Innovations

Financial risks mitigation strategies and productivity of banking institutions in Nigeria: Empirical approach

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Abstract

The Banking industry in Nigeria hasconsistently witnessed downturn of activities for decades.It is on this note that the research seeks to empirically investigateFinancial Risks Mitigation Strategies and Productivity of banking institutions in the industry in Nigeria. The study adopted mitigation strategies, namely: Risk Avoidance, Risk Reduction, Risk Transfer and Risk Retention as proxies for Financial Risks Mitigation to explain Productivity of banking institutions. Research data were sourced through Survey design using structuredquestionnaire and analyzed using Pearson Product-Moment Correlation Coefficient (PPMCC) or 'r' and the Coefficient of Determination (r^2).The research findings were relatively impressive.Thefour hypotheses models estimated gave unique results with comparatively middlingcoefficients for most of the variables excepting for hypothesis three ($H0_3$) which displayed a PPMCC or 'r' value of 0.9353 with Coefficient of Determination (r^2) value standing at 0.8748 or 87.48%. Though this model gave a more impressive outcome, the overall results are somewhat on the average, fair to middling andthat led us toconclude thatthe effectiveness of Risk mitigation coverage on operations in the industry may be just moderate and need to be improved upon to gear up productivity. Risky operations by norms should be managedby competent professionals and thus we recommend that skilled personnelshould be engaged to supervise risk management and mitigation processes in order to efficiently sustain productivity in the industry.

Keywords:1.Risk Mitigation, 2.Risk Avoidance, 3.Risk Reduction, 4.Risk Transfer, 5.Risk Retention, 6.Productivity, 7.Banking industry, 8.Nigeria.

1.0   Introduction

Though bankingactivities in Nigeria appears dynamic, in many respects it has been turbulent. Reasons are that institutions in the sector have experienced capital adequacy problems that led to recapitalization, merger and acquisitions, rescue mission, et cetera culminating into distresses and outright liquidation of some firms. In order to address these vices, several corrective steps and innovations were adopted, some of which includenew banking methods, products and adoptions of Information and Communication Technology (ICT) channels for operations. Obviously, these innovations wereaccompaniedwith allied risks elements besides natural risks associated with banking. The risks elements made operating firms vulnerable to offensive acts and thus productivity was retarded.However, banking firms cannot effectively function profitably outside risk taking as it is obvious that taking higher risks boost earnings. Audu (2014),affirmed that risk is inherent in banking and taking risk is an essential part of the business.Generally in banking business, risks are mostly exposures associated with financial markets activities and have the ability to cause serious problems that could ultimately have contagion effect in national and global financial systems. Financial risks have serious threats and consequences forbanking products, especially deposits, credits, resources, income and profitability and the remedy readily available is mitigation.At this point, it might be necessary to succinctly discus some financial risks this study wish to focus on that constitute core risk elements that require effective mitigation.

Credit risk or default risk: This type of risk occurs when a bank debtor fails tomeet up with his debt repayment obligations. It often results in partial loss or complete loss of interest and principal and so, has the ability to erode bank capital. This was the case with many banking institutions especiallyDeposit Money Banks (DMBs) in Nigeria.

Liquidity risk: This risk occurs when cash cannot be realized to meet all unforeseeable and forecasted cash flows and obligations. Audu (2014) explained that itoccurs mostly when banks use funds taken on short-term as in Demand depositliabilities and use them to grant credits as in medium and long term loans.

Operational risk: Operational risk occurs when there is breakdown of operational procedures. It may occur owing to breakdown of policy, processes, systemic blunder, uncontrolled external

activities, et cetera. Common examples of operational risk are frauds resulting from inefficient corporate governance practices.

Market risk: Audu (2014) described Market risk asthe chance of loss emanating from the erratic valuation in assetprice owing to the adverse, conflicting or unfavourable movements in market prices. Examples of market risk include: equity risk, interest rate risk, commodity risk and currency risk. These risks are uncontrollable though they can be minimized or hedged.

Legal risk: Legal risk arises from the contractual agreements signed by DMBs and other institutions in the course operations. For DMBs in particular, legal risk occurs mostly when loan agreements are not properly enforced and the firm is exposed to litigation.

The above are financial risk elements that banking institutions contend with during their daily operations. Ultimately,DMBs are compelled toadopt strategies to check and alley these risks.Thus, risk mitigation strategies which constitute basic components of Risk Management process becomes necessary tools.According to Ayodele and Alabi(2014), Risk Management can be related to a technique which takes into account such processes as planning, organizing,resource control and other activities that businesses undertake to effective reduce risk or the adverse effects of it.Risk Management cuts across every business as risks are inherent in businesses from the artisan activities to those of corporate organizations. Businesses are therefore on the lookout for the occurrence of future risks so as to manage them efficiently to avoid threats to operations. Basically, the objective of Risk control is to minimize effectively the disastrous effects of risks and not to actually do away with or eradicate it completely. Research findings have shown that taking necessary risks and strategically controlling them particularly in financial business operations do improve productivity toincrease yield or produce high profits. In banking, to prevent potential problems turning into real risks, there are strategies adopted to ameliorate them.Njogo, (2012) argued thatRisk Management pocess commences with the identifying potential risks, followed by its assessment. This Audu (2014) affirmed and averred that the strategiesthat financial service operators adopt toameliorate risks attempt to ensure that exposure to either financial loss or loss of reputation is controlled. Generally, the essential features or core components of Risks Management process that organizations do adopt usually includes: Risk Identification, Risk Evaluation and Risk Mitigation.

