RISK MANAGEMENT FRAMEWORK FOR MICROFINANCE INSTITUTIONS IN ETHIOPIA: A METHODOLOGICAL TRIANGULATION APPROACH

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DECLARATION

I, Elias Tadesse Mamo, declare that this thesis, entitled: **"RISK MANAGEMENT FRAMEWORK FOR MICROFINANCE INSTITUTIONS IN ETHIOPIA: A METHODOLOGICAL TRIANGULATION APPROACH"**, which I hereby submit for the degree of Doctor of Philosophy in Management Studies, is my own work and has not previously been submitted by me for a degree at this or any other institution.

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ELIAS TADESSE MAMO

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ABSTRACT (ENGLISH)

The primary challenge of microfinance is that it offers unsecured financial services, primarily in order to assist low-income households. In the twenty-first century, the focus on expansion and outreach by microfinance institutions has been accompanied by crises and failures, mainly due to risk. Risk management is therefore a crucial concern for microfinance institutions. Currently, only a limited number of studies have been done on risk management in Ethiopia, the majority of which are master's theses that focus primarily on selected microfinance institutions and operational-level risk categories. Too far, few or no studies have explored the function of risk management foundations in risk management framework.

By using a methodological triangulation approach, this study examines the risk management strategies and frameworks of Ethiopian microfinance institutions. Using a sequential explanatory mixed methods research design, 610 respondents from 20 microfinance institutions and 15 interviewees who are senior officials and experts in the microfinance industry were surveyed. Structural equation modelling (SEM) with AMOS version 23 and SPSS Statistics 26 were employed as the analytical models. AMOS was used for confirmatory factor analysis and path analysis, while SPSS was used for descriptive analysis and exploratory factor analysis. Confirmatory factor analysis was utilised to assess the reliability and validity of the conceptual model; SEM, in conjunction with multi-group analysis, was used to test the model’s hypotheses.

All variables, including risk culture, board effectiveness, internal controls, and internal audit, have a positive and significant effect on risk management performance. In addition, the study uncovered the moderating effect of microfinance institution ownership structure on the connection between exogenous dimensions (risk culture,

board effectiveness, internal control, and internal audit) and endogenous dimensions (risk management performance). The result demonstrated that ownership structure has a moderating effect on the association between exogenous constructs (risk culture and board) and endogenous construct (risk management performance).

The study further uncovered a significant indirect effect of internal audit on risk management performance through the partial mediation of internal control

The findings suggest that foundational aspects like risk culture, board effectiveness, internal control, and internal audit are crucial to consider in MFI's risk management. The study contributes to existing literature by providing empirical data on the model under consideration, as well as providing a number of significant theoretical and practical implications of the research.

KEYWORDS: microfinance institution, risk, risk management, risk culture, microfinance board, internal control, internal audit, structural equation modelling, confirmatory factor analysis, exploratory factor analysis, ownership structure, moderating effect

TSHOBOKANYO (ABSTRACT IN SETSWANA)

Kgwetlho e kgolo ya ditirelopotlana tsa ditšhelete e mo go thuseng malapa a a nang le lotseno le le kwa tlase ka go a neela ditirelo tse di se nang tshireletsotlotlo tsa ditšhelete. Mo seemong seno, ntlha ya taolo ya matshosetsi e tswelela go nna maleba thata. Fa e sale go tloga ka tshimologo ya ngwagakgolo ono, kgolo le tlamelo ya ditirelo tsa ditheo tsa ditirelopotlana tsa ditšhelete (di-MFI) di tsamaya mmogo le mathata le go palelwa go go amanang le matshosetsi, mme seno se dira gore taolo ya matshosetsi e nne botlhokwa thata mo ditheong tseno. Go dirilwe dithutopatlisiso di le mmalwa fela ka ga taolo ya matshosetsi kwa Ethiopia, ntle le ditlhotlhomiso di le mmalwa tsa maemothuto a mmasetase tse go le gantsi di tsepamisang mo ditheong tse di rileng tsa ditirelopotlana tsa ditšhelete le mo ditlhopheng tsa matshosetsi a a mo maemong a tiriso le tiragatso. Ke dithutopatlisiso di le mmalwa kgotsa ga go na dithutopatlisiso dipe tse di ikaegileng ka maitemogelo a mmatota tse di batlisitseng tiro ya metheo ya taolo ya matshosetsi e e mo teng ga letlhomeso la taolo ya matshosetsi. Thutopatlisiso eno e lekotse mekgwatiriso ya taolo ya matshosetsi le matlhomeso a di-MFI tsa Ethiopia, go dirisiwa mekgwa e mentsi ya go bapisa tshedimosetso e e kgobokanngwang le go sekasekiwa ka go dirisa netefatso ya tshedimosetso e e dirwang ka go bapisa metswedi ya yone. Ka ntlha ya seo, baikarabedi ba le 610 go tswa mo ba le 20 le batlhankedi-bagolwane ba le 15 le baitseanape ba MFI ba boditswe dipotso go dirisiwa mokgwa o go dirisiwang dikgato tse di latelanang go kgobokanya le go sekaseka tshedimosetso. Mo dikaong tsa tshekatsheko tse di dirisitsweng, go akareditswe Sekao sa Tshekatsheko ya Kamano fa gare ga Ditlhotlhomisiwa (SEM), ka tiriso ya AMOS v. 23 mo tshekatshekong ya tlhomamiso ya nepagalo ya dikamano (CFA) le tshekatsheko ya tlhotlheletsano ya ditlhotlhomisiwa mo kamanong ya tsone, fa go dirisitswe SPSS v. 26 mo tshekatshekong e e fokotsang

tshedimosetso e e tlhalosang le e e batlisisang sengwe se se rileng gore e tlhaloganyesege. Go dirisitswe CFA go tlhatlhoba boikanyego le nepagalo ya sekao se se ka ga kgopolo nngwe, fa go dirisitswe SEM le tshekatsheko ya ditlhophantsi go dira teko ya ditshitsinyo tsa sekao. Go fitlhetswe gore tiro ya taolo ya matshosetsi e amiwa ka tsela e e siameng le ya botlhokwa ke dikarolwana tsotlhe, go akaretsa megopolo le maitshwaro a a matshosetsi, boto ya MFI, taolo ya yone ya ka fa gare le boruni jwa ka fa gare. Mo godimo ga moo, go fitlhetswe fa thulaganyo ya go nna mong wa MFI e sekaseka kamano fa gare ga dikakanyo tse di ikaegileng ka mabaka a kwa ntle (megopolo le maitshwaro a a matshosetsi, boto, taolo ya ka fa gare le boruni jwa ka fa gare) le kakanyo ya ka fa gare (tiro ya taolo ya matshosetsi). Tshekatsheko ya kamano e senotse gore thulaganyo ya go nna mong e sekasekile fela kamano fa gare ga dikakanyo tse di ikaegileng ka mabaka a kwa ntle tsa megopolo le maitshwaro a a kotsi le boto, le kakanyo ya ka fa gare ya tiro ya taolo ya matshosetsi. Diphitlhelelo tseno di supa gore go botlhokwa go akanyetsa dikarolwana tsa motheo tse di jaaka megopolo le maitshwaro a a matshosetsi, boto, taolo ya ka fa gare le boruni jwa ka fa gare fa go dirwa taolo ya matshosetsi a MFI. Tiro e na le seabe mo tshedimosetsong le kitso e e maleba mo porofešeneng e e rileng ka go neela deitha ya mmatota ka ga sekao se se tlhatlhobiwang, mo godimo ga go lemoga ditlamorago di le mmalwa tsa botlhokwa tsa tiori le tiragatso.

Mafoko a botlhokwa: tshekatsheko ya tlhomamiso ya nepagalo ya dikamano, tshekatsheko e e fokotsang tshedimosetso e e batlisisang sengwe se se rileng gore e tlhaloganyesege, boruni jwa ka fa gare, taolo ya ka fa gare, boto ya ditirelopotlana tsa ditšhelete, setheo sa tirelopotlana ya ditšhelete, ditlamorago tsa tshekatsheko, thulaganyo ya go nna mong, matshosetsi, megopolo le maitshwaro a a matshosetsi,

taolo ya matshosetsi, Sekao sa Tshekatsheko ya Kamano fa gare ga Ditlhotlhomisiwa

UHLAKA LOKULAWULWA KOBUNGOZI BEZIKHUNGO ZEZIMALI EZINCANE E-ETHIOPIA -INDLELA YOCWANINGO ENGUNXANTATHU

ngu

ELIAS TADESSE MAMO

lhanjiswe ngokuhambisana nezidingo

zeziqu

ZOBUDOKOTELA BESIMO SENGQONDO

SOKUZIPHATHA

Esihlokweni

SEZIFUNDO ZOKUPHATHA

EMFUNDWENI EPHAKEME YASENINGIZIMU AFRIKA

Umphathi: USolwazi RT Mpofu

2023

OKUCASHUNIWE (ABSTRACT IN ISIZULU)

Inselela enkulu yezezimali ezincane isekusizeni amakhaya ahola kancane ngokuhlinzeka ngezinsizakalo zezezimali ezingavikelekile. Kulo mongo, udaba lokulawulwa kobungozi luya ngokuya lubaluleka. Kusukela ekuqaleni kwaleli khulunyaka, ukwanda kanye nokufinyelela ezikhungweni zezimali ezincane (ama-MFIs) kuhambisane nezinkinga ezihambisana nobungozi kanye nokwehluleka, okunikeza ukulawulwa kobungozi kubaluleke kakhulu kulezi zinkampani. Kuye kwenziwa ucwaningo olulinganiselwe ekulawuleni ubungozi e-Ethiopia, ngaphandle

kwemibhalo yeziqu zobumpetha ezimbalwa ezigxile kakhulu ezinkampanini ezincane zezimali ezikhethiwe kanye nezigaba zobungozi ezisezingeni lokusebenza. Zimbalwa noma azikho izifundo ezicwaningayo eziphenye umsebenzi wezisekelo zokulawula ubungozi ngaphakathi kohlaka lokulawula ubungozi. Lolu cwaningo luhlole amasu okulawula ubungozi kanye nezinhlaka ze-*Ethiopian MFIs*, kusetshenziswa izindlela ezingunxantathu. Ukuze kufezeke lokho, abaphenduli abangu-610 bezikhulu eziphezulu ezingu-20 kanye ne-15 kanye nochwepheshe be-MFI babuzwa imibuzo kusetshenziswa indlela yokulandelana exubile. Izifanekiso zokuhlaziya zisetshenzisiwe, zihlanganisa Isifanekiso Sokuhlola Okuguquguqukayo Okuningi (SEM), kanti i-*AMOS v. 23* isetshenziselwa ukuhlaziywa kwesici sokuqinisekisa (i-*CFA*) nokuhlaziywa kwendlela, kuyilapho *i-SPSS v. 26* isetshenziselwa ukuhlaziywa kwezinto ezichazayo nezihlolayo.

I-*CFA* yaqashwa ukuze ihlole ukwethembeka nokuba semthethweni kwesifanekiso somqondo, kuyilapho i-*SEM* nokuhlaziywa kwamaqembu amaningi kwasetshenziselwa ukuhlola okucatshangwayo kwesifanekiso. Ukusebenza kokulawulwa kobungozi kutholwe kukuhle futhi kuthinteke kakhulu kuzo zonke izici, okubandakanya isiko lobungozi, ibhodi le-MFI, ukulawula kwayo kwangaphakathi kanye nocwaningomabhuku lwangaphakathi. Ukwengeza, isakhiwo sobunikazi be-MFI sitholakale silinganisa ubudlelwano phakathi kobukhulu bangaphandle (isiko lengozi, ibhodi, ukulawula kwangaphakathi kanye nocwaningomabhuku lwangaphakathi) kanye nokwakhiwa okungapheli (ukusebenza kokulawulwa kobungozi). Ukuhlaziywa kokulinganisela kuveze ukuthi ukwakheka kobunikazi kwengamele kuphela ubudlelwano phakathi kokwakhiwa kwangaphandle kwesiko lengozi kanye nebhodi, kanye nokwakhiwa okungapheli kokusebenza kokulawulwa kobungozi. Lokhu okutholakele kukhombisa ukuthi izingxenye eziyisisekelo ezifana

nesiko lobungozi, ibhodi, ukulawulwa kwangaphakathi kanye nocwaningomabhuku lwangaphakathi kubalulekile ukuthi kubhekwe lapho kwenziwa ukulawulwa kobungozi kwe-MFI. Umsebenzi unikela endikimbeni yolwazi ngokunikeza imininingwane yangempela yesifanekiso ngaphansi kokuhlolwa, ngaphezu kokuhlonza inani lemiphumela ebalulekile yombono nengokoqobo.

Amagama asemqoka:

confirmatory factor analysis

ukuhlaziya isici sokuqinisekisa

exploratory factor analysis

ukuhlaziya isici sokuhlola

internal audit

ucwaningomabhuku lwangaphakathi

internal control

ukulawulwa kwangaphakathi

microfinance board

Ibhodi lwezezimali ezincane

microfinance institution

Isikhungo sezezimali ezincane

moderating effect

Umphumela wokulinganisa

ownership structure

Isakhiwo sobunikazi

risk

Ubungozi

risk culture

Isiko lobungozi

risk management

ukulawula ubungozi

Structural Equation Model

Isifanekiso Sokuhlola Okuguquguqukayo Okuningi

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LIST OF ABBREVIATIONS AND ACRONYMS

AEMFI: Association of Ethiopian Microfinance Institutions

CFA: Confirmatory Factor Analysis

CGAP: Consultative Group to Assist the Poor

CMEF: Council of Microfinance Equity Fund

COSO: Committee of Sponsoring Organizations of the Treadway Commission

CSFI: Centre for the Study of Financial Innovation

EFA: exploratory factor analysis

FDRE: Federal Democratic Republic of Ethiopia

IC: internal control

IFC: International Financial Corporation

IIA: Institute of Internal Auditors

IIF: Institute of International Finance

IRM: Institute of Risk Management

MFI: microfinance institution

NBE: National Bank of Ethiopia

OECD: Organization for Economic Co-operation and Development

PAR: Portfolio at Risk

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CHAPTER ONE: INTRODUCTION

1.1 Chapter introduction

Risk is an integral aspect of all businesses, particularly of microfinance institutions, since the banking industry is more exposed to risk than other industries. With the ongoing transformation of microfinance institutions (MFIs) into banks that accept deposits, risk is becoming a major worry for these businesses. In their internal audit and resources package, the Financial Services Working Group (2010: 3) defines risk as “the chance that current and future events, whether foreseen or unanticipated, may have an undesirable or detrimental effect on an institution goals, capital, or earnings”. Although several studies have been conducted on risk management in general and on microfinance risk management in particular, the majority of these studies concentrate on specific risk types or pillars and operational areas of risk, with credit risk being the most commonly studied risk type (Addae-Korankye, 2014; Ahmed & Malik, 2015; Khan, Siddique & Sarwar, 2020, Samuel, Holy & John, 2019;). This thesis addresses a concern and gap in the literature regarding the tendency of existing research to focus on the management of specific risk categories, particularly credit risk management, without considering risk management foundations that can serve as a basis for the management of all risk categories.

The purpose of this study was thus to determine the effect of risk management foundation variables on the risk management performance of MFIs in Ethiopia

This chapter will introduce the study by explaining the backdrop and context of the research, as well as the research problem, aims, objectives, questions, and rationale. It also provides an overview of the structure of the thesis.

1.2 Research background

Microfinance is a relatively new financial intermediary in the developing world that provides small businesses without access to conventional bank financing with an alternative source of funds and credit. It is the provision of loans to individuals and businesses who have been excluded from traditional banking markets mainly due to poverty (Ledgerwood, 1999; Schreiner, 2002). MFIs play a crucial role in economic growth by filling these gaps, as the exclusion of the poorest borrowers by conventional banks is regarded as one of the greatest obstacles to sustainable development and poverty reduction (Baklouti & Abdelfettah, 2013). Notable examples of the success of MFIs include the United Nation's proclamation of 2005 as the year of microcredit, in recognition of the microfinance industry's success in reducing poverty, and the awarding of the Nobel Peace Prize to Muhammad Yunus and Grameen Bank in 2006. MFIs, therefore, have become a crucial solution for poor borrowers who cannot pledge physical collateral. MFIs provide small loans to finance micro business endeavours and to assist the disadvantaged in owning tiny businesses to generate wealth. Such lending arrangements attract small businesses, which in turn encourages economic growth and generates additional employment prospects (Baklouti & Abdelfettah, 2013).

As a country in sub-Saharan Africa, the Federal Democratic Republic of Ethiopia (or FDRE, hereafter referred to simply as Ethiopia) is marked by extreme and widespread poverty. This makes financing an essential component of efforts to reduce poverty and to establish employment and income-generating activities for the disadvantaged. As a tool to serve a huge number of rural and urban poor who are not accepted by traditional banks, the Ethiopian government promotes the survival and growth of MFIs. The Ethiopian government's licensing and Supervision of Microfinance Institutions Proclamation (Proclamation 40/1996, "Licensing and Supervision of Microfinance

Institutions") drew attention to the creation of formal MFIs in Ethiopia. It described MFI activity as the operation of a firm that extends small amounts of credit. The declaration also provides for MFIs to mobilise population savings. As entities that mobilise savings, MFIs are regulated by the National Bank of Ethiopia (NBE), the country's financial regulatory agency. According to the proclamation, MFIs operate similarly to banks, with the exception that they are prohibited from engaging in international transactions. Thus, MFIs must satisfy all regulatory criteria applicable to conventional financial intermediaries.

Compared to normal banks, MFIs lend small amounts of money without requiring physical collateral. During their initial years of operation, MFIs in Ethiopia were permitted to extend credit not exceeding ETB 5,000 (USD 140). MFIs have grown and expanded in terms of outreach and sustainability during the past several years (Devi, 2017: 10-15). Trends in a number of performance indicators indicate that outreach and expansion were priorities in recent years. During the past decade, the MFIs regulated and supervised by the NBE mobilised approximately ETB 40.1 billion (USD 1.12 billion) in voluntary and mandatory savings, and disbursed approximately ETB 58.7 billion (USD 1.65 billion) to 5.435 million active clients. In addition, the MFIs' total assets amounted to ETB 83.5 billion (USD 2.33 billion) (see Appendix J). In the past six years, savings mobilisation climbed by 440% from ETB 7.41 million (USD 207,413), with an average annual increase of 33%, while loan disbursement increased by 360% from ETB 12.78 million (USD 357,967).

Tekie and Tiruneh (2019) conclude that MFIs in Ethiopia have a beneficial impact on the welfare of their clients, as opposed to those in other economies, whose positive impacts have not been established. Moreover, the nascent Ethiopian microfinance industry is one of the world's most rapidly expanding financial sectors. Based on data

from the most recent five years, the number of active borrowers has climbed by 67.58% from 3.24 million, with an average annual increase of 9.1%, while the outstanding loan balance has increased by 29% annually (see Appendix J).

Despite efforts to expand outreach, the World Bank's global financial report indicates that the majority of people still require loans to finance their microbusinesses. This indicates that there is still a substantial supply gap, necessitating increased outreach and sustainability efforts (World Bank, 2018). Given this enormous underserved market, it can be inferred that rapid growth will continue.

However, the expansion of the microfinance industry has altered the risk profile of MFIs, although many MFIs continue to pursue growth with little regard for the associated risks. Risk is inherent to financial intermediation and therefore risk management must be central to finance. In developing nations such as Ethiopia, systematic risk management in the microfinance industry is not as prevalent as it should be.

Although risk is inherent to all organisations, its importance in MFIs is heightened by the nature of their operations. With the recent migration of MFIs into deposit-taking banks, risk is becoming a major industry concern. In the developing world, lending is more difficult due to inadequate law enforcement, insufficient client information, the lack of borrowing experience among impoverished households, the absence of physical collateral, high processing costs for small loans, and intense competition. It has also been argued that microfinance is an inherently risky business because the majority of its clients are those living in poverty, with little or no physical collateral who are therefore unable to obtain loans from conventional banks (Brau & Woller, 2004, Akanga, 2017). Risk management is therefore essential in order to maintain a balance between risk and reward (Wu & Olson, 2010).

Several studies, such as one by Fraser and Simkins (2010), assert that poor risk management by financial institutions contributed significantly to the worldwide financial crisis. Since it is known that microfinance clients lack credit records, physical collateral, and financial stability, risk management is considered to be even more important in MFIs than in traditional banks (Yu, Damji, Vora & Anand, 2014). The extra emphasis on risk management in MFIs emanates from the dual nature of MFIs' objectives, which include both social and financial objectives. MFIs, more than other financial institutions, must manage their risks efficiently and effectively in order to meet their social and financial objectives (Steinwand, 2000). MFIs have the social objective of providing small loans to a large number of people living in poverty. However, as a result of the risks associated with high transaction costs, a lack of credit information, geographic dispersion, and loan default, achieving this social goal poses substantial risk to the MFI industry.

In the past, MFIs have endeavoured to mitigate the difficulties posed by the lack of physical collateral and the high information and transaction costs associated with providing small loans to a large number of poor borrowers. Researchers have found that group and progressive loans mitigate screening and repayment issues (Armendáriz & Morduch, 2010). Under group lending, an MFI provides a loan to one member of a group of four to six people, but all members are jointly responsible for its repayment.

Brau and Woller (2004) argue that "joint liability contracts mitigate portfolio risks for MFIs by reducing the problem of adverse selection and moral hazard and by providing a physical collateral substitute as group members monitor each other". Even though managers want to maximise their economic utility through individual liability contracts, Brau and Woller (2004) argue that joint liability contracts mitigate portfolio risk.

However, joint liability contracts are becoming less common as MFIs shift their focus from social to financial objectives and as MFIs begin to accept wealthier borrowers who can provide physical collateral. Individual liability contracts, as opposed to joint liability contracts, are found to offer wealthier borrowers the most economic utility as a result of the highest rate of return, so joint liability contracts are losing favour (Madajewicz, 2011).

The transition of MFIs from institutions founded by non-governmental organisations (NGOs) to those with private ownership is also now causing MFIs to assume more risk. This is the case because shareholders motivated by profit require MFI managers to take risks in an effort to increase return.

Continuous growth and sustainability in the microfinance industry necessitates an organisation-wide management of risk for MFIs. The majority of studies on microfinance risk management, however, concentrate on specific risk types and operational risk regions. Credit risk is the most commonly examined risk in numerous studies (Ahmed & Malik, 2015; Makri V, 2015, Samuel et al., 2019; Khan et al., 2020). The microfinance industry, however, faces more than just credit risk. Hence, learning how to mitigate all the different types of risks is critical to MFIs' sustainability.

The Ethiopian microfinance industry lacks experience compared to the rest of the world. Nonetheless, it has seen rapid geographical expansion by concentrating on rural households and promoting outreaches (Devi, 2017). Such rapid expansion exposes the industry to a collection of risk categories. Tekie and Tiruneh (2019) argue, in their assessment of the literature, that MFIs in Ethiopia now have greater access to commercial funding sources in the form of debt, equity, or deposits, which necessitates a stronger emphasis on risk management in order to protect investors' capital.

This thesis seeks to investigate risk management from the perspective of risk

management foundations that can serve in the proactive management of systematic risk, filling a current void in the literature as many studies in MFI risk management have focused on specific risk categories on a siloed basis. Consequently, the purpose of this empirical study is to examine the role of foundational risk management variables in enhancing the risk management performance of MFIs in Ethiopia and to propose a risk management framework for Ethiopian MFIs.

1.3 Research problem

In a world that is in a constant state of change, with each change bringing new ways of conducting business with different outcomes, risk management has become an issue of paramount importance. The global financial crisis served as a reminder that risk management and the way it is implemented are crucial if performance goals are to be consistently met.

As business owners and managers strive to improve and sustain performance, they are now required to consider the risk management practices their organisations have implemented to avoid falling short of their strategic goals. This is especially true in the financial services sector, including for organisations such as MFIs, as the financial services sector was hit the hardest by the financial crisis.

In Ethiopia, numerous MFIs based in the private sector with the aim of empowering the poor and alleviating poverty have emerged. Although MFIs' efforts towards outreach and inclusive finance are commendable, internal reports by supervisory authorities indicate that their efforts in terms of risk management are insufficient, as MFIs are plagued by risks and uncertainties, manifesting in a high rate of loan repayment defaults and bankruptcies. As a member of the board of a particular MFI, the researcher had the opportunity to participate in internal discussions with the NBE, the supervising authority, regarding MFIs' risk management challenges. Based on

these discussions, the researcher concluded that the interventions of regulatory agencies and the implementation of more stringent supervisory control systems have not significantly enhanced the ability of MFIs to manage risk. The solution for ensuring the sustainability and viability of the microfinance industry continues to be the development of strategies for effective risk management.

Organisational risk management strategies should facilitate proactive risk management, be comprehensive, and be pertinent to achieving organisational goals and objectives (Hopkin, 2017). Given these fundamental characteristics, risk management is essential for achieving institutional objectives and goals. Failure to effectively manage risk may result in losses and a decline in operational trust and efficiency. Therefore, comprehensive risk management is crucial in order to enhance the sustainability and reach of MFIs (Khraisha & Arthur, 2018).

The MFI industry has been able to achieve growth in Ethiopia, despite significant systemic limitations placed on financial services providers on the Ethiopian market and certain peculiarities of the microfinance sector itself. These peculiarities include, among others, the nature of capitalisation and governance structure, the persistence of difficulties in the adoption of technology, and the absence of numerous financial avenues.

Both the Ethiopian economy and the MFI industry are anticipated to continue their growth trajectory. Domestically and internationally, the MFI industry and individual MFIs will have to adapt to changing external and internal environments. It is therefore prudent to ensure that MFIs are prepared for these changes. A 2019 report by the Association of Ethiopian MFIs (AEMFI), included in the organisation's 10th Biennial Conference proceedings, highlighted certain microfinance industry trends that may necessitate cautious risk management. First, in addition to the increase in loan size,

the MFI industry in Ethiopia is expanding its reach into urban areas and includes new target audiences, such as men and individual borrowers. Second, the country has been experiencing prolonged drought conditions, which has put pressure on repayment trends and raised concerns of over-indebtedness in certain areas, which poses a threat not only to the financial stability of MFIs but also to their social objectives. Third, similar to the drought, there has been political unrest in some parts of the country, which has resulted in the loss of clients' property and means of subsistence, thereby impeding their ability to repay loans. In some regions, MFI operations have also been impeded by political unrest.

These recent trends are heightened even further by anticipated future changes, such as technological advancements that will require MFIs to accelerate their adoption of technology, the competitive pressure from conventional banks to expand their deposit base, and the entry of new players with a fresh perspective, such as Fintech companies. Although the raison d'être of MFIs is their social mission of poverty alleviation and inclusion, the expansion of MFIs' size and scope necessitates obtaining new sources of funding that are more commercially minded. This will eventually have a bearing on the nature of MFIs' operations and the risks they assume. Previously, MFIs' growth engines were group loans. However, a deteriorating social structure and rising client expectations have compelled MFIs to shift to individual and small- and medium-sized enterprise (SME) lending. These contracts have a unique liability structure that necessitates special risk management considerations.

All of these factors indicate that, while growth will be rapid, the environment will also change rapidly, and MFIs may need to reconsider their traditional strategies. New growth and new dimensions introduce additional risk, and, as renowned investment guru Warren Buffet has famously stated, "risk is the result of ignorance".

In terms of risk perception and management, Ethiopian MFIs have a relatively transactional and myopic perspective. Most often, they view risk solely from a compliance requirement perspective, create risk management as a separate silo within the organisation, make risk a rule-based and rule-bound process, conflate risk with internal audit or internal control, and treat risk as a one-time project (Narayana, Girma & Narayana, 2019). Obviously, each of these measures would provide some protection against the risks faced by businesses. However, they have a history of lulling organisations into a false sense of security and failing to prevent large-scale disasters. In the current fast-paced, technology-driven business environment, these factors have come into sharper focus, highlighting the urgent need for MFIs to make risk management a central aspect of their work. Those who do not develop a comprehensive and holistic risk management practice will quickly fall behind the competition.

Despite the undeniable significance of risk management to MFIs, efforts to establish a well-functioning risk management practice within MFIs have remained stubbornly low. The lack of emphasis placed on risk management by MFIs is primarily attributable to many organisations' emphasis on social and humanitarian objectives. This approach, coupled with MFIs' dependence on public subsidies, has led to an underestimation of their financial performance. In recent years, the demand for private resources has increased practitioners' understanding of the concept of sustainability. This has led to the development of performance-evaluation models in both the literature and in practice, but it has not necessitated the development of risk management models. According to Wolday (2016), many MFIs also take a reactive approach to risk, responding to reporting requirements from regulators or funders rather than proactively identifying and analysing their own risk management

shortcomings. LaTorre and Vento (2006) are in support of a more proactive approach, asserting that MFIs must integrate risk management into their organisational design, lending methodologies, savings and other services, and all other operational procedures in order to develop strategies to face risks, mitigate their impact, and maximise opportunities.

The primary challenge of microfinance is that it aims to assist low-income households who cannot pledge physical collateral, by offering unsecured financial services. In this setting, the question of risk management in MFIs becomes ever more pertinent. In the twenty-first century, the microfinance industry in Ethiopia and elsewhere has prioritised expansion and outreach. However, such growth and expansion, unless wisely managed, could result in failures and crises due to risk (Brom, 2015).

MFIs' greatest earning and operating asset and primary source of revenue consists of loans. Loans represent 70.3% of the total assets of MFIs operating in Ethiopia, according to estimations based on NBE aggregate statistics (see Appendix J). However, some of the loans granted become nonperforming, posing issues for MFIs. The trends in portfolio at risk (PAR) estimates, based on aggregate annual reports of the NBE (see Appendix J), suggest that loans tainted by arrears (90) days pas is on the rise. During the past five years, the average annual growth rate of loans in arrears was 14.3%, and the total increase was 74.9%, showing an issue with risk management.

Due to a number of factors, many MFIs are more susceptible to operational risk today than they were in the past. One of the factors is MFIs' recent access to commercial finance through debt, equity, and deposits, which brings more severe requirements to control risk and protect investors' funds (Brom, 2015). Furthermore, geographic growth and increased rural coverage increase clients' distance from company headquarters,

which in turn exacerbates the difficulty of exercising control.

Despite the growing relevance of risk management, it appears that comprehensive risk management has not yet become the norm in the microfinance industry both in Ethiopia and globally, as there is a lack of significant evidence and research about the implementation of risk management. The few studies that have been undertaken on risk management in Ethiopia are all master's theses that focus primarily on selected MFIs and selected risk categories, particularly operational and credit risks (Tulu, 2016; Suganda, 2017; Kefale, 2019; Agegnehu, 2021). The available literature on MFIs in Ethiopia focuses mostly on outreach, sustainability, and profitability, as well as on credit risk management, to a lesser extent.

As previously mentioned, existing research tends to focus on the management of specific risk categories, such as credit risk management, without considering the risk management foundations that can serve as a basis for the management of all risk categories. This thesis addresses this concern and gap in the literature.

The risk management practices of most Ethiopian MFIs are based on risk-based supervision, which is anchored in capital base, capital adequacy, PAR, liquidity/cash reserve ratios, investment in fixed assets, and single obligor limits, among other factors. This is accomplished through the use of the CAMELS rating system: capital adequacy, asset quality, management quality, earnings quality, liquidity, and sensitivity to interest rates. The CAMELS rating system is used as a risk management index by the supervising authority (Steinwand, 2000). These approaches rely heavily on quantitative analysis of financial accounting and net income measures, without proper consideration of the risk management foundations that underpin financial performance and their impact on risk management.

According to Brom (2015), these risk management foundations include risk culture,

board effectiveness, internal control, and internal audit. In addition, studies on the combined effect of these four essential variables on the risk management performance of MFIs are virtually non-existent. Many empirical studies concentrate on the individual "pillars of the house", which are represented by specific risk categories, from an operational rather than a strategic perspective. As a result of the diagnosis of the financial crisis, the necessity of risk culture, risk governance, and balanced incentives inside financial institutions as prerequisites for the maintenance of an effective risk management framework has emerged as an essential topic of focus. Numerous studies have been conducted on the effects of these three factors, with an emphasis on the failures of established markets and huge institutions. The impact of comparable challenges on emerging markets has received little attention, however. Therefore, there is a void in the empirical research concerning the contribution of these risk management foundations on the risk management performance of MFIs. In addition, very little previous research examines whether or not the efficiency of risk management strategies employed by MFIs varies according to their ownership structure.

Therefore, in order to improve enterprise-wide risk management, a shift away from reactive approaches and silo-based risk management is required. It is necessary for Ethiopian MFIs to move toward proactive risk management by establishing a risk management framework, in order to change current risk management practices, which focus primarily on compliance with regulatory reporting requirements. This can only be accomplished through the creation of a framework that integrates all risk management variables.

Among the numerous risk management variables, this study focuses on determining how four foundational forces or components – risk culture, board effectiveness,

internal control, and internal audit – contribute to the improvement of risk management in Ethiopian MFIs. In order to achieve effective risk management of all risk categories, risk management must be based on significant foundational variables, according to the premise underlying this study.

Moreover, it should be noted that some scholars have investigated the direct relationship between internal audit and risk management (ElHaddad, ElHaddad & Alfadhli, 2020; Yaser, 2022). However, the effect of internal audit on risk management as mediated by internal control has remained largely unstudied. This study investigates the role of internal control as a mediator between internal audit and risk management performance in MFIs.

Additionally, the study attempts to account for the peculiarities of ownership structure, which may explain the disparities in the risk management performance of MFIs. Particularly, the effect of ownership structure on the framework for risk management is investigated.

This study therefore fills the identified gap in the existing literature and provides a comprehensive understanding of how each component of the risk management foundation improves risk management in MFIs in Ethiopia in particular.

1.4 Research purpose, objectives, and questions

1.4.1 Research purpose and objectives

This study proposes a framework to investigate the impact of risk management foundations on the risk management performance of Ethiopian MFIs. Based on the problem stated and statement of purpose, this study aims to achieve the following particular objectives:

1. To evaluate the risk management performance of MFIs in Ethiopia in terms of

the relevant variables.

2. To investigate the effects of risk culture on the performance of risk management in MFIs in Ethiopia.
3. To determine the influence of board effectiveness on the risk management performance of MFIs in Ethiopia.
4. To investigate the effects of internal control on the risk management performance of MFIs in Ethiopia.
5. To investigate the impact of internal audit on the risk management performance of MFIs in Ethiopia.
6. To investigate the moderating effect of ownership structure on the risk management performance of MFIs in Ethiopia.
7. To evaluate the role of internal control as a mediator between internal audit and risk management performance in MFIs in Ethiopia.
8. To suggest the most essential risk management practices that Ethiopian MFIs should implement.

1.4.2 Research questions

To meet the above objectives, the research will address the following research questions:

1. What is the current risk management performance of MFIs in Ethiopia?
2. How do the risk management foundational variables, namely risk culture, board effectiveness, internal control, and internal audit, affect the risk management performance of Ethiopian MFIs?
3. Does internal control serve as a mediator (go-between) for internal audit and risk management in Ethiopian MFIs?

4. Does the moderation of ownership structure impact the performance of risk management in Ethiopian MFIs?
5. What are the most essential risk management procedures that Ethiopian MFIs must implement?

1.5 Research rationale and significance

1.5.1 Research rationale

The microfinance industry has grown and expanded in multiple dimensions in recent years. This expansion and growth have been accompanied by difficulties and failure, which are primarily attributable to excessive debt, which in turn is due to insufficient expansion risk management (Brom, 2015). According to Brom (2015), MFIs currently have access to commercial funding in the form of debt, equity, and deposits, and access to these commercial financing sources will necessitate effective risk management in order to protect investors' funds.

In addition, many stakeholders in the microfinance industry are aware of the need for effective risk management, but lack a comprehensive understanding of what this entails in practice. Currently, a "checklist method" is commonly utilised, which merely mandates the completion of certain standards such as a risk management policy, risk manager, and risk committee, without a true understanding of how a formal risk management culture should be integrated throughout the organisation.

Despite these previously mentioned circumstances that necessitate risk management as a crucial performance factor, it appears that risk management has not yet become the norm in the majority of MFIs in Ethiopia. In addition, extremely few studies have been conducted on risk management, with the majority of studies concentrating on specific microfinance firms and risk categories, especially operational and credit risk.

Numerous studies on MFIs focus on outreach, financial performance, and operational autonomy. However, if MFIs do not incorporate a risk management framework into their day-to-day operations, this practice, and the ongoing growth in the MFI market, will present numerous challenges.

Some of the primary reasons for conducting research on the selected topic include the rapid growth of the microfinance industry, both globally and in the Ethiopian context, which requires risk management as an essential performance metric, and the paucity of existing research on comprehensive risk management in the Ethiopian context. Inadequate research on risk management in the Ethiopian financial system, particularly in the microfinance banking sector, is also a contributing factor.

1.5.2 Significance of the research

MFIs, microfinance policymakers, MFIs, researchers, and academics will benefit from this empirical research on the risk management of Ethiopian MFIs.

Examining the prevalent risk management practices and performance of Ethiopian MFIs, as well as a framework that is suitable for microfinance risk management, can assist policymakers, educators, and experts in comprehending what the microfinance industry must do in relation to risk and risk management. Knowledge of existing risk management practices and the proposed framework can, for instance, assist the management, as represented by the board of directors, in achieving the most effective organisation of this framework and in enhancing their future strategic risk and management decision-making.

This research will contribute to risk management research by proposing innovative risk management practices that will enable MFI managers to be more proactive and to self-regulate, as opposed to waiting for an external reviewer to alert them to the problems and risks they face.”

The findings of this study will also assist academics and researchers in identifying research gaps and filling them for a comprehensive risk management framework.

To the best of the researcher's knowledge, no other empirical research has investigated the effects of risk management foundations such as risk culture, internal control, internal audit, and board on risk management, particularly in the context of Ethiopian MFIs. This study can therefore serve as a springboard for other researchers to investigate these variables in greater depth by incorporating additional constructs and mediating variables.

Microfinance regulators may utilise the results of this study when making policy and regulatory decisions, as well as when directing and monitoring the financial performance and risk management performance of MFIs. Administrators of MFIs, such as boards of directors and CEOs, may believe that these fundamental characteristics are essential to their risk management policies and risk management efforts.

