



沈阳建筑大学学报(自然科学版)

J o u r n a l o f S h e n y a n g J i a n z h u U n i v e r s i t y (N
a t u r a l S c i e n c e)

卷 : 39 期 : 06
Vol: 39 No. 06

doi: 10.11717/j.issn: 1671-2021.2023.06.16

Factors Affecting Risk Management Practices of Microfinance Institutions in Ethiopia

Dr. Ratna Kau*¹ and Buksh Molla²

**Assistant Professor, School of Management Studies, Punjabi University, Patiala, India,
Research Scholar, School of Management Studies, Punjabi University, Patiala, India,**

*Received: 14th November 2023 Accepted: 13th
December 2023 Published: 19th December 2023*

Abstract: The objective of this study is to identify factors affecting risk management practices of Microfinance Institutions (MFIs) in Ethiopia. Data were collected from primary sources using a structured 5 point likert scale for both risk management practices and factors affecting risk management practices from 388 respondents of 24 sample MFIs in Ethiopia. The study used ordered logistic regression analysis to identify the effect of the factors affecting risk management practices of MFIs in Ethiopia. The result of the study showed that, management's philosophy and operating style, human resources policies and practices, team work, proper and adequate training, infrastructure and facilities, effective communication and awareness of risk management processes have a positive and statistically significant effect on risk management practices of MFIs in Ethiopia. The other variables, organization structure and culture, top management commitment and support, technological capacity, internal control and effective monitoring were found statistically insignificant.

Keywords: Risk management, risk management practices, factors affecting risk management practices, Microfinance Institutions, Ethiopia

1. Introduction

A MFI provides financial services like deposits, loans, payments, money transfers and insurance to low and middle income households (Asian Development Bank, 2000). MFIs provide a significant contribution to poverty reduction (Ibtissem & Bouri, 2013). Furthermore, microfinance has been shown to be a significant development strategy tool by allowing poor entrepreneurs to create their own firms, safeguard the money they have to deal with risk and broaden the circle of their economic activities. MFIs have been extensively acknowledged as a tool for reducing poverty and promoting peace. This occurred in October 2006, when Mohammed Yunus, the founder of Bangladesh's Grameen Bank, was awarded the Nobel Peace Prize. In Africa, a variety of MFIs have emerged at various phases. In the 1970s, financial intermediaries such as cooperatives and rural and postal savings banks pioneered the industry, particularly in West and East Africa. It is now flourishing in the continent including Ethiopia (Mokaddem, 2009).

MFIs in Ethiopia have played an essential role by providing loans to individuals who do not have access to bank services. In Ethiopia MFIs' primary lending technique is group lending and they provide small loans in both urban and rural regions (Yimer, 2022). Several features distinguish Ethiopia's MFIs such as, a rise rate, aggressive proportion efforts, a broad geographic coverage, a dominance of MFIs backed by the government, attention on rural households, the promotion of both credit and savings products, sustainability as a first-rate theme and Ethiopian ownership and control (Deribie et al., 2013). Currently 34 MFIs are licensed by National Bank of Ethiopia under Proclamation Number 40/1966 and provides microfinance services serving the areas of credit delivery, savings, money transfer and pension payment to the population (Association of Ethiopian Microfinance Institutions, 2020). According to the National Bank of Ethiopia licensing and supervision of the business of MFIs minimum capital requirement directive number MFIs/27/2015 Article Number 4.1 and 4.2, the minimum initial paid-up capital required to obtain a license to open MFI in Ethiopia shall be birr 10,000,000, which shall be fully paid in cash and deposited in a Bank in the name and account of the MFI under formation (National Bank of Ethiopia, 2002).

Risk management is a macro level process entails assessing, analyzing, prioritizing and devising strategies to mitigate threats to an organization's assets and earnings (Verafin, 2015). Risk management practice of MFIs affected by several factors. Among the important factors management approach, goals and objectives of the organization, risk management policy and experts, information technology and culture, environment and usage of tools, teamwork and

commitment of the top management, communication and training, awareness of risk management process and legal requirements and risk monitoring and review are the most important (Kikwasi, 2016). Ranong & Phuenngam (2009) also argued that, commitment and support from top management, communication, culture, information technology, organization structure, training and trust are factors affects risk management practices of MFIs. Martin et al. (2021) highlighted that, policy reforms and engagement, lack of management support and institutional capacity remain significant constraints of MFIs. Yaraghi & Langhe (2011) verified that, top management commitment, strategy, organizational culture and structure, resources, organizational culture, organizational structure, communication system are the most important factors affecting risk management. Ahmed & Mahmoud (2014) showed that, top management support and training, technology capabilities, risk related factors are factors affecting risk management practices of MFIs.

Kanhai & Ganesh (2014) argued that, three factors namely adequacy of risk governance structure, quality of organizational structure and size of the bank have positive relationship with the adoption of risk management practices while intensity of bank regulation have a negative relationship with risk management practices adoption of MFIs. Further it was noted that two predictor variables namely adequacy of risk governance structure and quality of organizational culture have a large impact on the adoption of risk management practices. Cheluget & Naitore (2020) found that, technical competency affects credit risk management at a very high rate. Most of the respondents cited that it is significant for the organization to have employees who are trained with information technology basic knowledge and leadership skills. Chileshe & Kikwasi (2014) found that, awareness of risk management processes, team work and communications and management style were the three highly ranked factors whereas cooperative culture, customer requirement and positive human dynamics were considered to be the least important factors affecting risk management practices of MFIs.

Mahmoud & Elsadig (2014) obtained that, organizational factors, top management support and training, technology capabilities, risk related factor affects risk management practices of MFIs. Kimathi & Mugo (2015) found out that, MFIs internal control systems, policies, board oversight and risk monitoring significantly affects its liquidity risk management practices of MFIs. Hameed & Ghafoor (2022) argued that, the internal control, institution policies, institution board management and risk monitoring strategies significantly affect the liquidity risk management in MFIs. Even though similar MFIs are working in Ethiopia, previous researchers ignored to study factors affecting risk management practices of MFIs in Ethiopia.

