



## **EFFECTS OF OPERATIONAL RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF MICRO FINANCE BANKS IN KWARA STATE, NIGERIA**

**Mubaraq Sanni**

([mubaraq.sanni@kwasu.edu.ng](mailto:mubaraq.sanni@kwasu.edu.ng))

+2348030817202

---

*Department of Accounting and Finance, Kwara State University, Malete*

### **Abstract**

*This study provides empirical investigation on the operational risk management practices and financial performance of micro finance banks in Kwara State. Thus, the specific objectives are to: ascertain the relationship between technology risk management and micro finance banks' financial performance in Kwara State; and determine the effect of personnel risk management on financial performance of micro finance banks in Kwara State. In order to achieve this, survey research design was adopted with total population of 155 from which 112 were picked as a sample size. Partial Least Square Structural Equation Method (PLS-SEM) was used to analyse the data. Findings revealed that technology risk management and personnel risk management are significantly and positively related to the financial performance of micro finance banks in Kwara State. The study concluded that, operational risk management practices are positively related to the financial performance of micro finance banks in Kwara State. Therefore, the study recommended that management should adopt a new technology, and there should be provision of manual back up in case of system failure for vital document. Moreover, management should increase employment of skilled employees and regular training of existing staff on how to deal with operational risk exposure.*

**Keywords:** Operational risk, Operational risk management, technology risk management, personnel risk management, financial performance

### **1. Introduction**

Operational risk has become a major obstacle in the micro finance banking system. Its management involves taking proper measures to ensure qualitative transactions and delivery of excellent service to customers (Grody, Harmantzis&Kaple, 2005). Also, the dynamic changes in financial markets, increasing globalisation, re-capitalisation and global financial crisis have significant effects on the magnitude and nature of operational risk faced by micro finance banks. Due to several operational failures and attendant restructuring of the affected micro finance institutions, emphasis has been placed on operational risk. Thus, regulators, auditors and rating agencies now focus more on



operational risk within the micro finance institutions (Helbok& Wagner, 2006). Therefore, effective operational risk management needs to be established in the micro finance banks.

In Nigeria, operational risk management practices can be traced back to year 2005, when it was observed that the formal financial system provides services to about 35% of the economically active population while the remaining 65% are excluded from access to financial services. These 65% are often served by the informal financial sector, through non-governmental organisation, money lenders, friends relative and unions. The non-regulation of the activities of some of these institutions has serious implication for the central bank of Nigeria (CBN) ability to exercise one aspect of its mandate of promoting monetary stability and a sound financial system. Hence, the Central Bank of Nigeria (CBN) restructured the capital base of community bank and reframed its name to microfinance bank. This was because the capital base of 5million naira for community banks has become too low for its operation. Thus, new capital base was issued by the CBN. The new capital base of micro finance banks in the country was structured to N20 million for unit micro finance bank, N100 million for micro finance bank operating within a state and N1 billion for micro finance bank operating at national level with effect from 31<sup>st</sup> December, 2005 (Central Bank of Nigeria, 2005). Thus, this policy was formulated to reduce and mitigate the operational crisis in the financial system.

Several measures and procedures like curtailing complexities in business process and reinforcing organisational ethics have been put in place by the regulatory agencies to alleviate operational risk in micro finance institutions. However, micro finance bank exposure to this risk seems to be significant and affects financial performance of micro finance banks in Nigeria. Operational risk is not properly understood by many academia and financial risk managers, thus its treatment as a left-over risk from other types of risks affect micro finance institution and it has turned to major problem in the financial sector which needs to be addressed (Acharyya 2012).

Technology and system risk are two major causes of operational risk with greater effect on the financial performance of micro finance banks in Nigeria (Maina, Alala, Wabwile&Musiege, 2014). The complexity involves in micro finance banking activity and high dependence on the usage of technology have made operational risk the most important risk affecting micro finance banking system (Laker 2006; Fatemi&Sabbaghian, 2019). In addition, personnel risk has continued to hinder the financial performance of micro finance banks in Nigeria (Maina *et al.*, 2014). Processes and procedures involved in lending activity in the micro finance institution are prone to human error, misjudgement, negligence and fraud.

The implication of these problems such as, employee's error, equipment failure, external event, technology and system failure have consequently reduced micro finance banks' financial performance in terms of profitability, liquidity and asset turnover (Cope, *et al.*, 2009; Okeke, *et al.*, 2018). Many literature have been reviewed on operational risk



management and financial performance (Lyambiko, 2015; Meshack&Mwaura, 2016; Maalim, 2017; Ameer, 2018). However, there have been few studies on Nigeria (Osadahun, 2014; Okekeet *al* 2018), to the best of researcher's knowledge and the literature reviewed, none has been done in Kwara State. Based on this premise, the study tends to bridge the identified gaps in the literature by looking into operational risk management practices and financial performance of micro finance banks in Kwara State.

In view of this, this study examines the effect of operational risk management practices on the financial performance of microfinance banks in Kwara State using quantitative method of analysis.

## **2. Literature Review**

Operational risk can be defined as “the risk of direct or indirect loss, resulting from inadequate or failed internal process, people and systems or from external events”. This definition includes legal risk but excludes reputational and strategies (BCBS, 2001). Operational risk can also be defined as direct or indirect event that can harm the financial performance of micro finance bank negatively. Direct event could be any loss resulting from inadequate or failed internal processes, people, and systems. Indirect event could result from natural disaster, changes in political regime or parties (change in government, Civilian to Military regime), flood, terrorist attack and high robbery (Delija, 2015).

