Does Performance Measurement System Influence Firm's Performance?
Evidence from Nigerian Bailed-Out Banks

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Abstract: The increase uncertainty, complexity and competition within the business environments necessitated the need to adopt a Performance Measurement System (PMS) by firms in order to improve their performance. This study examined the relevance of PMS in the troubled bailed-out banks in Nigeria using the PLS-SEM approach. Based on a survey method, responses were received from managers concerning how PMS is applied and used to enhance firm's performance. The results of our analysis showed that PMS is strongly positively related to banks performance. Thus, the use of PMS in firms is highly encourage in order for them to survive, compete and succeed in the present uncertain business environment.

Key words: Performance measurement system, bank performance, encourage, complexity, survey

INTRODUCTION

Performance Measurement System (PMS) of business firms has received a remarkable attention of both Managers, Board Of Directors (BODs) shareholders, researchers and due to the complexity and competitiveness of today's business environment (Hakkak and Ghodsi, 2015). In the present era, business operations are facing numerous challenges like advancement in IT, risks and uncertainty, cost and price fluctuations, changing consumer taste and production methods etc. Prominent solution to this, is the use of Performance Measurement System (PMS) as a management control instrument which evaluates both managements, employees and the organizational performance (Grafton et al., 2010).

Apparently, deterioration of organizational performance or total corporate failures, are mostly caused by poor managerial leadership and corporate governance due to inefficient performance measurement (Galoji et al., 2012). PMS is certainly the best mechanism through which the performance of CEO, management and other employees is being improved in order to achieve a sound firm performance (Epstein and Roy, 2005; Zahra and Pearce, 1989; Zuriekat et al., 2011).

In Nigeria, this poor performance of CEOs which was un-measured and un-tackled by their Board Of Directors (BODs) was discovered by Central Bank of Nigeria (CBN) and NDIC and thus, consequently led their bank's performance to suffer a distress syndrome that necessitated a bailout reform and also the dismissal of the CEOs and BODs (Epstein and Roy, 2005; Zahra and Pearce, 1989; Zuriekat et al., 2011. Now, the major concern is about how these troubled bailed-out banks can operate to survive, sustain and succeed in the present volatile, challenging and hypercompetitive business environment.

The appropriate answer is to adopt a multi-dimensional PMS because with PMS, BODs can vigorously monitor and measure the CEO's contribution and progress to the bank's performance and may provide the BOD with early warning signs regarding any wrong/unaviable strategic decisions or other problems hindering organizational performance. Researchers opined that the conservative over-reliance on traditional financial performance measures (i.e., Return On Equity (ROE) Return On Investment (ROI) Return On Assets (ROA) etc.) are insufficient indicators of performance and may not fetch any competitive advantage for a firm growth (Kaplan and Norton, 1996a, b). Hence, non-financial measures are advocated as they consider aspect such as product quality, efficiency, customer satisfaction, market share, learning and innovation (Hakkak and Ghodsi, 2015; Kaplan and Norton, 1996a, b; Aliyu et al., 2014). Majority

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of the PMS studies were conducted in the manufacturing sectors (Abernethy and Lillis, 1995; Cohen, 1988; Ittner and Larcker, 1998; Hoque and James, 2000) while very little is done in the banking sector. Hence, the need to examine this in the Nigerian banking sector especially on banks that were troubled and rescued. Thus, little is known about the relative effect of PMS use and design in the service firms like banks.

Furthermore, up-till present time, virtually all the studies on PMS were conducted in the Western countries and Asia (Hakkak and Ghodsi, 2015; Zuriekat *et al.*, 2011; Cohen, 1998; Jamil and Mohamed, 2011) while use of PMS in Nigeria especially in banks is still uncharted. The need to address these aforementioned research gaps motivated us to conduct this study.

Performance measurement system: PMS are collections of financial and/or non-financial performance indicators which are used by managers in measuring their own, their subordinates or their unit's performance. Therefore, these financial and non-financial measures are indicators usually used in monitoring the implementation of strategy within the entire firm and determining whether or not, the firm's strategic objectives were attained (Bremser and Chung, 2005).

Similarly, researcher (Epstein and Roy, 2005) reported that CEO's performance is best improved using a multidimensional PMS. This is because, with PMS, BODs could more vigorously monitor and measure the CEO's contribution and progress to organisational performance and also hint the BOD with early warning signs regarding the strategic decisions that might have gone wrong or other problems hindering organizational performance. Also, the CEO would have to use an adequate PMS to monitor and measure the performance of business units and top employees which is an important objective for the CEO (Epstein and Roy, 2005). They (Epstein and Roy, 2005) added that "PMS metrics should reflect the CEO's and other manager's role in the implementation process and the day to day management of key internal processes and strategies with more focus on measurable and observable behaviors".

Researcher Bremser and Chung, (2005) opined that the renewed concern in PMS certainly led to the development of so many PMS frameworks and techniques by different scholars like (Simons, 1995; Jamil and Mohamed, 2011).