This study will also make a substantial contribution to the literature on risk management frameworks in general and in Ethiopian MFIs in particular.

1.6 Thesis structure

The dissertation is divided into seven chapters. Chapter One: Introduction introduces the study.

The second chapter, Literature review, gives an overview of the available literature on microfinance and the microfinance industry in Ethiopia. The chapter also defines key terms and concepts pertaining to risk and microfinance organisations' risk management, and provides a detailed picture of the existing literature on risk management in the microfinance industry in Ethiopia.

Chapter Three: Research methodology describes the methodology used in the study, including the research techniques and design used to perform the study, as well as

the methods used to determine the sample size and collect and analyse data.

Chapter Four: Research variables and hypothesis development discusses the research variables and the formulation of the research hypotheses. The chapter also defines the factors that influence risk management in MFIs by classifying the variables as latent variables and indicator (measured) variables.

In the fifth chapter, both qualitative and quantitative data analysis results are provided.

Chapter Six: Findings and discussion presents the findings of the study.

The final chapter, Chapter Seven: Conclusion contains a summary of the main findings of the study, conclusions drawn from the study, and recommendations for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Chapter introduction

This chapter provides an overview of the literature on microfinance and the microfinance industry in Ethiopia. The chapter also defines key terms and concepts pertaining to risk and microfinance organisations' risk management. It also presents a detailed picture of the existing literature on risk management in the Ethiopian microfinance industry, with an emphasis on risk culture, board effectiveness, internal control, and internal audit.

2.2 Microfinance: General overview

Microfinance emerged from the notion of microcredit, which refers to the provision of unsecured small loans, mainly to low-income households. These small amounts of credit are usually offered to financially disregarded low-income households to help them engage in entrepreneurial and income-generating activity. Dr Muhammad Yunus pioneered the concept in Bangladesh in 1976. Following Bangladesh's example, several nations began to examine microfinance as a means of extending credit to the financially excluded poor, thereby enabling very poor economic agents to engage in income-generating self-employment schemes and become economically and financially independent (Steel, Aryeetey, Hettige & Nissanke, 1997). In a 2013 report by the UN's Office of the Special Adviser on Africa, it was said that microfinance is crucial for empowering communities by assisting individuals in improving their lives and escaping poverty. According to the research, given Africa's current volatile economic environment, microfinance is crucial to Africa's efforts to address socio-economic development goals (United Nations, 2013). In this setting, the concept of microfinance becomes especially important in Africa, where poverty is widespread

and access to conventional banks can be difficult for people living in poverty.

Microfinance has been defined as “the provision of financial services to microbusinesses and underprivileged people” (Helms, 2006: 1). MFIs are also defined as a “financial intermediary that provides loans to members of society who lack access to regular banking institutions” (Fitch Ratings, 2008: 1). In addition to extending loans, MFIs sometimes offer technical assistance, such as business development services, to help the underprivileged launch and grow businesses (Narwal & Yadav, 2014; Ossa, 2014).

MFIs’ activities resemble those of conventional banks in that they accept deposits and provide loans, but their clients are primarily financially excluded individuals often living in poverty and who cannot provide physical collateral (Hossain & Khan, 2016; Balcha & Tamare, 2017). The absence of a collateral requirement is the most significant distinction between MFIs and conventional banks (Hermes & Lensink, 2007; Abate, Borzaga & Getnet, 2013; Tekie & Tiruneh, 2019). In addition, MFIs differ from normal banks in that their loan sizes are smaller and they do not engage in international operations (Brau & Woller, 2004). MFIs also differ from typical banks in that they cater mostly to high-risk, low-income borrowers who seek small loans that require close monitoring and evaluation (Hermes & Lensink, 2007; Hermes & Lensink, 2008; Ebisa, Getachew & Fikadu, 2013).

The microfinance industry is experiencing tremendous expansion in terms of the number of institutions, active customers, depositors, and loan and deposit volumes. Regarding this, the sector is increasingly dominated by regulated institutions that are growing their savings offerings.

2.3 MFI Performance, and Mission Drift

Numerous nations employ microfinance to promote financial inclusion (Hobden,

Kovacs & Amarger, 2021). As already established, microfinance is an economic strategy that can provide financial services to economically vulnerable segments of the population who are excluded from the formal financial sector (Fondation Grameen Crédit-Agricole, 2021). The concept of risk has always been inherent to microfinance, from the moment it was conceived as a means of aiding people living in poverty, and this risk must be managed in order for the microfinance industry to achieve sustainability. When Mohammad Yunus founded Grameen Bank in 1983 to provide microloans and microfinance to the rural poor, he was firmly convinced that this was one of the most effective ways to assist people in escaping poverty. Through these loans, people living in poverty would be able to establish small businesses, generate income, and ultimately improve their standard of living. This emphasis on poverty underpins the social mission of MFIs, which must be reconciled with the financial objective to ensure these institutions' long-term viability. Both these social and financial objectives form part of MFIs' double bottom line.

MFIs differ significantly from conventional banks in their willingness to provide financial services to clients who are marginalised by traditional financial institutions. As mentioned, they provide this service in the absence of physical collateral and without access to clients' credit histories. To address the issue of insufficient physical collateral, they employ ingenious strategies such as social collateral, group lending, smaller loan amounts with regular repayment schedules, and progressive loan structures (Sriram, 2011). Group-based lending contracts effectively make a borrower's neighbours co-signers on loans, mitigating issues caused by informational asymmetries like adverse selection, moral hazard, and enforcement. Thus, the functions of screening, monitoring, and enforcing repayments are transferred from the bank agent to the group members in group-lending programs (Mehrteab, H. T., 2005).

However, group-based lending is not without restrictions. First, it is susceptible to the domino effect because it is impossible to rule out the possibility of all members conspiring not to repay. Second, the joint liability mechanism may not be optimal due to the fact that a successful borrower may be enticed to help repay the loans of unsuccessful borrowers if they can minimise this loss. Third, social collateral is limited because it lacks market value (Mehrteab, H. T., 2005).

MFIs rely on group methodologies (Navin & Sinha, 2021) to instil a sense of social responsibility in group members regarding the repayment of the credit acquired. Due to self-selection and peer-pressure principles, group methodology may lead to the exclusion of the extremely poor, as people living in extreme poverty may self-isolate or be excluded by their peers during group formation. If this occurs, then the MFIs' social mission may not be realized. Additionally, youths are less able to join groups and apply for group loans. This decreases the desirability of MFI products for some individuals. Individuals are also sometimes ineligible for loans if another member of their household already has a loan. Social capital is required to obtain formal or informal loans. A guarantor is typically required for formal loans, even for repeat cycles. Group loans extract social capital in the form of a requirement for continued group membership. For informal loans, it is essential to establish relationships with moneylenders through effective networking.

The success of Grameen Bank in Bangladesh attracted numerous private competitors and conventional financial institutions to the market. Over time, the need to serve a massive population of people living in poverty led these institutions to develop an economic rationale for achieving financial sustainability. These developments prompted MFIs to seek funding from commercial sources in order to expand their operations. This necessitates that they operate on a foundation of self-sufficiency and

employ the market approach to generate profit (Mishra & Tankha, 2018), leading to a conflict between their social and financial objectives. However, Wassie, Kusakari, and Sumimoto (2019) find no evidence of conflict between the social and financial performance of MFIs in Ethiopia.

Currently, financial performance is just as important as social performance for MFIs. Due to a decline in grants and subsidies, they must achieve sustainability in order to continue and expand their operations. Even current donor agencies favour financially sound and efficient non-profit MFIs to ensure that the allocated funds are utilised effectively (Quayes, 2012). Financial sustainability is a requirement for the market survival of MFIs that generate a profit, for two main reasons: first, the use of commercial sources of funding increases the pressure to pay interest on time; second, providing a return to private equity investors is also crucial for attracting additional investments.

2.4 Overview of financial sector and MFI industry in Ethiopia

2.4.1 Overview of Ethiopian financial sector

The principal financial institutions in Ethiopia are banks, insurance companies, and MFIs. As MFIs offer only a limited selection of products and services, is still closed to foreign participation, and lacks a capital market, the MFI sector remains underdeveloped. Ethiopia's wider financial sector is also unable to provide competitive finance services on the required scale, as it remains relatively small, fragmented, and lacking in depth and breadth.

Access to finance is a significant barrier to the expansion of productive activities, particularly among SMEs, and to the diversification of export opportunities, such as the global export value chain. Despite concerted efforts, financial inclusion in Ethiopia remains limited, as conventional banks concentrate on Addis Ababa and surrounding

areas, leaving rural areas unserved, and rural savings and credit cooperatives are generally weak and unable to provide services sustainably. Baza and Rao (2017) identified the primary obstacles to financial inclusion improvement in Ethiopia, which included an underdeveloped financial infrastructure, an insufficient supply of suitable financial products and services, long distances to branch offices, a lack of trust in financial institutions, a lack of financial capability and awareness, and religious beliefs. Ethiopia's financial exclusion is severe for two main reasons. First, the majority of conventional banks are located in urban areas, while 80% of the population live in rural areas. Second, whenever possible, the formal banking sector excludes people living in poverty and in rural areas, largely due to the high costs of screening, monitoring, and enforcement associated with small-loan provision. In addition, the majority of people living in poverty have few or no assets for a bank to use as collateral (Hermes & Lensink, 2007; Shu & Oney, 2014). Ethiopia’s lending market also has a number of peculiar features, many of which exacerbate exclusion issues and impede growth and outreach objectives. According to the African Development Bank report on Federal Democratic Republic of Ethiopia Country Strategy Paper (2016-2020)report, few are listed. The following are some of the factors that impede growth and exacerbate exclusion.

- Any individual loan requires collateral as security. For disadvantaged groups, such as youths, women, or impoverished farmers, it may be impossible to provide adequate collateral to obtain a loan from formal sources, such as an MFI.
- Collateral size and loan size are reported to be frequently out of proportion, i.e., the value of required collateral relative to the loan amount is approximately 234% higher in Ethiopia than on the rest of the continent (160%).
- The majority of MFI loans are granted to groups as opposed to individuals.

Therefore, group membership is required to obtain such a loan. It is more difficult for young people to join groups and apply for group loans. This decreases the desirability of MFI products for some individuals.

- Individuals are ineligible for loans if another household member already has one.
- Social capital is required to obtain both formal and informal loans. A guarantor is typically required for formal loans, even for repeat cycles. Group loans extract social capital in the form of a requirement for continued group membership. Effective networking is essential for establishing relationships with money lenders for informal loans.

Within the realm of financial inclusion, MFIs have performed the bulk of the labour. The magnitude of the disparity between MFIs and conventional banks is illustrated by the fact that Ethiopian banks have 2.8 million credit accounts while MFIs have 5.3 million borrowers as witnessed by the internal information accessed by the researcher from the national bank of Ethiopia

2.4.1 MFI industry in Ethiopia

Ethiopia, being a sub-Saharan nation, is marked by tremendous poverty. Due to the fact that 77% of the working-age population of Ethiopia reside in rural regions, microfinance is an indispensable source of funding in Ethiopia. This is largely because traditional banks are averse to making small loans to people living in poverty, due to the substantial transaction costs involved. Additionally, banks require property as collateral for loans, which people living in poverty cannot afford to provide. Prior to 1996, microfinance services were made available to the impoverished through donors and other government programmes. However, these programmes do not serve people living in poverty in a continual and permanent manner (Wolday, 2016).

As previously mentioned, in 1996, the government of Ethiopia issued Proclamation 40/1996, “Licensing and Supervision of MFIs” (FDRE, 1996), which authorised the formation of deposit-taking MFIs, in an effort to provide financing to the poor in a sustainable fashion. Therefore, the creation of legal MFIs in Ethiopia is a fairly recent phenomenon that developed after 1996. This proclamation describes MFI activity as the operation of a firm that extends small amounts of credit (FDRE, 1996). The proclamation also authorises the NBE to oversee the mobilisation of savings from the populace by MFIs. In addition, the proclamation limits MFI activities to Ethiopian citizens.

MFIs in Ethiopia were initially permitted to extend credit up to ETB 5,000 (USD 140). Ten years ago, MFIs were concerned with achieving a balance between outreach expansion and long-term viability (Devi, 2017). Outreach – or MFIs’ social objective – was the primary emphasis of Ethiopian MFIs. According to trends in a number of financial performance indicators, 38 active MFIs regulated and overseen by the NBE mobilised around ETB 40.1 billion (USD 1.12 billion) in voluntary and compulsory savings, and disbursed approximately ETB 58.7 billion (USD 1.62 billion) to approximately 5.435 million active clients. In addition, the MFIs’ total capital assets amounted to ETB 83.5 billion (USD 2.33 billion) over the same time period (see Appendix J). Over the course of six years, savings mobilisation climbed by 440% from ETB 7.41 million (USD 207,413), with an average yearly increase of 33%, while loan disbursement increased by 360% from ETB 12.78 million (USD 357,967). As previously mentioned in the research background section, the Ethiopian microfinance industry has seen rapid expansion in the last decade (Tekie & Tiruneh, 2019).

Ethiopia’s microfinance industry is fairly young compared to that of other nations. However, it is expanding rapidly in terms of geographic reach, with a focus on

sustainability (Devi, 2017). The government's participation in the industry is substantial, ranging from institutional and portfolio support to ownership of MFIs. Wiedmaier-Pfister et al. (2008) found in their assessment of access to finance in Ethiopia that government-led MFIs had achieved a high level of service outreach. This is not because the markets require them to lend to people living in poverty, but because the government supports lending to people living in poverty for a specific purpose. Without such assistance, MFIs' reach could have been diminished (Ayele, 2015).

2.5 Risk management in MFIs

2.5.1 General microfinance and risk management

The requirement that MFIs issue loans without collateral that can serve as a guarantee is the greatest obstacle they confront while assisting those in need. Due to this, the problem of risk management in MFIs has become extremely important.

There is no globally acknowledged definition of risk, as different persons perceive and define it differently Churchill and Coster (2001: 2) regard risk as an exposure to the possibility of loss. Their meaning corresponds to the conventional understanding of risk, which refers to an unpleasant event or the possibility of a loss. Fernando (2007: 3) defines microfinance risk as "the potential for events or on-going trends to cause future losses or declines in future income of an MFI or deviate from the original social mission of an MFI".

According to MicroSave (2009), risk is "the subset of uncertainty that affects objectives in a positive or negative manner". It is difficult to completely avoid or eliminate risk in a business unless one ceases to conduct business. Consequently, risk is an inherent aspect of MFIs in particular but also of all businesses, in that all businesses carry some degree of risk. The banking industry is more exposed to risk than other industries,

however, due to the nature of their operations. In order for financial institutions to stay viable, it is essential to comprehend that their fundamental business entails taking certain risks and controlling others. Risk and return are complementary in the sense that there can be no return without risk (MicroSave, 2009).

MFIs, like other financial institutions and enterprises, confront risks that must be effectively managed for survival and growth. In addition, when MFIs begin to expand into new business sectors, such as voluntary savings products and insurance, it becomes vital for them to effectively manage risk. Failure to appropriately manage risk may prevent MFIs from achieving their two primary goals (the financial objective and the social objective), and may ultimately result in insolvency.

Risk can be categorised according to the following: institutional risk, operational risk, financial management risk, and external risk (Churchill & Coster, 2001: 6-11). Also according to Churchill and Coster (2001), each category of risk can also be divided further into the following categories:

- Institutional risk includes social mission risk, commercial mission risk, and dependency risk.
- Operational risk includes credit risk, fraud risk, security risk, transaction risk, and legal and compliance risk.
- Financial management risk includes asset and liability risk, inefficiency risk, and system integrity risk.
- External risk includes regulatory risk, competitive risk, demography risk, physical environment risk, and macroeconomic risk.

There are also additional risk categories, including the following:

- Financial risk, which includes credit risk, liquidity risk, and market risk.

- Governance risk, reputation risk, and external business risk include strategic risk.

In the current globalised environment, where economic events and financial systems are intertwined, risk management is a complex and crucial duty all financial institutions should be paying attention to. Therefore, the most successful MFIs should not only concentrate on their current performance, but also on their risk management systems, which will help them to plan for both expected and unexpected future hazards.

Risk management is a systematic process that includes the following steps: detecting risk, analysing and assessing risk, risk response planning, and monitoring and controlling risk (MicroSave, 2009). According to MicroSave (2009), risk management is the practice of controlling risk exposures by limiting negative consequences, either by reducing exposure to hazards or by converting them to a more acceptable level. Risk management consists of the following: the prevention of prospective hazards, the early detection of risks when they exist, and the modification of policies and procedures that allowed the occurrence. The essence of risk management is addressing uncertainty and minimising or eliminating risk factors. According to Fernando, MFIs' risk management is "the act of controlling the likelihood and potential severity of an adverse event: it involves methodically identifying, quantifying, restricting, and monitoring risks encountered by an institution" (2007: 10).

2.5.2 Risk management: Ethiopian MFI industry

The microfinance sector has been able to achieve growth in Ethiopia despite the significant systemic limitations on financial services providers on the Ethiopian market and despite certain peculiarities of the microfinance sector itself. As mentioned in Chapter One, Ethiopian MFIs generally have a relatively transactional and myopic

perspective and do not always see risk management as an ongoing process (Narayana et al., 2019).

2.5.2.1 Governance

Governance is a function of board composition and board commitment to its roles and responsibilities, which, in turn, is a function of the nature of the entity and its relationship to the government (Narayana et al., 2019). MFI governance is perceived to be weak across the board, despite differences between private MFIs and government- and NGO-sponsored MFIs.

In government-sponsored MFIs, the majority of board members are nominated by the respective government entity. However, in the case of NGO-sponsored MFIs, the NGO exerts significant influence over the appointment of both community members and NGO nominees to the board. According to the researcher, neither of these structures aligns incentives with the entity's management in terms of risk. In governmental MFIs, directors are hired not necessarily on the basis of skill, but on the basis of a number of other primary criteria. In the case of NGO-supported MFIs, there is an additional complication, as NGO-nominated directors often accord priority to the goals and ideas of the NGO, which are not always in the best interests of the MFI.

When it comes to credit risk and internal auditing, board committees are only serious. There is a stark contrast between private-sector MFIs and public-sector MFIs, where each board member is hired based on the value they bring to the table. Such boards are reportedly active, supportive, and engaged.

2.5.2.2. Risk culture

Ethiopian MFIs have a distinct culture of growth and outreach. Risk is generally limited to know your customer or documentation and compliance-related elements, and these

are the focus of communication throughout most organisations. Even at the board level, the management of most MFIs do not seriously consider providing risk information prior to evaluating options and making decisions (Narayana et al., 2019).

2.5.2.3 Internal controls and management information systems

Technology and its adoption are major vulnerabilities for the Ethiopian population as a whole, and this risk is exacerbated in geographically dispersed, intensive-operations-heavy businesses such as microfinance. Numerous MFIs manage large operations using only Microsoft Excel spread sheets. A major issue for the Ethiopian MFI industry is thus a lack of reliable data, while the rest of the world has begun to focus on mobile payments and portfolio analytics.

2.5.2.4 Risk identification

Identifying risks is the first step in the management process, and this can be a daunting task without technology. Traditionally, credit risk and fraud risk control have been prioritised. Regarding credit risk, the majority of MFIs have historically issued group loans where the process complexity is minimal and has, over time, become standardised. The associated risks and pitfalls are well-known and adequately covered. Private MFIs have carved out a distinct niche by focusing primarily on individual loans, inevitably resulting in a higher number of nonperforming loans (NPLs). Even though these loans are collateralised and the lien is registered with local authorities, it has been the experience of private MFIs that it is not easy to repossess them without incurring a loss. (Narayana et al., 2019)

At a deeper level, two factors contribute to an increase in individual NPLs. One is the asymmetry of information. After numerous cycles of group loans, MFIs typically transition borrowers to individual loans. This privilege is unavailable to privately owned

MFIs. Secondly, as a result of the dominance of government MFIs and their unfair trade advantage, other MFIs' cost of funds is inevitably higher, resulting in a negative selection of clients who are willing to borrow at a much higher rate. This risk can only be mitigated through sophisticated underwriting with risk data, which the MFIs generally lack, and through market-level information to avoid ex-ante adverse selection and moral hazard, through information such as credit bureaus, which is still some time away. (Narayana et al., 2019)

Lack of liquidity is also a significant issue for Ethiopian MFIs, forcing them to regulate it by limiting growth and transforming it into a function fund as liquidity becomes available. In the absence of dependable weather insurance, a high degree of MFI exposure to agriculture and drought has exacerbated the problem. In the event of major environmental shocks, such as droughts and floods, an MFI with a portfolio heavily invested in rural agriculture runs the risk of massive defaults.

Given manual and cash-driven paper-heavy processes that are primarily recorded in Microsoft Excel, the operations risk in Ethiopian MFIs is very real and grossly undervalued. Because frauds are highly visible, there is a greater awareness of them. MFIs are also adept at incorporating fraud-related lessons into process enhancements, but this is a slow and costly method of learning. Currently, only maker-checker, internal, and statutory audits can be used to monitor operations risk. All MFIs view operations risk as an ex-post and ex-ante root cause and key driver of credit risk. Given the NBE's clear and consistent regulatory practice, the majority of MFIs report no compliance issues. However, they anticipate, despite their efforts, that they will fall short in forthcoming areas such as International Financial Reporting Standards (IFRS) and the Basel Committee. (Narayana et al., 2019) Almost every conversation focused on strategy as a potential risk. This has numerous facets: (1) MFIs are heavily exposed

to agriculture, and in adverse conditions they have no recourse; (2) group loans, the bedrock of MFIs, are losing popularity as people's ambition rises; (3) banks are aggressively attracting the MFI savings base; and (4) competition, such as fintech companies, is rapidly approaching. (Narayana et al., 2019)

2.5.2.5 Risk measurement

Aside from portfolio-level credit risk measurement based on NPL norms and risk-weighted capital adequacy measurement, there is currently not much risk measurement in the Ethiopian MFI industry to speak of. Capital is only required against risk-weighted assets and nonperforming loans. (Narayana et al., 2019)

2.5.2.6 Risk treatment

When risks are evident, the default risk treatment of most Ethiopian MFIs is avoidance. Where risks are not readily apparent, the default strategy is acceptance, with the intention of addressing them as they become inevitable. Only in credit underwriting, collections, and frauds is a reduction in risk observed through process improvement. Many MFIs do not maintain information on collateral insurance and do not require it.

2.5.3 Risk culture and microfinance risk management

According to organisational theorists, culture impacts every facet of organisational existence (Schein, 2010). It specifies the structure, method, and procedure that can be utilised successfully within an organisation. The Institute for Risk Management (IRM) has developed a fully-fledged definition for the relatively new phrase "risk culture". According to the IRM (2012a), risk culture refers to how individuals perceive, comprehend, and respond to risk within a company. It describes the shared risk management principles, beliefs, knowledge, and understanding of an entity with a single mission. The Basel Committee defines risk culture as "the collective set of

individual and corporate beliefs, attitudes, competencies, and behaviour that illustrates a company's approach to risk management" (2011: 5). Kanu defines risk culture as "the impact of organisational culture on risk management" (2020: 14), and argues that a well-designed and well-implemented risk culture provides the cultural context in which risk management takes place.

Therefore, risk culture is a developing concept that encompasses an organisation's risk appetite and tolerance, as well as its risk management procedures as evidenced by its personnel. Risk tolerance refers to "the amount of uncertainty an organization is willing to accept in total" (Crickette et al., 2012: 3) in order to achieve its goals, whereas risk appetite is the grand amount of risk an enterprise is ready to shoulder in quest for value creation (KPMG, 2008).

Risk culture has a substantial impact on an organisation's capacity to make strategic risk decisions and fulfil performance commitments. Organisations with unsuitable risk cultures will inadvertently permit actions that are utterly at conflict with stated policies and procedures or operate outside of these regulations (IRM, 2012a). An inappropriate risk culture signifies not only that certain individuals or teams will engage in these actions, but also that the rest of the company will overlook, condone, or be oblivious to what is occurring. At best, this will hinder the fulfilment of strategic, tactical, and operational objectives. At worst, it will result in significant reputational and financial harm (IRM, 2012b). Therefore, it is evident that the creation of an effective risk culture inside a business is a crucial component of good risk management (IIF, 2011). This argument is supported by Wood and Lewis (2017), who demonstrated that weak organisational cultures, which hamper the efficacy of a risk management framework, lead to significant losses experienced by financial institutions throughout the previous economic crises.

Risk culture must be effectively supported and strengthened at the board level in order for it to permeate an organisation (CSFI, 2014). An effective risk culture necessitates that the board, senior management, and employees comprehend the organisation's approach to risks, assume personal responsibility for managing risks in all aspects of their work, and encourage others to follow their example. By harmonising its management systems and behavioural norms, a microfinance bank should encourage its board, senior management, and workers to make prudent risk-related decisions and show acceptable risk management behaviour. Developing an effective and lasting risk culture requires that the board and senior management pay close attention to the written rules that define the objectives and priorities of risk management. The board and senior management should also examine informal norms, protocols, and decision-making processes with rigour and candour, as these all have a significant impact on people's behaviour. They are also accountable for creating the correct tone at the top and fostering a company-wide risk consciousness that encourages risk-aware conduct at all levels of the bank. (Evans, 2015)

In its board guidelines on risk culture, the IRM defines an effective risk culture as "one that supports and rewards people and organizations for taking calculated risks" (IRM, 2012b: 6). For a risk culture to be deemed successful, a number of characteristics must be present, including: a distinct and consistent tone from the top regarding risk taking and avoidance; a commitment to ethical principles; a common acceptance throughout the organisation of the importance of continuous risk management; transparent and timely risk information flowing up and down the organisation with bad news quickly communicated without fear of blame, encouragement; and a commitment to ethical principles.(IRM, 2012b: 6

There are four markers for evaluating whether banks have an appropriate risk culture.

The first is tone from the top, which refers to the role played by the board and senior management in communicating risk culture expectations and values to all employees inside the firm, in accordance with the principles of leading by example. The second is accountability, which involves the realisation that each person is responsible for the consequences of their actions, i.e., understanding of the consequences of disobeying the rules and the ability to behave appropriately. The third marker includes good communication and challenge, an environment that encourages discussion, and both vertical and horizontal transparency on risk management-related issues. The fourth indication is an incentive, which refers to systems designed to stimulate the risk management behaviour of individual employees through the use of career progression, performance evaluation, and an appropriate remuneration structure. (Geretto and Pauluzzo, 2015

Geretto and Pauluzzo (2015: 2) further presented a number of characteristics that should characterise a sound risk culture in the banking industry, including:

> Individual and collective responsibilities; shared ethics, values, and purpose; general application and adoption of risk culture at all organizational levels and in all activities; understanding the value of effective risk management; transparent, timely, and accurate communications; employee expectation of challenge; and the presence of a learning organization. (Geretto & Pauluzzo, 2015: 2)

On the basis of the preceding discussions regarding risk culture, one can advise MFIs to strive to create a culture of risk awareness within their operating environment, having recognised its importance and significance to their capacity to identify and effectively manage risk. The correct risk culture can offer MFIs a competitive advantage in terms of risk management, as it has a significant impact on the institution’s risk management activities and the accomplishment of its vision, purpose,

and objectives.

Little empirical research has evaluated the influence of risk culture on organisational performance. Kpodo and Agyekum (2015) demonstrate a favourable link between risk culture and organisational performance in the Ghanaian banking industry. Several more studies, such as those by Nocco and Stulz (2006), Hoyt and Liebenberg (2008), and Walker (2009), have indicated that a firm's performance is enhanced by an effective risk culture or a strong risk culture. Others have also argued that the creation of a risk culture throughout an organisation is the most essential risk management technique (IIF, 2008). Farrel and Hoon (2009) similarly concluded that an organisational risk culture is a vital feature that ensures that doing the right thing triumphs over doing whatever is necessary. Many more studies have demonstrated the favourable relationship between risk culture and organisational performance, particularly in the banking industry (Chalhoub, 2009; Asree, Zain & Razalli, 2010; Ahmed & Shafiq, 2014; Kpodo & Agyekum, 2015). As evidenced by the scholarly literature, there is a general consensus regarding the favourable relationship between risk culture and corporate performance. However, the banking industry in general and MFIs in particular lack a comprehensive understanding of how risk culture impacts the performance of risk management.

Risk culture and its impact on the performance of risk management are relatively new to businesses and MFIs in Ethiopia. However, this does not imply that risk culture is unknown to MFIs in Ethiopia. What is lacking is empirical research on the relationship between risk culture and MFIs' performance of risk management. In an effort to build a framework for risk management, it is required to conduct research evaluating the current practice of risk culture and the relationship between risk culture and risk management performance. To the best of the researcher's knowledge, none of the

existing studies undertaken have yet measured the real effect of risk culture on the risk management performance of MFIs. In addition, the literature on risk management generally does not analyse the influence of risk culture on the risk management performance of MFIs by considering the moderating effect of ownership structure. Consequently, as this study will evaluate the real influence of risk culture on risk management performance, together with the moderating effect of ownership structure in general and of Ethiopian MFIs in particular, this study is a worthy attempt to fill an existing knowledge gap and contribute to the current literature.

2.5.4 Internal control and microfinance risk management

Every organisation has goals it strives to accomplish. In pursuing these objectives, the organisation will encounter situations and occurrences that may threaten their achievement. These potential occurrences and conditions create risks that an organisation must identify, evaluate, define, and address. Some risks can be accepted (in whole or in part), while others can be fully or partially mitigated to an acceptable level for the organisation. There are numerous methods for mitigating risk, with the design and implementation of effective internal control being one of the most important.

The Committee of Sponsoring Organizations of the Treadway Commission's (COSO) "Internal Control – Integrated Framework" (henceforth referred to as "the framework") describes the components, principles, and factors necessary for an organisation to manage its risks effectively through the implementation of internal control. However, the framework mostly does not specify who is accountable for specific responsibilities. (COSO, 2013)

According to COSO (2013), one of the important methods for mitigating microfinance

risks is the design and execution of effective internal control. It describes internal control as “a procedure designed to provide reasonable assurance over the attainment of objectives relating to operations, reporting, and compliance” (COSO, 2013: 4).

The Basel Committee on Banking Supervision (2010) describes internal control as “a system intended to give assurance in areas such as financial and operational reporting; monitoring compliance with laws, rules, and internal policies; operational efficiency and effectiveness; and asset protection.” Lakis and Giriūnas (2012: 151) define internal control as:

> a component of an enterprise management system that ensures the implementation of goals, the effective performance of the enterprise, the observance of accounting principles, and the effective control of work risks, thereby allowing the organisation to minimise the number of intentional and unintentional errors and frauds committed by authority or employees during enterprise performance. (Lakis & Giriūnas, 2012: 151)

This definition, like that of the Basel Committee, stresses efficient risk management.

KPMG (1999: 19) also notes the following about internal control:

> an internal control system encompasses the policies, processes, tasks, behaviours, and other aspects of a company that: (1) facilitate effective and efficient operation by allowing the company to respond appropriately to significant business, operational, financial, compliance, and other risks to achieving the company's objectives; (2) ensure the quality of internal and external reporting; and (3) ensure compliance with applicable law. (KPMG, 1999: 19)

In 1992, a committee of the United States National Council, widely known as the Treadway Commission, introduced the COSO framework as the first document in the

world to establish a comprehensive and systematic theoretical foundation for internal control. Internal control, according to the framework, consists of five interconnected components.

The first component refers to the set of standards, processes, and structures that serve as the basis for internal control throughout the entire organisation. This component consists of "the organisation related integrity and ethical values; the factors that assist the board of directors in carrying out its governance oversight responsibilities; the organisational structure and assignment of authority and responsibility; the procedure for attracting, developing, and retaining competent individuals; and the comprehensiveness of performance measures, incentives, and rewards to drive accountability for performance" (COSO, 2013). According to Hall (2004), the control environment is the climate produced within an organisation to support control objectives. It is recognised as the foundation of all other components of internal control since it determines the pace of an organisation and impacts the conduct of its members (KPMG, 2008).

The second component of risk assessment is a dynamic and iterative procedure for detecting and evaluating threats to the fulfilment of objectives. Risk assessment is the process through which the board and management identify and analyse potential threats to the institution's ability to achieve its projected goals (COSO, 2013). The evaluation is anticipated to assist in identifying the risk types, the process for managing them, and the controls required to mitigate the identified risks (COSO, 2013). According to the framework, risks can occur or change as a result of conditions such as: a change in the operating environment or personnel information system, rapid growth, the introduction of new technology, and the expansion of a business line. Therefore, MFIs are not exempt from these developments and are exposed to risk in

a variety of ways.

The third component, control activities, refers to the actions set by rules and procedures that help assure the implementation of board and management directions. Information and communication are a component of the framework relating to the continuous activity of delivering, sharing, and acquiring essential information. Monitoring activities refers to a continuous examination performed to determine whether each of the five internal control components is present and functioning.

In addition to identifying 17 principles under the five components, the framework outlines the requirements for an effective internal control system (COSO, 2013). An effective system, according to the framework, should provide reasonable certainty regarding the attainment of an entity's objectives and minimise the risk of not achieving an entity's objectives to an acceptable level. In order for the internal control components to be effective, the framework stipulates that all five components must operate as an integrated unit.

After identifying and analysing the risks associated with an organisation, management must implement policies, processes, and procedures to ensure that the identified risks are minimised or eliminated. Control activities are the component of internal control that focuses on the design of rules and procedures to ensure the exercise of control (COSO, 2011). Control activities instruct the entire organisation on what to do and how to do it, and offer reasonable direction throughout the entire implementation process. Therefore, it is crucial that MFIs increase their control operations by weighing the costs and benefits.

As another of the components of an internal control system, information and communication involve the design of an information system that generates operational, financial, and compliance-related information to facilitate control actions

(COSO, 2011). This component ensures that the relevant information is discovered, acquired, and disseminated so that people can efficiently carry out their tasks.

The framework further recommends constant review of the system's operation to ensure that internal control's effective functioning. This is due to the fact that the existence of control systems alone is not enough to ensure that internal control objectives are met. (COSO, 2011)

The framework (COSO, 2011) also sorts internal control into three categories: preventive, detective, and remedial controls. The framework emphasises preventative control as the most essential because of its preventive nature that will help the organisation to prevent problems before they arise as opposed to detecting or correcting problems after they have already occurred.

The risk-related performance objectives of an MFI are believed to be satisfied when an internal control system with an active control environment, suitable control processes, active risk assessment, information and communication, and monitoring are in place. Empirical research demonstrates the vital role of internal control in influencing the performance of risk management. Akwaa-Sekyi and Moreno (2016), for instance, examined the effectiveness of internal control mechanisms among Spanish banks and found that the banks are vulnerable to default risk due to inadequate internal control. The outcome revealed a correlation between internal control and credit risk. Although internal control procedures are in place, their performance cannot be assured, according to the report. In addition, a statistically significant inverse association is established between strong internal controls and the prevalence of fraud in MFIs (Akwaa-Sekyi & Moreno, 2016).

Other researchers, including Ngari (2017), have analysed the impact of internal control on financial performance. Ndiaye, Cheng, Azenga, and Kwamboka (2019) discovered

that all dimensions of internal control were positively and significantly associated with the profitability of MFIs in Senegal. Jin, Kanagaretnam, Lobo, and Mathieu (2013) discovered that, when banks adhere to internal control systems, they minimise their risk-taking behaviour and are less likely to collapse.

Although much research has been undertaken to examine the influence of internal control on credit risk management and fraud risk management, none of these studies examined the effect of internal control on MFIs' total risk management. In addition, as previously mentioned, studies on risk management generally do not analyse the influence of internal control on the risk management performance of MFIs by considering the moderating effect of ownership structure. Consequently, assessing the actual influence of internal control on risk management performance, together with the moderating effect of ownership structure in general and of Ethiopian MFIs in particular, is a worthy attempt to fill the void and add to the current body of knowledge.

2.5.5 Internal audit and microfinance risk management

The internal audit function is an independent assurance activity meant to enhance the efficacy and safety of a financial institution's operations (FSWG, 2011). The international professional organisation the Institute of Internal Auditors (IIA) defines internal auditing as "independent, objective assurance and consulting services meant to add value and improve an organization's operations." It assists a company in achieving its goals by providing "a systematic, disciplined approach to evaluating and enhancing the effectiveness of governance, risk management, and control systems." (IIA, 2017: 23). According to the IIA, internal audit assists a business in achieving its goals by evaluating and enhancing the efficacy of risk management, control, and governance systems (IIA, 2017). The term reflects the shift in internal auditing's focus from compliance, assurance, financial control, and asset protection to governance and

risk management, among other domains (Dellai & Omri, 2016).

Internal audit has the key function of reporting to the top management on the functioning of the management control systems and recommending improvements where necessary (Okaro, Okafor, Nwanna, & Igbinovia, 2017). This highlights the importance of internal audit in MFIs' risk management and its importance to the longevity of the microfinance industry. In a risk governance structure, the internal audit function is tasked with assuring senior management and the board that internal controls are operating as intended, providing recommendations for enhancing controls, processes, and procedures, and presenting an objective view of the overall bank operations (IIA, 2017).

As outlined in the FSWG's (2011) "Pocket Guide", the work of an internal audit department is comprised of the following elements: a clear reporting line to the board of directors; proper communication with the executive director; and skilled internal audit specialists adhering to established standards of conduct, practice, and ethics.

According to the COSO framework (2013), internal auditors can provide advice and assistance to an MFI in the implementation of a risk management strategy without compromising their independence. They can vouch for the risk management process, attest to the accuracy of risk evaluation, appraise risk management methods, and evaluate the management of major risks.

The framework also defines the role of internal audit in internal control, which requires confirming the effectiveness of internal controls, appraising internal controls, and advising management on improving and bolstering internal controls (COSO, 2013). In its publication on internal audit guidance for financial services, the Financial Services Committee of the Chartered Institute of Internal Auditors provides recommendations on how to enhance internal audit in the financial services sector (IIA, 2013). According

to the recommendation, the major function of internal audit should be to assist the board and executive management in protecting the institution's assets, reputation, and long-term viability. This is accomplished by assessing whether all significant risks are identified and appropriately reported by management and the risk function to the board and executive management; assessing whether they are adequately controlled; and challenging executive management to enhance the effectiveness of governance, risk management, and internal controls (IIA, 2013). The document acknowledges the significance of internal audit in risk management, mandating that internal audit activities evaluate the efficacy of risk management systems and contribute to their enhancement (IIA, 2013).

