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## **A Moderating Role of Board Characteristics on Enterprise Risk Management Implementation: Evidence from the Nigerian Banking Sector**

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### **ABSTRACT**

The objective of this study is to examine the extent of enterprise risk management (ERM) implementation in the Nigerian banking sector and also evaluated the moderating role of board characteristics on the antecedents and the stage of ERM implementation (SERM). The study used a survey approach to collect cross-sectional data across 361 branches and the headquarters of the 21 Nigerian commercial banks using 722 respondents. The finding revealed that there is an ERM complete in place in the majority of the banks. Furthermore, the finding showed that internal audit effectiveness (IAE), human resource competency and top management commitment effect significant influence on the SERM, and there is also a moderating effect of board characteristics on IAE and the SERM. The paper has a policy implication for the board of directors to improve their oversight functions and the regulatory authorities to entrench risk-based supervision in all the Nigerian banks.

**Keywords:** Board Characteristics, Enterprise Risk Management, Nigerian Banks, Shareholder Value

**JEL Classifications:** M41, M48

### **1. INTRODUCTION**

Enterprise risk management (ERM) has gained increased attention in recent years and has become a subject of interest to the stakeholders in the business world. The deployment of ERM in the organizations, especially the financial industry will provide the required monitoring mechanism to address effectively potential risk exposures that can jeopardize the accomplishment of the objectives of the enterprise. Thus, the essence of ERM adoption is to ensure that corporate goal of raising the value of stakeholders is achieved.

Presently, most businesses and industries are facing various threats from risk exposures which have been on the increase and are visible. These include compliance risk, competitiveness, financial risk, operational risk and strategic risk arising from technological advancement, globalization, incessant terrorist activities,

diversification, information security and industrialization (Jalal-Karim, 2013). The management of risk exposures must be practical regarding taking offensive action rather than defensive position. Therefore, managing such risk can be a real source of golden opportunity and challenge, and can be a powerful tool for supporting competitive advantage (Gatzert and Martin, 2013; Jalal-Karim, 2013). ERM is, therefore, a roadmap to identifying and analyzing the various risks faced by the enterprises from a business-wide perspective.

The recent company collapse and other external and internal factors, coupled with the lack of confidence by investors and creditors in financial reporting, are the main reasons which become strong motivating factors for strengthening and enhancing corporate governance and the adoption of ERM across industries (Kleffner et al., 2003; Lam, 2014). Therefore, ERM has now become an important issue for the business, industries, and the

academic, broader in scope and have been included in corporate philosophy (Kleffner et al., 2003). The goal of ERM is to preserve and enhance shareholder value (Gordon et al., 2009; Manab et al., 2010; Hoyt and Liebenberg, 2011).

However, ERM concept is still relatively new among Nigerian companies, and little is known about why many organizations are not fully adopting it. The Central Bank of Nigeria (CBN, 2012) asserts that risk management is still at its initial stage in Nigeria, and there is a paucity of research in ERM related issues (Fadun, 2013). In today's challenging global economy, business opportunity and risks are continually changing. Therefore, there is a need to identify, assess, manage and monitor the banks business opportunities and risks.

Corporate boards globally have been attracting lots of attention in the past years because of corporate failures and concerns around the functioning of corporations and the manner they are regulated. Ahmad (2014) suggests that ERM is a critical part of the corporate system. The Code of Corporate Governance apparently split out the guidelines for the Board of Directors to adequately perform their duties concerning monitoring role, even using internal or external monitoring mechanisms such as auditors.

Due to the new challenges of the global economy, it is necessary to evaluate the type of characteristics of the Board of Directors, and top management possesses. Board characteristics significantly affect the performance and the level of corporate governance practices of an organization (Wong and Bajuri, 2013). Senior management is now under increased pressure to improve their internal risk control systems (Dickinson, 2001). Enhancing the competitiveness of an organization's workforce, including the board and top management enhances higher opportunities of being successful. Competency level of the Board of Directors and senior management will enable them exploit opportunities and minimize threats associated with risks for the benefit of the bank particularly enhancing competitive advantage. ERM, therefore, redefines the value proposition of risk management by elevating its focus from tactical to the strategic. The greater the gaps in the current state of ERM practices and the expected future state of the banks risk management capabilities, the greater the need for ERM infrastructure to facilitate the advancement of risk management capabilities over time.

Therefore, the main objective of this study is to examine the extent of ERM implementation in the Nigerian banking sector. The study further examined the effect of the antecedents on the stage of ERM implementation (SERM) and evaluated the moderating role of board characteristics on the antecedents and the SERM.