Moreover, Ghosh Roy and Khakale(2013) defined operational risk as the risk that results from failure of operating system in the micro finance bank as a result of factors like fraudulent activities, human error and mistake. The operational risk can be traced to loss of manpower, unskilled labour, robbery, theft, internal and external fraudulent practice, shortage in labour in an organisation or poor-quality material.

Operational Risk Management (ORM) is the process of managing direct or indirect risk of loss resulting from failed internal process, staff, and system or threats from external events (Karam&Planchet, 2012). ORM also involves reviewing, directing and monitoring of all strategies that cater for management. It is also the process of managing all regulatory responsibility, quick responses and feedback to any major disruptions and external threats. It can be viewed from four major perspectives, namely; internal process risk management or internal control process, technology risk management, personnel risk management and compliance & legal risk management risk (de Jongh, de Jongh ,de Jongh& van Vuuren,2013; Delija, 2015;Chernobai, Ozdagli& Wang ,2018).

Technology risk is the risk that occurs due to system disruptions, unreliable hardware or software. New technology opens micro finance banks to technology risk (Fatemi & Sabbaghian, 2019). According to Shamakhi and Shekhipoorian (2016), technology can be defined as electronic convergence point of data process and telecommunication which promote the growth of an organisation. New technology development or advancement can make the old one become obsolete to the micro finance bank thereby creating threat to



operation and financial performance of micro finance bank. D'Olene and Barrett (2016) defined technology risk management as a process of making sure that data, system, machine and other information technology are protected and utilised in an efficient and effective way.

This is another type of operational risk which covers any defect in human resources department of an organisation, such as error by employees, unskilled staff, fraud by worker, act of dishonesty, taking deliberate action resulting in losses of serious nature (Delija, 2015; Arif, Jan & Kulsoom, 2016). Personnel risk management involves managing, recruiting, selecting appraising human resources in such a way that it conforms to the goal of the organisation (Aloqab, Alobaidi, & Raweh, 2018). Skilled and qualified personnel need to be employed to aid the financial performance of micro finance bank. Workers are needed to be assigned specific tasks according to their skills and talent (Imane, 2014).

Financial performance can be defined as the measure of micro finance banks' achievement on the goals, policies and operational activities in monetary value within a financial year. It involves financial health and strength of an organisation (Ngumo, Collins & David, 2017). In the context of micro finance banking system, financial performance measures the financial capacity of micro finance banks. Also, Obwogo *et al* (2017) defined performance as the ability and capacity of the firm or business organisation to generate new resources, from day to day operations, over a period of time. Financial performance can be gauged by net income and cash from operations. Also, it can be seen as the expansion in operation, enjoying economic of scale, maintaining steady cash flows, efficient and effective utilisation of resource, large customer base, large deposit, and more usage of technology (Okeke *et al.*, 2018).

Banks and every other business organisation are after profit margin and the best way to measure profit margin is through their financial performance (Maalim, 2017). Thus, financial performance indicators include; Return on Asset (ROA), Return on Earning (ROE) and Net Interest Margin (NIM) (Maalim, 2017; Olalere, Aminul, Yusoff, & Shamsuddin, 2018).

The theory underpinning this study is contingency theory. This theory was developed from sociological functionalist theories and propounded by Fred Edward Fiedler in 1964. According to Sigey (2018), contingency theory explains the relationship and the linkage between organisational performance and the environmental factors that influence it. Since micro finance banks are faced with a lot of pressure from internal factors (technology risk, employee risk etc). Micro finance banks need to monitor its environmental factors so as to improve its financial performance (Islam & Hui Hu, 2012). The theory also opined that, contingent factors such as technology and personnel risk affect the functionality of the organisation. Hence, proper and effective management need to be established for the organisation to stand well against these contingent factors (Islam *et al.*, 2012). The basic assumption of this theory is that, organisations have different contingent factors that affect



their operational performance. Each organisation is thus required to study and assess its environmental factors so as to understand the likely factors that can affect its functionality (Islam *et al.*, 2012; Otley, 2014).

The relevancy of this theory to this research study is that, it provides positive relationship between dependent variables and independent variables of this study. The dependent variable is financial performance while independent variable is operational risk management. This independent variable (operational risk management) is further divided into sub-parts; technology risk management and personnel risk management. The theory suggested A-prior expectation sign for this study to be positive.

Technology risk and employee risk are two factors that accounted for causes of operational risk exposure and have great influence on the financial performance. To support this, Kamssu, Rethel and Ziegelmayr (2003) explored a qualitative approach to determine the effect of information technology on financial performance through the impact of being an internet- dependent firm on stock returns. The result showed that choosing a particular information technology will have positive effect on the financial performance of firms; thereby increasing stock return.

A study conducted in Iran by Sadeghimanesh *et al.*, (2013), which examined the effect of Information Technology (IT) on financial performance of bank listed in the floor of exchange. 183 staff were selected for the sample using simple random sample. The study explored survey research design where questionnaires were distributed to the respondent. Information technology was measured with these variables: IT knowledge, IT operation and IT infrastructure while financial performance was proxy with capital management, asset quality and liquidity volume. The result showed that information technology has significant effect on the financial performance of listed bank. It is recommended for the bank to improve their usage of computer and establish Management Information System Department.

Maina *et al* (2014) examined the effect of operational risk in the lending process of micro finance banks profitability in Kakamega town, Kenya. Operational risk was proxy with compliance, system, character, culture and fraud. Survey research design method was used and questions were administered in a five-point likert scale to 51 employees of ten micro finance banks using stratified sampling technique. Partial regression technique was employed and results showed that compliance, system, character and culture were positively related while fraud was negatively related to the profitability of micro finance banks in Kenya. Another view by Osadahun (2014) which explored a qualitative approach on operational risk management in the Nigerian banking institution which showed that, fraud is one of the major causes of operational risk in the banking environment. The study used qualitative method in form of administering interview to the executive staff of the selected banks. The study revealed that, Nigerian banking had not been able to establish proper operational risk loss data base.