The FSWG stresses in its microfinance internal audit toolkit and resource (FSWG, 2011) that the interaction between risk management and internal audit is crucial; the two must be coordinated and synchronised in order to be efficient and successful. According to the toolkit, one of the primary responsibilities of the internal audit department is to verify staff compliance with risk-mitigation-oriented internal control systems (FSWG, 2011). However, if an internal audit department just focuses on internal compliance or noncompliance with policies and procedures, additional operating risks or external dangers to an MFI may jeopardise the institution's very existence (FSWG, 2011).

According to numerous researchers (Allegrini, D'Onza, Paape, Melville & Sarens, 2006; Erasmus & Coetzee, 2018), stakeholders' expectations of the internal audit role continue to rise. Internal audit is anticipated to be evaluated based on the value it offers to the organisation, which is dependent on how well it is managed within the business. Turetken, Jethefer, and Ozkan (2020) conducted a comprehensive literature review on internal audit and summarised the indicators for internal audit effectiveness,

despite the fact that the literature has not yet converged on a set of universally accepted indicators that can be used to quantify the effectiveness of an internal audit system. The researchers acknowledged the challenge of quantifying the efficacy of internal audit, but found that it can be approximated by evaluating the elements that may affect its efficacy (Turetken et al., 2020). Competence of internal audit department, size of internal audit department, organisational setting, scope limitation, internal audit independence and objectivity, management support for internal audit, cooperation with the audit committee, follow-up process, and supportive control environment were identified as factors affecting the effectiveness of internal audit (Turetken et al., 2020).

Internal audit department competency refers to internal auditors' knowledge and professionalism (IIA, 2017). The International Standard for Professional Practice in Internal Auditing (ISPPIA) also emphasises the significance of staff members' knowledge, abilities, and other competences required to carry out their duties (Dellai, & Omri, 2016).

Internal audit department size refers to the availability of a sufficient number of skilled specialists that enables internal auditors to perform rotations, resulting in a more objective internal audit (Bednarek, 2018; Chang, Chen, Cheng & Chi, 2019). Alhajri (2017) and other researchers have highlighted the significance of this aspect in enhancing the efficacy of internal audit.

Organisational context refers to the existence of transparent policies and processes against which the organisation's practices are evaluated. Permitting internal auditors to study any part of a company without restriction is another feature that promotes the efficacy of internal audit (Erasmus & Coetzee, 2018).

Internal audit independence refers to the absence of conditions that prevent the

internal auditor from carrying out their tasks objectively (Dejnaronk, Little, Mujtaba & McClelland, 2016). Most researchers agree that a lack of independence is a barrier to adequate internal audit performance (Alzeban & Gwilliam, 2014). Internal audit also becomes more effective with the backing of senior management (Alzeban & Gwilliam, 2014)

The internal audit performance standard (IIA, 2017) mandates the implementation of a procedure for monitoring identified internal control mistakes and ensuring that management actions have been properly implemented or that senior management has accepted the risk of inaction. Some studies argue that the availability of a procedure to track the status of audit findings and recommendations contributes to the enhancement of internal audit effectiveness (Oussii & Taktak, 2018).

A supportive control environment, which refers to the collection of standards, methods, and structures that form the foundation for conducting internal audit across the business, is crucial for the efficacy of internal audit (Barišić & Tušek, 2016).

The increased prevalence of fraud in MFIs has been attributed in part to the ineffectiveness of the internal audit function, according to a recent report (Aveh, Dadzie and Krah, 2013). Such ineffectiveness on the part of internal auditors has partly been attributed to the failure of such institutions' management to recognise the crucial role internal audits play and, as a result, to empower them (Kumar & Conteh, 2015). The function of internal audit serves as an early-warning system to discover any gaps or deficiencies in the internal control system. The purpose of the internal audit is to identify errors, problems, and policy and procedure violations before their repercussions become serious or have a significant impact on the MFI. Internal audits can also assist in identifying new or previously unknown issues. However, it is evident that internal auditors of MFIs confront obstacles, which may partly explain their

seeming inefficiency in risk management (Bota-Avram, Popa & Stefanescu, 2011; Obeng, 2016; Turetken et al., 2020).

Existing literature provides a substantial body of knowledge on the idea of internal audit effectiveness. Although there are several publications on the effect of internal audit on internal control, financial performance, and similar topics, there are few empirical studies that demonstrate the relationship between internal audit and risk management in MFIs. Okaro et al. (2017) investigated the challenges facing the internal audit function in MFIs and how the internal audit role in risk management can be improved. Their findings (Okaro et al., 2017) identified lack of access to relevant information and lack of sufficient training as the main obstacles impeding auditors' role in risk management. Okaro et al. (2017) recommend unconstrained access to information, continuous training, demarcation of clear line of authority, and reporting to top management by internal audit as solutions to aid auditors in effectively contributing to risk management.

In order to build a framework for risk management, it is required to conduct studies that evaluate MFIs' current practice of internal audit and the relationship between internal audit and risk management performance. To the best of the researcher's knowledge, none of the studies undertaken to date have measured the real effect of internal audit effectiveness on the risk management performance of MFIs and its contribution to the development of a risk management framework. Therefore, there is a need to broaden our understanding of internal audit effectiveness and evaluate its impact on risk management as a component of framework development for risk management. In addition, existing research on risk management generally does not analyse the influence of internal audit on the risk management performance of MFIs by including the moderating effect of ownership structure. Consequently, by assessing

the real effect of internal audit on risk management performance, together with the moderating effect of ownership structure in general and in Ethiopian MFIs in particular, this research aims to fill a gap in the existing literature.

2.5.6 Board and microfinance risk management

With the expansion of the microfinance industry, microfinance governance is receiving more attention. The Microfinance Banana Skins 2014 report (CSFI, 2014) identifies corporate governance as one of the top five threats facing the global microfinance industry. In fact, governance has been a significant threat to the sector since 2008. The Microfinance Banana Skins 2014 report (CSFI, 2014), which ranked corporate governance second in its list of threats facing the global microfinance industry, also highlighted governance-related issues such as the professionalism of the board, the role of independent directors, the measurement of governance performance, executive control, executive compensation, the quality of leadership, the role of investors, the conflict of interests among stakeholders, the rapid growth of organisations, rapid changes in the external environment, and insufficient internal checks. Governance concerns centre on the microfinance board.

According to the Council of Microfinance Equity Fund CMEF (2012), MFIs around the world are expanding their scope, which necessitates additional input and involvement by the board to maintain effective management, and a growing number of MFIs are becoming regulated and accumulating investor deposits. This undertaking requires strict management by the board to safeguard such deposits.

Shah, Napier, and Holloway (2017: 1) define corporate governance as “the mechanism through which organizations are directed and controlled”. Shah et al. (2017) also clarify the role of shareholders and the board in corporate governance by stating that shareholders take the ultimate responsibility of appointing the board of

directors and auditors, whereas the board of directors actively engages in the governance of the organisation through management.

Directors are supposed to oversee the condition of their businesses, make sound strategic decisions, and hold management accountable for their executions (CMEF, 2012). The board governs institutions and is responsible for oversight (Satagopan, 2012). Satagopan (2012) also enumerated additional conditions for effective governance as follows: the quality of the board members; the board's commitment to the institution's mission as evidenced by the time and energy invested by the board; the board's skills as leaders, visionaries, and managers; the board's technical expertise and experience pertinent to the organisation (i.e., financial, legal, and marketing expertise); and the board's independence from the chairperson and CEO. The board must also be small enough to facilitate frequent meetings (5–9 directors are common) (Satagopan, 2012), and, additionally, boards should have an odd number of members to prevent any voting deadlocks (Shettima & Dzolkarnaini, 2018).

Satagopan (2012) also recommends board diversity as a crucial governance element, arguing that boards must have the correct composition to provide a variety of perspectives. Board size is another aspect of board governance, and it is described as the number of directors required for meetings to run smoothly. Several academics have claimed that larger boards have advantages and that, as board size increases, so does company performance since more board members give greater oversight (Mori, Golesorkhi, Randoy & Hermes, 2015). According to CMEF (2012), boards should be large enough to fulfil their tasks efficiently and to secure quorums at meetings, yet small enough to make sound choices.

The third major consideration in board governance is the independence of the board. The concept of independent boards is based on agency theory. Inasmuch as they are

less likely to be vulnerable to the principal-agent issue, independent board members may give a higher level of operational control and responsibility. This is since, as independent members, they lack natural self-interests and are instead led by the interests of those who appointed them (La Porta, Lopez-de-Silanes & Shleifer, 1999). In its investigation on the governance practices of Indian MFIs, MicroSave (2015) analysed the significance of board makeup and dedication. Board composition factors included board size, board independence, gender representation, qualifications, and experience (MicroSave, 2015). Board commitment was comprised of characteristics such as board members' participation in creating the goals, strategies, and business plan of the MFI, their level of participation in board meetings, and their dedication to their tasks and responsibilities (MicroSave, 2015). Even between board meetings, the majority of MFIs in India indicated that their board members are ready for continuous support (MicroSave, 2015), which allows the management to seek them for advice as needed. Boards are increasingly concerned with ensuring that MFIs comply with all legal and statutory requirements, as well as periodically reviewing compliance reports to monitor MFIs in this regard.

The act of collecting and lending other people's money is a fundamentally risky one, and the risk increases when working with vulnerable clientele in nations like Ethiopia where poverty is widespread. Therefore, risk-taking is fundamental to financial intermediation, and the board of directors is ultimately accountable for the level of risk assumed by the institution. It is crucial that boards, as the ultimate guardians of MFIs, understand their responsibility in identifying and analysing the permissible level of risk (Centre for Financial Inclusion, 2013). The board of directors accepts ultimate responsibility and risk for an MFI's operations, mission, and financial management, particularly when the institution is not regulated. Through the internal audit committee

or risk management committee, the board is highly engaged in the financial and risk management of an MFI. Therefore, the MFI relies on its board to design and implement appropriate fiscal policies and a risk management framework, which are subsequently the responsibility of senior managers. In a 2009 report, the Organization for Economic Co-operation and Development (OECD) identified challenges in effective implementation of risk management (OECD, 2009). It noted the widespread failure of risk management as being one of the most shocking aspects of the financial crisis (OECD, 2009). The report further clarified the issue as follows:

> In many cases risk was not managed on an enterprise basis and not adjusted to corporate strategy. Risk managers were often kept separate from management and not regarded as an essential part of implementing the company's strategy. Most important of all, boards were in a number of cases ignorant of the risk facing the company and they were unaware of the risk confronting their specific MFIs. (OECD 2009: 8)

There is far less literature on risk management as a component of board governance. All board members, not only those who specialise in banking and finance, are accountable for understanding and regularly checking risk management metrics (Rampini, Viswanathan & Vuillemey, 2019). The board member's task is to be both a coach and a manager, and to remain involved despite the MFI's constant evolution. In their study assessing governance practices in MFIs in Uganda, Ssekiziyivu, Mwesigwa, Bananuka, and Namusobya (2018) discovered that MFIs have boards, but they are generally ineffective, there are no fully constituted board committees, shareholders' rights are not always respected, and accountability failures are common. The outcomes of their research reveal further options for enhancing governance, such as having a board with financial knowledge (Ssekiziyivu et al., 2018).

In their research, Mersland and Strøm (2009) found that NGOs had weaker structures because they lack owners with a financial stake in the organisation. This often results in a reduction in financial performance. Some research, such as a study by Thrikawala, Locke, and Reddy (2013), asserts that private shareholder-owned MFIs exhibit superior performance because of their presumably superior governance. The researchers also claim that MFIs converted from non-profit to shareholder enterprises perform better than non-profit firms (Thrikawala et al., 2013). However, non-profit organisations are seen to be more effective at reaching impoverished clients.

Gender diversity on boards (or the percentage of women on boards) is another topic that has garnered attention. According to the research on corporate governance, board diversity in terms of women and minority participation may be favourably correlated with firm performance (Bassem, 2009). Mori and Olomi (2012) observed that gender equality has a favourable impact on the performance and values of organisations. Mersland and Strøm (2008) discovered that MFIs with female CEOs who are also board members perform better than MFIs with male CEOs. Based on the preceding research, it is therefore anticipated that a positive correlation exists between the participation of women on the board and the performance of MFIs. Furthermore, the research cited above demonstrates that board members with banking and financial expertise boost sustainability without diminishing outreach.

Even though substantial research on governance and boards has been undertaken, these studies focus primarily on board effectiveness, the relationship between effectiveness and financial performance, and board oversight responsibilities. In addition, the available research was mostly undertaken in nations with more economic stability than Ethiopia, in countries where the microfinance industry is considerably less risky. To build a framework for risk management, it is required to conduct studies

evaluating the current practice of the MFI board and its relationship to risk management performance. To the best of the researcher's knowledge, however, none of the studies undertaken to date have measured the real impact of the board effectiveness on the risk management performance of MFIs and its contribution to the development of a risk management framework. Therefore, it is necessary to broaden our understanding of the MFI board and evaluate its impact on risk management as a component of the development of a risk management framework. In addition, the influence of the board effectiveness on MFIs' risk management performance by including the moderating effect of ownership structure has not been evaluated in the risk management literature. Therefore, by quantifying the actual influence of board on risk management performance, as well as the moderating effect of ownership structure in general and of Ethiopian MFIs more specifically, this study attempts to fill the void and add value to the existing literature.

2.6 Theoretical basis and proposed conceptual framework

2.6.1 Theoretical basis

The objectives of the framework used in this study are as follows: understanding the contribution of risk management foundation variables to the risk management performance of Ethiopian MFIs and examining the role of internal control in risk management. In order to explicate the impact of foundational variables such as risk culture, board effectiveness, internal control, and internal audit on risk management in MFIs, the study sought to isolate the key variables supporting the study, as depicted in Figure 1. The independent variables are: risk culture, board effectiveness, internal control, and internal audit.

2.6.1.1 Agency theory

Agency theory is utilised to establish the theoretical connection between board effectiveness and risk management. The study of agency relationships, which are regarded as one of the most prevalent and oldest types of social interactions, gave rise to agency theory (Ross, 1973). According to Ross (1973), an agency connection occurs when two (or more) individuals enter into an association in which the principal assigns the agent to act on their behalf or represent them in decision-making matters. Among the different prevailing principal-agent relationships, the shareholder-board relationship is considered an agency relationship in this context (Ross, 1973; Thomsen & Conyon, 2012).

In many agency relationships, the principal delegates decision-making power to the agent (Jensen & Meckling, 2019), who uses their knowledge and abilities to act in favour of the principal. In the shareholder-board agency relationship, for instance, the shareholders delegate governance and oversight authority to the board on the condition that it utilises their resources effectively and generates returns. By governing the firm's overall operation, boards assume responsibility for governing all firm affairs, including risk management issues.

Corporate governance and ownership are the contexts utilised for agency theory in MFI researches (Strøm, D'Espallier & Mersland, 2014). This thesis applies agency theory to the critical role the board of directors plays in the governance of MFIs, particularly its ultimate responsibility for risk management. This implies that, according to agency theory, the board is ultimately responsible for the performance of risk management in MFIs.

2.6.1.2 Three lines of defence model

The three lines of defence model is employed to determine the theoretical relationship between internal audit and the other three variables, namely risk culture, board

effectiveness, and internal control. As defined by the IIA, the three lines of defence model stipulates that risk management and control activities within an organisation must be articulated in three lines or levels in order to be efficient and effective (IIA, 2013).

The three lines of defence model address the assignment and coordination of specific duties related to risk and control within an organisation of any size or complexity. The model improves comprehension of risk management and control by elucidating roles and responsibilities. The model's underlying premise is that, under the supervision and direction of senior management and the board of directors, three distinct groups (or lines of defence) within the organisation are required for effective risk and control management (IIA, 2013).

The first line, represented by front-line operating management, is responsible for risk and control management. The risk, control, and compliance function, which represents the second line, monitors risk and control in support of management. Internal audit, the third line, provides independent assurance to the board and senior management regarding the effectiveness of risk and control management. The third line also provides assurance to senior management and the board that the efforts of the first and second lines meet senior management's and the board's expectations. (IIA, 2013).

Neither governing bodies nor senior management are considered to be among the three "lines" in this model, which is a flaw, as no discussion of risk management systems would be complete without addressing the crucial roles of both governing bodies, particularly the board. Governing bodies are the primary stakeholders served by the "lines" and are best positioned to ensure that the three lines of defence model is reflected in the organisation's risk management and control processes.

Consequently, the three lines of defence model is most effectively implemented with the active support and direction of the organisation's governing body.

This thesis therefore applies the three lines of defence model in the context of the critical role that each line of defence should play and the interaction between the three lines of defence in order to improve the risk management system. To fill the void, board and risk culture are also considered in order to empirically evaluate the variables' contribution to risk management.

The moderating effect of ownership structure (not-for-profit vs for-profit, or NGO-backed vs privately owned) and the mediating role of internal control are also used to evaluate the contribution of the variables to the risk management performance of MFIs.

2.6.1.3 Interaction between Internal Control and Internal Audit

Enterprise growth necessitates not only the assistance of internal control, but also the monitoring and early-warning services of internal audit. The relationship between internal control and internal auditing is both straightforward and mysterious (Nie, 2017). Although there are conflicting opinions regarding the relationship between internal control and internal audit, such as whether it is complementing versus inhibiting, the majority of researchers agree that internal control and internal audit interact positively. Some scholars believe that internal auditing is the oversight of internal control where it plays the role of "police" in corporate governance, so certain things will inevitably lead to dissatisfaction and even conflict within the internal control department, which is not conducive to the growth of the enterprise (Wei & Gui, 2002). Internal audit is traditionally viewed as a "troublemaker" and is often excluded by other departments (Wang, 2007).

More recent research, however, indicates that integrating internal control and internal

audit can add value to businesses. There is an interdependent relationship between internal control and internal audit, and you are in me and I have you typed (Ma, 2016). Internal audit and internal control are interdependent in that internal audit evaluates the effectiveness of internal control and suggests alterations to enhance internal control for value creation in the organisation (Xu, 1986). A strong internal control can provide support for the internal audit (Vijayakumar & Nagaraja, 2012), and an effective internal audit system helps a company deal with risks (Vijayakumar & Nagaraja, 2012). Internal control reform can affect internal audit, and internal audit effectiveness aids in internal control inspection. Ultimately, the two collaborate to safeguard the enterprise's health while significantly enhancing the quality of internal control (Wang, 2011; Wang & Zhang, 2015).

While modern enterprise managers have emphasised the significance of internal control and internal audit, they have not paid as much attention to their integration. Particularly unexplored is the effect of the interaction between internal control and internal audit on risk management in general and MFI risk management in particular. This study attempts to address this deficiency by empirically evaluating the interactive effect of the two variables on risk management. Thus, the role of internal control as a mediator between internal audit and risk management is studied.

2.6.2 Conceptual framework

Figure 1 provides a conceptual framework that illustrates the relationship between latent constructs and risk management performance, as well as the moderating effect of MFI ownership structure and the mediating role of internal control, based on the literature reviewed and the latent constructs described in Chapter Four.

Furthermore, it was assumed in the conceptual framework that MFI ownership moderates the relationship between the independent variables and the dependent

variables. In this study, moderating variables are those that influence the strength of the relationship between the risk management foundation variables (risk culture, board effectiveness, internal control, and internal audit) and risk management performance. Additionally, the role of internal control as a mediator between internal audit and risk management is investigated.

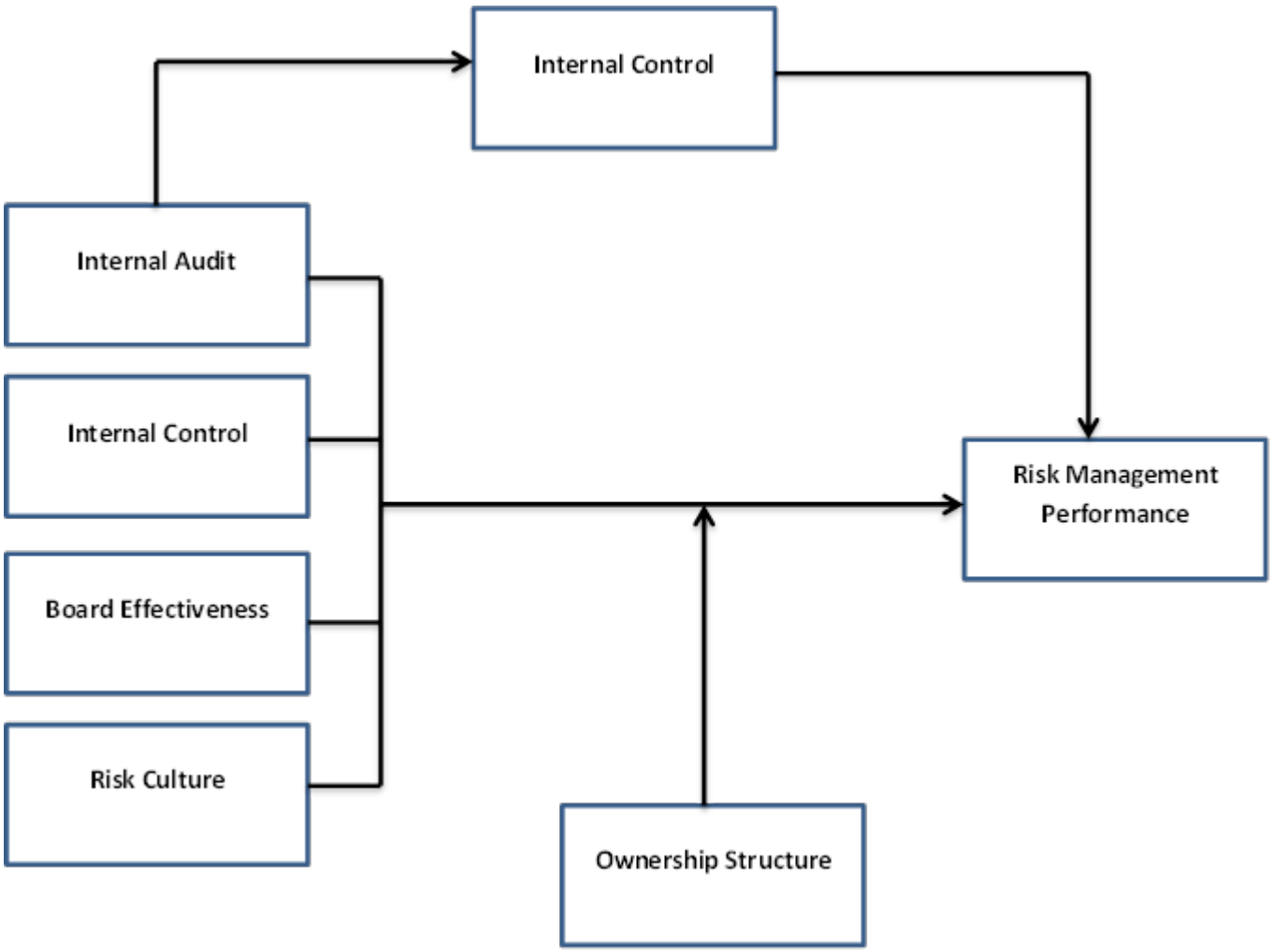

Figure 1: Conceptual framework

CHAPTER THREE: METHODOLOGY

3.1 Chapter introduction

This chapter describes the research methodology and design, as well as the procedures followed in calculating sample size, collecting data, and analysing results.

3.2 Research design and approach

Given that the research is problem-driven and focused on real-world application, the philosophical worldview under consideration is pragmatism. The research approach is pluralistic (mixed) and concerned with the repercussions of actions. Thus, data triangulation was employed, which combines quantitative and qualitative data collection techniques with a sequential explanatory approach. It is a mixed methods research design in which the researcher conducts quantitative research first, analyses the results, and then uses qualitative research to describe the results in greater depth. It is deemed explanatory since the qualitative data better explains the initial quantitative data results. In addition, the design is sequential since the first quantitative phase is followed by the qualitative phase (Creswell & Plano Clark, 2018). This method entails gathering both quantitative and qualitative data, combining these forms of information, and assuming distinct designs that may incorporate philosophical assumptions and theoretical frameworks. This method is predicated on the premise that the combination of qualitative and quantitative approaches provides a more comprehensive understanding of a research problem than either approach alone (Creswell & Plano Clark, 2017).

According to Creswell and Plano Clark (2018), a sequential explanatory mixed methods research design is the best way to answer research questions requiring a design that first collects quantitative data and then provides a qualitative explanation

for the quantitative results. This research approach thus allows for a more comprehensive examination of risk management in MFIs in terms of selected variables.

This sequential explanatory mixed methods research design adopts a pragmatic worldview that makes use of both quantitative and qualitative methods to approach the hypotheses and research questions in an effective manner. Using a sequential explanatory mixed methods research design enables further explanation of quantitative results through qualitative research. In a sequential explanatory mixed methods design, the quantitative portion of the research begins with a post-positivist worldview and transitions to a constructivist worldview when the qualitative phase begins (Creswell & Plano Clark, 2018). Therefore, the pragmatic approach permits the combination of these worldviews and the belief that it is appropriate to apply what worked best to each portion of the research as it evolved.

Risk management is a complex issue that necessitates a pragmatic worldview that considers multiple approaches and employs objective and subjective knowledge (Plano Clark, 2018). Therefore, the aforementioned design is most suitable for this study because it is exhaustive, permits the researcher to answer multiple research questions, and enhances the study's credibility in order to contribute to the existing body of knowledge. As the survey was collected first, followed by interviews to expand on the quantitative findings, a sequential explanatory mixed methods design was most suitable for answering the research questions posed by this study.

An important advantage of conducting the study using a mixed methods research design is that the multiple data collection and analysis platforms allowed for data triangulation, thereby enhancing the study's credibility. Triangulation is the method by which a researcher eliminates bias through the use of multiple data collection

techniques (Fusch, Fusch & Ness, 2017). By collecting a variety of data types, the analysis will be comprehensive (Fusch et al., 2017). Finally, triangulation through multiple data collection methods can also reduce barriers such as sample size, which can affect the validity of the study (Plano Clark, 2018).

3.3 Data sources and collection techniques

On the basis of the aforementioned chosen research design, both quantitative and qualitative data were collected. For greater dependability, quantitative data gathered via questionnaire are triangulated with qualitative data collected by in-depth interview. Members of MFI boards, senior management, internal auditors, CEOs, and branch managers were the data sources. The respondents were chosen based on their direct or indirect participation in the decision-making process and risk management issues. Quantitative data collection was followed by qualitative data collection. The primary data for quantitative analysis were obtained by using a questionnaire created by the researcher.

The data collection questionnaire is presented in Appendix D of this thesis. The questionnaire primarily collects two types of information. First, it collects the MFI profile and the profile of the respondents, including the MFI's age, the experience of respondents, and their educational background. Personal information such as name, phone number, and email address were omitted to encourage respondents' candour. The second section of the questionnaire consists of a series of five-point Likert scale questions that assess the respondents' perspectives on qualitative characteristics such as risk culture, board effectiveness, internal control, internal audit, and risk management performance. These questions were formulated after an exhaustive literature research and interview with an expert. A small number of MFI practitioners and academics were interviewed to validate the questionnaire and ensure that it

captures the essential constructs. In addition, opinions were collected in order to reformat surveys so that respondents may comprehend and reply appropriately. Before finalising the questionnaire for data collection, a pilot study was undertaken after the questionnaire was restructured. The respondents chosen for the pilot test were omitted from the actual data collection.

To acquire qualitative data, in-depth interviews with purposefully selected key informants were conducted. As is customary for the most effective qualitative questions, the interview questions were open-ended to encourage participants to express all their pertinent ideas.

3.4 Target population and sampling

As a population base, 38 actively operational MFIs were considered. The study population included both employees and managers. However, the researcher focused on employees and managers whose work relates directly or indirectly to risk management, as well as individuals with a greater grasp of risk and risk management. The target population in the study consists of the following: board members, CEOs, members of top management other than the CEO, branch managers, and internal auditors who provide independent assurance.

Board of directors: The board of directors is the highest governing body of MFIs and is ultimately accountable for governance and risk management on a global scale. According to the most recent information from the NBE, 249 boards serve the MFI industry (NBE, 2021).

CEOs: The CEOs of MFIs are the ultimate bodies accountable for the day-to-day operations and actual risk management of the institution. There are now 38 MFIs functioning in Ethiopia. This suggests there are 38 CEOs

Members of top management other than the CEO: The finance manager,

operations manager, and chief accountant are the three positions that are regarded to be part of the executive team. Based on the number of MFIs in operation in Ethiopia, these three positions employ a total of 114 people

Branch managers: Depending on the size of an MFI, multiple branches, each with a branch manager, can be established. According to NBE data, there are 1,007 MFI branches in Ethiopia, each with its own branch manager. Consequently, the total number of branch managers is 1,007.

Internal auditors: There are 1,176 internal auditors, with 38 of them serving as chief internal auditor.

As described in Table 1, the total population size is thus 2,584, based on the number of members of the target population that have been identified and the overall population size.

Table 1: Target population summary

No.	Population category	Population size
1.	Board of directors	249
2.	CEOs	38
3.	Members of top management other than the CEO	114
4.	Branch managers	1,007
5.	Internal auditors	1,176
Total population size		***2,584***

Source: Own collection from NBE,

The sample size for survey respondents was determined based on the target population indicated above. The population size was factored into the estimation of the sample size, with additional margins added to expand the sample size and

strengthen the study. It also examined the needs of the anticipated statistical instrument, SEM. Given a population size of 2,584, the researcher utilised multiple methods for estimating sample size. According to published tables by Israel (1992), the sample size for a population of 4,000 or more is predicted to be 364 (+5% precision level, 95% confidence level, and p = 0.5). Using Israel's proposed formula, (Israel, 1992), and based on the population size of 2,584, the estimated sample size for this study is 348, based on +5% precision levels, a 95% confidence level, and p = 0.5. At +5% precision levels, Yamane's (1967) simplified formula produces a sample size of 346.

The sample sizes provided by the researcher indicate the number of responses acquired, not necessarily the number of responses intended. Consequently, changes must be made to account for non-responses and to satisfy the sample size requirements of the selected statistical approaches. As a statistical procedure, SEM considers a variety of assumptions, one of which is sample size sufficiency. Bentler and Chou (1987) state that researchers may use as little as five cases per parameter estimate in SEM analysis if the data are well behaved (i.e., normally distributed, no missing data or outlying cases, etc.). According to their proposal, a sample size of 305, or 61 indicators multiplied by 5 cases each indicator is sufficient (Bentler & Chou, 1987). Nunnally (1967) claims that 10 cases per indicator variable (measured variable) is a commonly accepted rule of thumb for determining a sufficient sample size. Given that the data are highly kurtotic, Hoogland and Boomsma (1998) support Nunnally's (1967) proposal for a minimum sample size of 10 cases per observed variable.

This study proposes 61 observable variables and five latent variables, equating to around 12 observed variables per latent variable on average. The researcher wanted to err on the side of caution, so he determined the sample size to be 10 cases per

observed variable, which is more than the minimum sample size suggested by other experts. This is a safe sample size based on both size per observed variable and observed variable per latent variable evaluations. Using 10 cases per observed variable and 61 observed variables, a total sample size of 610 respondents was calculated (10 * 61). Such a lenient sample size was chosen to be prudent, allow for non-responses and incomplete responses, and maximise the likelihood of model validity.

The sample size for each respondent category is chosen using a technique of proportional stratified sampling. According to Black (1999), stratified sampling is a method that utilises a random sample from identified groupings (strata), subgroups, and so on. By selecting individual items from the stratum lists, it is possible to verify that specific groups are represented proportionally in the sample. The five groups of respondents stated in the population section acted as strata from which a proportional sample was drawn. Random sampling was used to select samples from each stratum. The researcher argues that personnel in different organisational positions have varying responsibilities for risk management, as well as different viewpoints on risk and risk management. Clearly, boards' perspective on risk management will differ significantly from that of top management, whose perspective will differ significantly from that of internal auditors. To consider representative respondents from each perspective, the researcher employed proportionate stratified sampling, where the organisational position of respondents in microfinance served as the means of sub-grouping.

In addition, the employment of this method yields a more efficient sample than would be feasible with a standard random sample. It is hypothesised that responders in different positions have diverse attitudes and perspectives about risk and risk

management, whereas individuals in the same position (stratum) hold similar opinions. The use of stratified sampling will reduce random sampling error because each group is internally homogeneous despite comparative variations between groups.

A second reason for selecting a stratified sample is to guarantee that the sample appropriately represents the population based on the stratification criterion. Occasionally, simple random sampling produces a disproportionate quantity of one group or another, resulting in a sample that is less representative than it could be. The sample size allocated proportionally is shown in the table below.

Table 2: Sample size from each stratum

Strata group	**Population per stratum**	**Total sample size**	**Proportionate sample size per stratum**
Board of directors	249	610	59
General manager	38		9
Senior management	1,121		265
Internal auditors	1,176		277
Total	2,584		610

3.5 Data collection methods

The gathering of data occurred in two distinct phases. After collecting quantitative data from primary sources, qualitative data were collected. In total, 610 survey questionnaires were distributed to a representative sample of respondents for the collection of quantitative data. The first half of the questionnaire centred on the demographic characteristics of the respondents and a few features of the microfinance

industry, while the second segment centred on the respondents' viewpoints or opinions regarding the risk management-related variables. The survey instruments for closed-ended questions were created using a Likert scale with a range of 1 to 5. Typically, five scales are used to obtain the opinion of respondents regarding the significance of each observable variable and hidden variable (Meyers et al., 2006). The five points correspond to the following responses: strongly disagree (1), disagree (2), neutral (3), agree (4), strongly agree (5).

The questionnaires were preliminarily tested by distributing them to academic peers who understood the topic and possessed research abilities in order to receive input on the measurement instruments' creation. The questionnaires were then pilot-tested on a subset of the target demographic, who were ultimately eliminated from the real data collection. Because of the challenges of the Covid-19 pandemic, the questionnaire was administered electronically.

Through in-depth personal interviews with intentionally selected key informants among the respondents, qualitative data were gathered. The purpose of the selection of a purposeful sample was to identify specialists among respondents with a higher level of experience and education, as determined from the demographic section of the questionnaires. The in-depth interviews were utilised to supplement the quantitative data collected with additional information that was not necessarily included in the questionnaire. The researcher self-administered the interviews in accordance with Covid-19 protocols, due to the interviewees' desire to discuss the topic face-to-face.

3.6 Methods of data analysis and interpretation

Due to the sequential explanatory mixed methods research design used in this study, the quantitative and qualitative data were individually evaluated before being merged for judicious interpretation. Data analysis for the quantitative section spanned from the

most elementary descriptive analysis to multivariate analysis techniques, such as SEM with confirmatory factor analysis and path analysis. The researcher analysed the quantitative data using SPSS version 26 and IBM SPSS AMOS version 23 to produce inferential results. Integrating the quantitative and qualitative analytical results to understand and draw conclusions was the final step. Before employing the chosen tools of analysis in each quantitative study, statistical significance and model fitting were evaluated.

3.6.1 Quantitative data analysis

In the initial phase of the quantitative analysis, descriptive methods were employed to offer a summary of the study data on the kind and form of the variables, as it was directly extracted from the data sources. It is intended to indicate the mean and standard deviation scores to provide a summary of the respondents' perceptions regarding the importance and ranking of the variables for risk management.

SEM is used to analyse the effects of the latent variables and associated indicator variables on the risk management performance of MFIs.

As discussed in the preceding chapters, the conceptual framework is comprised of five constructs or latent variables, which are denoted by groupings of measured variables. Since the research is constructed with latent factors that are represented by many observed variables, SEM is appropriate for correlating the multiple observed variables to their underlying latent variables, which show the risk management performance (Collier, 2020). In addition, as suggested by Meyers et al. (2006), SEM promotes the combination of two or more latent variables and their related indicator variables. The comprehensive SEM can be broken down into the measurement model and the structural model. Although a variety of goodness-of-fit indices are used to evaluate the model as a whole, SEM additionally evaluates the measurement and structural models

independently because it is possible that they fit the data differently.

The measurement model indicates the extent to which indicator variables capture the substance of the latent variable (factor). It is called a measurement model because the indicator variables are measured variables that provide access to or an indication of the intangible and unmeasurable latent variable. The structural model is comparable to route analysis in that the researcher can examine the causal relationship between the theory's most important variables. These significant factors are constructs or latent variables that the researcher deemed to be vital or central. SEM therefore evaluates both the measurement model (how well the measured variables define their corresponding latent variable/construct) and the structural model (how well the latent constructs link to one another) (Collier, 2020).

Utilising path analysis, SEM is lauded for its ability to eliminate measurement error issues. Using many measures for a construct is the most effective method for minimising the impact of the measurement error of a single indicator. Because it integrates a measurement model (confirmatory factor analysis (CFA)) and a structural model (regression or route analysis) into a single statistical model, it is regarded as superior to other techniques. The most important advantage of employing SEM is that it acknowledges measurement error and provides an alternative approach for assessing primary variables of interest by incorporating latent variables.

The measurement model was evaluated through CFA using "model-fit indices", in the sense that CFA determines whether the number of factors and the loadings of measured variables on those factors correspond to what would be expected based on prior theory. On the basis of prior theory, indicator variables were chosen, and factor analysis was employed to determine whether they loaded with the projected number of factors. Cronbach's alpha was utilised to determine the degree to which various

indicators for a latent variable are correlated (Cronbach & Meehl, 1955). Following a test of model fit and a CFA, a structural model with path analysis was utilised to quantify the explanatory link between latent constructs. SEM path analysis is utilised to examine the hypothesised link between the independent and dependent variable.

One of the benefits of employing SEM is the ability to determine how well the sample data fit the hypothesised model. By comparing the calculated covariance model to the observed covariance matrix, the model fit evaluates the plausibility of the hypothesis (Hair, Ringle & Sarstedt, 2011). There are numerous markers for evaluating model fit to determine whether or not the data sample fits the theoretical model. Model fit indices include the chi-square goodness of fit (CMIN value), the goodness of fit index (GFI), the normed fit index (NFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA).