Risk identification. This involves recognizing risk early and developing an effective management and mitigation plansfor it. It is the initial and foremost step in the process of risk management and it begins with the origin of theprobable problem..

Risk evaluation. This is designated as Risk Assessment. The moment a potential problem is identified, it has to be assessed and evaluated to indicate the likelihood that a risk will occur and if it does, how severe it could be. Risks differ in nature as some potential problems are more likely to materialize into risk than others.

Risk mitigation. The first two steps above precede the Mitigation stageconsidered as the actual 'Action stage' of Risk management procedure. Should the decision be that the riskshould be subjected to control depends onthe action taken or strategy adopted here.In the Mitigation stage, strategies for minimizing occurrence of risks or ameliorating the results of occurred risk are adopted. This is our main research focus, to empirically analyzeFinancial Risks Mitigation strategies and Productivityin banking institutions in Nigeria.

Audu (2014), opined thatFinancial Risks Mitigation strategies couldbe classified into four major tiers namely: RiskAvoidance, Risk Reduction, Risk Transfer and Risk Retention. It is from this that we derived our independent variables. Thus, the four tiers serves asproxies for Risks Mitigation strategies andconstitute our independent variablesto explain Productivity of banking institutions. On this emanates our broad research objective which is to investigate and determine to what extent has Financial Risks Mitigation strategies facilitatedProductivity in the banking institutions in Nigeria.The specific objectives are:

- To empirically evaluate how Risk Avoidance facilitates Productivity of Banking institutions in Nigeria.
- To determine empirically how Risk Reduction affects Productivity of Banking institutions in Nigeria.
- To empirically examine how Risk Transfer influences Productivity of Banking institutions in Nigeria.
- To empirically analyze the effect of Risk Retention on Productivity of Banking institutions in Nigeria.

1.1 Hypotheses formulation

Leaning on the objectives above, we formulated four null hypotheses to be tested to allow us draw valid inferences and conclusions. The hypotheses are:

$H0_1$ Risk Avoidance has nosignificant relationship withProductivity in the Banking institutions in Nigeria.

$H0_2$ Risk Reductionhas no significant relationship with Productivity in the Banking institutions in Nigeria.

$H0_3$ Risk Transfer has no significant relationship withProductivity in the Banking institutions in Nigeria.

$H0_4$ Risk Retention has no significant relationship with Productivity in the Banking institutions in Nigeria.

1.2 Review of related literatures

Financial risks are commonand are widespread in business activities particularly in banking and allied businesses.So,risk management and thus mitigationassists banking institutionsto control excessive risks taking during operations. Thisenhances productivity toachieve good profits.In the series of activities taken to achieve effectiveRisk management, the Mitigation stage is considered core as it constitutes the major actions needed to put risks under check.Thus, Mitigation strategies namely: Risk Avoidance, Risk Transfer, Risk Reduction, and Risk Retention are aimed at minimizing the emergence of risks or lessening the adverse effects of occurred risks. The adopted of these strategies are fundamental to our discussions.Zidafamor (2016) opined that employing these strategies to banking institutions operations havebecome of vital importanceas they help to efficiently take care of diverse forms of risk they encounter. Let's reiterate that the idea of efficient mitigation of risk does not mean that risk should totally be eradicated from operations.Generally, takingsome level of businessrisks help banking firms achieves higher levels of revenue toboost their source of income and that ultimately enhances their productivity and performance.That-not-withstanding, owing to the rapid rate at whichbanking institutionswerebecoming distressed, theneed to assuage and allay excessive risk taking arose.According to Thomas and Raphael, (2014), risk managementmeasuresin thebanking industry has not been too successfulin Nigeria as was expected possibly owing to some unethical practices.Financial risks could be hard to control and thus have serious consequences. Risk

mitigation actions should therefore be of foremost importance if productivity is to be aided in the industry.Audu (2014), argued thata sound mitigation strategies involves the pursuance of order process whereby those risks having highest possibility of loss and the highest likelihood of occurring are brought under control first, and those with lesser possibility of happening and lesser loss are controlled in descending order. Soludo (2007) averred that globally, risk control methods are changing in organizations in recent times.This is because business are recognizingthat risks are not justhazards to be discarded but they also constitute opportunities to be embraced and exploited.Viewed from this perspective, mitigating risks involves all the activities that influenc the risk profile, first to ameliorate the risk, not necessarily to eliminate it and secondly, to exploit the opportunitiesit may have presented for higher profits and benefits.What this implies is that effectively employing risk mitigationmeasures and strategies can enhance or facilitate banking institutions' productivity and indeed performance.

For a comprehensive discussion, we highlight some literatures on risk mitigation and analyzed deductions arrived at bythe researchers.Soyemi, Ogunleye and Ashogbon (2014) performed an investigation on risk management practices and banking industryperformance in Nigeria and found that performance was determined by effectively employing risk mitigation techniques. By implication, efficient application of mitigation strategies can reduce risk factor and allow the firm to achieve good performance.Akindele (2012) affirmed thatrisk competently managed enhances banking institutions' operations. He asserted thateffective risk mitigation pave way for the smooth running of operations, thus, itis capable of translating business failure into a boom. However, Olusanmi, Uwuigbe and Uwuigbe (2015), observed that a negative and insignificant relationship exists between the risk management proxiesand bank's performance.This result appears difficult to explain asit countered apriori expectation though it stillconstitutes relevant contribution to knowledge in this field of study.That-not-withstanding, in another outstanding research study, Ofosu-Hene and Amoh (2016) appraised risk management and banking performance in Ghana to determine their relationship and they found that the variables have positive relationship with banking performance. Angote, Malenya and Musiega (2015) examined how Financial Risk Mitigation affects performance of banks and affirmed that a positive relationship exists between efficient financial risk mitigation and banking performance in Kenya.

