



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ACCOUNTING, FINANCE AND MANAGEMENT SCIENCES



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To Link this Article: <http://dx.doi.org/10.6007/IJARAFMS/v11-i1/8440> DOI:10.6007/IJARAFMS /v11-i1/8440

Received: 31 December 2020, **Revised:** 28 January 2021, **Accepted:** 20 February 2021

Published Online: 26 February 2021

In-Text Citation: (Ewool & Quartey, 2021)

To Cite this Article: Ewool, L. M., & Quartey, J. A. (2021). Evaluation of the Effect of Risk Management Practices on the Performance of Microfinance Institutions. *International Journal of Academic Research in Accounting Finance and Management Sciences*, 11(1), 211-240.

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Vol. 11, No. 1, 2021, Pg. 211 - 240

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Evaluation of the Effect of Risk Management Practices on the Performance of Microfinance Institutions

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Abstract

The financial sector in Ghana has experienced intensive reforms resulting in the closure of many financial institutions that did not meet the required principles. In order to guarantee the sustainability of the microfinance sub-sector, management of risk practices must be effectively carried out. This study aimed at evaluating the effect of some major risk management practices (RMP) on the financial performance of some selected microfinance institutions (MFIs) in the Kumasi metropolis of Ghana. The financial performance measures used were Return on Asset (ROA) and Return on Equity (ROE). The RMPs in question included risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management. A five likert scale questionnaire with closed-ended questions were administered to ten selected MFIs. The results showed mean ROA and ROE of the selected MFIs to be 3% and 35% respectively. The results also showed a moderate to great extent usage of risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management occasionally. Benchmark ranking of frequent usage of these RMPs was in the order risk identification>risk monitoring> risk appraisal>risk control. It was recommended that Managers and Directors should ensure continuous usage of these risk management practices for more profitability.

Keywords: Financial Institutions, Microfinance, Return on Assets, Return on Equity, Risk Management

Introduction

The financial sector in Ghana has evolved with microfinance as its sub-sector very key player in providing financial services and support to micro and small businesses as well as low-income earners on a sustainable basis (Boateng & Agyei, 2013). Boateng, Boateng and Bampoe (2015) defined microfinance as the small-scale financial services offered to individuals engaging in small enterprises in both urban and rural communities. Appiah-Konadu, Churchill, Agbodohu and Frimpong (2016) argued that, to attain financial stability and successful microfinance operations, risk management is

a crucial variable to be taken into account. The financial sector in Ghana has in recent times experienced certain distress resulting in the collapse of many financial institutions. Boateng and Boateng (2014) reported that poor risk management practice was partly to be blamed for this situation. This indicates that the affected banks vividly lacked a proper insight into their actual risk profile. Some of the risk factors linked to the collapse of the banks include financial risks (credit risk and liquidity risk), operational risks, and market risks. Credit risk was among these many risk factors, the most widespread factor and this was due to the failure to adhere to best practices in the delivery of credit coupled with insufficient monitoring measures and credit officers who were inexperienced. Addae-Korankye (2014) emphasizes that to address or learn from these mistakes, it is, thus, important for institutions in the banking industry to cultivate a habit of risk management and this procedure must begin right from microfinance level to fully-grown banks. Pearl-Kumah, Yakubu and Bawuah (2014) indicated that the portfolio at risk, for instance, is linked to the risk of non-repayment, closely linked to the numbers of solvent and insolvent borrowers. This risk poses Achilles' heel or weakness in microcredit and takes up a leading place to improve the management of MFIs (Armendariz & Morduch 2010). Once again, meeting the capital adequacy of MFIs could be employed as a standard to conclude a healthy or distress bank.

The Objective of the study therefore was to evaluate the effect of risk management practices on the financial performance of selected microfinance institutions in the Kumasi metropolis of Ghana.

Specifically, the study seeks to:

- identify some risk management practices of selected microfinance institutions in the Kumasi Metropolis
- assess and benchmark the risk management practices employed by the selected microfinance institutions in the Kumasi Metropolis
- model the relationship between risk management practices and financial performance of the selected microfinance institutions in the Kumasi Metropolis

Literature Review

This chapter reviews the relevant related literature on managing risks and their impact on the financial performance of microfinance institutions. The chapter begins with the theoretical review of risk management practices. This is followed by the conceptual review. The empirical review is also highlighted in this section and finally ends with the conceptual framework.

Theoretical Review

Agency Theory

Agency theory depicts established associations in which the principal party determines the work while the agent does the work (Jensen & Meckling, 1976; Ross, 1973; Eisenhardt, 1989). It is very useful for governing, monitoring and controls in an organization. This theory helps management to assess the company capabilities and short falls, risk monitoring and identification. According to Smith and Stulz (1985) risk management could impact managerial behaviors towards risk taking and evading. Wamalwa & Mukanzi (2018) argued that agency theory expands the analysis of the company to involve separation of ownership and control, and managerial motivation. Kenny, Jumoke and Faderera (2014) indicated that the theory further clarifies a likely divergence of interest between shareholders, Management and debt holders as a result of asymmetries in the distribution of

earnings which can lead to the company taking an unacceptable risk or not taking part in positive net value projects.

Stakeholder Theory

Sathyamoorthi, Mogotsinyana, Mphoeng and Mashoko (2020) argued that stakeholder theory, coined originally by Freeman (1984) as a managerial tool, has since grown into a model of the company with high explanatory potential. The stakeholder model concentrates clearly on equilibrium of stakeholder interests as the major factor of corporate policy. Klimczak (2005) argues that in some sectors, especially high-tech and services, consumer trust in the firm is capable to maintain its services in the future and significantly contribute to firm value. Nonetheless, the value of these indirect assertions is very sensitive to the anticipated costs of financial distress and bankruptcy since corporate risk management practices result in a reduction in these anticipated costs and firm value increases. Therefore, Judge (2006) argues that the stakeholder model gives a new understanding into probable motivation or basis for risk management, but it has not yet been examined directly and studies of financial distress give only indirect evidence.

Credit Management Theory

Credit management theory as proposed by Woolcock and Narayan (2000) states that the markets for credit or loans are highly shaped by the lenders (MFIs) strategically, for potential borrowers screened and their opportunistic behavior addressed which is encouraged by the nature of loan contracts. Accordingly, lenders usually increase credit pricing to a level that they expect returns to be maximized. This often excludes small, risky and costly borrowers. The consumption of credit tends to be inversely related to both the interest rates and the required collateral. Commercial banks tend to apply the credit management theory taking advantage of the opportunistic behavior presented by potential borrowers. Consumption of credit is collated to the collateral requirements and a variable interest rate pricing policy might be utilized by individual banks (Tanui, Wanyoike & Ngahu, 2015).