Therefore, in Ethiopia, conducting studies on factors affecting risk management practices in MFIs is critical. So that, risk management stakeholders can gain a better understanding of the factors affecting risk management practices. Thus, this paper investigates the factors affecting the risk management practices of MFIs in Ethiopia with a sample size of 24 MFIs for the study period of 2023.

2. Rationale of the study

Historically, MFIs have faced the challenge of incorporating microfinance services into financial services norms and standards, while simultaneously encouraging it. The majority of researchers from various nations focused on factors affecting risk management practices (Kikwasi, 2016; Ahmed & Mahmoud, 2014; Kimathi & Mugo, 2015 and Kanhai & Ganesh, 2014). The outcomes of these studies were mixed and inconsistent from one study to the other. As a result, risk management practices are mostly influenced by foreign country-specific elements such as economic situations, institutional computation, financial rules, corporate principles and practices. Given the importance of the issue, there is no adequate research studies conducted on factors affecting risk management practices of MFIs in Ethiopia. More importantly, according to the examination of literatures, most of the research studies have concentrated a research study on commercial banks, with little emphasis paid to MFIs. As a result, factors affecting risk management practices of MFIs in Ethiopia needs to be studied and this study aimed to create new insight on factors affecting risk management practices of MFIs in Ethiopia.

This study is expected to fill a gap in the literature of factors affecting risk management practices of MFIs. The findings are also expected to help MFIs, policymakers such as the government and other stakeholders to design targeted policies and programmes that may actively stimulate the growth and sustainability of MFIs in Ethiopia, as well as to assist those policymakers in supporting, inspiring and promoting the formation of appropriate policies to guide the MFIs risk management practices. In addition, the outcome of this study can also be used by MFIs regulatory organizations to strengthen the framework for MFIs risk management practices regulation and supervision.

3. Objective of the study

The objective of this study is to identify factors affecting risk management practices of MFIs in Ethiopia.

4. Hypotheses of the study

The study has developed the following hypotheses on the factors affecting risk management

practices of MFIs in Ethiopia.

H1: Management's philosophy and operating style has a significant effect on risk management practices

H2: Top management commitment and support has a significant effect on risk management practices

H3: Organization structure and culture has a significant effect on risk management practices

H4: Human resources policies and practices have a significant effect on risk management practices

H5: Technological capacity has a significant effect on risk management practices

H6: Team work has a significant effect on risk management practices

H7: Proper and adequate training has a significant effect on risk management practices

H8: Infrastructure and facilities have a significant effect on risk management practices

H9: Internal control has a significant effect on risk management practices

H10: Effective communication has a significant effect on risk management practices

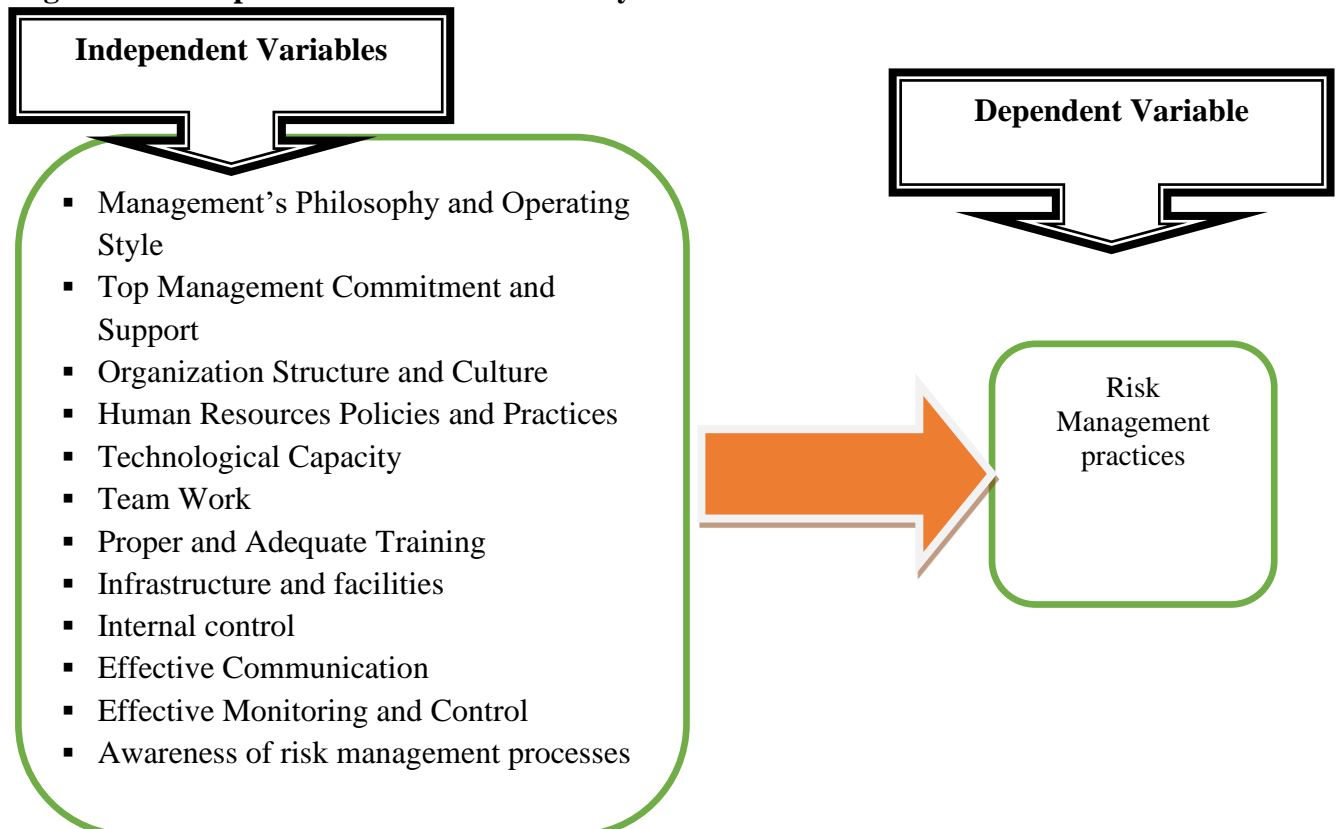
H11: Effective monitoring and control has a significant effect on risk management practices

H12: Awareness of risk management processes has a significant effect on risk management practices

5. Conceptual Framework of the Study

The conceptual framework of the study related to factors affecting risk management practices is developed as follows:

Figure 1: Conceptual framework of the study



Sources: Developed by the researcher

6. Research Methodology

6.1. Research Approach and Design

A quantitative research approach was employed in this study. This study was investigated using explanatory research design. Explanatory study design has been applied to investigate how one variable affects the change in another (Greener, 2008).