Philip (2013) affirmed thatRisk Avoidance, Risk Transfer, Risk Reduction, and Risk Retention are strategic risk mitigation tools. These strategiesare collectively known as 'Risk treatment'. As earlier stated, we adopted these strategies to explain Productivity of banking institutions in Nigeria. Succinctly, we wish to provide some explanations on each strategy to show their relevance and to justify their adoption.

Risk Avoidance: This involves the policy of a firm to refrain, prevent,eliminate or stay away from risk at all cost. It may include refusal to undertake transactions that could bring about any risk element.Risk Avoidance may appear to be an aggressive policy and a somewhat effective solution to all risks issues in a banking firm. However, in practice, it is not considered an acceptable or viable policy particularly for institutions whose main business involves takingappropriate risks to make huge returns.According to Lawrence and Marianna (2017), extensive use of risk avoidance strategy could deprive the business many opportunities of making good profits. This explains why sometimes, management scholars think that risk avoidanceis an unsatisfactory approach to dealing with financials risks.

Risk transfer: It is a risk mitigation strategy involving thetransfer ofrisk inherent in a transaction from one person or entity to another on a contractual basis. This occurs particularly in purchasing insurance policy where the risk is conveyed from the insured to the insurer.Lawrence and Marianna (2017), averred that risk transfer strategy may be employed to dealwith speculativefinancial transactionssuch as hedging; a method of buying and selling securities against possible fluctuations in prices.

Risk reduction: This strategy involves allaying,alleviating or reducingthe risk. It involvescurtailing the chancesof loss from taking place throughloss prevention. Loss prevention means preventing the possibility of loss by either actions or inactions that will deliberately keep the risk from happeningor through loss control which involves controlling the sternness or harshness of loss.

Risk retention: It is accepting and budgeting for possible losses that may occur in the course of operations. This commonly happens when loss values are low.It is relatively the most viable strategy particularly for small risks and thus the most acceptable technique of dealing with

financial risk. Lawrence and Marianna (2017), argued that when positive action is nottaken at allto avoid or ameliorate potentialrisk, the possibility of loss is retained. Risk retention could therefore be deliberate and that means that whatcould constitute a financial disaster is effectively curtailed and put under control.

2.0   Material and methods

These are the techniques employed in consummating or accomplishing the research process. Essentially, the technique defines the designof the research;study Population, Sample size; Sampling instrument and techniques, Analysis technique, Model specification and the Decision rule to aid discussions.

2.1   Research design, population of study

The study utilized primary data and so adopted 'Survey design' to source for data. Survey design is realistically comprehensive and givespractical observations.The study population consists of all employees in DMBs in Nigeria. Population as defined by Creswell (2005) is the most widespread level ofall observable elements in a group of individuals, things or features under studies. However, owing to the large size of a study population, a Sample population can bestudied to enable us make inferences of general application to the population.Again, Creswell (2005) defined Sample population as the actual list of sampling units from which the research data are selected. The study adopted all DMBs employees in Delta and Edo States in Nigeria as its Sample population and from there five hundred (500)employees were randomly selectedforinvestigation.

2.2   Sampling techniques

The Sampling technique employed in this study is the 'Random sampling technique'. It is presumed to be fair and unbiased. The instrument of sampling is structured questionnaire consisting of questions with answers options and administered randomly to the Sample population to elicit responses from respondents. The questionnaire was structured to conform to 'Item-Specific-Response-Options (ISRO). Wronski (2018),posits that 'Item specific' indicates that response options are definitive and distinct to a particular question in the questionnaire. However, different questions in the questionnaire may have different or diverse set of response options'.The ISRO systemis a moderninnovation in sampling technique and gives

resoluteresponses to questions. The system has response answer options scheduled in five-point-rating scale ranging from Very Affirmative, Somewhat Affirmative, Neither Affirmative nor Negative, Somewhat Negative to Very Negative and are weighted 5, 4, 3, 2 and 1 respectively.

2.3   Analysis technique and model specification.

The statistical tool utilized in estimating and analyzing data is the Pearson's Product-Moment Correlation Co-efficient (PPMCC) represented by the alphabet 'r'. The PPMCC or 'r' is the quantitative that gauges the extent of correlation between two variables, say Y and X under investigation and it attests to the strength and direction of relationship as per whether the relationship is weak or strong; positive or negative. Sauro (2011), opined that while estimatinga five point rating scale like the ISROscaleweighted 5 to 1 as per answeroptions,the score column should contain the numerical equivalent scores to the respondents chosen answers, that is, the allotted weights and the nominal column should contain the frequency of respondent's answers. Obadan, (2012) provides and specifies the model for computing PMMCC or 'r' as follows.

$$\text{PPMCC or 'r'} = \frac{\sum (X - \overline{X})(Y - \overline{Y})}{\sqrt{\sum (X - \overline{X})^2 \sum (Y - \overline{Y})^2}} \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (1)$$

Where: 'r' =   Pearson's Product-Moment Correlation Coefficient (PPMCC) between X and Y variables.