According to Hair, Black, Babin, Anderson, and Tatham (2010: 654), the SEM decision process consists of six stages (see Figure 2: The six-stage process for SEM). Typically, the first four stages are covered by the measurement model, while the last two are handled by the structural model.

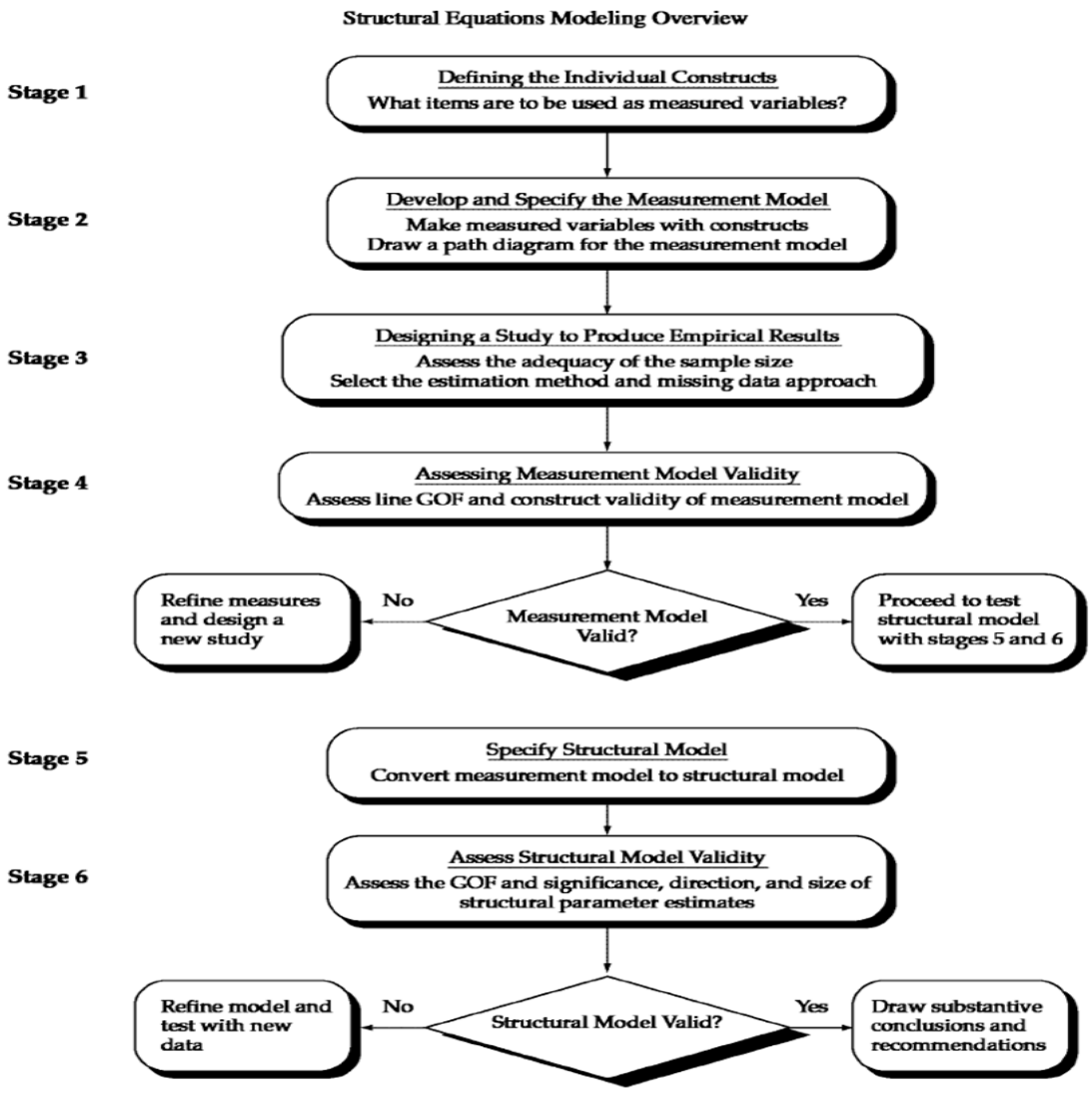

Figure 2: The six-stage process for SEM (Source: Hair et al., 2010)

3.6.2 Qualitative data analysis

In this instance, the qualitative data analysis consisted of the examination of a significant number of written opinions gathered through in-depth interviews with various respondents. The intention was to conduct in-depth interviews with 15 respondents chosen on the basis of their educational background and experience as determined during the quantitative data-gathering phase. In actuality, however, the interview was conducted with 12 respondents, due to the fact that three participants failed to plan their busy schedules due to their many responsibilities. The acquired

data were categorised according to the research questions. According to Kuhil (2013), Miles and Huberman (1994) presented a three-phase qualitative data analysis technique applicable to this type of research: data reduction, data presentation, and conclusion drawing and verification.

During the step of data reduction, significant data are selected, streamlined, and summarised from interviews. During the data display step, the reduced data are displayed in an orderly and understandable format, allowing the researcher to draw conclusions about the desired components of the research. The data are compiled and articulated using descriptive terminology. During the final phase of qualitative data analysis, the conclusion drawing and interpretation phase, meaning and context are assigned to the studied data by searching for a descriptive pattern in the data and generating conclusions in relation to the research questions. As a method of triangulation, the conclusion is subsequently evaluated relative to the outcomes of the quantitative data.

3.7 Validity and reliability

Before evaluating the data to evaluate the given hypothesis, SPSS and AMOS were used to verify validity and reliability (Gaskin, 2012).

According to Kerlinger & Lee (2000), an instrument is considered reliable if it consistently produces the same results. Scale reliability is the internal consistency of a latent variable and is often tested with the Cronbach's alpha coefficient. The goal of evaluating the construct's reliability is to determine how each indicator variable reliably measures its corresponding hidden variable.

Validity, in contrast, refers to the accuracy of a measuring device in displaying the right result. Three measures were used to determine validity: content validity, convergent validity, and discriminant validity.

Content validity examines the degree to which a constituent variable corresponds to its respective construct (Collier, 2020). As content validity cannot be measured using statistical tools, the researcher relied on an extensive literature review of existing empirical studies and theoretical frameworks to examine constructs and their factors. In order to identify the most significant observable factors and latent variables, the researcher conducted an exhaustive search of the relevant literature.

Convergent validity refers to the degree to which a latent variable correlates with questions designed to measure the same latent variable. According to Collier (2020: 34), convergent validity determines if the indicators for a construct are all measuring the same thing. Ideally, convergent validity is evaluated by establishing if the items on a scale converge or load together on a single construct in the measurement model. Convergent validity is present if the factor loadings are statistically significant. To evaluate convergent validity, the researcher evaluated the overall fit of the measurement model as well as the amount, direction, and statistical significance of the predicted standardised regression weight of each indicator variable as it converged to the corresponding latent variable (Collier, 2020).

Discriminant validity refers to the degree to which latent variables are distinct. If the latent variable has no correlation with other variables, its validity is established. By referring to average variance extracted (AVE) and maximum shared variance (MSV), one can determine if the measured variables conform to discriminant validity or not (Hair et al., 2011).

The statistical significance test determines whether the findings of a statistical investigation reveal a pattern other than randomness. Regarding directed hypotheses, the statistical significance level proposed in assessing the significance is the generally employed level for social science research of 5% (Meyers et al., 2006). The researcher

intended to put the degree of confidence at 95% for this study.

Due to the use of a sequential explanatory mixed methods research design, the qualitative part of the study followed the quantitative data gathering and analysis. It was considered that the data acquired from experts in the research area were reliable and that it builds on the quantitatively obtained and evaluated data. In order to retain credibility, the researcher chose subject matter experts as respondents. In addition, the researcher attempted to ensure the reliability of qualitative data by selecting samples that were representative of various population categories.

3.8 Ethical considerations

A fundamental component of research, ethical consideration implies that researchers treat participants and the data they collect with integrity, honesty, and professional standards. Ethical considerations are of the utmost importance in all research, but especially in studies that examine the social behaviour of participants (Hesse-Biber & Leavy, 2010). In this regard, the researcher exerted great effort to preserve anonymity and confidentiality by establishing trust with the respondents and explaining the significance of the study. A discussion was held with each MFI representative in order to establish a shared understanding of the goal of the research and the manner in which the information they contribute will be handled.

On the basis of UNISA's policy on research ethics, all research processes incorporated ethical considerations pertaining to anonymity, confidentiality, and the implications of results. Therefore, the researcher has taken precautions to ensure that participant responses remain anonymous. The researcher also submitted an application for ethical clearance and received approval from the Research and Ethics Review Committee of UNISA (ERC Reference # 2021 CRERC-028 (FA)), before

beginning data collection. A confirmation letter of ethical approval is included in Appendix A.

In addition to ensuring each participant that anonymity would be maintained, it was also stated openly by requesting participants to omit their names from the questionnaire. This was also conveyed to respondents via discussion and was stated explicitly in the introduction to the research questions. Additionally, participants were informed of how the study's findings would be processed. Concerning this issue, the researcher attempted to persuade the participants of the potential benefits of the study, as well as the fact that the study was conducted solely for academic purposes and that its application, if any, would not have any negative effects on the participant or the company they represent. All parties (organisations and individuals) were provided with pertinent information about the research in order for them to freely provide their consent before being recruited. To this purpose, participants and gatekeepers were given the approved supporting documents – an information sheet and a consent form – that describe the research in straightforward terms (see appendices).

In accordance with the principles of anonymity and confidentiality outlined in research ethics, the researcher pledged that participants' responses would not be divulged or displayed in a manner that would reveal their identities. In addition, all physical and digital documents (such as interview transcripts and computers) containing participant information would be safeguarded and managed with care to avoid illegal access. Participants in the study were told that the research procedure would be transparent and that their identities would be protected using codes and false names. As long as their privacy and identity are safeguarded, their participation in the study poses no threat to their employment or reputation. The collected data were thereafter managed

in accordance with the ethical guidelines for conducting research.

CHAPTER FOUR: RESEARCH VARIABLES AND HYPOTHESES

4.1 Chapter introduction

This chapter describes and organises the study's research variables, which were introduced in the literature review. This chapter attempts to outline the hypothesised elements that influence the risk management in MFIs by categorising them into latent variables and the associated indicator (measured) variables.

4.2 Forms of variables in the research

According to Creswell (2014), relating the variables in the research question makes it easier to determine how the data collection relates to the variables in the research question or hypothesis. The variables in this study are classified as latent variables and indicator variables, as described below (Meyers, Gamst, & Guarino, 2006).

4.2.1 Latent variables vs indicator variables

SEM is most useful when there are interdependent constructs. Contrary to observed variables, which can be assessed directly through a questionnaire, constructs are abstract ideas that cannot be measured simply by a single question. It necessitates a succession of observed variables that express the construct. This phenomenon is also known as a latent variable. In SEM, the term "latent variable" typically refers to constructs and indicators for observable variables. Consequently, an observable variable may act as a signal of a latent variable. Kenny, Kashy, and Bolger (1998) state that any latent variable should have at least two indications. Latent variables are thus constructs that are not directly or precisely measured or seen and can be evaluated indirectly via indicator variables.

Measured variables, however, are variables for which the researcher can acquire actual data. These variables are linked to data entries from questionnaire-based data

sources. In numerous scholarly works, the measured variables are also referred to as manifest variables, indicator variables, and observable variables.

Meyers et al. (2006) explain that, in multivariate research designs, it is necessary to build a model that illustrates how the variables in the study are related to or explained by one another, such as path analysis and SEM.

4.2.2 Exogenous vs Endogenous variables

Due to the fact that SEM is a graphical depiction of different interdependent interactions, there are several connected independent and dependent variables. Exogenous variables are analogous to independent variables that have a positive or negative effect on endogenous variables. Endogenous variables are comparable to the dependent variable and are directly or indirectly affected by exogenous variables (Kunnan, 1998).

4.3 Latent Variables and their Operational Designation

On the basis of the findings of the literature review, it can be argued that risk management performance and its associated effects should be produced based on the selected constructs. The researcher therefore identified four latent variables believed to influence the risk management performance of MFIs. The combination of the four exogenous variables and the dependent endogenous variable, risk management performance, resulted in the proposal of five latent constructs.

However, the five variables by themselves do not resolve all risk management challenges. In addition, the model simultaneously contains both seen and unobserved variables. Numerous observable indicator variables are used to measure the unseen variables. Various techniques, such as SEM, an extension of familiar techniques such as analysis of variance (ANOVA), multiple regression analysis, and factor analysis,

enable the researcher to answer multiple interrelated research questions in a single systematic and comprehensive analysis by modelling the relationships among many independent and dependent constructs concurrently (Holye, 2012).

The researcher has evaluated the following five latent constructs.

Risk culture: Risk culture is defined as:

> the norms and traditions of conduct of individuals and groups within an organization that determine how they recognize, interpret, discuss, and act on the risk the organization faces and the risks it takes. (IIF, 2011)

The Basel Committee (2011) defines risk culture as the collective set of individual and corporate beliefs, attitudes, competencies, and behaviour that illustrates a company's approach to risk management. To instil an effective risk culture, each member of the organisation must comprehend the MFI's attitude to risks, assume personal responsibility for risk management in all activities, and encourage others to follow their lead.

Board effectiveness: The MFI board refers to the supreme governing body of the MFI and the entity responsible for the MFI's risk management. Various elements are regarded as essential for the board's effective performance of their risk governance role, including: the structure and composition of the board, including board size, diversity of skills and expertise, experience in the finance industry (MFI and banks), training acquired, and experience in risk management; and the board's commitment to its roles and responsibilities in terms of the level of involvement of the members in bolstering the safety and financial stability of the institution (Thrikawala & Reddy, 2016)

Internal control: Internal control is the process designed and implemented by those responsible for governance, management, and other personnel to provide reasonable assurance about the achievement of the entity's objectives with respect to the

reliability of financial reporting, the effectiveness and efficiency of operations, and compliance with applicable laws and regulations (COSO, 2013).

Internal audit: According to the IIA (2011), internal audit is an impartial and objective assurance and consulting activity meant to provide value and improve an organisation's operations. It assists a company in achieving its goals by bringing a systematic, disciplined approach to evaluating and enhancing the efficacy of risk management, control, and governance systems.

Risk management: Risk management is a systematic process comprising the following steps: identifying risk, analysing and assessing risk, risk response planning, and monitoring and controlling risk in order to minimise the likelihood of loss and threat to corporate performance (MicroSave, 2010).

4.4 Indicator variables and their measures

The latent variables are intended to be measured by constructing several indicator variables, which are in turn derived from the literature review. The latent variables and their related indicator variables are presented as shown in Table 3.

Table 3: Framework of latent variables and their indicator variables

Latent variables	**Indicator (measured) variables**

Risk culture	1. Presence of clearly articulated risk management strategy 2. Integration of risk management function into the governance structure of the MFI 3. Integration of internal audit function into the risk governance structure of the MFI 4. Establishment by the board of risk awareness culture that is widely understood and adopted throughout the MFI 5. Availability of training to all functions meant to enhance the understanding and execution of risk management responsibilities 6. Integration of risk management with performance management systems in the MFI 7. Demonstrated leadership support for risk management at the top 8. Practical accountability to individuals for their risk-taking actions in the MFI 9. Encouragement of staff members to challenge decisions 10. Linking risk management to all strategies of the MFI 11. Participation of all staff in risk management in the MFI 12. Availability of fully enforced code of conduct in the MFI

Board effectiveness	13. Adequacy of the board size 14. Sufficiency of the competence of board members to discharge their responsibilities 15. Board members' knowledge of the communities that the MFI serves 16. Board independence in terms of having clear separation of their roles from that of chairperson 17. Direct reporting culture to the board by internal auditors 18. Well-trained board members in risk management 19. Effectively functioning risk management sub-committee 20. Well-diversified board in terms of qualifications, experience, gender, etc. 21. Awareness by board members of risk management requirement by the NBE 22. Board involvement in developing strategic directions and planning 23. Regular attendance at board meetings and sub-committee meetings 24. Evaluation by board of management team's performance 25. Adequate understanding and recognition of the importance of risk management

Internal control	26. Demonstrated commitment to integrity and ethical values 27. Board independence from management 28. Oversight by the board of the development and performance of internal control functions 29. Well-established structure, authority, and responsibility and reporting lines in pursuit of internal control 30. Individuals held accountable for their internal control responsibilities 31. Material risks recognised and continuously assessed 32. Internal control able to mitigate identified risk 33. Impactful changes identified and assessed 34. Potential for fraud considered in assessing risk 35. Control activities selected and developed 36. Control activities deployed through policies and procedures 37. Control activities supported through technology 38. Relevant quality information used 39. Availability of information dissemination system 40. Maintenance of effective channel of communication 41. Ongoing evaluation conducted to ascertain the functioning of internal control 42. Ongoing evaluation conducted to identify deficiencies 43. Prompt corrective actions against internal control deficiencies

Internal audit	44. Competence of internal staff 45. Adequacy of the number of qualified audit staff 46. Internal audit independence and objectivity 47. Clear organisational policies and procedures to guide internal audit operation 48. No scope limitation placed on internal audit 49. Cooperation with the audit committee 50. Top management support to internal audit 51. Existence of an audit follow-up process 52. Supportive control environment 53. Attractive remuneration and benefit packages 54. Regular performance evaluation of audit department
Risk management performance	55. Write-off ratio, NPL, and PAR in the MFI all within the required standard 56. Consistently improving (declining in magnitude) NPL and PAR over time 57. Consistently declining collection cost as a ratio of loan outstanding 58. Adequate liquidity (cash) to fund MFI's planned growth 59. Neither shortage nor overage of cash flows, because of consistent synchronisation (matching) of cash inflows and cash outflows in the MFI 60. Infrequent fraud incidents in the MFI 61. A lack of reliable management information systems is not a worry for MFIs

4.5 Latent variables and their indicator variables

Based on the latent variables and their corresponding indicators, as stated in the previous section, the symbolic identification of each indicator variable and its associated latent variable is provided in Table 4 for use in the pictorial route analysis in SEM, as proposed in the research methodology.

Table 4: Latent variables and the designated indicator variables

Latent variables	Indicator variable	Label of indicator variable
Risk culture	RC1	1. Presence of clearly articulated risk management strategy
	RC2	2. Integration of risk management function into the governance structure of the MFI
	RC3	3. Integration of internal audit function into the risk governance structure of the MFI
	RC4	4. Establishment by the board of risk awareness culture that is widely adopted and understood throughout the MFI
	RC5	5. Regular training for all functions, including the board, to understand and execute their risk management responsibilities
	RC6	6. Integration of risk management with performance management systems in the MFI
	RC7	7. Demonstrated leadership support for risk

		management at the top
	RC8	8. Holding individuals accountable for their risk-taking actions in the MFI
	RC9	9. Encouragement of staff to challenge decisions
	RC10	10. Linking risk management to all strategies of the MFI
	RC11	11. Participation of all staff in risk management in the MFI
	RC12	12. Availability of a fully enforced code of conduct in the MFI
Board effectiveness	BSC13	13. Adequate board size
	BSC14	14. Sufficient competence of board members to discharge their responsibilities
	BSC15	15. A strong finance, banking, or risk management background by a significant number of board members
	BSC16	16. Board members' knowledge of the communities that the MFI serves
	BSC17	17. Board independence in terms of having clear separation of their roles from that of chairperson
	BSC18	18. Direct reporting culture to the board by internal auditors
	BSC19	19. Well-trained board members in risk management
	BSC20	20. Effectively functioning risk management sub-

		committee
	BSC21	21. Relevance of experience and skills of risk management sub-committee members to effectively assume their functions
	BSC22	22. Well-diversified board in terms of qualifications, experience, gender, etc.
	BSC23	23. Awareness by board members of risk management requirement by NBE
	BCRR24	24. Board involvement in developing strategic directions and planning
	BCRR25	25. Sufficient attention given to risk management in board agenda items
	BCRR26	26. Regular attendance at board meetings and sub-committee meetings
	BCRR27	27. Evaluation by board of management team's performance
	BCRR28	28. Oversight of compliance to internal and regulatory requirements
	BCRR29	29. Evaluation of board performance, either individually or collectively
	BCRR30	30. Adequate understanding and recognition of the importance of risk management
	BCRR31	31. Payment of competitive compensation to the board
Internal		**Control environment**

control	ICEce32	32. Demonstrated commitment to integrity and ethical values
	ICEce33	33. Board independence from management
	ICEce34	34. Board oversight of the development and performance of internal control functions
	ICEce35	35. Well-established structure, authority, and responsibility and reporting lines in pursuit of internal control
	ICEce36	36. Demonstrated commitment to attract, develop, and retain competent individuals in pursuit of internal control objectives
	ECEce37	37. Individuals held accountable for their internal control responsibilities
		Risk recognition and assessment
	ICEra38	38. Material risks recognised and continuously assessed
	ICEra38	39. Internal control able to mitigate identified risk
	ICEra40	40. Impactful changes identified and assessed
	ICEra41	41. Potential for fraud considered in assessing risk
		Control activities
	ICEca42	42. Control activities selected and developed
	ICEca43	43. Control activities deployed through policies and procedures

	ICEca44	44. Control activities supported through technology
		Information and communication
	ICEic45	45. Relevant quality information used
	ICEic46	46. Availability of information-dissemination system
	ICEic47	47. Maintenance of effective channel of communication
		Monitoring activities
	ICEma48	48. Ongoing evaluation conducted to ascertain the functioning of internal control
	ICEma49	49. Ongoing evaluation conducted to identify deficiencies of internal control
	ICEma50	50. Corrective actions promptly deployed against internal control deficiencies
Internal audit	IA51	51. Competence of internal auditors
	IA52	52. Adequate size of internal audit department
	IA53	53. Internal audit independence and objectivity
	IA54	54. Clear organisational policies procedures to guide internal audit operation
	IA55	55. Lack of scope limitation
	IA56	56. Management support of internal audit
	IA57	57. Cooperation with the audit committee
	IA58	58. Existence of a follow-up process

	IA59	59. Supportive control environment
	IA60	60. Attractive remuneration and benefit packages
	IA61	61. Regular performance evaluation of audit department
Risk management performance	RMP1	62. Write-off ratio, non-performing loan (NPL), and portfolio at risk (PAR) in the MFI are all within the required standard
	RMP2	63. Consistently improving (declining in magnitude) NPL and PAR over time
	RMP3	64. Consistently declining collection cost as a ratio of loan outstanding
	RMP4	65. Adequate liquidity (cash) to fund planned growth
	RMP5	66. Neither shortage nor overage of cash flows, because of consistent synchronisation (matching) of cash inflows and cash outflows in the MFI
	RMP6	67. Infrequent fraud incidents in the MFI
	RMP7	68. Reliable management information system

4.6 The Hypothesised relationship

Based on the literature review, conceptual framework, and variable definition, the study puts forth the following nine hypotheses:

H1: Risk culture positively affects risk management performance in MFIs.

H2: Board effectiveness positively affects risk management performance in MFIs.

H3: Internal control positively affects risk management performance in MFIs.

H4: Internal audit positively affects risk management performance in MFIs.

H5: MFI ownership structure moderates the relationship between risk culture and risk management performance in MFIs.

H6: MFI ownership structure moderates the relationship between board effectiveness and risk management performance in MFIs.

H7: MFI ownership structure moderates the relationship between internal control and risk management performance in MFIs.

H8: MFI ownership structure moderates the relationship between internal audit and risk management performance in MFIs.

H9: The effect of internal audit on risk management performance of MFIs is mediated by internal control.

CHAPTER FIVE: DATA PRESENTATION AND ANALYSIS

5.1 Chapter introduction

This chapter presents and analyses the research data. For preliminary data analysis, including data screening, frequencies and percentages, reliability analysis, exploratory factor analysis (EFA), and descriptive analysis of all proposed constructs, SPSS Statistics version 26 was utilised. AMOS version 23 was used for the in-depth analysis of the relationships between the constructs (variables) within the proposed research model. Two steps were used: CFA to assess the construct validity and test the model fit, and SEM to test the hypothesised relationship between the independent and dependent variables.

Section 5.2 presents a preliminary review of the data, and section 5.3 provides the EFA results obtained by principal component analysis in order to assess the modified (adapted) instruments that have been contextualised for the microfinance industry in Ethiopia. This is followed by an assumption test for data normalcy in section 5.4. The following section, section 5.5, provides a reliability analysis to determine the structures' dependability. In section 5.6, the demographic profiles of the respondents and MFIs are discussed. Section 5.7 then provides a descriptive analysis of all the variables included in the study model. In section 5.8, the use of CFA to observe construct reliability, validity, and model fit is described. Section 5.9 provides a study of the structural model and testing of the hypotheses, both directly and through moderation. Section 5.10 concludes the chapter with an analysis of the qualitative data acquired via in-depth interviews.

5.2 Preliminary data examination

Prior to using the data for the primary study, a preliminary inspection of the data was

performed to identify missing data, outliers, and normality. A data screening test was performed to exclude answers with missing data. In this study, 610 respondents were contacted, but only 454 completed and returned the surveys, representing a response rate of 74.4%. Since the online questionnaire was structured to ensure that all questions are answered before proceeding to the next question, there were no incomplete questions or missing data.

In order to guarantee the accuracy of the data, descriptive statistics for each item were also examined. In this regard, the responses to questions that yielded out-of-range values on the original surveys were compared for more precision.

5.3 Exploratory factor analysis (EFA)

Due to the fact that some of the measurement scales are modified from previous research, an EFA was undertaken to contextualise the scales for Ethiopian MFIs. Using a principal component analysis and varimax rotation with a minimum factor loading of 0.50, an EFA was conducted. The communality of the scale, which displays the amount of variance in each dimension, was also evaluated to ensure adequate explanation levels.

The overall significance of the correlation matrix was weighted using Bartlett's Test of Sphericity, which offers a measure of the statistical probability that some of the matrix's components have a significant correlation. The initial results were statistically significant, x^2 (n = 454) = 28905.339 (p < 0.001), which indicates its suitability for factory analysis.

The Kaiser-Meyer-Olkin (KMO) test, or measure of sample adequacy (MSA), which shows the data's suitability for factor analysis, was 0.949. In this regard, data with MSA values greater than 0.800 are suitable for factor analysis.

Table 5: KMO and Bartlett's Test of Sphericity: first version

KMO (MSA)		0.949
Bartlett's Test of Sphericity	Approx. chi-square	28,905.339
	Df	2,278
	Sig.	0.000

However, in this initial EFA, certain items failed to load significantly on any dimension, for example: BCRR31: "Payment of competitive compensation to the board"; ICMA49: "Ongoing evaluation conducted to identify deficiencies of internal control"; and ICCE36: "Demonstrated commitment to attract, develop, and retain competent individuals in pursuit of internal control objectives".

Five items showed communalities values less than 0.50: BSC15: "A strong finance, banking, or risk management background by a significant number of board members"; BSC21: "Relevance of experience and skills of risk management sub-committee members to effectively assume their functions"; BCRR25: "Sufficient attention given to risk management in board agenda items"; "BCRR29: "Evaluation of board performance, either individually or collectively"; and BCRR30: "Adequate understanding and recognition of the importance of risk management ". As a result, the five items were eliminated from further analysis on the grounds that they do not adequately represent the underlying construct.

The researcher repeated the EFA, but left out these items. This new research proved the existence of five-dimensional structures. The MSA calculated by the KMO test was 94.9%. The factor solution produced from this analysis yielded five factors for the scale that accounted for 68.018% of the data variation. The Bartlett's Test of Sphericity was significant, and all communalities were above the minimum value of 0.50.

Table 6: KMO and Bartlett's Test of Sphericity: second version

KMO (MSA)		.949
Bartlett's Test of Sphericity	Approx. chi-square	26,674.614
	Df	1,711
	Sig.	.000

The factor loadings of the final EFA result are presented in Table 7.

Table 7: Factor loadings of final EFA result

Items	**1**	**2**	**3**	**4**	**5**
Risk culture					
RC1	.719				
RC2	.750				
RC3	.795				
RC4	.794				
RC5	.766				
RC6	.764				
RC7	.814				
RC8	.756				
RC9	.750				
RC10	.765				
RC11	.699				
RC12	.727				
Board effectiveness					
BSC13		.760			
BSC14		.715			
BSC16		.721			

Items	1	2	3	4	5
BSC17		.870			
BSC18		.789			
BSC19		.754			
BSC20		.615			
BSC22		.796			
BSC23		.837			
BCRR24		.736			
BCRR26		.636			
BCRR27		.745			
BCRR28		.593			
Internal control					
ICEce32			.835		
ICEce33			.833		
ICEce34			.860		
ICEce35			.648		
ICEce37			.847		
ICEra38			.830		
ICEra39			.841		
ICEra40			.692		
ICEra41			.591		
ICEca42			.865		
ICEca43			.661		
ICEic45			.857		
ICEic46			.819		

Items	1	2	3	4	5
ICEic47			.674		
ICEma48			.598		
ICEma50			.592		
Internal audit					
IA51				.861	
IA52				.666	
IA53				.603	
IA54				.646	
IA55				.628	
IA56				.742	
IA57				.588	
IA58				.804	
IA59				.846	
IA60				.877	
IA61				.783	
Risk management performance					
RMP1					.872
RMP2					.858
RMP3					.863
RMP4					.859
RMP5					.854
RMP6					.743
RMP7					.723

5.4 Testing the normality assumption

Since verifying normality is necessary in multivariate analysis to ensure the validity and reliability of the data (Hair et al., 2010), the normality test is used to determine whether or not the data are regularly distributed. Skewness, which assesses the symmetry of the distribution, and kurtosis, which offers information on the height of the distribution, are used to test for normality (Pallant, 2010).

According to Tabachnick, Fidell, and Ullman (2013), the typical range for the skewness-kurtosis value is 2.58, and the dataset (as indicated in Appendix F, ranges between –0.77 and +0.307) was determined to be normal. It is consequently proven that there is no substantial concern with the dataset's lack of normalcy.

5.5 Construct reliability

The reliability of constructs in the main study was checked using Cronbach's alpha. The Cronbach's alpha value for constructs ranged from 0.94 to 0.966, suggesting that the constructs had adequate reliability. This is because the reliability values in the range are well above the benchmark value. This means that the items related to each construct used in the proposed model were positively correlated to one another (Hair et al., 2010). The Cronbach's alpha value for each construct is presented in Table 8.

Table 8: Construct reliability

Construct	**Cronbach's alpha recommended value**	**Cronbach's alpha obtained value**
Risk culture	> 0.70	0.955
Booard effectiveness	> 0.70	0.948
Internal control	> 0.70	0.966
Internal audit	> 0.70	0.952

Risk management performance	> 0.70	0.940

5.6 Profiles of respondents and MFIs

The target sample for the survey consisted of actively operating Ethiopian MFIs, as well as their boards and key staff members. As mentioned, a total of 610 questionnaires were distributed, and 454 were returned with complete responses, indicating an overall response rate of 74.4%. Table 9 presents the demographic information of the respondents and the MFIs.

Table 9: Profiles of respondents and MFIs

Demographics	**Sub-category**	**Frequency**	**%**
MFI ownership type	NGO based	240	52.9
	Private	214	47.1
No. of years in operation	1–10 years	108	23.8
	11–20 years	82	18.1
	21–30 years	264	58.1
Experience in MFI/banking industry	1–10 years	234	51.5
	11–20 years	187	41.2
	21–30 years	33	7.3
Educational level	Grade 9–12	0	0
	Diploma	6	1.3
	Degree and above	443	97.6
	Other	5	1.1
Current position/job	Member of board	56	12.3

title	CEO	9	2.0
	Member of senior management	211	46.5
	Internal auditor	178	39.2
	Other	0	0
Area of specialisation	Accounting and finance or banking	160	35.2
	Management and related	141	31.1
	Economics	110	24.2
	Law	14	3.1
	Other	29	6.4

As seen in Table 9, 240 respondents, or 52.9%, work for MFIs supported by NGOs, while 47.1% work for MFIs run by commercial companies. Almost equal proportions of respondents are represented by both ownership types, according to the findings. Regarding the age of MFIs, approximately 76% of respondents are employed by MFIs that have been providing microfinance services for more than 10 years, demonstrating that many MFIs are mature and experienced in the market.

In addition to the age of the MFI for which respondents work, individuals were asked about their banking and microfinance industry experience. More than 50% of respondents had one to 10 years of experience in the banking and microfinance sector, while just 7.3% had more than twenty years of experience in these industries. Almost all of the respondents (97.6%) indicated holding a bachelor's degree or higher. This suggests that responders were sufficiently educated to comprehend and answer questions with professionalism and attention. The respondents' current positions in

their respective MFIs included 56 board members (12.3%), nine CEOs (2%), 211 members of senior management (46.5%), and 178 internal auditors (39.2%).

In terms of areas of specialisation, respondents with a background in accounting and finance or banking totalled 160 (35.2%), management and related fields totalled 141 (31.1%), economics totalled 110 (24.2%), law totalled 14 (3.1%), and others totalled 29 (6.4%). It can thus be observed from the composition of areas of specialisation that there are a sufficient number of respondents from a range of disciplines, with accounting and finance, management, and related fields comprising the majority.

5.7 Descriptive statistics of latent variables

Descriptive statistics such as the mean and standard deviation for each independent and dependent variable used in the research are supplied in order to evaluate the reaction of participants in terms of the average response and the dispersion of the response around the mean. The mean score ranges for the five-point Likert scale are as follows (Pimentel, 2010): (1) strongly disagree (1 to 1.80), (2) disagree (1.81 to 2.60), (3) neutral (2.61 to 3.40), (4) agree (3.41 to 4.40), and (5) strongly agree (4.41 to 4.80). (4.21 to 5.00)

5.7.1 Risk culture

This thesis conceptualises risk culture as a construct to evaluate how respondents in MFIs perceive, comprehend, and act in connection to risk, as well as the shared risk management values, beliefs, knowledge, and understanding. Much existing literature argues that the establishment of a risk culture within an organisation is a crucial component of effective risk management (IIF, 2008).

This variable was tested using a five-point Likert scale and 12 items adapted from literature and other sources. The range of the mean result is 2.95 (0.89) to 3.50 (1.03),

with an overall mean value of 3.23 (0.89). Although respondents had generally favourable responses to MFIs' endeavours to integrate the risk management function (RC2) and internal audit function (RC3) into their risk governance framework, respondents were generally neutral (or only partially agreed) on the remaining risk culture indicators. In terms of supporting and encouraging risk culture, the total mean score of 3.23 likewise reflects a neutral stance regarding MFIs. Respondents also indicated that the MFIs employing them provided fairly limited continual training to their employees in order to improve their awareness and execution of risk management obligations. (RC5).

Table 10: Descriptive statistics for risk culture

Item	Mean	Standard deviation	Mean (%)
RC1	3.32	1.06	66%
RC2	3.50	1.03	70%
RC3	3.41	1.10	68%
RC4	3.12	1.08	62%
RC5	2.95	0.89	59%
RC6	3.12	1.02	62%
RC7	3.20	1.05	64%
RC8	3.27	0.93	65%
RC9	3.20	0.97	64%
RC10	3.17	1.00	63%
RC11	3.23	0.93	65%
RC12	3.22	0.98	64%
Overall mean	**3.23**	**0.82**	**65%**

5.7.2 Board effectiveness

Due to the fact that microfinance governance is garnering more and more attention, the board's involvement in an MFI is crucial. Boards of MFIs are expected to monitor the situation of their institutions, make sound strategic decisions, and hold management accountable for their decisions (CMEF, 2012). They are also the MFI's ultimate body of responsibility for risk management.

The research questionnaire therefore considers two aspects of the MFI board to evaluate their contribution to risk management: the board's devotion to their jobs and obligations, and the board's structure and membership. As adapted from existing research, as discussed in the literature review, 13 items were measured on a five-point Likert scale. The mean score for these items ranges from 3.34 (0.90) to 3.69 (.95), with an overall mean score of 3.53 (0.73), indicating an overall positive response to board structure and composition, as well as to board dedication to their tasks and responsibilities. In general, respondents were positive about the majority of the indicators, with the exception of the MFIs' performance in terms of forming an effectively functioning risk management subcommittee of the board (BSC20) and creating clear awareness about the NBE's risk management requirements (BSC23).

Table 11: Descriptive statistics for board effectiveness

Item	Mean	Standard deviation	Mean (%)
BSC13	3.68	0.92	74%
BSC14	3.51	0.97	70%
BSC16	3.56	0.89	71%
BSC17	3.49	0.97	70%
BSC18	3.69	0.95	74%

BSC19	3.45	0.81	69%
BSC20	3.34	0.90	67%
BSC22	3.57	0.88	71%
BSC23	3.39	0.99	68%
BCRR24	3.59	0.93	72%
BCRR26	3.48	1.06	70%
BCRR27	3.52	0.84	70%
BCRR28	3.61	0.92	72%
Overall mean	**3.53**	**0.73**	**71%**

5.7.3 Internal control

This thesis conceptualises the internal control construct in order to extract information about the performance of MFIs in terms of their internal control system and the impact of internal control on the risk management of MFIs in Ethiopia. According to COSO (2013), one of the most important methods for mitigating microfinance risks is the design and execution of effective internal control. Using a five-point Likert scale, 16 items were evaluated. The descriptive data presented in Table 12 indicate that the mean for internal control items varied between 3.31 (0.84) and 3.78 (0.98). Respondents replied with a considerably lower score, indicating a more neutral attitude towards MFIs' continual assessment of risk to recognise material perils (ICERA38), although they were favourable towards MFIs' efforts to have a well-established structure, authority, and reporting lines in pursuit of internal control (ICECE35).

The total mean score is 3.4 (0.71), indicating a favourable opinion of the effectiveness of internal controls in MFIs.

