An Assessment of Risk Culture Practices on the Financial Efficiency of General Insurance Companies in Nigeria.

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Abstract

Insurance has been adjudged to be the most effective risk management technique because of its applicability to all spheres of life. However, the inverse nature of insurance operations necessitates the need for an insurance companies to embrace a combinations of techniques through the development of risk culture. Therefore, the study assessed the influence of risk culture practices on the financial efficiency of general insurance companies in the Nigerian insurance market. The study employed correlational research design. The population comprised of forty one general insurance companies as at January, 2019. Census sampling technique was adopted using a secondary data obtained from the annual financial statements of all general insurance companies. The study used risk tolerance, risk appetite and underwriting capacity as indicators of risk culture while reserve, investment and profitability were adopted as surrogates of financial efficiency. Findings of the study revealed statistical influence of risk tolerance and risk appetite on reserve and investment respectively while there was no statistical relationship between underwriting capacity and profitability. Hence, risk tolerance and risk appetite are strong risk culture practices that guide general insurance companies in determining their level of reserve and investment strategy. The study recommended that general insurance companies in Nigeria should develop a robust risk culture to compliment widely used reinsurance arrangements. This can be done by creating a virile investment and actuarial departments that will constantly review claims fluctuations, investment pattern and monitor the reserve level.
Key words: *Risk culture, Risk culture practices, Financial efficiency, insurance, profitability.*

Introduction

Risk is present whenever human beings are unable to control an outcome of a situation (Diacon & Carter, 2015). These outcomes according to Loomba (2014) are multifaceted and may relate to financial, non-financial, entity specific, intra-agency, entity's assets, or probable exposures. The dynamism of risk and its impact on every strata of human life and environment has made various disciplines define it from different perspectives. However, risk from insurance point of view is a condition which has possibility of an adverse deviation from a desired outcome that is expected or hoped for (Rejda, 2013; Vaughan & Vaughan, 2014; Oluoma, 2014). This definition presupposes that risk can be seen as adverse deviation, uncertainty, possibility of unfortunate occurrence and unpredictability. Precisely, it indicates possible variability in outcomes around expected value, chance of loss, peril and hazard (Rejda, 2008; Dorfman 2009). The uncertainty and unpredictability nature of risk presume the need to manage risk in order to reduce or eliminate its impacts. Though, scholars have delineated risk management into informal or formal (Dorfman, 2009; Epetimehin, 2013; Loomba, 2014). However, insurance as formal risk management technique has been proven to be the most driving force of modern risk management because of its applicability in all spheres of life (Dionne & Triski, 2008; Redja & McNamara, 2013; Oluoma, 2014). Its business model rests on transfer and pooling of risk based on the principles of large numbers (Redja & McNamara, 2013). The inverse cycle model for insurance business has made its operations distinctly different from other financial intermediation like banking and capital market (De Casteris, 2005; Obalola & Abass, 2015). Hence, insurance companies form an expectations (compensation) about the future before risks can be assumed (Lelyveld, Liedorp & Kampaman 2011). Forming of these expectations is however hinged on the creation of common pool, equitable premium, financial efficiency and risk culture practices that have been developed so as to narrow the gap between the expected and the actual claims. A risk culture therefore describes the conviction and corporate state of mind of decision makers at all levels within an insurance company before assuming risk from prospective insured (KPMG, 2010; Simon, 2012).

Statement of the problem

Adoption of risk culture is borne out of the fact that risk assumed by insurance companies can no longer be managed in silo but a combination of other risk management techniques (Acharyya & Johnson, 2006; Institute of Risk Management, 2012; Roschmann, 2014). While this has been the global trend, there seems to be little appreciation by Nigerian insurance companies to look at that direction. Though, much attention has been given to risk culture in