X = Weighted answer options with respect to the variables

Y   = Frequency of response of answer options

$\sum$ = Summation sign

$\overline{X}$ = Mean of weighted response options

$\overline{Y}$ = Mean of frequency of response options

However, computing equation 1 which uses the actual values of variables is mathematically cumbersome. To ease the difficulties of computing equation 1, Obadan (2012)introduced equation 2 which uses the deviations of the variables from their meansfor computing the value of PPMCC or 'r'. It is specified as follows.

$$\text{'r'} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (2)$$

$$\text{Where:} \quad x \;=\; X - \overline{X} \;\; \text{and}$$
$$y \;=\; Y - \overline{Y}$$

2.4   Decision rule:

Acording to Obadan (2012),the degree of correlation or interrelationship between the variables X and Y measured by PPMCC or 'r' ranges in value from -1 to +1. By interpretation, when:

'r'value is zero (0);No relationshipexists between the variables.

'r'value is +1; A perfect positive relationship prevails between the variables.

'r'value is -1; A perfect negative relationship subsists between the variables.

'r'squared; It is known as the 'Coefficient of Determination (r^2). It shows the extent of variation in the explained variable determined by the explanatory variable(s).

3.0   Results

3.1   Data presentation

This section presents data obtained from field survey for all the hypotheses earlier formulated. We stated earlier that five hundred (500) questionnaires were distributedin a haphazard random manner during the field survey. However, 465 were retrieved constituting 93.00% of total questionnaires distributed.

3.1.1 Presentation of data for hypothesis one (H0$_1$)

Hypothesis oneevaluated the expected relationship between Risk Avoidance strategy and Productivity of banking institutions in Nigeria.In the questionnaire administered the question that linked these variables states thus:

'How certain or uncertain would you say that 'Risk Avoidance'as a Risk mitigation strategy enhancesProductivity of banking institutions in Nigeria?'

Presented below on table 3.1 are the data sourced from field survey with respect to hypothesis one (H0$_1$). It depicts the ResponseFrequencies of answer options with their computed percentages.

Table 3.1: Responses frequencies for hypothesis 1 (H0$_1$)

Table 3.1 reveals that while 28.60% of respondents are very certain, 35.48% are somewhat certain that 'Risk Avoidance'enhances Productivity of banking institutions in Nigeria. These percentages are large and appear to suggest that Risk Avoidance' strategy can actually help DMBs to performance well to enhance productivity in the industry. The data of Response frequencies in percentages on table 3.1 were appropriated in computing a column chart shown in figure 3.1 to exhibit clearly data characteristics
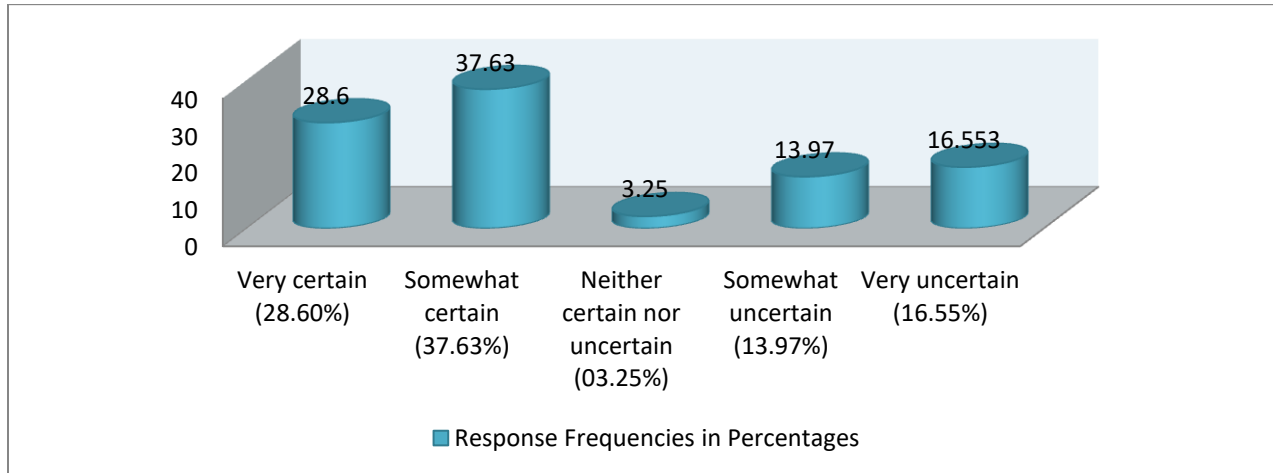

Figure 3.1Responses frequencies in column chart for hypothesis one (H0$_1$)
Source: Author's computation, 2022.

3.1.2 Presentation of data for hypothesis two (H0$_2$)

The second Hypothesis (H0$_2$) examined Risk Reduction strategy andProductivity of banking institutions inNigeria. The question used to examine these variables in the questionnaire reads as follows.

'To what extent do you agree or disagreewith the fact that 'Risk Reduction' as a Risk mitigation strategyfacilitatesProductivity of banking institutions in Nigeria?'

Table 3.2 presents the response frequency data obtained from field survey for the analysis of hypothesis two (H0$_2$).

Table 3.2: Responses frequencies for hypotheses 2 (H0$_2$).

