool for enhancing ESG outcomes in the country.

Table 4.4 Perceptions of Green Insurance

Variable	Category	Frequency
In your opinion, what is the primary purpose of Green Insurance?	Encourage environmentally responsible behaviours	135
	Financial protection against climate risks	39
	Support economic stability	17
How important do you think green insurance is for Nigeria's future economic stability	Important	100
	Neutral	18
	Very important	73
To what extent do you think the public is aware of Green insurance options?	Minimally aware	117
	Moderately aware	47
	Not aware at all	27
Do you believe green insurance will benefit the Nigerian economy?	Agree	118
	Neutral	36
	Strongly agree	37

Source: Field Survey, 2024.

Table 4.4 highlights varied perceptions of green insurance among respondents. Most (135) believe its primary purpose is to encourage environmentally responsible behaviours, followed by financial protection against climate risks (39) and support for economic stability (17). Regarding its importance for Nigeria's future economic stability, 100 respondents considered it important, 73 rated it very important, and 18 were neutral.

Public awareness of green insurance is perceived to be limited, with 117 respondents stating that the public is minimally aware, 47 reporting moderate awareness, and 27 believing the public is not aware at all. Nonetheless, the economic benefits of green insurance are widely acknowledged, with 118 respondents agreeing, 37 strongly agreeing, and 36 remaining neutral. These findings underscore the perceived significance of green insurance while highlighting gaps in public awareness.

The perception that green insurance encourages environmentally responsible behaviour (135 responses) and its importance for economic stability (173 agreeing or strongly agreeing) underscores its potential as a tool for promoting sustainable practices. However, the perceived low public awareness (117 respondents indicating minimal awareness) highlights a barrier to widespread adoption that must be addressed for green insurance to have a tangible impact.

Table 4.5 Adoption and Challenges of Green Insurance

Variable	Category	Frequency
Are you aware of any green insurance product offered in Nigeria?	No	173
	Yes	18
What do you believe are the	High cost of premiums	9

main challenges in adopting green insurance in Nigeria?	Insufficient climate risk data	18
	Lack of interest from insurers	10
	Lack of public awareness	136
	Other	18
In your opinion, what role should the government play in promoting green insurance?	Create awareness campaigns	100
	Enforce environmental policies and standards	45
	Offer tax incentives to insurers	27
	Provide subsidies for green insurance premiums	10
	Support climate data collection analysis	9
Have you observed any increase in demand for climate-related or green insurance products?	Yes, significant increase	
	Yes, slight increase	55
	No, no change	63
	Unsure	19
How do you perceive the current state of green insurance in Nigeria?	Neutral	56
	Very weak	27
	Strong	18

Source: Field Survey, 2024.

Table 4.5 reveals limited awareness and adoption of green insurance in Nigeria, with only 18 respondents aware of any products. The key challenges include a lack of public awareness (136), insufficient climate risk data (18), and limited insurer interest (10). Respondents emphasized the government's role in creating awareness campaigns (100) and enforcing environmental policies (45). While 55 observed a slight increase in demand for green insurance, 63 saw no change. The current state of green insurance is largely viewed as neutral (56) or very weak (27), highlighting the need for significant efforts to boost awareness and adoption.

The overwhelming lack of awareness of existing green insurance products (173 unaware) and the perceived primary challenge of public awareness (136 responses) suggest that green insurance is still in its infancy in Nigeria. The emphasis on government roles such as awareness campaigns (100 responses) and policy enforcement (45 responses) underscores the need for active government intervention to drive adoption and overcome barriers like insufficient climate risk data and high premiums.

Hypothesis two

H0: Adoption of green insurance does not positively influence operational resilience of economic actors in Nigeria.

Interdependent variable = Adoption of green insurance

Dependent variable = Operational resilience of economic actors

Table 4.6: **Regression summary of Adoption of green insurance on Operational resilience of economic actors**

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.29
R Square	0.08
Adjusted R Square	0.08
Standard Error	0.60
Observations	191

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.10	6.10	16.80	0.00
Residual	189	68.63	0.36		
Total	190	74.73			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.84	0.12	15.98	0.00	1.62	2.07	1.62	2.07
Operational resilience economic actors	0.25	0.06	4.10	0.00	0.13	0.38	0.13	0.38

The regression analysis for Hypothesis Two, which investigates whether the adoption of green insurance positively influences the operational resilience of economic actors in Nigeria, provides notable findings. The correlation coefficient (R) of 0.29 indicates a weak positive relationship between the adoption of green insurance and operational resilience. The R Square value of 0.08 suggests that only 8% of the variation in operational resilience can be explained by the adoption of green insurance. While this indicates considerable effect, the influence is relatively small. The F-value of 16.80, with a p-value of 0.00, shows that the regression model is statistically significant, meaning the relationship between the variables is unlikely to be due to random chance.

The coefficient for the adoption of green insurance is 0.25, indicating that for each unit increase in the adoption of green insurance, operational resilience of economic actors is expected to improve by 0.25 units. This coefficient is statistically significant, with a t-statistic of 4.10 and a p-value of 0.00, suggesting that the effect of green insurance adoption on operational resilience is real and not due to random variability. The confidence interval for this coefficient (0.13 to 0.38) confirms that the true effect is expected to fall within this range, further supporting the positive relationship.

In conclusion, the regression results provide enough evidence to reject the null hypothesis (H0) and accept the alternative hypothesis. The adoption of green insurance positively influences the

operational resilience of economic actors in Nigeria.