## 2. LITERATURE REVIEW

Risk management is an integrated process which involves all structures and the various components of the enterprise with clearly defined steps and benchmark which, if properly put through, supports decision making of the business by highlighting risk exposures and their effects on the entity (D'Arcy and Brogan, 2001; Casualty Actuarial Society, 2003). This enables the

organization to take necessary mitigating measures to minimize the shock of such risks or exploit the opportunity associated with the occurrence. This requires the cognitive process of identifying, evaluating, treating, communicating and monitoring all risks associated with any function, procedure or activity that could hinder the achievement of the purposes of the firm (D'Arcy and Brogan, 2001). Risk management requires the foundation of risk culture awareness across the system to assure that it becomes everybody's business. This can be made possible by integrating risk management into the philosophy and activities within the firm rather than managing risks as a separate program in individual units or sections. Indeed, the target of implementing ERM practices in the banks is to improve efficiency and performance thereby adding value to the stockholders.

The arrangement by which separate unit or sections of the organization manage risks is commonly referred to as traditional risk management or "silo" while the new concept which uses enterprise-wide approach to manage risk across the organization is now known as "ERM," which has the same meaning as holistic risk management, corporate risk management, integrated risk management, enterprise-wide risk management, and business risk management (Gupta et al., 2004; Hoyt and Liebenberg, 2006; Manab et al., 2012). ERM will be assumed and utilized throughout this study and will be used interchangeably with risk management. ERM supports the planning process in a company by developing plans to mitigate and manage risks to having control over business activities.

The Committee of Sponsoring Organization of the Treadway Commission (COSO) vision of focusing on risk management integration has become a standard of practice across the world (Sarens et al., 2010).

Similarly, COSO (2004) defines ERM as:

*"Process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance of entity objectives"* (p. 12).

The COSO framework emphasizes the significance of board's participation in risk management and, in fact, the decision for its deployment commences at the board level.

Recent developments in the world financial system within the past decade have given grave concern to stakeholders in the banking industry. The financial crisis experienced by the industry in recent times has been attributed mainly to the poor performance of the regulatory agencies and the low level of risk management practices of the financial institutions. It is suggested that the managers should not only consider the returns made in the sector but to evaluate critically frameworks used for risk management in the business and further protect their interests. The banking industry had the greatest effect of the crisis, where some banks, which were considered beforehand financially sound and healthy suddenly, announced substantial losses (Ajibo, 2015; Owojori et al., 2011). These have

the effect of breaching fundamental rules of risk management, such as minimizing the volatility of returns and avoiding substantial concentrations of assets. The problems in financial institutions can affect the whole business of banking that comes from risks taking in conditions of uncertainty because the problem can be life-threatening. The Turnbull approach puts much emphasis on management of risks rather than risk elimination (Carey, 2001).

A study conducted by Odonkor et al. (2011) on bank risk and performance in 18 Ghanaian banks showed that lesser risk stages can increase bank performance. High involvement of boards in the ERM process will significantly impact the efficient ERM system, and this invariably leads to significantly higher ERM practices in the banks. Board of directors is required to take strategic responsibility for setting, assessing and managing the risk management culture within their respective enterprises. In the same vein, Shafique et al. (2013) examine the differences in the application of risk management practices of Islamic institutions versus traditional financial institutions in Pakistan. The finding shows the types of risks faced by the banks which were classified as; credit risk, market risk, investment risk and equity. Others are; credit risk, liquidity risk, information safety risk, the rate of return risk and operational risk. The study concludes that the risk management practices in Islamic financial institutions are not different from the methods obtained in traditional financial institutions. By implication, the general risk management practices in the two enterprises are the same in Pakistan. However, the finding by Rahman et al. (2013) showed that the Islamic banks are more efficient in their risk management process than other non-Islamic banks in Malaysia and Egypt. Thus, resulting in mixed finding which calls for a further investigation.

Safriyu and Njogo (2012) examined risk management practices in the banking sector of Nigeria and document that the banking industry is a highly controlled industry with a high level of leverage that is related to high risk. Hence, the banks require a high degree of risk management practices. Therefore, this calls for more fast and efficient ERM implementation in the banking sector. There have been marked differences in the level of ERM implementation across different industries and organizations depending on the driving force for ERM adoption (Ciocoiu et al., 2009). Future studies are therefore needed to test the level of ERM implementation in different settings and recognizing environmental influences in the choice of variables.

Various studies have been conducted on the factors that affect ERM implementation in organizations (Altuntas et al., 2011; Beasley et al., 2009; Desender, 2011; Fadun, 2013; Gatzert and Martin, 2013; Golshan and Rasid, 2012; Gordon et al., 2009; Kleffner et al., 2003; Liebenberg and Hoyt, 2003; Mikes, 2009; Owojori et al., 2011; Paape and Speklè, 2011; Pagach and Warr, 2011). These studies identified several variables that influence ERM adoption and used different measures to examine the extent of ERM implementation; all the same, they all relegated the moderating role of board characteristics and the effect internal audit effectiveness (IAE) and human resource competency (HRC) on ERM deployment because none included them in their fields as variables.