Table 12: Descriptive statistics for internal control

Item	Mean	Standard deviation	Mean (%)
ICEce32	3.54	0.89	71%
ICEce33	3.49	0.85	70%
ICEce34	3.41	0.86	68%
ICEce35	3.78	0.98	76%
ICEce37	3.41	0.85	68%
ICEra38	3.31	0.84	66%
ICEra39	3.32	0.80	66%
ICEra40	3.41	0.86	68%
ICEra41	3.68	0.99	74%
ICEca42	3.45	0.83	69%
ICEca43	3.61	0.93	72%
ICEic45	3.37	0.79	67%
ICEic46	3.41	0.84	68%
ICEic47	3.52	0.83	70%
ICEma48	3.44	0.83	69%
ICEma50	3.65	0.89	73%
Overall mean	**3.49**	**0.71**	**70%**

5.7.4 Internal audit

In a risk governance structure, the internal audit function is tasked with assuring senior management and the board that internal controls are operating as intended, providing recommendations for enhancing controls, processes, and procedures, and presenting

an objective view of the overall bank operations. Consequently, internal audit contributes to microfinance risk management (IIA, 2017).

Eleven items were measured using a five-point Likert scale. In accordance with the descriptive statistics presented in Table 13, the mean score for the internal audit construct ranged between 3.23 (0.84) and 3.65 (0.97). In general, respondents were favourable about the effectiveness of internal audits, with the exception of the adequacy of the number of qualified audit staff (IA2). Respondents gave a slightly higher rating (3.65 out of 5) to the viewpoint of having a lack of scope constraints for internal audits (IA5). The total mean score is 3.45 with a standard deviation of 0.74, indicating little agreement on the overall efficacy of internal audits in MFIs.

Table 13: Descriptive statistics for internal audit

Item	**Mean**	**Standard deviation**	**Mean (%)**
IA51	3.41	0.89	68%
IA52	3.23	0.84	65%
IA53	3.47	0.99	69%
IA54	3.64	0.98	73%
IA55	3.65	0.97	73%
IA56	3.44	0.91	69%
IA57	3.47	0.92	69%
IA58	3.42	0.85	68%
IA59	3.45	0.89	69%
IA60	3.41	0.84	68%
IA61	3.41	0.85	68%
Overall mean	**3.45**	**0.74**	**69%**

5.7.5 Risk management performance

As backed by studies cited in the literature review, the risk management performance of MFIs may be measured in terms of portfolio at risk, loan loss provision; cash balance adequacy, management information systems efficacy, frequency of fraud events, and other similar metrics.

The risk management performance construct is measured by seven observable factors indicative of MFIs' risk management performance. The descriptive statistics results for seven items tested on a five-point Likert scale are shown in Table 14. The mean score varied between 2.53 (0.83) and 4.01 (0.86) according to descriptive statistics. Respondents were sceptical and generally disagreed with the assertion that "a lack of reliable management information systems is not a worry for MFIs" (RMP6). However, they generally responded positively (4.01) to the statement on maintaining PAR and NPL within minimum criteria (RMP1). The overall mean score of 3.20 (0.72) indicates that the majority of respondents were neutral (only mildly agree) about the performance of MFIs in risk management.

Table 14: Descriptive statistics for risk management performance

Item	Mean	Standard deviation	Mean (%)
RMP1	4.01	0.86	80%
RMP2	2.82	0.84	57%
RMP3	3.88	0.88	78%
RMP4	2.70	0.83	54%
RMP5	2.71	0.84	54%
RMP6	3.76	0.90	75%

RMP7	2.50	0.83	50%
Overall mean	**3.20**	**0.72**	**64%**

5.8 Analysis of measurement model

This section utilised CFA to investigate the links between the model's constructs or variables. In the CFA, model fit is tested to evaluate the measurement model's validity. The measurement model is subsequently applied to confirm the constructs' validity and dependability.

5.8.1 Factor loading

As part of the CFA, each item's factor loadings were evaluated. According to several, sources, such as Hair, Babin, and Krey (2017), an appropriate value for standardised factor loading is greater than or equal to 0.70. Hair et al. (2017) also argue that an item with a factor loading close to 0.70 can be preserved if the average standardised value of all items of a particular construct is at least 0.70. As shown in Table 7 of this thesis's CFA results, the average factor loading for each build is significantly more than 0.70, demonstrating a sufficient factor loading for each construct.

5.8.2 Analysis of fit indices

The model fit measures were utilised to evaluate the model's overall fit. A model is acceptable if the following conditions are met: the CMIN/df value is less than 5; the GFI (Hair et al., 2010) and the comparative fit index (CFI) (Bentler, 1990) are greater than 0.90; and the Tucker and Lewis index (TLI) is greater than 0.80 (Hair et al., 2010). In addition, a model is approved if the AMOS-calculated value of the standardised root mean square residual (SRMR) is less than 0.08 and the RMSEA is less than 0.08 (Hair et al., 2010).

The initial study of the measurement model revealed that there is room for improvement before the data are adequately represented by the model. On the improvement of model fit, standardised factor loading, modification indices, and standardised residual covariance were consulted. The researcher took the following steps to improve the model's fit and attain a better fit:

- Items with factor loadings below 0.50 are eliminated.
- Items with a greater residual standardised covariance are eliminated.
- A review of modification indices revealed that a small number of variables were substantially connected, posing a barrier for model fit. The researcher therefore drew covariance between the mistake terms.

After taking some of the preceding actions, some mistake phrases were combined and some things were removed. The method involved removing one indication at a time and then re-estimating the model. Five items (BCRR28, ICEMA48, ICEMA50, IA53, and IA57) are eliminated to attain the level of acceptable fit.

Using the model fit metrics (CMIN/df, IFI, TLI, CFI, SRMR, and RMSEA) to assess the model's overall goodness of fit, all values fell within their respective common acceptability levels (Bentler, 1990; Hu & Bentler, 1998; Ullman, 2006). The five-factor model (risk culture, board effectiveness, internal control, internal audit, and risk management) produced a strong match, as detailed in Table 15 (CMIN/df = 2.67, IFI = 0.90, TLI = 0.902, CFI = 0.90, SRMR =.064, and RMSEA = 0.061).

Table 15: Model fit statistics

Fit indices	**Recommended values**	**Sources**	**Obtained value**
P	Significant	(Bentler, 1990; Hu &	

CMIN/df	3-5	Bentler, 1998; Ullman, 2006; Hair et al., 2010)	2.670
IFI	> 0.90		0.908
TLI	> 0.90		0.902
CFI	> 0.90		0.907
SRMR	< 0.08		0.064
RMSEA	< 0.08		0.061

The final measurement model with the 54 items used in the CFA derived from the preliminary analysis is presented in Figure 3.

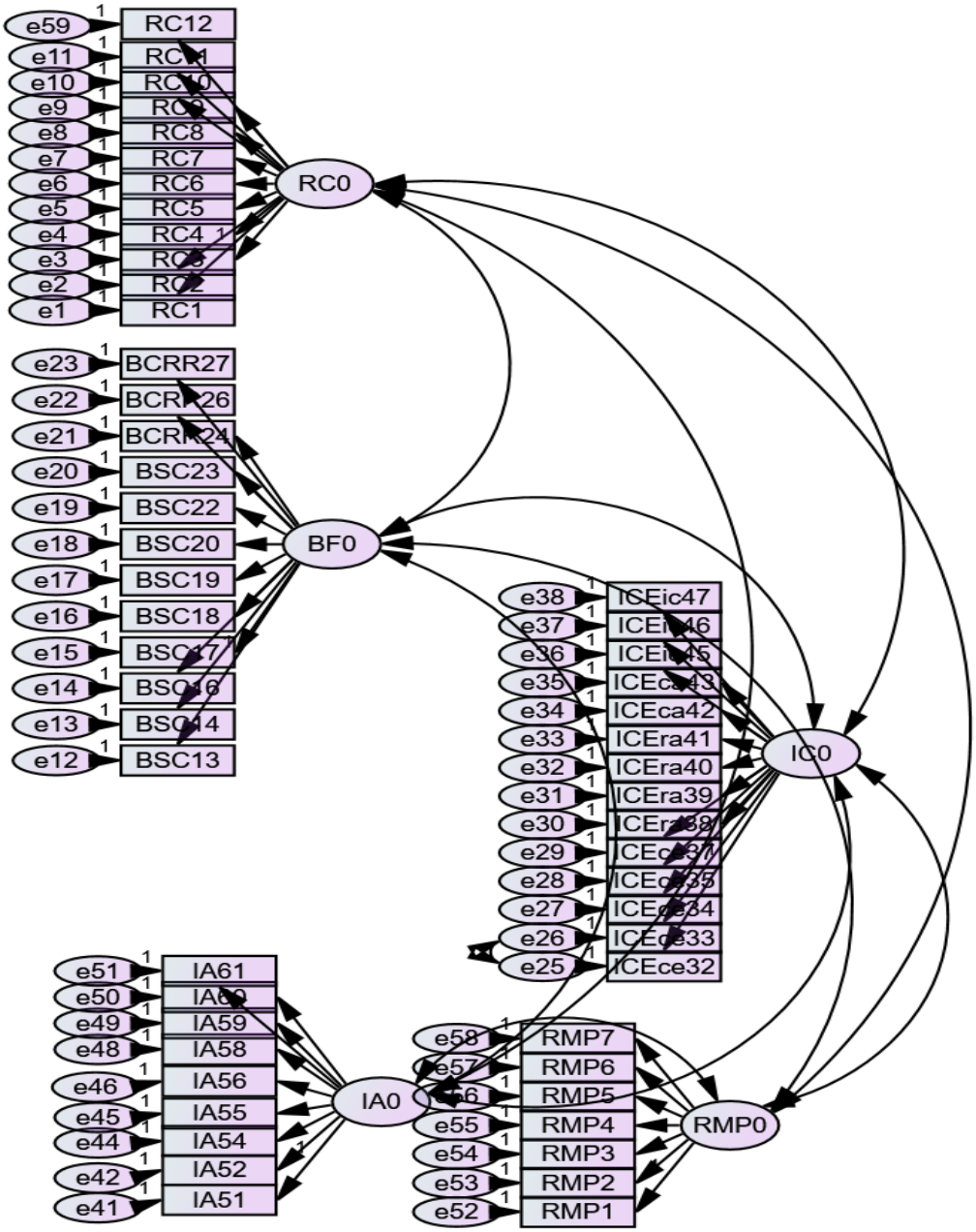

Figure 3: Hypothesised CFA model derived from preliminary analysis

5.8.3 Construct reliability and validity

Following the evaluation of model fit, the construct validity and reliability of the measures are assessed. Hair et al. (2010) define validity as “the extent to which a set of measured variables accurately reflects the theoretical latent concept they are intended to measure.” Construct validity can be assessed using convergent validity and discriminant validity.

Convergent validity is “the extent to which measures of a certain construct should converge or share a large proportion of variance in common” (Hair et al., 2010). In other words, it is the degree to which two measurements of theoretically related constructs are actually correlated, whereas discriminant validity, also known as divergent validity, is the degree to which a construct or concept is not overly associated to other comparable yet distinct constructs (Hair et al., 2010).

In this study, the researcher determined construct validity and reliability using Cronbach’s alpha, AVE, and heterotrait-monotrait ratio of correlations (HTMT ratio). Using factor loading and AVE, the researcher evaluated convergent validity (Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013)). Convergent validity denotes the average variance explained by the items inside a single construct. If the items account for 50% or more of the variation, convergent validity is adequate.

Composite reliability refers to the internal consistency of the construct and indicates the reliability of the item. As shown in Table 16, a value larger than 0.70 suggests acceptable dependability (Hair et al., 2010), and the current study meets this criterion. Discriminant validity indicates whether the items adequately explain the distinctive variance in a particular construct. A value above 0.70 is recommended for the square root of AVE to demonstrate discriminant validity. The outcomes of this thesis exhibited favourable values for all constructs.

5.8.3.1 Construct reliability

Cronbach’s alpha was used to evaluate construct reliability. The constructs’ alpha values varied from 0.94 to 0.966, exceeding the 0.70 benchmark. Thus, construct dependability was established for each of the study’s constructs (as demonstrated in Table 16).

Table 16: Construct reliability using Cronbach's alpha

Construct	Cronbach's alpha recommended value	Cronbach's alpha obtained value
Risk culture	> 0.70	0.955
Board effectiveness	> 0.70	0.948
Internal control	> 0.70	0.966
Internal audit	> 0.70	0.952
Risk management performance	> 0.70	0.940

5.8.3.2 Construct validity

Two types of validity are used to evaluate construct validity: convergent validity and discriminant validity. The convergent validity of scale items was assessed utilising the AVE). The average variance-extracted values exceeded the 0.50 criterion (Fornell & Larcker, 1981) Therefore; the present study's scales exhibit the requisite convergent validity (as demonstrated in Table 17).

Table 17: Convergent validity using AVE

Construct	Recommended AVE value	Obtained AVE value
Risk culture	> 0.50	0.64
Board effectiveness	> 0.50	0.60
Internal control	> 0.50	0.67
Internal audit	> 0.50	0.66
Risk management performance	> 0.50	0.65

In order to statistically determine the uniqueness of the constructs, discriminant validity is considered. Fornell and Larcker's (1981) criterion and HTMT ratio were used to examine the discriminant validity of the study. According to Fornell and Larcker's (1981) criterion, discriminant validity is demonstrated when the square root of AVE for a construct is greater than its corresponding correlation with the other constructs in the study. The square root of AVE for each construct, shown by the shaded and bolded numbers in Table 18, is bigger than its equivalent association with the other constructs. Consequently, discriminant validity was determined using Fornell and Larcker's (1981) criterion, and the results are displayed in Table 18.

Table 18: Discriminant validity using Fornell and Larcker's (1981) criterion

	RC	**BF**	**IC**	**IA**	**RMP**
RC	**0.800**	0.573	0.433	0.297	0.652
BF	0.573	**0.77**	0.316	0.308	0.564
IC	0.433	0.316	**0.82**	0.577	0.499
IA	0.297	0.308	0.577	**0.81**	0.499
RMP	0.652	0.564	0.509	0.499	**0.81**

The HTMT ratio was also used to measure discriminant validity, and all ratios were less than the 0.85 threshold required for discriminant validity (Henseler. Ringle & Sarstedt, 2015). Consequently, discriminant validity was also proven utilising the HTMT ratio. Table 19 displays the findings of the discriminant validity analysis using the HTMT ratio.

Table 19: Discriminant validity using HTMT ratio

Monotrait correlation		Heterotrait correlation		Recommended HTMT ratio	Obtained HTMT ratio
RC-RC	0.641	RC-BF	0.354	< 0.85	0.571
BF-BF	0.600	RC-IC	0.282	< 0.85	0.431
IC-IC	0.699	RC-IA	0.192	< 0.85	0.294
IA-IA	0.633	RC-RMP	0.446	< 0.85	0.717
RMP-RMP	0.603	BF-IC	0.199	< 0.85	0.314
		BF-IA	0.192	< 0.85	0.304
		BF-RMP	0.349	< 0.85	0.580
		IC-IA	0.379	< 0.85	0.569
		IC-RMP	0.325	< 0.85	0.512
		IA-RMP	0.306	< 0.85	0.484

5.9 Analysis of structural model and hypothesis testing

5.9.1 Testing structural model (path analysis)

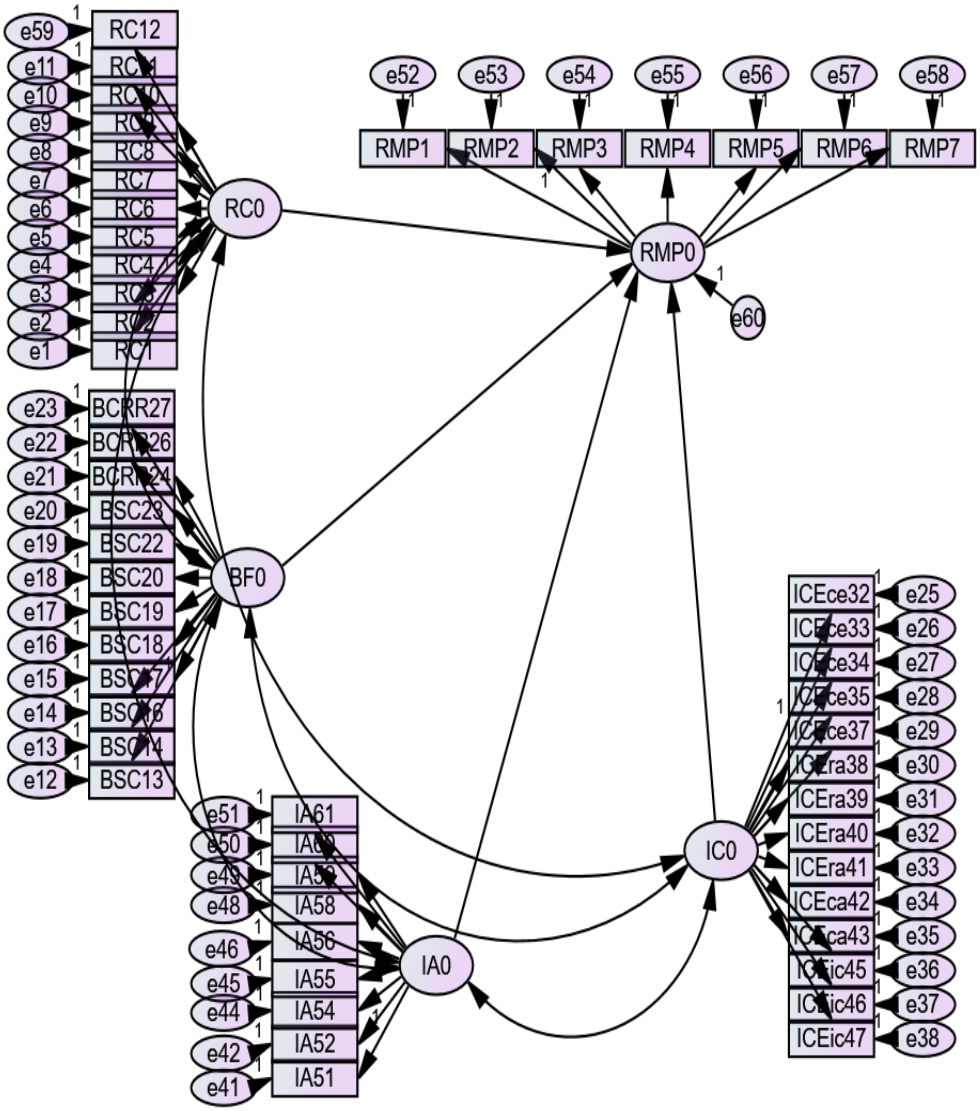

Figure 4: The structural model

The links between independent (exogenous) and dependent (endogenous) variables were investigated using an AMOS-generated SEM (Figure 4). A well-fitting model is accepted if the following conditions are met: the value of CMIN/df is 5; the GFI) (Hair et al., 2010), and the CFI (Bentler, 1990) are greater than 0.90; and the TLI (1973) is greater than 0.80 (Hair et al., 2010). In addition, a model is deemed acceptable if the AMOS-calculated value of the SRMR was less than 0.08 and the root mean square error approximation (RAMSEA) was less than 0.08 (Hair et al., 2010). The results were all within the acceptable range for the final structural model (CMIN/df = 2.67,

IFI = 0.908, TLI = 0.902, CFI = 0.907, SRMR = 0.064, and RMSEA = 0.061).

The squared multiple correlation for risk management performance was 0.570, indicating that risk culture, Board effectiveness, internal control, and internal audit account for 57% of the variance in risk management performance.

The study examined the influence of risk culture, board effectiveness, internal control, and internal audit on the risk management performance of MFIs. The assessment found that the effect of risk culture on risk management performance is positive and statistically significant in the absence of mediation (b = 0.398, t = 8.272, p = 0.001), showing that risk culture influences risk management performance positively. The relationship between the board effectiveness and risk management performance of Ethiopian MFIs is positive and statistically significant in the absence of mediation (b = 0.222, t = 4.991, p = 0.001), demonstrating that board effectiveness has a positive effect on risk management performance. The effect of internal control on the performance of risk management is likewise positive and statistically significant in the absence of mediation (b = 0.130, t = 2.83, p = 0.005). The influence of internal audit on risk management performance was also found to be positive and statistically significant in the absence of mediation (b = 0.238, t = 5.358, p = 0.001), showing that risk management performance improves with a stronger internal audit.

The model fit indices and the findings of the impact connection are summarised in the following table, Table 20.

Table 20: Standardised regression weight for direct structural relationship

Relationship	**Standardised estimate**	**t-value**	**p-value**	**Impact**
RC - > RMP	0.398	8.272	< 0.001	Positive and significant

BE - > RMP	0.222	4.991	< 0.001	Positive and significant
IC - > RMP	0.130	2.835	0.005	Positive and significant
IA - > RMP	0.238	5.358	< 0.001	Positive and significant
R-square				
RMP	.570			
Model fit				
CMIN/df = 2.67, IFI = 0.908, TLI = 0.902, CFI = 0.907, SRMR = 0.064, RMSEA = 0.061				

The hypothesised relationship for the first direct relationships is provided in Table 21, based on the AMOS of the structure model.

Table 21: Structural model test results for hypothesised direct relationship

Hypothesised relationships		**Standardised estimate**	**t-value**	**p-value**	**Hypothesis supported**
H1:	Risk culture -> Risk management	0.398	8.272	< 0.001	Supported
H2:	Board effectiveness ---> Risk management	0.222	4.991	< 0.001	Supported
H3	Internal control ---> Risk	0.130	2.83	0.005	Supporte

:	management		5		d
H4 :	Internal audit ---> Risk management	0.238	5.358	< 0.001	Supported
Model fit statistics					
CMIN/df = 2.67, P < 0.000, CFI = 0.907, TLI = 0.902, IFI 0.908, SRMR = 0.064, RMSEA = 0.061					

5.9.2 Moderation analysis

Comparing the chi-square difference between groups is how the multi-group moderation test is accomplished. The grouping variable is the ownership type of MFIs, and the study considers two ownership types: privately held MFIs and NGO-supported MFIs. In this method, the data sample is separated into subsamples, and the same structural model is applied to both samples simultaneously. The effects of moderators on the link between the exogenous and endogenous constructs are then examined by a pairwise comparison of route coefficients across the two groups.

As shown in Table 22, the standardised regression weights for the hypothesised correlations through the moderation of ownership structure vary for each exogenous component. The results indicate that the relationship between risk culture and risk management performance (t = 0.527) is stronger in privately owned MFIs than in those backed by NGOs (t = 0.244), while the relationship between board effectiveness and risk management performance is stronger in NGO-backed MFIs than in privately owned MFIs (t = 0.448, t = 0.128)

Table 22: Standardised regression weights with moderation

Hypothesised relationships		Privately owned MFIs: standardised estimates (t-value)	NGO-backed MFIs: standardised estimates (t-value)	Group difference CMIN/df	P-value
H 1:	Risk culture ---> Risk management	0.527	0.244	Supported	0.000
H 2:	Board effectiveness ---> Risk management	0.128	0.448	Supported	0.033
H 3:	Internal control ---> Risk management	0.196	0.180	Supported	0.368
H 4:	Internal audit ---> Risk management	0.115	0.178	Supported	0.642
Model fit statistics					
CMIN/df = 2.67, P < 0.001, CFI = 0.907, TLI = 0.902, IFI = 0.908, SRMR = 0.064, RMSEA = 0.061					

The significance of the difference in associations with the moderation of ownership type is evaluated utilising the chi-square difference, as shown in Table 23 The results of the constrained model indicate that the chi-square difference between two relationships, the relationship between risk culture and risk management performance and the relationship between board effectiveness and risk management performance, is statistically significant (p = 0.001 and p = 0.033, respectively). In contrast, the moderating effect of internal control and internal audit on risk management performance is modest (p = 0.368 and p = 0.642 for internal control and internal audit,

respectively).

Table 23: Nested model comparison

Model	DF	CMIN	P	NFI delta-1	IFI delta-2	RFI rho-1	TLI rho2
Structural weights	4	36.295	0.000	0.001	0.001	0.001	0.001
RC --> RMP	1	27.094	0.000	0.001	0.001	0.001	0.001
BE --> RMP	1	4.527	0.033	0.000	0.000	0.000	0.000
IC ---> RMP	1	0.809	0.368	0.000	0.000	0.000	0.000
IA ---> RMP	1	0.216	0.642	0.000	0.000	0.000	0.000

5.9.3 Mediation analysis

The study examined the role of internal control as a mediator between internal audit and risk management performance in MFIs. The results revealed a significant indirect effect of internal audit impact on risk management performance through the mediation of internal control (b = 0.079, t = 5.111, P = 0.005), supporting hypothesis 9 (H9). In addition, the direct effect of internal audit on risk management in the presence of the mediator was found to be statistically significant (b = 0.236, P = 0.000; df = 1). Therefore, internal control partially mediates the relationship between internal audit and the performance of risk management. The total effect increased from b = 0.238 to b = 0.314 as a result of mediation. The summary of mediation analysis is shown in Table 24 and Figure 5.

Table 24: Mediation analysis summary

Relationship	Direct effect	Indirect effect	Confidence interval		P-value	Conclusion
			Lower	Upper		

			bound	**bound**		
IA -> IC -> RMP	0.236	0.079	0.026	0.136	0.005	Partial mediation

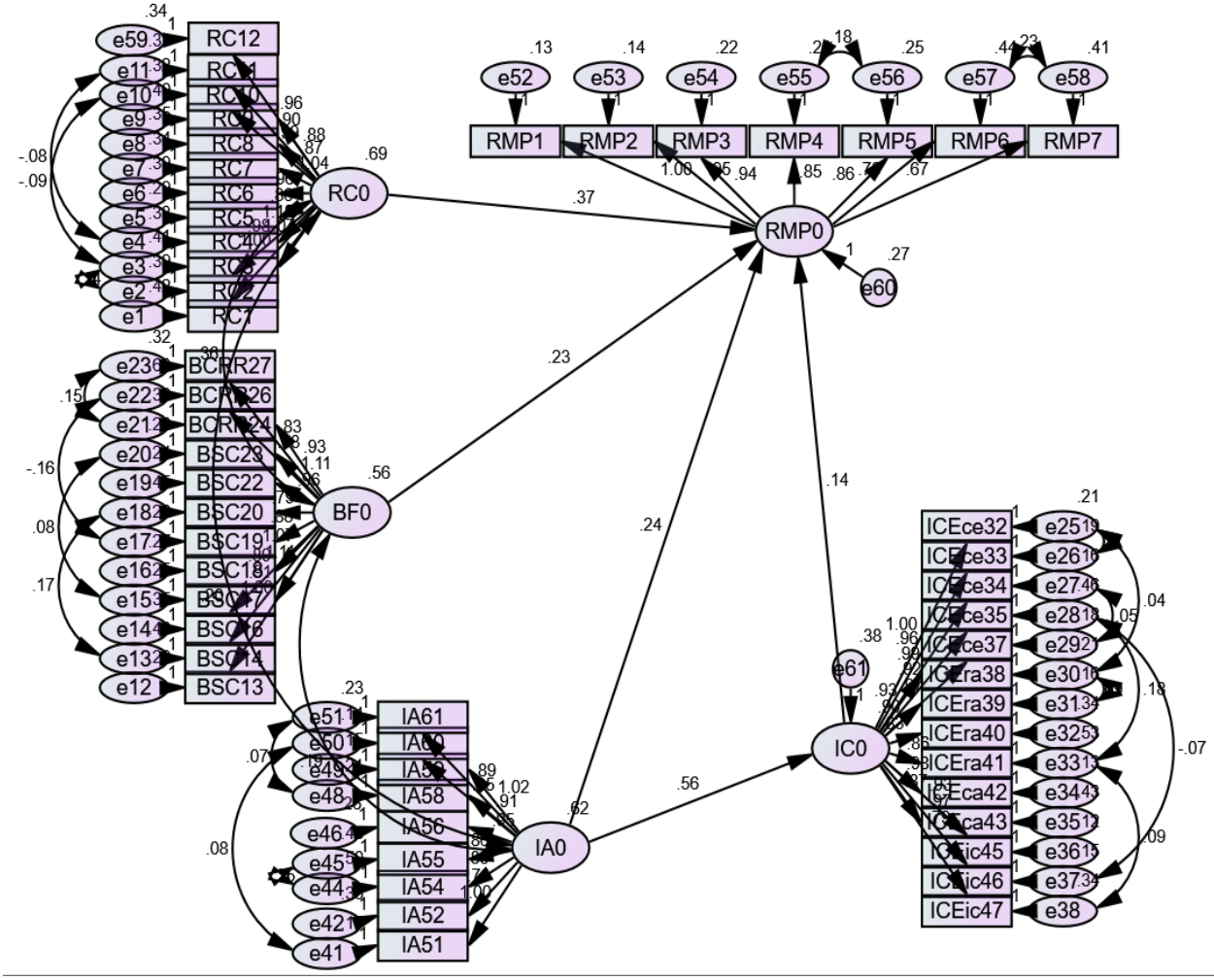

Figure 5: The structural model with mediation

Table 25: Hypotheses summary

Hypothesis	**Result**
H1: Risk culture positively affects risk management performance in MFIs.	Supported
H2: Board effectiveness positively affects risk management	Supported

performance in MFIs.	
H3: Internal control positively affects risk management performance in MFIs.	Supported
H4: Internal audit positively affects MFI risk management performance	Supported
H5: MFI ownership structure moderates the relationship between risk culture and risk management performance in MFIs.	Supported
H6: MFI ownership structure moderates the relationship between board effectiveness and risk management performance in MFIs.	Supported
H7: MFI ownership structure moderates the relationship between internal control and risk management performance in MFIs.	Not supported
H8: MFI ownership structure moderates the relationship between internal audit and risk management performance in MFIs.	Not supported
H9: The effect of internal audit on risk management performance of MFIs is mediated by internal control.	Supported

5.10 Qualitative data analysis

5.10.1 Introduction

The methodological foundation of this thesis is a mixed sequential approach. As a result, qualitative data were collected and analysed after quantitative data were collected and analysed. As a method of triangulation, qualitative data were collected to supplement the quantitative data results. This section presents the results of qualitative data collected through in-depth interviews with respondents.

Following the collection of quantitative data, respondents were purposefully selected

based on their demographic profile. Accordingly, in-depth interviews with experts and individuals in top leadership positions at MFIs were conducted. The experts and top executives were seasoned banking and microfinance industry professionals.

The selection of the sample was intentional, as explained in the methodology section of this study. The intention was to conduct in-depth interviews with 15 respondents. The researcher based the composition of the respondents on their current position within an MFI. Inclusion of the board of directors was intentional due to their ultimate responsibility for the affairs of MFIs in general and risk management matters in particular. In addition to the board, CEOs are responsible for the day-to-day operations and actual risk management of MFIs, based on the board's directives. Therefore, CEOs have a clearer understanding of risk management in their respective MFIs. The researcher views internal auditors as a company's watchdogs when it comes to monitoring the application of the internal control system and reporting discrepancies to the board and the CEO. Therefore, they have a significant appreciation for the challenges of risk management in their respective MFIs. CEOs and internal auditors were thus also included amongst those selected to be interviewed.

Only 12 of the presumed 15 candidates for the in-depth interview were ultimately interviewed. The repeated attempts of the researcher to contact two board members and one CEO were unsuccessful because they failed to adequately plan their busy schedules. Therefore, the researcher was only able to conduct in-depth interviews with 12 individuals.

The use of deductive descriptive coding is justified by the predefined set of theories and constructs derived from a literature review and theoretical foundation (Palys & Atchison, 2014). The theoretical assumptions and hypotheses established in Chapter Two's literature review are used to search for evidence in a narrative that either verifies

or refutes the hypotheses.

5.10.2 Analysis of in-depth interviews

5.10.2.1 Current risk management practices in Ethiopian MFIs

The interviewees were asked a general question regarding the risk management practices of Ethiopian MFIs and their respective MFIs. Respondents were asked the following question:

"How do you rate and evaluate the current risk management practice in MFIs in Ethiopia in general and in your MFI in particular?"

The majority of interviewees believe that risk management in Ethiopian MFIs is in its infancy and is very poor, with the exception of a few MFIs supported by NGOs. One respondent, for instance, believed that a few NGO-supported MFIs practise risk management effectively. They stated:

> As to me, risk management is well considered in NGO-backed MFIs who have been working in the industry for a long time. The risk management in the majority of the MFIs, however, is poor in terms of developing understanding and managing risk to the benefit of the institution. Our MFI is trying its best at least to meet the requirements of the National Bank of Ethiopia and trying to manage risk by following stringent credit policy and strict collection and follow-up practice.

Based on this response, it can be inferred that MFIs are only attempting to meet the regulatory requirements of meeting certain financial figures by focusing on tightening credit policy and increasing collection efforts in order to reduce the amount of uncollectible debt.

Another respondent said:

> Risk management in the Ethiopian MFI industry is not good. There are many

> fraud incidents that are reported by national bank of Ethiopia although not publicly disseminated. Many MFIs have closed their business because of liquidity challenges. These all indicate that there is problem in risk management. Many MFIs do not believe in the importance of risk management for their sustainability and performance, they rather perceive it as a challenge for their operational self-sufficiency because of the added cost of having separate risk management division if the requirement of the National Bank of Ethiopia is fully adhered to. In our MFI, however, we have a good practice in that we have a risk and compliance department that overlooks the risk management in the firm with a mandate to report to the risk management committee.

A third respondent said the following:

> In my opinion, risk management practice in in Ethiopian MFIs is very poor. I said so because awareness and understanding about risk and risk management at the board level is very poor. Follow-up by the board and top management is poor; there is no functioning risk management committee. Hence, the industry is not doing best in terms of risk management. The practice in our firm is not different from the industry. We just try to meet the reporting and regulatory requirements of National Bank of Ethiopia.

Based on the collected and summarised interview data, the majority of interviewees indicated that risk management awareness and practice are lacking in the Ethiopian MFI industry. Many of the MFIs do not have a clear understanding of risk management, others are unwilling to invest in a well-established risk management system, and others do not comprehend the significance of risk management to their long-term viability; as a result, they only strive to meet the reporting requirements of the NBE, the supervising regulatory authority.

The analysis also suggests that NGO-backed MFIs have relatively good experience in risk management, which may be due to the considerable experience of the numerous NGO-backed MFIs or to their adoption of the risk management culture of the parent NGO.

To elicit the opinions of respondents, a second question that assists in evaluating the current risk management practice in Ethiopian MFIs was posed to interviewees:

"Who owns the top risks in your MFI and is accountable for results and to whom do they report?"

Six respondents believe that risk management is owned by risk and compliance managers, who report to the general manager, three believe that risk is owned by the general manager, who reports to the board's risk management subcommittee, and the remaining respondents believe that risk management is owned by the board's risk management subcommittee, who reports to the board.

Individuals' diverse responses to the question indicate that there is a problem with risk management in MFIs. Firstly, the level of understanding regarding risk management mandates in MFIs varies. Secondly, there is a lack of consensus concerning reporting relationships. Importantly, the majority of respondents' beliefs were inconsistent. The inconsistency of responses to this question and the incorrect perception and practice, as believed by the majority, support the generalisation made in the preceding question regarding the risk management practice.

The following question was posed to industry professionals who can evaluate the risk management practice:

"Does the MFI articulate its risk appetite and define risk tolerances for use in managing

risk? If yes, briefly explain the practice."

There is no practice of articulating risk appetite and defining risk tolerance for use in MFI risk management, as evidenced by the responses of the vast majority of interviewees.

The following question was also posed to experts to gain a sense of their understanding of risk management:

"Does the MFI's risk reporting provide management and the board with the information they need about top risks and how they are managed?"

According to the researcher's summary of the results of the respondents' interviews in response to the question, there is risk reporting in some situations, but it is limited and inadequate for several reasons. These reasons include the following: (1) the NBE microfinance supervisory authority conducts compliance auditing and on-site supervision; (2) risk reporting is not formal and is not frequently communicated to the board due to the absence of a risk management subcommittee that oversees and follows up risk reporting; (3) risk management and risk reporting are not taken as a standing agenda item in board and management meetings. This practice will not enable the mitigation of risk prior to its occurrence. It serves only as a means to draw lessons for future conduct.

5.10.2.2 Risk culture

The following interview questions about risk culture were posed to respondents:

"How do you evaluate the contribution of risk culture for effective risk management in MFIs? How do you assess the risk culture in your MFI? Is it positively impacting risk

management in your MFI?"

The vast majority of respondents (nearly all) concur that a robust risk culture is essential for the risk management of MFIs because it positively influences risk management. With a robust risk culture, they believed that all employees at MFIs could develop a shared understanding of risk and risk management, and that employees would view risk management concerns as a top priority and work to achieve them. As an example, the following responses from two individuals reveal the majority view.

Respondent 1:

> I believe that having strong risk culture in an MFI will have a positive impact on risk management as it creates awareness and common understanding.

Respondent 2:

> I believe strong risk culture is essential if it is supported by the top management and the ultimate governing body, the board, because top management support and commitment increases the commitment of all employees. When risk sensitiveness and risk consciousness become a culture, risk management becomes the responsibility of all. This, in my opinion, will surely improve the risk management awareness and commitment, and in turn, the risk management performance.

Regarding the second sub-question, “Does the risk culture of your MFI positively impact risk management?” the majority of respondents believe their MFIs have a limited culture of risk awareness and consciousness. The responses of three individuals are presented as an example to support this argument.

Respondent 1:

> The risk culture in our MFI is poor as there is no effort made to make it an issue of concern for all in the MFI. Having strong risk culture requires understanding

and commitment of the top management including the general manager and the board. Especially the tone from the top leaders, the governing board is essential. The effort in our MFI, however, is very poor.

Respondent 2:

Ethiopian MFIs and our MFI are in their infant stage in terms of their risk management experience. Hence, the culture of risk awareness and risk sensitiveness is not yet a custom at a matured culture level.

Respondent 3:

Risk awareness culture is being currently nurtured in our MFI although at an infant stage. The national bank supervision and reporting requirement is triggering many MFIs to be risk sensitive especially in those areas required by National Bank of Ethiopia. Trainings are given to all employees so that they consider risk in their actions and we are observing positive results in this regard to some extent.

In response to further questions posed by the interviewer, the majority of respondents confirmed that risk culture is not explicitly encouraged in the day-to-day operations of MFIs, although some MFIs make efforts to develop it.

