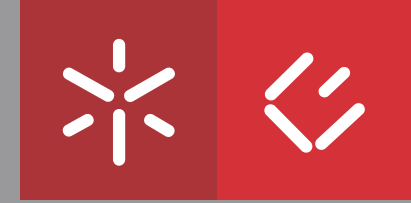


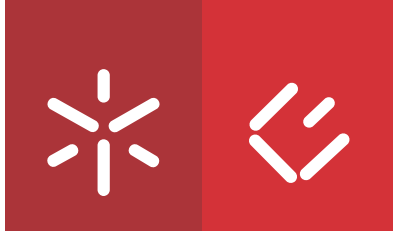


Maria Zenaida da Rocha Costa Neves Leite

**Microfinance institutions managers' motivation
towards green microfinance: The cases of
Cabo Verde and Brazil**

Universidade do Minho
Escola de Economia e Gestão





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Cabo Verde and Brazil**

Doctoral Thesis
Thesis in Business Administration

Thesis conducted under the supervision of
Professor Elisabete Sá

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Statement of integrity

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

Microfinance institutions managers' motivation towards green microfinance: The cases of Cabo Verde and Brazil

Abstract

In this study, we explore the motivations of Microfinance Institution (MFI) managers to develop green microfinance products that can promote sustainable practices. Although MFIs play a significant role in reducing poverty, they often finance environmentally unsustainable activities. Green microfinance can respond to this concern by offering products that support sustainable practices, but its implementation is still limited. Our research focused on the individual and institutional perceptions of MFI managers towards green microfinance. We use the Protection Motivation Theory and Institutional Theory to analyse the motivations and barriers to its implementation in two developing countries, Cabo Verde and Brazil. To collect data, we carried out 34 interviews with MFI managers and experts.

We conclude that managers are motivated to evaluate and approve green projects or activities systematically. However, their ability to do so depends on external factors. The study provides valuable information regarding green microfinance and the factors that influence its implementation. This information can inform the development of legal tools and environmental policies that are best suited to MFIs.

This study contributes to the development of theory on green microfinance and its potential growth, as well as to the design of policies more appropriate for the development of this sector. Furthermore, in the field of MFI governance it relates the beliefs of top managers with their environmental performance and shows the importance of the composition of the Board of Directors for the promotion of green microfinance. Ultimately, our study fills a gap in the literature regarding understanding how managers' beliefs about environmental sustainability, the role of microfinance in promoting it, and their perceptions of the institutional context affect MFIs' involvement in green microfinance initiatives.

Keywords: Green Microfinance, Institutional Theory, Managers' Beliefs, Microfinance Institutions, Protection Motivation Theory.

Motivação dos gestores de instituições de microfinanças para as microfinanças verdes: Os casos de Cabo Verde e do Brasil

Resumo

Neste estudo, exploramos as motivações dos gestores de Instituições de Microfinanças (MFI, sigla em inglês) para desenvolver produtos de microfinanças verdes que podem promover práticas sustentáveis. Embora as MFIs desempenhem um papel significativo na redução da pobreza, financiam, muito frequentemente, atividades ambientalmente insustentáveis. As microfinanças verdes podem responder a esta preocupação oferecendo produtos que apoiam práticas sustentáveis, mas a sua implementação é, ainda, incipiente. A nossa investigação centrou-se nas percepções individuais e institucionais dos gestores de MFIs em relação às microfinanças verdes. Utilizamos a Teoria da Motivação de Proteção e a Teoria Institucional para analisar as motivações e barreiras para a sua implementação em dois países em desenvolvimento, Cabo Verde e Brasil. Para a recolha de dados, realizamos 34 entrevistas com gestores e especialistas de MFIs.

Concluimos que os gestores estão motivados para avaliar e aprovar projetos ou atividades verdes de forma sistemática. No entanto, a sua capacidade para o fazer depende de fatores externos. O estudo fornece informações valiosas sobre as crenças e percepções dos gestores das MFIs em relação às microfinanças verdes e os fatores que influenciam a sua implementação. Esta informação pode informar o desenvolvimento de ferramentas legais e políticas ambientais que sejam mais adequadas para as MFIs.

Este estudo contribui para o desenvolvimento da teoria sobre microfinanças verdes e seu potencial crescimento, bem como para o desenho de políticas mais adequadas ao desenvolvimento deste setor. Além disso, no campo da governação das MFIs relaciona as crenças dos gestores de topo com o desempenho ambiental das mesmas e mostra a importância da composição do Conselho de Administração para a promoção das microfinanças verdes. Em última análise, o nosso estudo preenche uma lacuna na literatura relativamente à compreensão de como as crenças dos gestores sobre a sustentabilidade ambiental, o papel das microfinanças na sua promoção e as suas percepções do contexto institucional afetam o envolvimento das MFIs em iniciativas de microfinanças verdes.

Palavras-chave: Crenças dos Gestores, Instituições de Microfinanças, Microfinanças Verdes, Teoria da Motivação para a Proteção, Teoria Institucional

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List of Abbreviations and Acronyms

3BL	Triple Bottom Line
ABCRE	Associação Brasileira de Entidades Operadoras de Microcrédito e Microfinanças/Brazilian Association of Microcredit and Microfinance Operators
ADA	Appui au Développement Autonome/Support for Autonomous Development
ADAD	Associação para a Defesa do Ambiente e Desenvolvimento/Association for the Defence of the Environment and Development
ADECO	Associação para a Defesa do Consumidor/Association for the Defence of the Consumer
AMCRED-Sul	Associação das Instituições de Microcrédito e Microfinanças da Região Sul do Brasil/Association of Microcredit and Microfinance Institutions of the Southern Region of Brazil
APIMF-CV	Associação Profissional das Instituições de Microfinanças de Cabo Verde/Professional Association of Cabo Verde Microfinance Institutions
BADESC	Agência de Fomento de Santa Catarina/Santa Catarina State Development Agency
BNDES	Banco Nacional de Desenvolvimento Económico e Social/National Development Bank
BoP	Base of the Pyramid
BR	Brazil
BRAC	Bangladesh Rural Advancement Committee
BRDE	Banco Regional de Desenvolvimento do Extremo Sul/Regional Development Bank of the Far South
CAQDAS	Computer Aided Data Analysis Software
CEO	Chief Executive Officer
CEPA	Closer Economic Partnership Arrangement

CRCV	Constituição da República de Cabo Verde/Constitution of the Republic of Cabo Verde
CRESOL	Confederação Nacional das Cooperativas Centrais de Crédito e Economia Familiar Solidária/National Confederation of Central Credit Cooperatives and Solidarity Family Economy
CV	Cabo Verde
ESG	Environmental, social, and governance
FAO	Food and Agriculture Organisation of the United Nations
FIDA	Fundo Internacional de Desenvolvimento Agrícola/International Fund for Agricultural Development
FINCA	Foundation for International Community Assistance
GDP	Gross Domestic Product
GMFI	Green Microfinance Institution
GPA	Green Performance Agenda
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis/Brazilian Institute of the Environment and Renewable Natural Resources
IBGE	Instituto Brasileiro de Geografia e Estatística/Brazilian Institute of Geography and Statistics
INE	Instituto Nacional de Estatística/National Institute of Statistics
INEC	Instituto Nordeste Cidadania/Instituto do Nordeste Cidadania
ISO	International Organization for Standardization
IT	Institutional Theory
MEPI	Microfinance Environmental Performance Index
MFI	Microfinance Institution
MPO	Microcrédito produtivo orientado/Oriented productive microcredit

NAPA	National Adaptation Plan of Action
NEP	New Environmental Paradigm
NGO	Non-Governmental Organization
OSCIP	Organização da sociedade civil de interesse público/Civil society organization of public interest
PEDS	Plano Estratégico de Desenvolvimento Sustentável/Strategic Plan for Sustainable Development
PMT	Protection Motivation Theory
PNLP	Programa Nacional de Luta Contra a Pobreza/National Programme Against Poverty
PNMA	Política Nacional de Meio Ambiente/National Environmental Policy
PNMPO	Programa nacional do microcrédito produtivo orientado/National program for oriented productive microcredit
POSER-C	Programa de Promoção de Oportunidades Socioeconômicas Rurais/Program for the Promotion of Rural Socioeconomic Opportunities and Climate
SCM	Sociedade de crédito ao microempreendedor/Microentrepreneur credit society
SEBRAE	Serviço Brasileiro de Apoio às Micro e Pequenas Empresas/Brazilian Micro and Small Business Support Service
SD	Sustainable Development
SDGs	Sustainable Development Goals
SICOOB	Sistema de Cooperativas Financeiras do Brasil/Brazilian Financial Cooperative System
TBL	Triple Bottom Line
TPB	Theory of Planned Behaviour
UNEP	United Nations Environmental Program

UNO	– União Nordestina de Assistência a Pequenas Organizações/Northeastern Union for Assistance to Small Organizations
USAID	United States Agency for International Development
VBN	Value-Belief-Norm

1. Introduction

Since the 1970s, microfinance has been used as a mechanism to reduce inequality (Bateman & Chang, 2012; D'Espallier et al., 2017) and promote economic growth (Fouillet & Augsburg, 2010; Ghalib, 2013) since extreme poverty affects an estimated one billion people worldwide (Atkinson, 2017), mostly in developing countries (Demirguc-Kunt et al., 2018; World Bank Report, 2021). Following the impact of the COVID-19 pandemic, poverty is expected to grow, reversing the poverty reduction progress achieved over the years (World Bank Report, 2021), which should lead to between 68 million and 135 million people in poverty by 2030 (World Bank Report, 2021).

Climate change is another serious threat (Drummond et al., 2018) that is predicted to dramatically increase the levels of poverty worldwide by 2030 (World Bank Report, 2021). Poverty has also been associated with environmental damage, such as natural resource depletion and pollution (Allet, 2014; Lobell et al., 2011; Rippey, 2012). So, the debate on the challenge of striking a balance between natural resource exploitation, social equity, and economic progress is far from over, and microfinance institutions (hereafter MFIs) could not be left out of it (Kopnina, 2017). This challenge can lead governments and international donor agencies to link microfinance to environmental concerns that contribute to sustainable development (Agathou & Schuite, 2015; Allet, 2014; Huybrechs et al., 2015). Facing this challenge requires cooperation and commitment between all the parties (Huybrechs et al., 2019).

Studies show that, on the one hand, microfinance can have a positive social impact (e.g., Chliova et al., 2015), but, on the other hand, the way it is applied may also result in environmental problems. For example, Anderson et al. (2002) argue that there are important connections between microcredit programs and environmental resources (e.g., common resources), and some of these connections are made through the physical and human capital created by microfinance activities, mainly in small rural producers (Anderson, 1999; Anderson et al., 2002; Sica & Testa, 2009). For instance, Wenner et al. (2004) compiled a categorisation of micro-enterprises, indicating those activities that tend to harm the environment. Rural areas, for example, where most of the poor are concentrated (García-Pérez et al., 2020), is where microcredit has a very direct impact on natural resources, as loans for agricultural activities are primarily used to purchase pesticides, fertilisers, cattle, and land (Archer & Jones-Christensen, 2011; Sica & Testa, 2009). These activities have environmental consequences, such as deforestation, hazardous chemical pollution, and production of toxic waste (Gonzalez & Moser,

2015; Sica & Testa, 2009; Van Elteren, 2007). This negative impact is not limited to ranching or agriculture (Archer & Jones-Christensen, 2011; Arrow et al., 1995). Poor people often develop other activities with negative impact on the natural environment, such as fishing for endangered species and sand collection for construction (Archer & Jones-Christensen, 2011).

In this setting, integrating actions and solutions, both from the poverty reduction perspective and the environmental standpoint, should be one of the objectives of governments, even those from developed countries (Agrawala & Carraro, 2010). From this perspective, green microfinance programs aim for environmental objectives reaching micro-entrepreneurs to help them self-affirm economically through self-employed and environmentally sustainable work (Huybrechs et al., 2019; Rouf, 2013). Green microfinance generally includes small subsidised loans to individuals or groups of people who work directly to support sustainable, green and social development through small projects or activities (Rouf, 2013). Initially applied by some researchers (e.g., Agathou & Schuite, 2015; Allet, 2014; Allet & Hudon, 2015; Archer & Jones-Christensen, 2011; Forcella & Hudon, 2016), this concept is based on the MFIs' target of achieving the triple bottom line (TBL, 3BL or people, planet and profit) approach (Abedin & Khan, 2018; Elkington, 1997; Norman & MacDonald, 2004; Nugroho et al., 2017). This approach suggests that an organisation's success can and should be measured, not only by its financial results, but also by its social, ethical and environmental performance (Norman & MacDonald, 2004; Nugroho et al., 2017; Péreau et al., 2012), which means that an holistic and multidisciplinary approach is crucial (García-Pérez et al., 2020).

The green microfinance approach emerged from the evolution of the conventional microfinance linked with environmental issues (Rippey, 2012; Van Elteren, 2007). According to Forcella and Hudon (2016), green microfinance – provided by green microfinance institutions (hereafter GMFIs) – presupposes the provision of loans to support small green projects and non-financial environmental services (e.g., improvements in energy efficiency, recycling, waste management, organic production, agroforestry, and ecotourism, among others; and technical assistance to customers wishing to develop environmentally friendly practices, environmental awareness initiatives, etc.) (Abid & Kacem, 2018; Allet & Hudon, 2015).

Green microfinance is a way to induce changes in microfinance clients' decision-making and behaviour by financing activities that can reduce a client's vulnerability to environmental stresses and/or minimise the impact of their practices on the environment and avoid those that harm the environment (Forcella & Hudon, 2016; Huybrechs et al., 2015; Moser & Gonzalez, 2015). In sum, green

microfinance is seen as a set of financial products and services provided by MFIs, aimed at socially and environmentally responsible programs or projects, protecting their clients from vulnerabilities and risks due to climate change impacts (García-Pérez et al., 2020; Huybrechs et al., 2019). It means that it aims for triple bottom line objectives (environmental, financial, and social) (Abid & Kacem, 2018; Agier & Szafarz, 2013; Elkington, 1997; Goel, 2010; Huybrechs et al., 2019).

Research in this field ranges from topics that relate green microfinance with poverty reduction to those that relate it to climate change, value creation, development, and employment (Agathou & Schuite, 2015; Allet, 2014; Allet & Hudon, 2015; Anderson et al., 2002; Archer & Jones-Christensen, 2011; Forcella & Hudon, 2016; Huybrechs et al., 2015; Rippey, 2012; Van Elteren, 2007). Although management and ethics of MFIs or the environmental responsibility of traditional financial institutions have been frequently studied, much still needs to be revealed about the role of green microfinance (Bastiaensen et al., 2019; Forcella & Hudon, 2016; García-Pérez et al., 2017; Huybrechs et al., 2015). Yet, the understanding of the core beliefs of MFI managers that can support their environmental actions or safety practices has been largely ignored.

Considering the environmental challenges and poverty reduction goal, it is pivotal for developing countries, such as Cabo Verde and Brazil, to engage in strategies and policies towards adopting green microfinance practices. By fostering green microfinance, MFIs will be contributing to minimising the environmental impacts while promoting a better quality of life, especially for the poor people. It is widely accepted that MFIs can help to improve their beneficiaries' ability to overcome the environmental threats they face, as well as the ones that might be posed by their own operations (Fenton et al., 2015). Nevertheless, for conventional MFIs to be transformed into green MFIs, a well-defined strategic process is needed (Atahau et al., 2021)

Despite the existence of many studies on environmental behaviour (Allet, 2012; Allet & Hudon, 2015), including some on green microfinance (Archer & Jones-Christensen, 2011; Bruton et al., 2011; Han et al., 2009; Nugroho et al., 2017), research on microfinance managers' and institutions' beliefs on drivers and barriers to foster green projects or activities is scarce (Allet & Hudon, 2015). Although some studies have explored the factors that can act as drivers or barriers to environmental practices in small firms (e.g., Mir, 2008), and some researchers have investigated the motivations (e.g., Allet, 2014) and barriers (e.g., Rouf, 2013) to go green in the microfinance field, the identification of the key MFI managers' beliefs that can support their pro-environmental action or safety practices has received little attention. However, it is widely accepted that changes in behaviour are needed to foster a more

sustainable future (Steg et al., 2014). Additionally, research suggests that certain personal qualities and beliefs are necessary to motivate this behaviour change (e.g., Allet, 2012; Forcella & Hudon, 2016; Nugroho et al., 2017). Hence, studying managers' attitudes and behaviours can lead to greener practices (Khan, 2023; Renwick et al., 2012).

The literature has also shown that previously implemented green initiatives, including green microfinance, have often needed societal support, such as legislation, legitimation, economic support, organisational context, social responsibility, and competitiveness (Allet, 2014; Allet & Hudon, 2015; Aragón-Correa & Rubio-López, 2007; Bansal & Roth, 2000; Buysse & Verbeke, 2003; Céspedes-Lorente et al., 2003; Forcella & Hudon, 2016).

Although previous research has demonstrated the importance of bringing together the individual and institutional level to develop models and a range of issues related, for example, to environmental behaviour (e.g., Marshall et al., 2005), Corporate Social Responsibility (Aguilera et al., 2007), and new organisational forms (Tracey et al., 2015), this research does not identify studies in the microfinance field that explored the complementarity of these two contexts (individual and institutional) to identify beliefs that can support microfinance managers' decision to go green. Therefore, the object of this thesis is the study of the beliefs of managers of existing MFIs in Cabo Verde and Brazil about green microfinance. Its general objective is to understand MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about how the institutional context affects the engagement of their institutions in green microfinance, which is done by combining the components of Protection Motivation Theory (hereafter PMT) (Maddux & Rogers, 1983; Rogers, 1975) and Institutional Theory (hereafter IT) (DiMaggio & Powell, 1983).

PMT is used to assess MFIs managers' personal beliefs and responses to the perceived threats posed by environmentally unsustainable microfinance funded projects, while IT is used to explore the managers' perceptions about the coercive and normative pressures that may be exercised by stakeholders, such as governments, regulatory bodies, customers, other organisations, and community and environmental interest groups. The combination of individual and institutional components may help to better understand this phenomenon, in line with the perspective of Marshall et al. (2005).

Multiple theories have been used to explore the complexity of human and organisational behaviours (Anderson, 1999) and their actions to reduce environmental problems (Bazerman & Hoffman, 1999). Hence, models have been tested and applied to explain the relationship between values and environmental attitudes and behaviours (Ajzen, 2011; Dunlap & Liere, 2008; Kellert, 1985;

Rauwald & Moore, 2002; Stern et al., 1993). Among the predictive theories of individual behaviour, PMT appears to be a relevant framework for predicting pro-environmental behaviour (e.g., Bockarjova & Steg, 2014; Shafiei & Maleksaeidi, 2020). It can increase existing knowledge about the motivations for environmentally friendly behaviours (Bockarjova & Steg, 2014; Keshavarz & Karami, 2016), as it helps to identify the barriers and the factors that drive the acceptance of adaptive environmental behaviour (Shafiei & Maleksaeidi, 2020). In this setting, PMT is one of the theories chosen to guide this investigation related to the beliefs and perceptions of MFIs' managers about environmental threats and the role that green microfinance can play in mitigating them.

The PMT model (Maddux & Rogers, 1983; Rogers, 1975) provides an understanding of why attitudes and behaviour can change when individuals are faced with threats (Floyd et al., 2000). According to Rogers (1975), this theory emphasises the importance of cognitive processes, suggesting that the motivation for protection stems from the cognitive assessment of an event considered harmful and likely to occur, together with the belief that a recommended coping response can effectively prevent the occurrence of that event. That is, people assess the severity of the threat and their personal ability to deal with that harmful event (Maddux & Rogers, 1983) by changing their attitudes (Rogers, 1975). PMT has been applied to several domains, mainly for health-related behaviours (e.g., exercise, safe sex, cancer screening) (Conner & Norman, 2015). However, several studies also have used PMT to address environmental threats and pro-environmental behaviour (Bockarjova & Steg, 2014; Cobb et al., 2016; Kim et al., 2013; Kothe et al., 2019).

By applying this theory, we respond to the appeals of authors who suggest that we should consider factors at the individual level when explaining organisational greening (Aragón-Correa, 1998; Aragón-Correa & Sharma, 2003). Furthermore, the use of this approach has been focused mainly on high-income Western societies, although people at the bottom of the socio-economic pyramid in developing countries are those who suffer most from the threats of environmentally unsustainable behaviours (Kothe et al., 2019; Zhao et al., 2016). Based on PMT (Maddux & Rogers, 1983; Rogers, 1975), this study contributes to deepening the understanding of how the personal beliefs of MFI managers' about environmental issues relate to the involvement of their institutions in green microfinance.

Organisational decisions are also based on the external environment (Scott, 1987). Therefore, this study is also based on IT. IT emphasises the institutional settings in which organisations operate according to rules, cultural structures, cognitive schemes, and routines that may limit or enable their

actions (Chiu, 2017). The formal structure becomes a way to guarantee the perpetuation of institutionalised standards in organisations (Tolbert, 1988). Thus, when actors ascribe validity to processes and structures, they are institutionalised (Tolbert, 1988; Zucker, 1977). Fields are critical in organisational structuring (DiMaggio & Powell, 1983) and fundamental in forming organisational belief systems, which support the construction of organisational meaning (Meyer & Rowan, 1977).

IT has gained significant prominence in organisational behaviour, particularly in identifying institutional factors that influence decision-making, as it offers a promising way of investigating issues currently at the core of public concerns (Brammer et al., 2012; Zaman et al., 2021). This theory explains that coercive, normative and mimetic pressures influence individuals' behaviours (DiMaggio & Powell, 1983). These forces "constrain, construct, and strengthen organisational actors" (Suchman, 1995 p. 571) because they influence organisations' decision-making (Chu et al., 2018; DiMaggio & Powell, 1983).

IT has been applied to explain a wide range of phenomena, such as corporate social responsibility (Aguilera et al., 2007; Brammer et al., 2012) and pro-environmental behaviour (Allet, 2017; Delmas & Toffel, 2004; Hoffman, 2001; Jennings & Zandbergen, 1995; Ranta et al., 2018; Roxas & Coetzer, 2012; Seidler et al., 2017). Furthermore, for example, Babiak and Trendafilova (2011) proposed that institutional forces (coercive, normative and mimetic) influence the practice of environmental management. Lin et al. (2019) studied the role of institutional forces in e-business transformation intentions. Saeed et al. (2018) discovered the positive effect of institutional forces on Green Supply Chain Management practices.

Green behaviours of companies have often been analysed through the lens of IT, although research results are not always consistent (Chen et al., 2018; Tariq et al., 2017) and sufficiently comprehensive (Chu et al., 2018). Despite criticism, this theory has been considered a promising framework that investigates issues that are at the heart of public concerns, highlighting the role of social and cultural pressures that are imposed on organisations and that affect organisational practices and structures (Brammer et al., 2012; Jennings & Zandbergen, 1995).

In the context of this study, we argue that IT provides an appropriate lens to explain managers' beliefs that may or may not facilitate the development of green microfinance. Within the microfinance system, MFI managers' beliefs (Santandreu et al., 2020) in the coercive force generated by government and regulatory authorities (Mcquarrie et al., 2013; Scott, 2008) may influence the promotion of green microfinance. Similarly, MFI managers' beliefs in normative pressures may influence MFIs to promote

green microfinance because individuals consciously or unconsciously act in accordance with the demands of actors they consider referents (DiMaggio & Powell, 1983; Fligstein, 2001) and are defenders of an environmentally sustainable society. Furthermore, MFI managers' beliefs in the mimetic pressures induced by successful MFIs (DiMaggio & Powell, 1983) in green microfinance may lead them to follow the same strategy as their peers.

1.1. Purpose and scope of the study

By building a conceptual bridge between managers' beliefs and green microfinance, we seek to answer the following research question: How do managers' beliefs about environmental sustainability and the role of microfinance in promoting it, and their perceptions about their institutional context, affect the engagement of their institutions in green microfinance?

By answering this question, the following specific objectives are pursued:

Obj 1 – To understand MFIs managers' beliefs about the severity of the environmental threats posed by unsustainable projects funded by microfinance;

Obj 2 – To understand MFIs managers' beliefs about the effectiveness of the microfinance response to environmental threats;

Obj 3 – To assess how MFIs managers' personal beliefs affect the engagement of their institutions in green microfinance;

Obj 4 – To understand MFIs managers' perceptions about the influence of the regulatory normative and mimetic environment on their decisions towards green microfinance;

Obj 5 – To analyse the influence of individual beliefs and institutional pressures on intentions and decisions towards green microfinance.

The study focuses on MFIs from Cabo Verde and Brazil, which are developing countries and, as such, offer an important context for research into microfinance, in particular green microfinance, as a strategy to reduce poverty without harming the environment. Although the two countries have specific dimensions and dynamics, mainly from an economic point of view, both have a high rate of unemployment and poverty and, consequently, deal with a highly informal economy. For example, in Cabo Verde, the informal economy represents around 12% of GDP (Gross Domestic Product) (Bernardino et al., 2017).

Both countries have long experience in the field of microfinance. Microfinance services in Cabo Verde and Brazil have evolved substantially over the years, seeking to reduce poverty (Ramezanali & Assadi, 2018; Government of Cabo Verde, 2018). In this process, MFIs in both countries deal with customers whose activities may harm the environment.

Although some Brazilian MFIs have already taken the first steps in promoting green microfinance, there is still much to explore and develop (Moser & Gonzalez, 2015). In the case of Cabo Verde, to the best of our knowledge, MFIs do not have a green microfinance service integrated into their financing strategy.

1.2. Methodology

To fulfil the intention of understanding the beliefs and perceptions of MFIs managers underlying their decisions to implement green microfinance by supporting green projects or activities, the study adopts a qualitative approach. Such an approach allows the emergence of a holistic dimension of the phenomenon (Manera & Serrano, 2022) and enables a deeper understanding of the circumstances in which these decisions are made. Furthermore, a predominantly qualitative methodology is suitable for the level of theoretical development in the area (Corbin & Strauss, 2008; Creswell, 2007). Data were collected through in-depth semi-structured interviews with a total of 34 participants, 10 MFI managers and five experts from Cabo Verde, and 15 MFI managers and four experts from Brazil.

1.3. Structure of the thesis

This thesis is divided into six main parts. After this introduction, which embodies the first part, we present a literature review aiming to summarize the research state-of-the-art in microfinance and its environmental perspective, which is the central domain of our study. Firstly, we offer an overview of the microfinance concept, addressing, particularly, MFIs' financial sustainability versus mission compliance. Then, we focus on the topic of green microfinance, to show how it has evolved both as field of research and as a practice. Subsequently, we address the drivers and barriers to MFIs engaging in green behaviours, considering motivations and obstacles, being at the organizational level or at the level of managers' beliefs towards environmental sustainability. We then analyse PMT and IT, which serve as the basis for our study.

Part 3 of the thesis puts forth the conceptual framework and research propositions. A conceptual framework was developed to group the constructs of PMT and IT used to study how MFIs' managers'

beliefs about environmental sustainability and the role of microfinance in promoting it and their perceptions about their institutional context affect the engagement of their institutions in green microfinance.

In the fourth part of the thesis, we present the research question and the objectives of the study and explain the methodological and theoretical choices for data collection and analysis. This part also presents the basic philosophical assumptions of this research, setting out the ontological and epistemological positions we followed. Subsequently, this part details the research strategy used, the research design, the data collection and interviewing procedures, as well as the data analysis procedures.

Part 5 presents the empirical findings the study allowed attaining. We begin by presenting the results of applying the PMT in exploring the MFI managers appraisal of the threats posed by environmental challenges, in general, and by unsustainable projects financed by MFIs, in particular; the effectiveness of the green microfinance response to these threats, and the benefits and costs of engaging in green microfinance. Afterwards, the results of applying IT to explore MFI managers' perceptions about institutional influences and how these perceptions can affect MFI engagement in green microfinance are presented. This part is divided into two sections, each presenting the findings of each case study.

The last part of this thesis offers the main conclusions of the study, which are also further discussed. This part also describes the contributions and recommendations of the study and addresses its limitations and directions for future research.

2. Literature review

This chapter presents the evolution that has taken place in the microfinance area, which has become what is called green microfinance, in pursuit of the triple bottom line (social, financial, and environmental) (Araya & Christen, 2004; Elkington, 1998; Goel, 2010; Kouaib et al., 2020). Thus, the debate around the microfinance's sustainability and its mission are analysed, highlighting the possible deviations from their core mission and the possibilities of MFIs to help the economically and socially disadvantaged people (Bhuiyan et al., 2020; Epstein & Yuthas, 2010; Kar, 2013). Therefore, the motivations, barriers, and beliefs that support the managers' intentions in supporting environmentally sustainable activities or projects are also addressed.

The purpose of this chapter is to analyse the existing state of the knowledge on microfinance and highlight the gap in previous research in the area for whose reduction this study contributes. The review of the relevant literature on microfinance is important for determining what is known and unknown about the chosen research topic and follow current research approaches, debates, and trends. The assessment of the state of the knowledge relevant to the research topic is expected to inform the analytical framework, data collection, and data analysis.

2.1. Microfinance: An overview

The concept of microfinance, first named as microcredit, began with Muhammad Yunus, a Bangladeshi economist and a Nobel Peace Prize for pioneering the provision of small loans to millions of underprivileged people (Bateman & Chang, 2012). Yunus founded the Grameen Bank in 1976 with the idea that lack of capital (Battilana & Dorado, 2010) was the primary obstacle to productive self-employment among the poor (Pissarides, 1999). The original concept of microcredit, as a mean to reduce poverty (Matin et al., 2002) based in small loans to low-income people (Serrano-Cinca & Gutiérrez-Nieto, 2014) to finance small sustainable projects or activities, has gained great dimension over the years, transforming into the much broader concept of microfinance, meaning the supply of a whole range of financial and non-financial services to the underprivileged (Cobb et al., 2016; Ferdousi, 2015). Although the terms microcredit and microfinance are often used interchangeably, Elahi and Rahman (2006), and Jose and Buchanan (2013) point out that there is a basic difference between the two types of programs, which has to do with the services they provide. According to the authors, microcredit programs mainly provide loan distribution and collection, as well as the financial and

organisational activities associated with such operations, while microfinance programs provide a wider range of financial and organisational services, including credit, savings, insurance, pensions, and community development. Ghalib (2013) also refers to microfinance as services associated with giving access to capital and providing self-employment opportunities to low-income individuals. That is to say, nowadays, microfinance includes financial and non-financial services to attend disadvantaged people. This concept was consolidated with a World Bank publication – Handbook on Microfinance: An Institutional and Financial Perspective – by Joanna Ledgerwood in 1998 (Ledgerwood & White, 2006).

Microfinance emerged in the 1970s (Bateman & Chang, 2012; D'Espallier et al., 2017) to reduce inequality and promote economic growth (Fouillet & Augsburg, 2010; Ghalib, 2013). Hence, MFIs have evolved as a result of the efforts of individuals and assistance of international agencies (Archer & Jones-Christensen, 2011; Chliova et al., 2015), such as the Food and Agriculture Organisation of the United Nations (FAO), the United States Agency for International Development (USAID), and the World Bank Group, to reduce poverty by promoting entrepreneurship and self-employment on the promise of reaching a double bottom line of financial viability and social impact around the world (Afonso et al., 2011; Archer & Jones-Christensen, 2011; Bateman & Chang, 2009; Chliova et al., 2015).

Micro, small, and medium enterprises are regarded as playing a vital role to generate employment and contributing to economic growth, particularly in developing countries (Venkatesh & Kumari, 2012). However, these small businesses face the huge challenge of accessing capital. This challenge is especially relevant for low-income people who cannot access commercial banks (Jebarajakirthy & Lobo, 2015). Most people living below the poverty line do not have access to basic financial resources (Afonso et al., 2011; McKernan, 2002; Ravallion et al., 2007; Rouf, 2013). Although the co-signing provisions offered an incentive for the co-signer to monitor the actions of the person for whom he/she co-signed the loan and, as such, represented an adequate guarantee of the loan (Stiglitz, 1990), the frequent lack of collateral, poor deposit capacity, non-existent credit histories, the limited property rights of individuals, their weak deposit capacity, associated with the high transaction costs of loan values and the need to compensate for low income with uncertain subsidies, makes loan guarantees remain a major problem, and low-income individuals are an unattractive segment for commercial banks (Armendariz et al., 2013; Ghatak & Guinnane, 1999; McKernan, 2002; Serrano-Cinca & Gutiérrez-Nieto, 2014; Webb et al., 2013). Furthermore, most traditional banks are not familiar with small loan services and often consider them risky or unprofitable (Prior & Argandoña, 2009). Still, family and friends' financial support is unlikely to be enough in poor settings, because saving is difficult for individuals who typically need the resources to meet their own basic needs (Chliova et al., 2015;

Tavanti, 2013). In this context, microfinance is considered the most appropriate tool for dealing with credit constraints as to overcome poverty and social problems by promoting financial access to the base of the pyramid (BOP)¹ markets, enabling entrepreneurial activity and integrating this segment of the population into the economic system (Afonso et al., 2011; Bateman & Chang, 2009; Gonzalez & Moser, 2015; Kent & Dacin, 2013).

MFIs can act in several ways. One is to transform a non-profit entity into a formalised, regulated and licensed financial institution to broker public deposits. A second one is to create a commercial MFI from scratch. A third way is the involvement of traditional banks in microfinance activities (Ledgerwood & White, 2006). Their clients are low-income individuals or groups of individuals (Matin et al., 2002; Nugroho et al., 2017). Hence, most consider that poverty alleviation and financial inclusion are the most important goals of microfinance (Frank, 2008), answering to the inability and unwillingness of the formal banks to serve the needs of the low-income clients (Frank, 2008). There are many MFIs spread all over the world, even in developed countries, with over 100 million of the world's poor among their clients (Agrawala & Carraro, 2010). At the end of 2018, MFIs achieved an estimated 139.9 million low-income clients with an estimated credit portfolio of \$124.1 billion; 80% of these 139.9 million clients are women, and 65% are rural clients (Microfinance Barometer, 2019).

Since 1997, microfinance has attracted increasing academic interest and hundreds of articles started to be published (Brau & Woller, 2004) in many fields, including entrepreneurship, raising expectations of microfinance contribution to face the challenge of poverty based on the assumption that an inclusive financial system can help alleviate poverty around the world, and that the major constraint to growth is the inability to access enough funds (Bradley et al., 2012; Bruton et al., 2011; Ivanic et al., 2012; Kent & Dacin, 2013). MFIs are seen as a means for development by increasing individuals' capabilities to act as entrepreneurs and improve their livelihoods, as there is considerable evidence that entrepreneurial activity plays a relevant role in economic development (Acs & Dana, 2001; Van Rooyen et al., 2012). Although the literature provides evidence of the potential of microfinance to reduce poverty (Morduch, 1998; Morduch & Haley, 2002), some authors disagree with much of the rationale presented in support of microfinance, arguing that microfinance is an illusion (Bateman & Chang, 2012). Microfinance models and consumption indicators show that MFIs seem to meet all the conditions to achieve their mission in the short term, but in the medium and long term, they begin to face problems that undermine their sustainability (Banerjee, 2013; Bateman & Chang, 2012; Fenton et al., 2017).