6.2. Sources of Data and Method of Data Collection

Data for this study were collected from primary sources. Primary data was obtained from a sample of MFIs in Ethiopia. In order to identify factors affecting risk management practices of MFIs in Ethiopia, structured questionnaires were distributed to employees of the sample MFIs. Such structured questionnaires are designed on a 5-point Likert scale, a rating system that is widely used in in risk management literatures.

6.3. Population of the Study

This study's overall population consists of all MFIs in Ethiopia. Currently there are 34 MFIs licensed by the National Bank of Ethiopia under proclamation number 40/1966 that provide microfinance services such as credit delivery, saving, money transfer and pension payment services in Ethiopia (Association of Ethiopian Microfinance Institutions, 2022).

6.4. Sampling Design

In selecting sample MFIs included in this study, non-probability sampling method was used. In doing so three stage of sampling were used.

Stage 1: Using purposive sampling, 24 MFIs were selected for this study from the total 34 MFIs in Ethiopia based on their age since incorporation and availability of data. Accordingly, MFIs with 10 years of working age as MFIs were considered a sample for this study. The justification for this is that, MFIs that were established before the year 2013 are larger, which means that their risk management departments have a larger staff and well-structured, which is the focus of the study. Therefore, accordingly 24 MFIs established before 2013 are sample for the study.

Stage 2: Using stratified random sampling, from the total 130 branches of sampled 24 MFIs, which is found in the website of each MFIs, the number of sample branches to be included in this study are computed using a statistical formula. In order to minimize personal bias, it is better to use a statistical formula to determine the number of sample representatives. Given

these in to account, the study utilized the following sample size determining formula to set the actual sample size scientifically (Yamane, 1967).

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

Where n is sample size, N is the study population size, e^2 is acceptable error, which is assigned a value of 5 % that is a 95% confidence level.

$$n = \frac{130}{1+130(0.05)^2} \approx 97 \text{ branches of sampled 24 MFIs had been contacted for primary source of}$$

data. So that, a representative branches of sampled 24 MFIs were selected from each stratum.

In the final stage, ultimate sampling unit (branches of sampled 24 MFIs) were selected from each strata using simple random sampling technique based on the stratum table given below.

Table 1: List of sample branches of sampled 24 MFIs

Sr no.	Name of Micro Finance Institution	Number of Branches (a)	Proportion in percentages (b) = a/130	Sample branches (c) = 97 *b
1	Amhara Credit and Saving Institutions S.C	18	0.14	14
2	Addis Credit and saving Institutions S.C	6	0.05	5
3	Benshangul Gumuz Micro Finance S.C	3	0.02	2
4	Eshet Micro Finance S.C	4	0.03	3
5	Oromia Credit and saving S.C	20	0.15	15
6	Omo Microfinance S.C	4	0.03	3
7	Specialized Financial Promotional Microfinance	4	0.03	3
8	Wasasa Microfinance S.C	6	0.05	5
9	Africa Vilage Financial services S.C	6	0.05	5
10	Gasha Micro Finance S.C	6	0.05	5
11	Sidama Micro Finance S.C	8	0.06	6
12	Vision Fund Microfinance S.C	10	0.08	8
13	PEACE Micro Finance Institutions S.c	4	0.03	3
14	Meklit Micro Finance S.C	2	0.01	1
15	Bussa Gonofa Micro Finance S.C	6	0.05	5
16	Metemamen Micro Finance S.C	2	0.01	1
17	Diredawa Micro Finance S.C	2	0.01	1
18	Letta Micro Finance S.C	3	0.02	2
19	Aggar Micro Finance S.C	3	0.02	2
20	Digaf Micro Finance S.C	2	0.01	1
21	Harbu Micro Finance S.C	4	0.03	3
22	Harar Micro Finance S.C	3	0.02	2
23	Lefayeda Credit and Saving S.C	2	0.01	1
24	Dynamic Micro Finance Inst.S.C	2	0.01	1
Total Number of branches		130		97

Source: Researcher's compilation

Stage 3: In the third stage of sampling using stratified random sampling, employees of 24 MFIs selected as a sample in stage one, are classified in to three levels to form strata of top-level employees, middle-level employees and lower-level employees. Under the top-level classification of employee's board of directors and chief executive managers of each sampled MFIs, under the middle-level employee's executive officers and under lower-level employees other personals were contacted. Based on the help of Mix-Market data sheet report and each sampled MFIs website data, the total employees of sampled 24 MFIs are 13,106. The detail is presented in the following table:

Table 2: List of study population of 24 sampled MFIs in Ethiopia

Sr no.	Name of Micro Finance Institution	Top level employees	Middle-level employees	Lower-level employees
1	Amhara Credit and Saving Institutions S.C	239	1,485	3,236
2	Addis Credit and saving Institutions S.C	142	181	624
3	Benshangul Gumuz Micro Finance S.C	18	43	105
4	Eshet Micro Finance S.C	20	75	112
5	Oromia Credit and saving S.C	250	835	1,365
6	Omo Micro Finance S.C	178	249	434
7	Specialized Financial Promotional Micro Finance	18	62	145
8	Wasasa Microfinance S.C	32	224	314
9	Africa Vilage Financial services S.C	18	24	45
10	Gasha Micro Finance S.C	19	32	62
11	Sidama Micro Finance S.C	28	44	90
12	Vision Fund Microfinance S.C	59	69	156
13	PEACE Micro Finance Institutions S.c	26	113	112
14	Meklit Micro Finance S.C	29	37	64
15	Bussa Gonofa Micro Finance S.C	31	207	391
16	Metemamen Micro Finance S.C	13	13	42
17	Diredawa Micro Finance S.C	17	18	66
18	Letta Micro Finance S.C	26	37	46
19	Aggar Micro Finance S.C	14	44	84
20	Digaf Micro Finance S.C	12	18	40
21	Harbu Micro Finance S.C	21	40	70
22	Harar Micro Finance S.C	23	45	71
23	Lefayeda Credit and Saving S.C	20	30	40
24	Dynamic Micro Finance Inst. S.C	23	73	118
Total study population in each stratum		1,276	3,998	7,832
Total study population		1,276 + 3,998 + 7,832 = 13,106		