Lyambiko (2015) looked into operational risk from quantitative perspective. The study reviewed the effect of operational risk management practices on the financial performance of banks in Tanzania. The mode of data used for the study was quantitative and secondary data from 2009-2013 with population study of 36 banks. The study adopted descriptive statistics and regression analysis. Variables used include operational efficiency, credit risk and insolvency risk as independent variables and dependent variable as financial performance proxy with ROA. Thus, the result showed that operational efficiency was positive correlated with financial performance and credit risk, insolvency risk is negatively related to the financial performance. Also, the result showed that operational risk management practices have positive significant effect on financial performance.

In a related study, Meshack and Mwaura (2016) investigated the effect of operational risk management practices on the financial performance of micro finance banks in Tanzania between 2005-2015. The study used questionnaire as the primary data and a total sample of thirty-four (34) micro finance banks were chosen and descriptive method of analysis plus regression was used to analyse the data. The result revealed that operational efficiency, credit risk and insolvency risk which were used to measure operational risk as independent variable was significant to the performance of micro finance banks in Tanzania measured as Return on Asset (ROA).

Maalim (2017) measured the effect of operational risk management practices on the financial performance of Islamic bank in Kenya for a period of five (5) years from 2011-2015. Seven banks were sampled. Expo facto and questionnaire were used in the study and ANOVA was used to analyse the data obtained. Operational risk management was proxy with; sharia compliance and bank size. While financial performance was represented by ROA. The result revealed that there exists a strong linkage and association between financial performance and operational risk management practices in Kenya Islamic bank.

Similarly, Murithi and Waweru (2017) studied operational risk effect on the profitability of banks in Kenya. The study covered the period of 2005 and 2014 for the forty-three (43) registered commercial banks in Kenya. Generalized Method of Moment (GMM), method of regression analysis was used and the finding indicates cost- income ratio is negatively associated with profitability of the banks. Therefore, it was recommended that cost-income management need proper attention before effective operational risk management can be achieved.

Moreover, Nyada (2017) examined the relationship between operational risk management and quality management in micro finance banks of Kenya. The study used survey method. A total of 43 micro finance banks were sampled. The independent variables were quality management and proxy with customer focus, employee involvement, continuous improvement and leadership commitment. While dependent variable was operational risk management and proxy with; reduced operational loss, increased efficiency and improve customer service. The study revealed that micro finance banks had not implemented their



quality management system. Thus, the study recommended that banks should improve their quality management in order to have high performance and reduce operational risk in the micro finance banking sector.

Sigey (2018) looked into the effect of Information Technology (IT) risk management on the performance of micro finance bank in Kenya. The study used 42 micro finance banks from 2013-2017. The independent variable was measured with strategic risk of IT, cyber security and incidence response, IT resiliency and continuity risk, technology vendor and third-party risk. While the dependent variable was measured using ROA. Both primary and secondary data were used. Primary data were obtained using questionnaires arranged on five likert scale and secondary data were sorted from audited financial statement. The study concluded that strategic IT, IT resiliency and continuous risk, technology vendor and third-party risk are significantly negative to the performance of micro finance bank. Cyber security and incidence response are positive but insignificant on the performance of bank. Also, the study recommended that micro finance banks must establish Information Technology (IT) department in order to cater for risk exposure caused by IT.

Aloqabet *al* (2018) reviewed operational risk management in the financial institutions in China. The nature of the research was qualitative and the study looked at the various methods of operational risk identification and concluded that, for better operational risk management, micro finance banks need to comply with both national and global regulation guidelines. Also, Chernobaiet *al.*, (2018) employed quantitative research to analyse business complexity and risk management; evidence from operational risk event in U.S bank holding companies. The data cover from 1996-1999 and operational risk was measured with event disclosure on internal and external fraud, client, product and business practices, execution, delivery and process management. Performance was measured by Return on Asset (ROA) Thus, result showed that the frequency and magnitude of operational risk event increased significantly with bank complexity. Therefore, operational risk factors are likely to affect performance of bank among U.S bank holding companies.

Meiying (2018) examined operational risk management and its determinant in Malaysia using a case study of Century Logistics Holdings Berhad (CLHB). The study employed time series data between 2012 and 2016. Dependent variable was operational risk management proxy with operating expense to total income. While independent variables were firm micro factor (return on equity) and macro factor proxy with; inflation, current ratio and average collection period. Thus, the result revealed that, firm specific factor measured by Return on Equity (ROE) has significant effect on the operational risk management, while macro factors (inflation, current ratio and average collection period) do not show any influence on the operational risk management.

Okekeet *al* (2018) explored a quantitative method of operational risk management on the performance of selected banks in Edo state, Nigeria. The operational risk was measured by people risk, process risk, system, technology risk and external risk. The survey research





design was used and statistical tool by Borg and Gall (1973) was adopted to get sample size. Multiple regression analysis was also adopted to test the stated hypothesis. The result showed that process risk had negative influence, system and technology risk also had negative relationship while external risk has positive influence on the performance of deposit money bank. The overall result showed that operational risk has negative impact on the performance of bank in Edo State. The study recommended that the banking institution and the regulatory authority to focus more on the people risk and build strong internal control.

### **3. Methodology**

Survey method was used in this study and it involves using questionnaire to collect information from respondents (Gujarati, 2004). Survey research design was used for this study due to the fact it provides a clear opinion, feeling and attitude of the respondent.