Therefore, the main objective of this study is to examine the extent of ERM implementation in the Nigerian banking sector. The study further examined the effect of the antecedents (regulatory influence, IAE, HRC, top management commitment [TMC]) on the SERM, and evaluated the moderating role of board characteristics on the antecedents and the SERM. To this end, this is the first known empirical research that examines this set of combination of variables in the Nigerian banks about ERM implementation in the Nigerian context. Based on the extant literature reviewed and the issues highlighted in the study which affects the implementation of ERM, these precursors have been identified as influencing determinants for ERM adoption. They include; regulatory influence, IAE, HRC, TMC and board characteristics.

## 2.1. Antecedents of the Implementation of ERM

### 2.1.1. Moderating role of board characteristics on the antecedents of ERM adoption

The board of directors is the proponents of risk management in the organization and has the ultimate decision about the risk management application (Golshan and Rasid, 2012). A survey conducted by Kleffner et al. (2003) report that the characteristics of organizations differ in their level of ERM adoption in Canada. In the same way, Aebi et al. (2012) reveal that the board and top management support have a moderating effect on the relationship between the level of ERM practices and bank performance. Thus, related hypotheses to be tested in this study are:

- H5: There is a moderating effect of board characteristics on regulatory influence and the SERM.
- H6: There is a moderating effect of board characteristics on IAE and the SERM.
- H7: There is a moderating effect of board characteristics on HRC and the SERM.
- H8: There is a moderating effect of board characteristics on TMC and the SERM.

### 2.1.2. Regulatory influences

In various countries, regulatory authorities are putting pressure on organizations to improve risk management and risk reporting (Kleffner et al., 2003; Paape and Speklè, 2011). Abdullah et al. (2012) indicate that solid decision to implement ERM is influenced by outside elements such as corporate governance, laws, and regulatory submissions. It has frequently been argued that ERM initiatives within firms rise in reaction to regulatory pressure (Collier et al., 2007; Paape and Speklè, 2011). Because this pressure is more for publicly listed companies, it is expected that such firms are more probably to adopt ERM (Kleffner et al., 2003). Thus, a related hypothesis to be examined in this study is:

- H1: There is a positive relationship between regulatory influence and the SERM.

### 2.1.3. IAE

Certain conditions must be fulfilled to achieve the audit objective that includes; organizational status, independence, and objectivity (Badara and Saidin, 2013). Several studies (Arena and Azzone, 2009; Cohen and Sayag, 2010) find that the IAE has an impact on organizational performance, hence the ERM implementation. Most of these studies emphasized the new roles of internal audit in the implementation of ERM in organizations. Thus, a related

hypothesis to be tested in this study is:

H2: There is a positive relationship between IAE and the SERM.

#### 2.1.4. HRC

Human resource management places great importance on the competency level of the board and top management (Cardy and Selvarajan, 2006). Increasing competitiveness of an organization's workforce enhances higher opportunities of being successful. This equally provides the necessary capability to cope with the complexity of the banking operations so that they have the capacity and technical ability to identify, assess, measure, monitor, and control all risks. Thus, a related hypothesis to be tested in this study is:

H3: There is a positive relationship between HRC and the SERM.

#### 2.1.5. TMC

Perrin (2002) suggests that the application of an ERM framework, especially in the initial stage of implementation requires strong support from the senior management and board of directors. Some studies (Fadun, 2013; Manab et al., 2012) analyses the influence of top of management on the carrying out of the ERM and find positive associations between the top management support and commitment to ERM adoption. Beasley et al. (2005) argue that top management support and commitment are very necessary and relevant for the successful execution of the ERM. Furthermore, Bowling and Rieger (2005) suggest that without the commitment, support, and capabilities of top management, the ERM program may fail to succeed. Thus, a related hypothesis to be tested in this study is:

H4: There is a positive relationship between TMC and the SERM.

### 3. METHODOLOGY

The study adopted a quantitative approach using survey by collecting cross-sectional data through a questionnaire. The data was collected across 361 branches and the headquarters of the 21 Nigerian commercial banks using 722 respondents. Logistic regression model was used for data analysis. To assure the robustness of the questionnaire, a satisfactory result was obtained from the pilot test using 73 respondents from the branches. There was also a confirmation of the content validity of a group of experts comprising five faculty members and three practitioners. The face validity session was further conducted by the researcher through a focus group comprising of nine member panel in two branches of one of the commercial banks. After effecting the necessary corrections and adjustments observed, the researcher went ahead to conduct the major survey.

The questionnaires were administered to the staff of risk management, internal audit and other departments of the 21 commercial (Money Deposit, MDB) banks in Nigeria (CBN, 2012). The questionnaires were distributed to the staff of the various banks in 361 branches across the country and the respective headquarters of the banks through the drop and pick procedure. Similarly, the respondents were also clustered into risk management, internal audit and operational departments (Gay and Diehl, 1992; Hair et al., 2007), which was meant to

ensure that all the groups in the sample are adequately represented instead of individuals to cater for the large and widely spread population.