¹ Term introduced by Prahalad and Hart (2002) to represent the poorest segment of the population.

Although Banerjee et al. (2015) found that microfinance positively affects the consumption structure of households, allowing them to invest more in durable household goods and restrict the consumption of superfluous goods to reach financial and environmental sustainability, MFIs have to face the great challenge of providing financial services to the poor and cover operating costs (Hartarska, 2005; Wenner et al., 2004).

2.1.1. MFIs financial sustainability versus mission compliance

Reaching poor people and the sustainability of MFIs has been the subject of debate among researchers. Until the late 1990s, most MFIs were able to operate without covering their costs due to subsidies and donations from governments and other donor agencies (Brau & Woller, 2004). In Africa, for example, MFIs in Kenya and Uganda received huge donor support since they started their activities (Ayele, 2015).

From the late 1990s, donors and investors began to demand MFIs for their own sustainability, which raised the concern that, in an attempt to guarantee their financial sustainability, MFIs would end up deviating from their main objective – a phenomenon generally called *mission drift* (Armendariz et al., 2013; Armendáriz & Szafarz, 2011; Casselman & Sama, 2013; Coleman, 1999; Fouillet & Augsburg, 2010; Mersland & Strøm, 2010; Mia & Ben Soltane, 2016; Mosley & Hulme, 1998). This mission drift results from the overwhelming pressure exerted, both internally and externally, on MFIs to become financially self-sustaining, causing serious consequences (Bogan, 2012; Fouillet & Augsburg, 2010). That is, as MFIs grow, they seek to reduce their dependence on government and donor subsidies; to this end, they shift their purpose from serving the poorest of the poor to optimising business success, increasing the average size of their loans to reach richer customers and diverting resources from the poor who request smaller loans (Armendáriz & Szafarz, 2011; Cull et al., 2007; Mersland & Strom, 2010; Murdoch, 1998; Woller, 2002). In short, mission drift can result from MFIs trying to expand the market or become a for-profit financial institution to serve more clients, offer more services, access funds and investment capital, and achieve high performance (Epstein & Yuthas, 2010). From a different perspective, the quest for financial independence can also lead MFIs to become more entrepreneurial and more market-oriented, and profitable (Chiu, 2014; Sullivan Mort et al., 2003).

Although the mission of the MFIs seems clear – poverty reduction – to ensure the sustainability of the MFIs without deviating from their main objective is an issue that researchers are discussing. Therefore, the challenge is to take advantage of market opportunities and, at the same time, recognise

potential trade-offs (Cull et al., 2009a). The debate about mission drift arose with the movement of the transformation of many MFIs into commercial institutions. Many argue that this move towards transformation is a way of attracting more funds, given that investors are looking for purely commercial returns (Cull et al., 2009b). Thus, to better understand this debate, we will emphasise the approach of *transformation* and *commercialisation*, and their relationship with sustainability.

The commercialisation in the microfinance sector generally refers to the application of market-based principles, freeing itself from high dependence on donations or subsidies, while transformation in this sector generally refers to the institutional process by which a microfinance provider – a NGO (Non-Governmental Organisation) or MFI – converts into a deposit-taking institution licensed, regulated and supervised by the central bank (Chiu, 2017; Ledgerwood & White, 2006). Although they have different meanings, regulated MFIs usually have a for-profit status (Wagenaar, 2012).

The MFIs' transformation process began when donors and investors took a new approach to sustainability (Fouillet & Augsburg, 2010). MFIs that previously operated based on donations and subsidies have become legally established and for-profit entities (Mersland & Urgeghe, 2013). As a result, they started to use commercial funds, including customer deposits, as well as investments in shares and debts of social investors, with the possibility of investor participation (Casselman & Sama, 2013; Ledgerwood & White, 2006). Transformation imposes more regulation (Chiu, 2014). Highly regulated, self-sustaining, and large MFIs are leading a development trend towards a more business-oriented perspective (Ernst & Young Global Limited, 2014), perhaps based on the assumption that when the MFIs adopt market principles and if they show good indicators of economic and financial performance, they create better conditions to reach and serve a larger base of low-income people, reducing poverty (Chiu, 2014; Ghosh & Van Tassel, 2007; Ivanic et al., 2012; Ledgerwood & White, 2006; Onyuma & Shem, 2005; Wagenaar, 2012). To meet donors' and investors' requirements, many MFIs adopted transformation and commercialisation as strategic options to achieve financial sustainability (Wagenaar, 2012). Otherwise, they are not able to operate without subsidies and donations from governments and other donors (Brau & Woller, 2004). However, many researchers have associated the MFIs' transformation into regulated commercial entities with the mission drift of these institutions. Some researchers found that MFIs' engagement in commercialisation and transformation are costly, ineffective and can boost MFIs mission drift (Cull et al., 2009; D'Espallier et al., 2017; Demirgüç-Kunt et al., 2011; Ghosh & Van Tassel, 2007), inasmuch that the less poor tend to benefit more from commercialisation of MFIs than the extremely poor (Coleman, 1999; Copestake et al., 2005; Cull et al., 2009; Frank, 2008; Wagenaar, 2012).

Frank (2008) and Armendariz and Szafarz (2009) argue that some believe that the MFIs' decision to become regulated financial institutions – by the Central Bank – is strictly associated with mission deviation because the transformation will require moving away from providing small loans to low-income clients. For instance, Wagenaar (2012), using a 15-year data panel of 1,558 MFIs, found mission deviation in MFIs transformed from non-profit to for-profit institutions. The author also found that the percentage of women borrowing declined in the years following the transformation because most institutions that primarily serve women have difficulty staying focused on their mission after the transformation. This result is in line with the findings of Frank (2008), who examined the impact of the transformation process on a control group of approximately 25 MFIs. Thus, the concern is to what extent an MFI that has set aggressive post-transformation growth targets can guarantee these levels of growth, maintaining its focus on serving low-income individuals, and especially women, who, on average, require small loans (Frank, 2008). The lower the average loan size, the more clients are female (Bhatt & Tang, 2001), i.e., small loans are mostly requested by women.

Many sceptics argue that transformed and business-oriented MFIs will inevitably result in their mission drift (Ghosh & Van Tassel, 2007). The assumption is that wealthier clients cost less because they demand larger loans (Armendariz et al., 2013; Mersland & Strøm, 2010). This probably means that when the donors are profit-oriented, the unique way to attract more resources is by minimising transaction costs (Mersland & Strøm, 2010). However, these authors highlight that minimising transaction costs is not the only reason that leads to an increase in the average loan size and, consequently, the deviation from the mission of the MFIs, and consider that it is equally important to take into account variables such as the cost of serving the poor, deliver credible information to socially responsible investors, the market structure, interest rates and the specificities of each region (Armendáriz & Szafarz, 2011). The empirical efforts to detect mission deviation are extremely difficult because MFIs serving the poor are often limited by the number of low-income clients that can potentially be reached in a specific region and the specificity of those regions (Armendáriz & Szafarz, 2011). Accordingly, strategies for achieving financial sustainability differ substantially across regions (D'Espallier et al., 2013). Armendariz et al. (2013) found that microfinance providers charge high-interest rates, for example, in Africa and Asia, and in most cases, much higher than commercial to cover the costs of the operation (Ahmed, 2002; Obaidullah, 2008; Serrano-Cinca & Gutiérrez-Nieto, 2014; Widiarto & Emrouznejad, 2015).

The majority of the studies used the average loan sizes offered by some MFIs as the main indicator of mission deviation (Bhatt & Tang, 2001; Cull et al., 2009b; González Vega et al., 1996;

Mersland & Strøm, 2010). In addition to this indicator, others were also explored, such as borrower gender, MFI lending methodology, core market (Mersland & Strom, 2010), percentage of women borrowing, average savings balance, percentage of clients in the lower half of the population (Demirgüç-Kunt et al., 2011; Hermes et al., 2011; Wagenaar, 2012), the location of the MFIs (Vanroose & D’Espallier, 2013), strategy, portfolio maturity (Robert & Christen, 2000), regulatory constraints (Gaudens-Omer, 2018), and subsidies (D’Espallier et al., 2013; Hudon, 2010). For instance, MFIs that receive subsidies are more efficient than those that do not (Hudon, 2010; D’Espallier et al., 2013). However, when subsidies exceed a certain threshold, their marginal effect on efficiency is negative (Hudon, 2010). Lower subsidies are associated with a stricter cost management (Caudill et al., 2009).

Despite the negative effects shown above, engaging in transformation and commercialisation processes also seems to have brought some positive aspects. It facilitates access to financing and product diversification (Frank, 2008); causes the expansion of funding sources through deposits; improves team professionalism and growth (D’Espallier et al., 2017); provides an improvement of information and internal control systems; governments benefit because MFIs no longer need to subsidise or cover losses from credit programs; and diversifies ownership and governance structures. Thus, it increases the scope of inclusion (Ledgerwood & White, 2006) and induces a search for financial independence, and this can lead MFIs to become more entrepreneurial, more market-oriented and profitable (Chiu, 2014; Sullivan Mort et al., 2003). Financially sustainable MFIs will be able to provide more loans and at lower costs, facilitating access for the poorer (Ghosh & Van Tassel, 2008; Rosenberg et al., 2013). Therefore, by reducing operating costs, the main challenge to making the microfinance business sustainable may be one of the biggest benefits of transformation (D’Espallier et al., 2017; Mersland & Strøm, 2014).

Most of the above studies corroborate, to some extent, Casselman and Sama’s (2013) observation that the occurrence of mission drift, measured by the depth and breadth of reach and impact, was not present among the samples selected; therefore, what exists is a *mission drift perception*. This perspective is also in line with the empirical study by Quayes (2012), who found a positive relationship between the depth of reach and the financial efficiency of MFIs. Furthermore, detecting mission drift is difficult because MFIs serving the poor are often limited by the number of low-income clients that can potentially be reached in a specific region and the specificity of those regions (Armendariz et al., 2013).

In short, bringing financial access to the poor and, in addition, achieving financial self-sustainability requires a new configuration of MFIs, supported by *transformation* and *commercialisation*. These processes involve high costs and hard and continuous work, as they imply an increase in personnel capacity, management, infrastructure, management information systems, and internal control and risk management (Ledgerwood & White, 2006). Mission drift can occur if an MFI's objective is to achieve high returns, which can be mitigated if the MFI is more economical (Mersland & Strøm, 2014). Therefore, minimising the factors that can undermine the process and help MFIs abandon their core mission of poverty reduction is a major challenge. Copestake (2007) argues that improving targeting, strategic planning, and routine monitoring of clients' poverty status can help accelerate innovation and growth with a positive impact on poverty decrease. This reduces mission drift and may also help temper the claims of those who believe that mission drift occurs as MFIs increasingly serve better-off clients than the very poor (Mersland & Strom, 2010). Thus, microfinance aims to create sustainable institutions, transforming itself into a regulated financial institution, to market other services that include formal accounts, deposits, remittances, and insurance to serve low-income people (Chiu, 2017). If some *dot-coms* position themselves in the long tail of their markets without raising prices because they become more efficient through the innovative use of information and communication technologies, MFIs can behave in the same way; otherwise, they may drift away from their mission (Serrano-Cinca et al., 2015).

The debate above is basically about the financial sustainability required by MFIs and their ability to reach the poorer. This debate remains current, as most studies are not conclusive about the diversion of the MFI mission. Although the diversion of the MFIs' mission is not the focus of this study, it is worth knowing the findings on this subject in the context of this investigation. However, social and financial sustainability are not the only challenges MFIs face. As stated above, these institutions also deal with the challenge of supporting environmentally sustainable projects or activities, a phenomenon known as green microfinance. Hence, transformation to green MFIs is seen as one of the means to achieve long-run sustainability (Atahau et al., 2020).

2.1.2. Green Microfinance

The issues of climate change, natural resource depletion, and pollution are constantly on the agenda of governments and researchers. All have many negative consequences, particularly for low-income communities and especially in developing countries over continents such as Asia, Africa and

Latin America (Allet, 2014, 2017; Dowla, 2018; Fenton et al., 2017; Forcella & Hudon, 2016; Lobell et al., 2011; Rippey, 2012). In developing countries, national income and employment are heavily dependent on agriculture and livestock, which are directly affected by climate change; there is a high number of poor people who are more vulnerable to the negative effects of these changes. Moreover, the economic and technological capacity to adapt to climate change is often very scarce (Mertz et al., 2009; Yohe & Tol, 2002). Thus, adaptation – adoption of attitudes and behaviours that reduce social-environmental vulnerabilities – is more urgent in these countries (Fenton et al., 2017), given their high vulnerability caused by the lack of resources, limited infrastructure and poor governance (Ayers & Dodman, 2010).

This reality led governments and international donor agencies to link microfinance to environmental concerns (Agathou & Schuite, 2015; Allet, 2014; Allet & Hudon, 2015; Araya & Christen, 2004; Fenton et al., 2015, 2017; Forcella & Hudon, 2016; Huybrechs et al., 2015). Promoting entrepreneurship initiatives that contribute to financially empower the poorest members of society and foster Sustainable Development (SD) starts to be of concern to MFIs and researchers (Araya & Christen, 2004; García-Pérez et al., 2020). The new dimension of microfinance is known as green microfinance.

Green microfinance or the third bottom line approach to microfinance (Allet, 2011; Bastiaensen et al., 2019; Huybrechs et al., 2015) emerged from the evolution of the conventional microfinance linked with environmental issues, that is, the impact of a MFI through the activities carried out by its clients (Van Elteren, 2007; Huybrechs et al., 2015; Rippey, 2012). Green microfinance means any initiative implemented by an institution that provides financial (capital for green businesses) and non-financial services (e.g., training, mentoring services, marketing supports, and networking) to foster environmentally friendly practices at the micro level with the triple bottom-line objective (Forcella, 2013; Rouf, 2013). It is seen as a way to induce changes in microfinance client decision-making and behaviour by avoiding harmful business financing or by providing environmentally conditioned microfinance and non-financial services, possibly combined with targeted subsidies to reduce customer vulnerability to environmental problems and/or minimise the impact of their practices on the environment (Huybrechs et al., 2015). Those institutions, which also provide credit to support green projects or activities, are referred to as GMFIs (Rouf, 2013). GMFIs support the development of environmental-friendly activities (e.g., eco-tourism, agroforestry, waste management, and recycling) or access to environmental-friendly technologies, such as renewable energy technologies or energy-efficient technologies (Allet, 2014). In that way, they play a crucial role in attaining development goals regarding reducing poverty and promoting of environmental development (Rouf, 2013). GMFIs differ from the MFIs in that they aim the

triple bottom line social, financial, and environmental, whereas MFIs aim double bottom line objectives, i.e., social and financial. The main difference is that loans are provided to individuals or groups of individuals who work directly to support green activities, creating green jobs and environmentally progressive solutions to problems that are damaging Earth (Rouf, 2013). The Bangladesh Rural Advancement Committee (BRAC) and Grameen Shakti (Bangladesh), the Foundation for International Community Assistance (FINCA) (Uganda), the Ningxia Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) (China), the Tamweelcom (Jordan), the Agroamigo and Cresol (Brazil) the Integral (El Salvador) and the Compartamos (Mexico) are some examples of MFIs that provide green microfinance (Allet, 2012, 2017; Hudon, 2008; Moser & Gonzalez, 2016).

Green microfinance are subsidised loans or services to individuals or groups whose projects or activities support eco-friendly green and social growth, develop ecological tasks and progressive ecological solutions for everything that might pollute and destroy the world (Nair & Njolomole, 2020; Nugroho et al., 2017; Uddin et al., 2021). Many aspects of green microfinance are consistent with the SDGs (Uddin et al., 2021).

While the management and ethics of MFIs or the environmental responsibility of traditional financial institutions have been frequently studied, most of the literature does not focus on green microfinance (Forcella & Hudon, 2016). The debate on the need to add the environmental dimension as an additional objective of MFIs has started after some studies have shown that some of the activities promoted and supported by these institutions are harmful to the environment (e.g., Anderson et al., 2002; Archer & Jones-Christensen, 2011; Wenner et al., 2004). For instance, in rural areas, small producers may threaten the environment more than urban micro-entrepreneurs (Wenner et al., 2004). Also, in several specific industries, there is clear evidence of high levels of pollution caused by micro-entrepreneurs' agricultural activities, and microcredit has a very direct impact on natural resources depletion and pollution, as these financial resources are often used to purchase pesticides, fertilisers, cattle, and land (Anderson et al., 2002; Wenner et al., 2004; Archer & Jones-Christensen, 2011). Activities enabled by microfinance have serious environmental consequences such as deforestation, hazardous chemical pollution, and toxic waste production, and this negative impact is not limited to ranching or agriculture (Archer & Jones-Christensen, 2011; Dasgupta & Garan-Maler, 1994). Other activities developed by poor people have a negative impact on the natural environment, such as fishing for endangered species and sand collection for construction (Archer & Jones-Christensen, 2011).

Although some microfinance activities hurt the environment, poor people contribute the least to global warming; yet, they are the most vulnerable to a changing climate in that they have difficulty dealing with the threat to their homes, communities, livelihoods and health (McKee, 2008). As a consequence of global warming, crop output will be reduced by accelerating growth, a process that results in a smaller amount of grain (Dowla, 2018). Lobell et al. (2011) indicate that, globally, the yield of maize and wheat was reduced by 3.8% and 5.5%, respectively, due to the warming. Consequently, the rise in food prices will probably increase the number of poor people around the world (Ahmed et al., 2009; Ivanic et al., 2012). This context has called for the need to integrate actions and solutions that may foster poverty reduction and environmental protection, issues that are challenging governments, mainly those from developing countries.

Some researchers argue that it is challenging to combine the allocation of funds for poverty reduction towards an environmentally sustainable development, as the poor are concerned to meet their basic needs (Archer & Jones-Christensen, 2011). However, many investors, international donor agencies, governments and other players in the microfinance sector start to include the environment as a priority in their objectives by considering microfinance based on the triple bottom line. For example: i) social investors and microfinance investment vehicles – investments from international financial institutions and private investment funds that target the microfinance sector (Tomilova & Dashi, 2019) – are increasingly interested in evaluating the environmental performance of MFIs (Symbiotics, 2019); ii) MFIs rating agencies, such as Fitch Ratings, have introduced environmental elements in their social ratings (Gutiérrez-Nieto et al., 2007); and iii) social audit tools contain environmental dimensions, as well (Forcella & Hudon, 2016). In this setting, MFIs are facing the challenge of fighting poverty and unemployment (Ghalib, 2013), and simultaneously adopting mechanisms to mitigate the effects of climate change (Lobell et al., 2011). Their concern is to promote entrepreneurship initiatives that may contribute to poverty alleviation but that are able to protect the environment, as well (Agrawala & Carraro, 2010; Allet, 2011, 2012).

In this setting, donors, technical assistance providers, and experts have begun to assert that MFIs should go beyond the double objective and target a triple bottom line (Allet, 2012; Huybrechts et al., 2015; Nugroho et al., 2017). Since 1997, the organisers of the Microcredit Summit called on the world's governments, businesses, and multilateral credit institutions to make \$21.6 billion available to provide microcredit to 100 million of the world's poorest families and, at the same time, voices emerged on environmental and appropriate corrective measures due to the size of the microenterprise sector

(Wenner et al., 2004). MIFs need to ensure that their projects do not increase vulnerability to climate change in the future (Agrawala & Carraro, 2010).

Wenner et al. (2004) argue that the MFIs' activities have serious environmental consequences. Therefore, entrepreneurship initiatives that can mitigate poverty and, simultaneously, preserve the environment become a global concern (Bastiaensen et al., 2019). Over the last years, these concerns have led to several investigations dedicated to green microfinance. Research in this field range from topics that relate green microfinance to poverty reduction to those that relate it to climate change, value creation, development, and employment. For instance, research has started to focus on the connections between microcredit programs and environmental common pool resources (Anderson et al., 2002); the nexus between microenterprise development and environmental degradation (Wenner et al., 2004); the microfinance opportunities and threats in the context of climate change (Rippey, 2012); the environmental performance measure of MFIs based on management performance indicators (Allet, 2011); why MIFs decide to go green and their potential and limitations in promoting environmental risk management in microenterprises (Allet, 2014, 2017); the characteristics of MFIs involved in environmental management (Allet & Hudon, 2015); rationales for incorporating concern for the natural environment into the practice of microfinance (Archer & Jones-Christensen, 2011); MIFs and sustainable development (García-Pérez et al., 2017, 2020; Rouf, 2013); and, ethics in microfinance (Kleynjans & Hudon, 2016). Research in green microfinance has been done globally. For instance, in Europe (Forcella, 2013; Forcella & Hudon, 2016), Africa (Agathou & Schuite, 2015), Latin America (Moser & Gonzalez, 2015), Asia (Fenton et al., 2017; Gonzalez & Moser, 2015; Hulme & Moore, 2006), and North America (Rouf, 2013).

Anderson et al. (2002) point out important connections between microfinance programs and environmental resources. Their study reported that microfinance can be linked to several benefits, such as cleanliness of public space, increased organic farming methods, less deforestation, and less water use. Wenner et al. (2004) examined the feasible ways of promoting improved environmental management and occupational safety. They point out that MFIs may begin to take steps towards promoting environmental awareness and eco-efficiency among clients, reducing exposure to lending risk due to environmental and occupational safety problems, but warned that the MFIs should not be overly regulated, as this can lead to perverse effects.

Many scholars have directed their studies to the MFIs performance evaluation in the context of triple bottom line dimensions in various regions and countries worldwide. In this context, it is important

to highlight the contribution from Allet (2012), who based her studies on management performance indicators to propose a new tool to measure the environmental performance of MFIs – the Microfinance Environmental Performance Index (MEPI). This measure provides a framework for analysing MFIs' current level of environmental performance along five dimensions: environmental policy, ecological footprint, environmental risk assessment, green microcredit, and environmental non-financial services. Allet and Hudon (2015) used a sample of 160 MFIs worldwide and applied MEPI to analyse the characteristics of MFIs involved in environmental management. They found that large and mature MFIs tend to have better environmental performances, particularly by providing green microfinance and environmental non-financial services. They show that Asian MFIs, compared to MFIs located in other regions, are more likely to go green, and tend to have better environmental performance. Agathou and Schuite (2015) introduced the green performance agenda framework to investigate environmental performance and challenges of the microfinance sector in Southern and Eastern Africa. They reported that MFIs in these regions are presenting basic steps towards building up their environmental management profile, and they are interested in better understanding how they can take on their environmental responsibilities. A study in this area concluded that, in Europe, the overall environmental engagement of European institutions seems comparable to those of developing countries (Forcella & Hudon, 2016).

The microfinance sector worldwide is, then, seeking to keep up with the global trend, bringing the notion of environmental sustainability to the forefront of business practices, along with financial and social results (Agathou & Schuite, 2015; Forcella et al., 2017). Green microfinance is a product/service that has been growing since 2012 (Forcella et al., 2017), and researchers have reported a positive trend in the green microfinance field. A survey of 160 MFIs conducted by Allet (2011) reveals that 78% believe they have a role to play in protecting the environment. Forcella (2013) stated that, in Europe, 115 MFIs (27,7%) reported some environmental initiatives. Another study carried out by Forcella et al. (2017) in 2015 reveals that 183 MFIs already made green products available to their clients, and in 2014, the volume of loans to support green projects was approximately 90 million dollars. These results are in line with other researchers that have demonstrated that a growing number of MFIs internationally are engaging or aiming to engage in green microfinance initiatives (Abid & Kacem, 2018; Atahau et al., 2021; Huybrechts et al., 2019; Mahboubi & Fortes, 2015). For example, of the 553 MFIs analysed by Forcella et al. (2017) in Latin America and the Caribbean, 183 institutions (26%) from 21 countries reported that they offered or were developing green products during the 2011-2015 period. The results of this study reveal that the trend would be positive for subsequent years, with an estimated market

growth between 8% and 25% in volume and 20% to 80% in the number of credits per year (Forcella et al., 2017).

The above discussion shows that green microfinance is a result of the double bottom line dimension evolution (social and financial) to the triple bottom line dimension (social, financial, and environmental) (Huybrechts et al., 2019). Hence, green microfinance emerged to respond to the global demand for environmental protection that also includes MFIs (Dowla, 2018). The environmental perspective of microfinance has thus created a new field of research in this area, yet still little explored (Forcella & Hudon, 2016; Huybrechts et al., 2019). Especially in the last decade, some studies have emerged linking microfinance activities to environmental issues and how MFIs should deal with these issues. For example, Dowla (2018) explains the process by which climate change will affect MFIs and their clients and how they can adapt to these changes; furthermore, it shows that this situation can be an opportunity for MFIs to develop new products that can help their clients to face the consequences of climate change (Dowla, 2018). The relevance of microfinance as a means of dealing with natural disasters is also documented, promoting pro-environmental behaviour in micro and small businesses, due to their permanent interaction with the base of the pyramid and the synergies created by combining the use of financial information and services (Allet, 2017; Calis et al., 2017). Thus, climate change seems to be a strong motivating factor that can lead MFI managers to adopt pro-environmental behaviour, especially in MFIs from developing countries. However, MFIs face internal constraints, such as challenges in implementing an environmental risk management program, and some external barriers, such as changing environmental behaviour among micro-entrepreneurs (Allet, 2017).

To deepen this discussion, it is important to look at the relationship between microfinance and the environment, particularly to the drivers and barriers to MFIs going green.

2.2. Drivers and barriers to MFIs going green

2.2.1. Microfinance and environment issues

The war against climate change and its consequences is intensifying, especially in the current context, in which the world is looking for a way to overcome the economic break caused by the Covid-19 pandemic (Khurana et al., 2021). Fighting against climate change requires pro-environmental attitudes and behaviours (van Riper et al., 2013). Several studies have been trying to identify individual

and institutional factors that best impel pro-environmental actions or block them. In this setting, numerous models with different theoretical frameworks have been used, such as the Theory of Planned Behaviour (hereafter TPB) (Ajzen, 1991), Moral Norms on Interpersonal Behaviour (Schwartz, 1968), the Value-Belief-Norm (VBN) theory (Stern et al., 1999), and several psychological and institutional factors have been proposed to explain this topic (Blake, 1999; Liu et al., 2018). For instance, Hines et al. (1987) found variables such as knowledge of issues, locus of control, attitude, verbal commitment, and personal responsibility. Stern et al. (1993) expanded the social-psychological theory of altruism based on value orientations, which they named social orientation, and added egoistic and biospheric orientation as factors that may determine pro-environmental behaviour. Taylor et al. (2021) found that neurodevelopmental or mental health conditions may influence environmental attitudes, behaviour and climate change beliefs. Kollmuss and Agyeman (2002) analysed demographic factors, external factors (e.g., institutional, economic, social, and cultural), and internal factors (e.g., motivation, pro-environmental knowledge, awareness, values, attitudes, emotion, locus of control, responsibilities, and priorities) that can exert some positive or negative influence on pro-environmental behaviour. In sum, previous research has identified several individual and institutional factors that affect action, whose importance varies depending on the characteristics of each person, environmental actions, and social or institutional restrictions (Blake, 1999; Tanner, 1999).

Another factor that may influence environmental attitudes, and hence behaviour, are the attributes of an organisation's manager (Mir, 2008). Thus, internal factors and external factors determine the environmental behaviour of microenterprises (Chan, 2008; Hillary, 2004; Mir, 2008). However, besides factors that affect the assessment of alternatives by individuals, those that hinder their ability to participate in specific activities must be considered to ensure an adequate understanding of human behaviour (Tanner, 1999). Thus, it is important to understand the motivations and barriers that influence pro-environmental practices.

2.2.2. Motivations

Motivations for pro-environmental practices have been explored in several industries and are associated with different factors (Gifford & Nilsson, 2014). For example, Stern et al. (1993) focused their studies on personal characteristics, namely egoistic, social-altruistic and biospheric value orientations and beliefs about the consequences of environmental changes. According to these authors, selfish values lead people to protect aspects of the environment that affect them personally or to oppose

such protection when the personal costs seem high and altruistic values and beliefs lead to concern about environmental issues, while biospheric environmental concerns are more comprehensive, that is, individuals express and act based on moral principles that include concern for other species and the environment (Schultz, 2000; Stern et al., 1993; Stern & Dietz, 1994). These three factors are summarised in two by Thompson and Barton (1994), who argue that selfish and social-altruistic values are similar to anthropocentric attitudes, and biospheric values are more similar to what they defined as ecocentric motives. Motivation to act arises from beliefs about the consequences of a valued object and the weight or importance of value orientation toward that object (Stern et al., 1993). The more people become aware of the severe impacts related to the destruction of the environment and natural resources, the more they demonstrate environmentally friendly behaviours (Han et al., 2010) and purchase products or services that are environmentally friendly (Dagher et al., 2015).

Gifford and Nilsson (2014) grouped 18 individual and social factors to study pro-environmental motivations, including, among others, childhood experience, knowledge and education, chosen activities, norms, and urban versus rural residence. According to the authors, multiple factors can lead an individual towards pro-environmental behaviour. These factors, which can be social or personal, depend on the individual's specific personal and social profile. In short, personal characteristics and social pressure can contribute positively to organisations' pro-environmental behaviours.

The approaches referenced above are in line with many other results, which suggest that increased sensitivity to environmental issues has encouraged organisations to be or become "green" (Chen, 2014; Dewald et al., 2013; Han et al., 2009; Kim et al., 2013; Pirani & Arafat, 2014; Wang et al., 2013).

In this context, some researchers have begun studying why MFIs become green. For example, Archer and Jones-Christensen (2011) pointed out issues of an anthropocentric nature (advancing the human condition, promoting the cause of women, protecting and preserving children) and ecological (behaviour change on behalf of the planet) stakeholder legitimacy, social responsibility and competitiveness to explain pro-environmental motivations in the field of microfinance. Other researchers have focused their studies on the influence of stakeholder legitimacy, social responsibility and competitiveness factors (e.g., Allet, 2012, 2014; Forcella, 2013), access to capital and interest in participating in the Green Performance Agenda (GPA) to improve the public image (e.g., Agathou & Schuite, 2015). Other factors, such as the vulnerability of MFI clients to the consequences of environmental degradation, the activities of MFI clients that may seriously harm the local environment,

and the fact that MFIs are closer to people with low incomes, thus exerting a significant influence on their activities (Forcella, 2013), were also explored as factors that can motivate and encourage the practice of green microfinance. In general, although carried out in different regions, namely in Africa and Europe, these studies present identical results; motivations do not differ substantially from region to region. While there may be multiple reasons to support the proliferation of green microfinance, very few MFIs are incorporating this commitment into the framework of their financial products (Allet, 2011, 2017), maybe because they face some constraints.

2.2.3. Barriers

As well as the motivations, the barriers to pro-environmental practices have also been studied in several industries, namely in the microfinance industry (e.g., Abedin & Khan, 2018; Allet, 2017). MFIs face difficulties building internal skills and reconciling their environmental and performance objectives, limiting their ability to assist microenterprises in environmental management (Allet, 2017). Accordingly, a set of internal and external barriers (Archer & Jones-Christensen, 2011) limit the ability of MFIs to engage in environmental management commitments. Archer and Jones-Christensen (2011) point out a set of individual and structural barriers that affect MFIs. They indicate that MFIs manage a large amount of information requested by donors, regulators and rating agencies; they have difficulty creating and disseminating environmental policies and auditing these policies, and employees demonstrate a lack of interest or knowledge about environmental issues once they are generally overworked individuals because they work under challenging conditions. According to these authors, the unbridled struggle to achieve financial sustainability required by donors or investors can stifle the ability of MFIs to innovate and experiment with new solutions. These barriers are still associated with the lack of experience in developing new products, lack of information and the absence of intense competition, which leads them to concern about environmental issues (Archer & Jones-Christensen, 2011), as well as recent controversies in this field, namely the problem of MFIs mission drift discussed by some researchers (e.g., Armendariz et al., 2013; Serrano-Cinca et al., 2015).

More recent researchers share many of Archer and Jones-Christensen's (2011) findings in green microfinance. Some researchers associate barriers with financial, human or operational issues, size, maturity and legal status of organisations (e.g., Allet, 2014, 2017; Allet & Hudon, 2015). According to these authors, limitations associated with internal skills/procedures, knowledge and technical, as well as lack of maturity and absence of innovative strategies and legal status, condition the performance of

MFIs in promoting green microfinance. Agathou and Shauite (2015) found that the lack of environmental knowledge at the senior management level and the lack of access to affordable local consultancy services for technical assistance, both necessary for involvement in environmental management, are the most relevant barriers to the development of green microfinance, as well as an absence of legislation issued by the government or the Central Bank to require participating MFIs sustain environmental sustainability (Nugroho et al., 2017).

One of the reasons why environmental protection is difficult to achieve in developing countries is that poor people are using environmental resources to meet basic needs (Archer & Jones-Christensen, 2011). Overcoming these barriers is the main challenge for those who want to achieve triple bottom line objectives (Archer & Christensen, 2011). Dowla (2018) points out that, even in Bangladesh, a country that is on the frontline of climate change related impacts, the microfinance sector is not active in the preparation of the National Adaptation Plan of Action (NAPA), which aims at identifying priority activities to respond to climate change. This suggests that the main challenge to achieve triple bottom line objectives has to do with financing mechanisms (i.e., via governments, development agencies, and multilateral lenders), which face difficulties in directing investments to a large number of small projects that would remedy environment-related challenges at the bottom of the pyramid (Agathou & Schuite, 2015). There are, however, some initiatives trying to persuade MFIs and their clients to adopt practices aimed at reducing pollution from carbon emissions, but for this to happen, MFIs need to change the terms and delivery method of their loans (Dowla, 2018).

To enhance motivations and overcome barriers, managers need to have pro-environmental attitudes and implement green practices (Kang et al., 2019). In the same vein, to achieve long-term sustainability in all dimensions (García-Pérez et al., 2017, 2020), good governance is essential to implement green practices and invest in green products, for example, green loans (Atahau et al., 2021).