Theory of Information Asymmetry

Akerlof (1970) proposed the theory of Information asymmetry theory and argued that in markets, buyer usually use market statistic to determine the goods value. Therefore, the clients normally become aware of an average of an entire market whereas the seller is knowledgeable of a particular item. Akerlof's argument is that information asymmetry gives the seller a greater opportunity to sell his/her products or services of less than the average market quality (Parrenas, 2005). In this way, the average quality of a product or a service in a market may reduce as well as the market size. In this theory, relevant Information is often available for each agent but there is a strong information asymmetry between the managers and the investors of the firm (Akkizidis & Khandelwal, 2008). This theory explains a condition where all parties in an undertaking are not aware of the available relevant information (Eppy, 2005). Stiglitz (2001) indicates competitive behavior in such markets involving intertemporal linkages. The theory points out two problems associated with the perceived information asymmetry for the financial institution. That is the adverse selection and moral hazard. The theory affirms that, if commercial banks can exchange their client's information especially on clients' creditworthiness it could result in higher aggregate lending and low default rates (Weinberg, 2006).

The Adverse Selection Theory

The adverse selection theory was postulated by Stiglitz and Weiss in 1981 and was noted by Karlan and Zinman (2004) that the adverse selection occurs when borrowers or clients of the bank have features or characteristics which may not be observed by the bank when lending. These unobservable characters could lead to loan repayment default thus affecting the bank's profits negatively. The theory assumes that: lenders will be unable to distinguish between banks loan clients of different risk degrees and that all the contracts of the bank loans offered to borrowers are all subject to a limited liability (Berhanu, 2005). Since banks as lenders do not have complete borrowers risk profile information, high average interest rates are normally passed on to all loan clients without considering differences in their risk profile (Armendariz & Morduch, 2010).

Conceptual Review

Identifying Risks Management practices in Microfinance Institutions

Wenk (2005) indicated that the Risk Management model consists of risk identification, risk assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risks can come from uncertainty in financial markets, project failures, legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attack from an adversary, or events of uncertain or unpredictable root-cause.

Khizer, Muhammad and Sharma (2011) indicated that the first step in the risk management process is to identify risks and good quality information, as well as a comprehensive understanding of the microfinance institution and its internal and external environment, which are very crucial to identify the risks. Kenny et al. (2014) also emphasized that historical information concerning the institution and similar institutional kinds (competitors or not) can be more valuable, as they can result in educated forecasting on present and evolving matters that have not yet been confronted by the institution. Wamalwa and Mukanzi (2018) argued that the risk identification process includes the recognition and documentation of expected risk happenings within its institution and it is repetitive because new risks might become known as operations continue. Kalu, Shieler and Amu (2018) argued that the kinds of risks in the microfinance business are practically endless.

Mwangi (2014) indicated that the financial economic approach to corporate risk management is considered to be the most prolific in relation to both theoretical model extensions and empirical study. The model builds upon the common Modigliani-Miller paradigm which stipulates conditions for the insignificance of financial structure for corporate value. This model subsequently reached the sphere of risk management. Muthij, Wanjohi and Ndambiri (2017) stated that this model's hedging results in lesser instability of cash flow and thus, reduce the volatility of firm value. Reasons for corporate risk management were inferred from the insignificance conditions and involved: higher debt capacity, progressive tax rates, lesser anticipated costs of bankruptcy (Smith & Stulz, 1985), making safe internal financing (Froot, Scharfstein & Stein, 1993), information asymmetries (Geczy, Minton & Schrand, 1997) and comparative advantage in information. The final outcome of hedging, if it certainly is helpful to the company, ought to be higher value - hedging premium.

Bagh, Khan and Sadaf (2017) found that evidence to back the predictions of the financial economics theory approach to risk management is poor. Though risk management does result to lower volatility of corporate value for instance, Jin and Jorion (2006), which is the major requirement for every other

effect, there appears to be scanty evidence of this being associated with benefits stipulated by the model. On the other hand, one of the most commonly mentioned literature. There is no evidence to back financial hypotheses and focuses on the impact of managerial preferences in its place. In more recent times, Jin and Jorion (2006) found a strong proof of the absence of value relevance of hedging, though certain past researches have recognized a hedging premium (Allayannis & Weston, 2001; Carter, Daniel & Betty, 2006).

A unique view on risk management is provided by new institutional economics. The emphasis is moved here to governance procedures and socio-economic institutions that manage these procedures, as clarified by Williamson (1998). Jin and Jorion (2006) indicated that though there are no empirical evidence on the new institutional economics approach to risk management so far, the theory provides a different explanation of corporate behaviour. Specifically, it forecasts that risk management practices may be decided by institutions or accepted practice within an industry. Furthermore, Carter et al. (2006) stipulated that the model associates security with certain assets purchase, which means that risk management can be essential in agreements that bind two parties without permitting diversification, such as large financing agreement or close collaboration within a supply chain. Nair, Purohit and Choudhary (2014) suggested that an additional strong implication of this model is that shareholders may be concerned in attracting block ownership by decreasing firm risk. Thus, new institutional economics is akin in its predictions to agency theory but this model proposes that company practices may be affected by the ownership structure generally.

Return on Assets (ROA)

Al-Matari, Al-Swidi and Fadzil (2014) indicated that the most widely used performance measure in risk management literature in terms of accounting-related determinants is Return on Assets (ROA). This is estimated as the net income divided by total assets and is a pointer of short-term performance. $ROA = \text{Net Profit} / (\text{Beginning Total Assets} + \text{Ending Total Assets}) / 2$

Kenny et al. (2014) posit that ROA is an indicator that evaluates assets employed efficiency and conveys to investors the earnings that have been generated by funds that have been invested in capital assets. They further indicated that the efficient use of a company's assets is best depicted by the return rate on its assets. Al-Matari et al. (2014) stipulated that because a bank's management is accountable for the operations of the bank and utilization of the bank's assets, ROA is an indicator that permits investors to know how well the bank's risk management practices are functioning so far as improving the level to which the bank's management is running efficiently is concerned.

Return on Equity (ROE)

Al-Matari et al. (2014) indicated that Return on Equity (ROE) is a profitability ratio measured by dividing net profit over shareholders' equity. It shows how well the MFI can use equity investments to earn profit for investors.

$$ROE = \text{Net Profit} / (\text{Beginning Equity} + \text{Ending Equity}) / 2$$

According to Vanroose and D'Espallier (2013), Return on Equity (ROE) is another major accounting-related indicator of a company's performance which is employed in risk management studies. They further indicated that one of the key reasons why MFIs operate is to make profits to reward its shareholders; hence, ROE is an indicator that proves to shareholders, as well as other stakeholders, the earnings which they made from the money invested by the investors.

Al-Matari et al. (2014) stipulated that ROE is depicted as having some restrictions and ROE is not risk-sensitive (for instance, the amount of risky assets and the solvency event is not captured in ROE figures) and it does not consider the company's long-term strategy or essential extra-ordinary components; hence, ROE is not an independent performance measure.

Empirical Review

This section provides an empirical review of studies carried out across the globe on risk management practices and their impact on financial performance in financial institutions.