### 3.1. Research Model

The logistic regression model estimate has been specified in line with the objectives of the study.

Model (i) shows all the independent variables in the framework for the study to examine the effect of the antecedents on the model.

$$\text{Model (i): } \ln \frac{SERM}{(1-SERM)} = \alpha_0 + \beta_1 RIS + \beta_2 IAE + \beta_3 HRC + \beta_4 TMC + \beta_5 BCS$$

Where:

SERM = Stage of ERM implementation

RIS = Regulatory influence support

IAE = Internal audit effectiveness

HRC = Human resource competency

TMC = Top management commitment

BCS = Board characteristic support

Model (ii) reflects the moderating role of the board characteristics on the antecedents and the depended variable to assess the effect of the board characteristics.

$$\begin{aligned} \text{Model (ii): } \ln \frac{SERM}{(1-SERM)} = & \alpha_0 + \beta_1 RIS + \beta_2 IAE + \beta_3 HRC \\ & + \beta_4 TMC + \beta_5 BCS + \beta_{11} BCS * RIS \\ & + \beta_{12} BCS * IAE + \beta_{13} BCS * HRC \\ & + \beta_{14} BCS * TMC \end{aligned}$$

### 4. RESULTS AND DISCUSSION

#### 4.1. Questionnaire Administration

722 questionnaires were mailed away to the commercial (MDBS) banks. 435 questionnaires representing 60% were found usable. According to Nakpodia et al. (2007), the response rate for a survey research in Nigeria is 45-73%. However, Hair et al. (2010) indicated that a response rate of 30% is sufficient for the survey. The completed questionnaires were collected by the research assistants to facilitate fast retrieval of completed questionnaire and also to provide high response rate. The data was keyed into SPSS version 20 for further analysis. A non-response bias was calculated. Both the descriptive test and Levene's test for equality of variance were conducted on the demographic and continuous variables. The determination of the descriptive test did not indicate any significant statistical differences between (Early and Late) respondents' demographic variables. Logistic regression was applied for further analysis because of the categorical dependent variable.

#### 4.2. Test of Multicollinearity

Multicollinearity cases can be discovered and handled by deleting the affected variables. To detect multicollinearity in this subject area, Pearson correlation of SPSS was used. From the analysis, it is evident that there is no variable that is highly correlated with

one another. Based on the fact that the correlation values are considerably under the threshold of 0.9, it can be reasoned that there is no multicollinearity problem among the variables under investigation as reflected in Table 1. The variance inflation factor is below the threshold of 5 with the highest value of 1.691 and lowest 1.244. The margin value is above 0.30 with the highest value of 0.804 and lowest values of 0.591 that are shown in Table 2. All these did not bring out any correlation or multicollinearity problem.

### 4.3. Logistic Regression Result

The result of the logistic regression analysis done to assess the influence of antecedents on the SERM in the banking sector using the independent variables (RIS; IAE, HRC, and TMC) is presented in the Tables 1-4. The goodness of fit tests for the model and the model specification test are equally critical because they ensure that misleading inferences are avoided. It also helps to check the bias and inconsistent outcomes.

**Table 1: Correlation**

Construct	1	2	3	4	5
TMC	1.000				
HRC	0.393	1.000			
Regulatory influence	0.434	0.209	1.000		
Board characteristics	0.284	0.274	0.137	1.000	
IAE	0.443	0.313	0.422	0.188	1.000

Off-diagonal elements are the correlations among constructs. HRC: Human resource competency, TMC: Top management commitment, IAE: Internal audit effectiveness

**Table 2: Multicollinearity test**

Construct	Coding	Tolerance	VIF
Internal audit effectiveness	IAE	0.754	1.327
Human resource competency	HRC	0.804	1.244
Top management commitment	TMC	0.749	1.335
Regulatory influence support	RIS	0.591	1.691
Board characteristic support	BCS	0.663	1.508

VIF: Variance inflation factor

**Table 3: Logistic regression result**

Variable	Model 1	
	B	SE
Regulatory influence	1.118	0.218
IAE	1.455**	0.268
HRC	1.460**	0.242
Top management support	1.599**	0.301
Board characteristic	0.544**	0.159

\*\*Significant at  $P < 0.05$ , SE: Standard error, HRC: Human resource competency, IAE: Internal audit effectiveness

**Table 4: Moderating effect of board characteristics on the antecedents**

Variable	Model 2	
	B	SE
Regulatory influence	-1.128	1.136
IAE	-2.181**	0.958
HRC	0.155	0.889
Top management support	3.351***	1.260
Board characteristic	-1.163	1.203
BCSRIS	0.254	0.285

\*\*Significant at  $P < 0.05$ , \*\*\*Significant at  $P < 0.01$ , SE: Standard error, HRC: Human resource competency, IAE: Internal audit effectiveness