2.2.4. Beliefs towards environmental sustainability

It is widely accepted that MFIs need to improve the capacity of their beneficiaries to overcome climate change in their operations (Fenton et al., 2015). Several scholars have focused their research on green microfinance, but as it is a new and broad topic, there is still much to be explored (Allet, 2014; Huybrechts et al., 2015). For example, to the best of our knowledge, the various surveys on managers' attitudes and behaviours towards environmental issues (e.g., Allet, 2017; Mensah & Ampofo, 2021; Okereke et al., 2018; Papagiannakis & Lioukas, 2012) have not included analysis of the perceptions of

MFI managers on the development of green microfinance. That is, it remains largely unknown to what extent green microfinance managers can facilitate adaptation to green activities that can better respond to environmental challenges and, at the same time, reduce poverty (Huybrechts et al., 2019).

Literature suggests that a higher degree of environmental concern will lead to an increase in green behaviours (Dagher et al., 2015). The success of adaptation will largely depend on the extent to which individuals are willing to accept change and to adopt attitudes and behaviours that reduce social-environmental vulnerabilities by improving adaptive capacities and resilience (Agrawala & Carraro, 2010). In this setting, it is important to highlight that individual and institutional pro-environmental motivations can generate a sustainable pro-environmental culture in a given context (Luu, 2020; Piowar-Sulej, 2020).

Culture, as a set of attitudes, values, beliefs, and behaviours shared by a group of individuals that are transmitted from one generation to the next (Matsumoto & Yoo, 2006), is certainly intertwined with environmental attitudes, which lead to behaviours (Ajzen, 1991).

Many studies have examined how upper-level managers perceive environmental issues in an attempt to identify corporate environmentalism (Banerjee, 2002; Banerjee et al., 2003; Hoffman & Ventresca, 1999; Park, 2009; Sharma, 2000; Zutshi & Sohal, 2004). Banerjee (2002) points out that the degree of top management commitment with environmental problems varies depending on managerial perceptions of environmental issues. Banerjee et al. (2003) empirically examined the relationship between top management environment commitment and some external and internal forces, and their impact on firms' environment strategies in several business sectors. The authors found, for example, that top management commitment has a positive impact on both environmental orientation and strategy. In turn, Zutshi and Sohal (2004) examined the key-success factors for adopting environmental management. Their results suggest that top management leadership and support is one of the key elements in raising organisation-wide awareness and understanding of environmental issues. Thus, environmentally friendly organisations tend to depend on top management commitment, which can result in competitive advantages (Spencer et al., 2013).

Additionally, several models have been tested and applied to explain the relationship between values and environmental attitudes and behaviours (Ajzen, 2011; Dunlap & Van Liere, 1978; Kellert, 1985; Patton, 2002; Rauwald & Moore, 2002). Kellert's (1985) typology of attitudes and Dunlap and Van Liere's (1978) New Environmental Paradigm (NEP) scale are two different approaches to environmental attitudes. Both approaches were used to predict policy support for environmental

protection between college students. While NEP measures how people see their relationships with nature, Kellert's measure is based largely on human relationships to animals (Rauwald & Moore, 2002). Rauwald and Moore (2002) applied both measures to examine the extent to which general environmental attitudes and more specific environmental concerns predict policy support in Trinidad, Dominican Republic, and the United States. The results indicate that the NEP's environmental factor and the Kellert's Utilitarian factor are the most useful predictors of support for the environmental policy. They also show that different attitude measures were differentially predictive of environmental protective policy support in these countries. This approach suggests that this measure can raise different results when applied in different realities or contexts.

NEP was also applied in other fields of studies. For instance, Millar et al. (2012) conducted a green hotel attribute study by using the NEP scale and found that specific green attributes are very relevant factors for both leisure travellers and business travellers. Park (2009) utilised the 15 items version of the NEP scale (Dunlap et al., 2000) to measure top managers' environmental attitudes and their perceived advantages of environmental management, seeking to identify whether they are influential factors related to green initiatives in the hotel industry. Results of this study showed a positive correlation between top managers' environmental attitudes and organisational involvement in environmental management. These researchers argue that top managers' perceptions of environmental issues are directly linked to corporate environmental orientation and determine organisational response to environmental issues.

Han et al. (2010) proposed and tested Ajzen's TPB model to explain the formation of hotel customers' intentions to visit a green hotel. The authors found that the TPB model has a good fit to the data and better predictive power for intention than the Theory of Reasoned Action model. Consistent with the theory, the results revealed that attitude, subjective norms, and perceived behavioural control positively affected intention to stay at a green hotel. TPB is one of the most frequently cited models for the prediction of human social behaviour in specific contexts (Ajzen, 1991, 2011).

Although multiple theories have explored the complexity of human and organisational behaviour and their actions to reduce environmental problems (Bockarjova & Steg, 2014), being TPB (Ajzen, 1991) one of the most popular theories in environmental psychology to examine factors influencing environmental actions (Bockarjova & Steg, 2014), the study combines components of PMT and IT to understand the individual and institutional beliefs of the MFIs' managers about environmental sustainability, in line with Aragón-Correa (1998), Aragón-Correa and Sharma (2003), Jennings and

Zandbergen (1995) and Papagiannakis and Lioukas (2012), who suggest that we should consider individual-level factors in explaining organisational greening.

2.3. Protection Motivation Theory

The PMT model (Maddux & Rogers, 1983; Rogers, 1975) provides an understanding of why attitudes and behaviour can change when individuals are faced with threats (Floyd et al., 2000). It points out that when people face a threat, they experience both threat appraisal and coping appraisal. According to Rogers (1975), this theory emphasises the importance of cognitive processes, suggesting that the motivation for protection comes from the cognitive assessment of an event considered harmful and likely to occur, together with the belief that a recommended coping response can effectively prevent the occurrence of that event. That is, people assess the severity of the threat and the personal ability to deal with that harmful event (Maddux & Rogers, 1983) by changing their attitudes (Rogers, 1975).

PMT has been applied to several domains, mainly for health-related behaviours (exercise, safe sex, cancer screening, etc.) (Norman et al., 2005), and considered more advantageous than other theories, such as TPB (Ajzen, 1991), to understand and predict protective health behaviour (Milne et al., 2000). Meta-analyses in the health field support the notion that PMT variables have a significant influence on the motivation of protection (that is, intention) and that there is a link with effective behaviour (Floyd et al., 2000; Milne et al., 2000). Furthermore, many scholars have used PMT to study the effects of environmental threats on pro-environmental behaviour (Bockarjova & Steg, 2014; Kang et al., 2019; Kim et al., 2013; Kothe et al., 2019; Zhao et al., 2016). According to Wurtele and Maddux (1987 p. 464), possible failures associated with PMT research need not be considered a determining deficiency; once “[...] rare is the body of research that consistently fits the assumptions and hypotheses of the theory that spawned it or that supports predictions from mathematical models” (p. 464).

PMT is composed of two cognitive mediating processes (Floyd et al., 2000): i) the threat-appraisal process, which evaluates maladaptive behaviour; and ii) the coping-appraisal process, which evaluates the ability to deal with risky behaviour. These two processes comprise the cognitive mediating process, which determines behavioural intentions or a decision to initiate, continue, or inhibit the coping strategies (Carrete & Arroyo, 2014; Floyd et al., 2000). Together, they result in the intention to perform adaptive (protection motivation) or maladaptive responses (Fenton et al., 2017; Rippetoe & Rogers, 1987).

The threat appraisal requires assessing the severity and vulnerability of environmental problems, as it refers to personal beliefs about the threats posed by environmental degradation (Rogers, 1983). When people face an environmental pollution threat, they experience the cognitive threat assessment process (Zhao et al., 2016). Zur and Klöckner (2014) argue that perceived threats are mainly aspects of health and poor living conditions due to environmental problems and managing these threats requires the adoption of certain protective behaviours.

Concerning the coping appraisal, its main components are self-efficacy, response efficacy, and perceived costs of protective action or perceived difficulty in environmental protection (Bockarjova & Steg, 2014; Milne et al., 2000; Rippetoe & Rogers, 1987). Self-efficacy is defined as the individual's belief in their degree of ability to effectively execute the recommended coping response (activities and settings) (Bandura, 1977; Milne et al., 2000). According to Bandura (1977) perceived self-efficacy not only can have a directive influence on the choice of activities and settings but can also affect coping efforts once they are initiated if there is an expectation of eventual success. Efficacy beliefs play a crucial role in self-regulation of motivation through challenges of goals and result expectations (Bandura, 1977). Response efficacy is based on the individual's expectancy that carrying out a behaviour can remove the threat or risks (Bockarjova & Steg, 2014; Kim et al., 2013).

The protective response of people to a threat increases with the self-efficacy and effectiveness of the response and is weakened by the perceived difficulty of pro-environmental behaviours (Bandura, 2002; Rippetoe & Rogers, 1987). Personal judgment of costs and other difficulties (e.g., time, financial and non-financial cost, and efforts) are related to protective measures or actions (Bockarjova & Steg, 2014; Floyd et al., 2000). That is, factors perceived by individuals as inhibiting or prohibiting participation in behaviours such as green activities (Blake, 1999; Tanner, 1999).

Carrete and Arroyo (2014) stress that PMT provides a good explanation for current dietary behaviour. Bockarjova and Steg (2014) applied the PMT to predict the adoption of electric vehicles and conclude that it successfully explains the pro-environmental behaviour. It was also used to understand the base of the pyramid consumers' intentions to engage in pro-environmental behaviours (Bockarjova & Steg, 2014; Zhao et al., 2016) as well as for explaining pro-environmental behaviour among university students (Shafiei & Maleksaeidi, 2020). These studies found that this theoretical framework is an adequate tool for understanding what governs individual attitudes and behavioural changes (e.g., Bockarjova & Steg, 2014; Shafiei & Maleksaeidi, 2020).

2.4. Institutional Theory

Multiple theories have been exploring the complexity of human and organisational behaviour. One such theory that has gained great attention in the study of organisational behaviour is IT, which has a long history that began in the late 1970s with the publication of a classic article by Meyer and Rowan (1977). Since then, there has been a proliferation of IT developments (DiMaggio & Powell, 1983; Rowan, 1982; Scott, 1987, 2008; Tolbert & Zucker, 1983; Zucker, 1977, 1987).

According to IT, institutional forces lead to isomorphism, which means that organisations end up looking very similar as they adopt what is institutionally prescribed in terms of discourse, processes and structures (DiMaggio & Powell, 1983; Sarma, 2011; Scott, 2014). This similarity in organisational forms emerges from the structuring of organisational fields, a process that is driven by active isomorphic forces – regulatory, normative, and mimetic - within a given organisational field (DiMaggio & Powell, 1983). These forces “[...] constrain, construct, and power organisational actors” (Suchman, 1995, p. 571) because they influence organisations’ decision-making (Chu et al., 2018; DiMaggio & Powell, 1983).

IT is meant to provide a lens for understanding organisational behaviour, since this behaviour is based on actions that lead to maximising the organisation’s legitimacy with the main stakeholders, such as peer organisations, customers, or other actors (Alajoutsijärvi et al., 2014; Allet & Hudon, 2015; Bévort & Suddaby, 2016; Haveman & Rao, 1997). Legitimacy is the degree to which institutions view an organisation’s activities as socially acceptable and desirable because its practices comply with industry norms and broader societal expectations (Bitektine, 2011; Lounsbury & Glynn, 2001; Rindova et al., 2006; Suchman, 1995). IT emphasises the institutional configurations in which organisations operate, according to rules, cultural structures, cognitive schemes and routines that can limit or enable their actions (Chiu, 2017). Formal structure becomes a way of guaranteeing the perpetuation of institutionalised patterns in organisations (Tolbert, 1988). Thus, when actors attribute validity to processes and structures, they are institutionalised (Tolbert, 1988; Zucker, 1977). Institutional fields (on the merits of institutional forces) are critical in the organisational structuring process (DiMaggio & Powell, 1983) and fundamental in the formation of organisational belief systems, which support the construction of organisational meaning (Meyer & Rowan, 1977).

Although it provides a robust theoretical framework, there is also some criticism around this theory (Felin & Foss, 2005; Jennings & Zandbergen, 1995). Criticism of new IT is associated with its apparent inability to explain organisational transformation (Tracey et al., 2011). Jennings and

Zandbergen (1995) found several areas of modification when they tried to apply and expand IT to study ecologically sustainable organisations. The authors suggest changes in IT that incorporate the individual as an actor in the study of ecology, given that there is a significant role for individual interpretation and innovation. Institutional change is a dynamic and iterative process that takes place over time, and individuals are necessarily important because they are shaped and shape the institutional environment (Felin & Foss, 2005; Khavul & Bruton, 2013). Despite criticism, this theory has been considered a promising framework that investigates issues that are at the centre of public concerns, highlighting the role of social and cultural pressures that are imposed to organisations and that affect organisational practices and structures (Brammer et al., 2012; Jennings & Zandbergen, 1995).

IT has been applied in many fields, investigating a wide range of phenomena, such as corporate social responsibility (Aguilera et al., 2007; Brammer et al., 2012) and pro-environmental behaviour (Allet, 2017; Delmas & Toffel, 2004; Hoffman, 2001; Jennings & Zandbergen, 1995; Marshall et al., 2005; Ranta et al., 2018; Roxas & Coetzer, 2012; Seidler et al., 2017). There are three forces that pressure towards institutional isomorphism (DiMaggio & Powell, 1983).

IT encompasses three dimensions: i) regulatory or coercive, ii) normative, and iii) cognitive / mimetic influences (Chiu, 2017):

i) The regulatory or coercive perspective regards explicit formal rules that restrict behaviour and regulate interactions by inspecting the conformity of their application and, as necessary, putting into practice sanctions (punishments) that stem from political influence and the problem of legitimacy (DiMaggio & Powell, 1983). Legitimacy concerns compliance with organisational forms, procedures, rules, and practices within widely accepted social norms and legal structures (Meyer & Rowan, 1977; Suchman, 1995). Organisations also conform because they are compensated (Agrawal & Hockerts, 2013). Institutional fields contain several sets of constituents or stakeholders that assess the legitimacy of organisational structures and practices according to the logic in which they are implanted (Suchman, 1995). Thus, organisations use various strategies to gain legitimacy, for example, agreeing with the leader of a high-status institution (e.g., governmental agencies, donors, investors, creditors, etc.) or obtaining recognition from high-status actors (Agrawal & Hockerts, 2013; Nugroho et al., 2017).

ii) The normative process accounts for rules, standard operating procedures, codes of conduct, occupational standards and others, set by a variety of players, which influence behaviour through social obligation and peer pressures in a given context (Chiu, 2014, 2017; DiMaggio & Powell, 1983; Sarkis et al., 2011). In the microfinance sector, for instance, besides media and other actors, MFI associations

can have a major influence on the behaviour of their members, not necessarily because of their ability to legally enforce that behaviour but as a result of peer pressures and the establishment of standards that reflect which behaviours are acceptable or unacceptable (Chiu, 2017; Paul et al., 2016).

iii) The mimetic influence lays on the assumption that individuals perform certain actions or make certain decisions because they are intrinsically supported by unconscious cognitive aspects of the institutions (DiMaggio & Powell, 1983). It includes cognitive schemas and shared beliefs about what is understood to be responsible behaviour in a certain context (Chiu, 2017). The mimetic process was found to be the most relevant cause for isomorphism (Heugens & Lander, 2009). Imitative isomorphism concerns mostly firms' imitation of the practices and behaviours of peers in seeking intra-industry legitimacy and occurs when organisations shape themselves from the structures and practices of other organisations, when they perceive the practices of others as appropriate (Berrone et al., 2013; Mizruchi et al., 1999). In this sense, mimicry can occur regardless of specific technical or economic benefits to the adopting firm (Meyer & Rowan, 1977). Hillebrand et al. (2011) analyse imitative behaviour from two perspectives: (i) the rational perspective, according to which imitative behaviour results from observing the performance or results of other adopting companies and judging the suitability of the practice for the focal company; and (ii) the institutional perspective, which, considering that companies operate in a social context, sees the social pressures in the business environment as strong predictors for the adoption of practices and isomorphism between them. Hence, some decisions do not represent legal obligations but are based on perceptions about what institutions require, insofar that institutions, in addition to imposing legal restrictions, also define moral and cultural boundaries, separating legitimate from illegitimate activities (Scott, 2008). The sources of cognitive influences tend to come from an individual's background, education and life experiences, which may lead to environmental behaviour (Byars-Winston et al., 2010; Palmer & van de Sande, 1993; Varela-Candamio et al., 2018). Organisation leaders learn mental constructs and seek to act in ways that are considered appropriate by other significant actors in their environment (Aguilera et al., 2007; Matten & Moon, 2008). Organisations are strongly influenced to respond to natural environment issues by paying close attention to others organisations that implemented environmental practices (Delmas, 2002; Qi et al., 2021).

Isomorphic pressures seem most intense in non-profit organisations, which depend on financial and non-financial resources from the State and donors for survival (Sarma & Pais, 2008). The legitimacy, access to resources and the very survival of MFIs can be compromised if there is a failure to comply with critical and institutionalised standards. For the performance of any activity, formal and informal rules are necessary and must be complied with (Nugroho et al., 2017). IT appears to be relevant to

assess MFIs managers' commitments because: (i) expanding the access to financial resources to the poor and vulnerable populations, directed towards environmentally sustainable projects, tends to become institutionalised in rules, sanctions, and regulations; (ii) donors and investors demand inclusive and environmentally sustainable financing based on their own normative beliefs and values; (iii) voluntary initiatives encourage inclusive and environmentally sustainable financial practices among members through learning and imitating positive practices; and (iv) society's most challenging problems, such as global warming and poverty reduction, will likely require new organisational forms to solve them (Khavul et al., 2013; Sarma, 2011; Tracey et al., 2011). Furthermore, IT emphasises that environmental problems are not primarily technological or economic but behavioural and cultural (Hoffman & Jennings, 2015).

Despite the importance of PMT to reflect on green microfinance for understanding the beliefs and intentions that guide managers, the contribution of IT is also fundamental.

3. Conceptual model and research propositions

Despite a growing trend in green microfinance (Forcella et al., 2017), studies show that this practice is still negligible. There is still significant resistance to moving forward with sustainable microfinance projects, based on the argument that the poor are more concerned with solving their day-to-day problems (Archer & Jones-Christensen, 2011). The search for means of subsistence makes the poor contribute to deforestation, hunting of endangered species, destruction of soils, etc. (Lal & Israel, 2006; Shahidullah & Haque, 2014). Thus, microfinance may contribute negatively to the environment by funding activities such as these (Anderson et al., 2002; Archer & Jones-Christensen, 2011; Wenner et al., 2004). This behaviour affects both the environment and the health and well-being of the most disadvantaged families (Effendi, 2013; Kassa et al., 2018). Microfinance institutions have a high responsibility in changing attitudes and behaviours at the low-income segment, who survive with less than USD 1500 per annum, conventionally called in the literature as base of the pyramid (BoP) (Jebarajakirthy & Lobo, 2015; Prahalad, 2012; Zhao et al., 2016). MFIs are closer to this segment of the population and deal with their difficulties on a daily basis (Allet, 2017; Hall & Lal, 2006; Moser et al., 2016). The literature shows that the poorest are most affected by the consequences of environmental challenges. For example, climate change causes floods that damage their homes, soils for agriculture, their livestock and their health (Dowla, 2018; Lobell et al., 2011).

To contain this scenario, microfinance institutions have a mission to offer their clients products and services that are both accessible and environmentally sustainable (Forcella, 2013; García-Pérez et al., 2020; Widiarto et al., 2017). Although the literature often argues that, to grow and maintain in the long run, MFIs deviate from their main mission (Cull et al., 2009; Frank, 2008; Wagenaar, 2012), there is a current that emerged in the last decade, supporting the need for MFIs to invest in promoting green projects and activities (Allet, 2014; Dowla, 2018; Fenton et al., 2017). Thus, the challenge is to meet the needs of low-income people without harming the environment. However, studies on this topic are still very scarce, maybe because it is a relatively new field of study (Forcella, 2013; García-Pérez et al., 2018, 2020).

Despite the guidelines and demands on the part of donors and funding agencies, MFI managers have managerial discretion in formulating and deciding the business policies as environmental initiatives (Galema et al., 2012; Tchuigoua, 2018). However, there is evidence of the disconnection between what is demanded and actual practice (Archer & Jones-Christensen, 2011). Previous literature does not clarify

whether microfinance managers are sensitive to environmental issues, nor does it give clear indications about the beliefs of MFI managers that underlie their actions in this context (e.g., Allet, 2012; Dowla, 2018). Although Allet's (2014) studies suggest that there are proactive managers in preserving the environment, the factors underlying this proactivity are not evident, and little is known about the determinants of their attitudes that may lead the intention and effective behaviour towards green microfinance activities (Huybrechs et al., 2019). Thus, it is essential to understand what MFI managers think about the environment and how they deal or intend to deal with it to assess the future trend of this new perspective of microfinance. Building knowledge of the MFI managers beliefs can allow a better understanding of what would motivate or hinder them in developing this new perspective and can provide elements that lead us to assess their intention to behave in a way that facilitates or prevents the promotion of green microfinance. The promotion of green microfinance will contribute to the protection of the environment and could be beneficial to MFIs and improve the quality of life of the most unprotected (Allet, 2017; Dowla, 2018).

Given the above and based on the frameworks provided by the PMT and the IT, two main dimensions were deemed relevant to propose a theoretical model that framed the empirical research, corresponding to two main dimensions in the study of green microfinance. The first dimension is understanding the beliefs of MFI managers and how these influence their decisions. This dimension is based on a more psychological approach and focuses on the individual with values, objectives, motivations, and barriers (Liobikienė & Juknys, 2015; Steg et al., 2014; Van der Werff & Steg, 2016). A second dimension is to understand the perspective of MFI managers on the influence of the institutional context on their decision-making. The analysis of these two dimensions allows us to understand better what lies underneath the intention of MFI managers regarding the engagement of their institutions in green microfinance activities.

Using the research question as a guide, a conceptual framework was developed to group the constructs of the two theories used to study how managers' beliefs about environmental sustainability and the role of microfinance in promoting it and their perceptions about their institutional context to better understand how these affect the engagement of their institutions in green microfinance, as depicted in Figure 1.

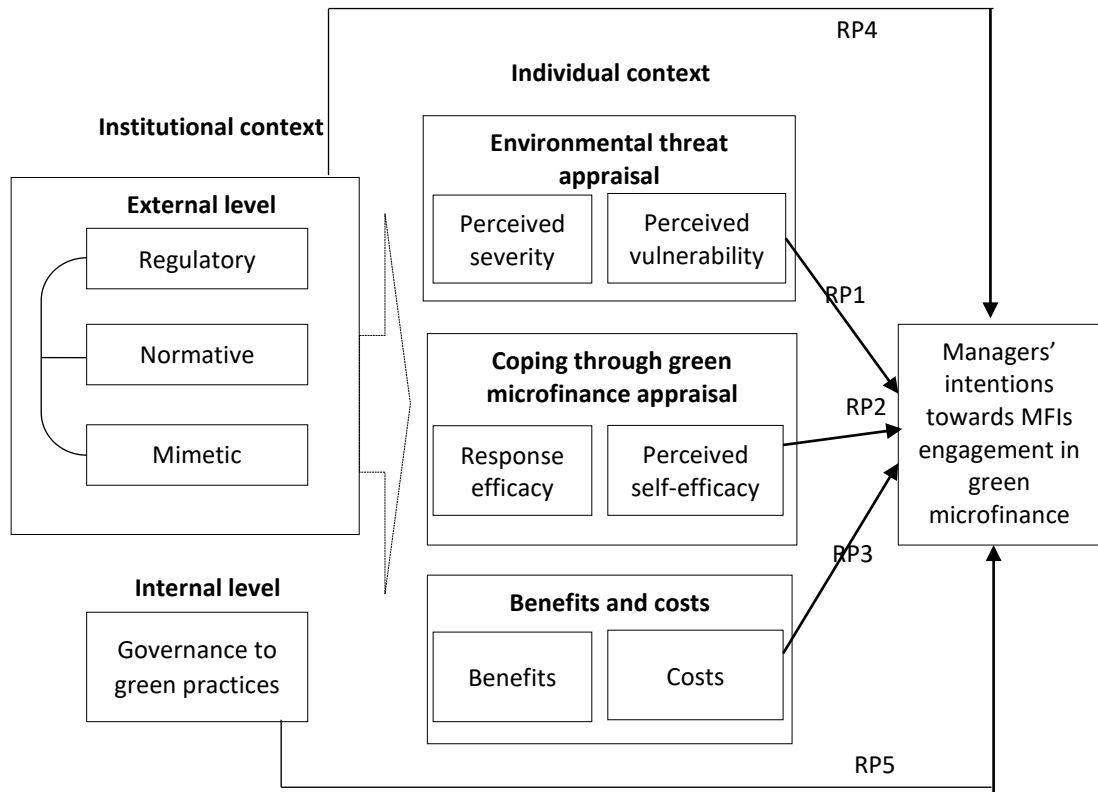


Figure 1. Conceptual model

There is an important debate in the literature about the effects of leadership on organizational outcomes (e.g., Fernández et al., 2006; Lieberman & Connor, 1972; Salanick & Pfeffer, 1977) and adoption of environmental practices (e.g., Egri & Herman, 2000; Sharma, 2000). As Jennings and Zandbergen (1995) posit, "[...] every society and every organization within it relies on some belief system or 'paradigm' that guides daily understanding and action" (p. 1037), that is, decisions do not depend exclusively on pre-established norms or procedures but also on the personal beliefs of those who make decisions (Jennings & Zandbergen, 1995). Egri and Herman (2000) argue that "[...] environmental leaders seek to change economic and social systems that they perceive as currently and potentially threatening the health of the biophysical environment" (p. 572). Hence, in the model presented for this study, PMT and IT are used to investigate the environmental beliefs and perceptions of microfinance managers (Ren et al., 2022) in the context of developing countries (Ansari et al., 2022) and to explore the factors that may interfere with managers' intention to develop green microfinance, as a product aimed at MFI clients.

Chief executive officers (CEOs) (Ren et al., 2022) (here referred to as top managers or simply MFI managers) are the highest level of leadership in organizations (Hiller & Beauchesne, 2014) and

play the most influential role in affecting firm strategies, structures, systems, and culture of their organizations. Managers' beliefs shape organizational practices (e.g., Berson et al., 2008; Chadwick et al., 2014; Robertson & Barling, 2013). Environmental belief describes the belief in the relationship one has with the environment, particularly concerning the relationship between human beings and nature (Raineri & Paille, 2016; Ren et al., 2022). Ren et al. (2022) found that CEOs' environmental beliefs are significantly related to green Human Resource Management, mainly for companies operating in locations with severe pollution levels.

Based on PMT, at individual context, the intentions of MFI managers to develop green microfinance activities can be influenced by their environmental beliefs. In line with the first component of PMT – environmental threat appraisal –, managers' intentions to promote green microfinance can be influenced by their beliefs about the severity of environmental threats and their consequences, both for themselves and the overall community. Managers' beliefs about the severity of environmental threats have to do with what they believe to be a severe threat to themselves and the community and the potential harm that a microfinance project or activity, harmful to the environment, can cause to low-income people. In the same perspective, when managers believe in the vulnerability of their clients, in the case of supporting projects or activities that harm the environment, this belief can help predispose them to be more aware of the environmental impact of their clients' activities (Nordlund & Garvill, 2002) and, consequently, the need to develop green microfinance, thus contributing to environmental protection.

Previous research on protection motivation reveals that the perceived severity of environmental threats positively affects motivation to engage in pro-environmental behaviours (Zur & Klöckner, 2014). Therefore, MFI managers' intentions regarding their institutions' involvement in green microfinance may be influenced by their assessment of the environmental threat and its consequences in such a way that:

RP1: When MFI managers perceive environmental problems as severe and that their clients and the community, as a whole, are vulnerable to environmental threats, they will be more sensitive and willing to involve their institutions in green microfinance activities.

Risk perception plays an important role in attributing human behaviour (Sjoberg et al., 2004). In other words, in line with the second component of PMT – coping through green microfinance appraisal –, managers' beliefs in environmental threats and their assessment of the danger of these threats are fundamental to triggering the assessment process of coping with threats, through which the

manager assesses their ability to face and prevent themselves, their customers and their community, in general, from being harmed by the threat (Ansari et al., 2022). In other words, when MFI managers believe that they can respond to environmental threats, as well as the effectiveness of the proposed protective behaviour to minimise the threat, this belief will influence their intentions to develop green microfinance activities or projects. In this study, responding to threats means that managers feel able to engage MFIs in environmental issues, developing policies and procedures associated with these issues. The effectiveness of the response indicates that the manager is able to guarantee the development and availability of green microfinance to their clients. In this way:

RP2: When MFI managers believe in green microfinance's effectiveness in minimizing the threat and their self-efficacy in implementing it in their institutions, this belief signals that they are willing to involve their institutions in developing green microfinance.

The conceptual model proposed in this investigation also considers the MFI managers' assessment of the costs and benefits of engaging their organizations in green microfinance activities, namely through supporting environmentally sustainable entrepreneurial projects. Studies on the costs and benefits (Mady & Omar, 2022) associated with the adoption of social (e.g., Giuli & Kostovetsky, 2014) and environmental (e.g., Griskevicius et al., 2010) responsibility policies of organizations have been developed over the years. Some studies highlight direct and indirect costs (Margolis & Elfenbein, 2009; Nguyen et al., 2019), while others focus on benefits, although without ignoring the costs or barriers inherent in adopting socially and environmentally responsible strategies in companies (Dangelico, 2016; Mady & Omar, 2022). Miller et al. (2008) point out that "[...] costs of going green vary by local market, the number of vendors and experience in the local market, developer/owner experience, and project or portfolio scale" (p.1). In the same vein, Mady and Omar (2022) and Purwandani and Michaud (2021) found that, in small and medium-sized enterprises, internal motivations and the opportunity to obtain a better public image are the fundamental drivers in going green. However, the authors also noted that lack of capital is the central barrier to implementing green business practices in these enterprises.

On the other hand, Dangelico (2016) points out a set of benefits when investing in green product innovation. The author points out some benefits, such as cost reduction, competitive advantage, better reputation, increased exports and increased productivity. Furthermore, Dangelico (2016) highlights that the green product innovation process is greatly influenced by the top management commitment and knowledge flows, both inside and outside the company, among others. Consequently, it is essential to

understand the beliefs of MFI managers about this perspective. In other words, the managers' perception that environmentally sustainable projects provide more significant economic benefits for MFIs and their clients may encourage them to develop green microfinance, thus contributing to environmental protection. Therefore, we formulate the following proposition:

RP3: When MFI managers believe that providing green microfinance to their clients will minimise costs and increase benefits for both MFIs and their clients, this belief signals that they are willing to involve their institutions in developing green microfinance.

According to IT, organizations strive to meet institutionalized norms and gain social legitimacy through their practices (DiMaggio & Powell, 1983; Scott, 1995). This approach suggests that organizational managers' decisions can be influenced by external contexts (Crossland & Hambrick, 2007; Hambrick & Quigley, 2014; Ren et al., 2022). Hence, managers are seen as recipients that interpret and analyse stakeholder influences or pressures based on their expectations of obtaining advantages (del Río González, 2005; Garcés-Ayerbe et al., 2012; Valero-Gil et al., 2017) and also to gain legitimacy (Allet, 2014; Bansal & Roth, 2000). External influences are typically exerted by various players (Forcella & Hudon, 2016). In the case of MFIs, the most prominent are governments, regulators, investors, donors, peer organizations, activists, and community interest groups (Allet, 2014; Bansal & Roth, 2000).

External pressure can be exerted through regulatory/coercive and normative means. When pressure is exercised by the Government and regulators, it is usually regulatory (Ledgerwood et al., 2013). Regulatory mechanisms include written laws and policies imposed by Governments and accredited agencies, which means that organizational changes are, in part, a direct response to government impositions (Agrawal & Hockerts, 2013; Berrone et al., 2013; Chiu, 2017; Chu et al., 2018; Nugroho et al., 2017). For instance, MFIs organizations hire accountants to meet the legal requirements for accountability or maybe to gain financial support or legitimacy from donor organizations or investors (Allet, 2014; Allet & Hudon, 2015).

Government agencies seem to be the institutional actors that influence the adoption of environmental practices the most (Delmas & Toffel, 2004). They are the ones who enact legislation and penalize those who do not comply (Ledgerwood et al., 2013; Nugroho et al., 2017). For example, Delmas (2002) found that governments play an important role in companies' decisions to adopt ISO (International Organization for Standardization) 14001. The regulator oversees the performance of MFIs in carrying out activities related to the environment, forcing them to comply with regulations (Delmas &

Toffel, 2004; Nugroho et al., 2017). Governments and regulators can use their power, through sanctions or rewards (Céspedes-Lorente et al., 2003), to force MFIs to approve environmentally sustainable projects or activities. Thus, laws, policies, and sanctions that MFIs are subject to comply with influence their behaviour (Chiu, 2017; Urbano & Alvarez, 2014). Regulatory pressure initiatives may also come from socially responsible investors or donors (Allet, 2017; Allet & Hudon, 2015). These use their privileged position to impose rules and procedures for granting loans to MFI clients (Forcella & Hudon, 2016; Jawahar & McLaughlin, 2001). They may impose loan conditions on projects or activities that do not endanger the environment.

However, pressures for change do not always stem only from coercive sources but also from the customer, activists and the community (del Río González, 2005). These actors can also pressure MFIs to implement codes of conduct that favour green projects or activities. A survey of the largest Canadian companies showed that customer pressure was the second most cited source of pressure to adopt an environmental management plan, after government pressure (Henriques & Sadorsky, 1996). However, in the microfinance sector, this pressure needs to be explored since MFIs are focused on the poor segment of the population (Ashraf et al., 2022).

Environmental non-governmental organizations (NGOs) promote many actions to raise awareness and pressure to defend the environment by disseminating knowledge about the importance of environmental protection (Garcés-Ayerbe et al., 2012; Hoffmann & Muttarak, 2020). Henriques and Sadorsky (1996) argue that, although environmentalists do not appear to be a source of significant pressure, they may indirectly influence corporate behaviour through their communications with the public and government organizations. Some studies point to organizations that have changed their environmental practices in response to pressure from environmental groups (Baron, 2003). More educated communities may also demand pro-environmental behaviour (Bronfman et al., 2015). Another player considered essential in this process is the successful peer MFIs. MFIs tend to emulate the practices of other successful MFIs. Several researchers highlight the role of peer persuasion (e.g., Aksen et al., 2013; Woersdorfer & Kaus, 2011). In the field of microfinance, peer pressure has also been evidenced in loan repayment (e.g., Rouf, 2013; Spiegel, 2012), but it needs to be explored in promoting green microfinance.