5.10.2.3 Board effectiveness

Based on the comments of the interviewees, it can be concluded that the effectiveness and performance of the boards of Ethiopian MFIs vary from institution to institution. Some boards are unaware of the influence their position has on the overall performance and risk management of the MFI. In the majority of MFIs, the CEO or general manager holds significant responsibility and authority; however, there are boards in some MFIs that engage in micromanagement and restrict management's ability to function effectively and be accountable. The CEOs of these MFIs rely on the

board's approval and seek the board chairperson's intervention for matters outside the board's purview. This suggests that board members of MFIs are not uniformly aware of their duties and responsibilities, as well as the differences between the CEO and other positions' responsibilities. According to the comments of interviewees, some board chairpersons in a subset of MFIs are highly influential and have assisted management in anticipating risk management challenges, thereby improving the MFIs' risk management. These board members, known as hands-on boards, engage in a constructive and challenging dialogue with management and provide valuable analysis that assists management in achieving an ever-increasing level of risk management performance.

The researcher asked the following questions related to board commitment:

"Do you believe that board commitment to their roles and responsibilities positively affects effective risk management in the MFI? How do you evaluate the commitment of board members to their roles and responsibilities in your MFI? Does the board in your MFI have the requisite skillsets and experience to provide effective risk oversight?"

The commitment of boards to their roles and responsibilities positively affects the risk management performance of an MFI, according to nearly all respondents.

One of the respondents, for example, spoke of their opinion supporting the above idea as follows:

> Since the board is the ultimate governing body of the MFI, its commitment in regards to risk and risk management, will surely improve risk management performance of the MFI.

Another respondent replied as follows:

> Surely, when the board demonstrates its commitment the management will do so, which will spread to supervisors and operational employees. Hence this will improve risk management performance.

Another respondent said the following:

> Especially in privately owned MFIs the role of the board is critical as they are the real owners and representatives of the firm. Hence, their commitment is expected to be much better than those in NGO-backed MFIs whose owners are nominal. Since private MFI boards are sensitive to financial results and the employees are aware of these facts, the performance of the board will surely be triggering those in the MFI to demonstrate the same. Hence board commitment strongly affects the risk management performance of MFIs.

The vast majority of respondents stated unequivocally that boards' commitment to their roles and responsibilities is minimal. The respondents also provided several explanations for the alleged cause of this lack of commitment. First, many board members are full-time employees of other companies and are occupied with their normal duties. Consequently, they devote little time to the affairs of MFIs. Second, many board members, particularly those in NGO-supported MFIs, view their mandate as a social responsibility and are not particularly sensitive to MFI issues. Third, many board members of MFIs are not adequately compensated and, as a result, are not committed to their roles. Finally, many board members view themselves as "stamp boards" who are merely needed to provide signatures in order to meet regulatory requirements, rather than as an ultimate governing body who should oversee all company matters, including risk management.

The researcher also asked the following question:

"Does the board of directors at your MFI possess the necessary skillsets and

experience to provide effective risk oversight? Please provide justification for your response."

As summarised by the responses of several individuals listed below, the response reveals that boards possess reasonable skills and experiences necessary to provide effective risk oversight.

Respondent 1:

> Boards in our MFI in the past were simply assigned by the mother NGO regardless of their skillset, experience, and background. Currently, however, the National Bank of Ethiopia has set minimum qualification and experience for board members. Hence, in recent years the boards have better experience and qualification relative to the past.

Respondent 2:

> Our MFI is privately owned and the shareholders consider the experience and qualification of board member rather than their investment in the company. The minimum qualification requirement by the National Bank of Ethiopia further supported the concern of our MFI to nominate qualified and experienced board members. Hence, our boards have average skills and experience to provide effective oversight.

Respondent 3:

> Board members are nominated from the pool of owners. Ours is an NGO-backed MFI with few nominal owners. Inadequacy of the number of owners poses the challenge of getting adequate number of skilled and experienced members to choose from. Firstly, it becomes difficult to have a pool of board members who can meet the qualification and experience required by the NBE because of the

limited number of owners to choose from. Secondly, since there are only a few nominal owners, a board serves for many years passing the term fixed by [he National Bank of Ethiopia. Hence, this issue is an issue of concern for our MFIs and similar MFIs.

Respondent 4:

In our MFI recently we have a pool of individuals in the board with required academic background but the problem is lack of experience in banking and the microfinance industry. Further, the training given to the board members is limited because of a week association and problem with National Bank of Ethiopia to tackle this problem.

5.10.2.4 Internal control

Internal controls consist of procedures and systems designed to prevent problems and institutional loss. Respondents were required to assess the significance of an internal control for enhancing risk management. In addition, they were requested to assess their internal control and its contribution to enhancing the risk management initiative.

"How do you rate the importance of an internal control system in MFI risk management? How do you evaluate the internal control system in your MFI in general and its contribution to risk management in particular?"

Nearly all respondents agreed unequivocally on the positive impact of internal control on risk management in MFIs and attested that internal control aids their respective organisations in the management of risk, particularly operational risks.

5.10.2.5 Internal audit

Respondents were asked to assess the significance of internal audit in enhancing risk

management initiatives. In addition, they were asked to assess whether internal audit aids their MFIs' risk management efforts.

"How do you rate the importance of internal audit in MFI risk management? How do you evaluate the internal audit in your MFI in general and its contribution to risk management in particular?"

Almost all respondents clearly agreed that internal audit positively impacts risk management in MFIs. They argued that internal audit functions as an independent watchdog by examining the internal control system and its application. It assists MFIs in the following ways: (1) by evaluating internal control and detecting problems before they manifest; (2) by providing recommendations for improvement and monitoring their implementation, and (3) by reporting to the board. Consequently, internal audit aids in risk management.

The majority of respondents believe that internal audit in MFIs is not as strong as it should be and does not support risk management as needed.

One of the respondents from a privately owned MFI described the issue with internal audit effectiveness as follows:

> Internal audit is not strong in our MFI and in many other MFIs too because of the challenges in acquiring and retaining qualified and experienced senior auditors. The main reason behind this is the financial constraint to hire experienced auditors coupled by competition from banks who steal experienced internal auditors.

Another respondent with the same opinion as the previous person said the following:

> Internal audit is not strong in our MFI and others too. Currently, however, the National Bank of Ethiopia is forcing MFIs to have risk-based internal audit where

all MFIs are required to hire an internal audit director. Currently our MFI hired chief internal auditor at director level. We believe this will make the internal audit stronger.

The third interviewee, also from a privately owned MFI, supported the opinion of the former two respondents. He said the following:

> Internal audit is not strong to the level it should be. It is because of the limited attention given to the function by the top management including the board. The board has a very weak internal audit committee just formed merely to fulfil the requirement of the NBE rather than to effectively follow up internal audit findings and strengthen the internal audit system.

Only two respondents, both from NGO-supported MFIs, argued that they have a robust internal audit department that conducts risk-based internal audits, thereby positively influencing risk management and resulting in an enhanced internal control system. The views of the two respondents are presented below.

Respondent 1:

> Internal audit in our MFI is relatively strong. It is headed by an internal audit and assurance directorate director. The department is well-staffed by senior auditors with ample experience in the industry. Currently, we follow risk-based audit, which is producing good results]in terms of improving the internal control system and risk exposures.

Respondent 2:

> Internal audit in our MFI is very strong and it is playing even the role of risk management by monitoring the risk management in our firm and by reporting the matter to the board structurally and to the management operationally.

5.10.3 Summary

Qualitative analysis of interview field notes is made by grouping the responses along the predetermined constructs presented in the theoretical framework. The qualitative analysis was grouped along these five dimensions: (1) overall risk management practice in Ethiopian MFIs, (2) risk culture, (3) MFI board effectiveness, (4) internal control, and (5) internal audit. The interview analysis revealed the following findings.

5.10.4 Overall risk management performance

Based on the research findings, risk management in Ethiopia MFIs is in its infancy, and Ethiopian MFIs generally have poor risk management practices, with the exception of a few MFIs supported by NGOs. Instead of proactively planning and managing risks, the majority of Ethiopian MFIs are merely attempting to meet the NBE's regulatory reporting requirements. Due to the stringent requirements of the NBE, the limited efforts of some NGO-supported MFIs are concentrated on credit risk management, in an attempt to reduce Portfolio At Risk (PAR) and Nonperforming Loans (NPLs). According to the majority of interviewees, there is no practice of articulating risk appetite and defining risk tolerance for use in MFIs' risk management. Many MFIs do not have a clear understanding of risk management or the financial resources necessary to implement an effective risk management system, and do not comprehend the significance of risk management to their financial sustainability.

According to numerous employees and board members of MFIs in Ethiopia who were interviewed by the researcher, the risk management division is the risk owner and should report to the general manager.

5.10.5 Risk culture

Experts in the risk management industry believe that a strong risk culture contributes

positively to the risk management performance of MFIs by fostering risk awareness and sensitivity throughout the MFI, thereby inducing all employees to be risk-conscious. However, actual practice reveals that Ethiopian MFIs are currently not benefiting from the development of a strong risk culture. Despite the fact that some MFIs make efforts to develop it, the integration of risk culture within MFIs is still very weak because it is usually not explicitly encouraged in day-to-day operations.

5.10.6 Board effectiveness

Many respondents believe that board structure and composition, as well as board commitment to their roles and responsibilities, have a significant positive impact on risk management. The greater the board's commitment to its role and responsibilities, the more effective the risk management in MFIs will be. In practice, however, the board's commitment to its roles and responsibilities in Ethiopian MFIs is below average, albeit varying from MFI to MFI. In some MFIs, the board merely serves as a "rubber stamp", while, in others, it intervenes in operational matters.

As a result of the general availability of sufficient pools of owners from which nominations can be made, the boards of directors of privately owned MFIs often possess a reasonable skillset and level of experience necessary for providing effective risk oversight. It is, however, a challenge for NGO-backed MFIs, which are owned by a small number of nominal owners and do not have access to a similar pool of owners as privately owned MFIs.

5.10.7 Internal control

Internal control has a positive effect on risk management in general. In many MFIs, according to the opinions of respondents, internal control aids in the management of operational risks.

5.10.8 Internal audit

Analysis of the interview results reveals that internal audit has a positive effect on risk management in general. Internal audit is considered a watchdog because it monitors internal control and provides an independent assurance service. In practice, however, internal audit in Ethiopian MFIs is weak and does not support risk management to the extent that is needed.

5.10.9 General

Based on the results of the qualitative data analysis and the responses of interviewees, it can be concluded that risk management in Ethiopian MFIs is in its infancy when measured against the variables of interest used for this thesis. Numerous MFIs are concerned with outreach, financial inclusion, and operational autonomy. Some MFIs employ proactive risk mitigation measures, while others rely on reactive measures. Through risk monitoring, the NBE plays a significant role in this regard. As opposed to proactively recognising and comprehending risk management deficiencies, some MFIs only consider risk management issues in response to reporting requirements from regulators or funders. The majority of an MFI's risk management resources is devoted to operational risk management, with an emphasis on fraud prevention. MFIs expend comparatively little effort on risk management foundations compared to operational level risk management elements.

CHAPTER SIX: DISCUSSION

6.1 Chapter introduction

This section presents a discussion and interpretation of the key research findings. Findings in relation to the following factors are discussed: the profile of respondents and MFIs; descriptive statistics regarding the current risk management performance status of MFIs in Ethiopia; the hypothesised direct relationship between exogenous (independent variables) and an endogenous (dependent variable) construct; the mediating role of internal control on the relationship between internal audit and risk management; and the impact of the moderator variable (ownership structure) on the relationships between the endogenous and exogenous latent variables. The mediating role of internal control between internal audit and risk management performance is also discussed

6.2 Discussion

Previous studies on risk management have primarily focused on the management of specific risk categories, with operational risk and credit risk receiving the most attention (Tulu, 2016; Suganda, 2017; Kefale, 2019; Agegnehu, 2021). Research confirms that risk management in the context of Ethiopian MFIs generally emphasise a reactive approach, based on the CAMEL rating system as a regulatory reporting requirement (Steinwand, 2000).

How foundational forces such as risk culture, board effectiveness, internal control, and internal audit potentially work together to improve risk management in Ethiopian MFIs is rarely researched and discussed. In order for risk management to effectively serve in the management of all risk categories, it must be based on significant foundational variables, according to the premise underlying this study. Moreover, it should be noted

that some scholars have investigated the direct relationship between internal audit and risk management (ElHaddad et al., 2020; Yaser, 2022). However, the effect of internal audit on risk management as mediated by internal control has remained largely unexamined. This study fills this gap by investigating the role of internal control as a mediator between internal audit and risk management performance in MFIs.

Additionally, the study attempts to account for the peculiarities of ownership structure, which may explain the disparities in the risk management performance of MFIs. In particular, the contribution of ownership structure to the framework for risk management is investigated by examining its moderating function.

In the following sections, the research questions raised by the study are summarised and discussed.

6.2.1 Risk management performance of MFIs in Ethiopia

The study's first research question asks the following: What is the risk management performance of MFIs in Ethiopia at present?

For this study, the risk management performance of Ethiopian MFIs was evaluated through quantitative analysis and qualitative discussions. The quantitative result is derived from a descriptive analysis of the performance status of Ethiopian MFIs with respect to the following risk management foundational variables: risk culture, board effectiveness, internal control, and internal audit. The qualitative results, in contrast, are based on both general questions posed to respondents regarding the performance of risk management in general and on the aforementioned risk management foundational variables.

The descriptive data revealed that the relative risk management performance of Ethiopian MFIs is average, indicating that the surveyed employees are ambivalent about the risk management performance of their MFIs. The performance of MFIs on

three variables (risk culture, internal audit, and risk management performance) is moderate (with a mean score of approximately 3.23 for the three constructs), indicating an approximate score of 65%. In terms of board functionality and internal control, however, the performance of MFIs according to surveyed employees is significantly improved (mean scores of 3.53 and 3.49, respectively), indicating an above-average result of over 70% and implying a positive agreement.

The qualitative evaluation organised the risk management performance of Ethiopian MFIs along five dimensions: the four foundational variables and an overall evaluation. Regarding the development of a risk culture, the qualitative findings indicate that Ethiopian MFIs have not yet developed a robust risk culture that will have a significant impact on risk management performance. In fact, the results indicate that MFI employees believe that Ethiopian MFIs have a rather lax risk culture. In comparison to the quantitative result, which indicated an average performance, this result is somewhat pessimistic.

The qualitative evaluation of the board's dedication to their roles and responsibilities reveals a below-average performance, whereas the quantitative evaluation revealed an above-average performance. The difference may have resulted from the in-depth discussions during the interview stage that clarified the issue for respondents in response to qualitative questions.

The qualitative and quantitative evaluations of the internal control system yielded similar results, namely that internal control is relatively effective in Ethiopian MFIs and strongly contributes to their risk management efforts.

The quantitative analysis reveals that respondents are ambivalent regarding the effectiveness of internal audit in Ethiopian MFIs. Similarly, the qualitative evaluation revealed that the internal audit function does not adequately support risk management

initiatives.

In terms of risk management, Ethiopian MFIs are in their infancy, according to a qualitative assessment of their current risk management performance. In terms of level of understanding, fostering a risk-aware culture, articulating risk appetite and risk tolerance for use in risk management, and producing effective risk reports, Ethiopian MFIs perform below average, although the level of performance varies between privately owned MFIs and those supported by NGOs.

6.2.2 Impact of direct relationships

This section discusses the direct linkages between the exogenous variables (risk culture, board effectiveness, internal control, and internal audit) and endogenous variables (risk management performance). The results of the direct hypothesised links in the suggested study model are depicted in Figure 4

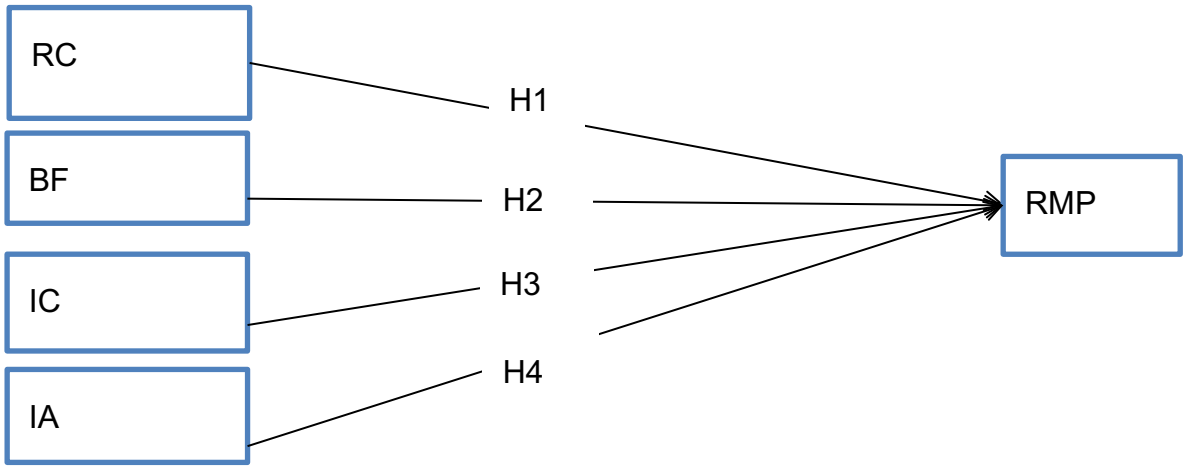

Figure 6 : Hypothesised direct relationships in the structural models

The second research question asks the following: How do the four risk management foundational variables, namely risk culture, board effectiveness, internal control, and internal audit, affect the risk management performance of Ethiopian MFIs?

Using the results of the SEM, a quantitative assessment of the contribution of each latent construct to risk management performance was revealed. The qualitative

assessment of how each foundational variable influences the risk management performance of MFIs is determined by analysing the interview results of selected MFI industry experts.

The quantitative data analysis revealed the study's respondents perceive risk culture to have a significant positive effect on the risk management performance of MFIs (b = 0.398, p = 0.001), confirming hypothesis 1 (H1). This result is consistent with the findings of the qualitative interview assessment, in which the majority of interviewees believed that a strong risk culture positively influences the risk management performance of MFIs.

This result is also consistent with the International Finance Corporation's 2015 report on risk culture, risk governance, and balanced incentives (IFC, 2015). The report highlights the importance of risk culture, risk governance, and balanced incentives within financial institutions as prerequisites for sustaining an effective risk management framework as a key focus area. This outcome is also consistent with the findings of other researchers who evaluated the relationship between risk culture and organisational performance. In its board guidance on risk culture (IRM, 2012), for instance, the IRM defined an effective risk culture as one that enables and rewards individuals and groups for taking the appropriate risks in an informed manner. Other empirical studies evaluated the influence of risk culture on organisational performance and found a positive correlation between risk culture and organisational performance (Nocco & Stulz, 2006; Hoyt & Liebenberg, 2008; Walker, 2009; Kpodo & Agyekum, 2015;). The finding of this study, which revealed a strong, significant relationship between risk culture and risk management performance of MFIs, is therefore consistent with theoretical assumptions and could potentially have a substantial impact on enhancing the risk management performance of MFI firms in Ethiopia.

Board effectiveness was positively and statistically significantly associated with risk management performance (b = 0.222, p 0.001), confirming hypothesis 2 (H2). The outcome of the SEM indicates that board effectiveness is viewed to have a positive and statistically significant effect on the risk management performance of MFIs. The result provides empirical evidence supporting the acceptance of H2. Similarly, the qualitative outcome revealed the same outcome. Experts in the microfinance industry believed that board structure and composition, as well as the board's commitment to its roles and responsibilities, have a significant and positive impact on risk management in MFIs. The findings suggest that the effectiveness of the board in an MFI in terms of its structure and composition, as well as its dedication to its role and responsibilities, influences its risk management.

The results of both the quantitative and qualitative data analysis are consistent with previous studies revealing a positive association between board effectiveness and risk management performance. For example, research by MicroSave (2015) identified indicators of board commitment and composition, and revealed the association of the indicators with risk management performance. Additionally, a study by Robert (2018) recommended the board to fully understand and monitor risk management measurement regularly for positive contribution in risk management. Both these studies support the findings of this study. In addition, a report by the Center for Financial Inclusion (2013), which asserts that the board should play an important role in risk management to reduce instances of financial crises, validates the results of the analysis. As assessed by Ssekiziyivu et al. (2018), the ineffective functioning of the board negatively impacted the risk management performance of Ugandan MFIs, revealing the association between board effectiveness and risk management. Current research is therefore consistent with this scholar's findings.

Both internal control (b = 0.13, p = 0.005) and internal audit (b = 0.238, p = 0.001) had a substantial and positive effect on the performance of risk management. Additionally, support for hypothesis 3 (H3) and hypothesis 4 (H4) is thus implied. The qualitative assessments reveal that both internal control and internal audit have a positive impact on the risk management performance of MFIs, indicating agreement between quantitative and qualitative results regarding the contribution of internal control and internal audit to enhancing the risk management performance of MFIs. The results of the qualitative evaluation and the SEM provide empirical evidence that internal control and internal audit are perceived to affect risk management positively. In other words, both internal control and internal audit are perceived by those working in the MFI industry to enhance the performance of risk management in Ethiopian MFIs.

To the best of the researcher's knowledge, there is very limited empirical evidence testing the impact of internal control on risk management in MFIs. Important theoretical models, such as those by COSCO (2013), discuss the significance of designing and implementing an effective internal control system for mitigating microfinance risks. This theoretical argument supports the empirical finding of a correlation between internal control and risk management effectiveness. This result is also consistent with the empirical findings of Akwaa-Sekyi and Moreno (2016), who conducted an empirical evaluation of internal control mechanisms in Spanish banks and found a positive correlation between default risk and an inadequate internal control system. Jin et al. (2013) discovered that, when banks adhere to internal controls, their risk-taking behaviour is minimised and they are less likely to fail. This result is also consistent with the research results, which demonstrate a positive correlation between internal control and risk management performance.

Although there are no empirical studies that test the relationship between internal audit

and risk management in MFIs, there are numerous theoretical foundations and reports that support the conclusion of the relationship between internal audit and risk management. Reports by the IIA (2013, 2017), the FSWG (2010), and Aveh et al. (2013) all support the positive relationship between internal audit and risk management.

6.2.3 Impact of mediation

Despite the central role played by the internal audit function in ensuring the oversight of the internal control process, little research has been conducted on the effect of the internal audit function on the quality of internal control. Consequently, the relationship between the internal audit function and internal control in emerging economies such as Ethiopia merits academic study. Particularly unexplored is the impact of the interaction between internal audit and internal control on risk management in general and on MFI risk management in particular. This limitation prompted investigation of this relationship in this study.

The third research question asks the following: Does internal control serve as a mediator (go-between) for internal audit and risk management in Ethiopian MFIs?

The mediating effect of internal control on the relationship between internal audit and risk management, i.e., the interaction effect of the two variables on risk management, was evaluated using an AMOS-based SEM. The results revealed a significant indirect effect of internal audit on risk management performance through the mediation of internal control (b = 0.079, t = 5.111, P = 0.005), supporting hypothesis 9 (H9). The mediation was determined to be inadequate. The total effect increased from b = .238 to b = 0.314 as a result of mediation (see Table 24).

The outcome is consistent with the opinion of Ma (2016), who emphasises the

significance of integrating internal control and internal audit in the creation of enterprise value. The relationship between internal control and internal audit, in Ma's (2016) opinion, is interdependent. Vijayakumar and Nagaraja (2012) also emphasise the significance of internal control and internal audit working together for maintaining the health of businesses and enhancing the quality of internal control systems. Vijayakumar and Nagaraja's (2012) perspective is supported by the findings of this research.

6.2.4 Impact of moderation

Several studies indicate that ownership type does not significantly affect the performance of MFIs. Studies by Mersland and Strøm (2008), for example concluded, based on a dataset containing information gathered from 200 NGO-backed and shareholder-owned MFIs in 54 countries, that ownership type does not affect performance.

However, Mersland and Strøm (2007) also note in their research that non-profit organisations are frequently regarded as having weaker structures due to the absence of owners with a financial stake in the organisation. This would theoretically result in a reduction in financial performance.

The fourth research question asks the following: Does the moderation of ownership structure impact the performance of risk management in Ethiopian MFIs?

This section discusses the moderating effect of ownership structure on the relationships between exogenous (risk culture, MFI board effectiveness, internal control, and internal audit) and endogenous (risk management performance) latent components. Figure 7 displays the outcomes of the proposed study model's linkages through a moderator (ownership structure). The effects of the moderator were

examined using multi-group analysis, in which the data sample is divided into subsamples and the identical structural model is run simultaneously on both samples. It is then followed by pairwise comparisons of path coefficients across the two groups and consideration of the crucial ratio for group differences.

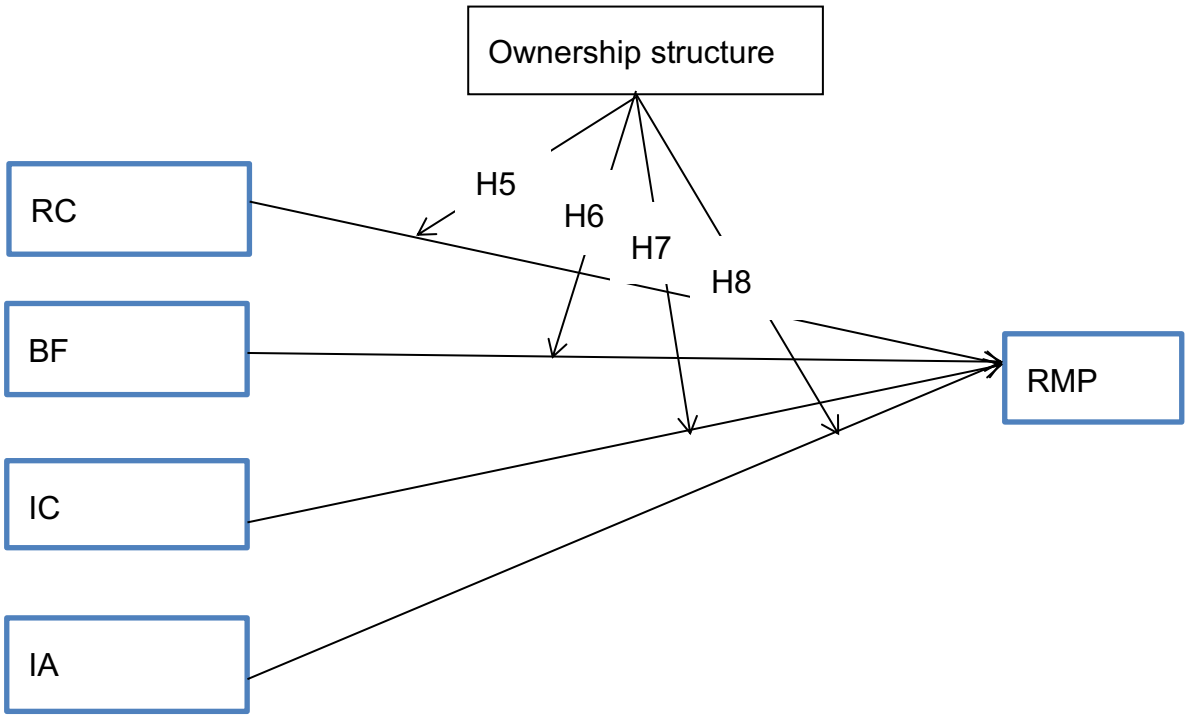

Figure 7: Hypothesised relationship in the structural model via moderator

The results of the moderating effect of ownership structure on the connection between independent variables (risk culture, board effectiveness, internal control, and internal audit) and the dependent variable (risk management performance) are presented in Table 26.

Table 26: Hypothesised results of moderating effect

Hypothesised relationship via moderator	**Result**
H5: RC → RMP	Supported
H6: BF → RMP	Supported

H7: IC → RMP	Not supported
H8: IA → RMP	Not supported

The results of AMOS structural relationship through the moderation of ownership structure, as shown in the table above, indicate that ownership structure moderates the relationship between risk culture and risk management, and that the effect of risk culture on risk management performance is greater in privately owned MFIs than in those backed by NGOs (see Tables 22 and Table 23), supporting hypothesis 5 (H5). This result is consistent with the claim made in policy papers that shareholder-owned MFIs exhibit superior performance because their governance is assumed to be superior (Mersland & Strøm, 2007). This is supported by the idea that privately owned companies have boards and management with a financial stake in the organisation, and that the top management in these MFIs may be considerably more committed to instilling a strong risk-aware culture than in NGO-owned MFIs.

The association between board effectiveness and risk management performance is moderated by ownership structure. In this instance, however, the impact of the board on the performance of risk management is greater in MFIs supported by NGOs than in those owned by commercial entities (see Table 22 and Table 23). This finding contradicts the existing literature, which has generally found that privately owned firms' boards are considered to be more effective. The age of MFIs in Ethiopia may account for this discrepancy between the results of this research and the findings of previous research; many of the most experienced MFIs in Ethiopia are supported by NGOs. The boards of NGO-backed MFIs also have the privilege of borrowing governance expertise from their parent NGOs. The majority of privately owned MFIs in Ethiopia are still emerging, whereas many NGO-backed MFIs are well-established.

The effect of ownership structure on the relationship between two exogenous factors (internal control and internal audit) and an endogenous variable (risk management performance) was found to be negligible. This indicates that ownership structure has virtually no effect on the relationships between the two exogenous variables (internal control and internal audit) and the endogenous variable (risk management performance). This also suggests that the ownership structure of an MFI has virtually no bearing on the effectiveness and direction of internal control and internal audit on risk management.

This result is also inconsistent with previous research, the majority of which supports the notion that privately owned MFIs have stronger governance than those supported by NGOs. It is anticipated that robust governance will result in a robust internal control system and an effective internal audit, which will in turn enhance risk management. This inconsistency may be due to the fundamentally different histories of privately owned and NGO-supported MFIs in Ethiopia. Until fairly recently, nearly all MFIs in Ethiopia were supported by NGOs or by the Ethiopian government. Therefore, these categories of MFIs have substantial experience with governance and risk management. Privately owned and profit-driven MFIs are a relatively new phenomenon in Ethiopia. Consequently, they have minimal experience with governance and risk management. This suggests that the two types of MFIs are not on the same page regarding the same evaluation.

The fifth research question asks the following: What are the most essential risk management procedures that Ethiopian MFIs must implement?

The dependence of Ethiopian MFIs on NGOs and politically motivated government bureaucracies is defining characteristic of Ethiopian MFIs. Private ownership of MFIs is a relatively new phenomenon that should be fostered in the future. Privatisation of

MFIs will arguably result in genuine ownership and governance.

On the basis of the research findings, Ethiopian MFIs should proactively manage their risk exposures by focusing on risk management foundations and incorporating foundational variables into their risk management framework. This can be accomplished by enhancing the internal control system, enhancing the internal audit function, and promoting a risk culture within the institutions. Without proper risk governance at the MFI board's helm, however, none of these will endure. The interaction of the variables as a unified whole can provide Ethiopian MFIs with a solid foundation for risk management. This framework resembles the three lines of defence model, as discussed by the IIA (2013), but with the addition of risk culture and board governance. The addition of risk culture and board governance to the three lines of defence model improves risk management in MFIs even further. Internal control implementation (first line of defence), internal control evaluation and follow-up (second line of defence), and independent assurance by internal audit involving the evaluation of the performance of first and second lines of defence (third line of defence), along with overall governance and board oversight, will improve risk management. Moreover, incorporating a risk culture into the framework improves risk management even further.

As advocated in the three lines of defence model, the following steps are crucial: the interaction between the internal control system (which is implemented at the first line of defence and monitored at the second line of defence), internal audit (the third line of defence that monitors the proper functioning of the first and second lines of defence), and the governance at board level (responsible for oversight and monitoring the proper functioning of all three lines of defence). When a risk culture prevails in an industry, proactive risk management and risk management performance can be

sustained. This recommendation is supported by the research findings based on Ethiopian MFI employees' perceptions of the effects of the foundational variables on the performance of risk management. Therefore, the interaction of internal control and internal audit, along with proper governance at the board level, which work together to instil a risk culture in MFIs, can serve as the foundation for a comprehensive risk management framework in Ethiopian MFIs.

CHAPTER SEVEN: SUMMARY, CONCLUSION AND RECOMMENDATION

7.1 Chapter introduction

This chapter presents the summary of findings, conclusion, and recommendations.. It begins with a basic overview of the research findings and then addresses its most significant contribution to practical understanding of the research topic. It then briefly covers potential limits and future research directions.

7.2 Thesis summary

This subsection provides a brief overview of the six chapters of the thesis and the measures followed to achieve the research objectives.

7.2.1 Overview of introduction

The first chapter provides an overview of the research and the impetus for undertaking the study. Previous literature has examined how the microfinance industry is growing and expanding along multiple dimensions. In addition, MFIs currently have access to commercial funding sources in the form of loans and equity, and are accepting client deposits. The combination of these variables makes risk management a crucial consideration in order to safeguard investor cash. The majority of literature focuses on expansion, inclusive financing, and sustainability. Few studies on risk management in Ethiopian MFIs have solely concentrated on fraud, credit, and liquidity risk pillars, and those are usually only master's-level studies. Nonetheless, comprehensive risk management necessitates an empirical assessment of the risk management foundations, including risk culture, board effectiveness, internal control, and internal audit. Therefore, this chapter emphasises the need for a more comprehensive examination of risk management by focusing on fundamental constructs of risk

management in Ethiopian MFIs.

7.2.2 Overview of literature review

The second chapter provides a literature review on the microfinance business and risk management. Then, a theoretical and empirical examination of the four most typical risk management foundations – risk culture, board effectiveness, internal control, and internal audit – is presented. After the literature review, theoretical models are discussed and the study's conceptual framework is developed.

7.2.3 Overview of methodology

The third chapter explains the philosophical research methodology utilised to answer the research questions and attain the research objectives. Combining quantitative and qualitative data collection techniques (mixed method) with a sequential explanatory approach, a data triangulation was applied. Both quantitative and qualitative information was gathered. Using SPSS and AMOS, quantitative data were examined.

7.2.4 Overview of research variables and hypotheses

The research variables and hypotheses were discussed in the fourth chapter. Three sets of hypotheses were generated, indicating the direct relationship between exogenous latent constructions and endogenous constructs, the same associations moderated by ownership structure, and mediation of internal control in between internal audit and risk management.

7.2.5 Overview of data presentation and analysis

At the beginning of this chapter, a preliminary analysis of the data gathered from respondents was conducted to ensure the validity and reliability of instruments used to test the hypothesis. Version 26 of SPSS was utilised for this preliminary data

analysis. Using EFA, the constructs were categorised. Analyses of the links between the dimensions within the proposed research model were conducted during model testing. During the data analysis procedure, two phases were utilised. In the first phase, CFA is used to assess the constructs' validity and verify the model's fit when data reliability, discriminant validity, and convergent validity are satisfied. Next, the SEM technique is used to examine the hypothesised relationships between the independent and dependent variables. Then, a multi-group analysis is employed to examine the moderating effect of ownership structure on the link between the model's key components. SEM path analysis is then used to examine the mediating role of internal control between internal audit and risk management.

In an effort to provide more accurate data, the results of the questionnaire were bolstered with the assistance of participant interviews. A triangulation approach enabled the researcher to gain an in-depth insight of the viewpoints of the participants on risk management and the construct factors.

This chapter contributes to the achievement of the first seven research objectives, which are:

1. To evaluate the risk management performance of Ethiopian MFIs in terms of relevant variables.
2. To investigate the effect of risk culture on the performance of risk management in MFIs in Ethiopia
3. Determine the influence of board on the risk management performance of MFIs in Ethiopia
4. To investigate the effect of internal control on the risk management performance of microfinance institutions (MFIs) in Ethiopia

5. To investigate the impact of internal audit on the risk management performance of microfinance institutions (MFIs) in Ethiopia
6. To investigate the moderating effect of ownership structure on the risk management performance of microfinance institutions (MFIs) in Ethiopia
7. To evaluate the role of internal control as a mediator between internal audit and risk management performance.

7.2.6 Overview of discussion

In this chapter, the main research findings are discussed by interpreting the results shown in accordance with the primary aims and objectives of the research. It helps to clarify the relationship between the separate latent constructs and the performance of risk management in relation to the literature and other empirical evidence. This section also explained the results of the quantitative assessment through qualitative results.

7.3 Contribution of the research

This section summarises the contributions to theory, practice, and methodology that the work described in this thesis has made to the field.

7.3.1 Contribution to theory

This research makes a significant contribution to theory. Importantly, the research led to the development of a conceptual model that facilitates a better understanding of the foundational factors that influence MFIs' risk management performance and the moderator's influence on the relationship between the foundational factors and MFIs' risk management performance.

As evidenced by the literature review and problem statement, there is a paucity of research regarding the impact of foundational risk management elements on MFI risk

management. These factors (risk culture, board effectiveness, internal control, and internal audit) have not been empirically examined, either in MFIs settings in general or in Ethiopian MFIs in particular, despite being theoretically established as potentially influential in positively affecting risk management. Through empirical investigation, this study confirmed the relationship between the hypothesised associations.

In addition, the research assessed the moderating effect of ownership structure on the relationship between risk management factors and risk management performance. Consequently, this study represents an initial attempt to fill this void. To the best of the researcher's knowledge, no other research has examined the moderating effect of ownership structure on the management of risk in MFIs and the mediating effect of internal control on the effect of internal audit on risk management.

7.3.2 Practical implications

The research findings indicate that risk culture, board effectiveness, internal control, and internal audit of MFIs in Ethiopia impact the performance of their risk management. These empirical findings have practical implications for microfinance regulators and administrators. Microfinance regulators can consider these risk management foundation variables when making policy and regulatory decisions, as well as when directing and monitoring microfinance operating performance and risk management performance. Administrators of MFIs, such as boards of directors and CEOs, may believe that these fundamental characteristics are essential to their risk management policies and risk management efforts.

7.3.3 Methodological contribution

This research exemplifies the use of mixed methods for verifying and confirming the

proposed association, thereby achieving the research purpose and objectives with a number of methodological contributions. First, this study contributes to risk management literature by utilising the structural equation technique to test the measurement and structural model. Specifically, a three-step methodology was employed in this study (EFA, CFA, and SEM with path analysis). As a result, this is one of the few studies that employ SEM statistical methods to investigate the fundamental factors that influence risk management performance.