Source: Researcher's compilation

Using the same statistical formula used above in determining sample branches of MFIs, from the total 13,106 employees of sampled 24 MFIs, the number of sample employees to be included in this study are computed as follows (Yamane, 1967).

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

$n = \frac{13,106}{1+13,106(0.05)^2} \approx 388$ employees and incorporating non response rate of 10% of 388 (≈ 39), **427** representative respondents were contacted for qualitative data of sampled 24 MFIs for primary source of data. So, a representative employees from each sampled 24 MFIs were selected from each stratum, which is computed based on the population proportion. In the final stage, ultimate sampling units (employees) were selected from each strata using simple random sampling technique based on the stratum table given below.

Table 3: List of sample population of 24 sampled MFIs in Ethiopia

Sr no.	Name of Micro Finance Institution	Top level employees	Middle level employees	Lower level employees
1	Amhara Credit and Saving Institutions S.C	7	48	105
2	Addis Credit and saving Institutions S.C	4	6	20
3	Benshangul Gumuz Micro Finance S.C	1	1	3
4	Eshet Micro Finance S.C	1	2	4
5	Oromia Credit and saving S.C	6	27	45
6	Omo Micro Finance S.C	4	8	14
7	Specialized Financial Promotional Micro Finance	1	2	5
8	Wasasa Microfinance S.C	1	7	10
9	Africa Vilage Financial services S.C	1	1	3
10	Gasha Micro Finance S.C	1	2	2
11	Sidama Micro Finance S.C	1	2	3
12	Vision Fund Microfinance S.C	2	2	5
13	PEACE Micro Finance Institutions S.c	1	3	3
14	Meklit Micro Finance S.C	1	1	2
15	Bussa Gonofa Micro Finance S.C	1	7	13
16	Metemamen Micro Finance S.C	1	1	1
17	Diredawa Micro Finance S.C	1	1	2
18	Letta Micro Finance S.C	1	1	2
19	Aggar Micro Finance S.C	1	1	3
20	Digaf Micro Finance S.C	1	1	1
21	Harbu Micro Finance S.C	1	1	2
22	Harar Micro Finance S.C	1	2	2

23	Lefayeda Credit and Saving S.C	1	1	1
24	Dynamic Micro Finance Inst. S.C	1	2	4
Total sample population in each stratum		42	130	255
Total sample population		42+130+255 =427		

Source: Researcher's compilation

6.5. Method of Data Analysis

Geoffrey et al. (2005) argued that, in most types of research studies, the process of data analysis involves the following three steps: (1) preparing the data for analysis (2) analyzing the data and (3) interpreting data (testing the research hypotheses and drawing valid conclusions). In this study, data for regression analysis of factors affecting risk management practices the pooled cross-section data of weighted average of Likert scale response for each aspect and components of risk management given by 388 respondents were used. Primary data was used which is collected by a questionnaire with a five-point Likert scale. For data analysis purpose, the ordinal data collected via a five-point Likert scale were scaled using weighted averages or means. The cross section of weighted average response of Likert scale data of similar questions combined in to a single variable is determined by adding each response's numerical value and then dividing by respondent number. The following scale measurement was used regarding mean scores of the risk management practice, which is similar ranking value employed by (Ola-awo et al., 2021; Musonda & Rakolote, 2022; Badiora & Oresanwo, 2022 and Shiang et al., 2023). The ranking scales are 1 = strongly disagree ($\geq 1.00 \leq$ and < 1.80), 2 = disagree (≥ 1.81 and ≤ 2.60), 3 = neutral (≥ 2.61 and ≤ 3.40), 4 = agree (≥ 3.41 and ≤ 4.20), and 5 = strongly agree (≥ 4.21 and ≤ 5.00). The resulted cross-sectional weighted average score is then used ordered logistic regression analysis to identify the factors affecting risk management practice using STATA Version 15.0.

6.6. Model Specifications

To choose the appropriate model, we need to know scale of measurement for the dependent variable. The researcher adopted ordered response model to variables using a 5 likert –scale. Accordingly, respondents were asked to identify among the pushing factors that lead them to comply or/and not comply. Thus, respondents were required to respond their perceptions using the five point likert scale choice. The level of agreement was rate using likert scale from 1 to 5 representing strongly disagree, disagree, neutral, agree and strongly agree respectively.

On the basis of the above information, we can assign from 1 to 5 codes for the dependent

variable. The responses of the variable are, therefore, ordered outcomes/polychotomous responses. In this case since the dependent variable does not have cardinal meaning, least squares regression will suffer from some short-comings such as predicted probabilities lying outside the unit interval. Instead, order response (ordinal outcome) models suit the problem.

The central idea behind the ordinal outcomes is that, the dependent variable has response of m ordered categories, where $m = 1, 2, 3, 4$ and 5 that there is clear ranking among the categories but the numerical values assigned to each category do not necessarily show their cardinal difference (Greene et al., 2012).