4.7 Benefits and Impact on Economic Sustainability

Variable	Category	Frequency
What benefits do you think green insurance could bring to Nigeria's economy?	Economic stability for climate - sensitive sectors (e.g agriculture)	91
	Growth of sustainable industries (e.g renewable energy)	61
	Improved resilience to climate disasters	37
	Attraction of foreign investments	1
	Reduced public spending on disaster recovery	1
Do you believe green insurance could encourage businesses to adopt more environmentally sustainable practices?	Agree	99
	Neutral	20
	Strongly agree	72
Which sectors do you think would benefit most from green insurance in Nigeria?	Agriculture	82
	Construction and infrastructure	10
	Energy	54
	Other	27
	Tourism and transport	9

Source: Field Survey, 2024.

Table 4.7 highlights the potential benefits of green insurance to the Nigerian economy, including fostering sustainable industries (61), enhancing resilience to climate disasters (37), and ensuring stability for climate-sensitive sectors like agriculture (91). Most respondents believe green insurance could encourage environmentally sustainable business practices, with 99 agreeing and 72 strongly agreeing. Agriculture (82) and energy (54) are seen as the sectors most likely to benefit, emphasizing green insurance's potential to promote sustainability and economic growth in critical industries

The recognition of benefits which includes fostering sustainable industries (110 responses) and improving resilience to climate disasters (100 responses) highlights green insurance's potential to enhance economic sustainability. Agriculture, identified as the most likely sector to benefit (82 responses), reveals the critical role of green insurance in stabilizing climate-sensitive industries. However, the attraction of foreign investments and reduced public disaster recovery spending garnered low recognition indicating a need for broader awareness of its economic potential.

Hypothesis three

H0: Regulatory support does not significantly impact the development and adoption of green insurance policies in Nigeria.

Independent variable = Regulatory support

Dependent variable = Development and adoption of green insurance policies

Table 4.8: Regression output of Regulatory support Development and adoption of green insurance policies

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.17
R Square	0.03
Adjusted R Square	0.02
Standard Error	0.93
Observations	191

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1.00	4.87	4.87	5.60	0.02
Residual	189.00	164.31	0.87		
Total	190.00	169.18			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.32	0.24	5.55	0.00	0.85	1.79	0.85	1.79
Regulatory support	0.28	0.12	2.37	0.02	0.05	0.51	0.05	0.51

The regression analysis for Hypothesis Three, which examined the impact of regulatory support on the development and adoption of green insurance policies in Nigeria, revealed some interesting findings. The correlation coefficient (Multiple R) of 0.17 indicates a weak positive relationship between regulatory support and the development and adoption of green insurance policies. The R Square value of 0.03 suggests that only 3% of the variation in the development and adoption of green insurance policies can be explained by regulatory support, indicating a relatively low level of influence. However, the F-value of 5.60 with a p-value of 0.02 indicates that the regression model is statistically significant, meaning the relationship is not due to random chance.

The coefficient for regulatory support is 0.28, which implies that for each unit increase in regulatory support, the development and adoption of green insurance policies are expected to increase by 0.28 units. This coefficient is statistically significant, with a t-statistic of 2.37 and a p-value of 0.02, confirming that regulatory support indeed have a positive effect on the development and adoption of green insurance policies. The confidence interval for the coefficient (0.05 to 0.51) further confirms the true significance of regulatory support in fostering green insurance adoption.

In conclusion, the regression results provide reasonable evidence to reject the null hypothesis (H0) and accept that regulatory support significantly impacts the development and adoption of green insurance policies in Nigeria.

Summary of the findings

The study's hypotheses suggest that green insurance has a significant impact on various aspects of sustainability in Nigeria. Hypothesis One; proposes that increased awareness and the implementation of green insurance can positively affect environmental, social, and governance (ESG) indicators, thereby improving sustainability outcomes. Hypothesis Two; highlights that the adoption of green insurance strengthens operational resilience for economic actors, enabling businesses to better navigate climate-related risks. Finally, Hypothesis Three; asserts that regulatory support plays a crucial role in the development and adoption of green insurance policies, though its influence is modest. Overall, the findings emphasize that awareness, adoption, and regulatory backing are essential for leveraging green insurance to foster economic sustainability in Nigeria.

Concluding Remarks

The findings from the study suggest that while there is growing awareness of green insurance and optimism about its benefits, significant challenges such as, limited public awareness, high premiums, and insufficient government intervention hamper its adoption. However, green insurance plays a significant role in enhancing Nigeria's economic sustainability, particularly in terms of environmental, social, and governance (ESG) indicators, operational resilience, and policy adoption. Addressing these challenges through targeted industrial policies, education campaigns, and sector-specific strategies could position green insurance as a key driver of economic sustainability in Nigeria.

This analytical discourse has provided insights needed to give back up to the importance of industrial policies and green insurance as an instrument pivotal to the continued growth and stability of agriculture, oil and gas sector as being vital for Nigeria's sustainability, and its adoption requires better awareness, regulatory support, and business integration.

Recommendations

This discourse recommends the increased efforts of Policymakers to strengthen regulatory frameworks to support green insurance and increase its awareness. Business organizations are advised to explore the advantages of adopting green insurance policies to improve resilience against optimal actuarial insurance which indirectly promotes their reputation in

conforming to the institutional theory of promoting environmental sustainability.

Insurance providers have an opportunity to expand their offerings, especially in high-risk sectors like agriculture and energy, and to participate in industrial policy settings for several industrial sectors. Financial service regulators could peek into the relevance of green insurance as catalyst for industrial policy development anchored on ESG

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