In addition, the fact that this study was conducted in Ethiopia is a significant contribution, as few studies in Ethiopia employ SEM techniques as a method of analysis. Consequently, this thesis demonstrates to other researchers how AMOs and SEM may be utilised in risk management research. In addition, the use of multi-group analysis to examine the impact of a moderator (ownership structure of MFI) on the relationship between exogenous and endogenous latent constructs in the proposed research model was uncommon in the prior literature; thus, this study is one of the few utilising multi-group analysis to detect and analyse the moderation effect. This is a novel technique in AMOS, and its application to answer the question regarding group comparison and differences may prove useful in future research of a similar nature.

Using mediation analysis by considering the interaction effect of internal control and internal audit in risk management research in general and microfinance risk management in particular is a significant methodological contribution.

7.4. Limitation

One of the major difficulties of studies like this is to obtain the necessary data timely and sufficiently. One of the reasons behind can be stakeholders' limited awareness for research works, which was witnessed by inadequate attention to provide all pertinent data needed to conduct the research timely. The other was the bureaucracy

of government offices that takes time to obtain simple information.

As there is no readily available database about microfinance sector and researches conducted on microfinance industry, accesses to the pertinent data were not easy.

The most important limitations to this study were that some potential key influential factors, such as MFI management and risk management functions, were not included in the model.

Another limitation to this study was the somewhat restricted sample size; the number of respondents in the survey was barely at an acceptable level. “Bigger is always better” when it comes to sample size for SEM. A general rule of thumb is that the minimum sample size should be no less than 200. Although the survey was designed to collect data from approximately 610 respondents, due to various factors, only 454 completed and returned the surveys, representing a response rate of 74.4%.

7.5. Conclusion

This study’s findings provide both theoretical and empirical support for the usefulness of the suggested foundational variables and the interrelationships between those variables as a framework for a better understanding of MFI risk management and enhanced risk management performance.

7.6 Recommendations

7.6.1. Recommendations for future research

According to the risk management house presented by risk management initiatives for microfinance, risk management, like a house, requires a solid foundation. Numerous studies have focused on as aspects of risk management such credit risk, fraud risk, and system risk, among others. This is the first investigation into the impact of risk

management foundations on risk management performance as the basis for a risk management framework. The study permits the submission of multiple proposals.

First, future research could expand the scope of this study to include additional potentially relevant constructs in the risk management foundation. In the proposed model for further integration of risk governance, for instance, senior management and risk management functions could be considered exogenous constructs in addition to board effectiveness.

Risk culture ranks first in terms of explanatory power, followed by internal audit, board effectiveness, and internal control. Therefore, testing the explanatory power of the categories in various microfinance contexts in Africa and other continents should be considered.

To improve the explanatory power of the exogenous independent constructs, future research could also investigate variables other than internal control that mediate the relationship between the independent constructs and the dependent construct.

A comprehensive empirical investigation could be conducted by combining the risk management foundation constructs and the risk management pillars, which are the primary risk categories, in a multistage SEM study.

By considering the experience of MFIs as a moderating variable, researchers can examine the role of experience in enhancing the risk management capacity of MFIs.

7.6.2. Recommendations for the Ethiopian MFI industry

The researcher has attempted to give a clear sense of the current risk management environment of Ethiopian MFIs. According to the research, and based on the researcher's own experience, there is still a considerable gap between Ethiopian MFIs actual risk management efforts and the ideal risk management efforts that these organisations need

Ethiopian MFIs must develop plans taking these known risks into account, and the identified risk management limitations must be acted upon. This will allow MFIs to anticipate and plan for risk as much as possible, so that mitigation measures that can help MFIs minimise the impact on their business can be put in place, which will also allow for unimpeded and sustainable growth.

Insofar as the context in which this study is conducted affords an opportunity to invite the management, investors, and boards of MFIs to pay attention to risk management, the researcher suggests that this attention would be best rewarded if these actors viewed their work to manage the risks of their entities not at the level of an event-centred transaction but at the level of a framework that they can commit to and build – that is, something that will not soon become obsolete. Such a framework should take into account the fundamental risk management variables whose contributions are supported by empirical evidence: risk culture, board effectiveness, internal control, and internal audit.

Ethiopian MFIs should promote a risk-conscious culture as one of the components of their framework, as this will infuse the MFIs with a culture that considers risk at both the transactional and decision-making levels, ensuring the MFI is growing sustainably. This will imply that, while the MFI may have a risk department, every official will also be responsible for risk management. If properly administered, a sound risk culture may not prevent all undesirable behaviour, but it can reduce the frequency and magnitude of losses caused or influenced by risk-taking behaviour. It will also increase public confidence in MFIs and the financial sector as a whole.

In addition to this study's empirical findings supporting a strong correlation between risk culture and risk management, many previous studies suggest that the degree of public support for microfinance is not only a function of the broad objective of funding

parties, but also of the cultural environment in which MFIs operate (Anyangwe, Vanroose & Fanta, 2022). Since this concept has a significant explanatory role on the risk management performance of Ethiopian MFIs, MFIs should promote a robust risk culture. They can accomplish this by incorporating risk management into their hiring practices, induction, and ongoing training programs to foster a risk-aware business environment, by making risk management everyone's responsibility, and by promoting risk discussions through timely, transparent, and honest communication on risk.

As discussed in this thesis, the majority of Ethiopian MFIs are either NGO-supported or privately owned. The composition and dedication of their boards are distinct. In the case of NGO-supported MFIs, they are represented by their parent NGOs or the social sector, whereas for privately owned MFIs, they are represented by investors. Despite these differences, there is a degree of misalignment between the incentives of management and those of the board, given that board members represent different pulls and pushes. As a result, it is crucial for MFIs to conduct periodic board composition reviews to ensure that there is an adequate number of experienced and qualified board members and that the board is diverse in terms of qualifications, experience, gender, etc. The composition should also consider the establishment of a subcommittee of the risk management board that is competent, functions effectively, and has received adequate training in risk management. The level of commitment to their roles and responsibilities is a crucial aspect of the effectiveness of the MFI board. It ranges from understanding and recognising the significance of risk management to promoting a risk-aware culture throughout the institution. This can be accomplished if MFIs are committed to risk management from the very beginning when nominating board members. It is now more apparent that MFIs, the NBE, and the AEMFI should collaborate to promote the nomination and assignment of board members solely on

the basis of merit by prohibiting the culture of social sector and government representation.

A proactive, constructive board of directors, in conjunction with a solid internal control structure, is essential to any sound risk management and governance (Narayana et al., 2019). In addition, MFIs should evaluate the effectiveness of their internal control system using the COSO framework's five internal control dimensions: the control environment, risk recognition and assessment, control activities, information and communication, and monitoring activities. Due to internal audit's watchdog responsibility over the internal control system, increasing its efficiency could result in improved internal control. MFIs should recognise the significance of their internal audit departments in this regard. The board and management of the MFI must assist with hiring a sufficient number of qualified employees for the internal audit department, provide ongoing support, regularly evaluate the performance of the internal audit department, and advocate for the independence of their activities.

In accordance with this recommendation, an empirical examination of the relationship between internal control and risk management revealed a positive association. Strong control and good governance at the board and management levels will create a shared risk-and-reward preference perspective. In contrast, few MFIs have a separate risk committee from the audit committee that operates at the board level. Prior to each board meeting, the risk committee should be presented with a well-defined risk charter and reporting element, per the recommendation of the researcher. This committee should also be available ad hoc for decision-making needs in the interim. Additionally, MFIs must keep audit and risk separate. This would permit a structure to develop around risk management as a distinct function that goes beyond credit and document quality and allow risk management to serve as a true force multiplier for MFIs.

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Appendix A: Ethics approval form

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCE RESEARCH

ETHICS REVIEW COMMITTEE

02 July 2021

NHREC Registration # : (if applicable)
ERC Reference # : 2021_CRERC_028(FA)
Name : Mrs Nondumiso Connie Bana-Lelala
Student No#: 58548335

Dear Mr Elias Tadesse Mamo

Decision: Ethics Approval from 2021 to 2026

Researcher(s): Mr Elias Tadesse Mamo , eliastm2006@gmail.com or elias.tadesse@aastu.edu.et
Tel No: +251913176434
College of Economic and management Sciences Department Finance, Risk Management and Banking University of South Africa

"Risk Management Framework for Microfinance Institutions in Ethiopia – a Methodological Triangulation Approach"

Qualification: PhD

Thank you for the application for research ethics clearance by the Unisa College of Economic and management Sciences Research Ethics Review Committee for the above-mentioned research. Ethics approval is granted for 3 years (**01 August 2021 until 31 July 2026**).

*The **low risk application** was **reviewed** by the College of Economic and management Sciences Research Ethics Review Committee on **19 July 2021** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

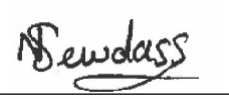
1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Economic and management Sciences Research Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South

African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date **(31 July 2026**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
8. Permission is to be obtained from the university from which the participants are to be drawn (the Unisa Senate Research, Innovation and Higher Degrees Committee) to ensure that the relevant authorities are aware of the scope of the research, and all conditions and procedures regarding access to staff/students for research purposes that may be required by the institution must be met.
9. If further counselling is required in some cases, the participants will be referred to appropriate support services.

*Note:The reference number **2021_CRERC_028 (FA)** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,



Prof Nisha Sewdass
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Executive Dean: CEMS
E-mail: mogalmt@unisa.ac.za
Tel: 012 429 4805

Appendix B: Participant information sheet

PARTICIPANT INFORMATION SHEET/CONSENT FORM

Research Title: Risk Management Framework for Microfinance Institutions in Ethiopia – a Methodological Triangulation Approach

You are invited to take part in this research, titled "Risk Management Framework for Microfinance Institutions in Ethiopia." You have been invited because of the relevance of your job position and educational background to the proposed research area. Your involvement is through filling a questionnaire that will be used for quantitative analysis. The questionnaire will consume a maximum of 30 minutes of your time

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research. Please read this information carefully. Ask questions about anything that you don't understand or want to know more about.

Participation in this research is voluntary. If you don't wish to take part, you don't have to. If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you. Understand what you have read and consent to take part in the research project

The researcher is **Mr. Elias Tadesse**, PhD student in University of South Africa, and the research is a thesis for Doctor of Philosophy in Management Studies – specializing in finance and risk management.

Risk management related issues are one of the areas of concern for Microfinances in general and stakeholders such as you in particular. Hence your participation will have positive impact in producing quality report which will in turn positively contribute to the

steps that may be taken in future based on the recommendations of the research.

The confidentiality of information provided will be protected as you are not required to write your name in the questionnaire. Further, the data will be exposed to the researcher and the statistician who has signed confidentiality agreement

Declaration by participant

Research Title: Risk Management Framework for Microfinance Institutions in Ethiopia

Researcher: Elias Tadesse Mamo

Declaration by Participant

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print)	_____
Signature _____	Date _____

Declaration by Researcher†

I have given enough explanation about the research, its procedures and risks and I

believe that the participant has understood that explanation.

Name of Researcher	
Signature	Date

Appendix C: Confidentiality agreement with statistician

May 6, 2021

Address: addia ababa,

Ethiopia

Confidentiality agreement with the statistician

Researcher: Elias Taddesse, student at the University of South Africa

Statistician: Mulugeta Gajea, Independent Researcher and Lecturer at College of Natural and Social Science, Addis Ababa Science and Technology Uninersity.

Mr. Elias Tadesse has been conducting his dessertation entitled as "Risk Management Framework for Microfinance Institutions in Ethiopia – a Methodologica Triangulation Approach "

Hence upon the request of the researcher the statistician shall provide statistical assistance service until the completion of the research.

Consequently, I the statistician Mr. Mulugeta Gajaa has agreed to keep the confidentiality of the information I obtained in assisting the research work through statistical service provision, thus I confirm having put my signature to keep confidentiality anonymously.

Researcher name and Signature		Statistician name and signature	
Elias Tadesse	.....	Mulugeta gajea	.....
Date Signed	May 6, 2021	Date Signed	May 6, 2021

Appendix D: Survey questionnaire

SURVEY ON MICROFINANCE RISK MANAGEMENT

Ethical clearance #**: 2021_CRERC_028 (FA)**

Dear Prospective participant,

You are invited to participate in a survey conducted by **Elias Tadesse Mamo** under the supervision of **Prof Raphael Tabani Mpofu**, a Professor in the College of Economics and Management Science towards a PhD at the University of South Africa. The survey you have received has been designed to study the **Risk Management Practice and Framework in Ethiopian Microfinance Institutions**. You were selected to participate in this survey because you are principal stakeholder of microfinance industry and that you have better picture of the microfinance operation in general and risk related matters in particular. By completing this survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to understand the clear picture of risk management practice in Ethiopian Microfinance Institutions, and propose risk management framework. You are, however, under no obligation to complete the survey and you can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of connecting the information that you provide to you personally. If you choose to participate in this survey it will take up no more than 20 minutes of your time. You will not benefit from your participation as an individual, however, it is envisioned that the findings of this study will help microfinance firms to evaluate their risk management frameworks, and that the government may use in developing microfinance supervision directives and guidelines. We do not foresee that you will experience any negative

consequences by completing the survey. The researcher undertakes to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual.

The records will be kept for five years for audit purposes where after it will be permanently destroyed. Records will be permanently deleted from the hard drive of the computer. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the Research Ethics Review Committee of the Department of Finance, Risk Management and Banking. The primary researcher, Mr. Elias Tadesse, can be contacted during office hours at 58548335@mylife.unisa.ac.za. Or eliastm2006@gmail.com or / Mob. +251913176434. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the Finance, Risk Management and Banking Ethics Review Committee, Chaired by Prof K Tsaurai on email tsaurk@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll-Free Hotline 0800 86 96 93.

Thanks for your kind cooperation!!!!!

I. DEMOGRAPHIC INFORMATION

1. Demographic Information

1.1 Number of years in operation (MFI): _____ years

1.2 Your Experience in Microfinance and / or Banking Industry total: _____ years

1.3 Educational level you have attained:

1. Grade 9-12
2. Diploma
3. Degree and above
4. Others

5. (specify)_____
_

1.4 Current position/Job title

1. Member of board
2. CEO
3. Member of Senior Management
4. Internal Auditor
5. Branch Manager

1.5 Area of Specialization/Certified in

1. Accounting and Finance or Banking
2. Management and Related
3. Economics
4. Law
5. Other (specify)

II. QUESTIONS TO ASSESS THE EXISTING PRACTICE

For questions under this section you are kindly required to provide responses by ticking the appropriate box to the extent of which you strongly agree, agree, neutral, disagree and strongly disagree to the existing practice in your Microfinance Institution (MFI) using 5 scales: ***1: Strongly Disagree; 2: Disagree; 3: Neutral; 4: Agree and 5: Strongly Agree***

a) Risk Culture: - refers to the norms and traditions of behaviour of individuals and groups within an organization that determine the way in which they identify, understand, discuss, and act on the risk the organization confronts and the risks it takes (IIF, 2011)

	1	***2***	***3***	***4***	***5***
1. The MFI has a clearly articulated risk management strategy					
2. Risk management function is integrated in the governance structure of the MFI					
3. Internal audit function is integrated well into the risk governance structure of the MFI					
4. The Board establishes a culture of risk awareness, which is widely adopted and understood throughout the MFI					
5. The Board and all functions receive regular training to understand and execute their risk management responsibilities					
6. Risk management is integrated with performance management systems in the MFI					

7. There is demonstrated leadership support for risk management at the top					
8. Individuals are held accountable for their risk-taking actions in the MFI					
9. Staffs are encouraged to challenge decisions					
10. Risk management is linked to all strategies of the MFI					
11. All staffs participate in risk management in the institution					
12. There is a code of conduct in the MFI which is fully enforced					

b) Board Structure and Composition: - The board composition and structure refers to the parameters that describe the structure of the governance models adopted by MFIs. Some of the key criteria under this head include board size, diversity of skill and expertise, experience in finance industry (MFI and Banks), Training acquired and experience in risk management and so on

Board Structure and Composition	***1***	***2***	***3***	***4***	***5***
13. The board size is adequate for effective functioning					
14. The board members competence is sufficient to discharge their responsibilities					
15. A significant number of Board members have a strong finance, banking, and/or risk management background					
16. Board members have knowledge of the communities that the MFI serves					
17. Board is independent that there is clear separation of the role of chairperson of the board and CEO					
18. There is direct reporting to the board by internal auditors					
19. Board members are well trained in Risk Management					
20. There is effectively functioning risk management sub-committee					
21. The experience and skills of risk management sub-committee members is sufficient to effectively assume their functions					
22. Board is well diversified in qualification, experience, gender, and the like					
23. Members of board are aware about risk management requirement by NBE					

d) Board Commitment to Roles and Responsibilities: - Commitment to roles and responsibilities includes the parameters that describe the level of involvement of board members in strengthening the institution in terms of safety and financial sustainability.

Board Commitment to Roles and Responsibilities	***1***	***2***	***3***	***4***	***5***

24. Board members actively involved in developing strategic directions and organizational planning					
25. Risk Management is given sufficient attention in board agenda items					
26. Board members have firm commitment to regularly attend and participate in both board and committee meetings					
27. Board regularly evaluates the performance of management team, specially the CEO, focusing on risk					
28. The Board adequately understands and recognizes the importance of risk management					
29. The board properly discharges the oversight of management compliance to internal and regulatory requirements					
30. Board evaluates its performance either individually or severally					
31. Members of board are paid competitive compensation commensurate to the demands on their time and the responsibilities					

e) Internal Control: - refers to systems covering the policies, processes, tasks, behaviours and other aspects of a company that, taken together, facilitate effective and efficient operations by enabling quick response to significant risk factors, enhance quality of internal and external reporting, ensure compliance with applicable laws and regulations, as well as internal policies.

Control Environment	***1***	***2***	***3***	***4***	***5***
32. The Board, Senior Management, and the Staff demonstrate commitment to integrity and ethical values in words and deeds					
33. The Board in the MFI demonstrates independence from management					
34. The Board in the MFI exercises oversight of the development and performance of internal control functions					
35. The MFI has a well-defined organizational structure and reporting lines in pursuit of Internal Control objectives					
36. The MFI demonstrates a commitment to attract, develop, and retain competent individuals in pursuit of internal control objectives					
37. The Institution holds individuals accountable for their internal control responsibilities.					
Risk Assessment	***1***	***2***	***3***	***4***	***5***

38. All material risks that could adversely affect the achievement of the MFI's goals are recognized and continually assessed					
39. The MFI has designed internal controls that mitigate the identified risks					
40. The MFI identifies and assesses changes that could significantly impact the system of internal control					
41. The MFI considers the potential for fraud in assessing risks to the achievement of objectives.					
Control Activities	***1***	***2***	***3***	***4***	***5***
42. The MFI selects and develops control activities (such as authorizations and approvals, verifications, reconciliations, performance reviews, and segregation duties..) that contribute to the mitigation of risks					
43. The institution deploys control activities through policies that establish what is expected and procedures that put policies into action					
44. The institution selects and develops general control activities over technology to support the achievement of objectives					
Information and Communication	***1***	***2***	***3***	***4***	***5***
45. The MFI obtains or generates and uses relevant, quality information to support the functioning of internal control					
46. There is a mechanism to quickly disseminate critical information throughout the institutions when necessary.					
47. The institution maintains effective channels of communication to ensure that staff fully understand and adhere to policies and procedures affecting their duties and responsibilities					
Monitoring Activities	***1***	***2***	***3***	***4***	***5***
48. The MFI selects and develops on-going evaluations to ascertain whether components of internal control are present and functioning					
49. The MFI conducts an ongoing evaluation of the internal control system and communicates deficiencies timely					
50. The institution takes prompt corrective actions in response of internal control deficiencies					
f) Internal Audit: - refers to an independent, objective assurance and consulting services designed to add value and improve an organization's operations					
Internal Audit	***1***	***2***	***3***	***4***	***5***
51. Internal audit is staffed with competent (qualified and experienced) professionals who exercise professional due care					

52. Internal Audit Department has adequate number of qualified experts.					
53. Internal audit is independent and objective in all its activities in the MFI					
54. There are clear organizational policies and procedures to guide the internal audit operations in the institution					
55. No scope limitation is placed on the internal audit, enabling it to investigate any aspects of the organizations					
56. There is good cooperation between internal audit and audit committee of the board.					
57. Top management support and commitment in support of internal responsibilities is worthy					
58. Effective audit follow-up exists in the MFI for monitoring the management action on previously identified internal control deficiencies.					
59. There is supportive control environment in the institution for proper internal audit functioning					
60. Payment of salary and related benefit to internal auditors is commensurate to the responsibility bestowed					
61. There is regular evaluation of the performance of internal audit department					

III. RISK MANAGEMENT PERFORMANCE INDICATORS

For questions under this section you are kindly required to provide responses by ticking the appropriate box to the extent of which you strongly agree, agree, neutral, disagree and strongly disagree to the performance indicators in your MFI using 5 scales: ***1: Strongly Disagree; 2: Disagree; 3: Neutral; 4: Agree and 5: Strongly Agree***

Risk Management Performance Indicators	**1**	**2**	**3**	**4**	**5**
1. Write-off ratio, non-performing loan (NPL), and portfolio at risk (PAR) in the MFI are all within the required standard					
2. NPL and PAR are consistently improving (declining in magnitude) overtime					
3. Collection cost as a ratio of loan outstanding is consistently declining					

4. The MFI has adequate liquidity (cash) to fund planned growth					
5. There is neither shortage nor overage of cash flows because of consistent synchronization (matching) of cash inflows and cash outflows in the MFI					
6. Fraud incidents are very rare and uncommon in the MFI					
7. Lack of reliable management information system is not a concern for the MFI					

Appendix E: Interview questions

Ethical clearance #**: 2021_CRERC_028 (FA)**

Dear Prospective participant,

You are invited to participate in interview conducted by Elias Tadesse Mamo under the supervision of **Prof Raphael Tabani Mpofu**, a Professor in the Department of Finance, Risk Management and Banking towards a PhD at the University of South Africa.

You were selected to participate in this survey because you are practitioner and pundit in the microfinance industry. By participating in this project, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to understand the clear picture of risk management practice in Ethiopian Microfinance Institutions, and propose risk management framework. You are, however, under no obligation to participate and you can withdraw from the study prior to completing the interview. If you choose to participate it will take up no more than 40 Minutes of your time.

You will not benefit from your participation as an individual, however, it is envisioned that the findings of this study may be used by microfinance institutions, including yours, in assessing the existing risk management practice. It may also be used as a reference by government of Ethiopia in developing microfinance supervision directives or guidelines. We do not foresee that you will experience any negative consequences by completing the survey. The researcher(s) undertake to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual. The interview will be recorded via MSTEAMS. The records will be kept for five years

for audit purposes where after it will be permanently destroyed. Records will be permanently deleted from the hard drive of the computer and other audio recorders. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the Ethics Review Committee College of Department of Finance, Risk Management of Banking. The primary researcher, Elias Tadesse Mamo, can be contacted during office hours at 58548335@mylife.unisa.ac.za / eliastm2006@gmail.com or / +251913176434. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the Finance, Risk Management and Banking Ethics Review Committee, Chaired by Prof K Tsaurai on email tsaurk@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

Interview questions

1. How do you rate and evaluate the current risk management practice in MFIs in Ethiopia in general and in your MFI in particular?
2. Who owns the top risks in your MFI and is accountable for results and to whom do they report?
3. How do you rate risk culture for effective risk management? What is your evaluation of risk culture in your MFI? Is the culture in your MFI positively impacting risk management? Please list indicators of the existence of effective risk culture if any
4. Does the MFI articulate its risk appetite and define risk tolerances for use in managing risk? If yes, briefly explain the practice
5. Does the company's risk reporting provide management and the board information they need about top risks and how they are managed?
6. Do you believe that board commitment to their roles and responsibilities positively affect effective risk management in the MFI? Does the board in your

MFI have the requisite skill sets and experience to provide effective risk oversight? Please list reasons that support your response?

7. How do you rate the importance of internal control system in MFI risk management? How do you evaluate the internal control system in your MFI in general and its contribution in risk management in particular?
8. How do you rate the importance of internal audit in MFI risk management? How do you evaluate the internal audit in your MFI in general and its contribution in risk management in particular

Appendix F: Normality assessment table

Normality assessment

Item	Mean	Std. deviation	Skewness	Kurtosis
RC1	3.3194	1.0576	-0.171	-0.669
RC2	3.5044	1.03097	-0.376	-0.47
RC3	3.4141	1.10002	-0.355	-0.573
RC4	3.1167	1.08248	0.05	-0.732
RC5	2.9515	0.89262	-0.073	-0.129
RC6	3.1233	1.01544	-0.008	-0.468
RC7	3.1982	1.04655	-0.079	-0.699
RC8	3.2709	0.93459	-0.059	-0.347
RC9	3.1982	0.97219	-0.073	-0.205
RC10	3.174	1.00468	0.092	-0.811
RC11	3.2335	0.93172	-0.201	-0.502
RC12	3.2159	0.98425	-0.165	-0.414
BSC13	3.6828	0.92348	-0.276	-0.59
BSC14	3.5088	0.97141	-0.308	-0.604
BSC16	3.5573	0.89147	-0.155	-0.454
BSC17	3.4934	0.97369	-0.169	-0.51
BSC18	3.6916	0.95463	-0.099	-0.982
BSC19	3.4515	0.81438	0.034	-0.255
BSC20	3.3392	0.90102	-0.03	-0.313
BSC22	3.5727	0.87534	-0.204	-0.455

BSC23	3.3921	0.98802	-0.229	-0.378
BCRR24	3.5925	0.93452	0.015	-0.905
BCRR26	3.4802	1.05826	-0.212	-0.674
BCRR27	3.5198	0.84221	0.182	-0.603
BCRR28	3.6123	0.91802	-0.05	-0.84
ICEce32	3.5441	0.88726	-0.362	-0.312
ICEce33	3.4912	0.85022	-0.2	-0.412
ICEce34	3.4141	0.85628	-0.335	-0.39
ICEce35	3.7753	0.98003	-0.414	-0.403
ICEce37	3.4119	0.85089	-0.317	-0.361
ICEra38	3.315	0.84304	-0.294	-0.226
ICEra39	3.3216	0.79603	-0.167	-0.435
ICEra40	3.4053	0.86306	-0.347	-0.447
ICEra41	3.6806	0.98632	-0.296	-0.521
ICEca42	3.4515	0.82782	-0.255	-0.494
ICEca43	3.6101	0.9326	-0.414	-0.213
ICEic45	3.3744	0.78948	-0.122	-0.555
ICEic46	3.4141	0.83541	-0.285	-0.376
ICEic47	3.5154	0.8344	-0.289	0.015
ICEma48	3.4449	0.8274	0	-0.549
ICEma50	3.6454	0.88638	-0.312	-0.244
IA51	3.4141	0.88917	-0.212	-0.238
IA52	3.2269	0.83999	0.225	-0.34
IA53	3.4692	0.98674	-0.066	-0.863

IA54	3.641	0.97709	-0.286	-0.545
IA55	3.6476	0.97384	-0.182	-0.772
IA56	3.4383	0.91078	-0.08	-0.598
IA57	3.4692	0.92198	-0.198	-0.266
IA58	3.4163	0.8539215	-0.058	-0.365
IA59	3.4537	0.89459	-0.167	-0.538
IA60	3.4119	0.84045	-0.068	-0.204
IA61	3.4053	0.84757	-0.051	-0.343
RMP1	4.0154	0.86493	-0.77	0.307
RMP2	2.848	0.83852	-0.204	-0.361
RMP3	3.8833	0.8775	-0.657	0.168
RMP4	2.7004	0.82625	0.063	-0.394
RMP5	2.7137	0.84149	0.135	-0.242
RMP6	3.7621	0.90413	-0.503	-0.043
RMP7	2.5022	0.82657	0.181	-0.538

Appendix G: Unstandardised regression weight for structural model

Regression weights (Group number 1 – Default model)

			Estimate	S.E.	C.R.	P	Label
RMP0	<---	RC0	.377	.046	8.272	***	par_75
RMP0	<---	BF0	.232	.047	4.991	***	par_76
RMP0	<---	IA0	.237	.044	5.358	***	par_77
RMP0	<---	IC0	.134	.047	2.835	.005	par_78
RC1	<---	RC0	1.000				
RC2	<---	RC0	.983	.052	19.011	***	par_1
RC3	<---	RC0	1.070	.055	19.540	***	par_2
RC4	<---	RC0	1.100	.053	20.681	***	par_3
RC5	<---	RC0	.854	.045	19.111	***	par_4
RC6	<---	RC0	.960	.051	18.818	***	par_5
RC7	<---	RC0	1.043	.052	20.196	***	par_6
RC8	<---	RC0	.866	.047	18.325	***	par_7
RC9	<---	RC0	.881	.049	17.824	***	par_8
RC10	<---	RC0	.993	.050	19.952	***	par_9
RC11	<---	RC0	.896	.047	19.195	***	par_10
BSC13	<---	BF0	1.000				
BSC14	<---	BF0	.909	.054	16.754	***	par_11
BSC16	<---	BF0	.889	.049	18.255	***	par_12
BSC17	<---	BF0	1.111	.050	22.144	***	par_13
BSC18	<---	BF0	1.067	.050	21.506	***	par_14

BSC19	<---	BF0	.881	.043	20.425	***	par_15
BSC20	<---	BF0	.794	.051	15.495	***	par_16
BSC22	<---	BF0	.964	.046	21.032	***	par_17
BSC23	<---	BF0	1.110	.051	21.639	***	par_18
BCRR24	<---	BF0	.926	.051	18.085	***	par_19
BCRR26	<---	BF0	.927	.061	15.311	***	par_20
BCRR27	<---	BF0	.831	.046	17.977	***	par_21
ICEce32	<---	IC0	1.000				
ICEce33	<---	IC0	.958	.027	36.077	***	par_22
ICEce34	<---	IC0	.994	.039	25.675	***	par_23
ICEce35	<---	IC0	.927	.051	18.296	***	par_24
ICEce37	<---	IC0	.971	.039	24.849	***	par_25
ICEra38	<---	IC0	.934	.036	26.273	***	par_26
ICEra39	<---	IC0	.903	.037	24.604	***	par_27
ICEra40	<---	IC0	.835	.044	18.890	***	par_28
ICEra41	<---	IC0	.859	.052	16.401	***	par_29
ICEca42	<---	IC0	.981	.037	26.731	***	par_30
ICEca43	<---	IC0	.868	.049	17.832	***	par_31
ICEic45	<---	IC0	.935	.035	26.733	***	par_32
ICEic46	<---	IC0	.974	.038	25.886	***	par_33
ICEic47	<---	IC0	.789	.043	18.257	***	par_34
IA51	<---	IA0	1.000				
IA52	<---	IA0	.735	.041	17.737	***	par_35
IA54	<---	IA0	.851	.048	17.586	***	par_36

IA55	<---	IA0	.858	.048	17.921	***	par_37
IA56	<---	IA0	.948	.040	23.814	***	par_38
IA58	<---	IA0	.908	.037	24.770	***	par_39
IA59	<---	IA0	1.024	.035	29.097	***	par_40
IA60	<---	IA0	.951	.024	40.278	***	par_41
IA61	<---	IA0	.884	.037	23.832	***	par_42
RMP1	<---	RMP0	1.000				
RMP2	<---	RMP0	.949	.032	29.398	***	par_43
RMP3	<---	RMP0	.944	.036	26.151	***	par_44
RMP4	<---	RMP0	.854	.036	24.018	***	par_45
RMP5	<---	RMP0	.861	.037	23.517	***	par_46
RMP6	<---	RMP0	.782	.045	17.570	***	par_47
RMP7	<---	RMP0	.667	.042	15.818	***	par_48
RC12	<---	RC0	.954	.049	19.463	***	par_49

Appendix H: Regression weight for multi-group moderation analysis

Standard regression weight for multi-group analysis using ownership type as moderating variable

Standardised regression weights

(Private – Unconstrained)

			Estimate
RMP0	<---	RC0	0.527
RMP0	<---	BF0	0.128
RMP0	<---	IC0	0.196
RMP0	<---	IA0	0.115
RC1	<---	RC0	0.772
RC2	<---	RC0	0.766
RC3	<---	RC0	0.805
RC4	<---	RC0	0.838
RC5	<---	RC0	0.824
RC6	<---	RC0	0.79
RC7	<---	RC0	0.837
RC8	<---	RC0	0.808
RC9	<---	RC0	0.793
RC10	<---	RC0	0.8
RC11	<---	RC0	0.829
BSC13	<---	BF0	0.886
BSC14	<---	BF0	0.759

Standardised regression weights

(NGO – Unconstrained)

			Estimate
RMP0	<---	RC0	0.244
RMP0	<---	BF0	0.448
RMP0	<---	IC0	0.18
RMP0	<---	IA0	0.178
RC1	<---	RC0	0.799
RC2	<---	RC0	0.814
RC3	<---	RC0	0.814
RC4	<---	RC0	0.854
RC5	<---	RC0	0.762
RC6	<---	RC0	0.776
RC7	<---	RC0	0.814
RC8	<---	RC0	0.74
RC9	<---	RC0	0.717
RC10	<---	RC0	0.841
RC11	<---	RC0	0.792
BSC13	<---	BF0	0.724
BSC14	<---	BF0	0.644

BSC16	<---	BF0	0.773	BSC16	<---	BF0	0.714
BSC17	<---	BF0	0.894	BSC17	<---	BF0	0.845
BSC18	<---	BF0	0.892	BSC18	<---	BF0	0.787
BSC19	<---	BF0	0.846	BSC19	<---	BF0	0.779
BSC20	<---	BF0	0.623	BSC20	<---	BF0	0.73
BSC22	<---	BF0	0.847	BSC22	<---	BF0	0.794
BSC23	<---	BF0	0.889	BSC23	<---	BF0	0.796
BCRR24	<---	BF0	0.761	BCRR24	<---	BF0	0.719
BCRR26	<---	BF0	0.64	BCRR26	<---	BF0	0.684
BCRR27	<---	BF0	0.773	BCRR27	<---	BF0	0.717
ICEce32	<---	IC0	0.86	ICEce32	<---	IC0	0.887
ICEce33	<---	IC0	0.846	ICEce33	<---	IC0	0.896
ICEce34	<---	IC0	0.854	ICEce34	<---	IC0	0.919
ICEce35	<---	IC0	0.785	ICEce35	<---	IC0	0.625
ICEce37	<---	IC0	0.836	ICEce37	<---	IC0	0.91
ICEra38	<---	IC0	0.788	ICEra38	<---	IC0	0.912
ICEra39	<---	IC0	0.826	ICEra39	<---	IC0	0.901
ICEra40	<---	IC0	0.77	ICEra40	<---	IC0	0.67
ICEra41	<---	IC0	0.727	ICEra41	<---	IC0	0.579
ICEca42	<---	IC0	0.884	ICEca42	<---	IC0	0.935
ICEca43	<---	IC0	0.758	ICEca43	<---	IC0	0.612
ICEic45	<---	IC0	0.877	ICEic45	<---	IC0	0.918
ICEic46	<---	IC0	0.86	ICEic46	<---	IC0	0.921
ICEic47	<---	IC0	0.795	ICEic47	<---	IC0	0.612
IA51	<---	IA0	0.808	IA51	<---	IA0	0.947

IA52	<---	IA0	0.698		IA52	<---	IA0	0.585
IA54	<---	IA0	0.748		IA54	<---	IA0	0.591
IA55	<---	IA0	0.82		IA55	<---	IA0	0.581
IA56	<---	IA0	0.738		IA56	<---	IA0	0.865
IA58	<---	IA0	0.79		IA58	<---	IA0	0.833
IA59	<---	IA0	0.81		IA59	<---	IA0	0.98
IA60	<---	IA0	0.801		IA60	<---	IA0	0.963
IA61	<---	IA0	0.762		IA61	<---	IA0	0.823
RMP1	<---	RMP0	0.952		RMP1	<---	RMP0	0.781
RMP2	<---	RMP0	0.941		RMP2	<---	RMP0	0.805
RMP3	<---	RMP0	0.924		RMP3	<---	RMP0	0.664
RMP4	<---	RMP0	0.883		RMP4	<---	RMP0	0.743
RMP5	<---	RMP0	0.85		RMP5	<---	RMP0	0.773
RMP6	<---	RMP0	0.744		RMP6	<---	RMP0	0.506
RMP7	<---	RMP0	0.682		RMP7	<---	RMP0	0.529
RC12	<---	RC0	0.774		RC12	<---	RC0	0.835

Appendix I: Model comparison for multi-group moderation analysis

Nested model comparison result from IBM AMOS Version 23

Assuming model unconstrained to be correct:

Model	DF	CMIN	P	NFI delta-1	IFI delta-2	RFI rho-1	TLI rho2
Structural	4	36.295	.000	.001	.001	.001	.001

weights							
RCRMP	1	27.094	.000	.001	.001	.001	.001
BFRMP	1	4.527	.033	.000	.000	.000	.000
ICRMP	1	.809	.368	.000	.000	.000	.000
IARMP	1	.216	.642	.000	.000	.000	.000

Appendix J: National Bank of Ethiopia data

a) Number of active MFI clients for years 2014 through 2020

No.	MFIs	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20
1	Amhara credit and savings ins.	880,606	955,218	1,163,329	1,232,551	1,269,270	1,359,699	1,371,198
2	Dedebit credit and savings ins.	380,356	408,351	399,202	402,038	379,451	342,261	461,260
3	Oromiya credit and savings ins.	724,711	939,191	983,617	759,185	889,146	993,013	1,024,946
4	Omo credit and savings ins.	605,026	747,091	910,634	1,072,596	1,271,962	1,490,356	1,601,667
5	Addis credit &savings ins.	215,501	245,265	271,931	286,288	291,759	295,827	298,135
6	Specialized fina.& prom. ins.	35,943	36,060	42,422	41,292	41,292	28,638	32,428
7	Gasha micro-financing ins.	5,207	4,825	4,553	3,925	3,925	3,992	4,207
8	Wisdom micro-financing ins.	63,024	55,924	83,013	102,656	102,656	163,440	192,388
9	Sidama micro-financing ins.	31,484	39,625	48,228	56,129	56,129	76,915	54,223
10	Buussa Gonof.micro-financing ins.	67,787	80,189	76,091	80,993	80,993	85,156	87,878
11	PEACE micro-financing ins.	22,935	21,845	21,809	20,498	20,498	21,065	24,522
12	Meklit micro-financing ins.	9,352	11,053	12,275	10,189	10,189	7,566	8,438
13	Eshet micro-financing ins.	22,300	19,565	15,445	12,825	12,825	10,148	10,113
14	Wassassa micro-financing ins.	65,768	68,263	71,226	72,584	72,584	55,406	58,549
15	Ben. Gum. micro-financing ins.	38,770	40,828	38,027	37,947	37,947	44,582	42,229
16	Dire micro-financing ins.	4,539	5,693	5,435	6,842	6,842	10,491	11,754
17	Agar micro-financing ins.	7,119	10,035	10,429	11,311	11,311	15,163	11,997
18	Harbu Micro-financing ins.	21,241	20,543	26,387	29,194	29,194	30,603	31,573
19	African village financial serv.	12,715	13,137	12,635	11,813	11,456	10,924	8,432