The Ordered Response Model

Let the underlying regression model be;

$$Y_i = \beta' X_i + u_i$$

Where Y is the response variable, X is a set of explanatory variables, $i=1, 2, 3 \dots n$ and u is the residual. Y is a latent variable (cannot be observed) underlying the observed responses, but we know which of the m categories it belongs to (we only know when it crosses thresholds). It belongs to j^{th} category if (Maddala, 1983);

$$Y_i = j \quad \text{if } \mu_{j-1} < Y_i \leq \mu_j \quad \text{where } i = 1,2,3, \dots, n; j = 1,2, \dots, m$$

Given the cut off points, μ_i , the choice rule (observed value, Y^*) is,:

$$\begin{aligned} Y_1^* &= 1 && \text{if } Y_i \leq \mu_1 \\ Y_1^* &= 2 && \text{if } \mu_1 < Y_i \leq \mu_2 \\ Y_1^* &= 3 && \text{if } \mu_2 < Y_i \leq \mu_3 \\ Y_1^* &= 4 && \text{if } \mu_3 < Y_i \leq \mu_4 \\ Y_1^* &= 5 && \text{if } Y_i > \mu_4 = \mu_5 \end{aligned}$$

The probability that observation i will select alternative j is:

$$\begin{aligned} p_{ij} &= p(y_i = j) = p(\mu_{j-1} < y_i^* \leq \mu_j) \\ &= F(\mu_j - x_i' \beta) - F(\mu_{j-1} - x_i' \beta) \end{aligned}$$

where $F(\cdot)$ the cdf that could be normal cdf or logistic cdf. Using the generic representation, the respective probabilities for the five categories are derived as:

$$\begin{aligned} pr(y_i = 1) &= F(\mu_1 - x_i' \beta) \\ pr(y_i = 2) &= F(\mu_2 - x_i' \beta) - F(\mu_1 - x_i' \beta) \\ pr(y_i = 3) &= F(\mu_3 - x_i' \beta) - F(\mu_2 - x_i' \beta) \\ pr(y_i = 4) &= F(\mu_4 - x_i' \beta) - F(\mu_3 - x_i' \beta) \\ pr(y_i = 5) &= 1 - F(\mu_4 - x_i' \beta) \end{aligned}$$

In this study, risk management practice (RMP) is the function of the twelve independent variables. This model is adopted to examine the effects of the twelve factors that affect the risk management practices of MFIs in Ethiopia. On the basis of literatures the following variables are chosen as explanatory variables.

$$\mathbf{RMP} = \mathbf{f}(\mathbf{MPOS, TMCS, OSC, HRPP, TC, TW, PAT, IF, IC, ECOM, EMC, ARMP})$$

Whereas;

RMP = Risk Management Practice
MPOS = Management’s Philosophy and Operating Style
TMCS = Top Management Commitment and Support
OSC = Organization Structure and Culture
HRPP = Human Resources Policies and Practices
TC = Technological Capacity
TW = Team Work
PAT = Proper and Adequate Training
IF = Infrastructure and facilities
IC = Internal control
ECOM = Effective Communication
EMC = Effective Monitoring and Control
ARMP = Awareness of risk management processes

7. Data Analysis and Discussion

A total of 427 questionnaires were distributed to the respondents of the study. At the end of the fieldwork 388 questionnaires were completely filled and collected which, represent 90.86% response rate and all of them were incorporated in the analysis of the study. Regarding the reliability/Internal consistency of instruments cronbach’s alpha coefficient was checked. Alpha coefficient between 0.80 and 0.95 are considered to have very good reliability. Scales with a coefficient between 0.70 and 0.80 are considered to have good reliability and value between 0.60 and 0.70 indicates fair reliability. When the coefficient is below 0.6, the scale has poor reliability (Zikmend & Griffin, 2015). A brief summary of computed value of cronbach’s alpha coefficient reliability statistics is presented below in table 1.

Table 4: Reliability statistics

Variables	Cronbach's Alpha	No. of Items
Risk Management Practice	0.856	11
Management’s Philosophy and Operating Style	0.758	4
Top Management Commitment and Support	0.856	7
Organization Structure and Culture	0.728	4
Human Resources Policies and Practices	0.790	5
Technological Capacity	0.811	5

Variables	Cronbach's Alpha	No. of Items
Team Work	0.835	5
Proper and Adequate Training	0.824	4
Infrastructure and facilities	0.780	3
Internal control	0.816	4
Effective Communication	0.805	5
Effective Monitoring and Control	0.746	4
Awareness of Risk Management Process	0.769	6

Source: *Survey Result, 2023*

As it is indicated in the above table in this study, the cronbach's alpha reliability statistics of all items are above 0.7. Hence, it implies that all the indicators' included under each variable have internal consistency/reliability or it satisfies reliability test assumption of instruments. In addition to reliability check, the validity of instruments was also checked by identifying an instrument that would be in use; by examining prior studies that have reported scores and use of the instrument; by looking closely at the purpose for which the instrument has been used in these studies; by looking as well at how the researchers have interpreted the scores in light of their intended use and finally, by evaluating whether the authors provide good evidence that links their interpretation to their use by giving due care in the development of measurement scale or questionnaires design.

7.1. Econometrics Analysis

7.1.1. Test of Basic Assumption of the Ordinal Logistic Regression

In order to test the hypotheses of the study set earlier, this study applied econometric estimations using ordered logistic regression. Before performing the actual tests of the hypotheses, both pre-test and post-test estimations were made in order ascertain that the entire data undertaken for the study satisfied both necessary and sufficient conditions of hypotheses testing. The assumptions and test results of the ordinal logistic regression are discussed as follow.

7.1.1.1. The dependent variable is ordered

Data for the dependent variable, risk management practices of MFIs in this study were collected using five likert scale from 1 to 5 representing strongly disagree, disagree, neutral, agree and strongly agree respectively. Then, after collecting data from the respondents the responses rata of 12 independent questions weighted average mean were ranked in five scales as, from 1:00-1.80, 2 from 1.81-2.60, 3 from 2.61- 3.40, 4 from 3.41-4.20 and 5 from 4.41-5:00. Therefore, as the dependent variable is ordered, ordinal logistic regression was used to analyze the factors

affecting risk management practice of MFIs.

