

Effect of Risk Management Practices On Corporate Investment of Financial Institutions in Rwanda: A Case Study of Selected Commercial Banks

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Abstract—Risk management practices are currently a subject of interest and a novel impression beneath research and application by diverse organizations. Nevertheless, there seems much to be debated on this subject in terms of a general strategic risk management practices statement. There is uncertainty like, when there should be a declaration for each principal risk category the organization experiences or should exist a general risk management practices for the organization. A risk management practice is about achieving corporate goals. For many financial institutions (FIs), dual goals exist such as the social and economic perspectives. This study sought to analyze the effect of strategic risk management practices on corporate investment of selected financial institutions in Rwanda. The study aimed at establishing the effect of operational risk management practices, market risk management practices, compliance risk management practices and governance risk management practices on corporate investment in selected commercial banks in Rwanda. The study adopted descriptive research design. The study targeted 95 managers from finance, internal audit, risk compliance and operations departments. The sample size was 77 respondents. The research was conducted using primary and secondary data, which includes survey forms (questionnaires), interviews as well as reports of the targeted institutions. Information for the research were gathered utilizing organized surveys forms that were distributed to the targeted respondents. Narrative information obtained from interviews and open-ended questions in the questionnaire were analyzed using qualitative approaches. Validity and reliability of the instruments were tested using the Cronbach Alpha test retest methods. With the aid of Statistical Package for Social Science version 21.0, both descriptive statistics such as the means, modes, standard deviation, variances and inferential statistics were analyzed. The research revealed that management of operational risk has a constructive effect financial outcomes performance of financial institutions in Rwanda. The study found that there is a correlation between both operational risk management and market risk management and performance of the financial institutions. The research findings revealed that operational risk management ($r=0.096$, $p<0.01$), market risk management ($r=0.506$, $p<0.01$) and compliance risk ($r=0.612$, $p<0.01$) on corporate investments.

CORRELATION/ BETWEEN OPERATIONAL RISKS AND CORPORATE INVESTMENT

	Operational risk	Corporate investment
Pearson Correlation		
Operational risk		
	N	64
Corporate investment	Pearson Correlation.612**	1
	Sig. (2-tailed)	.000

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N	64	64
**. Correlation is significant at the 0.01 level (2-tailed).		

It however found that the banks do not involve experts and consultants in market risk management thus recommendations were made for the banks to revise their risk management policies, open up and share information with other players on market risk thus involve consultants more in their market risk management and to be more proactive than reactive in risk management. The study concludes that compliance risk and fines monitoring, liquidity risk, market risk and operational risk management can be used to ensure that risk management practices are aligned to proper risk monitoring which would ensure that the management discovers any mistake at early stage. This research concludes that credit risk management gives positive influence on investment decisions in the commercial banks of Rwanda. The study recommends that the managers should perform a comprehensive assessment of bank's overall credit risk management framework often and the credit position in order to ensure that they deliver adequate level of resilience to credit stress given the bank's main function in the financial system.

Index Terms—Operational Risk Management Practices, Market Risk Management, Compliance Risk Management Practice, Corporate Investment

I. INTRODUCTION

The present business environment is replete with extreme competitive pressures, volatile financial conditions, growing default fees and growing ranges of consumer and business debt, a corporation's ability to effectively display and manage its credit risk may suggest a distinction between fulfillment and survival (Altman 2002). The past decade has visible dramatic losses within the banking enterprise. Corporations that have been working successfully announced huge losses because of credit exposures that turned bitter, interest charge positions taken, or derivative exposures that may or might not had been assumed to hedge balance sheet threat (Santomero, 1997). Aduda and Gitonga (2009) echoed that, financial institutions have almost universally embarked upon an upgrading of their risk management and control systems. Due to the nature of their business, financial institutions expose themselves to the risks of default from borrowers. Prudent credit risk assessment and creation of adequate provisions for bad and doubtful debts can cushion the banks risk. However, when the level of non-performing loans (NPL's) is very high, the provisions are not adequate protection (Gupta, 1998). Financial organizations risk management is meant to monitor risks that may trigger failure in case those risks are not well catered for. The maximization of return on

investment is the desired end in the private sector. In its sister entity, the public sector, the management of the risk augments the possibility of an organization to achieve its core mission as well as its strategic objectives (Hardy, 2010). Therefore, the success of a firm to meet its objectives is demonstrated by how it successfully manages the risks it faces whether private or public. Risk management is related to decision theory in that decision has to be made with the objective of eliminating or reducing at acceptable level the risks facing business firms. Risk management makes decisions to manage the uncertainties whilst decision theory prescribes the correct course of action that would be applied to deal with the risk.