manufacturing, engineering, beverage and other sensitive industries (Schein, 2012), its implementation from Nigerian insurance is still in its early stages. This is however traceable to heavy reliance on reinsurance as a major risk management technique (Abass, 2018). Recent trend in the Nigerian insurance industry has linked poor performance of insurance companies to weak tolerance level and appetite (Adeyele & Maiturare, 2012). In response to this, the regulatory body (National Insurance Commission) has issued guidelines for risk-based supervision. Despite this directive, there seems to be unconscious efforts of general insurance companies to identify the amount of risk they are prepared to underwrite because there is no known scientific method(s) of setting funds set aside for emergencies and claims that have been triggered but not yet reported. More importantly, Nigerian insurance companies have always be reluctant to venture into relatively emerging risks like index and agriculture insurance. This may not be unconnected to their poor risk appetite orchestrated by low solvency margin, capital adequacy and poor investment. Heavy reliance of reinsurance arrangements by Nigerian insurance companies compared to other African insurance markets had been sharply traced to poor underwriting capacity. For instance, the rate of total gross premium written to reinsurance utilisation by general insurance companies in Nigeria in 2017 was 46%. This shows a steady rise from 2012 to 2016 representing 30%, 34%, 41%, 42% and 43% respectively (Nigerian Insurance Digest, 2017). The implication of this is that they spend large chunk of premium written on reinsurance premium which may lead to inadequate cash outflow due to poor underwriting capacity.

The motivation for the study is the dearth of empirical evidence of influence of risk culture practices that inculcate risk appetite, risk tolerance and underwriting capacity and their impact on the financial efficiency on the general insurance companies especially in Nigerian.

Research hypotheses

H_{01}: Risk tolerance does not significantly influence reserve of general insurance companies in Nigeria.

H_{02}: Risk appetite does not have an effect on total investment of general insurance companies in Nigeria

H_{03}: Underwriting capacity has no influence on profitability of general insurance companies in Nigeria.

Literature review

Concept of Risk Culture

Culture is referred as values, expectations, beliefs, collective programming of the human mind, grown opinions and norms, or basic assumptions (Sackmann, 2002). It is often associated with artefact, espoused values and basic assumptions (Schein, 2012). However, risk culture as an independent concept in the field of risk management is defined as values, beliefs, knowledge and understanding about risk shared by group of people within a common intended purpose (Sliwinski & Klapkiv, 2016). According to Roschmann, (2014), it encompasses various approaches adopted by insurance companies to manage risks they assume from the insureds. Its emergence is an important enabler of effective risk management. Though, the concept of risk culture from insurance is at infant level. Academic literature, publications by consultants, regulators and annual reports have scanned risk culture practices to include risk appetite, risk tolerance, underwriting capacity, appointment of chief risk officer (CRO) and Enterprise Risk management (Swiss Re, 2004; Acharyya & Johnson, 2006; CRO Forum, 2009; Roschmann, 2014 &The Risk and Insurance Management Society, 2012). This study conceptualizes risk culture practices into risk tolerance, risk appetite and underwriting capacity.

Risk tolerance measures the degree of uncertainty that an insurance company is willing to accept in respect of negative changes to its business or assets (Roschmann, 2014). It relates to the amount of market risk, such as the volatility, or market ups and downs that an investor can tolerate. In setting up risk tolerance level, Committee of Sponsoring Organizations of the Tradeway Commission (COSO) (2009) opines that management must consider the relative importance of related objectives and aligns its risks tolerances with the risk appetite. Risk tolerance is determined by frequency and severity of potential claims, underwriting guide and capital adequacy (Bertha, Yohanes & Putu, 2018).

On the other hand risk appetite according to Chaplin (2007) is the maximum amount of risk that an insurance company is willing to accept in the pursuit of its mission, objectives and strategic plan. Though, risk appetite revolves around stakeholders within an insurance company, Epetimehin (2013) suggests that its execution relies on the executive management in balancing the relationship between the organisation's value (expressed as an annual return) and the maximum acceptable level of risk (expressed as the upward-sloping but convex). Risk appetite of insurance company may addressed both in quantitative and qualitative (The Risk and Insurance Management Society, 2012).