In the microfinance sector, pressure from governments and organizations, both national and international (e.g., United Nations Environmental Program – UNEP; peer organizations) to assure environmental protection and the MFIs' quest for legitimacy can make their actions compatible with

industry standard operating procedures (Ashraf et al., 2022; Uddin et al., 2021). Another example is the adoption of codes of conduct (Kleynjans & Hudon, 2016) associated with environmental protection for obtaining financial resources from donors and investors (Forcella & Hudon, 2016). In the absence of effective regulations, MFIs may neglect values that promote the adoption of socially responsible practices, procedures and policies (Chiu, 2017).

Changes derived from a mimetic act occur when organizations copy rules and practices from the most successful, legitimate, reputable status organizations in the industry to hedge uncertainty (DiMaggio & Powell, 1983; Haveman, 1993; Meyer & Rowan, 1977; Zhu & Sarkis, 2007). This suggests that MFIs can also promote environmental action based on their perceptions about what other institutions do in this matter. Consequently, MFIs can induce actors to behave and act positively, using incentives, rewards, and other devices, thus exploring cognitive elements, which include cognitive representations, mindsets, or shared beliefs about what is expected to be responsible behaviours (Chiu, 2014). Based on the previous discussion, we propose that:

RP4: The regulatory, normative and mimetic institutional context influences MFI managers' willingness to engage their institutions in green microfinance activities.

Institutional external pressure is generally regarded as one of the main motivations underlying the adoption of pro-environmental behaviours (Buysse & Verbeke, 2003). Many researchers have argued, however, that the structural characteristics of an organization also strongly influence its behaviour (Kimberly & Evanisko, 1981). Organizations have their principles and values (Meehan & Bryde, 2011; Zientara & Zamojska, 2018), usually written in manuals, codes of conduct and mission statements, which normally determine the organizational structure that characterizes them. Thus, some factors such as policies, size, processes, procedures and internal rules, communication flow, technological evolutions (Bazerman & Hoffman, 1999), as well as financial conditions, monitoring systems (Florida et al., 2001), experience, and code of conduct (Kleynjans & Hudon, 2016) influence the managers' behaviour and consequently their decision-making. In this sense, based on IT, the study proposes that managers' beliefs about the environmental threats and their ability to cope with them through green microfinance is influenced by their perceptions about the conditions of their organizations. Based on the previous discussion, the study proposes that:

RP5: Managers' perceptions of internal conditions in their MFIs concerning environmental protection influence their decisions to involve their institutions in green microfinance activities.

PMT and IT are, therefore, used to explore the personal and institutional beliefs and perceptions of microfinance managers that can influence their decisions to engage their institutions in green microfinance. We propose that managers' beliefs in environmental threats, their clients' vulnerability to these threats, and their beliefs in their capabilities to design green microfinance products and services and make them available to their clients, as well as their perceptions regarding institutional influences, may predispose them to promote green microfinance in their institutions. Thus, our research propositions are explored following the methodological procedures described in the next section of the thesis.

4. Methodology

The main purpose of this study is to further the understanding of how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about how the institutional context may affect the engagement of their institutions in green microfinance. Such knowledge not only contributes to the theory on green microfinance but also might provide new inputs that can help in the formulation of new policies that favour its promotion in developing countries.

We start by clarifying the goals of the study, which guide the remaining chapter. Afterward, we explain the methodological and theoretical route applied to collect and analyse the data. The fieldwork required to collect data to achieve our goals followed a methodological procedure described in detail in the next section. Before that, the basic philosophical assumptions of this research are set out. Research philosophy is critical in any research (Crossan, 2015; Easterby-Smith, 1997), as failures in the philosophical questions of research can profoundly affect research quality.

4.1. Research question and objectives

As revealed by the literature review, although green microfinance is already a reality in some MFIs, its implementation is still underdeveloped (Forcella et al., 2017). Although large companies are those that contribute the most to environmental problems (Heede, 2014; Hörisch et al., 2015), the expansion of green practices to more, if not all, MFIs is needed and timely, inasmuch that by putting into practice their social mission of poverty alleviation, microfinance institutions may be contributing for environmental problems, since funding is often used to support unsustainable practices (Anderson et al., 2002; Archer & Jones-Christensen, 2011; Wenner et al., 2004). Thus, MFIs must embrace their triple bottom line purpose (Allet & Hudon, 2015; Kizza & Samali, 2022). MFI managers have a pivotal role in this process, as they are the ones that largely influence organization pro-environmental behaviours (Allet, 2017). However, it is necessary to explore further how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the institutional context, affect the engagement of their institutions in green microfinance (Huybrechts et al., 2019), since previous research suggests that both individual beliefs and institutional

pressures may play a relevant role (Buysse & Verbeke, 2003; Kang et al., 2019), Therefore, this study aims at contributing to build knowledge on this topic by answering the following research question:

How do managers' beliefs about environmental sustainability and the role of microfinance in promoting it, and their perceptions about their institutional context, affect the engagement of their institutions in green microfinance?

By finding answers to this question, we aim to achieve the following research objectives (Obj):

Obj 1 – To understand MFIs managers' beliefs about the severity of the environmental threats in general and the ones posed by unsustainable projects funded by microfinance, in particular;

Obj 2 – To understand MFIs managers' beliefs about the effectiveness of the microfinance response to environmental threats;

Obj 3 – To assess MFI managers' perception of the costs and benefits of the microfinance response to environmental threats;

Obj 4 – To understand MFI managers' perceptions about the influence of the regulative, normative and cognitive/mimetic environment on their decisions towards green microfinance;

Obj 5 – To explore how MFI managers' perceptions of the internal conditions of their organizations, namely regarding governance, influence their decisions towards green microfinance.

To answer the research question and attain the objectives, a qualitative multiple-case study approach was selected, as detailed below. Before that, we briefly present the ontological and epistemological position adopted in this thesis without the intention of exhausting the entire debate on the subject.

4.2. Research paradigm – Ontological and epistemological positions

In the theory of knowledge, several debates have been taking place about the position of the research and its antecedents. Thomas Kuhn, for example, coined the term “Paradigm Shift” and thus introduced the notion of paradigm into modern science (Anand et al., 2020; Onega, 2014). Hence, answers to the questions: How to position a survey? Where does it belong? and What philosophical traditions should it follow? are necessary for an investigation to be relevant in academia, progress without major problems, and achieve its academic and practical goals (Grix, 2002).

Paradigms have become an important concept in the social sciences (Morgan, 2007). A paradigm is a perspective of thinking about how the world is perceived based on fundamental assumptions and beliefs that guide the work of a researcher (Jonker & Pennink, 2010). It is a peculiar set of beliefs and perceptions (Kuhn, 1962) that will inform the research method, a worldview that guides the researcher not only in the choice of method but also ontologically and epistemologically (Lincoln et al., 2011), which includes assumptions, issues to resolve and research techniques to apply (Sobh & Perry, 2006). Thus, a paradigm (Lincoln et al., 2011) or a worldview (Creswell, 1998) represents a group of assumptions and “beliefs that guide action” (Guba, 1990, p. 17). It is important to note that one paradigm cannot be used to judge the suitability of another, as each paradigm is considered rational within its own logic (Lincoln et al., 2011). The choice of a paradigm is not based on objective foundations (Sobh & Perry, 2006). A researcher can choose a paradigm that is consistent with their assumptions (Sobh & Perry, 2006).

The two critical dimensions to distinguish worldviews are ontology and epistemology (Saunders et al., 2009). Ontology deals with the nature of being and, therefore, refers to the nature of knowledge (Wahyuni, 2012), to the fundamental beliefs and assumptions we have about reality, about how things are in the social world where we want to conduct research (Blaikie & Priest, 2019). It can be external, objectivist or realistic and independent of social actors and their interpretations or a construction of our mind (Jonker & Pennink, 2010; Neuman, 2014; Saunders et al., 2009). An objective or realistic ontological view presupposes that reality exists and has already been given to this world (Lomborg & Kirkevold, 2003; Saunders et al., 2009). In other words, that “there is a world out there” (Pio & Varkøy, 2012 p. 108), regardless of the perceptions and mental constructions that one might have in relation to it. On the other hand, a subjective or idealistic ontological view represents reality as a product of the mind (Gibson & Morgan, 1979). It starts from the premise that an object or entity comes into existence from the moment it is perceived by an actor, in a mental construction. In this perspective, the world exists from the perceptions we have about it (Bryman, 2016). In this perspective, individuals contribute to the construction of social phenomena (Wahyuni, 2012).

Epistemology is related to the construction of knowledge, its understanding, and use (Wahyuni, 2012). Therefore, it includes what is necessary to produce knowledge and how scientific knowledge is understood once created (Neuman, 2014). The epistemological debate revolves around the discussion about the way knowledge is acquired, that is, whether through patterns, through a mirror of reality (positivism) (Sobh & Perry, 2006), or whether it is experienced directly (anti-positivism) (Gibson & Morgan, 1979).

The literature presents the different paradigms that should guide the choice of research strategies. The four main paradigms are: positivism, interpretivism, post-positivism and pragmatism (Wahyuni, 2012). The selection of one or more research paradigms is subject to their conditions and the researchers' interests, that is, it depends on how they see the truth, what they know and how they know it, along with their theoretical perspective about the research topic, the existing literature, and their own values (Brown & Dueñas, 2020; Nguyen, 2019). However, it is necessary to understand that choosing a research methodology cannot be a simple matter of preference for the researcher, as this choice will have to be related to the questions that the researcher poses, with the nature of what is intended to be known and with the type of answers one hopes to provide (Brown & Dueñas, 2020).

Positivists basically seek legitimate generalizations, called "nomothetic" (Neuman, 2014, p. 99), conducting a value-free study to assess social phenomena (Wahyuni, 2012). They emphasise that different researchers studying the same real problem will produce similar results through the appropriate use of statistical tests and following a similar research process when studying a large sample (Creswell, 2009). Thus, positivists assume that knowledge is generalized to a population through the statistical analysis of observations about an existing reality (Creswell, 2009; Sobh & Perry, 2006). For them, only observable and measurable phenomena can be valid knowledge, which can be put to the test (Godfrey & Hill, 1995). Positivists believe that generalization is universal and applies to many contexts, just as they believe in the power of replication, with which repeating the study in various ways leads to the same results (Hubbard & Armstrong, 1994).

The post-positivist approach is an evolution of the positivist paradigm (Corbetta, 2003). According to post-positivists, the perception of reality is not an objective image; rather, it is full of theories insofar as "[...] even the simple recording of reality depends on the researcher's frame of mind and, on the social and cultural conditioning" (Corbetta, 2003, p. 19). In other words, although it also believes in generalizations, it admits that knowledge is the result of social conditioning (Wahyuni, 2012). This positioning is called a critical realistic posture, which means that understanding social reality requires framing it in a given context of relevant dynamic social structures capable of creating the observable phenomena in the social world (Wahyuni, 2012). In short, from an ontological point of view, post-positivism is characterized by a critical realism, i.e., social reality is "real" but can only be known in an imperfect and probabilistic way (Guba & Lincoln, 1994). Epistemologically, dualism is no longer sustained. It is acknowledged that the subject who conducts the study can have effects on the object of study (Corbetta, 2003). Concerning the methodology, post-positivism admits qualitative methods (Corbetta, 2003; Wahyuni, 2012).

The post-positivist approach differs from other approaches in that post-positivists do not believe that the truth can be convincingly found with a single study (Willis, 2007). Rather, each study is part of a larger effort to get closer and closer to the truth (Nguyen, 2019; Willis, 2007). In short, post-positivism allows us to remain grounded in the situation, while paying attention to the fact that people's beliefs are vital in this situation (Wahyuni, 2012). According to the author, the post-positivist admits that knowledge is a result of social conditioning.

Interpretivism is based on the view that reality is mentally created as a projection of individual consciousness (Goulding, 2002; Morgan & Smircich, 1980). This perspective holds that human behaviour depends on the way people interpret the conditions they are in and on how they make sense of their social world (Blaikie, 1991). In interpretivism or constructivism (Bhatta, 2018), theorists argue that reality is a social construction (Guba & Lincoln, 1994; Wahyuni, 2012; Walsham, 1995). In other words, an objectivity constructed from the institutional world is produced by humans (Berger & Luckmann, 1991). Consequently, objective reality depends on human thought (Passmore, 1958; Pistrang & Barker, 2012) through a process called objectification (Berger & Luckmann, 1991). Despite this type of objectivity, the social world does not acquire an ontological position beyond the human activity that initially created it (Berger & Luckmann, 1991). That is, the objectivity of the world, however comprehensive it may appear to the individual, is an objectivity produced and constructed by human beings (Berger & Luckmann, 1991). Thus, in constructivism, perceptions are the creators of the existing reality (Wahyuni, 2012). Therefore, a generalization of the results cannot be made (Sobh & Perry, 2006). Human constructions impact behaviour in such a way that external reality becomes irrelevant, and, moreover, the comparison between the multiple constructed realities of different individuals is not possible (Berger & Luckmann, 1991; Sobh & Perry, 2006).

Interpretivism is a branch of constructivism (Creswell, 2007), which is based on the argument that reality is constructed by the perceptions of individuals and social actors (Wahyuni, 2012). The ontological and epistemological assumptions underlying interpretivism are, therefore, different from those of positivism. Interpretivism ontology is of subject-object interaction, i.e., it does not consider the existence of a totally objective or subjective reality (Rosen, 1991). The interpretivists believe that there is an interaction between the characteristics of a given object and the understanding that human beings create about that object, socially, through intersubjectivity rather than objectivity (Rosen, 1991; Walsham, 1995). The reality is reproduced through social interactions; it is not something given, waiting for a discovery (Goldkhul, 2012; Orlikowski & Baroudi, 1991). Thus, this positioning makes interpretivists claim that an objective knowable reality does not exist beyond the human mind; instead,

knowledge is created by lived experiences (Sandberg, 2005). It is assumed that, through social interaction, individuals from different backgrounds contribute to the continuous construction of the reality found in their social context (Wahyuni, 2012). As such, the human world is experienced and related to a conscious subject. Thus, social reality is not constant (Berger & Luckmann, 1991; Thanh & Thanh, 2015). Human experiences shape and alter the structure, function and behaviour of the brain, which makes them subjective, favouring the emergence of multiple perspectives (Schiffer, 2019; Watson, 2007). In addition, interpretivists prefer to work with qualitative data that offers the opportunity to study rich social constructs (Pulla & Carter, 2018; Silverman & Marvasti, 2008; Willis, 2007). The parameter for testing knowledge in the interpretivist differs from the positivist paradigm (Wahyuni, 2012). Therefore, a study is only considered as good social knowledge if it reveals authentic meanings of social phenomena from the participants' perspective (Wahyuni, 2012). In the interpretive paradigm, the inductive logic prevails, in which the researcher tries not to impose their previous understanding about the researched situation (Gioia & Pitre, 1990; Tekin & Kotaman, 2013). It avoids imposing categories for the empirical study of a phenomenon (Corbin & Strauss, 1990; Gioia et al., 2013). Participants are allowed to use their own words, expressions and images, based on their own conceptions and experiences (Alharahsheh & Pius, 2020). As for axiology, in the matter of values, interpretivists assume that the researcher never has a neutral position but that their assumptions, beliefs, values and interests, in some way, interfere in the conduct of their investigations (Pulla & Carter, 2018). Interpretivism is useful because it encompasses a concern about what can be done in practice in the world (Nguyen, 2019).

Pragmatism is another paradigm characterized by the distance from extreme positions but acknowledges the value of the different approaches as research communities that guide choices about how to conduct inquiry (Morgan, 2014). Pragmatists emphasize that research philosophy should be seen as a "continuum" rather than an option in opposite positions; that is, the objectivist and subjectivist perspectives should not be seen as mutually exclusive (Wahyuni, 2012). This paradigm focuses on beliefs that are more directly related to actions (Morgan, 2014; Nguyen, 2019). Therefore, it is acceptable to make a mixture of ontology, epistemology and axiology to approach and understand social phenomena (Wahyuni, 2012), privileging what is most appropriate to solve the research problem under study.

This study seeks to understand how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the institutional context, affect the engagement of their institutions in green microfinance. In other words, it aims to identify

beliefs about real life events, namely beliefs in acts that can motivate or inhibit pro-environmental attitudes and behaviours in MFIs. The meanings and interpretations would help to visualize and understand the reality to better adapt the pro-environmental policies and actions in MFIs. MFIs deal with the poor segment of the population and the one that suffers most from climate change. Therefore, it requires interventions and solutions that minimize the suffering of these people and provide them with an improvement in the quality of life. The reality is reflected by the beliefs of the social actors (in this case, the managers of the MFIs) who have a role in promoting green projects and activities (i.e., environmentally sustainable) and the researchers' interpretations.

Thus, the research is aligned with the post-positivism paradigm for several reasons: i) post-positivism offers a different way of looking at reality, understanding it and investigating it. Although post-positivism is based on the fundamentals of positivism, the truth is seen as probabilistic and imperfect (Guba & Lincoln, 1994); ii) post-positivism can expand the scope of the positivism perspective to investigate real-life problems (Devers, 1999); iii) post-positivism does not ignore the relevance of positivism, but contributes to a contemporary perspective that is also worth considering (Henderson, 2011); and iv) post-positivism accepts generalization, but critically affirms that knowledge is a product of social conditioning, assuming a critical realistic stance (Wahyuni, 2012). That is, post-positivism goes beyond positivism, arguing that only partially objective reports from the world can be produced, as methods for examining such reports can fail (Denzin & Lincoln, 2011; Fox, 2008; Henderson, 2011; Mayer, 2015).

In addition, post-positivism has several characteristics that align with the objective of this study: it encompasses breadth, that is, theory and practice are not separable; the researchers' commitment to a topic and their motivations are seen as vital in the research result; and, finally, post-positivists admit the application of qualitative methodology (Corbetta, 2003; Wahyuni, 2012) and recognize several techniques suitable for data collection and analysis (Ryan, 2006). Post-positivism suggests that the social sciences are often fragmented, that knowledge is not neutral, and that all knowledge is socially constructed (Henderson, 2011), and admits that multiplicity and complexity are the reality of all human experiences (Ryan, 2006). Like interpretivism, post-positivism emphasizes meanings and pursues social problems (Henderson, 2011). The post-positivism paradigm can be used to study human behaviour (Guba & Lincoln, 1994), and this is fundamental to our study, since our thesis revolves around human and organizational behaviour, aligned with Jutta et al. (2019). We seek to contribute to the minimization of complex problems – associated with the environment – that affect humanity, in these specific cases, the most disadvantaged individuals and communities. This is done through MFIs, whose main mission

is to serve this segment of the population, providing credits for environmentally sustainable projects or activities.

Epistemologically, we adopt interpretivism for the following reasons: i) interpretivists believe that reality is built by social actors and people's perceptions of it (Chowdhury, 2014). In this regard, managers' beliefs and perceptions are fundamental to understanding their attitudes and behaviours in promoting and supporting green microfinance projects or activities; ii) they privilege interaction and dialogue with the studied participants (Wahyuni, 2012), which is essential to capture their beliefs; iii) they choose studies that reveal internal perspectives or real meanings of social phenomena of their study participants as good social knowledge (Wahyuni, 2012); iv) from an axiological point of view, they study social reality from the perspective of the people themselves (Chowdhury, 2014; Nguyen, 2019), in this case, the managers of the MFIs; v) interpretivists prefer to work with qualitative data that provide concrete descriptions of social constructions, especially important since we are studying a relatively new phenomenon requiring deeper understanding (Goldkhul, 2012; Pulla & Carter, 2018); and vi) the interpretivists assume that the researcher never has a neutral position, but their assumptions, beliefs, values and interests intervene, in some way, in the conduct of their investigations (Goldkhul, 2012; Nguyen, 2019; Pulla & Carter, 2018). In this setting, we believe this approach is in line with our purpose, as contributing to a sustainable environment requires behaviour, attitude, action and practice, and the phenomenon we are studying exists. Our study focuses on beliefs and perceptions that can induce attitudes and behaviours. Therefore, the reality we are trying to understand is basically of a human nature, which leads us to the use of qualitative methods.

4.3. Research Strategy

Some social scientific research involves quantitative data, while other research uses qualitative data (Neuman, 2014) based on a quantitative and qualitative research methodology, respectively. Also, in many studies, a mixture of the two methodological approaches is applied in a complementary way, known as the mix-method approach or triangulation of methods (Chowdhury, 2014; Creswell, 2014; Ragin, 1994). Although the latter is considered by some as a waste of time, both approaches share fundamental scientific principles, but they also differ in significant ways (Neuman, 2014).

Quantitative research was initially developed in the natural sciences to study natural phenomena (Morgan & Smircich, 1980; Myers, 1997). It often provides answers to the question "how many" and "to what extent", while qualitative research addresses "how" questions to understand the world from

the point of view of the target audience under study (Pratt, 2009 p. 856). According to Yilmaz (2013), qualitative research method is “[...] an emergent, inductive, interpretive and naturalistic approach to the study of people, cases, phenomena, social situations and processes in their natural settings in order to reveal in descriptive terms the meanings that people attach to their experiences of the world” (p. 312). It has been used not only to apply theories from the past but also to construct new theories, find connections between various situations, and provide a deeper understanding of contextual influences on organizational change (Garcia & Gluesing, 2013). Understanding what meaning individuals ascribe to their experience, how they interpret experiences, how they construct their worlds (Bluhm et al., 2011; Merriam, 2009) is essential in this type of research. Just as quantitative research includes several methods of data collection, such as survey and experimentation, and data analysis techniques, including some sophisticated statistical tools for analysis, so does qualitative research, which, in turn, uses interviews, case studies, or ethnographic fields as sources of data (Nguyen, 2019; Pratt, 2009). However, when analysing these data, a case study (Yin, 2003), the ethnographic method (Spradley, 2016) or grounded theory (Eisenhardt, 1989; Glaser & Strauss, 1967) can be used. A qualitative study can be inductive or deductive, or even a combination of both (Ross & Staw, 1993). The decision to approach a problem from a quantitative or qualitative perspective must be in accordance not only with the researcher’s philosophical beliefs, but also with the research questions, the previous literature, the research design and the expected study contributions (Edmondson & Mcmanus, 2007; Neuman, 2014).

While quantitative approaches provide techniques considered more accurate in measurement, an opportunity to compare studies and populations, and the ability to test causality using experiments (Pistrang & Barker, 2012), qualitative approaches also have many advantages. They provide “thick descriptions” (Geertz, 1973 p. 6) or in-depth textured data. Thus, they provide a lens to better capture nuances, contradictions and personal meanings (Yin, 2011). They are useful for under-explored areas (Neuman, 2014) as they provide an approach to generate theory inductively (Kuczynski & Daly, 2003). Participants can express their experiences in their own language and, therefore, compensate for the unbalanced power in the relationship between the researcher and a participant (Yilmaz, 2013). Qualitative research is crucial to assess deeper processes in individuals, teams, and organizations and to deeply understand the way they evolve over time (Bluhm et al., 2011). Finally, subpopulations and minorities gain a voice (Pistrang & Barker, 2012). “More open and qualitative approaches are more likely to reach into exploring the things that we do not yet know” (Anderson & Starnawska, 2008, p. 226).

The objectives intended with this investigation are the basic elements that guided the methodological and approach decisions. According to the post-positivism and interpretivism paradigm, a qualitative approach fits our study. It was deemed the most appropriate to capture the beliefs and perceptions of MFI managers and to understand how they can affect the engagement of their institutions in green microfinance. As this topic is still under-explored, quantitative methods, such as closed-answer questionnaires, would not be adequate for this phase because quantitative methods are generally not able to provide an in-depth view, as they emphasize that the reality should be studied objectively by the researchers who should put a distance between themselves and what is being studied (Yilmaz, 2013).

Hence, the purpose of this research, the novelty of our topic and the type of data that can be collected are aligned with post-positivism as the ontological dimension, and interpretivism as the epistemological dimension. Although much of the literature takes the position that post-positivism and interpretivism are not compatible because they take different stances on topics such as the nature of reality and the purpose of research (Willis, 2007), in fact, they are quite compatible (Racher & Robinson, 2003). Thus, this combination seems appropriate to deepen the understanding of the beliefs of MFI managers about reality. We start from the premise that MFI managers hold beliefs that motivate or inhibit their actions supporting green microfinance activities. In this setting, the combination of these two dimensions helps explain this reality, reveal meanings, and achieve the results we seek.

Regarding to methodology, this is a complex, abstract, and often elusive concept (Cook & Fonow, 1986). It encompasses the choice of method, the implications of that choice, and how these methods are used (Campbell & Bunting, 1991). Methodology is the study of methods and not merely specific techniques themselves (Cook & Fonow, 1986). It is a much more philosophical and value-laden concept than method (King, 1994), so it cannot be reduced to a unit or technique, but to a way of seeing patterns of the whole (Moccia, 1988). Methods are not necessarily attached to one's philosophical position and do not drive assumptions (Campbell & Bunting, 1991). "Methods in themselves aren't innately anything" (Stanley & Wise, 1983, p. 159).

This study aims to contribute to developing an understanding of the green microfinance developing concept. We intend to understand MFI managers' beliefs and perceptions and how they affect the engagement of their institutions on green microfinance. This research takes on a subjectivist stance and is based on qualitative methods due to the suitability; the complexity of the problem being studied, and the stage of the theoretical development. At the technical level, we follow an interpretivist approach and qualitative methods of data analysis, as they offer the best opportunities for answering

our research questions. We also used a case study approach (Yin, 1994) to ensure the specificity of the two countries studies, Cabo Verde and Brazil. In addition, cases can be selected because they provide an opportunity to learn and maximize understanding of the phenomenon under investigation (Stake, 1995).

Because the objective was to understand and not measure the phenomenon, the qualitative paradigm of research was adopted. The qualitative method has, in essence, an interpretive and naturalistic approach to the world in the sense that it makes the world visible and completely transform it, making it a set of representations, including observation notes, interviews and other field records (Denzin & Lincoln, 2011). The fundamental assumption underlying qualitative research is that the world or reality, instead of being fixed, unique, agreed, and measurable, as assumed in positivist research, is composed of multiple constructions and interpretations, and the meaning is socially constructed by individuals in interaction with their world (Merriam & Grenier, 2019). The researcher's intention is to make sense of the phenomena through the meanings individuals attribute to them (Denzin et al., 2006). Therefore, the main interest is to understand these interpretations in a context, understand how people experience and interact with the social and real world around them, and how they make sense from their interpretation, which entails an interpretative approach (Merriam & Grenier, 2019).

A qualitative approach to data collection and analysis is therefore appropriate to give consistency to the phenomenon under study and to understand the contextual and situational aspects underlying the decision-making process in the MFIs (Mori & Charles, 2019). Entrepreneurial decisions are often intuitive and heuristic (Busenitz & Barney, 1997), sometimes unconscious, and MFI managers may have difficulty in reporting their thought processes in a structured way. The qualitative methodology, through in-depth interviews, can provide a deeper understanding of the subjective elements of the complex decision-making process (Wahyuni, 2012; Yilmaz, 2013). The use of a qualitative approach in our study is anchored in our belief that it fits the nature of the problem under study. The choice of methods is more linked to the nature of the object and the objectives of the research than to the philosophical belief.

Qualitative research is useful when the researcher is trying to discover the nature of people's experiences and when it is intended to understand what is behind a phenomenon not yet well understood, and when the intricate details of a given phenomenon are difficult to obtain with quantitative methods (Corbin & Strauss, 1990). As Patton (2002) observes, this understanding is an end in itself, as there is no attempt to necessarily predict future events but to understand a particular environment

and apprehend the meaning for the individual of being in that unique environment. Therefore, the objective of studying information-rich cases is not to generate empirical generalizations but to gain in-depth insights and understanding (Patton, 2002).

Although some positivists still perceive qualitative research as unscientific and full of conjecture (Goulding, 2002), the debate that opposes quantitative and qualitative seems to be diminishing. For example, in the field of entrepreneurship, there is increased encouragement toward the development of qualitative studies as it gives respondents a voice and ensures findings reflect their experiences and thought (Quartey & Kotey, 2019).

Due to the scarcity of qualitative data on green microfinance and the fact that it is a relatively new field of investigation, we believe it is important to understand first the beliefs of MFI managers that can guide them in supporting green microfinance activities. Thus, the study adopts a qualitative approach, which is appropriate to understand the contextual and situational aspects underlying the decision-making process in MFIs (Mori & Charles, 2019). Usually, qualitative methodology is chosen to address research questions that require explanation or understanding of social phenomena and their contexts, especially to explore issues that have some complexity (Yilmaz, 2013). Hence, to carry out this qualitative research, a case study approach was adopted.

4.3.1. The case study approach

Two exploratory case studies were conducted to understand how MFI managers' perceptions of environmental sustainability and the role of microfinance in promoting it, as well as their perceptions of the institutional context, affect the engagement of their institutions in green microfinance. Using case studies as a research method was preferred as it allows for a more descriptive and exploratory approach that provides insights into the phenomenon being researched (Voss et al., 2002). Furthermore, it provides first-hand observations in a natural environment, thus providing a basis for generating new theories and the possibility of revisions (Badraoui et al., 2020).

The case study approach has been widely used across multiple disciplines (Bartlett & Vavrus, 2017) in many fields, such as psychology, political science, sociology, social work, community business planning, and economics (Ghauri et al., 2020; Gilgun, 1994; Yin, 2003). Qualitative approaches in case studies provide a lens to better capture nuances, contradictions and personal meanings (Yin, 1994). Thus, considering that green microfinance is a topic still little explored and requires further investigation, we opted for a case study. This study includes two cases – Cabo Verde and Brazil.

A case study consists of in-depth contextual analyses of one or a few instances of a natural phenomenon, such as a person, an organization, a program, an event, a geographical location, or a decision (Tracy, 2019) which the investigator has little control over that (Yin, 2018). According to Yin (1994), “[...] a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 13) and may provide a distinct advantage when “[...] a how or why question is being asked about a contemporary set of events over which the investigator has little or no control” (p. 9). Cases can include individuals, organizations, processes, situation, social unit, events, a geographical location, or a decision (Schoch, 2020; Tracy, 2019; Yin, 2003). Case study research is largely informed by qualitative research and one of the most used research methods in the constructivist paradigm (Bhatta, 2018). The Constructivist Paradigm is also called Social Constructivism or Qualitative Research Paradigm (Guba & Lincoln, 2005).

Like other research methods, case study research faces challenges (Bhatta, 2018). Its philosophical basis of research generates much discussion. Discussions are related to the recognition of its contribution to theory construction, as it raises questions about the evidence of research quality, validity, and generalization, as well as concerns about the researcher’s subjectivity (Bhatta, 2018; Dasgupta, 2015; Lucas et al., 2018). Bhatta (2018) argues that “[...] there are both challenges and misunderstandings about theory building from the case study research” (p. 77). The main challenges of theory construction from case study research stem from the differences in the researchers’ philosophical assumptions, the proper selection of the case or cases to be studied, and their complexity (Bhatta, 2018). The author points out that the predominant misconceptions are mainly due to differences in the researchers’ worldview, as positivists hesitate to accept the results of qualitative research as results of scientific research.

It is also discussed whether the case study is a methodology or a method. In the 1980s, Stake (1995), Yin (1994), Merriam and Grenier (2019), and others wrote about case study research as a methodology (Bhatta, 2018). According to Guba and Lincoln (1989), the methodology is the “[...] overall strategy for solving the full set of choices and options available to the investigator” (p. 183), while a research method describes in detail the most appropriate way of collecting and analysing data in the context of the study (Gratton & Jones, 2010). Other researchers argue that the case study can be considered a method or methodology, depending on the purpose of the study (e.g., Stake, 1995). It is considered a method if the objective is to examine “cases” as individuals or events (Lucas et al., 2018).

It is considered methodology when the objective is to explore and critique a phenomenon in context, using various data sources and collection methods (Baxter & Jack, 2008).

Despite the challenges and misunderstandings surrounding case study research, Bhatta (2018) concluded that many researchers consider it appropriate for theory building. Case studies are a popular form of widely applied qualitative research, and their advantages are identified. Some benefits of using the case study as a research strategy are related to the flexibility of studies, which can be both prospective and retrospective (Bennett, 2004; Stake, 1995), or its usefulness when detailed explanations and descriptions are needed, and the fact that case studies allow obtaining a holistic and accurate perspective of the real world (Yin, 2011). Furthermore, qualitative case study research gives the researcher the opportunity to collect data using various collection methods, such as questionnaires, observation, reports, and semi-structured interviews (Merriam, 2009). This form of data collection generates large volumes of data, which can be managed with the support of computerized systems, allowing the researcher to explore the issue in-depth and promote the credibility of the data (Baxter & Jack, 2008). Thus, one of the strengths of case study research is its ability to conduct an in-depth study of a complex phenomenon and the possibility of developing a new theory from it (Bhatta, 2018; Dooley, 2002). Another advantage is that it allows other researchers to apply lessons learned in one case to others, leading to transferability (Schoch, 2020). Guba and Lincoln (1981) conclude that a case study is the best form of evaluation reporting because it provides a complete and reasoned description. The authors consider case studies to be holistic and realistic, not only because they simplify the data to be used by the reader but also because they provide evidence and can communicate tacit knowledge.

The case study is the most appropriate approach in circumstances where the objective of the investigation is to understand the meaning of events, situations and actions in a given context of the participant's behaviour, the influence of that context on their actions, as well as understanding how things happen, and why they happen (Maxwell, 1992; Yin, 2011). A case study is also an appropriate approach for investigation when the objective is to develop more general theories about the observed phenomenon (Guba & Lincoln, 1994; Rodriguez et al., 1996; Yin, 2011, 2018). Furthermore, choosing the case study method is also advisable when the object of investigation still lacks scientific research (Gond et al., 2012; Gray et al., 1997; Songini & Pistoni, 2012) and it is necessary to collect data from people who experienced the phenomenon (Baxter & Jack, 2008; Yin, 2011). Case study research allows the researcher to explore individuals or organizations through complex interventions, relationships, communities, or programs (Baxter & Jack, 2008; Yin, 2003) and supports the deconstruction and reconstruction of various phenomena (Baxter & Jack, 2008).

A case study can be exploratory when the objective is to find preliminary information about the subject studied or to develop and clarify concepts and ideas to understand specific problems or phenomena (Pinsonneault & Kraemer, 1993; Yin, 2011). It can be descriptive when the objective is to describe the phenomenon (Voss et al., 2002). Finally, it can be explanatory (or analytical) when one wants to problematize, produce, build or develop new theories that will be confronted with existing theories (Yin, 2011). Furthermore, a case study can be conducted in any research paradigm (Myers, 1997).