Organizations face several risks. The risks can interfere achievement of the strategic as well as operational objectives. Risk happens because of ambiguity and is present in all activities whatsoever the size or difficulty, in the financial sector (Mcnaull & Loy, 2008). Risk is a wide concept than the traditional view of merely a threat. It includes threats (damaging events) which would lead to failure to achieve objectives and opportunities (challenges) which if exploited could offer an improved way of achieving the desired outcomes but could potentially have negative impacts. That is the risk of taking or not taking opportunities (Mcnaull et al., 2008).

There are different classifications of risks that give properties or characteristics of risk and sources. Financial and non-financial risk can be distinguished. According to Vaughan (1997), financial risks are those risks that have financial loss, consequences or impact. Financial loss considers relationship between an organization and an asset and the projected income that could be lost or damaged (Cienfuegos & TwenteHolanda, 2013). The Risk Management team has to uncover all the risks that can affect the organization. The challenge is to determine an appropriate technique or a combination of techniques of risk identification so that various risks can be taken care of appropriately (Gustavsson, 2006). Additional encounter is how to address since there is an immense number of risk treatment options such as to avoid risks, share risks, outsource risks, accept them or transferring them (Schanfield & Helming 2008). Dependence on mathematical risk models where the model hosts risks at some levels, however it is recommended that those entities should refrain from applying those risks in their daily businesses (The Chartered Institute of Management Accountants, 2010).

Rwandan financial framework, be that as it may, has encountered a fast development; it has constantly confronted a few difficulties especially identified with hazard the executives. Hazard the executives and hazard recognition can never be completely being finished since there are constantly unanticipated and unintended parts of hazard condition (National Bank of Rwanda [NBR], 2011). In tending to the need to alleviate hazard and to anticipate future misfortunes in the economy, National Bank of Rwanda (NBR) requires Bank supervisors to give satisfactory hazard the executives (NBR, 2005). Given that the Rwandan financial framework has encountered a fast development, it has constantly confronted a few difficulties especially identified with hazard the board. Hazard the board and hazard discovery can never be completely being

finished since there are constantly unexpected and unintended parts of hazard condition (National Bank of Rwanda [NBR], 2011). In tending to the need to relieve chance and to anticipate future misfortunes in the economy, National Bank of Rwanda (NBR) requires Bank directors to give sufficient hazard the executives (National Bank of Rwanda [NBR], 2005). The Rwandan money related framework is contained protection, banking benefits reserves. The money related part has fourteen (14) business banks; one advancement bank; two specific banks; three miniaturized scale account bank; one rebate house, an expected one hundred seventeen (122) smaller scale money foundations right now working and 416 Umurenge Sacco's, eleven (11) insurance agencies and the Social Security Fund of Rwanda (National Bank of Rwanda[NBR] 2012).

The commercial banks include, BK, I&M Bank, Cogebanque, Access Bank, Ecobank, Fina Bank, Kenya Commercial Bank, Banque Populaire du Rwanda and Equity bank. However, Bank of Kigali is the largest bank in Rwanda by total assets, total loans and total deposits with a market share of 32%, 34.6% and 28.7% respectively as of 30th September 2012 (NBR, 2012). Bank of Kigali was incorporated in the Republic of Rwanda on December 22nd 1966 as a joint venture between the Government of Rwanda and Belgolaise, the subsidiary of Fortis Bank. In 2011, BK became the 2nd local company to be listed in Rwanda. BK got award as Best Bank in Rwanda in year 2013, 2015 & 2016 by EUROMONEY awards for excellence. According to 2014 National Bank of Rwanda report, the main types of risks that the bank is exposed to in the course of executing its operations include, Credit risk, Liquidity risk, Market risk, Interest risk, foreign currency exchange risk, operational risk. The purpose of this research is to investigate the impact of enterprise risk management on financial performance of commercial banks in Rwanda and if the performance is positively affected by risk and control self-assessment, key risk indicators, incident management, compliance of both internal and external regulations, and action tracking. Through this study, commercial banks will benefit from our findings and recommendations so as to be aware of inherent risks they are exposed to and be way of the impact of a risk management system in their financial performance.