From the analysis, it is clear that the model has attained a great goodness of fit because the likelihood ratio  $\chi^2$  is 43.71 at a statistically significant level of 1% ( $P = 0.001$ ). The Wald test  $\chi^2$  is 34.98 at the level of significant at 1% ( $P = 0.0025$ ). Hosmer and Lemeshow test shows insignificant  $P = 0.5661$ . The last measure of the goodness of fit of the model is the percentage of correct classification (PCC) of the observed and the predicted estimates that are reflected in the classification table. There is no significant difference existing between observed estimate (88.7) and actual classification (88.97) ceteris paribus. The PCC demonstrates the predictive power of the model regarding its ability to accurately classify the outcomes of the dependent variable. The percentage of (88.97) PCC is considered very high given the suggestion by Pampel (2000) that prediction cases between 50% and 100% are accurate measures of prediction.

The outcome of the test enabled the researcher to fail to reject the hypothesis that there is no significant difference existing between the hypothesized model and the expanded model regarding predicted estimates of the data set. The overall model fits the data, hence, the rejection of the null hypothesis because at least one of the parameters in the model has impacted on the dependent variable. Consequently, we conclude that the approximations of the framework fit the data at an acceptable level.

Link test shows two variables, *hat* represents the predicted value from the model, and thus it is expected to be significant. On the other hand, *hatsq* represents the predictor to rebuild the model and is projected to be insignificant. Pregibon (1980) recommend that to satisfy the link test; the *hatsq* should be insignificant while the *hat* should be significant. The model is also correctly specified as *hatsq* is insignificant at 0.471, and *hat* is significant at 1% ( $P = 0.004$ ). The result conforms to the assumption of a well-specified model. Therefore, the overall outcomes of the analysis are that the models under investigation have a right fit for the data and well specified for testing the hypotheses. The Stata uses the likelihood estimate  $R^2$ , Wald test  $R^2$ , Hosmer–Lemeshow test, *lfit*, group (10) table and the classification prediction table (*lstat*) to assess the goodness of fit of the model. It also uses the link test to measure the model specification.

From the Table 3, the individual performance of the independent variables on the dependent variable can be measured based on the elaboration of each model and the level of significance continue to change due to increasing in the number of variables in the model. Three variables (IAE, HRC, and TMC) remain statistically significant in all the models. These variables continue to impact greater effect on the dependent variable even with the entry of more variables. However, these are the new variables that are being tested for the first time in this context. However, BCS is negatively significant. Therefore, Model 3 has satisfactorily met all the measures of goodness of fit of the model and its specification on the data in the study and finally, answers question three as demonstrated in Table 3.

Model 2 contains the independent variables in the framework and the moderating role of BCS on the relationship between the independent variables (RIS, IAE, HRC, and TMC) and the

dependent variable (SERM). The primary aim of this model is to test the hypotheses in respect of the interaction term. The result in Table 4 shows that TMC is positively significant at 1%, while the IAE is negatively significant at 5%. The BCS negatively moderates the relationship between the TMC and the SERM at a statistical significance of 1 percent and positively moderate the relationship between the IAE and the SERM at a statistical significance of 1%. The BCS equally fails to moderate the relationship between the RIS and HRC, and SERM. Conclusively, BCS does not moderate the relationship between RIS, HRC, TMC and the SERM.

#### 4.4. Discussion and Implication

From the result of the descriptive statistics, the Nigerian banks have complete ERM in place because a larger percentage of the respondents confirmed this. This implies that there is a high level of compliance with the CBN directive on the implementation of ERM in all the commercial banks. This is supported by the finding of a study conducted in Malaysia by Soltanzadeh et al. (2014). The study reveals that about 80% of the respondents indicated that they have ERM complete in place in their establishments. From the logistic regression analysis, the finding shows that regulatory influence reflects insignificant outcome and the hypothesis was not supported. The finding is coherent with the results of Kleffner et al. (2003) that find no significant difference in the Canadian firms that are listed on TSE and those not listed but in contrast to the finding of Paape and Spèkè (2011).

The finding further demonstrates that ERM deployment was motivated by the institutional response to a clarion call for more efficient corporate governance and regulatory-based risk management supervision. This shows that not all ERM implementation programs in the Nigerian banks emanated largely from compliance but board decision process and other institutional requirements. Similarly, the IAE effect positively in all the models and, therefore, is supported. This finding is in line with the study by Ussahawanitchakit and Intakhan (2011) that find internal audit professionalism and independence positively significant to IAE. Several studies (Cohen and Sayag, 2010; Arena and Azzone, 2009) find that the IAE has an impact on organizational performance which impact on ERM deployment.