According to CBN (2018), the total number of registered microfinance banks in Kwara State as at December, 2018 was thirty-one (31). Based on this, it is sufficing that a workable sample is selected from the population. The respondent population was derived at by choosing the Heads of microfinance banks mandatorily required by the CBN. The heads comprise five (5) management staff (managing director, Head of credit risk manager, Head of customer service, Head of internal audit and compliance, Head of operations and head of admin and finance) with 31 MFBs in Kwara State. This gives total respondent population 155.

The study adopted a purposive sampling technique in order to achieve a fair representation of the total population and to reduce biasness. The sample size of 112 for this study was determined using Taro Yamane (1967). However, Israel (2013) advised that 10% -30% should be added to the minimum sample size for attrition. 30% of 112 (34) was added to the minimum sample size of 112 to make it 146. 146 copies of the questionnaires were distributed to the respondents.

The study used survey method of data collection through the distribution of well-structured questionnaire to the targeted respondents. The survey method was used because most of the micro finance banks in Kwara State were not listed on the floor of exchange and therefore made it difficult to get their published data. Thus, primary data were chosen for this study. Primary data allow for collection of data from large respondents within a short period of time and provide a standardised method of capturing populations. It also provides original quality of the research and does not create room for bias or third-party opinions (Field, 2009).

The mode of instrument used in collecting data for this study was questionnaire. The layout of the questionnaire was designed easily and simple in order to encourage meaningful participation by the respondents (Asika, 2006). Questionnaires were designed on the five (5) point likert scale which rate respondents' opinion on the basis of their responses as to





whether they strongly agree, agree, undecided, disagree and strongly disagree. Each of the Five (5) Likert point has coding number which include; 1 for strongly disagree, 2 for disagree, 3 for undecided, 4 for agree and 5 for strongly agree. Five-point likert scale was preferred for this study as they have high versatility and gives room of independences to the respondent to choose any responses of their choice in a balanced and symmetric way (Joshi, Kale, Chandel & Pal, 2015).

Following the proxies for both dependent and independent variables, descriptive and inferential statistical instrument were used as a means of measuring collected data. The descriptive statistical tool shows the demographic characteristics of respondents, and response rate of data collected. While the inferential statistical tool shows the result of measurement of model, reliability and validity test, outer loading and bootstrapping analysis. Moreover, preliminary analysis was conducted to determine the appropriate methodological techniques. These include; normality test, assessment of outlier and multicollinearity test. The hypotheses of this study were tested at Five percent (5%) level of significant using a statistical technique known as Partial Least Square Structural Equation Model (PLS-SEM) method of regression analysis in order to provide robust result. The justification for chosen these techniques is that, it provides an opportunity to measure unobservable variables with indicators; it also shows the extent to which construct of variable study can be relied upon (Sander & Lee., 2014).

In order to quantify the objective of this study, Maina *et al* (2014) model was adapted. The study assessed the effects of Operational Risks Management in the Lending Process of Deposit Money Banks Profitability in Kakamega, Kenya. The study adopted survey method and basically explored data from questionnaires. Therefore, the modified model is stated below:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e \dots\dots\dots 1$$

Where Y measures financial performance of deposit money bank in term of its profitability.  $\beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5$  were coefficients which indicate the amount of change in the value of dependent variable for a unit change in independent variables.  $X_1, X_2, X_3, X_4$  and  $X_5$  were independent variables representing Compliance, Systems and technology, Character, Culture and Fraud respectively and e was the error term.

Furthermore, this study modified the model in order to get clear relationship between dependent and independent variables. This was done because the model does not contain all the independent variables of this work. Thus, this study added other variables such as personnel risk management to the adapted model. Also, all these elements of risks are conceptualised using perception metric base on earlier studies (Okekeet *al.*, 2018; Chernobaiet *al.*, 2018).

Therefore, the study's model is expressed as follow:

$$FIN_i = \beta_0 + \beta_1TRM_i + \beta_2PRM_i + \mu_i \dots\dots\dots 2$$



Where TRM means Technology Risk Management; PRM implies Personnel Risk Management and FIN means Financial performance

**4. Result**

Table 1 below shows the summary of the number of questionnaires distributed and the number of questionnaires returned. The total of 146(112+34) questionnaire were distributed and 118 (80.8%) were retrieved. Data screening was carried out on the retrieved questionnaire and all were found to be useful. Thus, the analysis was based on 118 questionnaires duly filled and returned which represent (80.8%) of the total questionnaire distributed. The response rate is considered sufficient for statistical reliability and generalization (Tabachnick&Fidell, 2013).

Table 1: Summary of Response Rate

Items	No of Copies	Percentage (%)
Copies of Questionnaire Distributed	146	100
Copies of Questionnaire Returned	118	80.8

Source: Field Survey, 2019

It is important to put in to preliminary test, the data collected prior running main data analysis (Hair, Black & Babin, 2014). The collected data were vetted for missing values, detection of outlier, data normality and multicollinearity. Details are presented below.

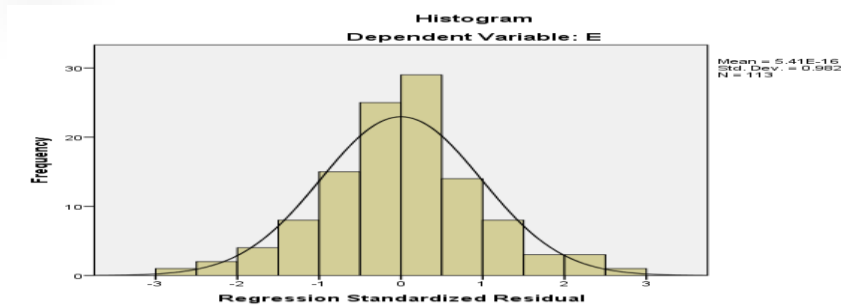
Using descriptive statistics, out of 4,248 data elements only 12 were found to be missing in the data set. This constitutes 0.28% of the data set which is far below the 10% benchmark and therefore was ignored. However, the missing values were replaced using mean substitution. Mean substitution is the most commonly used method for replacing missing values (Hair *et al.*, 2014).