Review of Risk Management on financial performance

There have been many studies on risk management. Many empirical pieces of evidence have been recorded on the correlation between risk management practices and financial performance. For example, Zubairi and Ahson (2015) investigated the strength of correlation between present risk management practices and the profitability of five (5) Islamic banks in Pakistan. Risk management practices of the banks were studied and quantified over a seven-year period. The study adopted both primary (survey questionnaires) and secondary data (annual reports) to collect data. The study estimated pooled regression and verified the reliability of the estimated model via the Augmented Dickey-Fuller test and found that risk management system had a statistically significant negative influence on profitability using ROA and ROE during the period under review. Abdel-Ménaf (2015) investigated risk management practices in MFIs focusing on two key institutions in Togo, involving Federation of Savings and Loans Cooperative (FUCEC) and Women and association for gain both economic and Social (WAGES). The study used a qualitative survey research design and collected data through semi-structured interviews, using 40 respondents in both institutions and analyzed data utilizing descriptive statistics. The results indicated that the risks faced by the institutions included institutional, operational, financial management, and external risks but concentrated more on credit risk. Furthermore, the study found that the major threat to credit risk management was the lack of training and bad selection of staff in charge of credits. Kauna (2016) adopted a descriptive research design and targeted a population of 43 Kenyan commercial banks in which data was collected from 39 commercial banks. The study employed primary data through questionnaires and secondary data via the banks' published financial statements from 2011-2015. The data collected was analyzed using descriptive statistics and inferential statistics such as standard deviation and mean, and regression analysis and correlation respectively. The results indicated a significant positive correlation between risk identification and risk monitoring and the financial performance of the banks. The findings showed a positive insignificant relationship between risk appraisal and financial performance. Furthermore, there was a negative insignificant relationship between risk control and the financial performance of the banks. Korir (2012) used a descriptive survey approach in the collection of data from respondents in assessing risk management in Deposit-taking MFIs in Kenya, by sampling 36 staff. The results indicated that the MFIs adopted risk management practices to address risks faced by them and also found that the MFIs have adopted different techniques in screening and assessing risk before granting credit to clients to reduce loan losses. The practices included the establishment of capacity/competition and conditions and use of collateral/security and character of the borrower to screen and assess risks. The findings also revealed a positive relationship between risk management practices and the financial performance of Deposit-taking MFIs.

Makokha, Namusonge and Sakwa (2016) conducted a study to investigate the impact of risk management practices on commercial banks' performance. The study used a mixed-method of research design and collected data using questionnaires and interviews. The target population was 43 licensed commercial banks in Kenya from which a sample size of 133 managers was randomly chosen. Data were analyzed utilizing descriptive statistics and inferential statistics including correlation analysis, bivariate regression analysis, and multiple regression analysis. The study revealed the usage of credit risk, liquidity risk, interest rate risk and operational risks and monitored regularly to replace the outdated risks. The study found a positive statistically significant correlation between risk management practices and financial performance. They suggested that the risk management systems must be adopted in financial institutions to assist them to proactively mitigate risks.

Kiprop (2017) conducted a study employing exploratory research design as well as stratified random sampling to choose respondents from the target population of 46 managers of commercial banks, 52 MFIs, and 200 (Savings and Credit Cooperative Society) SACCOs and a sample size of 239 respondents. The study used questionnaires to collect data and also employed descriptive statistics as well as inferential statistics using Pearson correlation. The findings revealed that risk identification, evaluation, and monitoring policy systems had a significant impact on the financial performance of financial institutions. The study further found that risk assessment positively had a relationship with the performance of financial institutions. Also, empirical evidence provided by Adeusi, Akeke, Adebisi and Oladunjoye (2013) on the relationship between risk management practices and financial performance of listed banks in Nigeria adopted a pooled secondary data over a four-year period and randomly selected 10 banks from a population of 21 listed banks in Nigeria. The findings indicated a statistically significant correlation between financial performance and risk management practices. Oyerogba, Ogungbade and Idode (2016) examined the risk management practices and financial performance of listed firms in Nigeria for the period of ten (10) years from 2005 to 2014, with specific attention on 21 deposit money banks. The study employed both primary (survey questionnaire) and secondary (audited financial statement) as sources of data. The findings indicated that risk management practices have a statistically significant impact on financial performance. This finding led to a suggestion that an adequate risk management system must be established by the Board of Directors and this system must be revised often to determine adequacy, effectiveness, and level of adherence by management to this system. Olalere, Omar and Ahmad (2016) studied the effects of credit risk on profitability of 8 commercial banks in Nigeria and indicated that poor risk management reduced profitability and led to a low-profit margin of the firms. One of the key findings revealed that the management of risk does not frequently translate to the positive financial performance of banks and does not also ensure an increase in the returns on equity. The study also indicated that poor risk management results in the deterioration in capital adequacy and has a direct impact on shareholder's funds.

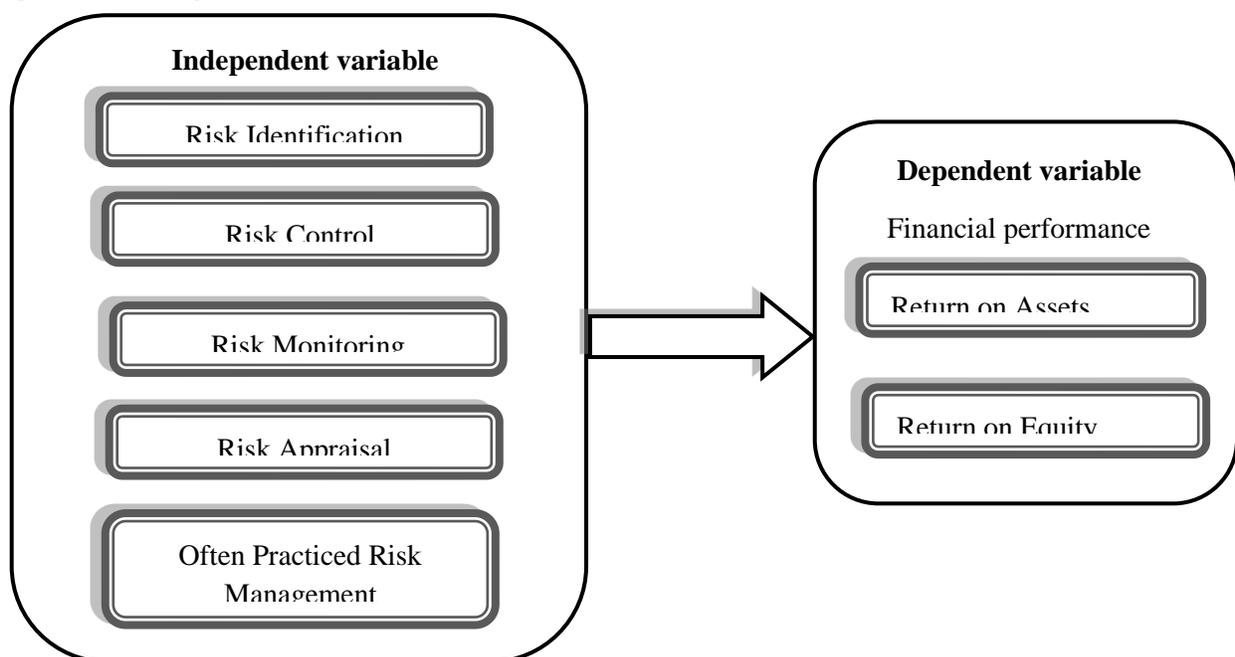
A study undertaken by Pearl-Kumah et al. (2014) employed a closed-ended question format in a questionnaire to investigate the extent to which banks in Ghana utilize risk management practices in managing various kinds of risks. The findings revealed that the major key kinds of risk faced by the selected banks included credit risk, liquidity risk, operating risk, interest rate risk, and solvency risk. The results further indicated that the major risk faced was credit risk, followed by interest rate risk and finally technological risk. The study found that the selected banks were efficient in managing the