Table 3.2 indicates that 24.51% and 38.71% of respondents strongly agree and somewhat agree respectively that Risk Reductionhas significant relationship withProductivity of banking institutions in Nigeria. This revelation looks quite robust.We represent in figure 3.2 the Column chartof response frequencies in percentages for hypotheses two (H0$_2$). The chart shows distinctivelythe data characteristics.
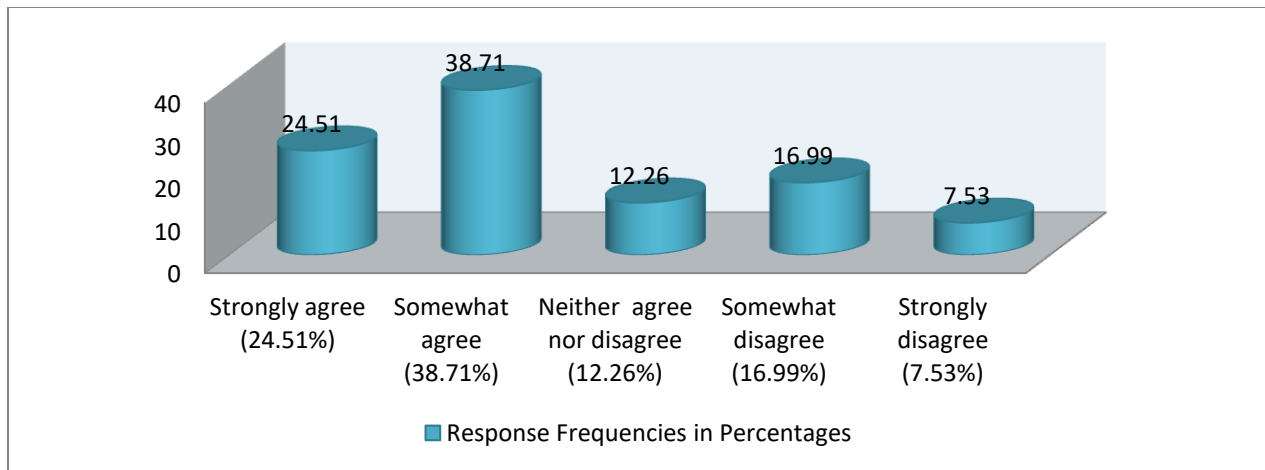

Figure 3.2Responses frequencies in column chart for hypothesis one (H0$_2$)
Source: Author's computation, 2022

3.1.3 Presentation of Data for Hypothesis three (H0$_3$)

Hypothesis three (H0$_3$)evaluates Risk Transfer strategy and its influence on Productivity of banking institutions in Nigeria. The question that linked these variables in the questionnaire administered is expressed as follows.

'How assured or unsure would you say that 'Risk Transfer' as a Risk mitigation strategy influences Productivity of banking institutions in Nigeria?'

The response frequencies in figures and percentages for hypotheses three (H0$_3$) are exhibited in table 3.3.

Table 3.3:Responses frequencies for hypotheses two (H03).

Table 3.3 reveals that 29.25% of respondents are strongly assured and 32.47% are somewhat assured that 'Risk Transfer' as a Risk mitigation strategy enhances Productivity in the banking industry in Nigeria. The implication of this result will be clearer on computation of PMMCC or 'r'. To display the distinctnessof response frequencies of data obtained to analyze hypotheses three (HO_3),a Column chart in figure 3.3 is constructed.
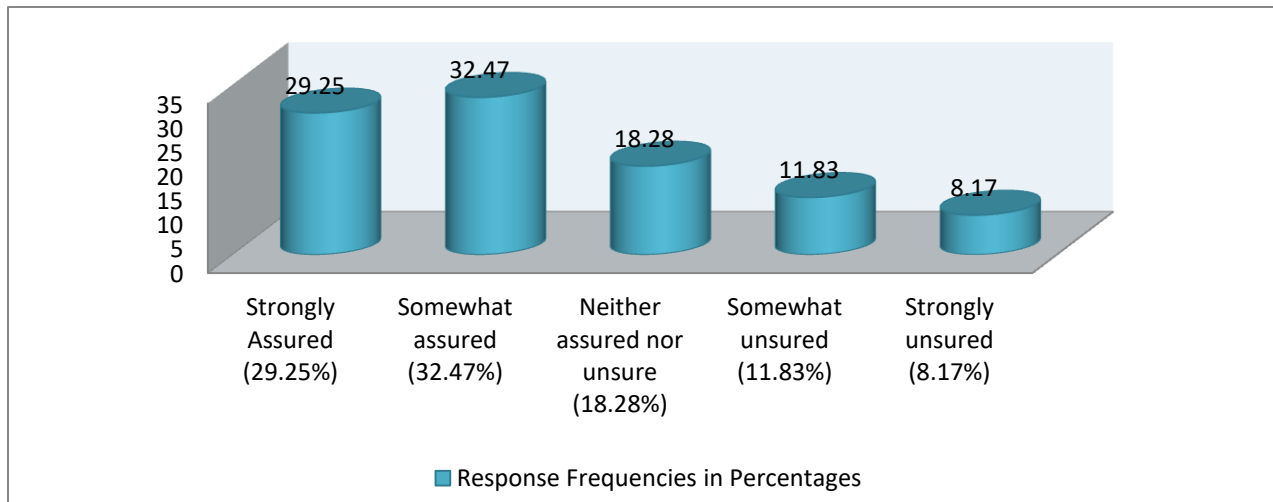

Figure 3.3Response frequencies in column chart for H0$_3$.

Source: Author's computation, 2022.

3.1.4Presentation of Data for Hypothesis four (H0$_4$)

In hypotheses four $(H0_4)$, the relationship between 'Risk Retention' strategy and Productivity of banking institutions in Nigeria was analyzed. The question that determined the nexus between the variables states as follows.

'How satisfied or dissatisfied would you say that 'Risk Retention' as a Risk mitigation strategyfacilitates Productivity of banking institutions in Nigeria?'

Table 3.4 shows an impressive result revealing that 26.67% and 33.98% of respondents were strongly satisfied and somewhat satisfied respectively that 'Risk Retention' as a Risk mitigation strategy could enhance efficient DMBs performance and thus Productivity in the banking industry in Nigeria. However, more about the validity of these results will be brought to fore on computation of the Pearson Product-Moment Correlation Coefficient (PMMCC) or 'r'.