Detecting outliers for multivariate analysis such as this study is best detected by using Mahalanobis distance ( $D^2$ ). Thus, this study used Mahalanobis distance ( $D^2$ ) to detect outliers and Five (5) cases were detected as outlier and were deleted from the data set. 113 cases of 118 useful copies of questionnaires were used for analysis, as a result of the deletion of 5 cases from the data set.

Normality test was carried out on the basis of individual items measuring the constructs in the study. The study utilised skewness and kurtosis statistics to assess the normality. While skewness measures the symmetry of the distribution, kurtosis measures the peakness or flatness of a distribution (Hair, *et al.*, 2014). To them, if the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid. Critical value of +2.58 (.01 sig level) and +1.96 (@ .05 sig level) are benchmark. The result of this test showed that all items are relatively normal as shown in figure 1 below.



Figure 1 Histogram



Source: Field Survey, 2019

The study tested multicollinearity using variance inflation factor (VIF). A VIF figure above  $\geq 5$  shows serious multicollinearity (Kothari & Garg, 2014). However, there was no problem of multicollinearity as all VIF figure in Table 2 are below the threshold.

Table 2: Multicollinearity Statistics: VIF Values

Construct	VIF
Technology risk management	1.679
Personnel risk management	1.002

Source: Field Survey, 2019

This section presents demographic characteristics of respondents. These include gender distribution, age distribution, academic qualification, and years in which respondents have been working with their organisations. The results are presented in Table 3.

Table 3 shows that the majority of the respondents that participated in this study are male constituting of 68 respondents, which is equivalent to 60 percent of the total responses usable for the analysis of this research, whereas 45 participants representing only 40 percent of the total respondents are female. This implies that the rate at which men responded was higher than that of women. Therefore, the men constitute largest respondent in this study. Also, from the Table 3, it can be deduced that only 6% of the sampled respondents are between the ages of 18-25. More so, 29 of the respondents are between the ages of 26-30, representing 26%. 38% of the total respondents are between the ages of 31-35. Respondent above 35 years are 34, presenting 30% of total respondents. This implies that most of the sampled respondents of this study are those between the ages of 31-35.

Information on the academic qualification of sampled respondents are as follows; 29% are holders of either national diploma or higher national diploma. 49% are first degree holders, while 15% either have a postgraduate certificate or are postgraduate students, while 7% hold degrees that are not specified in the study. The respondents of this study include; national diploma/higher national diploma, first degree holders and post graduate. It can be



deduced that the most of the respondents are degree holder as they cover 49%, while the next is diploma (ND/HND) which covered 29%, follow by post graduate which covered 15% while 7% represent others. This implies that most of the respondents of this study are all literates and will be suitable for this study.

Moreover, as indicated in Table 3 , 11 respondents constituting 10% of the total responses have been working with the micro finance bank less than a year, while 24 respondents constituting 21% of the total response have been working within a period of one to five years. On the other hand, 78 respondents which constitute 69% of the total response have been working over five years. This therefore implies that most of the respondents for this study have been working with the micro finance bank for more than five years. Thus, they are suitable for data collection as a result of their long year of services in the work.

Table 3: Demographic Characteristics of Respondents

Characteristics		Frequency	Percentage	Cumulative Percentage
Gender	Male	68	60	60
	Female	45	40	100.00
Age Distribution	18-25	7	6	6
	26-30	29	26	32
	31-35	43	38	70
	Above 35	34	30	100
Academic Qualification	ND/HND	33	29	29
	B.SC/BA	55	49	78
	Post Graduate	17	15	93
	Others	8	7	100
Working Experience	Under 1 year	11	10	10
	1-5 year	24	21	31
	Over 5years	78	69	100

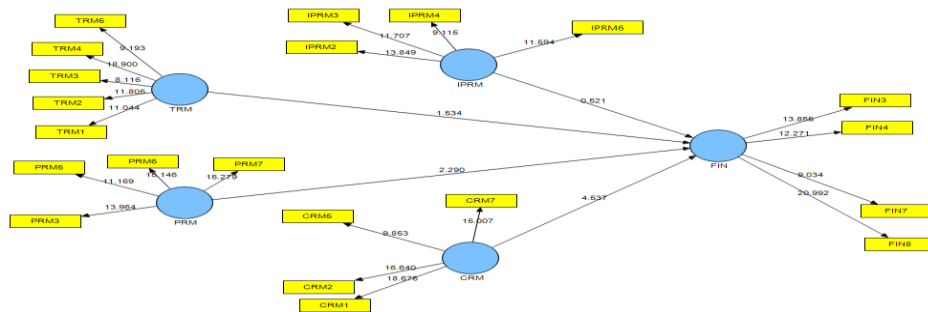
Source: Field Survey, 2019

In order to determine the effects of operational risk management practices on financial performance of micro finance bank in Kwara State, Nigeria, the study applied bootstrapping analysis. Bootstrapping analysis otherwise known as Structural Equation Model (SEM) provides opportunity to assess unobservable variables with indicators (Sander & Lee, 2014). Also, Akter, FossoWamba, & Dewan (2017) opined that the best way to measure research that involves in survey method is through bootstrapping or structural equation model, because it provides exact relationship between indicator and latent variables of the study.