risks. Boateng and Boateng (2014) used a deductive approach and only secondary data on the assessment of risk management practices among MFIs in Ghana. The study confirmed that MFIs were ignorant in relation to the risks they faced with risk management practices such as control measures implemented reactively and ineffectively. The results showed that no structured risk identification was done by the selected MFIs and assumed unaware and/or unplanned risk exposure to their limited financial resources and non-financial resources. The findings also indicated that managerial actions were focused on avoiding risk, rather than formulating risk control techniques. Frempong, Nartey and Korankye (2019) investigated the influence of risk management on organizational efficiency in Ghana, using Access Bank Ghana Ltd (UPSA Branch) aimed at understanding of risk management, knowing the potency of risk identification, risk assessment and analysis, risk monitoring and controlling with its impact on organizational efficiency. It was reported from the study that multiple linear regression showed that risk monitoring as an element of risk management had a positive relationship of 0.56 and significant predictor with organizational efficiency of ($\beta=0.733$, $t(15)=3.398$, $p<0.050$). The test for the fitness of the model was also positive and significant and the study model was accepted. The study revealed strong positive relationship between risk identification, understanding of risk and risk monitoring.

Conceptual Framework

To get a comprehensive understanding of a phenomenon visually explaining the key concepts or variables and their relationships, an analytical tool called conceptual framework is normally used (Grant & Osanloo, 2014). It is usually a framework developed based on an existing theory a special field of inquiry that relates the hypothesis of a study or research serving as a guide to prevent deviations from the researcher's objectives (Grant & Osanloo, 2014). In this study, risk management practices were the independent variables and the financial performance were ROA and ROE (Fig.1).

Figure 1: Conceptual Framework



Source: Researcher's Construct, 2020

Methodology

Research Design

This study espoused a quantitative research approach and made predictions on the correlation between variables in a statistical manner and analyzed the impact of risk management practices and financial performance among selected MFIs (i.e. the relationship between variables). Opinions and views of respondents on risk management practices formed the basis of quantitative data for this study.

Sample Size and Sampling Technique

Sample size taken was 40 participants across Ten (10) MFIs (Appendix II). The sample included management, operation managers, branch managers, accountants, internal auditors, and officers from the credit departments. The multi-staged sampling was adopted as been cluster and purposive sampling method. Firstly, the cluster sampling technique was adopted to sample areas within the Kumasi metropolis into clusters and eight (8) clusters were selected which included Kwadaso, Adum, Suame, Kejetia, Ahodwo, Sofoline, Amakom and Edwenase. Ten (10) MFIs were selected from the clusters using convenience sampling regarding MFIs that were ready to participate in the study. The respondents of the study were selected using the stratified random sampling method. The staff was divided into three (3) smaller strata or subgroups namely Cooperative Credit Unions, Savings and Loans companies and Rural Banks.

Data Collection Instrument

The nature of this empirical study made it possible for the researcher to administer survey questionnaires in collecting primary and secondary data (Appendices I and III respectively). The questions in the questionnaire were designed on the basis of the Likert scale format and were closed-ended questions. Questionnaires were self-administered to respondents. The survey questionnaire was divided into three (3) parts. Section 'A' highlighting issues on demographic information about the respondents; Sections B and C addressed questions on the objectives outlined. However, in Section C the questionnaire was used to determine rankings for assessing and benchmarking the often practiced risk management. The responses were ranked by assigning weights from one to 5 in ascending order, such that rank one had the highest weight of 5 and rank five had the lowest weight of one (Nguthi, 2007). The overall score for each question was then calculated by summing up the frequency of the respondents multiplied by the rank position assigned to the question.

Data Analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS) software version 16 in creating tables and charts for easy presentation and insight into results. Descriptive statistics in the form of mean and standard deviation (SD) were also utilized to provide meanings to data collected. Inferential statistics such as linear regression and Pearson's correlation is seen as the linear modeling technique that is utilized to assess the correlation between a set of independent and dependent variables (Hair, Black, Babin & Anderson, 2010). Thus, the method was used to establish the correlation between financial performance (dependent) and risk management practices (independent).

Validity and Reliability

Scales utilized to measure the variables were standard measures previously validated and employed by kin researchers. The study also utilized the Cronbach alpha coefficient in determining the reliability of the research instrument. Hair et al. (2010) suggested that the reliability is expounded by Cronbach's Alpha score which is between 0 and 1. Usually questionnaires that possess a score of 0.7 and above are perceived to be reliable.

Test of Significance

The p values were used to establish the significance variables at a 5% level of significance where a p-value greater than 5% would be considered insignificant ($0.05 > P$) while a p-value of less than 5% ($P < 0.05$) would be considered significant.

Analytical Model for Return on Assets (ROA)

The regression equation according to Kothari (2011) is as follows:

$$ROA = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu (\text{error})$$

Where ROA=Return on assets, which is the ratio of net income to total assets

α =Constant term

$\beta_1 \beta_2 \beta_3 \beta_4 \beta_5$ =coefficients of the regression model

X_1 = Risk identification

X_2 = Risk assessment

X_3 = Risk control

X_4 = Risk monitoring

X_5 = Often practiced management risk

μ =probable error

Analytical Model for Return on Equity (ROE)

The regression equation according to Kothari (2011) is as follows:

$$ROE = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu (\text{error})$$

Where ROE=Return on Equity, which is the ratio of net income to shareholders' Equity

α =Constant term

$\beta_1 \beta_2 \beta_3 \beta_4 \beta_5$ =coefficients of the regression model

X_1 = Risk identification

X_2 = Risk assessment

X_3 = Risk control

X_4 = Risk monitoring

X_5 = Often practiced management risk

μ =probable error

Results and Discussion

Response Rate

Ten microfinance institutions were involved in the research and all fully participated representing 100% response rate per the institutions. However, at least 1-4 estimated top management staff per each institution resulted in 40 participants at a response rate of approximately 90%.

Data Reliability

The study used Cronbach's alpha coefficient in determination of reliability of research instrument. Results obtained ranged from 0.7 to 0.9 (Table 1) which fall in the acceptable range of 0.7-1.0 with one deletion from the risk control questionnaire. The high values of Cronbach's Alpha obtained indicated that the questionnaire used was reliable to attain the credibility of the study and to guarantee that scales employed to measure the variables were also valid and reliable as recommended by Kothari (2011), Bryman and Bell (2007).