Table 3.4:Responses frequencies for hypotheses two (H03).

For clarity of the characteristics of response frequencies expressed in their percentages are represented in figure 3.4.
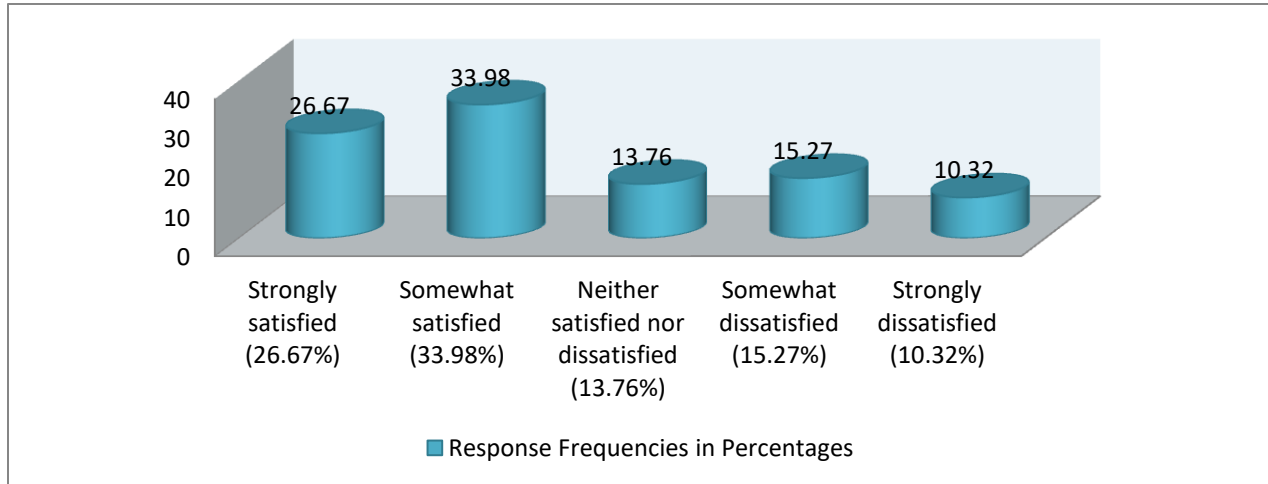

Figure 3.4Response frequencies in column chart for $H0_4$.

Source: Author's computation, 2022.

3.2 Empirical estimation of models

In this section, the models for the four null hypotheses formulated were estimated and the values of PPMCC or ('r') and the Coefficients of Determination (r^2) for each of the models were determined. Our analysis is based on the explanation and interpretation of the values of these parameters.

3.2.1 Estimating Hypothesis 1 (H01)

The derivation of totals of variables for computing the values of PPMCC or 'r' and the Coefficients of Determination (r^2)for Hypothesis 1 (H01)was done using table 3.5

Table 3.5: Deriving totals ($\sum$) of variables for $H0_1$

Mean of Weighted Answer Options; $\qquad \overline{X} = \dfrac{\sum X}{n} = \dfrac{15}{5} = 3$

Mean of Frequency Response Options $\overline{Y} = \dfrac{\sum Y}{n} = \dfrac{465}{5} = 93$

From equation 2; PPMCC; 'r' $= \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{222}{\sqrt{10x15448}} = \dfrac{222}{393.04} = 0.5648$

Therefore: PPMCC) or 'r' = 0.5648 and

The Coefficient of Determination (r^2) = $(0.5648)^2$ = 0.3190 or 31.90%.

3.2.2 Estimating Hypothesis 2 (H0$_2$)

We derived the total sums of the variablesutilized in computing the values of PPMCC or 'r' and subsequently, the Coefficient of Determination (r^2) ofhypothesis 2 (H0$_2$) model using table 3.6.

Table 3.6:Deriving totals ($\sum$) of variables for H0$_2$

Mean of Weighted Answer Options; $\qquad \overline{X} = \dfrac{\sum X}{n} = \dfrac{15}{5} = 3$

Mean of Frequency Response Options $\overline{Y} = \dfrac{\sum Y}{n} = \dfrac{465}{5} = 93$

From equation 2; PPMCC; 'r' $= \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{258}{\sqrt{10x12866}} = \dfrac{258}{358.69} = 0.7193$

Therefore: PPMCC or 'r' = 0.7193 and

The Coefficient of Determination (r^2) = $(0.7193)^2$ = 0.5173 or 51.73%.

3.2.3 Estimating of hypothesis 3 (H0$_3$)

To enable us compute PPMCC or 'r' and Coefficient of Determination (r^2) values for hypothesis 3 (H0$_3$)we employed table 3.7 to derive the totals of variables under discussion.

Table 3.7: Deriving totals ($\sum$) of variables for H0$_3$

Mean of Weighted Answer Options; $\overline{X} = \dfrac{\sum X}{n} = \dfrac{15}{5} = 3$

Mean of Frequency Response Options $\overline{Y} = \dfrac{\sum Y}{n} = \dfrac{465}{5} = 93$

From equation 2; PPMCC or 'r' $= \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{292}{\sqrt{10 x 9746}} = \dfrac{292}{312.19} = 0.9353$

Therefore: PPMCC) or 'r' = 0.9353 and

The Coefficient of Determination (r^2) = $(0.9353)^2$ = 0.8748 or 87.48%

3.2.4 Estimating of Hypothesis 4 ($H0_4$)

To enable us compute PPMCC or 'r' and Coefficient of Determination (r^2) values, we employed table 3.8 to derive the totals of variables under discussion.