Underwriting capacity shows an insurance company's ability to pay for its obligations (Pritchett, Doerpinghaus & Athearn, 1996). It shows the financial ability of an insurance

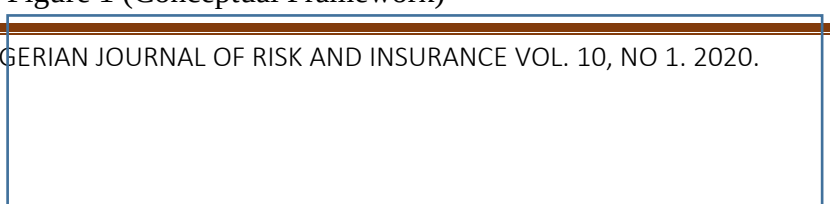
company to underwrite new business (Rejda, 2008). Though, determination of underwriting capacity may vary from one insurance company to another, Rejda and MacNamara (2013) posit that it may be influenced by the regulatory guidelines.

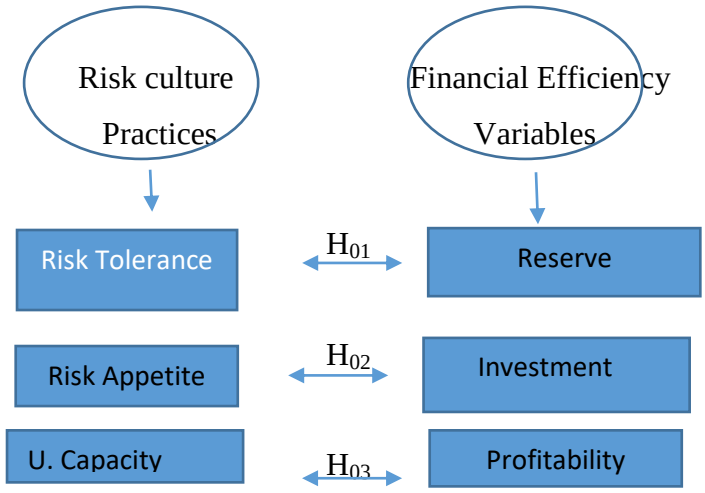
Concept of Financial Efficiency

Financial efficiency is an organisation's ability to translate it financial resources into mission related activities (Virambhai, 2010). It measures how well an organisation has managed certain trade-offs (risk and return, liquidity and profitability) in the use of is financial resources (Virambhai, 2010). Different authors have indicated drivers of financial efficiency in insurance business to include; financing structure, profitability, repayment capacity, equity premium, net investment income, management expenses, premium, investment income, debt capital service and material, equity capital, incurred claims and reserve (Daicon, 2001; Cummins & Nini, 2002; Chen & Wong, 2004; Adams & Buckle, 2003; Charumathi, 2012; Alshatti, 2015). This study conceptualizes financial efficiency into reserve, investment and profitability.

A reserve is a stated amount of liquid assets that an insurer must have in hand that will satisfy all claims from and other outstanding liabilities. Reserve in insurance operations according to Mackednie (2017) entails claims reserve; Incurred but Not Reported (IBNR) and Statutory Reserves. The need for reserve as a major determinant of financial efficiency of insurance companies according to Faculty and Institute of Actuaries (1997) include financial soundness, pricing and retention level. Investment on the other hand is a monetary asset purchased with the intention that such asset will yield income in the future or will later be sold at a higher price for a profit (Chen & Wong, 2004). Investment in insurance business is concerned with the application of insurance funds which are immediately required for expenditure or payment of insurance claims and other benefits (Ehiogu 2017). Need for investment according to Davis (2000) is to accumulate more funds to cater for catastrophic claims. Profitability according to Alshatti (2015) is the ability of an organisation to generate more revenue over expenses. It refers to the operating efficiency of an organisation (Tulsian, 2014). Scholars have proposed several profitability ratios like return on equity, net profit margin, return on assets, return on investment, return on investment invested capital, gross profit margin and so on (Karaca & Cigdem, 2012; Heikal, Khaddafi & Ummah, 2014). However, return on asset has been widely adopted as proxy for profitability of insurance companies (Tulsian, 2014; Malik, 2011; Kozak, 2011).