7.1.1.2. One or more of the independent variables are continuous, categorical or ordinal.

Data for the independent variable, factors affecting risk management practices of MFIs in this study were collected using five likert scale from 1 to 5 representing strongly disagree, disagree, neutral, agree and strongly agree respectively. The nature of this data is ordinal. Therefore, the assumption of ordered logistic regression which says one or more of the independent variables are continuous, categorical or ordinal is not violated.

7.1.1.3. Test of Multicollinearity

Multicollinearity refers to the existence of linear relationship among explanatory variables which makes the variance of an estimator larger than it should have been. Generally, when multiple VIF factors approach 10 or greater, problems with multicollinearity can be expected (Zikmend & Griffin, 2015). As a rule of thumb, If the VIF value exceeds 10, which will happen only if correlation between independent variables exceeds 0.90, that variable is said to be highly collinear (Gujarati, 2004). A brief summary of computed value of test for multicollinearity is presented below in table 2.

Table 5: Test for multicollinearity

```
. vif
```

Variable	VIF	1/VIF
TC	4.57	0.218916
ECOM	3.89	0.256778
OSC	3.66	0.273384
MPOS	2.65	0.377647
IC	2.55	0.392105
TW	2.51	0.398360
PAT	2.31	0.432723
TMCS	1.97	0.508314
HRPP	1.96	0.510195
ARMP	1.70	0.588747
IF	1.58	0.634801
EMC	1.38	0.725852
Mean VIF	2.56	

Source: Survey Result, 2023

As it is indicated in the above table, multicollinearity test for independent variables is done using variance inflating factor (VIF). As it can be seen from the above table number 5, the VIF for quantitative independent variables is very less than 0.5 and the mean VIF IS 2.56. Therefore, there is no multicollinearity problem on the independent variables used in this study.

7.1.1.4. Proportional odds

The insignificant chi-square value suggests that ordered logistic regression assumptions are met, of course, with larger samples it is not at all unusual to find that the proportional odds assumption is violated (Williams, 2021). A brief summary of computed value of test for the

proportional odds is presented below in table 6.

Table 6: Test for the proportional odds/ parallel lines assumption of the ordered logit model.

Approximate likelihood-ratio test of proportionality of odds across response categories:	
chi2 (12) =	16.89
Prob > chi2 =	0.1537

Source: Survey Result, 2023

As it is indicated in the above table, the chi-square value of an approximate likelihood ratio test of proportional odds across response categories is 0.1537. Based on this result the study failed to reject hypothesis, which says there are no statistically significant factors between the variables that influence the risk management practices score. Thus, the proportional odds ratio in this model is not violated.

7.2. Ordered Logistic Regression Result and Discussions

To estimate the relationships between the dependent variable risk management practices and the dependent variables and to test the hypothesis the ordered logistic regression analysis was conducted. Goodness-of-fit tests produce a p-value. If it's below 0.05, accept the model (Allison, 2014). The estimation result presented on table 7 below indicated that, the likelihood ratio chi-square of 295.91 and degree of freedom is 12 with a p-value of 0.0000 implies that the model as a whole is statistically significant. Values of pseudo R² between 0.2-0.4 are considered to be indicative of extremely good model fits, which equivalence this range to 0.7 to 0.9 for a linear function (McFadden, 1977). In this study the value of pseudo R² is 0.4102, which indicates the model is extremely good model. The detail of the summary of the ordered logistic regression is presented below in table number 7.

Table 7: Summary of Ordered Logistic Regression Output

Ordered logistic regression							
RMP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
MPOS	.501	.268	1.87	.061	-.023	1.026	*
TMCS	.269	.303	0.89	.375	-.325	.862	
OSC	-.524	.379	-1.38	.167	-1.268	.22	
HRPP	.823	.255	3.23	.001	.324	1.323	***
TC	-.128	.374	-0.34	.733	-.861	.606	
TW	.82	.235	3.48	0.000	.358	1.281	***
PAT	.839	.221	3.79	0.000	.404	1.273	***

IF	.639	.231	2.77	.006	.186	1.091	***
IC	.086	.268	0.32	.748	-.44	.612	
ECOM	.648	.335	1.93	.053	-.008	1.304	*
EMC	.026	.252	0.10	.917	-.467	.519	
ARMP	1.075	.274	3.92	0.000	.537	1.613	***
Mean dependent var		4.464	SD dependent var			0.705	
Pseudo r-squared		0.4102	Number of obs			388	
Chi-square		295.909	Prob > chi2			0.000	
Akaike crit. (AIC)		453.471	Bayesian crit. (BIC)			508.925	

***, ** and * Indicates statistically significant $p < .01$, $p < .05$ and $p < .1$ level of significant respectively

Source: STATA regression result based on data obtained from MFIs in Ethiopia for the study period 2023.

In the above table number 4, the p value indicated that, Management's Philosophy and Operating Style (MPOS), Human Resources Policies and Practices (HRPP), Team Work (TW), Proper and Adequate Training (PAT), Infrastructure and facilities (IF), Effective Communication (ECOM) and Awareness of risk management processes (ARMP) were identified as statistically significant at $p < 0.01$, $p < 0.05$ and $p < 0.1$ to determinant of risk management practices of microfinance institution's in Ethiopia, while Organization Structure and Culture (OSC), Top Management Commitment and Support (TMCS), Technological Capacity (TC), Internal control (IC) and Effective Monitoring and Control (EMC) were statistically insignificant. The detailed discussions and interpretations of the effects of these variables are made in the next paragraphs.

Table number 4 above indicated that, management's philosophy has a positive coefficient estimate of 0.5012458 and it is statistically significant at 10 percent level of significance with p value 0.061. Bearing in mind that the first hypothesis was management's philosophy and operating style has a significant effect on risk management practices. Since the (P-values) of management's philosophy and operating style is significant at 10 percent level of significance the hypothesis is accepted. Therefore, the outcome of this variable is in line with the proposed hypothesis. Thus, the result revealed that, management's philosophy and operating style has a positive and significant effect on risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Kikwasi (2016), Ahmed & Mahmoud (2014), Yaraghi & Langhe (2011) and Chileshe & Kikwasi (2014).