Fan and Wong (2005) indicate that auditors play a monitoring and bonding role so as to mitigate the agency conflict between shareholders, other investors, and the management. Likewise, HRC has a positive effect on the antecedents. Hence, the hypothesis is supported. The finding with respect to HRC is not surprising because the Central Bank of Nigeria (CBN, 2012) maintained that risk management is still at its rudimentary level in the Nigerian banks and is facing many challenges, which include inadequate knowledge of risk management by members of the board of many banks and lack of professionals. Others are a lack of risk training and teaching. There is also a lack of a framework that supports the development of skilled and capable workers in the industry (CBN, 2011; 2012).

In the same vein, TMC has a positive effect on the SERM in the Nigerian banking sector as expected. This finding is in consonant with the results of several studies (Altuntas et al.,

2011; Fadun, 2013; Manab et al., 2012; Walker et al., 2002) that examine the influence of top of management on the extent of ERM implementation. Beasley et al. (2005) argue that top management support and commitment are very necessary and relevant for the successful implementation of the ERM. Bowling and Rieger (2005) suggest that without the commitment, support, and capabilities of top management, the ERM program may fail to succeed. The finding is also in agreement with the agency theory because the primary agency relationship in the bank is between the shareholders and the bank management, and shareholders and the debt holders. In most cases, conflict of interest would suffice because of the divergence of interests pursued by each group. In the bank setting, the bank hires top management and employees to, in part, exploit economic of specialization. They rather continue their stake regarding the compensation paid to them for the service rendered in the form of agency cost or stock bonuses. This natural process has led the principal to incur residual losses in the form of opportunity cost that arises as a consequence of differences in outcome (Jensen and Meckling, 1976).

Consequently, the logistic regression result reveals a moderating effect of board characteristics on the relationship between IAE and the SERM in the Nigerian banks while other independent variables had no moderating effect. This implies that the higher the board oversight activities, the greater the likelihood of internal audit roles on ERM practices. Therefore, this finding means that the effectiveness of the board as an internal corporate governance monitoring mechanism is in doubt. The significance of this outcome demonstrates that the boards of directors of the Nigerian banks have a passive role in corporate governance, particularly ERM implementation. The implication of the finding supports Jensen (1993) argument that the character of corporate boards come to be more and more important during periods of crises, if shareholders' interests are at stake and, for instance, performance declines. The board of directors is likely to become more active to meet up with these challenges rather than averting them in advance.

## 5. CONCLUSION

This research examined the extent of ERM implementation in the Nigerian banks and the effect of antecedents on the SERM in the Nigerian banking sector. It also evaluated the moderating role of board characteristics on the antecedents. This study contributes to the knowledge and understanding of ERM implementation to stimulate performance and enhance shareholders value. The findings of this study revealed that there is an ERM complete in place in the Nigerian banks because only insignificant percent of the respondents indicated ERM partial in place. This implies that there is full compliance with the CBN Code of Corporate Governance on ERM implementation. The further finding revealed that there is a positive effect of the IAE, HRC and TMC on the SERM in the Nigerian banks. The finding shows a moderating effect of board characteristics on the relationship between the IAE and the SERM while there is no moderating effect of board characteristics on the relationship with other antecedents.

This study is however limited to the commercial banks only, and a greater percentage of the respondents was lower level staff that

might not have adequate information about the level of ERM implementation. Thus, future research is needed to assess the ERM implementation intensity and its effectiveness using the top level management as respondents. Other studies could as well examine the SERM in development and co-operative banks, microfinance banks, and finance and discount houses. Consequently, a clarion call is made for the introduction of ERM practices across all the Nigerian companies.