Table 1: Data Reliability

<i>Variable</i>	<i>Cronbach's Alpha</i>	<i>No. of items</i>
Risk Identification	0.909	14
Risk Appraisal	0.700	6
Risk Control	0.700	7
Risk Monitoring	0.782	7
Often practiced risk management	0.729	4

Source: Field data, Letty (2020)

The mean, standard error, standard deviation and variance of the variables studied are presented in Table 2. Results showed that, mean ROA and ROE of the selected microfinance institutions was 0.031 and 0.35 respectively with a standard deviation of 0.029 and 0.284 respectively. Results also showed that mean usage of risk identification, risk appraisal, risk control, risk monitoring and risk management practices were 3.3, 1.5, 1.8 2.1 and 1.6 respectively (Table 2) indicating 2 to 3 in the likert scale of the questionnaire (great extent to moderate) and occasionally (likert scale of 2) practiced risk management (Appendix 1).

Table 2: Identification of risk management practices of selected MFIs

<i>Descriptive Statistics</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean Error</i>	<i>Std.</i>	<i>Std. Deviation</i>	<i>Variance</i>
Returns on Assets Ratio	10	.002	.099	.03050	.009293	.029387	.001
Returns on Shareholders Equity Ratio	10	.019	.814	.34810	.089762	.283853	.081
Risk Identification	10	2.000	4.000	3.30000	.213437	.674949	.456
Risk Appraisal	10	1.000	2.000	1.50000	.166667	.527046	.278
Risk Control	10	1.000	2.000	1.80000	.133333	.421637	.178
Risk Monitoring	10	1.000	3.000	2.10000	.179505	.567646	.322
Often practiced risk Management	10	1.000	2.000	1.60000	.163299	.516398	.267

Source: Field data, Letty (2020); N=No. of MFIs

The positive ROA though low indicates that the return on all MFIs assets is frequently utilized as a general index of profitability, and the higher the value, the more profitable the MFI (Ngutor, Falaye, Onah, Nyor and Evans, 2013). The positive ROA observed in this study indicates that assets were efficiently employed by these MFIs to generate profits for the institutions (Kenny et al., 2014) and is a good indication of how well the risk management practices of the MFIs are functioning as indicated by Al-Matari et al. (2014), a situation that gives hope to investors that the MFIs are attaining profitable returns on their borrowed funds (Ngutor et al. 2013). Similarly, the high ROE obtained from this study meant that the rate of return on the shareholder's equity employed in the MFI in terms of managing its available resources and assets to net higher profits are high and a proof to shareholders, as well as other stakeholders, that the earnings which they made from the money invested is yielding profits. High ROE observed may be due to the fact that ROE is depicted as having some restrictions and ROE is not risk-sensitive since the amount of risky assets and the solvency event is not captured in ROE figures and it does not consider the company's long-term strategy or essential extra-ordinary components. Hence, ROE is not an independent performance measure (Al-Matari et al., 2014). The positive ROA and ROE obtained from this study is in agreement with the theories backing the present study in terms of efficient risk management practices (Akerlof, 1970; Eisenhardt, 1989; Freeman 1984; Jensen & Meckling, 1976; Ross, 1973). The low value of ROA obtained may be due to the fact that ROA is an indicator that evaluates assets employed efficiency and conveys to investors the

earnings that have been generated by funds that have been invested in capital assets (Kenny et al., 2014).

The mean usage of risk identification, risk appraisal, risk control, risk monitoring measures were moderately undertaken and in some cases to a great extent and occasionally risk management practices were pursued. The result is in accordance with several workers who identified these risk management practices as contributing to financial performance (Abdel-Ménaf, 2015; Kalu et al. 2018; Khizer et al. 2011; Wamalwa & Mukanzi, 2018; Wichterich, 2012;) and some argued that the kinds of risks in the microfinance business are practically endless. The usage of these risk management practices could contribute immensely to the positive financial performance of these MFIs (Kiprop, 2017; Mwangi, 2014; Nair et al. 2014).

A five likert scale was used to assess the respondents for the risk magement practices they often do (Table 3). Results of the overall scores in order of ranking were 187, 185, 182 and 176 respectively for risk identification, risk monitoring, risk control and risk appraisal. As indicated earlier, several authors have suggested risk identification as one of the important factors in commencing risk management practices for example, Kiprop (2017). The result is in agreement with Khizer et al. (2011) who indicated that the first step in the risk management process is to identify risk and this may include recognition and documentation of expected risk happenings (financial, operational and strategic risks) within the MFIs (Wamalwa & Mukanzi, 2018).

Table 3: Rankings for Assessing and benchmarking selected risk management practices

	<u>Frequently</u>		<u>Occasionally</u>		<u>Rarely</u>		<u>Very Rarely</u>		<u>Not at all</u>		<u>Overall score</u>	
	Freq	Score	Freq	Score	Freq	Score	Freq	Score	Freq	Score	Total score	Rank
Risk Identification	27	135	13	52	0	0	0	0	0	0	187	1
Risk Monitoring	24	120	15	60	1	3	1	2	0	0	185	2
Risk Control	23	115	16	64	1	3	0	0	0	0	182	3
Risk Appraisal	20	100	16	64	4	12	0	0	0	0	176	4

Source: Field data, Letty (2020)

The correlation results of risk management practices and financial performance of selected MFIs are presented in Table 4. Results showed that there was a positive correlation between the financial performance as measured using ROA, ROE (dependent variables) and risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management (independent variables). Most of the relationship showed strong (0.6-0.7) to moderate (0.4-0.5) positive correlations between financial performance (ROA, ROE) and risk management practices. ROA was moderately and positively correlated with risk identification (0.4), risk control (0.5) and had a positive and significantly

strong correlation (0.7) with risk monitoring. However, risk appraisal and 'often practiced risk management' had positive low correlations (0.1 and 0.3 respectively). ROE was moderately and positively correlated with risk appraisal (0.5), risk monitoring (0.5) and often practiced risk management (0.5) and a positive and strong correlation (0.6) with risk control. However, risk identification had positive low correlations (0.2). The correlation results of risk management practices and financial performance of selected MFIs are presented in Table 4. Results showed that there was a positive correlation between the financial performance as measured using ROA, ROE (dependent variables) and risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management (independent variables). Most of the relationship showed strong (0.6-0.7) to moderate (0.4-0.5) positive correlations between financial performance (ROA, ROE) and risk management practices. ROA was moderately and positively correlated with risk identification (0.4), risk control (0.5) and had a positive and significantly strong correlation (0.7) with risk monitoring. However, risk appraisal and 'often practiced risk management' had positive low correlations (0.1 and 0.3 respectively). ROE was moderately and positively correlated with risk appraisal (0.5), risk monitoring (0.5) and often practiced risk management (0.5) and a positive and strong correlation (0.6) with risk control. However, risk identification had positive low correlations (0.2).

Table 4: Pearson Correlation Test of risk practices and financial performance of selected MFIs

	Return on Assets Ratio	Return on Shareholders' Equity Ratio	Risk Identification	Risk Appraisal	Risk Control	Risk Monitoring	Often practiced Risk Management
Return on Assets Ratio	1						
Return on Shareholders' Equity Ratio	.684*	1					
Risk Identification	.350	.176	1				
Risk Appraisal	.133	.451	-.156	1			
Risk Control	.457	.578	.234	.500	1		
Risk Monitoring	.716*	.471	.493	.186	.557	1	
Often practiced risk Management	.308	.510	.383	.408	.102	.152	1

*Correlation is significant at the 0.05 level (2-tailed)

Table 5 showed an R-value of 0.781 which indicates a high degree of correlation (strong) and a good level of prediction of financial performance of the selected MFIs. The results also showed a coefficient of determination (R-square) value of 0.611, which indicated that risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management explained 61.1% of the variation of financial performance of the selected MFIs. Therefore, 38.9% of the variation in financial performance is explained by other factors and the error term.