II. STATEMENT OF THE PROBLEM

In recent times, financial disasters in both financial and nonfinancial organizations have been witnessed. This stresses the need for numerous and wide approach in forms of risk management. Ideally, effective risk management is fundamental to the success of the Bank. Risk management is a strategic priority and a responsibility shared by all the bank's employees. Banks have a strong, disciplined risk management culture. A key aspect of this culture is to be well-diversified across business lines, products, and industries. The primary goals of risk management are to ensure that the outcomes of risk-taking activities are predictable and consistent with the Bank's strategies and risk appetite, and that there is an appropriate balance between risk and reward in order to maximize shareholder returns. Management practices of the financial institution which summarizes assertions that give the baseline in

indicating both the risks the institution is embracing and risks the company is purposefully avoiding (Perrin, 2009). The objective of this research is to evaluate the effect of Strategic Risk Management Practices and how they impact the corporate investment of financial institutions in Rwanda. The researcher's secondary objective is to ascertain the level of risk appropriate to achieve corporate objective and how risk management practices could be managed in financial institutions.

Rwandan banking being under the money related administration segment still face numerous difficulties as for the executives of dangers which they are presented to, in spite of the huge development in the segment (BNR, 2011). Disintegration of advantage quality identifies with increment in credit hazard which lessens the normal benefits. For example, as indicated by BNR report in 2015 this development has anyway been joined by an expansion in non-performing credits from 5.1% in 2015 to 6.7 % in 2016. Various researches conducted in Rwanda have endeavored to address the issues of money related hazard which have been contemplated in piece supper way. They have tended to the various segments of budgetary hazard exclusively. For example, Sangwaire (2016), looked into on layaway chance while Nyamboga (2015) examined on money related dangers on the loose. By handling the dangers separately these examinations neglect to recognize the impact of money related hazard on the monetary exhibition, hence, the need to take an extensive view on Rwandan perspective.

A study by consultancy firm Ernst & Young and the Institute of International Finance (2013) asserts that banks, having moved to enhance the structure of risk management post-crisis, are still working to fully operationalize those policies with most banks still finding it difficult to embed risk appetite. Therefore, it is on the basis of this gap that the present study sought to establish the effect of risk management practices on corporate investments of commercial banks in Rwanda.

III. OBJECTIVES OF THE STUDY

A. General objective

The general objective of the study was to analyze the effect of risk management practices on corporate investment in selected financial institutions in Rwanda.

B. Specific objectives

The specific objectives were:

1. To determine the influence of operational risk management practices on corporate investment in financial institutions in Rwanda.
2. To analyze the effects of market risk management on corporate investment in financial institutions in Rwanda.
3. To determine the effects of compliance risk management practices on corporate investment in financial institutions in Rwanda.

IV. CONCEPTUAL FRAMEWORK

Many scholars, such as Peters, Elmendorf, Kandola &

Chellaraj, 2000 define conceptual framework as a schematic presentation which identifies the variables that when put together explain the issue of concern. Coulthard, 2004 upholds this theory by stating that it is a set of broad ideas used to establish and elaborate the relationship between the independent variables (factors) and the dependent variables (outcome).

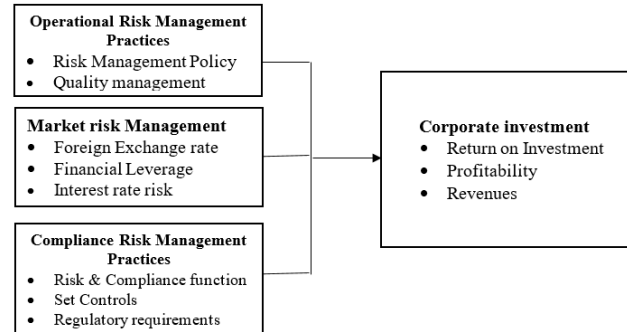


Fig. 1. Conceptual framework

V. TARGET POPULATION

Under the take of Cooper and Schindler (2008), a population is defined as set of people, services, elements, and events, group of things or households that are being investigated. While conducting our research, the target population was 95 managers from finance and operations departments. By population the researcher refers to the complete census of the sampling frames. The population of interest in this study is homogeneous and everybody has equal chances to be incorporated in the latest sample that is built up. This study was carried out in the seventeen (17) licensed financial institutions in Rwanda.