Figure 1 (Conceptual Framework)





Theoretical review

This study is hinged on organisational culture theory. OCT explains cultural influences on all aspects of organisational's life (Schein, 2012). Though, most organisational culture theorists emphasize the fact that there is no single best organisational culture. This notwithstanding, Roschmann (2014) views risk culture as a subset of organisational culture that helps in effective risk management. Approaches to organisational culture has been classified into dimensional and interrelated (Hofstede, Neuijen, Ohayv & Sanders, 1990; Schein, 2002). While the dimensional adopts organisational culture dynamics which considerably differ from natural culture dynamics. The interrelated approach assumes that organisation's culture is characterised by bidirectional links indicating interdependence. This link may be linear or recursive illustrating certain relationships between the domains of the theory. The two models provide deeper understanding to risk culture dimension that an insurance company may adopt. Both approaches may provide relationship that are grounded in culture and organisational studies and also help establish a better complete relationship between subculture of an organisation like risk culture and the determination of financial efficiency of the organisation.

Empirical review

Previous studies attempt to link risk culture to financial efficiency. This is not unconnected to the global financial crisis of 2008, which has necessitated a number of studies to examine the linkages between the two variables (COSO, 2009; CRO Forum, 2009; Sliwinski & Klapkiv, 2016). Relatedly, European Commission emphasized the relationship between risk management culture and organisational failures (EC 2010). Though, Schalk (2008) highlights the complexity and multidirectional nature of culture, he reiterates the importance of risk

culture as one of major subcultures in an organisation. Therefore, risk culture encompasses an organisation's risk appetite, risk tolerance, capacity and risk management practices as demonstrated by its employees (KPMG, 2008).

Research method

This study employed correlational research design. The research design was employed in other to find out the statistical relationship between the two variables without controlling either of them. The population comprised of forty one (41) general insurance companies in Nigeria as January 2019 (National Insurance Commission, 2019). General insurance companies are licensed companies that underwrite non-life risks. The study adopted census sampling technique where all units of the population were considered. Annual financial reports of all the general insurance companies were gathered cumulatively over a ten year period of 2008 to 2017. Descriptive and regression analysis were employed to ascertain the relationship between risk culture practices (risk tolerance, risk appetite, and underwriting) and financial efficiency variables (reserve, total investment, and profitability). Reliability, normality, autocorrelation and heteroscedasticity test were carried out on the data.

Model specification and analytical variables

$$FF = f(RC) \quad (1)$$

Where: $RC = RT, RA, UN, \mathcal{E}$ (1a)

$FF = RE, IN, PR, \mathcal{E}$ (1b)

$$FF = \alpha + \beta_1(RC)RT + \beta_2(RC)RA + \beta_3(RC)UN + \mathcal{E}$$

Table 2 Definition of Variables

Variables	Definitions	Measurement

Dependent Variables

RE	-	Reserve	Earned Premium x Expected Losses – Losses paid
IN	-	Investment	Net Investment Income
PR	-	ROA	Profit before tax /Average Total Asset

Independent Variables

RT	-	Risk Tolerance	Capital Adequacy
RA	-	Risk Appetite	Solvency
UC	-	Underwriting Capacity	Combined Ratio+ Reserve

4.0 DATA PRESENTATION

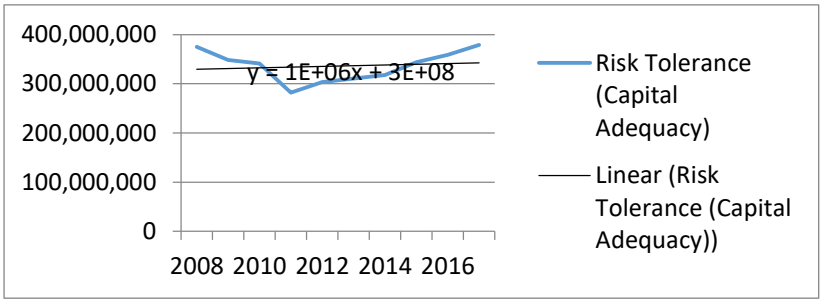


Figure 2 Line Charts for risk tolerance (Capital adequacy)