0	Sha.Idi.ye.Ag. micro-financing ins.	2,224	2,241	1,943	2,011	1,370	1,166	1,269
21	Metemamen micro-financing ins.	13,549	17,148	23,393	22,353	20,149	14,914	19,912
22	Leta MFI	2,478	2,416	1,867	1,770	1,803	1,637	1,395
23	Digaf MFI	435	426	367	215	115	128	109
24	Harar MFI	6,768	8,584	8,551	8,365	8,577	9,590	11,231
25	Lefayda credit & saving ins'n	317	188	271	393	578	1,113	1,277
26	Tesfa MFI	343	0	60	1,325	15	10	1,030
27	Gambella MFI			10,138	327	0	0	0
28	Dynsamic MFI	163	261	496	893	1,181	1,035	1,324
29	Somali	1,499	5,398	9,789	17,321	21,217	31,079	34,431
30	Lideta MFI	1,273	1,709	2,441	3,595	5,074	6,474	7,679
31	Nisir MFI			153	375	817	1,698	1,392
32	Adeday MFI			14,556	15,868	11,742	11,284	13,094
33	Afar MFI			174	755	3,223	4,254	4,401
34	Rays MFI			0	0	0	68	68
35	Kershi					23	350	402
36	Dedo MFI						70	203
37	Sheger MFI							287
38	Yemisirach MFI							56
	Total	**3,243,433**	**3,761,072**	**4,270,887**	**4,326,422**	**4,675,313**	**5,130,115**	**5,435,497**

Source: Consolidated report from National Bank of Ethiopia (NBE)

b) Consolidated balance sheet

Consolidated balance sheet of microfinance sector in thousands (,000)							
Period Ending	**Jun-14**	**Jun-15**	**Jun-16**	**Jun-17**	**Jun-18**	**Jun-19**	**Jun-20**
Cash on hand	336,749	476,543	539,644.6	516,389.4	581,718.6	702,471.1	809,656.3
Cash at banks / or MFIs	2,341,936	4,355,988	4,117,685.0	6,959,400.1	11,819,963.3	15,063,532.7	15,433,991.2
Cash at NBE	0	0	0.0	0.0	0.0	0.0	0.0
Short term investment	62,264	18,601	583,539.1	67,064.2	21,399.9	90,595.6	347,392.0
Gross outstanding loans	12,784,541	16,855,557	21,827,337.3	25,203,763.0	32,399,527.3	44,987,229.9	58,722,261.1
Provision for loan loss (Reserve)	-318,189	-349,387	-484,518.9	-689,193.3	-976,334.4	-1,214,867.7	-2,042,013.9
Net outstanding loans **(B5 -B6)**	12,466,352	16,506,170	21,342,818.4	24,514,569.7	31,423,192.9	43,772,362.2	56,680,247.2
Interest receivable on loan portfolio	659,952	901,809	1,213,666.1	1,504,913.6	1,977,771.4	2,530,877.2	3,605,776.4
Reserve for interest (on loan) loss /contra to I/R	0	0	0.0	0.0	0.0	66.4	182.7
Other receivables	615,072	579,613	672,517.2	1,081,903.2	1,543,174.4	2,341,858.7	3,354,235.7
Total receivables other than loan	1,275,024	1,481,421	1,886,183.3	2,586,816.8	3,520,945.9	4,872,669.5	6,959,829.5
Prepayments	447,222	383,661	298,247.2	111,326.7	201,245.9	144,147.8	195,925.9
Long term investments in allied activities	59,845	314,711	563,545.9	606,766.4	682,448.7	743,407.1	1,047,119.6
Long term investments in non allied activities	125,372	10,140	11,546.1	8,927.7	31,131.1	38,183.9	40,790.1
Fixed Assets	677,577	1,050,413	1,314,975.3	1,387,493.7	1,603,769.7	1,741,816.8	2,157,802.0
Accumulated depreciation & amortization/contra toFA	-137,278	-219,772	-274,890.7	-303,296.1	-480,064.6	-580,976.4	-818,918.5
Net Fixed assets **(B14-B15)**	535,053	825,672	1,040,084.6	1,084,197.6	1,123,705.2	1,160,840.4	1,338,883.5

Other Assets	88,353	162,942	178,718.0	212,553.1	156,304.1	673,784.2	1,942,958.8
Total Assets =SUM B(1-4, 7, # -13, 16-17)	**17,738,169**	**24,535,850**	**30,562,012.2**	**36,668,011.7**	**49,562,055.5**	**67,261,994.6**	**83,475,519.0**
Liabilities & Capital							
Voluntary Savings	5,157,064	8,901,821	11,167,432.6	14,338,333.4	21,065,113.9	26,660,942.8	33,699,163.6
Compulsory Savings	2,250,548	2,593,709	3,331,351.9	3,620,841.4	4,643,298.0	5,415,888.6	6,368,334.9
Time deposit	86,387	223,149	276,870.6	382,286.2	496,875.2	878,160.4	1,324,891.6
Demand deposits	38,558	65,541	57,092.3	91,375.7	118,676.3	258,132.7	504,789.5
Loan Financing Debt-Commercial	574,953	1,094,161	1,070,331.5	790,956.9	794,710.9	865,544.9	998,570.7
Loan Financing Debt-Concessionary	1,258,635	1,575,056	1,808,112.3	1,657,596.1	1,645,929.4	1,796,122.3	2,284,699.6
Interest accrued on Commercial debt	33,848	65,600	54,248.8	43,677.0	41,802.4	53,428.2	14,984.6
Interest accrued on Concessionary debt	30,761	38,865	65,920.0	46,180.6	45,113.9	60,520.0	56,885.5
Interest payable on deposits	106,648	160,569	99,881.4	80,263.4	175,715.0	382,532.9	818,058.8
Deferred Grants	118,142	103,592	116,569.5	348,685.0	407,733.2	417,176.9	266,534.9
Other short term liabilities	1,998,554	2,220,166	3,171,038.1	3,671,647.8	5,927,435.8	11,666,370.5	14,728,707.2
Other long term liabilities	1,544,843	1,841,776	2,155,903.7	2,720,387.4	3,469,596.5	5,034,738.6	5,841,964.4
Total liabilities	**13,198,940**	**18,883,844**	**23,374,752.7**	**27,792,231.0**	**38,832,000.6**	**53,489,558.8**	**66,907,585.3**
Paid up capital	332,798	412,455	478,465.3	602,097.8	698,562.1	1,817,185.5	1,979,471.5
Donated equity **(B34+B35)**	934,224	974,305	1,139,553.0	1,156,184.4	1,196,868.0	1,238,116.5	1,296,983.9
Granted equity: Prior period	815,733	811,740	1,028,007.1	1,040,161.9	1,045,555.7	1,125,701.8	1,175,089.2
Granted equity: Current period	118,492	162,565	111,545.9	116,022.4	151,312.3	112,414.7	121,895.6
Retained Earnings: Prior period	2,248,530	2,939,636	3,940,663.5	5,171,070.9	6,415,826.1	7,141,531.7	9,659,443.8
Profit/ loss: Current period	717,550	985,806	1,258,096.5	1,432,999.8	1,875,033.8	2,564,601.5	2,556,271.4
Legal Reserves	74,578	108,259	152,375.2	226,876.4	326,904.8	380,917.9	466,798.0

Other capital account	231,550	231,546	218,106.0	286,551.4	216,860.1	630,082.7	608,965.1
Total Capital =SUM B(32, 33, 36-39)	**4,539,230**	**5,652,006**	**7,187,259.5**	**8,875,780.6**	**10,730,054.8**	**13,772,435.9**	**16,567,933.7**
Total Liabilities & Capital (B31+B40)	**17,738,169**	**24,535,850**	**30,562,012.2**	**36,668,011.7**	**49,562,055.5**	**67,261,994.6**	**83,475,519.0**

c) Consolidated income statement

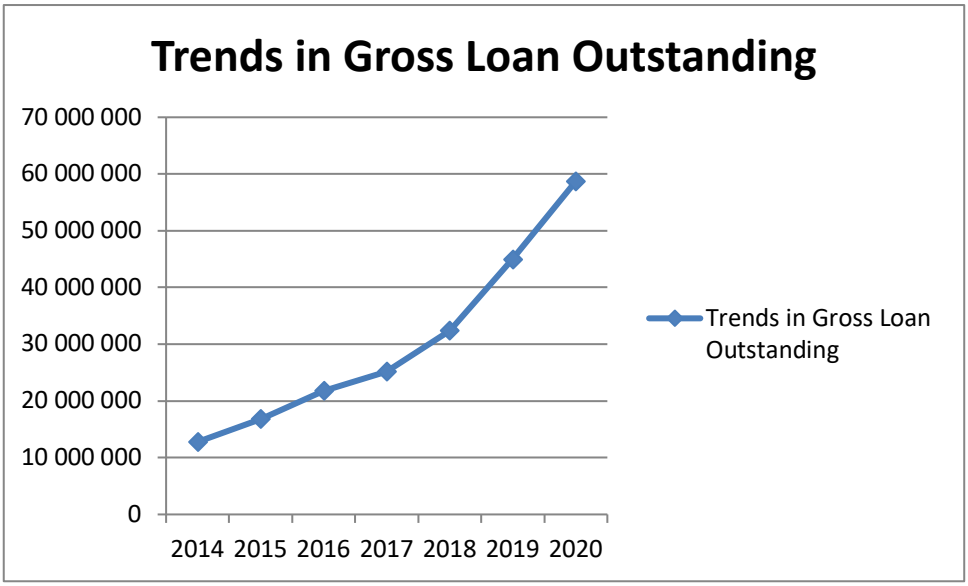
CONSOLIDATED INCOME STATEMENT OF MICROFINANCE SECTOR

In Thousands of Birr

Ref	Item	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019	June 2020
	Financial Revenue							
I1	Interest income from loan portfolio	1,942,972.1	2,105,489.2	2,874,949.9	3,550,527.3	4,284,486.0	5,839,184.7	7,769,626.8
I2	Service charge & commission on loan portfolio	196,656.9	252,772.9	291,527.8	379,311.3	476,459.3	593,641.6	669,236.3
I3	Financial revenue from investment	79,576.1	84,144.2	148,300.7	249,122.5	336,373.3	247,050.1	330,012.5
I4	Other financial revenue	137,652.4	123,468.3	142,268.6	154,029.1	282,884.7	519,979.3	631,049.2
I5	**Total Financial Income (I1+I2+I3+I4)**	**2,356,857.5**	**2,565,874.6**	**3,457,047.0**	**4,332,990.2**	**5,380,203.3**	**7,199,855.6**	**9,399,924.8**
	Financial Expense							
I6	Interest & fee expense on compulsory savings	121,857.0	99,391.1	146,976.8	199,026.0	248,409.8	294,976.7	312,437.3
I7	interest & fee expense on voluntary savings	216,585.8	263,079.5	387,083.3	493,320.1	671,205.3	1,205,164.9	1,770,527.9
I8	Interest & fee expense on debt -commercial	49,385.0	83,044.7	83,472.8	83,426.3	60,683.9	65,281.2	64,256.3
I9	Interest & fee expense on debt- Concessionary	85,693.5	108,972.4	147,905.0	144,356.2	160,900.5	138,603.8	240,685.3
I10	Other Financial expenses	4,623.7	2,694.1	4,216.6	10,903.1	4,715.2	11,732.4	3,308.6
I11	**Total Financial Expense (I6+I7+I8+I9+I10)**	**478,144.9**	**557,181.8**	**769,654.5**	**931,031.8**	**1,145,914.7**	**1,715,759.0**	**2,391,215.5**
I12	**Gross financial margin (I5-I11)**	**1,878,712.6**	**2,008,692.8**	**2,687,392.5**	**3,401,958.4**	**4,234,288.7**	**5,484,096.6**	**7,008,709.3**
I13	Loan loss provision	145,502.5	55,682.8	155,175.4	231,508.1	339,482.8	190,020.3	802,026.9
I14	Interest loss Provision	0.0	0.0	231.6	523.0	0.0	216.4	8,117.9

I15	**Net financial margin [I12-(I13+I14)]**	**1,733,210.1**	**1,953,010.0**	**2,531,985.5**	**3,169,927.3**	**3,894,805.9**	**5,293,859.9**	**6,198,564.5**
	Operating expense							
I16	Personnel Expense (Operational)	499,325.3	509,077.8	695,343.3	972,484.4	1,193,766.3	1,537,874.9	2,228,231.8
I17	Other expenses (Operational)	112,890.1	183,264.1	220,167.1	230,346.1	219,518.1	492,034.6	468,629.5
I18	Administrative expenses- Personnel	110,584.2	117,272.3	163,271.4	209,412.0	250,679.9	299,974.4	446,699.5
I19	Administrative expenses-Others	147,566.5	178,473.7	156,563.5	227,458.3	230,180.5	276,340.9	428,558.9
I20	**Net Operating Income[I15-(I16+I17+I18+I19)]**	**862,844.0**	**964,922.1**	**1,296,640.2**	**1,530,226.5**	**2,000,661.1**	**2,687,635.1**	**2,626,444.9**
I21	Non-operating Revenue	41,645.5	33,264.1	**65,068.7**	83,575.6	93,524.6	78,378.1	85,069.5
I22	Non-operating Expense	5,069.7	1,553.5	3,935.5	4,822.7	3,952.5	13,714.7	9,767.3
I23	**Net Income before tax & grant [(I20+I21)-I22]**	**899,419.8**	**996,632.7**	**1,357,773.4**	**1,608,979.4**	**2,090,233.2**	**2,752,298.4**	**2,701,747.1**
I24	Tax	0.0	0.0	0.0	19.2	0.0	0.0	0.0
I25	Net Income after tax (I23-I24)	**899,419.8**	**996,632.7**	**1,357,773.4**	**1,608,960.2**	**2,090,233.2**	**2,752,298.4**	**2,701,747.1**
I26	Cash grants	40,557.8	7,735.9	16898.5	25,754.1	15,841.3	28,060.4	16,475.9
I27	Non-cash grants	3,797.0	13,087.9	6543.8	103.3	1,770.6	101.7	67.8
I28	**Net Income after tax & donation (I25+I26+I27)**	**943,774.6**	**1,017,456.5**	**1,381,215.7**	**1,634,817.5**	**2,107,845.1**	**2,780,460.6**	**2,718,290.8**

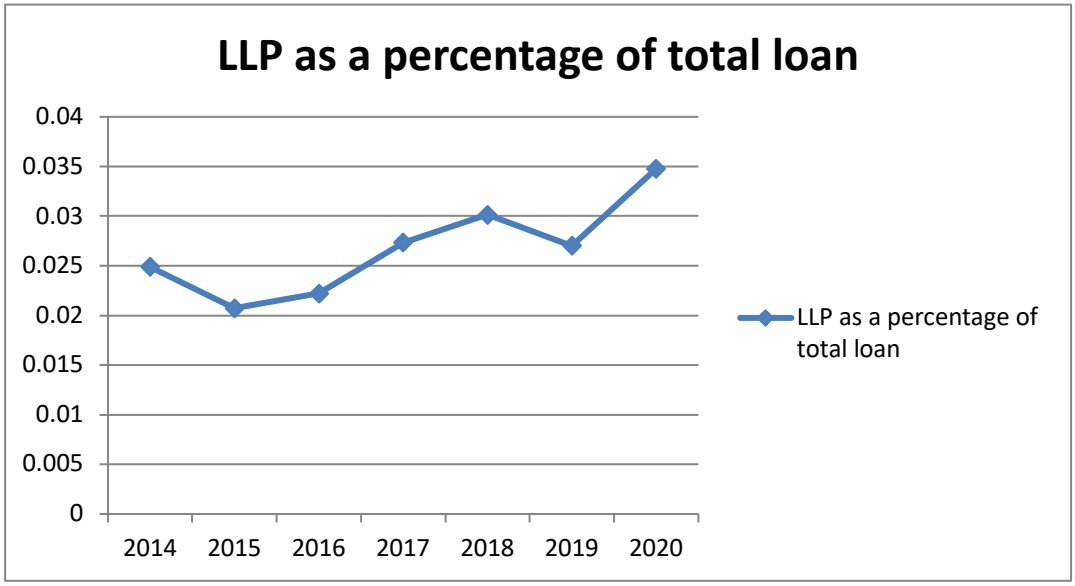
d) Trends in gross loan outstanding



Average annual increase by 29% and a total increase in 6 years by 359%

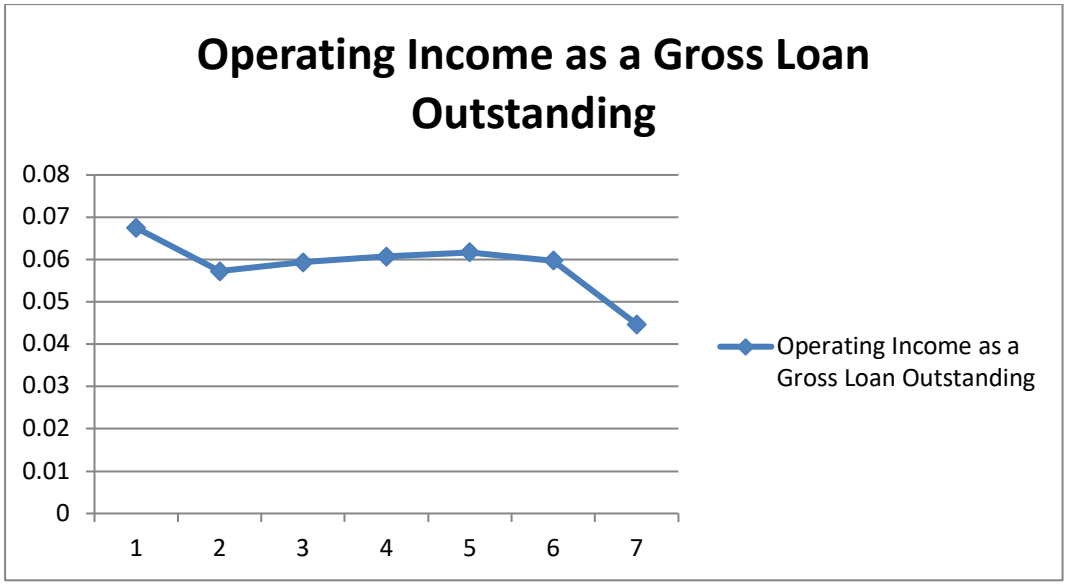
Computation based on data from NBE

e) Loan loss provision as a percentage of loan



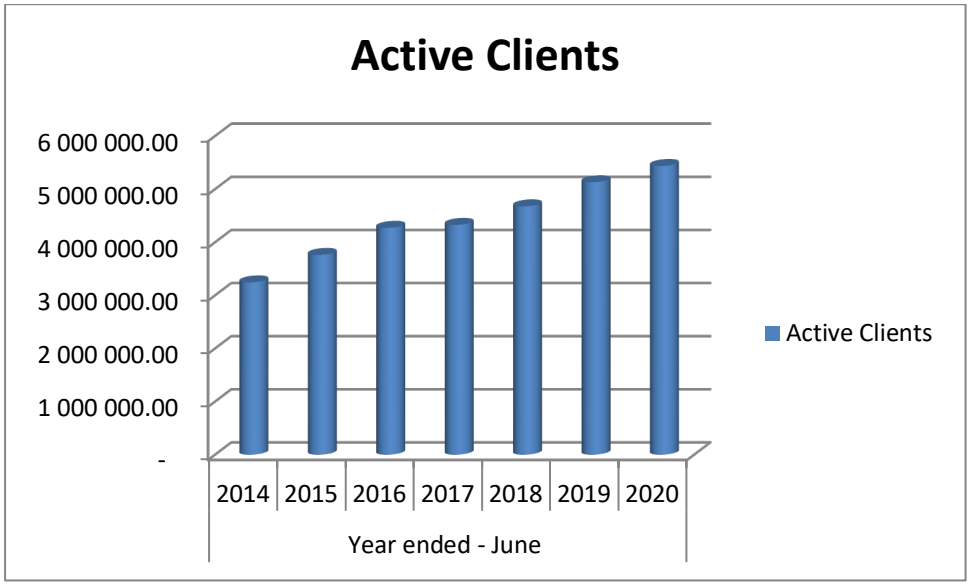
Own computation based on NBE

f) Net operating income as a percentage of total loan



Own computation based on NBE data

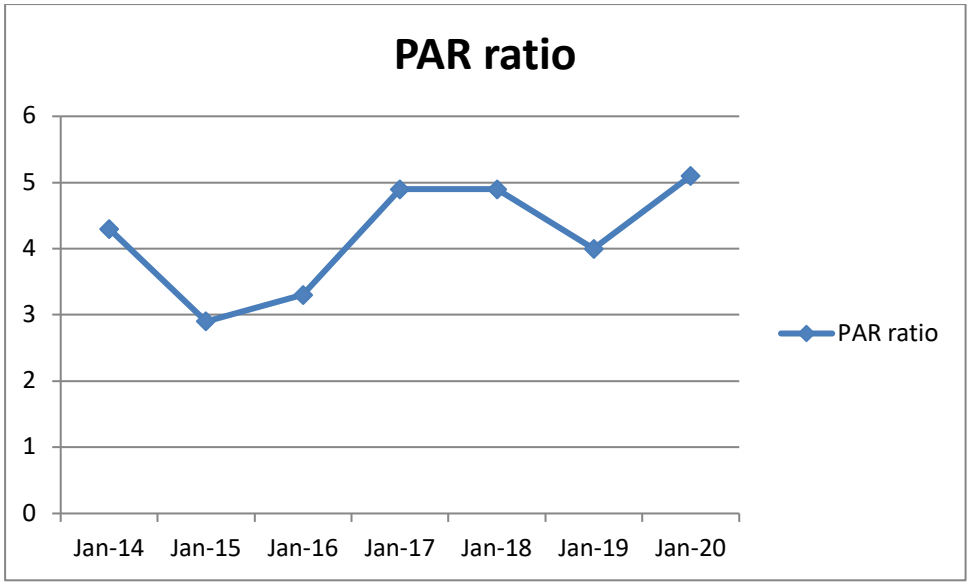
g) Active clients



Average annual increase by 9.1% and increase in 6 years by 67.58%

Computations based on data from NBE

h) PAR (90 days)



Average annual increase in PAR by 13.5% and a total rise by 75.9% from the year 2014

Own computation based on NBE data

Appendix K: Standardised regression model

			Estimate
RMP0	<---	RC0	.398
RMP0	<---	BF0	.222
RMP0	<---	IA0	.238
RMP0	<---	IC0	.130
RC1	<---	RC0	.788
RC2	<---	RC0	.795
RC3	<---	RC0	.812
RC4	<---	RC0	.847
RC5	<---	RC0	.797
RC6	<---	RC0	.788
RC7	<---	RC0	.831
RC8	<---	RC0	.772
RC9	<---	RC0	.755
RC10	<---	RC0	.824
RC11	<---	RC0	.801
BSC13	<---	BF0	.815
BSC14	<---	BF0	.704
BSC16	<---	BF0	.750
BSC17	<---	BF0	.858
BSC18	<---	BF0	.841
BSC19	<---	BF0	.814

			Estimate
BSC20	<---	BF0	.663
BSC22	<---	BF0	.829
BSC23	<---	BF0	.845
BCRR24	<---	BF0	.745
BCRR26	<---	BF0	.659
BCRR27	<---	BF0	.742
ICEce32	<---	IC0	.853
ICEce33	<---	IC0	.856
ICEce34	<---	IC0	.882
ICEce35	<---	IC0	.721
ICEce37	<---	IC0	.867
ICEra38	<---	IC0	.839
ICEra39	<---	IC0	.862
ICEra40	<---	IC0	.735
ICEra41	<---	IC0	.667
ICEca42	<---	IC0	.900
ICEca43	<---	IC0	.707
ICEic45	<---	IC0	.900
ICEic46	<---	IC0	.886
ICEic47	<---	IC0	.719
IA51	<---	IA0	.890
IA52	<---	IA0	.693

			Estimate
IA54	<---	IA0	.689
IA55	<---	IA0	.698
IA56	<---	IA0	.824
IA58	<---	IA0	.841
IA59	<---	IA0	.906
IA60	<---	IA0	.895
IA61	<---	IA0	.825
RMP1	<---	RMP0	.911
RMP2	<---	RMP0	.893
RMP3	<---	RMP0	.848
RMP4	<---	RMP0	.815
RMP5	<---	RMP0	.806
RMP6	<---	RMP0	.682
RMP7	<---	RMP0	.636
RC12	<---	RC0	.808

Appendix L: Squared multiple correlations

	Estimate
RMP0	.570
RC12	.653
RMP7	.405
RMP6	.465
RMP5	.650
RMP4	.664
RMP3	.719
RMP2	.797
RMP1	.831
IA61	.681
IA60	.802
IA59	.821
IA58	.708
IA56	.679
IA55	.487
IA54	.475
IA52	.480
IA51	.792
ICEic47	.516
ICEic46	.785
ICEic45	.810

	Estimate
ICEca43	.500
ICEca42	.810
ICEra41	.445
ICEra40	.541
ICEra39	.743
ICEra38	.704
ICEce37	.752
ICEce35	.520
ICEce34	.778
ICEce33	.732
ICEce32	.728
BCRR27	.551
BCRR26	.434
BCRR24	.556
BSC23	.715
BSC22	.687
BSC20	.439
BSC19	.663
BSC18	.707
BSC17	.736
BSC16	.563
BSC14	.495

	Estimate
BSC13	.663
RC11	.642
RC10	.679
RC9	.571
RC8	.596
RC7	.690
RC6	.621
RC5	.635
RC4	.717
RC3	.659
RC2	.631
RC1	.621

Appendix M: Standardised regression weight for mediation analysis

Standardised regression weights (Group number 1 – Default model)

			Estimate
IC0	<---	IA0	.583
RMP0	<---	RC0	.402
RMP0	<---	BF0	.225
RMP0	<---	IA0	.240
RMP0	<---	IC0	.137
RC1	<---	RC0	.787
RC2	<---	RC0	.795
RC3	<---	RC0	.814
RC4	<---	RC0	.846
RC5	<---	RC0	.798
RC6	<---	RC0	.788
RC7	<---	RC0	.831
RC8	<---	RC0	.772
RC9	<---	RC0	.756
RC10	<---	RC0	.823
RC11	<---	RC0	.800
BSC13	<---	BF0	.814
BSC14	<---	BF0	.704
BSC16	<---	BF0	.750

			Estimate
BSC17	<---	BF0	.858
BSC18	<---	BF0	.841
BSC19	<---	BF0	.814
BSC20	<---	BF0	.663
BSC22	<---	BF0	.829
BSC23	<---	BF0	.845
BCRR24	<---	BF0	.745
BCRR26	<---	BF0	.659
BCRR27	<---	BF0	.742
ICEce32	<---	IC0	.854
ICEce33	<---	IC0	.856
ICEce34	<---	IC0	.882
ICEce35	<---	IC0	.719
ICEce37	<---	IC0	.868
ICEra38	<---	IC0	.839
ICEra39	<---	IC0	.863
ICEra40	<---	IC0	.734
ICEra41	<---	IC0	.665
ICEca42	<---	IC0	.901
ICEca43	<---	IC0	.707
ICEic45	<---	IC0	.900
ICEic46	<---	IC0	.886

			Estimate
ICEic47	<---	IC0	.717
IA51	<---	IA0	.888
IA52	<---	IA0	.695
IA54	<---	IA0	.691
IA55	<---	IA0	.700
IA56	<---	IA0	.825
IA58	<---	IA0	.842
IA59	<---	IA0	.904
IA60	<---	IA0	.894
IA61	<---	IA0	.826
RMP1	<---	RMP0	.909
RMP2	<---	RMP0	.890
RMP3	<---	RMP0	.844
RMP4	<---	RMP0	.810
RMP5	<---	RMP0	.802
RMP6	<---	RMP0	.676
RMP7	<---	RMP0	.630
RC12	<---	RC0	.808

Appendix N: Indirect effect – two-tailed significance (BC)

Indirect effects – Two-tailed significance (BC) (Group number 1 – Default model)

	IA0	BF0	RC0	IC0	RMP0
IC0	...	...	...	...	...
RMP0	.005	...	...	...	...
RC12	...	...	...	...	...
RMP7	.001	.001	.001	.007	...
RMP6	.001	.001	.001	.007	...
RMP5	.001	.001	.001	.007	...
RMP4	.001	.001	.001	.007	...
RMP3	.001	.001	.001	.006	...
RMP2	.001	.001	.001	.007	...
RMP1	.001	.001	.001	.007	...
IA61	...	...	...	...	...
IA60	...	...	...	...	...
IA59	...	...	...	...	...
IA58	...	...	...	...	...
IA56	...	...	...	...	...
IA55	...	...	...	...	...
IA54	...	...	...	...	...
IA52	...	...	...	...	...
IA51	...	...	...	...	...
ICEic47	.001	...	...	...	...

	IA0	BF0	RC0	IC0	RMP0
ICEic46	.001	...	...	...	...
ICEic45	.001	...	...	...	...
ICEca43	.001	...	...	...	...
ICEca42	.001	...	...	...	...
ICEra41	.001	...	...	...	...
ICEra40	.001	...	...	...	...
ICEra39	.001	...	...	...	...
ICEra38	.001	...	...	...	...
ICEce37	.001	...	...	...	...
ICEce35	.001	...	...	...	...
ICEce34	.001	...	...	...	...
ICEce33	.001	...	...	...	...
ICEce32	.001	...	...	...	...
BCRR27	...	...	...	...	...
BCRR26	...	...	...	...	...
BCRR24	...	...	...	...	...
BSC23	...	...	...	...	...
BSC22	...	...	...	...	...
BSC20	...	...	...	...	...
BSC19	...	...	...	...	...
BSC18	...	...	...	...	...
BSC17	...	...	...	...	...

	IA0	BF0	RC0	IC0	RMP0
BSC16	...	...	...	...	...
BSC14	...	...	...	...	...
BSC13	...	...	...	...	...
RC11	...	...	...	...	...
RC10	...	...	...	...	...
RC9	...	...	...	...	...
RC8	...	...	...	...	...
RC7	...	...	...	...	...
RC6	...	...	...	...	...
RC5	...	...	...	...	...
RC4	...	...	...	...	...
RC3	...	...	...	...	...
RC2	...	...	...	...	...
RC1	...	...	...	...	...

Appendix O: Indirect effect – lower bounds and upper bounds (BC)

Indirect effects – Lower bounds (BC) (Group number 1 – Default model)

	IA0	BF0	RC0	IC0	RMP0
IC0	.000	.000	.000	.000	.000
RMP0	.026	.000	.000	.000	.000
RC12	.000	.000	.000	.000	.000
RMP7	.149	.089	.181	.027	.000
RMP6	.172	.104	.212	.031	.000
RMP5	.200	.114	.236	.035	.000
RMP4	.195	.114	.235	.036	.000
RMP3	.218	.126	.256	.040	.000
RMP2	.216	.130	.262	.039	.000
RMP1	.225	.134	.271	.041	.000
IA61	.000	.000	.000	.000	.000
IA60	.000	.000	.000	.000	.000
IA59	.000	.000	.000	.000	.000
IA58	.000	.000	.000	.000	.000
IA56	.000	.000	.000	.000	.000
IA55	.000	.000	.000	.000	.000
IA54	.000	.000	.000	.000	.000
IA52	.000	.000	.000	.000	.000
IA51	.000	.000	.000	.000	.000
ICEic47	.357	.000	.000	.000	.000

	IA0	BF0	RC0	IC0	RMP0
ICEic46	.452	.000	.000	.000	.000
ICEic45	.436	.000	.000	.000	.000
ICEca43	.388	.000	.000	.000	.000
ICEca42	.457	.000	.000	.000	.000
ICEra41	.390	.000	.000	.000	.000
ICEra40	.374	.000	.000	.000	.000
ICEra39	.418	.000	.000	.000	.000
ICEra38	.432	.000	.000	.000	.000
ICEce37	.448	.000	.000	.000	.000
ICEce35	.421	.000	.000	.000	.000
ICEce34	.460	.000	.000	.000	.000
ICEce33	.443	.000	.000	.000	.000
ICEce32	.463	.000	.000	.000	.000
BCRR27	.000	.000	.000	.000	.000
BCRR26	.000	.000	.000	.000	.000
BCRR24	.000	.000	.000	.000	.000
BSC23	.000	.000	.000	.000	.000
BSC22	.000	.000	.000	.000	.000
BSC20	.000	.000	.000	.000	.000
BSC19	.000	.000	.000	.000	.000
BSC18	.000	.000	.000	.000	.000
BSC17	.000	.000	.000	.000	.000

	IA0	BF0	RC0	IC0	RMP0
BSC16	.000	.000	.000	.000	.000
BSC14	.000	.000	.000	.000	.000
BSC13	.000	.000	.000	.000	.000
RC11	.000	.000	.000	.000	.000
RC10	.000	.000	.000	.000	.000
RC9	.000	.000	.000	.000	.000
RC8	.000	.000	.000	.000	.000
RC7	.000	.000	.000	.000	.000
RC6	.000	.000	.000	.000	.000
RC5	.000	.000	.000	.000	.000
RC4	.000	.000	.000	.000	.000
RC3	.000	.000	.000	.000	.000
RC2	.000	.000	.000	.000	.000
RC1	.000	.000	.000	.000	.000

Indirect effects – Upper bounds (BC) (Group number 1 – Default model)

	IA0	BF0	RC0	IC0	RMP0
IC0	.000	.000	.000	.000	.000
RMP0	.136	.000	.000	.000	.000
RC12	.000	.000	.000	.000	.000
RMP7	.277	.229	.335	.160	.000
RMP6	.325	.265	.388	.186	.000
RMP5	.347	.286	.420	.203	.000
RMP4	.347	.284	.415	.200	.000
RMP3	.390	.313	.462	.222	.000
RMP2	.383	.315	.460	.224	.000
RMP1	.406	.330	.487	.234	.000
IA61	.000	.000	.000	.000	.000
IA60	.000	.000	.000	.000	.000
IA59	.000	.000	.000	.000	.000
IA58	.000	.000	.000	.000	.000
IA56	.000	.000	.000	.000	.000
IA55	.000	.000	.000	.000	.000
IA54	.000	.000	.000	.000	.000
IA52	.000	.000	.000	.000	.000
IA51	.000	.000	.000	.000	.000
ICEic47	.539	.000	.000	.000	.000
ICEic46	.645	.000	.000	.000	.000

	IA0	BF0	RC0	IC0	RMP0
ICEic45	.617	.000	.000	.000	.000
ICEca43	.594	.000	.000	.000	.000
ICEca42	.654	.000	.000	.000	.000
ICEra41	.594	.000	.000	.000	.000
ICEra40	.569	.000	.000	.000	.000
ICEra39	.605	.000	.000	.000	.000
ICEra38	.622	.000	.000	.000	.000
ICEce37	.648	.000	.000	.000	.000
ICEce35	.636	.000	.000	.000	.000
ICEce34	.657	.000	.000	.000	.000
ICEce33	.637	.000	.000	.000	.000
ICEce32	.661	.000	.000	.000	.000
BCRR27	.000	.000	.000	.000	.000
BCRR26	.000	.000	.000	.000	.000
BCRR24	.000	.000	.000	.000	.000
BSC23	.000	.000	.000	.000	.000
BSC22	.000	.000	.000	.000	.000
BSC20	.000	.000	.000	.000	.000
BSC19	.000	.000	.000	.000	.000
BSC18	.000	.000	.000	.000	.000
BSC17	.000	.000	.000	.000	.000
BSC16	.000	.000	.000	.000	.000

	IA0	BF0	RC0	IC0	RMP0
BSC14	.000	.000	.000	.000	.000
BSC13	.000	.000	.000	.000	.000
RC11	.000	.000	.000	.000	.000
RC10	.000	.000	.000	.000	.000
RC9	.000	.000	.000	.000	.000
RC8	.000	.000	.000	.000	.000
RC7	.000	.000	.000	.000	.000
RC6	.000	.000	.000	.000	.000
RC5	.000	.000	.000	.000	.000
RC4	.000	.000	.000	.000	.000
RC3	.000	.000	.000	.000	.000
RC2	.000	.000	.000	.000	.000
RC1	.000	.000	.000	.000	.000

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To Whom It May Concern

I hereby confirm that I carried out a language edit of the thesis "Risk Management Framework for Microfinance Institutions in Ethiopia – a Methodological Triangulation Approach" by Elias Tadesse Mamo (UNISA student number 58548335). The following elements were corrected or, where necessary, a query was raised for the author to resolve:

- General grammar, spelling and punctuation
- General consistency
- Cohesiveness, clarity and flow
- Adherence to formal/academic tone
- Layout and formatting
- References and reference list, according to the guidelines provided by the author.

Corrections, suggestions and queries have been indicated throughout using the "track changes" function in Microsoft Word, and it is the responsibility of the author to accept or reject corrections and suggestions and to resolve all queries raised by the editor.

While the editor has made every effort to point out potential errors, inconsistencies or instances of plagiarism, it remains the responsibility of the author to minimise errors and eliminate plagiarism, and the editor cannot be held responsible for any errors, inconsistencies or instances of plagiarism in the edited document. The author accepts this disclaimer upon acceptance of the edited document. The editor suggests that the thesis is given a final proofread by the author before submission to minimise typos, as the editor cannot guarantee a fully error-free document.

Signed

Kristien Potgieter (Language editor)

6 September 2023
Date