## REFERENCES

- Abdullah, N.S., Sadiq, S., Indulska, M. (2012), A compliance management ontology: Developing shared understanding through models. In: *Advanced Information Systems Engineering*. Heidelberg: Springer Berlin. p429-444.
- Aebi, V., Sabato, G., Schmid, M. (2012), Risk management, corporate governance, and bank performance in the financial crisis. *J Bank Financ*, 36, 3213-3226.
- Ahmad, F. (2014), *The Quest for Identity*. Turkey: Oneworld Publications.
- Ajibo, K.I. (2015), Risk-based regulation: The future of Nigerian banking industry. *International Journal of Law and Management*, 57(3), 201-216.
- Altuntas, M., Berry-Stölzle, T.R., Hoyt, R.E. (2011), Implementation of enterprise risk management: Evidence from the German property-liability insurance industry. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 36(3), 414-439.
- Arena, M., Azzone, G. (2009), Identifying organizational drivers of internal audit effectiveness. *International Journal of Auditing*, 13(1), 43-60.
- Badara, M.A.S., Saidin, S.Z. (2013), The relationship between audit experience and internal audit effectiveness in the public sector organizations. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(3), 329-339.
- Beasley, M.S., Clune, R., Hermanson, D.R. (2005), Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of Accounting and Public Policy*, 24(6), 521-531.
- Bowling, D.M., Rieger, L. (2005), Success factors for implementing enterprise risk management: Building on the COSO framework for enterprise risk management to reduce overall risk. *Bank Accounting and Finance*, 18(3), 21-27.
- Cardy, R.L., Selvarajan, T.T. (2006), Competencies: Alternative frameworks for competitive advantage. *Business Horizons*, 49(3), 235-245.
- Carey, A. (2001), Effective risk management in financial institutions: The Turnbull approach. *Balance Sheet*, 9(3), 24-27.
- Casualty Actuarial Society Enterprise Risk Management Committee. (2003), *Overview of Enterprise Risks Management*. Fairfax, VA: Casualty Actuarial Society.
- CBN. (2011), *Financial System Stability*, Dr. Chiedu K. Moghalu, a Remark made at the 2011 Global Policy Forum. Alliance for Financial Inclusion (AFI). RivieraMaya, Mexico.
- CBN. (2012), *Exposure drafts of the Revised Code of Corporate Governance for banks in Nigeria and the Guidelines for Whistleblowing in the Nigerian Banking Industry*. Central Bank of Nigeria, Abuja, Nigeria.
- Ciocoiu, N., Dobra, C., Berea, G. (2009), Improving organization performance through risk management to survive a crisis period. *Review of International Comparative Management*, 4(1), 481-488.
- Cohen, A., Sayag, G. (2010), The effectiveness of internal auditing: An empirical examination of its determinants in Israeli organizations. *Australian Accounting Review*, 20(3), 296-307.
- Collier, P.M., Berry, A.J., Burke, G.T. (2007), *Risk and Management Accounting: Best Practice Guidelines for Enterprise-Wide Internal Control Procedures*. Oxford: Elsevier.
- COSO. (2004), *Committee of Sponsoring Organizations of the Tread way Commission. Enterprise Risk Management - Integrated Framework: Executive Summary*. Available from: [http://www.coso.org/documents/coso\\_erm\\_executivesummary.pdf](http://www.coso.org/documents/coso_erm_executivesummary.pdf). [Retrieved on 2015 Aug 15].
- D'Arcy, S.P., Brogan, J.C. (2001), Enterprise risk management. *Journal of Risk Management of Korea*, 12(1), 207-228.
- Desender, K.A. (2011), On the determinants of enterprise risk management implementation. In: Shi, N.S., Silvius, G., editors. *Enterprise IT Governance, Business Value and Performance Measurement*. Hershey, Pennsylvania: IGI Global.
- Dickinson, G. (2001), Enterprise risk management: Its origins and conceptual foundation. *The Geneva Papers on Risk and Insurance. Issues and Practice*, 26(3), 360-366.
- Fadun, O.S. (2013), Promoting 'enterprise risk management' adoption in business enterprises: Implications and challenges. *International Journal of Business and Management Invention*, 2(1), 69-78.
- Fadun, O.S. (2013), Risk management and risk management failure: Lessons for business enterprises. *International Journal of Academic Research in Business and Social Sciences*, 3(2), 225.
- Fan, J.P., Wong, T.J. (2005), Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of Accounting Research*, 43(1), 35-72.
- Gay, L.R., Diehl, P.L. (1992, 1998), Research methods for business and management. In: Hill, R., editor. *What Sample Size is 'Enough' in Internet Survey Research? Interpersonal Computing and Technology: An electronic Journal for the 21<sup>st</sup> Century*. Available from: <http://www.emoderators.com/ipct-j/1998/n3-4/hill.html>.
- Gatzert, N., Martin, M. (2015), Determinants and value of enterprise risk management: Empirical evidence from the literature. *Risk Management and Insurance Review*, 18(1), 29-53.
- Golshan, N.M., Rasid, S.Z.A. (2012), Determinants of Enterprise Risk Management Adoption: An Empirical Analysis of Malaysian Public Listed Firms. In *Proceedings of World Academy of Science, Engineering and Technology (No. 62)*. World Academy of Science, Engineering and Technology.
- Gordon, L.A., Loeb, M.P., Tseng, C.Y. (2009), Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*, 28(4), 301-327.
- Gupta, S., Lehmann, D.R., Stuart, J.A. (2004), Valuing customers. *Journal of Marketing Research*, 41(1), 7-18.
- Hair, J.F., Money, A., Page, M., Samouel, P. (2007), *Research Methods for Business*, Chichester, England: John Wiley & Sons, Ltd.
- Hosmer, D.W., Lemeshow, S. (2000), *Introduction to the logistic regression model*. Applied Logistic Regression. 2<sup>nd</sup> ed. New York, NY: John Wiley & Sons.
- Hoyt, R.E., Liebenberg, A.P. (2006), Determinants of risk management adoption among the insurance companies. *Journal of Business and Other Social Science*, 128(4), 213-230.
- Hoyt, R.E., Liebenberg, A.P. (2011), The value of enterprise risks management. *Journal of Risk and Insurance*, 78(4), 795-822.
- Jalal-Karim, A. (2013), Leveraging enterprise risk management (ERM) for boosting competitive business advantages in Bahrain. *World Journal of Entrepreneurship, Management, and Sustainable Development*, 9(1), 65-75.
- Jensen, M.C., Meckling, W.H. (1976), Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jensen, M.C. (1993), The Modern Industrial Revolution, Exit and the Failure of Internal Control Systems. *Journal of Finance*, 48(3),

pp. 831-880.