Researcher Jamil and Mohamed (2011) also believe that performance measures have to emanate out of the firm's strategy. However, the Balanced Score Card (BSC)

(Kaplan and Norton, 1996a, b), levers of control (Simons, 1995) PMS framework are all derived from strategy and these measures assists in tracking whether all the resources, i.e., management/employees (human) capital/investments (financial) and properties or processes (physical) are collectively assisting the firm based on the firm's strategy (Bremser and Chung, 2005). Researcher developed an extended PMS framework which is more comprehensive to the study of PMS and could address the limitations of existing frameworks. They offered this framework to be used by adopted by empirical researchers and also help them in verifying the PMSs of both the profit-oriented and non-profit-oriented organizations to describe their operation and to go on to explore the fundamental reasons for such control structures. Therefore, this study employs this extended framework to explore the Nigerian banking sector as no study is found to have done that.

Firm performance: Evaluating performance is the most important way of deriving necessary information concerning business operations. Performance information may be for a unit or branch or entire organisation. Therefore, the traditional financial measures were heavily relied upon. Until recently due to highly competitive business environment, the quest for survival and sustainability forced the adoption of non-financial measures in addition to financial.

This is because the non-financial measures enables learning and innovation, business process improvement and customers satisfaction. All these are significant determinants of firm's growth and profitability.

Researcher Kaplan and Norton (1996a, b) invented their BSC framework, that is meant to aid strategy implementation and control which to date is the most widely used performance measurement model. The BSC is the important component of strategic management system which basically enables organizations to translate their strategic objectives into specific measures of performance. The BSC comprises of the following four aspect of performance; financial perspective, internal business process, customer perspective and learning and innovation perspective. It consists of both financial and non-financial measures which serve as key indicators used in monitoring implementation of strategy all over the organization and also determine if strategic objectives were achieved or not (Bremser and Chung, 2005). Particularly, BSC excellently suitable for performance measurement in the banking industry (Bremser and Chung, 2005). Hence, this study adopted BSC framework to measure the firm performance.

Performance measurement system and firm performance: Performance Measurement System (PMS) will therefore be relevant in providing information useful in strategy implementation and to quantify the management's contribution to strategy (Simons, 1995; Anthony and Govindarajan, 2007). However, researcher opined that Management Control System (MCS) uses performance measurement information to influence the activities of all the organizational resources in implementing the targeted organizational strategies. Thus, this hypothesis is formed:

- H_1: PMS is positively related to firm's performance

MATERIALS AND METHODS

A survey research approach was being used in this study by gathering the data through a self-administered questionnaires delivered to bank branch managers. Majority of the respondents were branch managers followed by some middle and top level managers especially those that hold corporate strategic positions. The population in this study is 2,811 branches of the 10 Nigerian bailed-out banks while a sample of 338 was derived using a sample size formula of researcher (Dillman, 2007) supplemented by the sample size table by researcher (Krejcie and Morgan, 1970).

In order to avoid the problem of potential low response or damage, or unreturned questionnaires, 50% of the sample was added to the initial sample now making our total sample to be 507. Stratified sampling method was applied to allocate the number of branches for each bank to partake in the survey. Proportionate stratified technique was then used based on the aggregate number of branches it has in each respective strata (banks). The collected data was subjected to a preliminary data screening and little missing data were treated, few outliers deleted, after then normality as well as multicollinearity tests were conducted which all revealed an impressing output showing a normally distributed fit for analysis Partial Least Square (Smart-PLS) is adopted to examine the hypothesized relationship.

PLS statistical technique is now among the most common used by researchers because of its ability of analysing the relationship existing between variables and their measures. Smart-PLS 2.0. S was used in this study for evaluating the path model. In PLS-SEM, the goodness of measures which is otherwise known as the measurement model is evaluated to determine the indicators goodness. Secondly, the structural model follows from which our basis of conclusion is done. In this study, the model is a reflective model and the quality

criteria assessment are Composite Reliability (CR) which confirms the internal Consistency, Average Variance Extracted (AVE) which confirms the convergence validity and then discriminant validity (Fornell and Larcker, 1981; Hair *et al.*, 2013).

RESULTS AND DISCUSSION

Descriptive statistics of latent constructs: The variables of this study are all having a mean values above 4 which denotes that the majority of respondents were having positive opinions agreeing with most of the questions in the survey, indicating that respondent's average response agrees with the effects or conducts of PMS implemented within the banking sector. Yet, the responses dispersion is lower i.e., 23% as shown in the value of the standard deviation.

For performance, the mean response was all above 4 with a varied response value of 61 and 57% for financial performance and non-financial performance, respectively (Table 1). This implies that the majority of the respondent's perceptions agreed that firm's performance significantly improved.