TABLE I: FINANCIAL INSTITUTIONS IN RWANDA WHERE THE STUDY WAS CONDUCTED

Serial No.	Target population
1	Bank of Kigali
2	KCB Bank
3	Equity Bank
4	GT Bank
5	I & M Bank
6	Access Bank
7	CogeBanque
8	Bank Populaire du Rwanda
9	Urwego Opportunity Bank
10	Bank of Africa Rwanda
11	EcoBank
12	Unguka Bank
13	Development Bank of Rwanda (BRD)
14	AB Bank
15	Zigama CSS
16	Umwarimu Sacco
17	Umurenge Sacco

A. Sampling Procedure

To achieve more valid results, the study used a sample size of 77 respondents, and they were selected from a total number of 95 individuals by applying as indicated above the formula of Yamane (1967). A random sampling technique was used to select and stratify the managers. This system enables various gatherings of a population to be sufficiently represented in the sample. Nachimas & Nachimas (2008) submit that stratified sampling divides the population into

compact units such that elements within each unit are more similar than the elements in the population comprehensively. Random sampling was used to select individuals from the various strata.

$$n = \frac{N}{1+N(e)^2} \quad (1)$$

Where;

n= Sample size

N=Total population size (95)

e= 0.05 level of significance

$$n = \frac{95}{1+95(0.05)^2} = 77$$

VI. RESEARCH FINDINGS AND DISCUSSION

TABLE II: RESPONSE RATE

Response	Frequency	Percentage
Questionnaire returned	64	83.1
Questionnaire unreturned	13	16.9
Total	77	100.0

TABLE III: INFLUENCE OF OPERATIONAL RISK MANAGEMENT ON INVESTMENT DECISIONS

	Frequency	Percentage
Very Great degree	14	21.9
Great degree	17	26.6
Moderate degree	13	20.3
Little degree	11	17.2
No degree	9	14.1
Total	64	100

Table above showed that 26.6% of the study participant strongly agreed with the statement that operational risk management has affected your investment decisions, majority (21.9%) just agreed, 20.3% were indifferent with the statement while minority (14.1%) disagreed with the statement that operational risk management has affected your investment decisions.

Operational risk management is perceived to affect corporate investment in financial Rwandan institutions. feedbacks against the statements were recorded using the scale shown below: 1-Stronglylily disagreed; 2 – Disagreed; 3 – Unresponsive; 4 – Agreed; 5 –Strongly agreed.

TABLE IV: RESPONDENTS VIEWS RELATING TO ASPECTS OF OPERATIONAL RISK MANAGEMENT ON THE FIRM'S INVESTMENT DECISIONS

	1	2	3	4	5	Mean	Std. Dev
Inadequate internal processes, people, system, and external events	23.4%	28.1%	15.6%	15.6%	17.2%	2.75	1.43
IT systems and software failure	18.8%	21.9%	15.6%	23.4%	20.3%	3.05	1.43
Reputational risk	21.9%	23.4%	17.2%	15.6%	21.9%	2.92	1.47

According to Table 4.11, 15.6% of respondents agreed that Inadequate internal processes, people, system, and external events, 17.2% of respondents strongly agreed to the same statement, 28.1% disagreed with the statement, 23.4% strongly disagreed, 15.6% were indifferent. The mean was very high at 2.75 and confirmed the strong evidence of the fact; the standard deviation at 1.43 to show the heterogeneity of responses.

TABLE V: CORRELATION/ BETWEEN OPERATIONAL RISKS AND CORPORATE INVESTMENT

	Operational risk	Corporate investment	
Operational risk	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	64	
Corporate investment	Pearson Correlation	.612**	1
	Sig. (2-tailed)	.000	
	N	64	64

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.13 show that operational risk is significantly correlated to corporate investment (r=0.612, p<0.01). This implies that operational risk would impact on corporate investment of commercial banks in Rwanda.

Regression Analysis

Regression analysis was done to examine the effect of strategic risk management practices on corporate investments of commercial banks in Rwanda.

TABLE VI: MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.542 ^a	.294	.268	.130

a. Predictors: (Constant), Operational risks, Market risks, and Compliance risks

Table 1 shows that the coefficient of determination R square is 0.294 and R is 0.542 at 0.05 significance level. The coefficient of determination indicates that 29.4% of the variation in the dependent variable commercial banks corporate investments is explained by the independent variables (Operational risks, Market risks, and Compliance risks).