Table 5: Model Summary (Return on Assets)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781 ^a	.611	.124	.027505

a. Predictors: (Constant), Risk Identification, Risk appraisal, Risk Control, Risk Monitoring, Risk Management Practices

Source: Field data, Letty (2020)

The ANOVA is presented in Table 6. The results showed a non-significant p-value of 0.425 indicating that the regression model could not significantly predict the dependent variable very well. However, similar Sum of squares for the regression and residual indicated that more than 50% of the variation in the financial performance (ROA: dependent variable) of the selected MFIs could be explained by the model.

Table 6: Multivariate regression of risk management practices on financial performance (Return on Assets)^b

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.005	5	.001	1.255	.425 ^a
Residual	.003	4	.001		
Total	.008	9			

a. Predictors: (Constant), Risk Identification, Risk Appraisal, Risk Control, Risk Monitoring, Risk Management Practices

b. Dependent Variable: Return on Assets

Source: Field data, Letty (2020)

The regression coefficient result is presented in Table 7. The results showed that $p > 0.05$ indicating that the coefficients were not significantly different from 0 (zero). This meant that the relationship between the financial performance indicator (ROA) and the risk management practices were statistically insignificant as opposed to significant results observed in Frempong et al. (2019). Again, the results showed B coefficients of -0.49, -0.12, -0.19, 0.18, 0.37, 0.24 respectively for the constant (c), risk identification (X_1), risk appraisal (X_2), risk control (X_3), risk monitoring (X_4) and often practiced risk management (X_5), thus the general equation obtained from the results of the regression coefficients is:

$$ROA = -0.049 - 0.012X_1 - 0.019X_2 + 0.018X_3 + 0.037X_4 + 0.024X_5 + \mu (\text{error})$$

Table 7: Regression Coefficients using Return on Assets^a

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	-.049	.058		-.843	.446
Risk Identification	-.012	.020	-.269	-.585	.590
Risk Appraisal	-.019	.027	-.336	-.697	.524
Risk Control	.018	.032	.251	.552	.610
Risk Monitoring	.037	.022	.708	1.676	.169
Often practiced risk Management	.024	.024	.414	.969	.388

a. Dependent Variable: Return on Assets

Source: Field data, Letty (2020)

Table 8 showed an R-value of 0.783 which indicates a high degree of correlation (strong) and a good level of prediction of financial performance of the selected MFIs. The results also showed a coefficient of determination (R-square) value of 0.614 that indicated that risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management explained 61.4% of the variation of financial performance (ROE) of the selected MFIs. Therefore, 38.6% of the variation in financial performance (ROE) is explained by other factors and the error term.

Table 8: Model Summary(Return on Equity)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 ^a	.614	.131	.264631

a. Predictors: (Constant), Risk Identification, Risk appraisal, Risk Control, Risk Monitoring, Often practiced risk management

Source: Field data, Letty (2020)

Table 9 indicates the ANOVA results which reports how well the regression equation fits the data (i.e., predicts the dependent variable). The results showed a non-significant p-value of 0.420 indicating that the regression model could not significantly predict the dependent variable very well. However, similar Sum of squares for the regression and residual indicated that more than 50% of the variation in the financial performance (ROE: dependent variable) of the selected MFIs could be explained by the model.

Table 9: Multivariate regression of risk management practices on financial performance (Return on Equity)^b

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.445	5	.089	1.271	.420 ^a
Residual	.280	4	.070		
Total	.725	9			

a. Predictors: (Constant), Risk Identification, Risk Appraisal, Risk Control, Risk Monitoring, Risk Management Practices

b. Dependent Variable: Return on Equity

Source: Field data, Letty (2020)

Results of the summary of the coefficient of regression are presented in Table 10. The results showed $p > 0.05$ indicating that the coefficients were not significantly different from 0 (zero) as observed in the ROA above. This meant that the relationship between the financial performance indicator (ROE) and the risk management practices were statistically insignificant as opposed to significant results observed in Frempong et al. (2019). Again, the results showed B coefficients of -0.504, -0.149, -0.091, 0.349, 0.147, 0.339 respectively for the constant (c), risk identification (X_1), risk appraisal (X_2), risk control (X_3), risk monitoring (X_4) and often practiced risk management (X_5), thus the general equation obtained from the results of the regression coefficients is:

$$ROE = -0.504 - 0.0149X_1 - 0.091X_2 + 0.349X_3 + 0.147X_4 + 0.339X_5 + \mu(\text{error})$$

ROA was moderately and positively correlated with risk identification (0.4) in agreement with Nair et al. (2014) who indicated that risk management practices such as risk identification can influence business performance. Also Kalu et al. (2018) found that credit risk identification and credit risk assessment have a strong positive relationship on financial performance. Kiprop (2017) also revealed that risk identification, had a significant impact on the financial performance of financial institutions. Kiprop (2017) revealed that risk identification, monitoring policy systems had a significant impact on the financial performance of financial institutions. The moderate relationship between risk control and financial performance was in agreement with Kalu et al. (2018) who found that credit risk control have a moderate positive relationship with financial performance and also according to Gatuhu (2013) who found a strong relation between the MFIs financial performance and credit risk control.

Table 10: Regression Coefficients^a (Return on Equity)

Model (1)	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	-.504	.560		-.901	.419
Risk Identification	-.149	.192	-.353	-.772	.483
Risk Appraisal	-.091	.258	-.169	-.353	.742
Risk Control	.349	.305	.518	1.143	.317
Risk Monitoring	.147	.210	.294	.700	.523
Often practiced risk Management	.339	.234	.616	1.447	.221

a. Dependent Variable: Return on Equity

Source: Field data, Letty (2020)

The present study had a positive and significantly strong correlation (0.7) with risk monitoring in agreement with Mago, Hofisi and Mago (2013) Kalu et al. (2018) and Frempong et al. (2019) who found that credit risk monitoring have a moderate positive relationship with financial performance and similarly Kiprof (2017) revealed that risk monitoring policy systems had a significant impact on the financial performance of financial institutions. However, risk appraisal and often practiced risk management had positive low correlations (0.1 and 0.3 respectively) in agreement with Kauna (2016) who showed a positive low insignificant relationship between risk appraisal and financial performance but in contrast to Wanjiru (2011) who found that proper risk management practices improve financial performance. The low correlations in terms of ROA and risk management practices were similar to Sathyamoorthi et al. (2020) who found that credit risk management practices had insignificant impact on return on assets. Olalere et al. (2016) also indicated that risk management practices do not frequently translate to positive financial performance. They argued that even though effective risk management practices in financial institutions decrease the events of systemic and economic breakdown, however, this does not guarantee an increase in the returns on equity. Furthermore, they emphasized that poor risk management practices and negligence on the part Management in financial institutions often result in the deterioration in capital adequacy and have a direct impact on the shareholder's funds.