As indicated in figure 4.4, Bootstrapping was done by using 5000 numbers of subsamples together with 113 cases in order to determine the effect of operational risks management on the financial performance of microfinance banks. Based on the result, figure 4 is presented, which shows the structural model of the relationships between the exogenous variables (financial performance) and endogenous variable (operational risk management practices) of the study.

Figure 4 Bootstrapping Analysis



Source: Field Survey, 2019

Table 8 presents the path coefficient which indicates the Beta Value, Standard Error, Adjusted R Square and Decision Rule of hypotheses tested in the study. As indicated in Table 4.8 below, technology risk management has positive effect on financial performance of micro finance banks in Kwara State ( $\beta=0.311$ ,  $t>1.96$ ) and significant at 5%. Personnel risk management has positive effect and significant at 5% on financial performance of micro finance banks in Kwara State at Beta Value of 0.210,  $t>1.96$  and significant at 5%.

Table 8: Path Coefficients

Hypotheses	B Value	Standard Error	T Statistics	Decision
TRM -> FIN	0.311	0.101	3.079	Rejected
PRM -> FIN	0.210	0.092	2.290	Rejected

Decision Rule: T-Statistics  $\geq 1.96$

Source: Field Survey, 2019

It is important to assess the size of effect for the relationships between internal process risk management, technology risk management, personnel risk management, compliance risk management and financial performance of micro finance bank in Kwara State. The result is presented in Table 9.

TRM represents Technology Risk Management, and PRM represents Personnel Risk Management. Table 9 shows effect of size computed as the increase in  $R^2$  relative to the proportion of variance that remains unexplained in the endogenous latent variable. R-square change is the change in  $R^2$  when a causal (exogenous) factor is removed from the



model. The f-square coefficient is constructed equal to  $(R^2_{\text{original}} - R^2_{\text{omitted}}) / (1 - R^2_{\text{original}})$ . The  $R^2$  without IPRM was 0.677, for TRM, it was 0.667, PRM was 0.655 and CRM was 0.573, TRM was 0.034, PRM was 0.071. The larger the  $R^2$  change, the more impacting that factor reduced the explained variance in financial performance of micro finance banks.

Table 9: Effect Size for the Relationship

R Square 0.678			
Construct	Unexplained	$R^2$ change	$F^2$ change
TRM	0.322	0.667	0.034
PRM	0.322	0.655	0.071

Source: Field Survey, 2019

The term co-efficient of determination is another technique for determining structural equation model in the Partial Least Square Structural Equation Model (PLS-SEM). Thus, it helps in determining the proportion of variation in the dependent variable that is being explained by its independent variables (Hair, Sarsted&Ringle, 2012). It is also used to determine the goodness of fit of a model. That is, the more the value closer to 0.1, the more goodness of fit of such model or vice versa. The acceptable value of co-efficient determination ( $R^2$ ) varies across different researchers. There is no prescribe acceptable value for it (Hair, *et al.*, 2010). However, Falk and Miller (1992) proposed an acceptable minimum  $R^2$  to be 0.10. Meanwhile, Chin (1998) opined that for  $R^2$  to be accepted as weak, moderate and substantial in the PLS-SEM, it must be 0.19, 0.33 and 0.67.

As displayed in Table 10 below, R square is 0.678, meaning that 67.8% variance in financial performance of micro finance banks in Kwara State is accounted for by that internal process risk management, technology risk management, personnel risk management and compliance risk management. Thus, operational risk management practice is accounted for 67.8% changes in the financial performance of micro finance bank in Kwara State, Nigeria. This implies that proper management of operational risk (internal process risk, technology risk, personnel risk, and compliance risk) will cause 67.8% positives change in the financial performance of micro finance bank. Also, the value of R square for this study showed that the model is of goodness of fit and it is substantial enough to explain the variation that take place between variables as suggested by Falk and Miller (1992).

Table 10 coefficient of determination

Variables	$R^2$	ADJ $R^2$
OP> FIN	0.678	0.678

Sources: Field Survey, 2019



This section provides answer to the hypotheses that were formulated in chapter one. These hypotheses were tested using Partial Least Square Structural Equation Model (PLS-SEM). The overall result showed the goodness of fit (0.678) and all the variables for operational risk management practices in relation to financial performance were significant at 5% and have positive influence on the financial performance of micro finance bank in Kwara State as displayed in tables 8 and 10.

As indicated in Table 8, row 2 column 2 above, the result shows that technology risk management is positively and significantly ( $\beta=0.311$ ,  $t>1.96$ ) influenced the financial performance of micro finance in Kwara State at 5% level. This led the study to reject the null hypotheses and accept the alternative hypotheses. This implies that, there exist a positive and significant relationship between technology risk management and financial performance. The beta coefficient value ( $\beta=0.311$ ) can be interpreted as for any 1% changes in the management of technology risk of micro finance bank (i.e increasing in provision of external hard disk for software backup data in the bank) will cause their financial performance to increase by 31.1%. The implication of this is that, there is a direct relationship between technology risk management and micro finance bank 's financial performance such that if there is effective management of technology risk, then the financial performance will be increased.

As indicated in Table 8, column 3 row 3 above, personnel risk management has direct influence and significant at 5% level (0.210,  $t>1.96$ ) on the financial performance of micro finance bank in Kwara State. This led to rejection of null hypotheses and acceptance of alternative hypotheses. The coefficient value (0.210) implies that, for any 1% changes in the management of personnel (increasing in employment of skilled staff) will cause their financial performance to increase by 21.0%. This implies that, there is a positive relationship between personnel risk management and financial performance of the banks. From this, it can be seen that, if micro finance bank manage their personnel risk through employment of skilled staff, regular training and seminar for employees, this will cause their financial performance to increase.