TABLE VII: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.575 ^a	3	.192	11.388	.000 ^b
1 Residual	1.379	32	.017		
Total	1.953	35			

a. Dependent Variable: Corporate investments

b. Predictors: (Constant), Operational risks, Market risks, and Compliance risks and fines management

Table 2 presents the results of Analysis of Variance (ANOVA) on strategic risk management versus corporate investments of commercial banks in Rwanda. The ANOVA/ results for regression coefficient indicate that the significance of the F is 0.00 which is less than 0.05. This implies that there is a positive significant relationship between strategic risk management versus corporate investments of commercial banks in Rwanda and that the model is a good fit for the data.

TABLE VIII: COEFFICIENT RESULTS SHOWING THE RELATIONSHIP BETWEEN THE COMBINED STRATEGIC RISK MANAGEMENT AND CORPORATE INVESTMENTS OF COMMERCIAL BANKS IN RWANDA

Model		Unstandardize d Coefficients B	Std. Error	Standardize d Coefficients Beta	T	Sig.
1	(Constant)	.455	.231		1.973	.016
	Operational risk	.204	.240	.230	.850	.028
	Market risk	.153	.017	1.075	3.159	.002
	Compliance risks	.182	.050	1.231	3.616	.003

From the information in the Table 3, the regression equation was

$\hat{Y} = 0.455 + 0.204 X_1 + 0.153 X_2 + 0.182 X_3$ and it was revealed that holding Operational risks, Market risks, and Compliance risks and fines management to a constant zero, corporate investments would be at 0.455. A unit increase on operational risk management would lead to increase in corporate investment by a factor of 0.204, a unit increase in market risk would lead to increase in corporate investment by a factor of 0.153, and unit increase in Compliance risks to a constant zero would lead to increase in financial performance by a factor of 0.182.

VII. CONCLUSION AND RECOMMENDATIONS

A. Conclusion

The research installed that banks frequently calculate the operational risk attention by way of estimating the possibility of an occurrence of a specific event and the potential misfortune from this occasion, for this reason the take a look at concludes that operational dangers control has a positive effect compliance risk management on company investments of commercial banks in Rwanda. The research establish that Market hazard management distinguishes the affectability of the budgetary foundation's income or the financial estimation of its cash-flow to unfavorable changes in loan costs, outside trades rates, ware costs, or value costs hence the research infers that market hazard administration has a positive on the compliance risk administration on corporate ventures of commercial banks in Rwanda. The research uncovered that compliance risk administration ought to be a top priority for bank the executives and controllers; along these lines, the examination presumes that liquidity risk administration positively affects the compliance risk administration on corporate investments of commercial banks in Rwanda.

B. Recommendations

The research appeals the management of commercial banks in Rwanda to adopt operational risk management, this will guarantee proactive identification, evaluation, monitoring, manipulate and mitigation regarding operational risks in a complete manner as a financial entity. This is in accordance with the proposition in the new Basel Capital Accord, whereby banks are required to give cash-flow to operational hazards. Banks are ordered to create reasonable inside ways to deal with the estimation of operational dangers and to set up operational hazard board as well as related control procedures which should cover the plan, execution and survey of operational hazard philosophy. The banks' inward review gatherings are required to lead normal audits of the operational hazard the executives' inclusion of the governing body, and senior administration of banks should be part of risk management. Financial institutions need to fuse market risks management inside the interior valuing, execution the executives and new item endorsement system for all gigantic endeavor exercises (both on and off-balance sheet), accordingly adjusting the hazard taking motivating forces of individual mechanical banks.

Commercial banks in Rwanda particularly privately owned are required to consider methods for moderating the

market dangers which will help to diminish their exposure to the market risks. This should be possible by utilization of for the most part acknowledged money related ideas and strategies for hazard estimation. The administration and controllers of the banks should control swelling rates and loan fees as well as different factors by setting a standard for the greatest measure of dangers and benchmark for the base measure of large return for every determinant of hazard and return separately. Senior management should develop strategies, policies and practices to manage liquidity risk in accordance with the risk tolerance and to ensure that the bank maintains sufficient liquidity. Senior management should continuously review information on the bank liquidity developments and report to the board of directors on a regular basis. Board of directors should review and approve the strategy; policies and practices related to the management of liquidity at least annually and ensure that senior management manages liquidity risk effectively.

C. Recommendation for further research

The research examined the effects of Risk Management approaches on corporate investments of commercial banks in Rwanda. Other studies may put emphasis on the order to investigate the determinants of operational risk; the legal risk, fraud and influence of human risk in operational risk in banks in Rwanda.

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