Descriptive statistics of respondents: In this studies survey, the respondents are comprises of males 67.3% while females represent 32.7%. As for the years of experience, the branch managers with 1-5 year working experience are the least 4.7%. While, managers with banking work experience 6-10 year, 11-20 year were the majority as they constitute 32.4 and 48%, respectively. Branch level managers were the majority being 58.9% of the sample, middle level managers were 29% while top level managers constituted 12.1% of the respondents. The bail-out reform was rated as "effective" by 69.5% as "fairly effective" by 28.3% and as "ineffective" by 2.2% of the respondents.

Measurement model: After running the PLS algorithm, the output forms the basis for extracting and presenting the convergence validity and reliability as shown in Table 2 and 3. The convergent validity was examined and the results showed that the Average Variance Extracted (AVE) has exceeded the required of 0.5 threshold, i.e., range of 0.508-0.540 for all the variables (PMS, FP and NP)

Table 1: Descriptive statistics

Constructs	Mean	SD
Performance measurement system	4.49	0.23
Financial performance	4.34	0.61
Non-financial performance	4.30	0.57

Table 2: Discriminant validity

Constructs	Fin. perfm	Nonfin. perfm	PMS
Fin.perfm	0.723	-	-
Nonfin. Perfm	0.716	0.713	-
PMS	0.414	0.417	0.735

Table 3: Cross-loadings

Constructs	Fin. perfm	Nonfin. perfm	PMS
FP10	0.781	0.530	0.405
FP5	0.778	0.499	0.260
FP6	0.728	0.451	0.178
FP7	0.696	0.580	0.264
FP8	0.623	0.520	0.334
FP9	0.718	0.516	0.345
NP11	0.440	0.730	0.380
NP12	0.500	0.714	0.335
NP13	0.435	0.650	0.258
NP14	0.576	0.714	0.429
NP15	0.525	0.707	0.192
NP16	0.633	0.743	0.294
NP17	0.456	0.783	0.277
NP18	0.495	0.650	0.199
PMS12	0.174	0.294	0.712
PMS13	0.367	0.344	0.825
PMS21	0.340	0.276	0.658

Table 4: R^2

Endogenous construct	R^2-value	Results
PERFM	0.203	Moderate

R^2 values are rated as: 0.27 = substantial, 0.13 = moderate and 0.02 = weak

while the composite reliability is also hereby achieved by exceeding the 0.70 threshold (Hair *et al.*, 2012) with a range of 0.777-0.892. Additionally, the performance was measured as a second order hierarchical construct based on (FP and NP) and also have been achieved all. For the second-order constructs, NP has loadings of 0.905 and NP has 0.945 while the performance itself has an AVE and composite reliability of 0.858 and 0.921, respectively.

In this study, the discriminant validity was assessed firstly with researcher (Fornell and Larcker, 1981) criterion as shown in Table 2 where the square roots of constructs AVE were shown bolded diagonally while the other off-diagonal values shows the squared inter-construct correlations. Hence, this validity is confirmed achieved because the square root of AVE are all more than the inter-construct correlations.

Table 3 displays the cross-loadings which is the second criterion of assessing discriminant validity. From the Table 3, it is proved that all indicator's loadings were really more than their respective cross loadings in the model. Hence, the study certifies that the reliability and validity of all constructs were acceptably achieved (Hair *et al.*, 2013). From Table 4, the R-square of this model is statistically confirmed as moderate.

Multicollinearity test: It has been a common requirement that multicollinearity should be tested before the structural model is run just to ensure that abnormal inter-constructs correlation are avoided from distorting the result. However, no multicollinearity exist as only one exogenous variable exist in the model. Hence we proceeded with the structural model.

Structural model: In PLS-SEM, structural model is meant to evaluate the significance of the paths, (i.e., between

Table 5:Hypothesis test results

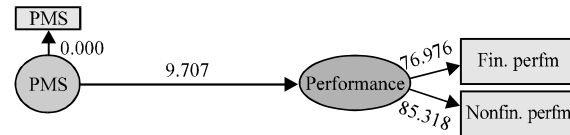| Relationship	β-value	SE	t-value	p-value	Decision
PMS->performance	0.449	0.046	9.707	0.000	Supported

Fig. 1: Structural model

constructs). Here, we determine the effect of PMS on the organisational performance where the performance is treated as a hierarchical second-order construct which consists of both financial and non-financial performance. The result from Fig. 1 and Table 5 implies that PMS is strongly related with performance of banks. This is because PMS is found to have a strong positive effect with a t-value of 9.707 which is accepted at 1% level of significance. Therefore, this relationship is statistically supported.

CONCLUSION

Consistent with the agency theorists, this study supports that PMS improves the performance of firms. This is because PMS provides both financial and non-financial information necessary for better decision making and strategies formulation/implementations. Additionally, our results showed that non-financial has a stronger influence than financial on the firm's performance. Our results is consistent with researchers Epstein and Roy (2005), Zuriekat *et al.* (2011), Kaplan and Norton (1996a, b). Hence, companies, banks are all suggested to immensely utilize PMS and non-financial data to predict their firm's performance.

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