The regression analysis of ordered logistic regression result in the above table indicated that top management commitment and support is not statistically significant in affecting risk management practices of MFIs in Ethiopia. The second hypothesis stated that, top management commitment and support has a significant effect on risk management practices. Since the (P-

values) of top management commitment and support is insignificant the hypothesis is not accepted. Thus, the result revealed that top management commitment and support has not a significant effect on risk management practices of MFIs in Ethiopia. This result implies that, top management commitment and support is not an important determinant factor of risk management practices when it comes to the risk management practices of MFIs in Ethiopia.

Similar to that top management commitment and support, organization structure and culture has not a statistically significant effect on risk management practices of MFIs in Ethiopia. The third hypothesis stated that, organization structure and culture has a significant effect on risk management practices. Since the (P-values) of organization structure and culture is insignificant the hypothesis is not accepted. Thus, the result revealed that organization structure and culture has not a significant effect on risk management practices of MFIs in Ethiopia. This result implies that, organization structure and culture is not an important determinant factor of risk management practices when it comes to the risk management practices of MFIs in Ethiopia.

The relationship between human resources policies and practices and risk management practices is found positive with a coefficient of 0.8234842 and statistically significant at 1 percent level of significance. The fourth hypothesis stated that human resources policies and practice has a significant effect on risk management practices. Since the (P-values) of human resources policies and practice is significant at 1 percent level of significance the hypothesis is accepted. Therefore, the outcome of this variable is in line with the proposed hypothesis. Thus, the result revealed that human resources policies and practice has a positive and significant effect on risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Chileshe & Kikwasi (2014).

Technological capacity is found statistically insignificant with risk management practices. The fifth hypothesis stated that, technological capacity has a significant effect on risk management practices. Since the (P-values) of technological capacity is insignificant the hypothesis is not accepted. Thus, the result revealed that technological capacity has not a significant effect on risk management practices of MFIs in Ethiopia. This result implies that, technological capacity is not an important determinant factor of risk management practices when it comes to the risk management practices of MFIs in Ethiopia.

Consistent with the findings of Kikwasi (2016), Yaraghi & Langhe (2011) and Chileshe & Kikwasi (2014), team work is found positive and statistically significant with risk management

practices at 1 percent level of significance. Team work explained risk management practices positively by 0.8199408 coefficients. The result indicates that team work is positively and significantly affects the risk management practices of MFIs in Ethiopia. The outcome of this variable is in line with the proposed hypothesis, which says team work has a significant effect on risk management practices. Thus, the result revealed that team work has a positive and significant effect on risk management practices of MFIs in Ethiopia.

Regarding proper and adequate training a positive and statistically significant result found at 1 percent level of significance. The result indicates that proper and adequate training is positively and significantly affects the risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Ahmed & Mahmoud (2014), Ranong & Phuenngam (2009), Mahmoud & Elsadig (2014) and Kikwasi (2016). The outcome of this variable is in line with the proposed hypothesis, which says proper and adequate training has a significant effect on risk management practices. Thus, the result revealed that proper and adequate training has a positive and significant effect on risk management practices of MFIs in Ethiopia.

Regarding infrastructure and facilities ordered logistic estimation result shows that infrastructure and facilities has a positive and statistically significant relationship with risk management practices at 1 percent level of significance. The result indicates that infrastructure and facilities is positively and significantly affects the risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Yaraghi & Langhe (2011). The outcome of this variable is in line with the proposed hypothesis, which says infrastructure and facilities has a significant effect on risk management practices. Thus, the result revealed that infrastructure and facilities has a positive and significant effect on risk management practices of MFIs in Ethiopia.

Internal control ordered logistic estimation result shows that, it is not statistically significant in affecting risk management practices of MFIs in Ethiopia. The ninth hypothesis stated that, internal control has a significant effect on risk management practices. Since the (P-values) of internal control is insignificant the hypothesis is not accepted. Thus, the result revealed that internal control has not a significant effect on risk management practices of MFIs in Ethiopia. This result implies that, internal control is not an important determinant factor of risk management practices when it comes to the risk management practices of MFIs in Ethiopia.

Effective communication is found positive and statistically significant relationship with risk management practices at 10 percent level of significance. The result indicates that effective

communication is positively and significantly affects the risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Kikwasi (2016), Ranong & Phuenngam (2009), Yaraghi & Langhe (2011) and Chileshe & Kikwasi (2014). The outcome of this variable is in line with the proposed hypothesis, which says effective communication has a significant effect on risk management practices. Thus, the result revealed that effective communication has a positive and significant effect on risk management practices of MFIs in Ethiopia.

Ordered logistic estimation result shows that, effective monitoring and control is not statistically significant in affecting risk management practices of MFIs in Ethiopia. The eleventh hypothesis stated that, effective monitoring and control has a significant effect on risk management practices. Since the (P-values) of effective monitoring and control is insignificant the hypothesis is not accepted. Thus, the result revealed that effective monitoring and control doesn't affect risk management practices of MFIs in Ethiopia. This result implies that, effective monitoring and control is not an important determinant factor of risk management practices when it comes to the risk management practices of MFIs in Ethiopia.

Finally, awareness of risk management processes is found positive and statistically significant relationship with risk management practices at 1 percent level of significance. The result indicates that awareness of risk management processes is positively and significantly affects the risk management practices of MFIs in Ethiopia. This result is consistent with the findings of Ishtiaq (2015) and Kikwasi (2016). The outcome of this variable is in line with the proposed hypothesis, which says awareness of risk management processes has a significant effect on risk management practices. Thus, the result revealed that awareness of risk management processes has a positive and significant effect on risk management practices of MFIs in Ethiopia.

8. Conclusions

In this study after collecting primary data from 388 respondent's regression analysis was conducted to identify the factors affecting risk management practices of MFIs in Ethiopia. The study used ordered logistic regression analysis to identify the effect of the factors affecting risk management practices of MFIs in Ethiopia. Among the factors management's philosophy and operating style, human resources policies and practices, team work, proper and adequate training, infrastructure and facilities, effective communication and awareness of risk management processes have a positive and statistically significant effect on risk management practices of microfinance institution's in Ethiopia. The other variables, Organization structure

and culture, top management commitment and support, technological capacity, internal control and effective monitoring were found statistically insignificant.