Source: Researchers' computation (2019)

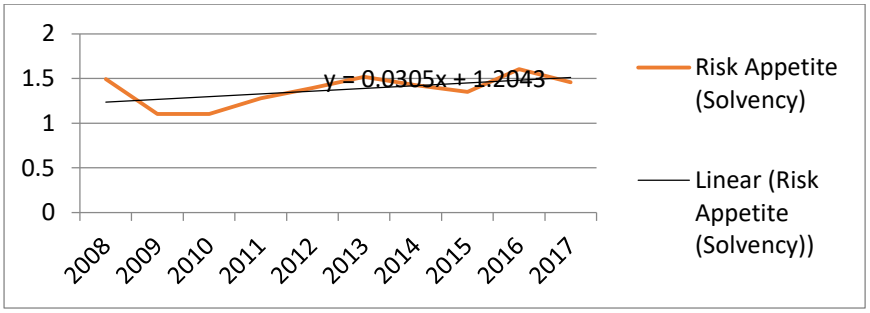


Figure 3 Line Charts for risk appetite (Solvency)

Source: Researchers' computation (2019)

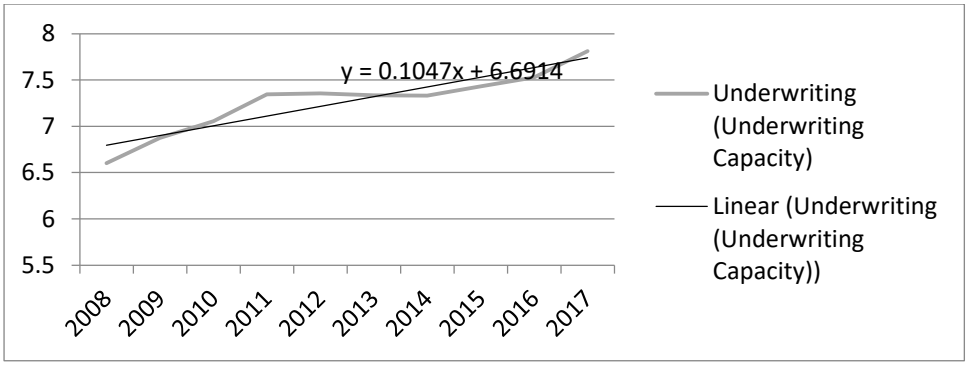


Figure 4 Line Charts for Underwriting Capacity

Source: Researchers' computation (2019)

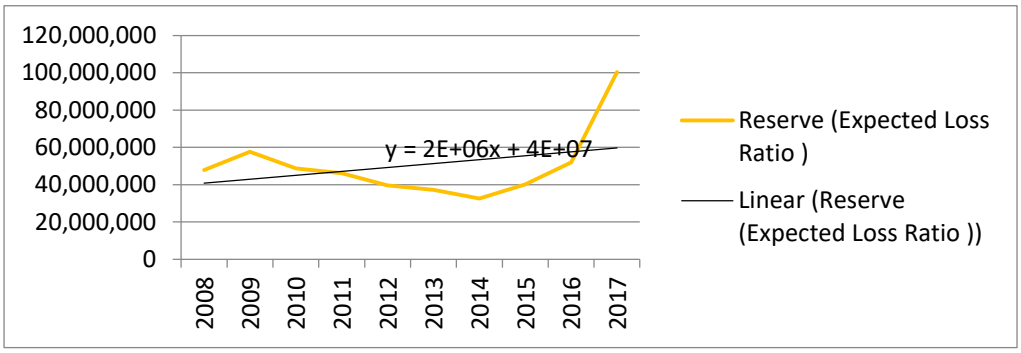


Figure 5 Line Charts for Reserve

Source: Researchers' computation (2019)