Table 3.8Deriving totals ($\sum$) of variables for $H0_4$

Mean of Weighted Answer Options; $\overline{X} = \dfrac{\sum X}{n} = \dfrac{15}{5} = 3$

Mean of Frequency Response Options $\overline{Y} = \dfrac{\sum Y}{n} = \dfrac{465}{5} = 93$

From equation 2; PPMCC; 'r' $= \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{239}{\sqrt{10 x 8536}} = \dfrac{239}{292.16} = 0.8180$

Therefore: PPMCC or 'r' = 0.8180 and

The Coefficient of Determination (r^2) = $(0.8180)^2$ = 0.6691 bor 66.91%

4.0 Discussion

4.1 Discussion of findings

This study empirically explored Financial Risks Mitigation Strategies and Productivity of Banking institutions in Nigeria. The values of PPMCC or 'r' and the R-squared (r^2)

coefficientwere estimated using data derived from field survey.Table 4.1 displays the results of computed values of PPMCC or 'r' and R-squared (r^2) used for our discussions.

Table 4.1: **Summary of results for the null hypotheses tested**

Hypotheses Tested	PPMCC or 'r'	Coefficient of Determination (r^2)
H0$_1$ Risk AvoidanceandProductivity of Banking institutions in Nigeria.	0.5648	31.90%
H0$_2$ Risk Reduction andProductivity of Banking institutions in Nigeria.	0.7193	51.73%
H0$_3$ Risk Transfer andProductivity of Banking institutions in Nigeria.	0.9353	87.48%
H0$_4$ Risk Retention andProductivity of Banking institutions in Nigeria.	0.8180	66.91%

Source: Authors' Computation, 2022.

Hypothesis one (H0$_1$)examined the affiliation betweenRisk Avoidance variable and Productivity of Banking institutions in Nigeria.The computed value of PPMCC or 'r' for H0$_1$ stood at 0.5648, implying that Risk Avoidance has a somewhat mild relationship withbanking Productivity in Nigeria. This appears to suggestthateliminating risk at all cost which Risk Avoidance stands to meanmay not have really aided or improved operational productivity as may have been anticipated.The Coefficient of determination (r^2) stood at 31.90% indicating that only 31.90% variation in Productivity is explained by Risk Avoidance strategy.

In hypothesis two (H0$_2$) Risk Reductionvariable and Productivity of Banking institutions in Nigeria was investigated. The computed value of PPMCC or 'r' for this model stood at 0.7193. This coefficient signifies a relatively strong linear relationship existing between these variables under discussion. By implication, the magnitude of the coefficient suggests that reducing the possibility of loss from taking place facilitatesProductivity in banking operations. The Coefficient of determination (r^2) of the model stoodaveragely stood at 0.5173 implying that 51.73% variation in Productivity is explained by Risk Reduction variable.

The third hypothesis, (H0$_3$) deals with Risk Transfer strategy and Productivity of Banking institutions in Nigeria. The model produced PPMCC or 'r' coefficient standing at 0.9353. This indicates a near perfect positive relationship. It implies that transferring risk inherent in a transaction from one person or entity to another on contractual basis can effectively enhance operational Productivity.The robustness of this result is reflected in its Coefficient of determination (r^2) standing at 0.874. It signifies that Risk Transfer variable explained 87.48% variation in operational Productivity. Thisresult points out clearly that theRisk Transfer variable has the strongest influence on operational Productivity of Banking institutions in Nigeria.

Hypothesis four (H0$_4$) evaluated the nexus betweenRisk Retention and Productivity of Banking institutions in Nigeria. The value of the PPMCC or 'r' coefficient produced from hypothesis four, (H0$_4$) model stood at 0.8180. This coefficient is high and strong and it suggests that Risk Retention strategy has the ability to positively influence Productivity in the industry. The Coefficient of determination (r^2) of this model stood at 0.6691signifying that the Risk Retention variable was able to explain 66.91% variation in operational Productivity. Itappears to suggest that a well managedRisk Retention strategymay be able to improve productivity of banking institutions in Nigeria.

5 Conclusions

We based our conclusion on the studyfindings discussed above. Four models were estimated and each gave unique results, implying that the independent variables influenced or affected the dependent variable differently at various degrees. First, the computed value of PPMCC or 'r' for H0$_1$which stood at 0.5648, led us to conclude that Risk Avoidance had an average or a rather mild influence on Productivity. Its Coefficient of determination (r^2) which stood at 31.90% reinforced our conclusion and the low value of (r^2) further affirmed that eliminating risk at all cost does not really facilitate banking operational productivity in Nigeria.Secondly, the PPMCC or 'r' coefficient for hypothesis two (H0$_2$) stood at 0.7193. The value exhibited by the coefficient is high enough to impel us to conclude that there is relatively strong relationship between Risk Reduction strategy and operational Productivity in the industry.Its Coefficient of determination (r^2) stood at 51.73 % implying that on the average, Risk Reduction strategy could be considered relevant in formulating policies that willimproveProductivity of banking institutions in Nigeria. Thevalue of PPMCC or 'r' coefficient for the third hypothesis, (H0$_3$)

stood at 0.9353. This result is considered absolutely robust and near perfect condition. It compelled us to conclude that transferring risk inherent in a transaction from one entity to another on contractual basis can excellently boost operational productivity. The Coefficient of determination (r^2) standing at 87.48% affirmed that Risk Transfer strategy has very strong consequences and effect onProductivity in the industry.The estimated model of the forth hypothesis, (H0$_4$) produced PPMCC or 'r' coefficient standing at0.8180. This coefficient is also very strong that it impelled us to conclude that Risk Retention strategy is capable of effectively boostingProductivity in banking industry in Nigeria. Its Coefficient of determination (r^2) standing at 0.6691 or 66.91% affirmed thatRisk Retention strategy is relevant forachieving or aiding desired Productivityin the industry in Nigeria.On a general note, most of the Risk mitigation strategies as discussed above passed the test of relevance and that is a driving force to compel us to conclude that financial risk mitigation can induce excellent operational productivity and thus solvency in the Banking industry in Nigeria.