According to Yin (2015), case studies can be single, when there is only one element to be analysed, or multiple. Yin (2015) presents three fundamentals to justify carrying out a single case study: i) when the single case represents a critical test of existing theory; ii) when the case represents a unique or rare case; and iii) when the single case is the revelatory case – that is, when an investigator has the opportunity to observe and analyse a phenomenon previously inaccessible to scientific investigation. The disadvantage is that it can generate distortions in the analysis due to the peculiarities of the studied organization and offer a weak basis for generalization (Yin, 2011, 2015).

Multiple-case studies, also known as “[...] collective case studies; crossover cases; multi-case, multi-site studies; or comparative case studies” (Merriam, 2009 p. 49), involve collecting and analysing data from multiple cases (Merriam & Grenier, 2019). The advantage of the multiple-case study may be related to the condition that different cases, in general, highlight complementary aspects of the phenomenon, in addition to bringing together individual patterns that, when compared, can allow the researcher to draw a complete theoretical picture (Eisenhardt, 1989; Ghauri et al., 2020; Yin, 2011).

We chose a multiple-case design because it not only allows us to study the phenomenon but also helps us to analyse data both within and across countries (Yin, 2003), allowing us to understand the differences and similarities between the two countries (Baxter & Jack, 2008; Stake, 1995) under study and clarify whether the findings are valuable for the literature (Eisenhardt, 1991; Vannoni, 2015). Furthermore, the evidence that emerges from a multiple-case study increases chances of producing robust results than using a single-case design (Baxter & Jack, 2008; Yin, 2003), bringing insights that can increase the external validity or generalizability of the results (Dasgupta, 2015; Merriam, 2009; Miles & Huberman, 1994). Therefore, we adopted the multiple-case study as a research strategy to further strengthen the objectives of this investigation, with an exploratory purpose. To this end, it was necessary to collect data from MFI managers on their beliefs, perceptions and intentions regarding green microfinance in both cases – Cabo Verde and Brazil.

In the first stage, the study proposal and data collection procedures were defined based on the research purpose of understanding how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the institutional context, affect the engagement of their institutions in green microfinance.

Therefore, at this stage, we seek to define the study proposal, which directs attention towards what we intend to investigate and define the components of the case studies, the units and subunits (Merriam, 2009) of analysis, that is, the countries and the research participants, respectively. According to Yin (2003), the definition of the unit of analysis must be related to how the initial research questions and the generalizations necessary at the end of the project are defined. The components (countries and the research participants) – linking the data to the propositions and criteria for interpreting the findings – are elements that can anticipate the stages of data analysis and indicate techniques for analysing and interpreting the results Yin (2011). Thus, the units of analysis of the study are two countries, Cabo Verde and Brazil. However, to obtain in-depth information on the topic under investigation, MFIs and their managers are considered sub-units of analysis in both cases (Merriam, 2009), as the objective is, through MFI managers' decision-making, to analyse the MFI behaviour. Yin (2003) suggested the concept of embedded sub-cases, that is, when, within a single case, consideration is also given to a subunit or subunits (Yin, 2015). The managers of these institutions are those who usually make decisions regarding the strategic direction of their institutions, including their engagement in microfinance activities.

The following topics describe the procedures used during the research process, i.e., the research design, the sampling process, and the instruments and procedures for data collection and analysis.

4.4. Research design

As detailed below, the empirical work involved a process of collecting and analysing data from two cases, specifically, two countries – Cabo Verde and Brazil. We chose these two countries for four main reasons: i) despite their MFI being at different stages of development, both offer contexts for investigating topics related to microfinance; ii) they all are developing countries with cultural proximity and share history as Portuguese post-colonies; iii) both countries have long experience in microfinance; and iv) the differences between the two contexts can bring subsidies that increase the theory on green microfinance (Casini et al., 2014; Moser & Gonzalez, 2016).

Although they are two different realities, for instance, in terms of size and natural resources, both countries have a high unemployment rate (e.g., in 2022, Cabo Verde had 12,1% and, in 2023, Brazil had 7,4%) and poverty (INE [Instituto Nacional de Estatística/National Institute of Statistics] (acronym in Portuguese), 2024; IBGE [Instituto Brasileiro de Geografia e Estatística/Brazilian Institute of Geography and Statistics] (acronym in Portuguese), 2024) and thus are subject to activities and practices that can harm the environment (Nugroho et al., 2017; Wenner et al., 2004). On the other hand, the poor populations of these countries suffer a significant impact related to climate change and its consequences (Zhao et al., 2016). Although, in Brazil, some microfinance institutions have already taken the first steps in promoting green microfinance activities, there is still much to be done in terms of policies and action (Moser & Gonzalez, 2016). In Cabo Verde, there are still no properly structured and integrated green microfinance policies or programs.

Since the objective of this research is to attain in-depth knowledge of the subject under study, we used the case study approach (Yin, 2003, 1994, 2015) to guarantee the specificity of each country. Cabo Verde and Brazil are the units of study (the contexts), and microfinance institutions and their managers are the subunits (the target of study). The subunits are explored as a way to add significant opportunities for extensive analysis, enhancing the insights into the two prominent cases without losing focus on the holistic aspects of research (Yin, 2003, 2015). The subunits are 25 MFIs, of which 10 are from Cabo Verde and 15 from Brazil.

The theoretical framework and the research question guided the selection of countries and MFIs that would be part of the study. As the purpose was to understand how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about how the institutional context affects the engagement of their institutions in green microfinance, it was essential to select organizations that provide or intend to provide microfinance products and services to the microfinance target. Access to the organization and whether the managers of these organizations would be willing to share information was the first concern in selecting MFIs.

4.4.1. Selection process

The selection of several cases was part of the initial concept. Initially, we chose Portugal and Cabo Verde. However, after conducting some preliminary interviews, we concluded that Portugal had an experience that seemed to be underdeveloped in the area of microfinance. Hence, we choose Brazil and

Cabo Verde because they are cases with long history and experience in the area of microfinance, consequently, congruent with the objective of the study, in line with Patton (1999).

Before starting the field study, it was essential to identify who the key participants would be; that is, who would be able to answer questions related to beliefs and perceptions about environmental sustainability that might affect MFIs' involvement in green microfinance. We began by conducting exploratory interviews with experts, i.e., key informants with experience and in-depth knowledge of the subject (Ali et al., 2014). Tremblay (1957) suggests that key informants should fulfil, for instance, the following criteria: hold formal positions in the community, have knowledge relevant to the object under study, be willing to share this knowledge and communicate well (Ali et al., 2014). The experts in our study were selected from State institutions, universities and pro-environmental organizations that deal with poverty. Their roles in these institutions can contribute with relevant complementary information (Egeru, 2016; Lokot, 2021) since they are institutions that develop research and policies linked to the problem of poverty. Therefore, experts can "[...] provide information on the nature of the problems and give recommendations for solutions" (Ali et al., 2014 p. 133). Being key informants in this field, they were able to provide complementary and relevant information to achieve the study objectives. In addition, this kind of participants are essential for helping the researcher make additional contacts (Mckenna & Main, 2013; Morin et al., 2003) and can be used in data triangulation (Farmer et al., 2006).

Interviews with the first two experts from Cabo Verde indicated that it was more appropriate to interview MFIs' top managers, since they are closer to the processes and are the decision-makers in these organizations, which are generally small or medium-sized. The selection of MFIs to compose the group of participants to interview was based on their practical experience in microfinance. Accordingly, we opted for MFIs with 10 or more years of experience to ensure that a significant track record existed. Efforts were made to ensure national coverage by interviewing MFIs from different Islands of Cabo Verde and different States of Brazil. Additionally, different types of microfinance providers were included, namely banks, non-bank financial institutions, cooperatives, and non-governmental organizations (NGOs) that provide microcredit and/or non-financial services to low-income people. As mentioned above, experts were important to complement and triangulate the data.

In Cabo Verde, the sampling process was based on a list of 12 MFIs and six experts. From the list of MFIs, 11 were provided by Associação Profissional das Instituições de Microfinanças de Cabo Verde [Professional Association of Cabo Verde Microfinance Institutions] (APIMF-CV), acronym in Portuguese), and another is a national banking institution that also provides microcredit services. The process was

fairly easy because the country, although archipelagic, is small, and most managers of these institutions and experts are known to the researcher. Of the 12 organizations contacted, 10 managers agreed to be interviewed. We contact six experts, and five of them accept being interviewed. The five experts are from the APIMF-CV, the Ministry of Agriculture and Environment and The United Nations Development Programme, respectively.

The process was complex in Brazil because the country is huge, and the number of MFIs is higher. We began the process by interviewing two researchers and professors in the social field from Pontifícia Universidade Católica do Rio Grande do Sul [Pontifical Catholic University of Rio Grande do Sul] (PUCRS) (acronym in Portuguese) and the University of Passo Fundo, respectively. These professors had contacts from some of the MFIs they had worked with as part of their research. These first two interviews served not only to adjust the interview script but also as a guide to reaching some MFIs.

Based on the criteria described above, the population was identified mainly using the MFIs published by Associação Brasileira de Entidades Operadoras de Microcrédito e Microfinanças [Brazilian Association of Microcredit and Microfinance Operators] (ABCRED) (acronym in Portuguese). Most MFI managers' contacts were obtained in person during a conference organized by ABCRED. In addition to the MFIs associated with ABCRED, we contacted some MFIs belonging to Organização das Cooperativas Brasileiras [Organization of Brazilian Cooperatives] (OCB) (acronym in Portuguese). Twenty-two MFIs were contacted, of which 15 managers agreed to participate in this case study. The participants also include the manager of a bank considered suitable for this study as it provides microfinance services, as well as four experts. Of these four experts, two are from universities, one from ABCRED, and one is a consultant.

We identified and selected the participants based on purposive selection (Polkinghorne, 2005; Sharma, 2017). Participants are chosen purposively to potentially provide the best information-rich data available from people who have experienced a phenomenon in a particular context (Ali et al., 2014; Egeru, 2016; Morrow, 2005). In other words, information-rich case studies produce in-depth knowledge and understanding rather than empirical generalizations (Patton, 2002; Sharma, 2017). This technique provides more convincing evidence of the theory's credibility and allows for establishing the sampling limit (Dasgupta, 2015).

Although Sharma (2017) considers that one of the advantages of purposive sampling is that it can provide researchers with insights that can be transferred from the sample under study to other contexts, making it possible to eventually draw generalizations of a theoretical, analytical or logical nature, our main aim is not to generalize results. Instead, we are interested in building a first insight into MFIs'

beliefs about green microfinance that may lead them to engage in green microfinance activities in complex contexts to advance understanding of their motivations and barriers. The number of participants was deemed sufficient, allowing achieving data saturation (Glaser & Strauss, 1967; Saunders et al., 2018). Saturation is defined as “[...] the point when no additional issues are identified, and the codebook begins to stabilize” (Hennink et al., 2017, p. 4). Furthermore, Sandelowski (1995) argues that there is no certainty that the richness of the data increases as the number of participants increases.

In the next sections, we present a brief description of the cases studied to provide context to the data extracted from the sources and to allow a better understanding of the findings.

4.4.1.1. *Cabo Verde*

Cabo Verde is located about 500 km off the West African coast. This country consists of 10 islands – one of them is not inhabited – that, together, comprise a total of 4,030 km². It has a total population of 520,500 inhabitants (World Bank, 2024), only 10% of its territory is classified as arable land and mineral resources are limited, and around 60% of the population live in urban areas (Vera-Cruz, 2014). According to the World Bank Group (2018), Cabo Verde is a small, open island economy, exposed to high trade volatility and susceptible to climatic and geological risks that negatively affect the resilience of its economy and households. Information collected in Cabo Verde’s Strategic Plan for Sustainable Development (PEDS II, acronym in Portuguese) reveals that if the global average temperature increases by 2.0°C, by the end of the century, we could see an increase in the average annual temperature of between 1.0°C and 2.0°C and the decrease in precipitation could reach 20%, a scenario that could cause sea level rise, with highly negative consequences, particularly for Cabo Verde (PEDS, 2023).

Cabo Verde deals with a strong informal economy accounting for about 12.1% of the GDP (Bernardino et al., 2017). The informal sector includes businesses without corporate form, therefore, without organized accounting and, consequently, without tax identification. This sector also represents 53.8% of informal employment, with 73.3% in rural areas (INE, 2022). The official site of the Cabo Verde Government report that 35% of the population is poor, 11% are extremely poor, and 48% of the poor people live in rural areas (Government of Cabo Verde, 2018). Microfinance services in Cabo Verde have evolved substantially over the years, with good results in terms of poverty reduction (Government of Cabo Verde, 2018).

In Cabo Verde, the microcredit program began in the mid-90s to reduce poverty. According to the executive secretary of APIMF-CV, when this study was carried out, 12 NGOs were operating in this sector. The sector was financed by Programa Nacional de Luta Contra a Pobreza/National Programme to Combat Poverty (PNLP, acronym in Portuguese) and the Appui au Développement Autonome/Support for Autonomous Development (ADA, acronym in French). Currently, apart from the ADA, the Government of Cabo Verde has an agreement with Fundo Internacional de Desenvolvimento Agrícola/International Fund for Agricultural Development (FIDA, acronym in Portuguese) to support Programa de Promoção de Oportunidades Socioeconómicas Rurais/Program for the Promotion of Rural Socioeconomic Opportunities and Climate (POSER-C, acronym in Portuguese). This program aims to improve the living conditions of the poorest rural populations, considering climate change and focuses primarily on income-generating activities, with poor rural women and youth as priority target groups (Ministry of Agriculture and Environment, 2024).

In the 1990s, after the 1992 Rio Summit, the process of formulating the legal framework for the environmental sector began with the enactment of Law (Law No. 89/IV/93, of October 18) and, subsequently, with Regulatory Decree (Law No. 14/97), which developed the foundations of environmental policy, in line with Constituição da República de Cabo Verde/Constitution of the Republic of Cabo Verde (CRCV, acronym in Portuguese) in its article 72, proclaiming that all citizens have the right to a healthy and ecologically balanced living environment and a duty to defend it (CRCV, 2015). Within the public structure, an environmental authority department coordinates cross-sectional systems that impact the ecological sustainability and protection of the country's natural biodiversity, with the functions of conceiving, executing, and coordinating government policies.

The institutions operating in the microfinance sector have regulations and provide financial and non-financial services directly to the clients (BCV, online). Most MFIs work primarily with women (Bernardino et al., 2017), and they represent, on average, 83% of loan beneficiaries (Casini et al., 2014). The loans are applied to education, small business investments, housing, weddings, and others to meet the basic needs of low-income people (Bernardino et al., 2017).

As highlighted in PEDS (2017/2021), microfinance services in Cabo Verde have evolved substantially over the years, with good results in terms of poverty reduction. Although PEDS II brings, as the country's objective by 2026, to build a more resilient Cabo Verde by increasing knowledge about climate change and minimizing its negative impacts (PEDS, 2023), there is no evidence of specific policies that can foster green microfinance in this country. As Cabo Verde is a developing and vulnerable

country, green microfinance can contribute to responding to the challenges of economic, social, and environmental sustainability and simultaneously meet international requirements for environmental protection in line with the SDGs (Uddin et al., 2021).

Of the 12 institutions linked to microcredit existing in Cabo Verde, 10 were included in the Cabo Verde case study. Of these, seven are already registered with the central bank as MFIs (as of the date of the interviews, none were registered) and provide credits for micro and small projects to people who do not have access to traditional banking; one MFI is in a commercial bank and offers microcredit service; another one is an association and never provided microcredit services, and one of them discontinued microcredit service due to lack of resources but intended to take it back.

Of the MFIs selected, 70% are located on Santiago Island, the country's largest and most populous island. The remaining 30% are spread over the other three islands: one in Santo Antão, the second largest island, but with only two institutions, one in Sal and one in Fogo. Interviewees consisted of seven men (70%) and three women (30%), with an average age of 50 years and 12 years of experience in the microfinance sector. Table 1 shows the features of each MFI based on the following elements:

- i) Date of foundation (defines the time in the industry). 90% of MFIs have been operating for 14 or more years. 59% started their activities in the 1990s, 27% started after 2000, and 14% started before the 1990s. These are institutions with a relevant history in microfinance industry. These data practically do not differ in the two case studies;
- ii) Number of employees (defines the dimension of the MFI). In Cabo Verde, the average is 18 employees per MFI. This information demonstrates that most MFIs are small in size;
- iii) Managers' years of experience. On average, managers of Cabo Verde MFIs have 12 years of experience in microfinance activity;
- iv) Loan granting areas. Almost all the MFIs are engaged in microfinance, providing credit and other services to low-income people who do not have access to traditional banking. In Cabo Verde, 99% of MFIs provide credit and other services to low-income people. One MFI has suspended, temporarily, credit service. The credits are mainly intended for informal businesses.

Table 1. Cabo Verdean participant MFIs' features

MFIs	Date of foundation	Employees	Managers' experience (years)	Loan granting areas
MFI1	1999	30	15	Agriculture, livestock, informal business, services, small industries.
MFI2	1996	3	14	Eradication of tents where the poor live and for social inclusion of young people through sport as well as in vocational training.
MFI3	1997	3	14	Health, education, and vocational training.
MFI4	1997	5	10	Informal business and small industries.
MFI5	1988	16	28	Informal business, small industries, agriculture, renewable energy, fishing, livestock, and vocational training.
MFI6	1997	10	20	Agriculture, livestock, trade, and housing repairs are the areas that have consumed the largest share of credit provided by this MFI, which also operates in health and education.
MFI7	1991	43	25	Informal business, small industries, fishing, livestock, and vocational training.
MFI8	1981	50	20	Informal business, small industries, fishing, livestock, Health, women's rights, vocational training, pre-school education, tourism, and the environment.
MFI9	1997	10	23	Agriculture, livestock, trade, housing repairs and education.
MFI10	2002	10	16	Agriculture, livestock, manufacturing industry and commerce. Also, education, tourism, and vocational training.

4.4.1.2. Brazil

Brazil is a developing country with continental dimensions, as it has a territorial extension of 8,514,876 km² and occupies an area corresponding to approximately 1.6% of the entire surface of the planet (Neto & Cavalcante de Melo, 2020). An estimated 45.4 million Brazilians living in both rural and urban areas are at high risk of suffering from the consequences of environmental threats, and 4,14 million are living below the poverty line (IBGE, 2022). Thus, when the issue is poverty and environmental sustainability, Brazil is one of the countries at the core of discussions.

The Brazilian environmental legislation, Law 10,165/2000, of December 27, enforced government environmental control on industries' environmental risk (Crisóstomo et al., 2020). In this matter, among Latin American countries, Brazil has been the most active in defending environmental interests (McAllister, 2005). Despite the existence of solid laws for environmental protection and many criticisms about their application (e.g., McAllister, 2005), organizations seem to be increasingly involved

in environmental sustainability. This involvement gained momentum in 2003 when the United Nations Global Compact – Brazil Network was created. This Network is considered one of the world's largest corporate sustainability initiatives that calls on companies to align their strategies and operations with universal principles of human rights, labour, environment and anti-corruption, and to take actions that promote social objectives.

According to information collected on the official Global Compact Network Brazil website, it is considered the second largest network worldwide, with more than 1.900 members. Among these Network's members are small, medium and large companies, microcredit cooperatives, such as, for example, Confederação Nacional das Cooperativas Centrais de Crédito e Economia Familiar Solidária/National Confederation of Central Credit Cooperatives and Solidarity Family Economy (CRESOL, acronym in Portuguese) and Sistema de Cooperativas Financeiras do Brasil/Brazilian Financial Cooperative System (SICOOB, acronym in Portuguese). This Network also includes some NGOs and Associations. All members of the Global Compact Network take on responsibility for contributing to achieving the SDGs. The projects carried out in Brazil are developed through joint actions for Water, Sustainable Agro, Human Rights, Climate, Anti-corruption, and Action to Communicate and Engage, all in line with international programs (United Nations and government agencies) (Global Compact Network Brazil, online).

The challenge of combating poverty and avoiding the degradation of the environment is particularly relevant to Brazil (Moser & Gonzalez, 2015). As in Cabo Verde, the microfinance service has been used to alleviate poverty in Brazil (Ramezanali & Assadi, 2018). Brazil has a long history in microfinance. The microcredit service in Brazil began in the 1970s with the activities of União Nordestina de Assistência a Pequenas Organizações/Northeastern Union for Assistance to Small Organizations) (UNO, acronym in Portuguese), an entity created to support micro and small enterprises in the Northeast region (Santos et al., 2022). According to Ramezanali and Assadi (2018), microfinance services gained their more significant impetus after 1990, when government institutions integrated into the process and created microcredit programs linked to state or federal public banks and established partnerships with civil society to create *microcrédito produtivo orientado*/oriented productive microcredit (MPO, acronymy in portuguese) that include *sociedade de crédito ao microempreendedor*/microentrepreneur credit society (SCM, acronym in Portuguese) and *organização da sociedade civil de interesse público*/civil society organization of public interest (OSCIP, acronym in Portuguese). SCMs are private institutions and consequently allow the distribution of dividends. OSCIPs are social and non-profit entities created to facilitate partnerships and agreements with all levels of

government and public bodies (federal, state, and municipal) and allow donations made by companies to be deducted from income tax (Pereira et al., 2015).

In microcredit policies and programs in Brazil, MPOs have been more emphasized (Barone & Sader, 2008). Among them, *programa nacional do microcrédito produtivo orientado*/national program for oriented productive microcredit (PNMPO, acronym in Portuguese), created in 2005, stands out as the largest and most important microcredit program to date (Santos et al., 2019). According to the PNMPO Law – Law No. 11,110, of April 25, 2005 – the program's objectives are: (i) to encourage the generation of work and income among micro-entrepreneurs; (ii) to make resources available for MPOs; and (iii) provide technical support to MPO institutions, with a view to institutionally strengthening them to provide services to micro-entrepreneurs (Santos et al., 2019).

Supported by governmental actions, microfinance in Brazil has experienced enormous growth over the years, peaking at US\$ 2.7 million in 2013 (Moser & Gonzalez, 2016). Despite this effort, 44 million people still work in the informal sector, and around 10 million informal microenterprises lack access to credit, according to SEBRAE (online). Several agents work in the credit sector in Brazil, such as Cooperatives, SCMs, commercial banks, and OSCIPs. OSCIPs are the main operators of productive-oriented microcredit (ABCRED, 2018). OSCIPs are entities associated with ABCRED and aim to develop the microcredit segment in Brazil by developing microfinance institutions. Although OSCIPs are non-profit organizations, they are taxed (ABCRED, 2018). Among MFIs, Agroamigo and Cresol are the two most extensive Brazilian credit programs whose mission is to finance projects and activities that generate extra income for poor people and/or help them sustain their small businesses (Moser et al., 2016).

Established in 2005, Agroamigo is the Microfinance Program of *Banco do Nordeste Rural*, financed by the government (Moser et al., 2016), which, in partnership with *Instituto Nordeste Cidadania*/Instituto do Nordeste Cidadania (INEC, acronym in Portuguese), aims to improve the social and economic profile of farmers in the states of Northeast, northern Minas Gerais, and Espírito Santo. It has 170 branches and over 1.1 million active clients and has sought to disseminate, among them, practices for the sustainable exploitation of natural resources, as well as organic and agroecological-based production, through the promotion of awareness and training events (Bank of Northeast, online).

Cresol Confederation was founded in 1995 in Francisco Beltrão, southwest of Paraná, and is considered the largest cooperative in Brazil, with more than 200 thousand cooperative families in nine Brazilian states. It is a System of Rural Credit Cooperatives that has an area with service stations, in

addition to Paraná, in the states of Santa Catarina, Minas Gerais, Espírito Santo, Goiás, Rondônia, São Paulo, Rio de Janeiro, and the Rio Grande do Sul (Dias et al., 2019). This System is composed of Singular Cooperatives and Services Regional Bases, as well as the Central Cooperative, and is entirely administered by smallholder farmer members. It aims at promoting financial inclusion and social development in each of these regions, providing financial products and services (CRESOL, 2017). With 62,691 clients, it ranks as the second largest rural microfinance program in Brazil (Moser et al., 2016).

The two programs mentioned above are guided by the good practices of sustainability and the management of social and environmental risks through loan mechanisms that help clients to better respond to climate change impacts (CRESOL, 2017; Bank of Northeast, 2022). Even though Brazil has experience in green microfinance, much of its potential remains untapped (Gonzalez et al., 2009; Moser & Gonzalez, 2015).

PNMPO has undergone some improvements, for example, the expansion of the target audience, harmonizing it with legal norms that cover micro-enterprises, more extensive use of digital technologies, and permission for non-face-to-face service by the credit agents (Santos et al., 2022). Improvements also occurred in the legal area, such as the most recent changes promoted by Law No. 13.636/2018, of March 20, Provisional Measure No. 905/2019, of March 23, 2020, converted into Law No. 13,999/2020, of May 18, which expanded the PNMPO limit, as well as some regulatory adjustments, such as prioritizing low-income segments and reducing costs (Santos et al., 2022).

An important advance in regulation accompanied initiatives in the microfinance sector, which gained momentum with the enactment of Law (Law No. 9.790/1999, of March 23) – OSCIPs Law – (Gonzalez et al., 2009) and later consolidated with Law No. 11,110/2005, of April 25) promoting the financial inclusion of the low-income population (Marconatto et al., 2016). This Law, instituted as PNMPO was necessary for transforming MPO. Later, a new Law (Law No. 13.019/2014, of July 31) emerges, which defines the rules for transferring resources to non-profit organizations, such as OSCIPs. This Law establishes the legal regime for voluntary partnerships, whether or not involving transfers of financial resources, between the public administration and civil society organizations in a cooperation regime to achieve public interest purposes. This legal regime also changed Laws no. 8.429, of June 2, 1992, and no. 9.790, of March 23, 1999 (Pereira et al., 2015). Despite advances in the regulation of the microfinance sector, Marconatto et al. (2016) consider that regulation in Brazil is still precarious, requiring adjustments that can facilitate the work and effectiveness of MFIs.

As in the case of Cabo Verde, Brazil offers an interesting context for research regarding understanding how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about how the institutional context affects the engagement of their institutions in green microfinance.

In Brazil, the selection criteria for MFIs were the same as those used in the case of Cabo Verde: MFIs' practical experience of microfinance – 10 or more years of experience – and choosing MFIs in the country's different States. Hence, of the 15 institutions from Brazil, two are cooperatives, one is a bank, and 12 are OSCIPS. The OSCIPSs are regulated and supervised by the Ministry of Justice, while the cooperatives and banks are regulated by the central bank. All these institutions provide credits for micro and small projects from people who do not have access to traditional banking. The cooperatives only give credit to their associates, while the OSCIPS and banks are open to the public. Henceforth, we also will use the term MFI to designate OSCIPs and cooperatives. The Brazilian MFIs that are part of this study are geographically distributed as follows: 67% are based in the South, 1% in S. Paulo and 32% in the Northeast. One of the MFIs is one of the largest in Latin America. Together, they cover about 2,000 municipalities. Respondents comprised 12 men (80%) and three women (20%), with an average of 50 years old and 18 years of experience. Table 2 presents the features of each MFI, based on the same elements used to characterize the MFIs in the case of Cabo Verde, that is, Date of foundation, Employees, Managers' experience and Industry.

i) Date of foundation. Most MFIs are more than 18 years old practicing microfinance: 59% started their activities in the 1990s, 27% started after 2000, and only 14% started before the 1990s. These are institutions with a relevant history in microfinance industry.

ii) Number of employees. In the case of Brazil, the average number of MFI employees, calculated on 10 MFIs, is 41 employees per MFI. For this case, we excluded MFI 14 and MFI 18 from the average calculation because the number of employees is at an abnormal distance from other MFIs. If they were used, the average would be unrealistic.

iii) Managers' years of experience. On average, managers of Brazil MFIs have 18 years of experience in the area of microfinance. Two of them have more than 30 years of experience.

iv) Loan granting areas. All the MFIs are engaged in microfinance, providing credit and other services to low-income people who do not have access to traditional banking. The credits are mainly intended for businesses and small industries.

Table 2. Brazilian participant MFIs' features

MFIs	Date of foundation	Employees	Managers' experience (years)	Loan granting areas
MF11	1998	33	20	Small business and industries.
MF12	1999	80	20	Small business, small industries, and agriculture
MF13	1997	97	22	Micro-insurance, small business, small industries, and agriculture
MF14	1990	200	30	Informal and formal business and small industries.
MF15	1998	24	33	Informal business, small industries, agriculture, construction of sewage, septic cesspit, housing rehabilitation, agriculture, and livestock.
MF16	1992	38	18	Small business, small industries, and agriculture.
MF17	1994	27	17	Business and agriculture
MF18	2003	7.800	16	Commerce, agriculture, livestock, and training
MF19	1999	11	12	Agriculture, business, constructions and services
MF110	1999	54	15	Agriculture, small business, training, social services
MF111	2001	27	17	Agriculture, small business and industries, and services
MF112	2002	14	10	Informal and formal business
MF113	2002	15	20	Services; commerce, family farming, agro-industry, and small industries
MF114	1996	4	10	Agriculture, small business, and industries
MF115	2001	15	10	Small business, training, agriculture, and livestock.

4.5. Data collection and interviewing procedures

To collect the data, we conducted an exploratory study, which consisted of in-depth interviews with 10 MFI managers and five experts in Cabo Verde. In a second phase, the researcher travelled to Brazil, and did the same process with 15 MFI managers and four experts from Brazil. Bogdan and Biklen (2007) recommend doing fieldwork in one location at a time rather than collecting data simultaneously from multiple locations. The authors argue that this way is beneficial because the first case study provides insights to define the parameters of the others, making them easier to study. The main objective of studying the two cases was to make managers express their beliefs and perceptions that affect their institutions' involvement in green microfinance.

4.5.1. Data collection

Data were collected through qualitative semi-structured interviews with MFI managers from Cabo Verde and Brazil to elicit their beliefs about sustainable activities or projects and their intentions regarding their institutions' engagement in green microfinance (Downs & Hausenblas, 2005). Also, some experts in the field of microfinance were interviewed with the aim of capturing the view of those outside the MFIs on the same phenomenon.

We chose the in-depth semi-structured interview instead of closed-response survey questions, as it is the method that best meets our objectives; that is, it enabled respondents to share their experiences, opinions and perceptions, illustrating concepts about the phenomenon under analysis in this study, voluntarily and without restrictions (Turner, 2010; Wahyuni, 2012; Yin, 2003). Semi-structured interviews allow for reaching a broader scope of communicated knowledge and capturing accurate field data from first-hand experiences (Kallio et al., 2016; Turner, 2010). Hence, a semi-structured interview guide was settled following the principles set out by Braun and Clarke (2006) to gather relevant data (Appendix 1).

An interview protocol was developed from the literature (Eisenhardt, 1989; Yin, 1994) and based on the constructs of PMT and IT (DiMaggio & Powell, 1983; Rogers, 1975). Thus, to carry out the case study, we used interviews to understand the beliefs in environmental sustainability that can support decisions to develop green microfinance activities.

Following the same logic as González-Benito and González-Benito (2005) and Allet (2014), we only interviewed one top manager in each MFI, assuming that the point of view of this top manager satisfactorily reflects the position of the MFI. To overcome this limitation, we systematically sought to triangulate information by looking at MFIs' websites and other relevant information from experts. Unfortunately, for the case of Cabo Verde, it was not possible to triangulate the data with the annual reports and business plans of the MFIs because the majority of respondents assured that, to date, they did not have such documents. In the case of Brazil, there was no such problem because most MFIs have an activity plan and produce annual reports.

4.5.2. Interviews

Interviewing is a very popular tool and the most widely employed for collecting information (Atkinson & Silverman, 1997; Nunkoosing, 2005). As individuals, we mostly engage in some form of an interview, either as interviewers or interviewees (Alsaawi, 2014). If we are exploring participants'

experiences, beliefs, or identities, we may use qualitative interviews (Mann, 2011). The interviewer and the interviewee use their routine interactional skills to do interviewing (Qu & Dumay, 2011), emphasizing the interviewer's neutrality (Antaki et al., 2000).

Generally, there are many interviewing types, such as unstructured, structured, and semi-structured interviews. Despite their differences in interview style and methodology, they all have a common denominator: to use questions to understand people's thoughts, feelings, beliefs, and behaviour (Stuckey, 2013). It is crucial to ensure consistency between research questions, interview type, and analysis method(s) (Madill, 2012). Interviews produce in-depth information about participants' lived experiences and opinions about a specific topic (Husband, 2020; Turner, 2010). The most famous form of interviewing is the semi-structured interview (Grinsted, 2005). The semi-structured interview does not follow a standard and direct form of the interview; that is, the researcher outlines the topics to be covered, but how the interview will be conducted is determined by the interviewees' answers (Stuckey, 2013). During the interviews, the participants are able to transmit their knowledge to the researcher (Boeije, 2010; Husband, 2020).

The guide was built based on the research's theoretical framework and targeted all the concepts of the model to answer the research question. The main questions were aligned with supporting theories. An open and semi-structured protocol was established to guide the interview, to ensure the homogeneity of the data and give respondents the ability to describe their reality without restrictions and avoid forcing responses from predetermined categories, following the approach of Bardin (2011) and Glaser and Strauss (1967). The protocol specified a short and flexible list of topics to be addressed during the interview, namely: i) definition of MFI's mission and objectives; ii) beliefs about the severity of environmental challenges and their impact on the lives of people, especially their customers; iii) the perception of the impact of their customers' activities on the environment; iv) the opinion on the role of MFIs in protecting the environment; v) the ability of MFIs to implement environmental management programs; vi) the level of engagement in green microfinance and history of involvement in green activities; vii) the strategic interest in supporting green entrepreneurial activities or projects in the future; viii) potential stakeholder pressures and other contextual forces; xix) knowledge and influence of other realities dealing with green microfinance; x) support received; and xi) regulation of the sector.

Participants were contacted by telephone or email to invite them to participate in the study. In Cabo Verde, 83% agreed to participate in interviews, and in Brazil, 68% agreed. The interviews were conducted with MFIs' top managers and microfinance experts, who were informed about the purpose

of the study. We ensured anonymity to the MFI managers and their institutions to avoid omissions that could undermine the reliability of the conversation content. As for the experts, they provided consent for their identification, which allowed to better understand their opinions. At an early stage, in July 2018, the interview guide was tested through exploratory interviews with informants from three different organizations hosted in Cabo Verde. In Brazil, we had to adapt the guide to the specific language and test it with two specialists in the field of microfinance.

In the two cases, the interviews lasted about 45 minutes on average and were carried out between August 2018 and February 2019. Before starting an interview, we introduced ourselves as a researcher, explained the reason for the interview, asked for permission to record the conversation, and ensured confidentiality. We also informed that the interview content would be kept securely. In all audios, there is a record of the participants' agreement. All interviews were recorded on a cell phone, in Portuguese, with the prior authorization of the interviewees. To ensure the anonymity of the interviewees (Saunders et al., 2015), we assigned a code number to each one (Tables 1 and 2). In addition, follow-up questions were asked via phone where clarification was required.