Similarly, technology risk management has positive effect on financial performance of micro finance banks in Kwara State ( $\beta=0.311$ ,  $t>1.96$ ) and significantly at 5% level. Thus, it is understood that technology risk management has influence on the financial performance of micro finance banks in Kwara State. Therefore, proper management of technology risk will cause changes to financial performance of micro finance banks positively. Also, operational risk management is significant and have positive effect on financial performance of micro finance banks through technology risk management. This is in line with the work of (Kamssuet *et al*, 2003; Sadeghimaneshet *et al*, 2013; Barrett, 2016). In their study, they found a significant effect of technology risk management on the financial performance. Moreover, it is in line with assumption of contingency which both state that proper technology risk management will reduce system failure and improve financial performance of micro finance bank. However, this result is in contrast with the studies of





Chernobeiet *al*, (2011) which claims that there is no effect of technology risk on the financial performance.

Personnel risk management has positive and significant effect on financial performance of micro finance banks in Kwara State at Beta Value of 0.210,  $t > 1.96$  at 5% level. This implies that any positive change in personnel Department will also generate positive change as well in the financial performance. Thus, proper management of personnel risk will result in the improvement of the financial performance of micro finance bank in Kwara State. This result is in line with findings of Okekeet *al*, (2018) which examined the effect of operational risk and organisational performance in Edo state. The result also supports the assumptions of contingency theory which states that proper management of personnel risk will eventually improve the financial performance of micro finance banks. Thus, there exists a positive linkage between operational risk management and financial performance of micro finance banks in Kwara State through personnel risk management. However, the finding is in contrast with the work of Chernobeiet *al*, (2011) which found out that, factors, such as personnel risk management, fraud, processes were not determinants and do not have any influence on financial performance.

##### **5. Conclusion and Recommendations**

Based on the discussion of findings earlier stated in section four, it can be concluded that there exists a strong linkage between operational risk management practices and financial performance of micro finance banks in Kwara State. Two variables were used to measure operational risk management which includes; technology risk management, personnel risk management on a five-point likert scale. And all were found significant as follows: Technology risk management as a proxy for operational risk management found to be significant at Five percent ( $\beta=0.311$ ,  $t > 1.96$ ). And therefore, proper management of technology risk will bring positive effect on the financial performance of micro finance bank. Personnel risk management was found to be positive and significant at Five percent (5) (0.210,  $t > 1.96$ ) and have influenced the financial performance of micro finance bank in Kwara State. Thus, effective management of personnel will eventually result to high financial performance of micro finance bank.

The result showed that technology risk management has direct influence and significantly related to the financial performance. Following it effects ( $\beta=0.311$ ) on the financial performance of micro finance bank which can be interpreted as it constitutes 31.1% changes in the financial performance. The study recommends that, there is need for microfinance banks to adopt changes in technology system and update their technology, machine, build external storage device to avoid crashing of software. Regular back up of important files, and document of customer should be ensured. Furthermore, the result of third hypotheses showed that, there is positive influence of personnel risk management on the financial performance of micro finance bank and its portion in the financial performance as 21% led to this recommendation. Micro finance banks need to improve in the area of personnel by employing qualified and competent staff, provision of continuous capacity building for their staff and presence of effective human resources team.



## References

- Acharyya, M. (2012). *Why the current practice of operational risk management in insurance is Fundamentally Flawed: Evidence from the Field*.
- Akter, S., FossoWamba, S. & Dewan, S. (2017). Why PLS-SEM is suitable for complex modeling? An empirical illustration in big data analytics quality. *Production Planning and Control*, 28 (11-12), 1011-1021
- Aloqab, A., Alobaidi, F., & Raweh, B. (2018). Operational risk management in financial Institutions: An overview. *Business and Economic Research*, 8(2), 11- 25.
- Arif, M., Jan, S., & Kulsoom, A. (2016). *Operational risk exposure to islamic banks*. Retrieved from <http://ssrn.com>
- Asika, N. (2006). *Research methodology in behavioral science*. Lagos Longman Nigeria
- PlcBank for International Settlements, B. (2001). *Basel Committee on Banking Supervision Working Paper on the Regulatory Treatment of Operational Risk*.
- Central Bank of Nigeria (2005). *Microfinance policy, regulatory and supervisory framework for Nigeria*. Abuja: CBN
- Chernobai, A., Ozdagli, A. K., & Wang, J. (2018). Business complexity and risk Management: Evidence from operational risk events in U.S. Bank Holding Companies. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2736509>
- Chin, W.W (1998). The partial least squares approach to structural equation modelling. G. A. Marcoulides (Ed), *Modern Methods for Business Research* (4) 295-336.
- Cope, E., Mignola, G., Antonini, G., & Ugocioni, R. (2009). Challenges and pitfalls in measuring operational risk from loss data. *The Journal of Operational Risk*, 4(4), 3–27.
- Delija, A. (2015). The management of operational risk in the microfinance sector looked through albanian reality. *Mediterranean Journal of Social Sciences*, 6(2S2), 35–48.
- deJongh, E., de Jongh, D., de Jongh, R., & van Vuuren, G. (2013). A Review of operational risk in banks and its role in the financial crisis. *South African Journal of Economic and Management Sciences*, 16(4), 364–382.
- D'Olene, S., & Barrett, K. (2016). *Scholar works effects of information technology risk management and institution size on financial performance*.
- Fatemi, A. S., & Sabbaghian, A. (2019). The role of information technology on management of risks in the capital market (Case Study: Companies Listed in Tehran Stock Exchange). <https://doi.org/10.20944/preprints201901.0109.v1>
- Field, A. (2009). *Discovering statistics using spss* (3rd ed.). London: Sage. Fullerton,
- Ghosh Roy, D., Kohli Associate Professor, D., & Khatkale Assistant Professor, S. (2013). Basel I to Basel ii to Basel iii: A Risk Management Journey of Indian Banks. *AIMA Journal of Management & Research* (Vol. 7).
- Gujarati, D.N. (2004) *Basic Econometrics*. 4th Edition, McGraw-Hill Companies
- Grody, A. D., Harmantzis, F. C. and Kaple, G. J. (2005). Operational risk and reference data: exploring costs, capital requirements and risk mitigation, Stevens Institute of Technology, Hoboken, NJ.