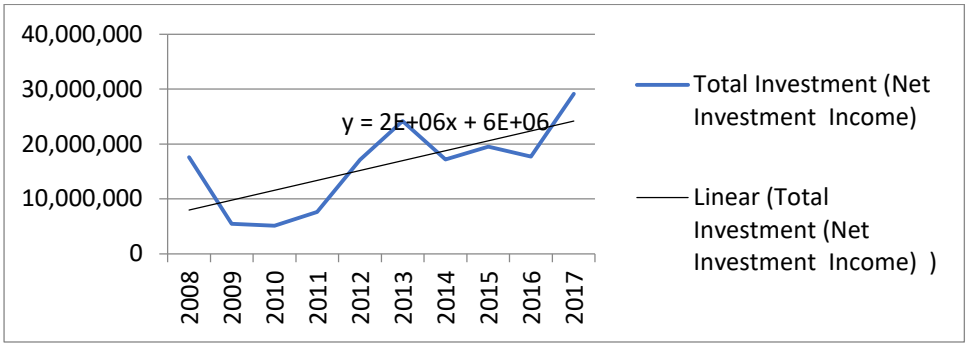


Figure 6 Line Charts for Investment

Source: Researchers' computation (2019)

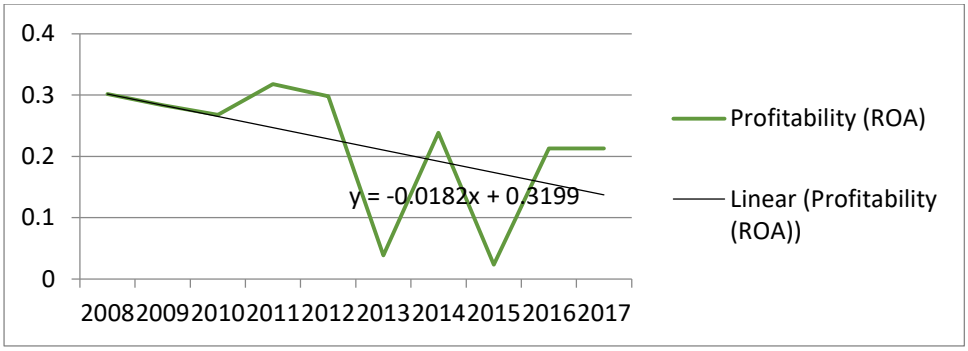


Figure 7 Line Charts for profitability

Source: Researchers' computation (2019)

Table 3: Test of Hypothesis 1

Regression Analysis

r^2	0.368	n	10
r	0.607	k	1
Std. Error	16146644.374	Dep. Var.	**Reserve**
	Durbin-Watson =	2.34	

Regression output					*confidence interval*	
variables	*coefficients*	*std. error*	*t (df=8)*	*p-value*	*Tolerance*	*VIF*
Intercept	-73,058, 690.2446	57,343, 941.9067	-1.274	.2384		
Risk Tolerance (Capital Adequacy)	0.3669	0.1700	2.158	.00630	1.000	1.000

Table 3: Test of Hypothesis 2

Regression Analysis

r^2	0.628	n	10
r	0.793	k	1
Std. Error	5096009.752	Dep. Var.	
		Durbin-Watson =	2.43

Regression output					*confidence interval*	
variables	*coefficients*	*std. error*	*t (df=8)*	*p-value*	*Tolerance*	*VIF*
Intercept	-34,660,954.8773	13,885,578.7029	-2.496	.0372		
Risk Appetite (Solvency)	36,969,818.6719	10,052,304.2715	3.678	.0062	1.000	1.000

Hypothesis 3

Regression Analysis

r^2	0.144	n	10
r	-0.380	k	1
Std. Error	0.104	Dep. Var.	**Profitability (ROA)**
		Durbin-Watson =	2.31