In Cabo Verde, all interviews were conducted face-to-face with the participants. Informants took the time to answer the questions. During the interview, they were always willing and open to any additional questions. At no time did we notice any bodily movement that indicated tiredness or pressure to end the conversation. At the end of the interview, everyone provided their telephone numbers to offer additional information, if necessary.

In Brazil, due to the costs inherent to travel, of the 15 interviews, only seven were carried out face-to-face with the participants. The remaining eight interviews were made via videocall and voice recording on the cell phone, with the participants' permission. Participants also took the time to answer the questions. During the interview, they were always willing and open to any additional questions. At the end of the interview, all participants provided their telephone numbers to offer additional information, if necessary.

In a subsequent phase, interviews were fully transcribed to text, supplemented with notes taken during the recording, and translated into English by the lead researcher, who is a native Portuguese speaker. Only the most important portions of the body of data were transcribed and coded due to their relevance to the research question. While there are opinions sustaining that all data should be scrutinized, most research methodologists agree that up to one-half to two-thirds of the total record can be left out of intensive data analysis (Saldaña, 2013). This decision was also due to time constraints.

Later, data were transported and treated with the support of the NVivo12 software – the details are below, in section 3.6.1. Coding process. The application of the semi-structured in-depth interview responded to the components of our research: the research paradigms adopted, the qualitative approach, the type of data sought, and the meanings attributed to the interviewees' words (Denzin & Lincoln, 2011).

4.6. Data analysis procedures

Data were assessed through content analysis. Content analysis is a research technique that allows for replicable and valid inferences from significant subjects to contexts of their use, providing new insights that increase research understanding of a specific phenomenon or inform practical action (Krippendorff, 2004). It is a description of the manifest content close to the text, as well as interpretations of the latent content derived from the experiences lived by the participants (Graneheim et al., 2017), that is, the interpretations of the hidden meaning of the text (Graneheim & Lundman, 2004). The technique consists of preparing, organizing, and reducing data through a systematic encoding process and condensing the codes into themes, capturing important meanings of the data (Creswell, 2007), making “[...] inferences about the intentions, attitudes, and values of individuals” (Morris, 1994, p. 903). Bengtsson (2016) states that “The purpose of content analysis is to organize and elicit meaning from the data collected and to draw realistic conclusions from it” (p. 8).

Content analysis has been used in many research areas (White & Marsh, 2006), mainly in the social sciences and humanities, although its application has been increasing in legal, political, and commercial areas (Krippendorff, 2004). It is noted that several authors have emphasized the use of content analysis in their studies on microfinance (e.g., Archer & Jones-Christensen, 2011; Kanayo et al., 2013; Kleynjans & Hudon, 2016). Kleynjans and Hudon (2016), for instance, used content analysis to examine to what extent the specifics of MFIs are determining factors in the content of an ethics code.

Despite some criticism (see Prasad, 2008), content analysis is widely applied and of crucial importance for qualitative research as it strongly influences the results a study. In addition to some advantages presented by Weber (1990), it has the benefits of being a systematic and replicable technique to compress the content of texts in categories based on explicit rules of coding (Krippendorff, 1980); discreet, insofar as neither the sender nor the message recipient is aware that it is being analysed – it provides the researcher's opportunities to discreetly study individuals' values, feelings, intentions, and ideologies generally inaccessible to researchers – and helpful in dealing topics sensitive

and with large amounts of data (Bengtsson, 2016; Morris, 1994; Prasad, 2008; Weber, 1990). In addition, it is a transparent technique since the coding process and the applied sampling can be displayed (Mayer, 2015; Vaismoradi et al., 2016), and flexible because it can be used for different unstructured information, allowing the analysis of trends (Mckibben et al., 2020).

In this study, we used content analysis within our post-positivist and interpretivism worldview to analyse qualitative data. Content analysis encompasses elements of both constructivism and post-positivism (Koro-ljungberg, 2001; White & Marsh, 2006). While the grounded theory method tries to create theory (Saldaña, 2013), we used content analysis, which has been used to systematically examine the content of large amounts of information, both verbal and non-verbal. Thus, based on PMT and IT, we applied content analysis to explain and describe the observed phenomenon involving the beliefs of MFI managers in the motivations and limitations to act in an environmentally sustainable way.

For content analysis, we used NVivo 12, a Computer Aided Data Analysis Software (CAQDAS), to support organizing and displaying data from various perspectives to capture respondents' perceptions or beliefs (Bazeley & Jackson, 2013). Otherwise, when conducted "manually", this task is often time-consuming and raises concerns about unreliability (Biroscak et al., 2017; Indulska et al., 2012). Computational technology allows researchers to perform analyses more reliably, as it eliminates coding errors and allows the analysis of large volumes of written communication at a lower cost (Morris, 1994). The author presents a set of advantages of using computational technology for content analysis (see page 294).

NVivo is a qualitative data analysis software developed to manage coding procedures and is considered one of the best in this process (AlYahmady & Alabri, 2013). It has many advantages; for example, it helps to manage, shape, and analyse qualitative data; it provides security when storing the database; it allows the use of several languages and the writing of memos; and its categorization process is flexible, allowing the researcher to go back for coding review without wasting too much time, to name just a few (see Creswell, 2007, p. 167 for more details). Hence, CAQDAS helps to discover patterns, themes, or categories (Braun & Clarke, 2006; Creswell, 2007) in the different transcribed interviews, subsequent classifications, and incorporation of data in cases, allowing for their comparisons (Creswell, 2007). The organization into categories makes the process easier and allows the assignment of meanings or interpretations of the researched reality (Zanelli, 2002). In the next section we will explain the whole process.

Through repeated in-depth readings of the transcripts, we were able to discover initial topics and key thoughts (Goold et al., 2007; Rosenthal, 2016). We took notes and compared them with those taken earlier during the interviews. The first interviews offered great insights and functioned as an indicator of the initial views expected from the interviews and gave us insight into prospective topics and concepts. Rather than just using our perspective to describe real-life events, the descriptions also expressed the participants' perspective (Denzin & Lincoln, 2011).

Data analysis is of critical importance within qualitative research as it has a major influence on the results of each research conducted (Weber, 1990). Although content analysis is driven by logical positivism (Yick & Oomen-Early, 2008), it can be performed in transcribed speech, verbal interactions, written text, visual images, characterizations, non-verbal behaviours, sound events, or any other types of messages (Krippendorff, 2004; Neuendorf, 2017). Content analysis can be performed inductively or deductively (Bengtsson, 2016; Mckibben et al., 2020). Inductive reasoning is the process in which the researcher identifies, in the collected data, relevant information that answers the research question, while in deductive reasoning, the researcher, based on pre-established or existing hypotheses or propositions, identifies information in the text that tests the hypotheses or propositions (Bengtsson, 2016). In this study, we applied a combined approach of content analysis in which the deductive method allowed us to identify portions of the data with similar meanings giving rise to categories; and the inductive method allowed new meanings to inductively emerge from the data without a pre-existing definition, forming new categories (Neuendorf, 2017; Vaismoradi et al., 2016). That is, in line with the approaches of Vaismoradi et al. (2016) and Neuendorf (2017), our analysis was carried out starting from the concrete to the abstract and from the abstract to the concrete, thus avoiding losing important meanings. Below, we detail the data coding process.

4.6.1. Coding Process

In case studies, different data sources can be used, such as interviews, focus groups, field notes from researchers, reports, voice recordings, journals, documents, literature, photographs, and videos (Busetto et al., 2020; Russell & Gregory, 2003). Our data mainly come from interviews. To make sense of the data we collected, it was crucial to engage in coding (Braun & Clarke, 2006; DeCuir-Gunby et al., 2011). Systematic text coding is a fundamental ingredient of qualitative analysis (Corbin & Strauss, 1990).

The coding process requires reading the collected data over and over, as the more we interact with the data, the more patterns and categories can emerge (Patton, 2002). Codes abstractly represent a phenomenon or an object, and they can have three different origins, including theory (theory-driven), data (data-driven), and research goals (structural) (Corbin & Strauss, 2008; DeCuir-Gunby et al., 2011). Coding usually involves highlighting the respondent's comments, and classifying them into a given category (Rosenthal, 2016; Saldaña, 2013). Basically, a code is a word or short phrase, an essence-capturer of a datum and can represent topics, concepts, or categories of events, processes, attitudes, or beliefs that express the human activity and thought (Jacoby & Siminoff, 2008; Rosenthal, 2016; Saldaña, 2013). Codes are used to rearrange data in a way that facilitates interpretation and allows the researcher to see a picture of the data that is difficult to discern in transcript form (Jacoby & Siminoff, 2008). The most important is that "[...] the researcher is able to synthesize the codes and concepts into a useful theoretical integration that reflects, as close as possible, the meaning in the data from the perspectives of the research participants" (Olshansky, 2015 p. 23).

Throughout the codification process, codes range from simply describing topics to a more analytical level, in which concepts are interpreted (Richards, 2015). Developing theory-driven codes requires coming back and forth to the theory, while structural and data-driven codes require a coder to examine the raw data constantly (Braun & Clarke, 2006). Therefore, coding is a circular, iterative process (DeCuir-Gunby et al., 2011). One of the key goals for a coder is to find recurring patterns of actions, regularities in human matters, and relationships throughout the documented data (Saldaña, 2013). However, patterns or themes can come in various forms, such as frequency, causation, similarity, difference, sequence, and correspondence (Hatch, 2002). In our analysis, we took the frequency of the codes into account, but we also looked for possible relationships between the data, guided by our theoretical model.

Considering the literature review, the theoretical framework, and the research propositions, we prepared to code the data relevant to the question and research objectives. As previously mentioned, the questions in the interview guides were already constructed based on the theoretical assumptions of this research. The coding process started the very moment data were collected and developed from general to abstract and from abstract to general (Neuendorf, 2017; Saldaña, 2013; Vaismoradi et al., 2016). Abstraction is a methodological tool used in various scientific methods and is defined as a process in which different elements of content are transferred to a higher logical level, presenting a kind of classification or pattern (Downe-Wamboldt, 2009; Lindgren et al., 2020). That is, it is abstraction because researchers use intuition to elicit meaning from data and present description and interpretation

at a uppermost logical level (Graneheim & Lundman, 2004; Schilling, 2006), labelled by category, theme or pattern (Merriam, 2009).

Hence, after transcribing the interviews, we read the texts several times to verify the transcription's authenticity and familiarize ourselves with the data. Next, we translated the contents and notes taken during the interviews into English. During the translation, we immersed ourselves more deeply in the data and took notes of the salient meanings we captured throughout this process. According to Braun and Clarke (2006), the researcher must dive into the data as they will be familiar with the depth and breadth of their content. After translation, we reread the contents to check for possible errors, and this process was another opportunity to underline, with different colours, the identified essential meanings (Coffey & Atkinson, 1996). We identified ideas for the coding process by collecting, transcribing, reading, translating, and rereading the data. In the next phase, we imported the data into the NVivo 12 QSR software.

Before importing the data into NVivo, they were organized using a spreadsheet that allowed simple counts to be performed and a preliminary overview of the data. Then, we imported the data to NVivo 12 QSR. The structuring of the data in NVivo was done according to the conceptual model, but to avoid losing important meanings that could emerge from the data, we kept attentive and open to the reconfiguration of the structure to integrate new categories and themes (Creswell, 2007; Schilling, 2006). In this study, and following Merriam (2009, p. 178), we envisage "[...] a category the same as a theme, a pattern, a finding, or an answer to a research question". Data analysis combined deductive and inductive approaches (Azungah, 2018), integrating theory-driven and data-driven coding (Azungah, 2018; Fereday & Muir-Cochrane, 2006). In the deductive process, categories from PMT were used to delimit the main research dimensions linked to the study's purpose, while in the inductive process emergent meaning was extracted from data to explore these theoretical dimensions. Thus, the codes were organized into categories and refined into subcategories. These categories and subcategories were then compared with each other, consolidated and integrated into themes (Saldaña, 2013). A collection of codes form categories, which can be divided into subcategories (Graneheim et al., 2017; Saldaña, 2013). We used categories and subcategories to classify the content analysis levels, but we are aware that the terminology used varies from researcher to researcher. For example, some use aggregated categories (e.g., Asmussen & Creswell, 1995; Stake, 1995); some use themes, categories, and subcategories (e.g., Coffey & Atkinson, 1996; Morse, 2008); others use themes and subthemes (e.g., Braun & Clarke, 2006; Vaismoradi et al., 2016), and so on.

In sum, we used thematic analysis to identify and describe the central themes in all data. When reading all the transcripts, we identified questions raised by the participants, which two analysts verified, giving each question a code name and listing all codes and code definitions in a codebook. This process took a long time because we felt the need to repeatedly return to the data to see if the categories, explanations and interpretations made sense and if they really reflected the nature of the phenomena. A template for the codebook was developed *a priori* (Fereday & Muir-Cochrane, 2006), adapted from the underlying theories and complemented with codes derived from the data.

Another researcher analyzed the codes and categories that emerged from the first readings to check for the consistency of the process. The researchers negotiated the differences and reached an agreement on the descriptions. That is, coding discrepancies were resolved before the entire data set was coded. Secondly, they analyzed the transcripts independently. The second researcher analyzed a portion of the transcripts, chosen randomly, and the two later reviewed and negotiated the differences. Therefore, the code tree resulted from this analysis process and agreements between the primary researcher and a second researcher. This method aligns with Creswell (2009), who argues that to guarantee data consistency, it is necessary to find another person who can cross-check their codes.

Although Cabo Verde and Brazil were treated and analysed separately, the data of both cases followed a similar structure of the coding process. The final codebook resulted from a preliminary set of codes aligned with the research question, objectives and the theoretical framework underlying the research, and also from codes based on data derived from the process of interpreting the raw data. In total, 27 data-driven codes were applied to classify sub-categories of antecedents of the intention to engage in green microfinance activities for the cases Cabo Verde and Brazil (Figure 2).

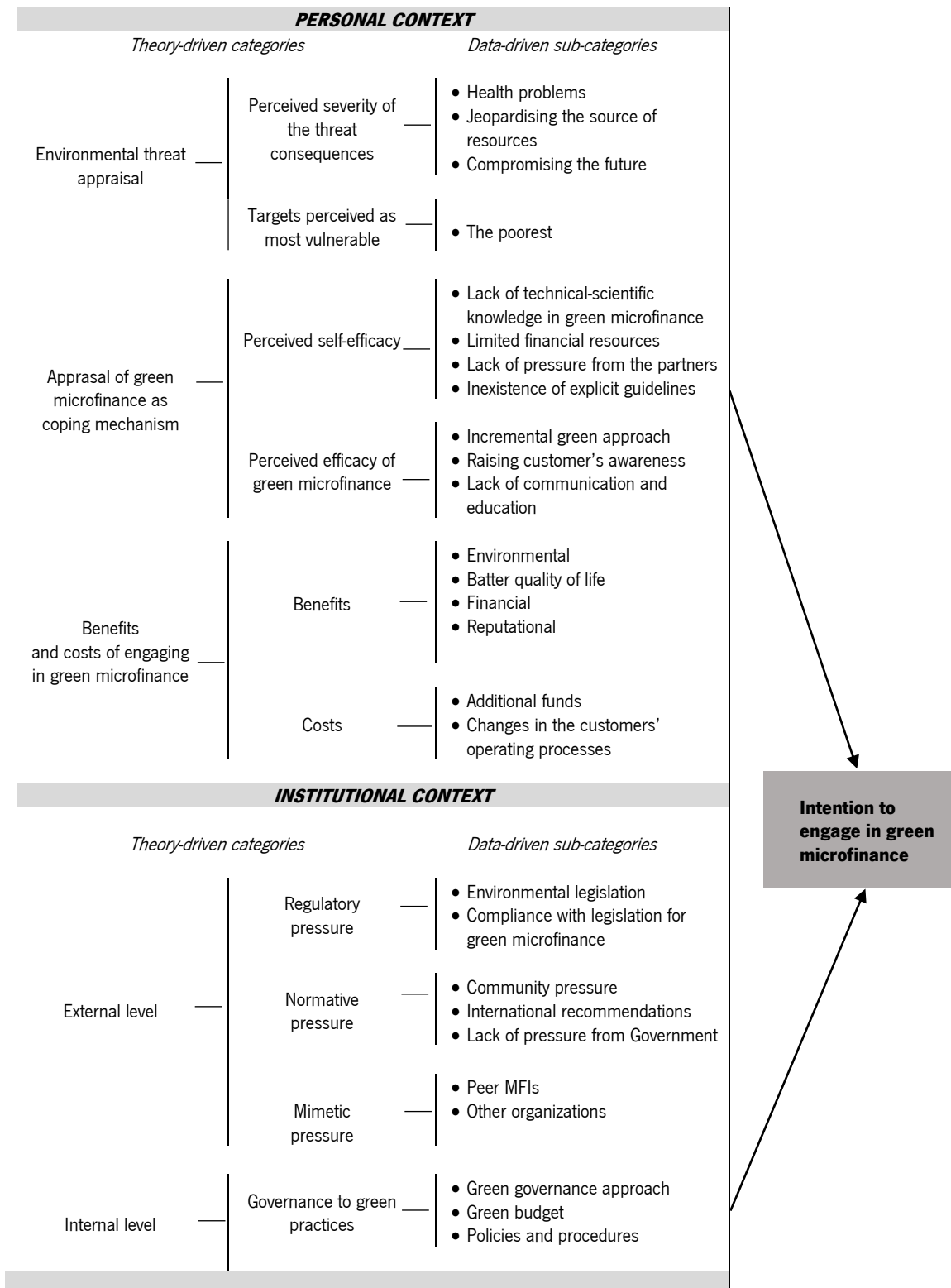


Figure 2. Qualitative data codebook

The initial analysis was carried out individually for each case. This process was essential for us to get familiar with the specific patterns of each case, which allowed us the in-depth understanding necessary to carry out the cross-case analysis (Eisenhardt, 1989). The individual and cross-case analysis was carried out taking the conceptual model and the propositions that guided the research into account. In other words, the analysis was performed in a cohesive manner with the theoretical assumptions within the defined methodological standards and objectives.

The comparison of the two cases was made by comparing their individual conclusions. Based on the narratives, the cross-case analysis compiled and organized important information about the beliefs of MFI managers in each country about environmental sustainability and the role of microfinance in promoting it, together with their perceptions about their institutional context that can affect the involvement of their institutions in green microfinance management. Cross-case analysis is a means of grouping common interview responses and analysing different perspectives on central issues (Patton, 1990).

4.6.2. Validity and reliability

Validity and reliability in social sciences are critical aspects, as they can make the difference between good and poor research, and consequently they must be taken into account in any investigation (Ahmed et al., 2009; Brink, 1993; Morse et al., 2002; Richards, 2015). The objective is to ensure rigor in all scientific processes (Morse et al., 2002).

The validity of a research study is related to how well the observed results among study participants account for the truth in the studied population (Patino & Ferreira, 2018). In other words, the validity of a study is related to the proper collection and interpretation of data so that the results accurately reflect and represent the real world that was studied (Yin, 2015). In practice, construct validity refers to defining the phenomenon to be investigated in specific concepts, relating them to the original research objectives, and choosing data sources that combine the concepts with the phenomenon under investigation (Yin, 2015, 2018). Thus, the validity includes two dimensions: internal and external validity (Patino & Ferreira, 2018). "Internal validity is the extent to which we can establish a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships" (Yin, 1994, p. 35). Miles and Huberman (1994) stated that internal validity has to do with questions such as "Do the findings of the study make sense? Are they credible to the people we study and to our readers? Do we have an authentic portrait of what we were looking at?" (p. 278). It explains

the causal relationship (Yin, 2011), which means evaluating the logic of its structure (Badraoui et al., 2020), that is, the procedures followed to minimise threats to the study's internal validity. In turn, external validity is knowing whether a study's finding or presumed causal relationship can be generalised beyond the immediate case study (Badraoui et al., 2020; Cook & Campbell, 1979; Yin, 2015, 2018).

In this study, we chose the term credible (Lincoln & Guba, 1985; Patton, 1999) rather than valid. According to Giacomini et al. (2000), to avoid confusion with a quantitative assessment, qualitative researchers typically avoid the term "valid" in favour of alternatives such as "credible" since qualitative research offers empirically based insights into (or) personal experiences, which necessarily have a very subjective nature, but are no less credible than biometric data. Similarly, Drost (2011) argues that "[...] it is possible to have a very reliable measure that is not valid" (p. 107). From this perspective, reliability is a necessary but not sufficient condition for validity (Du, 2010; Pollock, 1984).

Reliability is whether the study process is consistent over time and across researchers and methods (Miles & Huberman, 1994). It regards the degree to which a study's procedures can be replicated and produce similar interpretations and results (Cook & Campbell, 1979; Fitzner, 2007; Miles & Huberman, 1994; Yin, 1994, 2018), minimizing errors and biases in the study (Yin, 2011). Analytical generalization is used, where the results are generalizable in light of theories (Meyer, 2001). The theory is tested by replicating a finding in one or more cases (Yin, 2011, 2015). However, this study seeks not to generate empirical generalizations but to build a first insight into MFI managers' beliefs about green microfinance that may lead them to engage their institutions in green microfinance activities in complex contexts. Along these lines, the case study protocol was adopted to maintain data collection records with all the procedures adopted during data collection. All interviews were transcribed into a text document and later saved in a Word database.

The study protocol was developed to ensure internal and external credibility. We used the triangulation method to ensure internal and external credibility. "Triangulation is a process by which the researcher can guard against the accusation that a study's findings are simply an artifact of a single method, a single source, or a single investigator's biases" (Patton, 1999, p. 1197). Internal credibility was assessed by comparing the categories of both cases to verify whether the findings were similar in both contexts. External credibility was established through the selection of cases with identical characteristics.

Triangulation is generally recommended to improve the quality and credibility of qualitative research (Yin, 2015, 2018) and "[...] probably the most well-known strategy to shore up the internal

validity of a study” (Merriam, 2009, p. 215). The case study is a research strategy that must use triangulation (Stake, 1995), and it is a necessity that arises from ethics to confirm the credibility of processes (Yin, 2011, 2018). Although data triangulation is an expensive process and we did not have any financial support from third parties to carry out our investigation, we were able to verify the consistency of the results, using intentional samples to identify and include multiple perspectives on the topic in studies (Patton, 1999). In this context, to ensure credibility, it was guaranteed that the decision-makers were interviewed. The interview data was complemented with additional information from other sources.

In the case of Cabo Verde, data collected in interviews with participants were triangulated with data collected in interviews with some consultants and representatives of institutions linked to the microfinance sector and with notes taken during the interviews. It should be noted that few MFIs have a website, and the majority do not have activity plans and reports. In the case of Brazil, data collected in the interviews were triangulated with data from some consultants in the area of microfinance and with data collected from websites and documents such as reports and contracts. PMT and IT (Meyer & Rowan, 1977; Zucker, 1987) sought theoretical elements that help explain the phenomenon in the light of the reality of the two cases.

Although practical guidelines for when data saturation would be reached were not initially established, the question of how many interviews are sufficient to reach data saturation must be addressed (Guest et al., 2006). Saturation is critical to the excellence of qualitative research (Morse, 1995). In qualitative research, data saturation must be achieved when using interviews to reach a target audience (Parker & O'Reilly, 2012). Typically, researchers collect data in a degree of redundancy (Morrow, 2005), until it is no longer possible to acquire new information from new data sources (Guest et al., 2006), until the collected data have contributed enough information to reproduce the study (Fusch & Ness, 2015; Guest et al., 2006), and until no further coding is feasible (Guest et al., 2006). In this sense, we strive to achieve data saturation in our data collection, coding, and analysis for this thesis. We focused more on the quality and depth of the data than on the sample size or duration of interviews. In Cabo Verde's sample, no new codes were generated from the 7th interview on, suggesting saturation (Figure 3). In the case of Brazil, no new codes were generated from the 5th interview on, also suggesting saturation (Figure 4)

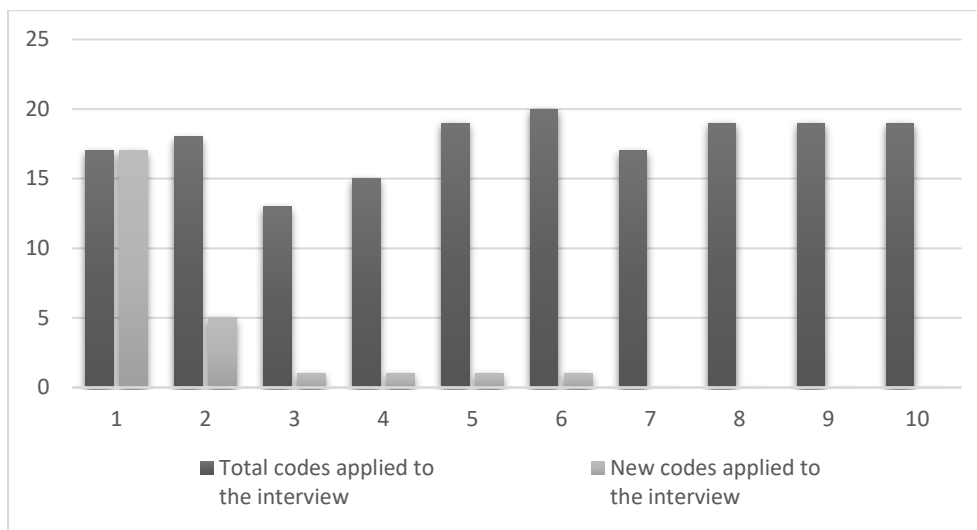


Figure 3. Data saturation level in the Cabo Verde case study



Figure 4. Data saturation level in the Brazil case study

As the data were collected in Portuguese, we did the translation ourselves to avoid the loss of information or insights that could be relevant to the study. Eventually, transcribing, translating, and constantly reviewing the data allowed the researcher to be reflective and achieve deeper immersion in the data. This process helped us easily recognize relevant concepts and identify the data saturation we sought. Interviewing additional people was stopped when new codes stopped emerging in subsequent interviews (Harris & Sutton, 1986). Additional data were also collected through observations during

meetings, from the archival documents, and from news articles available on the Internet. Collecting information from multiple sources followed the logic of “caches” suggested by Glaser and Strauss (1967, p. 61-62).

5. Findings

Drawing on PMT and IT, we explore how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, along with their perceptions about their institutional context, affect the engagement of their institutions in green microfinance. Results are presented separately for the Cabo Verde and Brazil cases. The theories that support this study were also explored separately in each case to add greater rigor in the presentation of the results of this research.

We begin by presenting the results of applying the PMT in exploring the beliefs of MFI managers in the environmental threats posed by unsustainable projects financed by MFIs, the effectiveness of the microcredit response to these threats and how these beliefs can affect the engagement of MFIs in green microfinance. According to PMT, when individuals are exposed to fear appeal information (e.g., an environmental threat), adaptive and maladaptive responses are produced through two cognitive processes: threat appraisal and coping appraisal (Fry & Prentice-Dunn, 2006; Prentice-Dunn et al., 2009; Prentice-Dunn & Rogers, 1986). Adaptive responses are considered more likely if individuals realize that they are facing a threat regarded as severe, while maladaptive response concerns the intrinsic and extrinsic perceived benefits of neglecting a given protective behaviour (Prentice-Dunn et al., 2009; Prentice-Dunn & Rogers, 1986). Based on this theory, in this investigation, it is assumed that adaptive responses may be more likely if the individual believes that such responses effectively reduce the threat and believe that they can carry out the adaptive response effectively. These two cognitive assessments favour protection motivation intervening variables that stimulate, sustain, and direct activity to protect oneself from a threatening situation (Bubeck et al., 2018; Kothe et al., 2019). Protection motivation leads to an intention to carry out environmental protection behaviour, in this case, the engagement in green microfinance activities to mitigate the behaviours that can pose a threat, that is, MFIs customers' activities that can cause environmental damage. Thus, MFI managers' beliefs about the severity of environmental problems and their impact on low-income people and their ability and capacity to perform the coping response, that is, engaging in green microfinance, may result in drivers or barriers to supporting environmentally sustainable projects or activities. MFI managers' perceptions about the information they have and/or the pressures they feel from the organization and the external context they are in can affect their decision-making and, consequently, their environmental practices.

Then, the results of applying IT to explore MFI managers' beliefs about institutional influences and how these beliefs can affect MFI engagement in green microcredit are presented. This study

assumes that the institutional context, both at the external and the internal levels, influences MFI managers' decision-making. The external level includes forces embedded in the field where organizations conduct their business (Scupola, 2003). The factors that act in this environment can be constraints and opportunities for any organization (Scupola, 2003). The internal level includes forces associated with the organization's strategy approach, policies, rules, procedures, etc. (Bazerman & Hoffman, 1999; Florida et al., 2001; Kleynjans & Hudon, 2016). Hence, in this section, we present the findings, based on the content analysis of the collected data from Cabo Verde and Brazil.

PMT was used to explore MFI managers' personal beliefs that may affect their decisions to engage their institutions in the development of green microfinance, that is, managers' perceptions of the environmental threat and its severity and their ability to carry out the coping response, considering perceptions of costs and benefits. IT was used to explore MFI managers' institutional beliefs in the external and organizational factors that may affect their intention to engage their institutions in the development of green microfinance. The results of applying these two theories are complementary.

5.1. Case 1 – Cabo Verde

5.1.1. Individual context

In the individual context, MFI managers' beliefs were explored based on the PMT components (or dimensions): threat appraisal (in this study, environment threat appraisal), and coping appraisal (in this study, coping through green microfinance appraisal). However, some codes emerged in the data analysis process, forming the "benefits and cost" category. These categories represent managers' perceptions of environmental threats and their severity, and their ability to perform the coping response considering the costs and benefits.

5.1.1.1. Environmental threat appraisal

The environmental threat appraisal is based upon considering MFI managers' beliefs about the severity of and susceptibility to the environmental threat in general and particularly related to funding some entrepreneurial projects that engage in unsustainable practices. Figure 5 represents this dimension, its categories and subcategories. The figure also shows the number and percentage of interviewees that mentioned each sub-category.

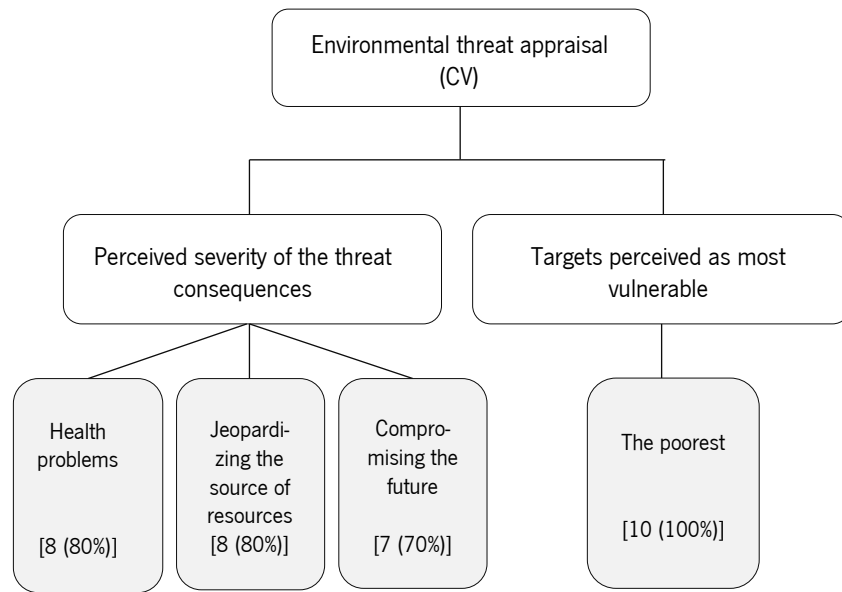


Figure 5. Perceptions about the environmental threat

5.1.1.1.1. Perceived severity of the threat consequences

This category refers to the perceived level of negative consequences for oneself, others, and the environment, in general, from not supporting environmentally sustainable projects or activities and supporting others that can carry environmental risks instead. Most Cabo Verde participants' responses to the perceived severity of environmental consequences were generally consistent. From the participants' perspective, these consequences are translated into three main issues: health problems, jeopardizing the source of resources, and even compromising the future human sustainability.

Participants recognize the consequences of environmental threats to human health as their first concern. While some assume that «*nowadays there are diseases that we do not know the origin of*» (MF11) but may be linked to unsustainable environmental practices, others assure that, in Cabo Verde, «*today we have dangerous diseases associated with the poor management of the environment*» (MF18). Human food quality depends on the quality of the environment from which it is obtained, and «*the better we eat, the better health we surely have*» (MF11). As one of the participants summed up, «*We are what we produce. If we produce a degraded environment, we compromise [...] our health*» (MF12).

Maintaining sources of resources is another concern expressed by participants. They refer specifically to the threat posed by the pollutants that not only «*put health in jeopardy*» (MFI8) but also «*damage the soils*» (MFI3). This is a position also shared by the Cape Verdean authorities, as demonstrated by one of the heads of a State Department: «*In our country, the use of insecticides is still not very well controlled*» (General Director of Agriculture and Environment). However, as another participant highlights, «*one thing is the theory, the discourse, is to think that we are prepared, that we already have information; and another is to change our attitude, our behaviour*» (MFI9). In general, MFI managers understand that the environment is critical for life sustenance; so, if we are to use nature's resources for «*our nourishment [...] we have to ensure that it does not get damaged*» (MFI2) because «*if we do not preserve it, we have nowhere else to get what we need*» (MFI4). In this sense, it seems essential to raise awareness among MFI clients for better fertilizer management, as one participant argues: «*we intend to reinforce our work with clients towards the rational use of fertilizers to avoid problems for their health and for society as a whole*» (MFI1)

Ultimately, the consequences of not taking care of the environment in the short run could be putting people's futures at risk. As one participant shares, «*if we do not take care of the environment, I do not know what the future will be*» (MFI1). Managers understand that MFIs need to support as many projects as possible, but they understand that this does not have to be at any cost because «*we will only have projects if we have people*» (MFI2), and the truth is that, because of «*the current situation on the planet [there is] the risk of communities disappearing*» (MFI10). Hence, taking care of the environment is not just for nature's sake; it is a human preservation need «*because by preserving the environment, we are preserving life*» (MFI4). Being aware of the severity of the consequences of the environmental problems is, thus, seen as an essential step to ensure that the future is not compromised; as one participant puts it, «*We must have this well-defined environmental awareness to guarantee our own and [other] human's sustainability*» (MFI2).