- Helbok, G & Wagner, H. (2006). Determinants of operational risk reporting in the banking industry, *Journal of Risk*, July 11
- Hair, J., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate Data Analysis*. 7<sup>th</sup> ed. Pearson New International Edition: UK
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7<sup>th</sup> ed). Upper Saddle River, New Jersey: Prentice Hall.
- Hair, J. F., Sarsted, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(414-433).
- Isreal, G. D. (2013). Determining sample size. *Journal of business research*, 1(1), 1-5
- Imane, Y. (2014) Risk management practices and financial performance in Jordan: Empirical evidence from Islamic Banks at Setif University.
- Islam, J. (2012). A review of literature on contingency theory in managerial accounting. *African Journal Of Business Management*, 6(15).
- Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). *Likert Scale : explored and explained likert scale : Explored and Explained*. (January).
- Lyambiko, M. R. (2015). *The effect of operational risk management practices on financial performance of commercial banks in Nigeria*.
- Laker, John. F. 2006. The evolution of risk and risk management – A prudential regulator’s perspective. Chairman’s Speech, Australian Prudential Regulatory Authority. September
- Maina, G., Alala, O., Wabwile, E., & Musiege, D. (2014). Effects of operational risks in the lending process of commercial banks profitability in Kakamega Town. *International Journal of Business and Management Invention*, 3(31), 11-17
- Maalim, B. (2017). The effect of operational risk management practices on the financial performance in Islamic Banks In Kenya .Research Project Proposal Submitted In Partial Fulfillment Of The Requirement For The Award Of The Degree Of Master Of Sci.
- Meshack, K. M., & Mwaura, R. W. (2016). The effect of operational risk management practices on the financial performance in commercial banks of Tanzania. *American Journal of Finance*, 1(6), 29-39.
- Muriithi, J. G., & Waweru, K. M. (2017). Operational risk, bank size and the financial performance of commercial banks in Kenya. *International Journal of Finance & Banking Studies* (2147-4486), 6(3), 39. <https://doi.org/10.20525/ijfbs.v6i3.691>
- Obwogo, A.C., Muturi, W., & Atambo, W. (2017). Effects of enterprise risk management measure on performance of commercial banks in Kenya. *International Journal of Economics, Commerce and Management*, Vol v, 1-10.
- Olalere, O. E., Aminul, I., Yusoff, W. S., & Shamsuddin, Z. (2018). *An Investigation into operational risk in commercial banks: Empirical evidence from Nigeria*. *International Journal of Accounting* (Vol. 3). Retrieved from [www.ijafb.com](http://www.ijafb.com)
- Okeke, A. N., Onuorah, ; M N, Aganoke, C. U., & Onuorah, A. N. (2018). Operational risk management and organisational performance of banks in, Edo State. *International*



- Journal of Academic Research in Economics and Management Sciences*, 7(4), 103–120.
- Osadahun, S. B. (2014). *Operational risk management in the Nigerian Banking Sector*.
- Palys, T. (2008). Purposive sampling. In L. M. Given (Ed.) *the Sage Encyclopedia of Qualitative Research Methods*,(2) 697-8.
- Pallant, J. (2010). *SPSS survival manual: a step by step guide to data analysis using SPSS* (4th ed.). New York: Open University Press.
- Kamssu, A. J., Reithel, B. J., &Ziegelmayr, J. L. (2003). *Information Technology and Financial Performance: The Impact of being an Internet-Dependent Firm on Stock Returns*.
- Karam, E., &Planchet, F. (2012). Operational risks in financial sectors. *Advances in Decision Sciences*. <https://doi.org/10.1155/2012/385387>
- Kothari, C.R., &Garg, G. 3<sup>rd</sup> Ed. (2014). *Research methodology: Methods and Techniques*. New Age International Publishers.
- Shamakhi, H. R., &Sheikhipoorian, E. (2016). The effect of changing capital and deposits on the performance of banks: Banks listed in Tehran Stock Exchange. *International Business Management*, 10(11), 2235–2242.
- Sigey, W. (2018.). Effect Of Information Technology Risk On Financial Performance Of Commercial Banks In Kenya A Research Project Submitted In Partial Fulfillment Of The Requirement For The Award Of The Degree Of Master.
- Tabachnick, B.G., &Fidell, L.S. (2013). *Using multivariate statistics* (5th ed.). Boston: Pearson.
- Tabachnick, B. G., &Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.
- Uwamahoro, A .,Twesige, D., Dukunde, A., &Muvunyi, E.,Ndikubwimana, J. B.(2019) .Loan management and performance of microfinance institutions In Rwanda: A Case Musanze District (2015 - 2017). *International Journal of Business and Applied Social Science*, 4(1) 226-232.