The study pointed out that, risk management practices of MFIs significantly and positively affected by management's philosophy and operating style, human resources policies and practices, team work, proper and adequate training, infrastructure and facilities, effective communication and awareness of risk management processes.

9. Recommendations

This study attempted to identify factors affecting risk management practices of MFIs in Ethiopia. On the basis of the findings and conclusions reached in this study, the following recommendations were forwarded.

With regard to management's philosophy and operating style, human resources policies and practices, team work, proper and adequate training, infrastructure and facilities, effective communication and awareness of risk management processes MFIs should give attention to improve the risk management practices of microfinance intuitions.

The finding of this study revealed that, Organization structure and culture, top management commitment and support, technological capacity, internal control and effective monitoring are found statistically insignificant in affecting risk management practices of MFIs. With caution, it would be good then for MFIs to give a special attention for these variables.

Regarding further research directions, this study highlights a number of issues which gives directions on the factors affecting risk management practices of MFIs in Ethiopia. Thus, by taking the previous studies and this study as a stepping stone, it could be possible to come up with a better insight. The outcome of this study can be more robust, if future researchers conduct a study on this area by further increasing the sample size to the whole financial sector and taking evidence from manufacturing business firms or merchandising business firms as a study area.

References

- Ahmed, M., & Mahmoud, N. (2014). Factors Affecting Risk Management Practices and Financial Performance of Iraqi Private Banks. *Middle-East Journal of Scientific Research*, 22(7), 971–977.
- Allison, P. (2014). *Measures of Fit for Logistic Regression*. 2(1989), 1–13.
- Asian Development Bank. (2000). Finance for the Poor: Microfinance Development Strategy. *Asian Development Bank*, 1–52.
- Association of Ethiopian Microfinance Institutions. (2020). An overview of Association of Ethiopian Microfinance Institutions training activities, *Addis Ababa, Ethiopia*.
- Cheluget, J., & Naitore, K. P. (2020). Factors Affecting Credit Management in Microfinance Institutions in Kenya : A Case of “ J B .” *International Journal of Research and Innovation in Social Science (IJRISS) /Volume IV, Issue VIII, August 2020/ISSN 2454-6186, IV(Viii)*, 120–132.
- Chileshe, N., & Kikwasi, G. J. (2014). factors for implementation of risk assessment and management practices within the Tanzanian firms. *Engineering, Construction and Architectural Management*, 21(3), 291–319.
- Deribie, E., Nigussie, G., & Mitiku, F. (2013). Filling the breach: Microfinance. *Journal of Business and Economic Management*, 1(January), 10–17.
- Greener, S. U. E. (2008). *Business Research Methods*. Exon & Kumar, 2020.
- Greene, W. H., River, U. S., Hall, N. J. P., & Hoch, J. S. (2012). *A Review of: “ Econometric Analysis , Seventh. 3406*.
- Gujarati, D. N. (2004). *Basic Econometrics* (4th ed.).
- Hameed, A., & Ghafoor, F. (2022). Determinants of liquidity risk management in Microfinance Institutions. *Journal of Contemporary Business and Islamic Finance*, 2(1), 86–93.
- Ibtissem, B., & Bouri, A. (2013). Risk Management in Microfinance. *Microfinance*, 2(1), 71–92.
- Ishtiaq, M. (2015). Risk Management in Banks : Determination of Practices and Relationship with Performance. *University of Bedfordshire*, 1–272.
- Kanhai, C., & Ganesh, L. (2014). Factors Influencing The Adoption Of Risk Management Practices by Banks in Zimbabwe. *International Journal of Business and Commerce*, 3(6), 1–17. www.ijbcnet.com
- Kikwasi, G. J. (2016). Critical Success Factors for Effective Risk Management. *Intech*,

11(tourism),13.

- Kimathi, A., & Mugo, R. (2015). *Factors Affecting Liquidity Risk Management Practices in Microfinance Institutions in Kenya*. 6(4), 78–91.
- Maddala, G. S. (1983). *Limited-Dependent and Qualitative Variables in Economics*, New York: Cambridge University Press, pp. 257-91.
- Mahmoud, N., & Elsadig, M. A. (2014). Factors Affecting Risk Management Practices and Financial Performance of Iraqi Private Banks. *Middle-East Journal of Scientific Research*, 22(7), 971–977.
- Martin, P., Elbeltagy, Z., Hasannudin, Z., & Abe, M. (2021). *Factors Affecting the Environmental and Social Risk Management of Financial Institutions in Selected Asia-Pacific Developing Countries*.
- McFadden, D. (1977). *Quantitative Methods for Analyzing Travel Behaviour of Individuals: Some Recent Developments*.
- Mokaddem, L. (2009). Microfinance Scaling Up in Africa : Challenges Ahead and Way Forward. *African Development Bank Concept Note*, June, 1–16.
- National Bank of Ethiopia, Mfi. L. and S. of M. I. (2002). *Penalty For Failure to Comply with the Requirements requirement Proclamation number 40/1996 and Directives of National Bank of Ethiopia*.
- Ranong, P. N., & Phuenggam, W. (2009). *Critical success factors for effective risk management procedures in financial industries: a study from the perspectives of the financial institutions in Thailand*.1–76.
- Verafin. (2015). *How to perform a financial institution risk assessment*. 15.
- Williams,R.(2021).*OrderedLogitModels*.1–16.
- Yamane, T. (1967). *Statistics, An Introductory Analysis 2nd ed*.
- Yaraghi, N., & Langhe, R. G. (2011). Critical success factors for risk management systems. *Journal of Risk Research*, March 2015, 37–41.
- Yimer, G. A. (2022). The Regulation and Supervision of Micro Finance Institutions in Ethiopia: The Need to Balance Social Objectives with Financial Sustainability. *Mizan Law Review*, 16(1), 131–158. <https://doi.org/10.4314/mlr.v16i1.5>
- Zikmend, B., & Griffin, C. (2015). *Business research methods* (8th ed.).