5.1.1.1.2. *Targets perceived as most vulnerable*

Vulnerability concerns the probability of adverse environmental impacts on the poorest if MFI managers do not support environmentally sustainable projects and how susceptible they feel. It relates to how seriously they take the environmental threats caused by projects that do not consider environmental concerns. The analysis of the MFI managers' beliefs reveals that, although they understand that environmental threats will impact humanity, the negative effects of the projects they

support may take a toll on the poorest, i.e., their customers. The participants recognize that *«Microfinance customers are vulnerable to environmental risks»* (MF16). In Cabo Verde, some people built their houses in the middle of streams, putting them at risk of being destroyed when it rains very heavily (APIMF-CV Director). Furthermore, this vulnerability is directly related to their way of living because their customers *«depend on agribusiness for their livelihood, which in a situation of dramatic climate change, puts their entire production and life at risk»* (MF18).

The participants explain that these people have to deal with significant challenges; for example, *«the farmer has water problems, the cattle farmer today suffers from grazing problems inherent to the lack of water»* (MF11), and some of their customers also have to deal with *«forest wildfires»* (MF13). These examples show that the poorest, the ones MFIs are supposed to help, *«are the most vulnerable to environmental risks»* (MF11). So, ironically, they end up being the most vulnerable victims of several environmental threats that can also derive from the very support they receive. In this setting, it is the intention of some MFIs *«to work with the government to create conditions for constructions for the most disadvantaged people to be made in safer places»* (MF11).

5.1.1.2. Appraisal of green microfinance as coping mechanism

Coping appraisal refers to the process of assessing the beliefs in behavioural alternatives, which might reduce the threat. This process involves the managers' belief in their ability to perform the coping response (self-efficacy), i.e., engaging their institutions in green microfinance and that carrying out this pro-environmental behaviour can contribute to removing the threat (response efficacy). Figure 6 represents these categories and the nodes that emerged from it.

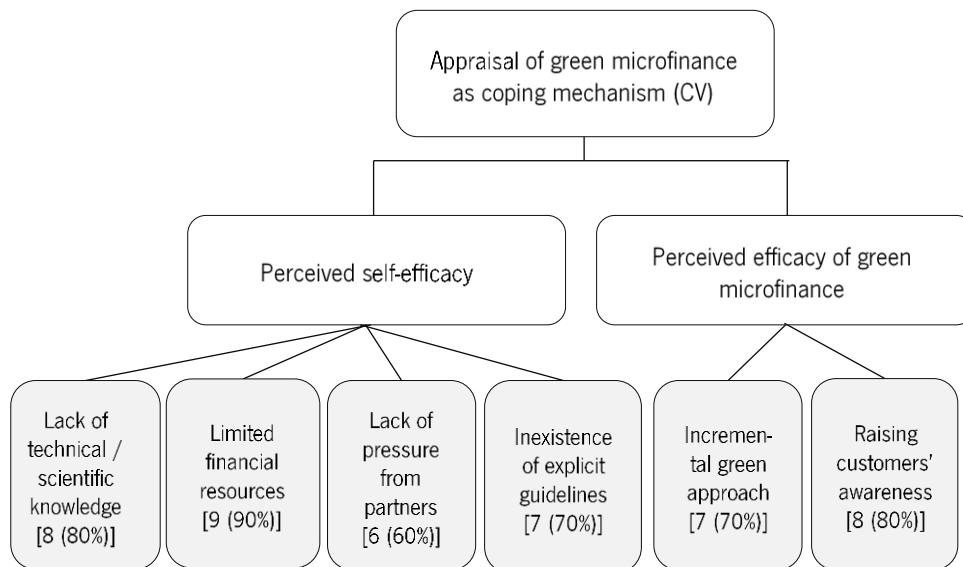


Figure 6. Codes from coping appraisal

5.1.1.2.1. *Perceived self-efficacy to implement green microfinance*

Self-efficacy means the perceived ability of MFI managers to perform the coping response by supporting environmentally sustainable projects. The managers were asked about the elements that give them certainty about choosing the best project, when faced with the decision of having to support a project among several available alternatives. Respondents generally feel that they are able to meet environmental requirements when selecting projects or activities and incorporate this routine into the MFIs decision-making process. However, this adhesion faces some barriers, namely the lack of technical-scientific knowledge in green microfinance, limited financial resources, lack of pressure from the partners and inexistence of explicit guidelines.

The participants recognize that «*the sector is very weak regarding technical-scientific knowledge*» (MF11). Some share that they sometimes lack the knowledge because they do not have access to studies in certain areas, «*so, many times when we talk about what could harm, it is based on the observation we make; it is not scientific data that give us this information*» (MF15). Thus, to be able to make more informed decisions, the acquisition of new capabilities may be crucial, as one participant shares: «*We will have to find someone... competencies that can teach more about the issue and provide us guarantees in the process of granting credit*» (MF11) to more sustainable projects.

Most participants have never heard of green microfinance and have no clear idea about actions MFIs can carry out to promote this type of product/service; as one participant shared, «*We will have to*

discuss it to get to know the subject better and improve the credit disbursement process» (MF11). However, one participant revealed that at certain times, they financed projects such as *«installation of drip irrigation [and used] [...] land, unconventional energies, soil, water and wind»* (MF15) for some projects. The same participant stated that at the MFI he manages, they are *«concerned [...] in demonstrating the use of new technologies, the use of new plants, with greater resistance to [...] the climate»* (MF15). These types of projects or activities are environmentally sustainable projects. It is noticed that some MFIs have already supported some environmentally sustainable projects and activities but do not associate these projects or activities with green microfinance.

The MFI managers' self-efficacy is also hindered by the absence of other conditions, namely financial resources. They indicate that they face economic challenges mainly because they do not have access to financial support from the Government, as stressed by one participant: *«We do not receive any State grants to support green projects»* (MF18). Additionally, they perceive their capacity to make better decisions to be hindered by the absence of any *«formal engagement on environmental protection issues»* (MF19) from their investors or from *«donors [who] do not place any demands on environmental issues»* (MF19).

Their ability to support more sustainable projects is also limited by the lack of explicit guidelines supporting them through the decision-making process. They share that the *«environmental criteria are not explicitly stated»* (MF19) and that the *«Government should have criteria for the eligibility of projects or activities, a criterion related to environmental issues»* (MF15). In this scenario, there is evidence of the intention to *«work towards raising Government and investors' awareness to support us financially for actions to train our employees regarding environmental issues and, thus, have specific criteria in mind when they evaluate projects»* (MF16).

5.1.1.2.2. Perceived efficacy of green microfinance

Response efficacy regards the perceived effectiveness of the proposed protective behaviour by supporting environmentally sustainable projects or activities to avoid the threat. We analysed the elements that make the managers' decisions easier or harder when selecting environmentally sustainable projects or activities and supporting them. Results suggest that following an incremental green approach, and raising awareness and educating their customers may facilitate an effective response to the problem.

MFI managers believe that *«it is possible to associate microcredit with environmental issues»* (MF14) and in the advantages of their actions to improve the quality of life of their clients and to protect the environment, so they start taking initiatives in this direction. Some state that they already have some experience and implemented actions that reflect this experience, which makes them more confident about the future development of this approach. One participant describes that they *«did some experiments with improved stoves, to respond to the issue of using wood in the kitchen [and] our headquarters was built using stone [...]. We wanted to set an example and show that it is possible»* (MF15). Others share that although they may not have a formal green microfinance system, they *«try to avoid projects that generate some environmental discomfort and that do not add value to our country»* (MF14) and that they *«would not accept anything that would harm the environment»* (MF10). So, the transition to a new paradigm that puts the environmental criteria at the top of their concerns may need to be incremental. They assume that they *«start with small things, like not approving projects that will cause visible environmental damage»* (MF14) so they can *«walk slowly, but safely»* (MF19). To this, they suggest that MFIs *«must define and assume priorities, such as the problem of mitigating drought, by reinforcing drip irrigation projects, to save water»* (MF19). Unfortunately, in some cases, the green issue may take on greater prominence in the discourse than in real actions, as one participant states: *«There is much talk and little action regarding environmental projects»* (MF13). However, on this subject, the Minister of Agriculture and Environment indicates that *«there are already projects that aim at better management of water resources throughout the country»*.

They also think that to move faster, their customers' environmental awareness needs to be raised. One of the managers believes that *«all institutions should approach their clients, promote and raise awareness to use their funding in environmentally-friendly activities»* (MF16). Another one shares that *«MFIs move a lot of people. It is possible to convey information to many people, and these people are agents of change»* (MF18). So, educating people should also be part of the response to the problem, and even children should be the target when *«working to preserve the environment»* (MF12). Yet, this is not considered an easy task because, as one of the participants admits, *«people care about immediate interests, they do not care about tomorrow, with the future for our children, [even if] they are the ones who will pay dearly if we do not protect the environment»* (MF16).

The managers' decision to support environmentally sustainable projects or activities will be facilitated if there is reinforcement in communication and customer awareness. Results point to the need of strengthening education and awareness actions for clients and society as a whole *«because it*

is necessary, but also because the World Bank and other international entities have already signalled that this will be a requirement for financing» (Secretary of State for Business Development).

5.1.1.3. Perceived benefits and costs of engaging in green microfinance

The perceived benefits and costs of the prospective adaptive behaviour, which, in this case, refers to selectively supporting environmentally sustainable projects, are part of a set of predictors used by PMT to explain pro-environmental choices (Bockarjova & Steg, 2014). In this study, costs and benefits have to do with the losses or gains that MFIs can obtain when promoting green microfinance. Figure 7 presents these categories and subcategories that emerged from the data.

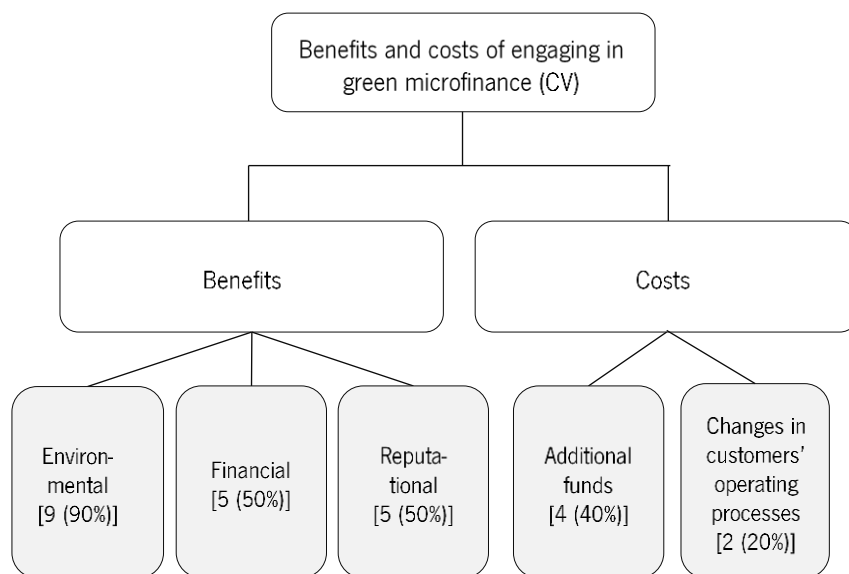


Figure 7. Costs and benefits of pro-environmental choices

Results show that participants believe in the benefits of engaging in green microfinance. Their perceptions are that benefits can be environmental, financial and reputational. Despite various barriers to adhering to green microfinance, most respondents are generally optimistic and motivated to «*start supporting green projects*» (MF11), and in cases when previous experiences exist, they want to «*start working again with microcredit and activities that do not harm the environment*» (MF12). Some participants state that they will be more attentive to the criteria for evaluating projects in the future and will «*be careful in approving projects and granting credit to projects that are not harmful to the environment*» (MF13), mentioning that they «*will pay more attention to these aspects*» (MF18) because

«*approving projects or activities that do not harm the environment benefits the environment*» (MFI7). In addition to the environmental balance, they believe that green microfinance also brings «*commercial and financial advantages*» (MFI4), as an «*institution concerned with sustainable development can raise more funds to finance green projects*» (MFI7) and «*positioning yourself as an institution concerned with the environment is a way of obtaining more resources*» (MFI6). Respondents also mentioned that engaging in microfinance or green activities contributes to «*reputational gains*» (MFI6) and «*promotes the image of MFIs among their stakeholders*» (MFI1).

On the other hand, they also identify some additional costs that are difficult to bear for MFIs but necessary to engage in green microfinance, namely, costs of additional funds and costs associated with changes in customers' operating processes. They argue that MFIs «*must have a relatively large customer base to guarantee financial resources to cover operating costs*» (MFI10) because «*environmental actions require additional costs that the Government must assure*» (MFI9). Furthermore, the changes in their customers' practices towards sustainability are also associated with costs. For example, «*organic products are generally more expensive and require technical knowledge that MFIs do not have*» (MFI5). Thus, the benefits of green microfinance may motivate managers to make pro-environmental decisions, but the perceived costs must be reduced. Also, to have a real effect in terms of future decisions and actions, MFI managers need to assess positively their ability to contribute to the environmental solution.

Sometimes, this concern already exists, and there is an intention to strengthen this approach in the future, as one participant shares: «*In all projects' documents, there is a mention to environmental, social and economic sustainability, and we intend to reinforce this*» (MFI9). To go in that direction, some MFIs may need to define clear guidelines to support the decision-making, as «*there are no indicators on environmental performance, but we intend to work on it*» (MFI10). Other managers seem to intend to start implementing green microfinance actions motivated by their preliminary knowledge about the subject, as the following quote suggests: «*I have some idea that I will try to perform [...]. I have heard of green microfinance [...]. I learned from internet readings*» (MFI4).

Considering that Cabo Verde is a developing country and very dependent on the support of international institutions, being in line with sound environmental practices advocated by these institutions is almost mandatory. Therefore, the perception that access to funds will be facilitated can positively affect managers' decisions.

5.1.2. Institutional context

As for the institutional context, MFI managers' beliefs were explored using IT. In this study, the institutional context was analysed in two dimensions: External and internal. Individuals in organizations focus on different aspects of their external and internal environments, depending on the cognitive framework through which they view the world (Hoffman, 2001). In this investigation, managers' perceptions of pressure based on institutional principles and values, which can influence their decision-making regarding green microfinance activities, are assessed. At the external level, managers' perceptions of the influence of regulatory, normative and mimetic pressures on their decisions to support green projects or activities, that is, the promotion of green microfinance, were analysed. At an internal level, their perceptions were analysed about MFI Governance to green microfinance, that is, MFI internal conditions that may favour or prevent the rise of green microfinance.

Analysing the institutional context in these two environments allowed us to understand, in more detail, the level of influence of each of them on MFI managers' decisions to engage their institutions in promoting green microfinance. According to Menguc and Ozanne (2010), the motivation for a protective environmental strategy can originate from external and/or internal environments. However, it is by combining data from these two environments that it is possible to fully capture the factors that can motivate or restrict a behaviour (Braun & Clarke, 2006; Guagnano et al., 1995) since a purely internally-oriented approach can prove inadequate due to external (social) legitimacy and reputation issues (Hart, 1995). For example, Rao (2002) points out the key role of internal and external environmental initiatives in improving competitiveness and performance. These two contexts have different green approaches, so their contributions must be evaluated separately (Giovanni, 2012). Therefore, we analysed MFI managers' perceptions about the drivers and barriers in both external and internal environments. This analysis was carried out separately to better to understand the influence of institutional factors as a whole.

5.1.2.1. External level

Participants answered questions related to their perceptions about the external divers or barriers that can influence their decisions to develop green microfinance. The objective was to grasp MFIs managers' perceptions about the influence of the regulative, normative and mimetic environment on their decisions towards green microfinance. From these categories new sub-categories emerged from the data, as depicted in Figure 8.

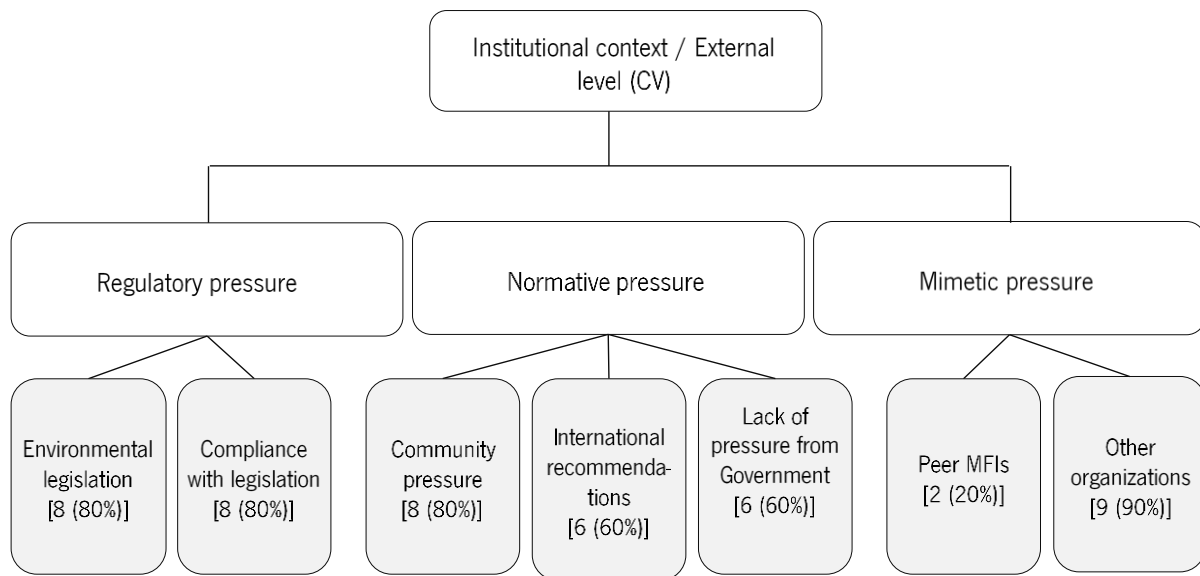


Figure 8. Perceptions about the external influences on MFI managers' decisions to engage their institutions in green microfinance

5.1.2.1.1. Regulatory pressure

Regulations are mandatory guidance to organizations, expressed through rules, controls, rewards, and sanctions (Berrone et al., 2013; DiMaggio & Powell, 1983). Thus, managers' perceptions and knowledge about regulation constraints can effectively influence their decisions. The interviewees highlighted two main issues, one relating to the increasing focus of the government in issuing new environment legislation and the second regarding MFIs' effective compliance with such legislation.

The first issue concerns the perceived level of environmental legislation in Cabo Verde and whether laws emerge as barriers or incentives to promote environmentally sustainable microfinance projects or activities. When focusing on green microfinance, regulatory pressure can be defined as the perceived pressure governments put on MFIs through regulations and regulatory enforcement to engage them in green microfinance. Objectively, environmental protection has gained increasing attention from the government of Cabo Verde in recent years, and a set of laws and policies have been established. There is Decree-Law No. 27/2020, of March 19, for environmental protection, which covers all sectors. Although the majority of participants are aware of the existence of this law and others also related to environmental protection, they generally consider that this type of legislation does not cover the

microfinance sector. For instance, MFI2 summarizes: «*there is some legislation on this subject [...], but there is no evidence that this Law is being applied in the microfinance sector*».

Law No. 83/VIII/2015, of January 16, amended to Law No. 12/IX/2017, of August 2 (Official bulletin I Series no. 66 of November 16) regulates microfinance activity in Cabo Verde. However, this Law is not clear in terms of environmental protection. In its content, it describes microfinance as being “the activity carried out by authorized entities and which consists of providing adequate and sustainable financial services in favour of the low-income population, normally excluded from the traditional financial system” (Official bulletin I Series no. 45, of December 10, 2007). It seems clear that the Law refers to the term “sustainability” from an economic/financial perspective since nowhere in its text does it refer to environmental issues, which may have possibly influenced the understanding of the participants that Decree-Law No. 27/2020, of March 19, does not cover the microfinance sector. Consequently, the lack of specific laws for the microfinance sector or clarification of the existing law «can give managers more freedom to act on their own beliefs» (MFI2). This supposed vacuum in the Law can represent a barrier to promoting environmentally sustainable projects or activities once the fear of penalties and fines is considered a primary reason that leads organizations to adopt proactive environmental strategies (Darnall, 2006; Davidson & Worrell, 2001; Hoffman, 1999). These results corroborate those of Graafland (2019), who argues that the absence of regulation can negatively impact environmental responsibility. Thus, MFI managers can support green projects or activities if they believe in the legal system.

The second issue highlighted by the participants refers to compliance with current laws. Failure to comply with the Law may impose formal or informal sanctions or punishments on those who transgress it (Nugroho et al., 2017; Scott, 2014). This category assesses the respondents’ perception of compliance (or not) with environmental laws in Cabo Verde. Over the years, several laws have been created and updated. Although participants seem to be aware of environmental laws, in practice, they consider that these laws «*have mainly been applied to large projects, financed by commercial banks and other large financial institutions*» (MFI1). Significant projects are subject to environmental impact assessment following Decree-Law No. 27/2020. It includes a set of rules regarding the categorization of projects that allows the introduction of different assessment types depending on the projects’ environmental risk profile. This Decree-Law and other Decrees-Law show that the preservation of the environment has been a concern of successive Governments. Successive speeches by political leaders also demonstrate this concern. One participant considers that «*The Ministry of Agriculture and its delegations*» (MFI1) are government structures that deal more closely with environmental issues and,

consequently, must ensure, in practice, compliance with environmental laws. However, the biggest problem *«is in the practical application of the laws in force»* (MF15) and their *«inspection»* (MF11).

As most participants understand that there are no environmental protection laws specific to the microfinance sector, *«MFIs are subject to general laws»* (MF10). However, in practice, it appears that MFIs do not identify with general environmental protection laws. Some participants mention that in their *«internal regulations, there is no reference to environmental legislation»* (MF11), and *«they have never been inspected on this issue»* (MF12). Therefore, *«the government should be more involved in the process [...], have eligibility criteria for projects or activities [...]; criteria related to environmental protection»* (MF15), providing greater engagement from managers and other MFI employees. However, there are conflicting opinions about local environmental regulations and their application within MFIs. While some participants assume that *«environmental protection laws are taken into account when evaluating and deciding on approval of projects or activities»* (MF14), others consider that *«MFIs, as they serve small-scale projects or activities, are not covered by this, and other Environmental Protection Decrees»* (MF17).

Regulators typically exert pressures oriented toward environmental improvements (Blackman, 2008; Porter & Van Der Linde, 1995). In Cabo Verde, the Central Bank regulates the microfinance sector but is silent on the environmental regulation of MFIs. The Central Bank, in its 2010 *MFI Monitoring and Supervision Manual* (Central Bank), refers to environmental sustainability. However, in the set of performance indicators (Annex II of the same guide) required from MFIs, there is no environmental performance assessment indicator. Documents collected at the Central Bank of Cabo Verde and on MFI websites do not provide any concrete and objective guidance to pressure MFIs to comply with environmental laws when carrying out their activities.

Some participants stated that, regardless of the absence of formal requirements for applying environmental laws, they seek to be judicious in selecting and approving projects or activities to align with international recommendations. However, participants who admit that MFIs are subject to general environmental protection laws indicated that compliance with these laws is associated with their intentions to increase their credibility with their stakeholders. In sum, the regulatory gap can be mitigated if stakeholders are more demanding, especially donors and investors who finance microfinance activities. In this sense, MFI managers' perceptions of the norms and rules imposed by stakeholders, advocates of the environment, are analysed next.

5.1.2.1.2. Normative pressure

Normative pressures result from collective expectations, within particular organizational contexts, about what is appropriate and, therefore, legitimate behaviour (DiMaggio & Powell, 1983; Heugens & Lander, 2009; Scott, 1995). Therefore, in this study, this category assesses MFI managers' beliefs about the pressure from external actors that can influence their decision to support (or not) green projects or activities. Specifically, identify MFI managers' beliefs about the pressures that may impact their decisions, resulting in drivers or barriers to the development of green microfinance. Results show that two topics gain relevance from the interviewees perspective: community pressure, international recommendations and lack of pressure from Government (Figure 8).

Pressures from community are pressures that stem from informal rules, which are unspoken rules that define acceptable behaviour for different individuals based on a combination of accepted social and cultural norms (Nugroho et al., 2017). In this study, the community includes clients, experts in environmental issues, national pro-environmental organizations, and partners.

Participants who admit that MFIs are subject to general environmental protection laws indicate that compliance with these laws is associated with their intentions to increase their credibility with their stakeholders. They believe that to gain the attention of stakeholders, especially investors and donors, they need to be able to signal their credibility (Lounsbury & Glynn, 2001). This perspective aligns with Scott (2014), who argues that the greater the legitimacy, the greater the reputation and the opportunity to access markets and resources. Legitimacy is compliance with organizational forms, procedures, rules, and practices within widely accepted social norms and legal frameworks (Meyer & Rowan, 1977; Suchman, 1995). In this way, they gain legitimacy, increase access to more financial resources, and avoid *«the loss of support from various international and national organizations, which require compliance with environmental criteria when making credit allocation decisions for microfinance projects, or activities»* (MFI10). Participants state that concerning the eligibility criteria of projects or activities, most international donors and investors *«do not impose any environmental criteria»* (MFI9) to make financial resources available to MFIs. They revealed that the most significant concern of investors is economic viability and gender equity, as mentioned by one participant: *«The largest projects are funded by international partners who have their requirements, and often the requirements are not environmental; there are other requirements»* (MFI5). Another participant also underlines this aspect when stating that *«Most of the funders we work with set these criteria for the lines of credit they finance [...]: interest rate, commissions to be paid, repayment period, the maximum amount of credit [...]]»*

(MF14). They ask that the *«gender issue be accounted for by defining in advance the percentage of funding to be directed to women»* (MF17). However, some claim that punitive actions are applied to MFIs that do not meet environmental criteria in evaluating microfinance projects or activities. For instance, one participant argues that *«For all projects linked to agriculture, donors demand environmental protection requirements to comply, and these requirements are in the contract we signed»* (MF17).

In the case of Cabo Verde, all participants mentioned that, for instance, they do not receive any pressure from their clients. One participant stressed: *«we do not receive any pressure from our clients to promote credit services for environmentally sustainable projects or activities»* (MF18). However, most participants demonstrated that they are aware of pro-environmental organizations that promote good environmental practices and the work that they carry out, for instance, *«ADAD [Associação para a Defesa do Ambiente e Desenvolvimento/Association for the Defence of the Environment and Development] and ADECO [Associação para a Defesa do Consumidor/Association for the Defence of the Consumer]»* (MF16). ADAD is a non-profit association created in 1991 with the aim of promoting awareness-raising actions for the preservation of the environment. ADECO is a non-profit association of civic intervention and social solidarity in defence of consumers created in 1998, which promotes citizenship, sustainable development, and protection of the environment. The fact that all participants have assumed that they know these two associations suggests that these two entities have notoriety for their actions. NGOs play a crucial role regarding environmental norms and standards. Some studies have shown that, although NGOs are not direct stakeholders, they can influence organizational processes through social movements, group coordination, and resource mobilization (King, 2008; Lounsbury et al., 2003; Reid & Toffel, 2009; Weber et al., 2009). Thus, environmental NGO activities in the MFI environment likely increase pressures to comply with environmental standards. Despite the low pressure from the community to adopt pro-environmental practices in the decision-making process for approving green projects or activities, other organizations can influence managers' decisions to align with good practices.

Results point toward some divergence of opinions among the interviewees regarding the existence of a pro-environmental culture in Cabo Verde. Some participants believe that the people in Cabo Verde is still undemanding in terms of environmental protection. While one of the managers believes that *«there is a general concern for the environment, at a global, [...] national and [...] even local level»* (MF15), others argue that *«Cabo Verdeans, in general, still behave less environmentally, despite the efforts made by some national pro-environmental organizations»* (MF11), and that *«People in Cabo Verde seem distant from environmental issues, especially low-income people»* (MF10). Most

respondents believe Cabo Verdeans are still not very attentive to environmental issues. This low requirement can negatively affect the practice of green microfinance, as several studies have indicated that company decisions to adopt environmental management practices are influenced by the desire to improve or maintain a good relationship with their communities (Delmas & Toffel, 2004). If the community is undemanding, this can make companies less attentive to these issues. Previous research evidences that some communities may be more prepared and willing to encourage adopting environmental practices than others (e.g., Delmas & Toffel, 2004).

The second topic addressed under normative forces relates to MFI managers' perceptions of the pressure stemming from international recommendations. Thus, this category evaluated MFI managers' perceptions of external informal norms and their influence on decision-making toward green microfinance. Hence, pressure can stem from international recommendations, as pointed by the POSER-C Coordinator, who stated that *«this is the case of the United Nations»*, which has been exerting pressure to achieve the SDGs: *«Here in Cabo Verde, I see the United Nations working on several relevant projects in this direction, at least until 2030»* (MF16). For instance, *«projects that are harmful to the environment, [...] that use chemicals or something that does not comply with international environmental conventions are automatically excluded»* (MF17).

The pressure to achieve SDGs has led several countries to adopt more robust measures to avoid projects or activities that harm the environment. Uddin et al. (2021) suggest that significant aspects of green microfinance are very consistent with SDGs. The Government of Cabo Verde is engaged in SDGs, and some interviewees feel engaged. One participant claims that they are contributing *«to some extent in achieving SDGs as [they are working] with low-income people; [helping] with financial education and family support; [and] orienting credit towards [...] sustainable activities [...] to improve water, [...] food production, [...] production quality»* (MF10). Others comment that *«the Government and institutions are working, considering SDGs. [...] today we talk about inclusion, financial citizenship, and precisely because it is within the United Nations recommendations»* (MF11); *«We embrace SDGs. [...] We were highly active in preparing the sustainable development plans for the Municipality»* (MF13); *«the Government and institutions are working, considering SDGs [...]. Therefore, today we talk about inclusion, financial citizenship, and precisely because it is within the United Nations recommendations»* (MF11).

According to the United Nations Group, the emphasis of SDGs is on both green growth and inclusive growth (Warnecke, 2015). *«Climate change has adverse effects on poverty (Goal 1), food*

security (Goal 2), health (Goal 3), sanitation and access to clean water (Goal 6), economic growth (Goal 8), but also on equality (Goal 10) and on peace and justice (Goal 16)» (Lanzavecchia et al., 2021 p. 6). Uddin et al. (2021) examined the contribution of MFIs to SDGs, and he found that MFIs can play a more significant role in SDGs through the effective implementation of green microfinance.

While some participants are optimistic, believing that it is possible to achieve SDGs, others are less optimistic. They believe that SDGs are challenging. Different countries lead to different levels of contribution to SDGs, as well as geographical limitations and unbalances (Leal Filho et al., 2022). It is noted that it is necessary to change the rules to influence individuals' attitudes and behaviour eventually. They argue that there is much talk, much speech but little action. They believe that to achieve SDGs, it *«would have to undergo a profound change in the attitudes and behaviour of the Government and especially of municipal governments to think more about the place, more about people and less about politics [...] act more and talk less»* (MF15). This perspective is in line with some concerns that Gupta and Vegelin (2016) addressed in their analysis of the 17 SDGs. In general, participants stated that they were aware of international recommendations for the adoption of environmental standards in the financial sector, as is the case of one participant, who comments that *«there is an international standard that recommends banks and microfinance institutions to act in an environmentally sustainable way»* (MF110).

Most participants point out that Government's pressure for the development of green microfinance is almost nil, although there is a record of speeches about its commitment to environmental issues. Some participants underline *«the commitment and concern of successive Governments with environmental protection»* (MF17). For example, *«the Government's program includes actions to rationalize water and supervise the use of certain fertilizers»* (MF17). Nevertheless, these interviewees understand that there is no good articulation between the country leaders. They mention that *«this understanding is lacking, as well as the development of a more permanent dialogue [...], so that everyone can become aware of the path to be followed or even clues to follow, for [...] the protection of the environment»* (MF12). One participant points out that *«governments must define clear environmental criteria that all MFIs must follow»* (MF17), because *«environmental criteria are only fully followed when the financing lines require the application of environmental standards for approval of projects or activities»* (MF19). Another participant points to the following example: *«we recently worked with the Government's emergency program, where one of the financing conditions for agriculture was to use the modern irrigation system instead of the traditional one»* (MF17). Government's pressure is seen as fundamental in promoting environmentally sustainable activities and projects. This perspective

corroborates the findings of Delmas (2002), who found that governments play an essential role in the decision of companies to adopt ISO 14001, an Environmental Management System Standard established by ISO (Yin & Schmeidler, 2009).

5.1.2.1.3. Mimetic pressures

Mimetic influences relate to the pressure to mimic successful players in the industry (Hillebrand et al., 2011; Mizuchi et al., 1999; Yang & Kang, 2019; Zhu & Sarkis, 2007). Organizations try to imitate their competitors' behaviours to gain legitimacy and the reduction of perceived risks (Kang et al., 2019; Li & Ding, 2017; Liu et al., 2010). Mimetic isomorphism is observed when an organization mimics actions from the industry's most successful, legitimate, reputable status organizations to hedge uncertainty (DiMaggio & Powell, 1983; Zhu & Sarkis, 2007). The good performance of environmentally leading organizations can exert pressure on other organizations seeking environmental legitimacy by imitating the environmental management practices that successful organizations have implemented (Delmas & Toffel, 2004). Articles on social influence highlight the role of peer persuasion (e.g., Babutsidze & Cowan, 2014; Biswas & Roy, 2015; Mansori et al., 2020). Moreover, positive peer pressure can be a way of influencing pro-environmental behaviour (Culiberg & Elgaaied-Gambier, 2016).

In this investigation, this category assesses managers' perceptions of the environmental behaviour of peer MFIs and other organizations and the influence of this behaviour on their decision-making towards their institution's engagement in green microfinance activities. Some participants mention that they are aware of the role of MFIs in other countries (e.g., «*in Brazil, in Bolivia [...], where microfinance institutions are very concerned about the environment*» (MFI1)). One participant states that he has visited «*northeastern Brazil where they shared their concerns about environmental issues [...] and Burkina Faso, at the African Microfinance Week [...]*» (MFI10), where he also realized that there is an environmental concern. Although the interviewees did not directly express the impact of these findings on the MFIs they manage, they showed their admiration and respect for the attitude and behaviour of their peers. These participants believe that positioning an MFI as an institution concerned with protecting the environment can contribute to a good institutional image and generate more resources.

Results revealed that the image and reputation of environmentally sustainable MFIs can positively impact MFIs and lead them to act similarly. Bergh (2002) found that companies were most strongly influenced to learn and respond to issues of the natural environment, paying close attention to

other companies, such as their competitors, rather than from their own experiences and coercive legal or regulatory pressures. However, the assumption that MFI managers support green projects or activities because they believe in the success of other organizations that care about protecting the environment was tenuously confirmed in the results of this investigation. In other words, there is still no significant influence of peer environmental performance on the MFIs object of this investigation. To some extent, this finding corroborates the results of Manrique and Marti-Ballester (2017), which indicate that the pressures towards mimetic isomorphism are less intense for companies in developing countries, which means that fewer companies in these countries are able to achieve environmental legitimacy, imitating environmental practices of environmental leaders.