ROE was moderately and positively correlated with risk appraisal (0.5), risk monitoring (0.5) and risk management practices (0.5) which is in agreement with several authors (Adarkwa, 2011; Adeusi et al. (2013); Bagh et al. 2017; Makokha et al. 2016; Mwangi, 2014; Opoku- Korir, 2012; Oyerogba et al.

2016; Wanjiru, 2011) who found that proper risk management practices improved financial performance of MFIs. In contrast, Zubairi and Ahson (2015) investigated the strength of correlation between present risk management practices and the profitability of five (5) Islamic banks in Pakistan. Risk management practices of the banks were studied and quantified over a seven-year period and found that risk management system had a statistically significant negative influence on profitability using ROA and ROE during the period under review. The present study had a positive and strong correlation (0.6) with risk control and financial performance (ROE) in contrast to low positive insignificant relationship between risk control and the financial performance of the banks by Kauna (2016). However, risk identification had positive low correlations (0.2) with financial performance (ROE) in contrast to Kauna (2016) who indicated a significant positive moderate correlation between risk identification and financial performance of the banks. These observations probably may be due to the fact that specifically credit risk identification was used as opposed to general risk identification in the present study.

Conclusions

The findings of the study revealed that the selected MFIs were doing well in terms of returns on assets and Equity. This means that the MFIs are making profits that would attract investors and more shareholders. The moderate to strong correlations observed between the risk practices (risk identification, risk appraisal, risk control, risk monitoring, often practiced risk management) and the financial performance are very important since these factors will help boost the MFIs financial performance if they are undertaken. Monitoring of MFIs risk management practices was significant and important in this study and must be adhered to at all stages of risk management practices to ensure good financial performance.

Theoretical and contextual contribution of this research to existing knowledge

Several studies have examined the relationship between financial performance and credit risk of which most managers concentrate. However, performance of MFIs does not depend only on credit risks. There are other risk management practices (RMPs) that must be observed in order for MFIs to perform. The RMPs in question included risk identification, risk appraisal, risk control, risk monitoring and often practiced risk management. This is a major gap that this study investigated. It should be noted that the financial sector in Ghana has experienced intensive reforms resulting in the closure, shutting down or collapse of many financial institutions that did not meet the required principles due to poor management practices. In order to guarantee the sustainability of the microfinance sub-sector, management of risk must be effectively carried out. MFIs must, thus, be aware of how relevant risk management practices are in the general strategic plan of a financial institution to avoid their collapse. The study was intended to assist policymakers to formulate policies that could assist the management of the majority of microfinance institutions by identifying risk management practices for their respective financial institutions. These factors might result in the failure or collapse of their institutions and for that matter could utilize the information acquired from this study to guide them in their decision-making process.

Limitations of the Study

The study was limited to the number of companies that agreed to participate in the research. The availability of time for this study was limited and could not permit the consideration of all MFIs in the

Kumasi Metropolis. The researcher also envisaged that some information might be classified as confidential which will not be released to support the data analysis.

Acknowledgements

We wish to express our sincere gratitude to the entire staff of the Department of Accounting and Finance, Christian Service University College and all others who advised us in the field of research. We are grateful to Dr. Manfred B. Ewool of CSIR-Crops Research Institute and Mrs. Felicia Ewool for their financial support in the conduct of this research.

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APPENDICES

Appendix 1: Questionnaire

CHRISTIAN SERVICE UNIVERSITY COLLEGE



KUMASI
Questionnaire

Dear Respondent,

This questionnaire aims at examining the effect of risk management practices on the financial performance of microfinance institutions in the Kumasi metropolis. The research is purely academic in nature and any information obtained from this questionnaire will be confidential. We shall appreciate your cooperation and support.

Please tick and fill where appropriate

Section A: Background Information

1. Gender of Respondent: a) Male b) Female
2. Age of Respondent: a) Below 25 b) 26-40 c) 41-50 d) Above 51
3. What is your highest educational qualification or nearest equivalent? a) HND
 b) Bachelor c) Master's degree d) Professional qualification e) Postgraduate
 f) Others (specify)
4. How long have you been working in this institution? a) Below 5 years
 b) 6-10 years c) 11-15 years d) 16 years and above
5. Specify your position in the organization

Section B: Managing Risks

To what extent does your organization undertake the below risk identification strategies to ensure that risk identification is well done to prevent it from failing in its obligations and meeting its objectives. Therefore, you are required to tick where appropriate, where (1) = To a very great extent, (2) = To a great extent, (3) = To a moderate extent, (4) = To a little extent, (5) = Not at all.

	Statements	1	2	3	4	5
	Risk Identification					
1	The institution has identified and documented possible risk occurrences	[]	[]	[]	[]	[]
2	The company is faced with borrowers' late and non-payment of loan obligations	[]	[]	[]	[]	[]
3	The institution experiences loan diversion	[]	[]	[]	[]	[]
4	There is concentration of loans (granted to a particular group) in the loan portfolio	[]	[]	[]	[]	[]

5	The cost of funds has gone up faster than the institution can or is willing to adjust its lending rates (interest rate risk)	<input type="checkbox"/>				
6	The institution is unable to meet its cash requirements or payment obligations timely and in a cost-efficient manner	<input type="checkbox"/>				
7	There is a currency mismatch in the MFI's assets and liabilities that has exposed it to foreign exchange rate fluctuations	<input type="checkbox"/>				
8	Field officers have lost their lives while discharging their duties	<input type="checkbox"/>				
9	There have been cases of direct theft of funds by loan officers	<input type="checkbox"/>				
10	There has been intentional or deliberate deception for unfair or unlawful personal gain	<input type="checkbox"/>				
11	There have been theft or harm to property in the institution	<input type="checkbox"/>				
12	The institution is faced with receiving inconsistent reports from officers through errors in the delivery of product and services	<input type="checkbox"/>				
13	Clients feel they are not been treated well by the institution and have formed a negative public opinion about the bank	<input type="checkbox"/>				
14	There have been inappropriate strategic choices	<input type="checkbox"/>				

To what extent does your organization undertake the following risk management measures to ensure that risk measures are well done to prevent it from failing in its obligations and meeting its objectives? Therefore, you are required to tick where appropriate, where (1) = To a very great extent, (2) = To a great extent, (3) = To a moderate extent, (4) = To a little extent, (5) = Not at all.