5.1   Recommendations

Undoubtedly, financial risks management and mitigation are core banking skills that only professional in the field can effectively handle. It requires absolute knowledge of practical banking experience to manipulate and manage the four financial risks Mitigation strategies under review namely: Risk Avoidance, Risk Reduction, Risk Transfer and Risk Retention. Special skills must be brought to fore to efficiently manage and execute these strategies, thus, employees with the right occupational or banking competences may be required.

Based on the foregoing, we recommend that sustained effort must be made to recruit competent managers with industry-based competences who can efficiently improve the management of risk mitigation approach so as to drive productivity. Besides, the Banking industry in Nigeria has operated some sort of unguided recruitment policy where graduates from all educational disciplines were employed into the system. This has led banking institutions to engageemployees devoid of the knowledge of the profession. We therefore recommend for this group of employees that rigorous on-the-job training and re-training to help assimilate and acquire the tacit knowledge required to propel effectively the wheel of operations in the industry.

Acknowledgment

Tables

Table 3.1:Responses frequencies for hypothesis 1 (H0$_1$)

Response Options	Response Frequencies	Response Frequencies in Percentages (%)
Very certain	133	28.60%
Somewhat certain	175	37.63%
Neither certain nor uncertain	15	03.25%
Somewhat uncertain	65	13.97%
Very uncertain	77	16.55%
Total	465	100.00%

Source: Field Survey, 2022.

Table 3.2:Responses frequencies for hypotheses 2 (H0$_2$).

Response Options	Response Frequencies	Response Frequencies in Percentages (%)
Strongly agree	114	24.51%
Somewhat agree	180	38.71%
Neither agree nor disagree	57	12.26%
Somewhat disagree	79	16.99%
Strongly disagree	35	7.53%
Total	465	100.00%

Source: Field Survey, 2022.

Table 3.3:Responses frequencies for hypotheses two (H03).

Response Options	Response Frequencies	Response Frequencies in Percentages (%)
Strongly assured	136	29.25%
Somewhat assured	151	32.47%
Neither assured nor unsure	85	18.28%
Somewhat unsure	55	11.83%
Strongly unsure	38	8.17%
Total	465	100.00%

Source: Field Survey, 2022.

Table 3.4:Responses frequencies for hypotheses two (H03).

Response Options	Response Frequencies	Response Frequencies in Percentages (%)
Strongly satisfied	124	26.67%
Somewhat satisfied	158	33.98%
Neither satisfied nor dissatisfied	64	13.76%
Somewhat dissatisfied	71	15.27%
Strongly dissatisfied	48	10.32%
Total	465	100.00%

Source: Field Survey, 2022.

Table 3.5:Deriving totals ($\sum$) of variables for $H0_1$

Response Options	X	Y	x = X - Ẍ	y = Y - Ȳ	xy	x²	y²
Very Satisfied	5	133	2	40	80	4	1600
Somewhat Satisfied	4	175	1	82	82	1	6724
Neither Satisfied nor Dissatisfied	3	15	0	-78	0	0	6084
Somewhat Dissatisfied	2	65	-1	-28	28	1	784
Very Dissatisfied	1	77	-2	-16	32	2	256
Totals ($\sum$)	15	465	00	00	222	10	15448

Source: Authors' computation, 2022.

Table 3.6:Deriving totals ($\sum$) of variables for $H0_2$

Response Options	X	Y	x = X - Ẍ	y = Y - Ȳ	Xy	x²	y²
Strongly agree	5	114	2	21	42	4	441
Somewhat agree	4	180	1	87	87	1	7569
Neither agree nor disagree	3	57	0	-36	0	0	1296
Somewhat disagree	2	79	-1	-14	13	1	196
Very disagree	1	35	-2	-58	116	4	3364
Total ($\sum$)	15	465	00	00	258	10	12866

Source: Authors' computation, 2022.

Table 3.7:Deriving totals ($\sum$) of variables for $H0_3$

Response Options	X	Y	$x = X - \ddot{X}$	$y = Y - \bar{Y}$	Xy	x^2	y^2
Strongly assured	5	136	2	43	86	4	1849
Somewhat assured	4	151	1	58	58	1	3364
Neither assured nor unsure	3	85	0	-8	0	0	64
Somewhat unsure	2	55	-1	-38	38	1	1444
Strongly unsure	1	38	-2	-55	110	4	3025
Total ($\sum$)	15	465	00	00	292	10	9746

Source: Authors' computation, 2020.

Table 3.8Deriving totals ($\sum$) of variables for $H0_4$

	X	Y	$x = X - \ddot{X}$	$y = Y - \bar{Y}$	xy	x^2	y^2
Strongly satisfied	5	124	2	31	62	4	961
Somewhat satisfied	4	158	1	65	65	1	4225
Neither satisfied nor dissatisfied	3	64	0	-29	0	0	841
Somewhat dissatisfied	2	71	-1	-22	22	1	484
Very dissatisfied	1	48	-2	-45	90	4	2025
Total ($\sum$)	15	465	00	00	239	10	8536

Source: Authors' computation, 2020.

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