- Kleffner, A.E., Lee, R.B., McGannon, B. (2003), The effect of corporate governance on the use of enterprise risk management: Evidence from Canada. *Risk Management and Insurance Review*, 6(1), 53-73.
- Lam, J. (2014), *Enterprise Risk Management: From Incentives to Controls*. Hoboken, NJ: John Wiley & Sons.
- Liebenberg, A.P., Hoyt, R.E. (2003), The determinants of enterprise risk management: Evidence from the appointment of chief risk officers. *Risk Management and Insurance Review*, 6(1), 37-52.
- Manab, N.A., Kassim, I., Hussin, M.R. (2010), Enterprise-wide risk management (EWRM) practices: Between corporate governance compliance and value. *International Review of Business Research Papers*, 6(2), 239-252.
- Manab, N.A., Othman, S.N., Kassim, I. (2012), Enterprise-wide risk management best practices: The critical success factors. *OIDA International Journal of Sustainable Development*, 4(03), 87-96.
- Mikes, A. (2009), Risk management and calculative cultures. *Management Accounting Research*, 20(1), 18-40.
- Nakpodia, E.D., Ayo, B.T., Adomi, E.E. (2007), A better response rate for questionnaires: Attitudes of librarians in Nigerian university libraries. *Library Philosophy and Practice*, 9(2), 50-56.
- Odonkor, T.A., Osei, K.A., Abor, J., Adjasi, C.K. (2011), Bank risk and performance in Ghana. *International Journal of Financial Services Management*, 5(2), 107-120.
- Owojori, A.A., Akintoye, I.R., Adidu, F.A. (2011), The challenge of risk management in Nigerian banks in the post consolidation era. *Journal of Accounting and Taxation*, 3(2), 23-31.
- Paape, L., Speklè, R.F. (2012), The adoption and design of enterprise risk management practices: An empirical study. *European Accounting Review*, 21(3), 533-564.
- Pagach, D., Warr, R. (2011), The characteristics of firms that hire chief risk officers. *Journal of Risk and Insurance*, 78(1), 185-211.
- Pampel, F.C. (2000), *Logistic Regression: A primer (quantitative applications in the social sciences)*. Logistic Regression: Primer. London, UK: Sage Publications.
- Perrin, T.T. (2002), *Enterprise Risk Management in the Insurance Industry-2002 Benchmarking Survey Report*. World Wide Web. Available from: [http://www.tillinghast.com/tillinghast/publications/reports/ERM\\_Insur\\_Ind\\_2002\\_benchmark\\_survey/ERM\\_2002\\_all.pdf](http://www.tillinghast.com/tillinghast/publications/reports/ERM_Insur_Ind_2002_benchmark_survey/ERM_2002_all.pdf).
- Pregibon, D. (1980), The goodness of link tests for generalized linear models. *Applied Statistics*, 29(1), 15-14.
- Rahman, R.A., Noor, S.B., Ismail, T.H. (2013), Governance and risk management: Empirical evidence from Malaysia and Egypt. *International Journal of Finance and Banking Studies*, 2(3), 21-33.
- Safriyu, A.M., Njogo, B.O. (2012), The impact of small and medium scale enterprises in the generation of employment in Lagos state. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 1(11), 107-141.
- Sarens, G., de Visscher, C., van Gils, D. (2010), Risk Management and internal control in the public sector: An in-depth analysis of Belgian social security public institutions. *Bulletin de Documentation/Service Public Fédéral Finances*, 7(03), 65-90.
- Shafique, O., Hussain, N., Hassan, M.T. (2013), Differences in the risk management practices of Islamic versus conventional financial institutions in Pakistan: An empirical study. *The Journal of Risk Finance*, 14(2), 179-196.
- Soltanizadeh, S., Rasid, S.Z.A., Golshan, N., Quoquab, F., Basiruddin, R. (2014), Enterprise risk management practices among Malaysian firms. *Procedia-Social and Behavioral Sciences*, 16(4), 332-337.
- Ussahawanitchakit, A., Intakhan, A. (2011), Audit professionalism, audit independence and audit effectiveness of CPAs in Thailand. *International Journal of Business Research*, 11(2), 1-11.
- Walker, P.L., Shenkir, W.G., Barton, T.L. (2002), *Institute of Internal Auditors. Enterprise Risk Management: Pulling it all Together*. Altamonte Springs, Florida: The Institute of Internal Auditors Research Foundation.
- Wong, Y.C., Bajuri, N.H. (2013), Corporate governance: Board structure, information technology, and CSR reporting. *Sains Humanika*, 64(2), 109-113.