Regression output					*confidence interval*		
variables	*coefficients*	*std. error*	*t (df=8)*	*p-value*	*95% lower*	*95% upper*	*VIF*
Intercept	1.0714	0.7349	1.458	.1830	-0.6232	2.7661	
Underwriting (Underwriting Capacity)	-0.1172	0.1010	-1.160	.2794	-0.3502	0.1157	1.000

Discussion of findings

Figure 2 shows a near constant trend in risk tolerance of general insurance companies in Nigerian Insurance industry from for the ten year period while figure 3 shows a slight increase in the risk appetite while figure 4 depicts a zig-zag movement in the underwriting capacity. Figure 5 illustrates a relatively upward in the reserve trend while figure 6 demonstrates a sharp and steady upward trend in the total investment. On the other hand, figure 7 shows a steady downward trend in profitability.

The regression on table 3 low positive relationship between risk tolerance and reserve (r = 0.607). However, 36.8% of the variance observed reserve of general insurance companies in Nigeria is explained by risk tolerance. The result is statistically significant at 0.0630. An examination of the coefficient of risk tolerance and its associated p-value in the regression output shows that risk tolerance is significant in predicting reserve of general insurance companies in Nigeria. The result is consistent with the study of RIMS Executive Report, (2012) and Bertha et al (2018). The findings reveal that risk tolerance is a risk culture practice that guides insurance companies in underwriting, determines the potential claims, and monitors capital adequacy. The regression table 4 shows a statistical relationship between risk appetite and total investment of general insurance companies in Nigeria. (r = 0.628). 79.3% of the variance observed in total investment of general insurance companies in Nigeria is explained by risk appetite. The result is statistically significant at 0.0062. Therefore, risk appetite has a significant effect on total investment of the non-life insurance companies in Nigeria. This result supports by the findings of Epetimehin (2013) and IRMI (2010). Their

findings affirm that risk appetite lies on the investment strategy adopted by executive management of insurance companies. Hence, investment is a key risk culture practice that serves as a buffer for insurance companies when decide to assume more risks. Investment strategy shows the maximum level an insurance company can prepared to bear to achieve a minimum level of return. Moreover, the regression on table 5 indicates no relationship between underwriting capacity and profitability of general insurance companies in Nigeria at ($r = -0.38$). Only 1.44% of the variance observed of profitability is explained by their underwriting capacity. This result shares divergent view with study of RIMS Executive Report (2012). The reason for the divergent findings according to Obalola and Abass (2015) may not be unconnected to heavy reliance on reinsurance arrangements. In essence, rather than build more capacity for risk retention, Nigerian insurance companies would rather assume the risks and transfer through reinsurance arrangements. This however proves the assertion of Chen, Hamwi and Hudson (2001) that frequent usage of reinsurance arrangement will improve the underwriting capacity on the short run but it also an indication that insurance company is not performing optimally.

Conclusion and recommendations

The findings of the study established the statistical influence of risk culture practices on the financial efficiency of non-life insurance companies in Nigeria. A check at individual objectives reveal risk tolerance and risk appetite show a significant influence on reserve and investment respectively. While there is insignificant relationship between underwriting capacity and profitability. The study further deduced the insignificant relationship to risk transfer strategy through reinsurance arrangements rather than risk retention. Hence, reinsurance is a major risk management mechanism often used by Nigerian non-life insurance companies with less concentration on other risk culture practices like determination of risk tolerance level and mapping out risk appetite to a strata of the management. In order to ensure that non-life insurance companies in Nigeria perform maximally, it is therefore recommended that they should concentrate on holistic risk culture risk practices that will include risk tolerance, risk appetite and determination of underwriting capacity rather than the silo method used through reinsurance arrangement. In achieving this, they may need create an actuary and investment departments whose duties are to review the pricing, claims fluctuations, reserve and investment pattern of non-life insurance companies in Nigeria.

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