No.	Statement	1	2	3	4	5
	Risk Appraisal	<input type="checkbox"/>				
1	The institution reviews the credit history of every borrower	<input type="checkbox"/>				
2	The institution conducts analysis of credit risk-based decisions	<input type="checkbox"/>				
3	The institution assesses the willingness of the client to repay the loan debt	<input type="checkbox"/>				
4	The institution evaluates the financial ability of the borrower to repay the loan debt	<input type="checkbox"/>				
5	The institution assesses possessions or equities from which payment might be made from the borrower	<input type="checkbox"/>				
6	The institution reviews the client's commitment or contribution to the project or difficulties in raising deposits	<input type="checkbox"/>				

No.	Statement	1	2	3	4	5
	Risk Control					
1	The institution trains bank staff on risk control	[]	[]	[]	[]	[]
2	The institution ascertains the value of collateral secured	[]	[]	[]	[]	[]
3*	There are penalties upon default to ensure prompt repayment of loan	[]	[]	[]	[]	[]
4	The institution has introduced an education campaign to encourage clients to speak out against corrupt staff and group leaders.	[]	[]	[]	[]	[]
5	The institution standardizes all loan policies and procedures so that the staff cannot make any decision outside the regulations	[]	[]	[]	[]	[]
6	The institution emphasizes management training to increase managers' capacity and to introduce strict supervision processes	[]	[]	[]	[]	[]
7	The institution has established an inspection unit that performs random operational checks	[]	[]	[]	[]	[]
8	The institution ensures the loan is used for the intended purpose through regular visits to clients' business site	[]	[]	[]	[]	[]

*deletion

No.	Statement	1	2	3	4	5
	Risk Monitoring	[]	[]	[]	[]	[]
1	There is continuous monitoring of cash flows of the borrower	[]	[]	[]	[]	[]
2	There exists a frequent visit to borrowers	[]	[]	[]	[]	[]
3	The institution reviews clients' loan repayment pattern	[]	[]	[]	[]	[]
4	The institution supports distressed borrowers	[]	[]	[]	[]	[]
5	There is a frequent loan classification/provisioning revising	[]	[]	[]	[]	[]
6	The institution reconciles manual accounts with computerized accounts	[]	[]	[]	[]	[]
7	The institution revises its credit risk control and appraisal measures	[]	[]	[]	[]	[]

C. Which of the following risk management practice do you often practice?

Please respondent, kindly rate the various statements listed below, the responses of which are to be represented on the scale. Therefore, you are required to tick where appropriate, where (1) = Frequently (2) = Occasionally (3) = Rarely (4) = Very Rarely (5) = Not at all

No.	Statement	1	2	3	4	5
	How often do you practice					
1	Risk identification	[]	[]	[]	[]	[]
2	Risk Appraisal	[]	[]	[]	[]	[]

3	Risk control	[]	[]	[]	[]	[]
4	Risk monitoring	[]	[]	[]	[]	[]

Thank you

Appendix II: List of selected Microfinance Institutions

List of Selected Microfinance Institutions in the Kumasi Metropolis

No	Microfinance Institutions	Location	No. of Participants
1	Credit Union Soils Research Institute	Kwadaso-Agric	4
2	Credit Union Kumasi Technical University	Asafo	4
3	Credit Union Komfo Anokye	Bantama	3
4	Credit Union Ramseyer Presby	Adum	5
5	Savings and Loans Sinapi Aba	Ahodwo	5
6	Savings and Loans Opportunity International	Kejetia	3
7	Bosomtwi Rural Bank	Edwenase	1
8	Otuasikan Rural Bank	Kejetia	3
9	Ahafo Ano Rural Bank	Suame	5
10	Atwima Mponua Rural Bank	Bantama	7
TOTAL			40

Appendix III. Financial Performance Data of Selected Microfinance Institutions in the Kumasi Metropolis

	<u>Net income</u>			<u>Total assets</u>			ROA
	2018	2019	Average	2018	2019	Average	
CU SRI	356,735.78	425,825.60	391,280.69	7,735,445.17	8,020,527.85	7,877,986.51	0.05
CU KTU	835,161.07	974,600.39	904,880.73	9,300,812.08	10,415,058.7	9,857,935.41	0.09
CU KATH	1,160,686.06	546,299.08	853,492.57	10,688,431.9	12,447,071.6	11,567,751.8	0.04
CU Ramseyer	339,287.89	102,363.57	220,825.73	13,779,195.9	15,370,130.3	14,574,663.1	0.00

INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ACCOUNTING, FINANCE AND
MANAGEMENT SCIENCES

Vol. 11, No. 1, 2021, E-ISSN: 2225-8329 © 2021 HRMARS

S&L		3,150,321.	2,027,830.	167,355,207.	183,768,805.	175,562,006.	0.01
Sinapi	905,339.00	00	00	00	00	00	8
	-		-				
S&L	6,382,410.	2,088,726.	2,146,842.	236,907,506.	261,564,619.	249,236,062.	0.00
Opport	00	00	00	00	00	50	8
RB							
Bosomt	1,308,881.			76,187,671.0	88,669,879.0	82,428,775.0	0.00
wi	00	156,996.00	732,938.50	0	0	0	2
RB							
Otuasika	1,002,572.	1,354,195.	1,178,383.	68,131,329.0	79,964,358.0	74,047,843.5	0.01
n	00	00	50	0	0	0	8
RB							
Ahafo				21,119,566.0	28,530,570.0	24,825,068.0	0.03
Ano	631,151.00	736,399.00	683,775.00	0	0	0	0
RB	1,353,958.	1,267,600.	1,310,779.	56,134,360.0	60,927,119.0	58,530,739.5	0.02
Mponua	00	00	00	0	0	0	2

CU=Credit Union; S&L=Savings and Loans; RB=Rural Bank; SRI=Soils Research Institute KTU=Kumasi Technical University; KATH=Komfo Anokye Teaching Hospital; Opport=Opportunity International

	<u>Net income</u>			<u>Equity</u>			ROE
	2018	2019	Average	2018	2019	Average	
CU SRI	356,735.7 8	425,825.6 0	391,280.6 9	690,000.00	750,000.00	720,000.00	0.59 1
CU KTU	835,161.0 7	974,600.3 9	904,880.7 3	1,017,771.6 0	1,614,851.7 4	1,316,311.6 7	0.74 0
CU KATH	1,160,686. 06	546,299.0 8	853,492.5 7	1,342,200.4 7	1,819,722.8 0	1,580,961.6 4	0.34 6
CU Ramseyer	339,287.8 9	102,363.5 7	220,825.7 3	1,813,735.8 3	2,145,176.8 6	1,979,456.3 5	0.05 2
S&L Sinapi	905,339.0 0	3,150,321. 00	2,027,830. 00	10,202,235. 00	13,352,555. 00	11,777,395. 00	0.26 7
S&L Opport	6,382,410. 00	2,088,726. 00	2,146,842. 00	34,054,521. 00	41,724,502. 00	37,889,511. 50	0.05 5
RB Bosom	1,308,881. 00	156,996.0 0	732,938.5 0	8,397,841.0 0	7,998,239.0 0	8,198,040.0 0	0.01 9
RB Otuasikan	1,002,572. 00	1,354,195. 00	1,178,383. 50	1,102,462.0 0	2,225,092.0 0	1,663,777.0 0	0.81 4
RB Ahafo	631,151.0 0	736,399.0 0	683,775.0 0	1,934,650.0 0	2,510,300.0 0	2,222,475.0 0	0.33 1
RB Mponua	1,353,958. 00	1,267,600. 00	1,310,779. 00	5,811,291.0 0	3,731,883.0 0	4,771,587.0 0	0.26 6

CU=Credit Union; S&L=Savings and Loans; RB=Rural Bank; SRI=Soils Research Institute; KTU=Kumasi Technical University; KATH=Komfo Anokye Teaching Hospital; Opport=Opportunity International