The analysis of perceptions about external factors that can interfere with the MFI managers' decision-making of supporting (or not) the development of green microfinance was complemented by the analysis of the MFIs' internal level. At an internal level, we analyse the policies, capabilities and procedures that may be drivers or barriers to the development of green microfinance. That is, governance to green approach.

5.1.2.2. Internal level: Governance to green practices

Beliefs on the internal level were analysed about MFI Governance to green microfinance, that is, respondents answered questions related to their perceptions about the existence of internal conditions in MFIs that may favour or hinder the development and provision of environmentally sustainable financial and non-financial services.

This category includes green the governance approach, green budget, and internal policies and procedures, as depicted in Figure 9.

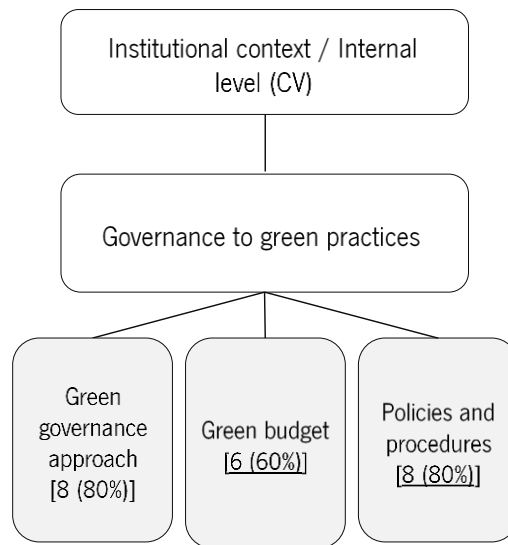


Figure 9. Perceptions about the internal influences on MFI managers' decisions to engage their institutions in green microfinance

The green governance approach is essential for an organization to achieve its goals without harming the environment (Nugroho et al., 2017). MFIs, mainly the small ones, need strong governance to oversee the transformation process towards green microfinance (Atahau et al., 2020; García-Pérez et al., 2017, 2018; Lozano & Huisingh, 2011). In this study, the green governance approach suggests a structure and board composition that includes members with experience in social and environmental management (García-Pérez et al., 2018), the formalization of environmental responsibility policies and a reporting system that allows the assessment of the MFI's environmental strategy (Forcella et al., 2017). In the case of Cape Verdean MFIs, there is no Board of Directors. MFIs have a President who is also the CEO; as one participant points out, «*the President is the one who coordinates and makes decisions*» (MF19). «*The President is responsible for the strategies adopted by MFIs*» (MF13), explains another respondent. However, MFIs did not have a strategic plan when the research was carried out. Despite the majority of participants having a pro-environmental discourse, we were unable to identify the practice.

Green budget refers to budget destined to green finance or activities. Environmentally sustainable investments often do not pay off, in financial terms, at least in the short term (Bansal, 2005; Bansal & Clelland, 2004; Hoffman, 1999); thus, the financial budget is pertinent. For instance, in European microfinance, the lack of funds is one of the factors that seem to be among the significant

constraints preventing the development of green MF initiatives. In this matter, donors or investors appear to have an essential role, inasmuch that they positively influence the institution's environmental performance (Forcella, 2013). Therefore, preparing a green budget can be an opportunity to encourage proactive mindsets (Choi, 2009) among investors, donors, and MFI employees regarding environmental sustainability. Investors, for example, can support young MFIs financially to help them engage in green microfinance (Allet & Hudon, 2015). In this context, this sub-category assesses the Cape Verdean managers' belief in financial budget as a motivating or inhibiting factor in approving green projects or activities. To this end, we evaluate the extent to which the Cape Verdean MFIs quote a specific amount in their budget for pro-environmental projects or actions, namely for the training of their agents, communication with their clients, etc. and whether this budget originates from its funds or third-party funds.

All participants underlined that the MFIs' annual plan and budget does not highlight actions with respective budgets for environmental protection. «*No fraction of the budget is earmarked for promoting green microfinance*» (MFI5). Environmental requirements are not necessarily considered in projects financed with their own funds, but compliance with environmental standards is required in some projects financed with third-party resources. Consequently, in the first situation, environmental issues are left to the discretion of those who evaluate and decide which projects or activities should be funded. They all underlined that there is no relevant internal pressure to consider criteria that prevent the approval of projects harmful to the environment. Participants emphasized the need to «*invest more in information and environmental education*» (MFI7) but, at the same time, presented financial limitations as an obstacle to this type of investment. Some participants share this argument: «*We work to make the client aware, but we need financial resources to reinforce this communication*» (MFI10); «*Communication helps to change attitudes and behaviours. For that, we need financial resources*» (MFI9). Hence, results point to the lack of funds, either own or from third parties, devoted to green projects or activities in Cape Verdean MFIs.

Policies and procedures are another sub-category that emerged from the data. It assesses whether there is internal policy, normative, and procedure conditions in MFIs that support decision-making to approve green projects or activities. All participants ensure that «*there is no mention in the internal regulations [...] or codes of conduct [...] about environmental requirements to be taken into account when evaluating projects or activities*» (MFI9) within MFIs. One of the participants was more assertive when commenting that «*MFIs' internal regulations do not contain any mention to environmental issues*» (MFI7). Other participants argue that «*often those who are analysing the projects*

do not look at these aspects [...], what kind of products are farmers using to fertilize the soil or kill pests; if they are toxic products [...] that we are going to eat» (MFI8), as there is no previously established environmental policy. Therefore, the internal procedures do not reflect *«any obligation to comply with environmental standards»* (MFI1).

5.1.3. Cape Verdean managers' current practices and future intentions towards MFIs engagement in green microfinance

Based on PMT and IT approaches, analyses were carried out to understand how the beliefs of managers of Cape Verdean MFIs about environmental sustainability and the role of microfinance in its promotion, as well as their perceptions about the institutional context, affect the involvement of their institutions in green microfinance. Managers of Cape Verdean MFIs point out numerous barriers to adopting green microfinance. However, MFI managers' beliefs about the environmental threat, their abilities to cope with it, and MFI managers' beliefs in institutional changes can result in the intention to engage in green microfinance. One participant argues that *«The challenges are great, but we intend to contribute to a healthy environment»* (MFI4).

Despite various barriers to adhering to green microfinance, most respondents are generally optimistic and motivated to *«start supporting this green project»* (MFI1). When previous experiences exist, they want to *«start working again with microcredit and activities that do not harm the environment»* (MFI2). Some participants stated that they will be *«more attentive to the criteria for evaluating projects in the future»* (MFI8) and will *«be careful in approving projects and granting credit to projects that are not harmful to the environment»* (MFI3). Sometimes, this concern already exists, and there is an intention to strengthen this approach in the future, as one participant shares: *«In all projects' documents, there is mention to environmental, social and economic sustainability, and we intend to reinforce this»* (MFI9).

Most participants are willing to face barriers, both personal and institutional, to promote the development of green microfinance in their institutions. Personal barriers can be overcome by investing in training and benchmarking with organizations that already develop green microfinance, as indicated by one participant: *«We will plan training abroad, and we will take advantage of the trip to establish contacts and benchmark with MFIs experienced in green microfinance»* (MFI3), while another states that *«in this way we create conditions to develop policies aimed at protecting the environment»* (MFI10). Other managers seem to intend to start implementing real green microfinance actions motivated by

their preliminary knowledge about the subject, as the following quote suggests: *«I have some idea that I will try to perform [...] I have heard of green microfinance [...] I have learned from internet readings»* (MF14).

Institutional barriers are internal and external to MFIs. At the MFIs' internal level, managers pointed out that they have to trigger actions that will allow the development of green microfinance. For example, some indicate that they intend to take the first step, promoting training programs for their employees; two of them state: *«We can provide continuous and systematic training so that we can achieve the SDGs»* (MF11); *«We are preparing to support projects in solar panels»* (MF14), and another points out: *«Our credit agents will be prepared for these new habits»* (MF11). They also highlight information as one of the necessary conditions to boost green microfinance. Some managers intend to strengthen their clients' and the community's education and information. To this end, they intend to *«carry out awareness-raising activities in communities and customers»* (MF18) because *«raising people's awareness that, individually, must take care of environmental protection is fundamental»* (MF19). Some of them highlighted: *«In the management information system we are working on, it may be essential to add information about caring for the environment»* (MF14), as *«changing the way of thinking requires education»* (MF15). To go in that direction, some may need to define clear guidelines to support the decision-making, as *«there are no indicators on environmental performance, but we intend to work on it»* (MF110).

At the external level, managers argue that *«Cabo Verde faces many barriers»* (MF13) that may prevent them from advancing in developing other environmentally sustainable products and services. However, they indicate the ways to overcome them. For example, they point out the *«difficulty in dialoguing with other institutions»* (MF17) but intend to *«develop a more permanent dialogue [...] so that everyone is aware [...] of the path [...] or even clues to follow to protect the environment»* (MF12). Another manager indicates: *«In Cabo Verde, there is little information about green microfinance, so we intend to intensify the search for more information on how to deal with environmental issues within microfinance»* (MF16). Others call for a more significant commitment to raising awareness among communities, including children. Children are considered fundamental for the promotion of green initiatives, as one participant shared: *«let us work to preserve the environment, especially with children [who] are the biggest information transmitters [...] know how to share information when they learn»* (MF12). However, these efforts must be comprehensive and harmonious. To this end, *«there must be specific environmental laws to standardize MFIs' actions»* (MF16).

Political leaders support the intention expressed by most managers to adopt green microfinance. Cape Verdean policymakers interviewed reported their intention to embrace more effective measures and incentives to protect the environment. For instance, some participants point out that to face financial challenges, they will *«put pressure on the Government to guarantee financial support with subsidized interest rates»* (MF11), but regarding this issue, the Minister of Agriculture and Environment states: *«The Government, through this ministry, has ensured subsidized bonuses for projects linked to agriculture; some MFIs have led these processes, and we will continue in this vein»*. He also recognises that *«water is a precious asset and is increasingly scarce»*. Therefore, *«urgent measures have to be taken to better manage the little that exists and that it is possible to have through the technique of desalination that we use here in Cabo Verde»*. This participant also indicates that *«Cabo Verde has already started to take its first steps and points out examples of the various projects linked to protecting seabirds and flora in the country»*. The APIMF-CV Executive Secretary argues that *«the World Bank is increasingly demanding, imposing environmental criteria for financing approval»*. The POSER-C Coordinator says: *«We have no other option than to support environmentally sustainable projects because some financiers have already signalled that they will be more demanding and stringent in terms of environmental requirements; this is the case of the World Bank»*. In short, the managers' intention to move forward with a green microfinance-oriented strategy seems supported by their own beliefs and perceptions, as well as their institutional beliefs.

5.2. Case 2 – Brazil

In the case of Brazil, the various initiatives to promote green microcredit need to be framed within a global strategy that includes specific environmental standards for MFIs (Moser & Gonzalez, 2016). In this context, the results of the Brazilian case study can contribute to developing a more appropriate strategy for promoting green microcredit. The data was coded with reference to the codebook developed *a priori* based on the conceptual frameworks and supplemented by data-driven codes from the previously analysed case of Cabo Verde. The analysis of the data from the case of Brazil showed a general consistency with the codes previously developed and refined after the analysis of both cases. Nevertheless, some variations were identified between the two cases that will be explored later, during the discussion of the results.

5.2.1. Individual context

As in the case of Cabo Verde, we started by exploring Brazilian MFI managers' beliefs about environmental threats and their consequences, and about the efficacy of green microfinance to mitigate them, which were explored based on the PMT components to reveal how they influence their decision-making.

5.2.1.1. Environmental threat appraisal

The environmental threat appraisal is based upon considering Brazilian MFI managers' beliefs about the severity of and susceptibility to the environmental threat in general and particularly related to funding some entrepreneurial projects that use unsustainable practices. Such an appraisal considers both the type of perceived consequences and the severity of the threats, and the identification of the most vulnerable to them. Figure 10 shows the frequency of the sub-categories in the Brazilian sample.

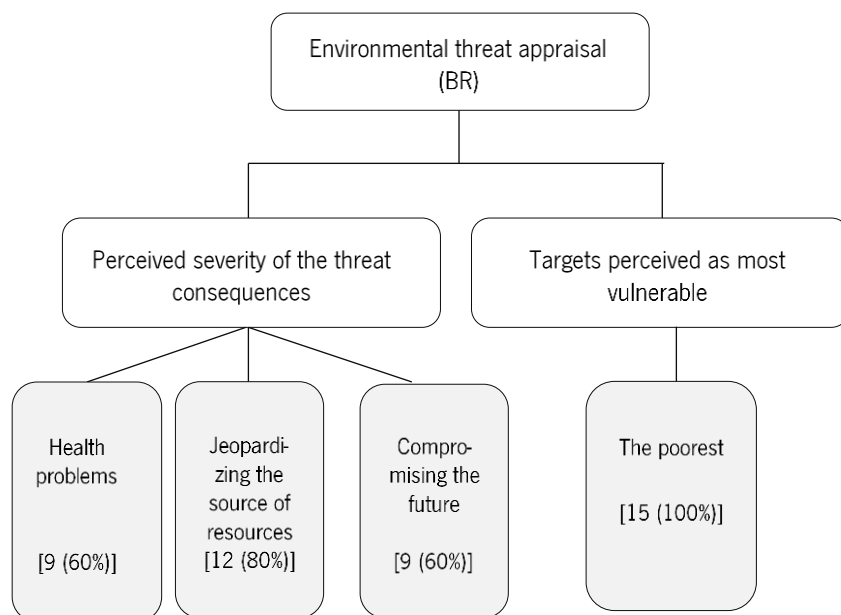


Figure 10. Perceptions about the environmental threat

5.2.1.1.1. *Perceived severity of the threat consequences*

The perceived environmental threats expressed by Brazilian MFI managers could be classified into the same three categories identified in the Cabo Verde's sample: health problems, jeopardizing the source of resources, and compromising the future of human sustainability.

Some participants state that «*the effects of climate change have an impact on people's health*» (MF114), also pointing out that «*the poor face serious health problems due to the storms*» (MF18), which is why they do not feel comfortable approving projects that may «*have an attractive financial return*» (MF113), but «*the damage they can cause to health or the environment can be incalculable*» (MF112). Interviewed MFI managers indicate that, due to the lack of environment protection, «*many diseases are emerging [...] and the poor have problems accessing medications and good hospitals*» (MF14). Therefore, MFI managers understand that people's future should not be compromised, and everyone must contribute with concrete actions towards a healthy environment, as one participant stated: «*I think we have to do our part [because] a healthy nature is essential, especially for the new generations*» (MF19).

Managers are also aware that protecting the environment is critical to sustain the source of resources. They emphasize that they «*deal with people who depend on agriculture for their subsistence*» (MF14) and «*heavy rains often wipe out plantations*» (MF11). For example, participants mention that «*during the harvest [farmers] burn the straw from the field because it is easier to introduce a new crop*» (MF111), but «*this action destroys the soil's productive capacity*» (MF110). So, participants generally believe that «*it is humans who are destroying nature's resources*» (MF12). MFI managers seem to understand that using sources of resources in a balanced way contributes to the preservation of the environment. Taking care of the environment is not only a benefit to nature, but it is necessary for human preservation; as one participant highlights, «*The biggest concern is the future of our children and those to come*» (MF12), because «*climate change compromises the future of human beings*» (MF14).

In general, MFI managers understand that people's health, and especially that of the most disadvantaged, is largely affected by environmental threats, and that «*these environmental changes are caused by human decisions*» (MF12). They believe that «*resources are increasingly scarce*» (MF16) and that this is a result of the «*consequences of our decisions*» (MF11). Therefore, «*the big risk would be to finance activities that could bring environmental problems*» (MF13). In this context, being aware of the seriousness of the consequences of environmental problems is thus seen as a fundamental step to

ensure that the future of the next generations is not compromised, as one participant states: «*Approving projects and activities that do not harm the environment is a commitment to future generations*» (MFI15).

5.2.1.1.2. *Targets perceived as most vulnerable*

The analysis of the MFI managers' beliefs reveals that they understand that environmental threats are a transversal and global problem and that all of us have to «*deal with the problems of climate change in our daily lives*» (MFI14). However, they pinpoint «*especially the poorest*» (MFI14), as «*these threats make the poorest more vulnerable*» (MFI1). In this case, the interviewees recognize that the poorest are disproportionally affected by environmental risks because they live in areas that do not have the conditions to withstand environmental turbulence, such as floods and landslides, as a consequence of «*storms that destroy the soil and homes of the most vulnerable*» (MFI3). That is, their «*clients are victims of climate change*» (MFI4) because «*they live in areas that collapse under heavy rain*» (MFI3), leaving them «*without shelter*» (MFI14). One participant points out that «*there are years when storms are so intense that they drag everything away, including the homes of people with low incomes*» (MFI4). Therefore, the poorest «*are the ones who suffer most*» (MFI2), although being «*often unaware that they are the most affected*» (MFI15) by these threats. The fact that «*the challenges are tremendous, mainly for the poorest segment of the population*» (MFI15) and because MFIs «*deal with underprivileged people*» (MFI14) lead MFI managers to believe that it is necessary to «*contribute to preserving the environment*» (MFI15). According to one of the interviewees, «*one of the best ways to solve the problems of my country and the planet is through income distribution; that is, teaching and guiding the population so that it can generate its income*» (MFI12).

Managers generally understand that they are dealing with low-income people and that this segment of the population is the one that most «*suffers the consequences of these environmental disasters*» (MFI5). One of the participants even mentions: «*I follow the news about the impact of climate change on poor communities around the world [...] landslides, health problems, deaths... many consequences*» (MFI6). Hence, the harmful effects of the projects they support can affect the poorest, i.e., their clients, leaving them more vulnerable to environmental consequences.

5.2.1.2. Appraisal of green microfinance as coping mechanism

The perceptions of Brazilian MFI managers' ability to cope with environmental threats through green microfinance and the extent to which such response is considered effective were analysed (Figure 11).

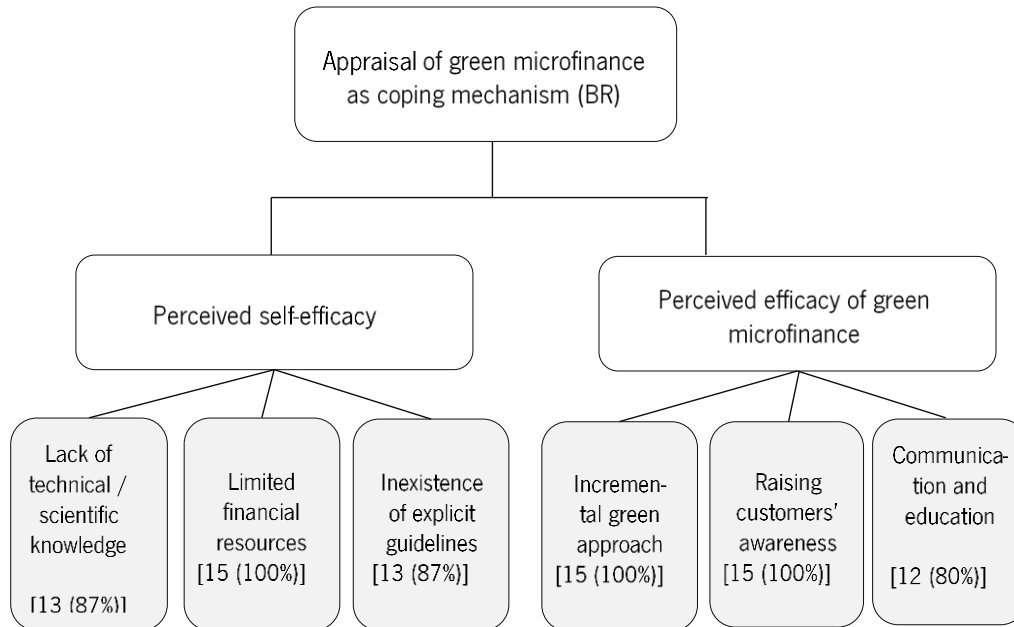


Figure 11. Codes from coping appraisal

5.2.1.2.1. Perceived self-efficacy to implement green microfinance

Similar to the case of Cabo Verde, Brazilian MFI managers generally feel that they are able to meet environmental requirements when selecting projects or activities to support. They may, however, face some barriers in the process, namely the lack of technical and scientific knowledge in green microfinance, the limited financial resources to be greener and the lack of explicit guidelines from the country's Government. Unlike the Cabo Verde's case, Brazilian MFI managers did not identify the limited pressure from partners as a barrier.

Most managers recognize that «*the absence of a technical opinion on a project's technical viability can be a barrier in decision-making to support environmentally sustainable projects or activities*» (MF18). Some assume that they have already thought about developing environmentally sustainable projects «*but still have not reached a standard [...]. We lack more knowledge in this matter*» (MF15). Thus, acquiring new skills can be crucial to make more informed decisions, as one participant argues:

«We need more training in the environmental area so that we can act more appropriately» (MFI14). However, self-efficacy, namely of cooperative managers who provide credit for projects related to agribusiness, does not seem to be very conditioned by lack of technical knowledge, as one manager expresses: *«We have a project in the area of training for our agents, and with that, we will also focus on preserving the environment and public safety» (MFI2),* but they understand that they are not experts on green microfinance, as indicated by one manager: *«We are not experts» (MFI3).*

The self-efficacy of some MFI managers is also hampered by the absence of financial resources that could be provided to them to support the investment in technical training necessary to effectively evaluate projects or activities, as indicated by some participants: *«We have financial and technical knowledge limitations [...] if I had to change the regulations, I would change them to have more resources for technical assistance» (MFI7).* Moreover, participants indicate that they *«do not receive any financial support from the government» (MFI3)* or any *«public subsidies» (MFI6, MFI7).* They believe that *«there should be more incentive for that [...] for example, lower interests and long-term loans» (MFI4)* and *«different incentives in terms of fees» (MFI8)* aimed at environmentally sustainable projects or activities. Some participants point out that they have been waiting for financial support from the Government for a long time, as highlighted by one of them: *«We have been waiting for three or four years for the Federal Government [...] to make lines of credit available exclusively for environmentally sustainable activities. Unfortunately [...] there are many promises and few actions» (MFI12).*

Some managers point out that explicit guidelines supporting them in the decision-making process would facilitate their ability to support more sustainable projects. Cooperatives mainly receive guidelines from the central bank, as underlined by one participant: *«the most significant pressure comes from the Central Bank» (MFI7),* but also from investors. One participant explains that *«our contracts with Agência de Fomento de Santa Catarina/ Santa Catarina State Development Agency (BADESC, acronym in Portuguese) and Banco Nacional de Desenvolvimento Econômico e Social/ National Development Bank (BNDES, acronym in Portuguese) have clauses that state that our credits cannot benefit activities that could harm the environment and admit slavery or child labour. We have to take care of these things when we assign credit» (MFI5).* Other managers state, however, that they do not feel *«any pressure from the government to promote environmentally sustainable microfinance» (MFI9).* Nevertheless, some institutions develop their own guidelines to support their agents regarding the care they should take when assessing the profile of projects, and for clients regarding the quality of the projects they must present. They share that *«We advise our agents to verify the impact of projects on the environment» (MFI15).* For example, *«there is a technical recommendation when a project foresees*

the use of a chemical product» (MF17). In the relationship with their customers, depending on the type of project presented, they may raise questions, for example, regarding the treatment of waste, as indicated by one participant: *«If we finance equipment for a mass factory, they have to explain what they would do with the waste»* (MF11).

5.2.1.2.2. *Perceived efficacy of green microfinance*

The results of the Brazilian case suggest that having an incremental green approach, a willingness to raise customers' awareness among their customers about environmental preservation, and investing in communication and education can facilitate a more effective response to environmental problems through green microfinance.

In Brazil, the incremental green approach within MFIs seems more deeply rooted than in the case of Cabo Verde. The majority of the interviewed Brazilian MFI managers seem to be convinced that preserving the environment is a necessity. Consequently, the role of MFIs *«is to serve society in a self-sustainable way»* (MF12). Some participants point some successful experiences and note the need to invest more in raising awareness among people, both at the level of MFIs and clients and the society in which they operate. They believe that *«poverty is a great enemy of the environment»* (MF10) since the priority of poor people is survival. In this sense, MFIs must address poverty in conjunction with environmental preservation; that is, *«must play a significant role in reducing poverty and promoting a more sustainable environment among low-income populations»* (MF14). Some participants even state that *«money is just a means; it is not the end»* (MF14) and that *«the evaluation of projects is not just based on numbers»* (MF11). They believe *«they cannot harm nature for the sake of financial income»* (MF14). For example, one participant argues that *«in a project that involves liquid waste, the way in which that waste is treated should be regulated before being returned to nature»* (MF17); in other words, *«an environmentally sustainable project would be prioritized over another with a greater financial return»* (MF18). Most managers share that there is environmental awareness and knowledge in their organizations. They argue that *«the socio-environmental problem is one of [MFI name] concerns [...], this is already in our DNA... it is a systemic concern»* (MF13), which reinforces the future development of this awareness.

Interviewees point out their MFI's successful past experiences in supporting environmental activities or projects as a proof that green microfinance is indeed effective in mitigating environmental problems. Some participants state that they have already taken the first steps towards considering

environmental issues in their activities. They argue that in addition to «*not approving environmentally harmful projects*» (MFI15), their MFIs have supported many pro-environmental projects. For instance, one participant points out: «*We work in five communities and with socio-environmental projects [linked] with horticulture, productive backyards, and so on*» (MFI4). Others argue: «*We support businesses in purchasing recyclable materials*» (MFI5), «*We support projects related to basic sanitation: for example, drinking water collection; plumbing; sewage treatment; rainwater drainage; sewage; construction and renovation of bathrooms, etc., credit for solar energy*» (MFI14). Some share that, internally, at the MFI, they develop actions with employees, to «*not pollute the environment, that is, avoid printing documents*» (MFI3), and «*replace disposable cups with mugs*» (MFI14). Others mentioned that there are «*several social and environmental programs developed in some regions, and they include the planting of trees to combat deforestation*» (MFI8), «*[...] actions in schools; exchange programs and organic production initiatives*» (MFI7), as well as «*distribution [...] of fruit seedlings, fruit trees and native plants in communities*» (MFI5), «*basic sanitation programs to teach clients how to save water and reusing wastewater for specific purposes*» (MFI14).

These successful past experiences are a source of motivation to invest gradually more in green microfinance activities. Also, the «*dissemination of [these] good practices*» (MFI3), both internally and among customers, contribute to raising environmental awareness. Hence, raising customers and the surrounding society's environmental awareness about environmental issues is a concern for Brazilian MFI managers, as it contributes to making green microfinance implementation more effective. Therefore, managers emphasize that they develop activities with this purpose in the form of «*meetings, community debates and discussions with groups of rural producers, traders and people who produce and organize themselves to sell*» (MFI7). Participants point out that they develop a diverse set of actions that also include working with children, as some of them share: «*We raise awareness among children so that they grow up concerned about the preservation of the environment*» (MFI14) and to «*help customers understand the importance of preserving the environment and how they can earn money by protecting the environment*» (MFI11).

Communication and education are carried out with the support of universities, as mentioned by a manager: «*We are doing work with the university in which students work with our clients to improve the dissemination of our services*» (MFI11). Others mention that they receive support from some national institutions, namely ABCRED and Associação das Instituições de Microcrédito e Microfinanças da Região Sul do Brasil/Association of Microcredit and Microfinance Institutions of the Southern Region of Brazil (AMCRED-Sul, acronym in Portuguese), to «*train agents*» (MFI4) and that they have even

received a certificate of recognition, as indicated by a participant: «*We receive the socio-environmental service certification for seven consecutive years*» (MFI12). They believe that, despite being a difficult task, it is necessary to educate their clients and children to preserve the environment, as one participant shared: «*Educating poor clients to preserve the environment is necessary, but it is not easy because they are more concerned in solving their day-to-day problems*» (MFI15). Therefore, «*It is essential to start working with children so that we can change the culture*» (MFI16). The perspective is that «*the more we develop human beings, the more prepared they will be to contribute to improving the environment*» (MFI10). In short, the experience and integrated actions seem to reflect some environmental awareness of Brazilian MFIs.

While some participants indicate that their organizations are working to raise awareness among their customers and the society in which they operate, others reveal that their contributions to environmental protection «*are still far from effective*» (MFI5). Some managers indicate that they do not have advertising material and do not use their websites to raise their customers' awareness about environmental issues. As some participants share: «*In general, we do not carry out any environmental awareness actions*» (MFI5), and «*we do not work on environmental issues with customers [...]. We still do not have a project to bring information about the environment to the customer*» (MFI4). At the same time, they claim that they «*deal directly with the poor population; hence, [they] are in better conditions to sensitize them*» (MFI6). They believe that «*MFIs can contribute to environmental protection by carrying out training and campaigns to educate people*» (MFI5). Thus, «*it is also necessary for this environmental concern to appear on [their] websites and all the other means we use to communicate with our customers*» (MFI12).

Participants understand that «*the complexity of the environmental issues is still enormous*» (MFI8). Thus, one must always be prepared «*to keep up with society's demands and perhaps have to review concepts*» (MFI12). In this perspective, some argue that they have «*an excellent team, which shares [their] vision, mission and values*» (MFI3) and that there is «*the habit of debating the environmental impact of the projects [they] approve*» (MFI7).

5.2.1.3. Perceived benefits and costs of engaging in green microfinance

In the case of Brazil, besides the financial advantages and reputational gains for MFIs pointed out by Cabo Verdean MFI managers, better quality of life was also identified as a benefit deriving from the implementation of green microfinance (Figure 12).

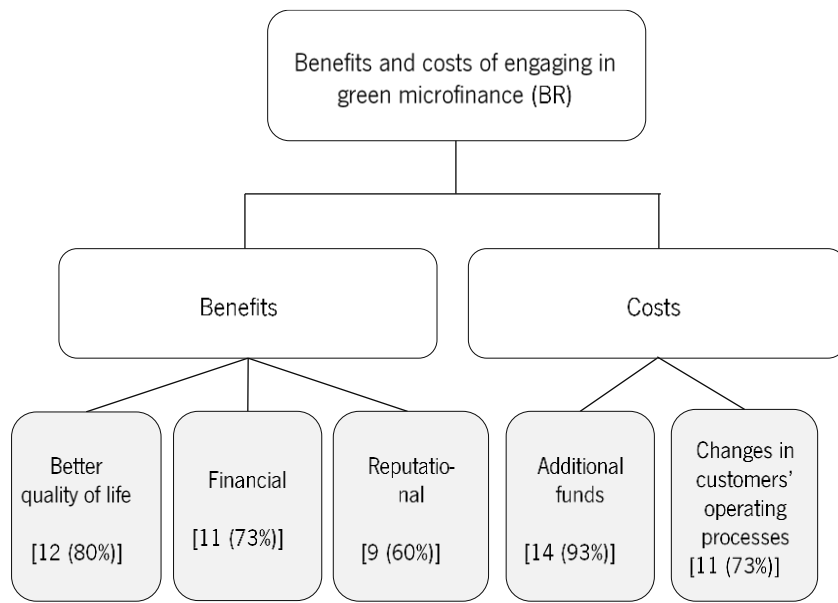


Figure 12. Costs and benefits of pro-environmental choices

Most participants seem to associate preserving the environment with improving quality of life. They believe that «*green microfinance benefits the environment*» (MFI10) and it is «*the most appropriate way to achieve a better quality of life for the most disadvantaged*» (MFI1, MFI2), that is, «*green microcredit contributes to a more promising environment*» (MFI13). One participant states that «*the positive effects when choosing a project that is environmentally sustainable would be the appreciation of the family, providing a better quality of life*» (MFI9). In this perspective, some managers ensure that their MFIs' work plans are, in essence, aligned with the SDGs, as one interviewee indicates: «*MFIs contribute to the SDGs because microcredit contributes to quality of life; it strengthens the resistance of people, especially concerning droughts and floods*» (MFI4). In fact, «*If we do not protect the environment, in 20 or 30 years, we will not have a society with quality of life or adequate conditions for human survival*» (MFI8). Hence, «*the advantage of approving an economically viable and ecologically sustainable project is that we are preserving nature and future generations in addition to their quality of life*» (MFI7).

Regarding financial benefits, some participants state that such advantages arising from the adoption of green microfinance can be achieved in several ways. They believe that green microfinance reduces costs of production factors, such as water and electricity, necessary for the production of essential goods, as exemplified by one of the participants: «*I believe there are financial advantages in*

adopting green microfinance programmes; for example, the resources we save in the consumption of water, electricity, etc., can be invested in organic gardens to supply schools» (MFI10). Another financial advantage is the access to resources at lower interest rates. In other words, MFI managers argue that they can obtain financing at a lower cost when they demonstrate that they have a policy of investing in environmentally sustainable projects, as one participant indicates: *«OSCIPs pay a lower rate to obtain funds to finance environmentally sustainable projects»* (MFI13). Consequently, they create better conditions to make green credit available at a lower rate, as another participant highlights: *«When we obtain financing at a reduced rate, we offer lower rates to environmentally sustainable investment projects»* (MFI13), *«for example, renewable energies, because we understand that these projects have a positive impact on the environment»* (MFI8). Another advantage is the easier access to financing, as one participant points out: *«MFI's involvement with SDGs»* (MFI5), and *«it is a way of obtaining more resources»* (MFI12) to finance environmentally sustainable projects.

The third category of benefits relates to reputation. Managers consider that MFIs achieve reputational gains by investing in green microfinance because it makes *«institutions more prestigious and better seen by society and financiers»* (MFI6). Managers emphasize that *«preserving nature and future generations»* (MFI7) *«is certainly a way of enhancing the image of the microfinance system»* (MFI2). One interviewee argues: *«We have credibility because we comply with environmental requirements»* (MFI3), and another states that *«MFIs can do an excellent job in raising awareness of environmental issues because they deal with many people daily, and [...] this is good for the image of the institution»* (MFI14). For example, a participant indicates: *«We are going to provide a specific line for the production of organic beer, and our gain is not only financial but also reputational»* (MFI13). Additionally, they understand that adopting green microfinance impacts the additional funds they can obtain to direct them later to environmentally sustainable projects.

On the other hand, the perceived costs of engaging in green microfinance are real and affect the decisions of some managers. As in Cabo Verde, Brazilian MFI managers believe that making green microfinance available involves the cost of the additional funds and costs regarding changes required in the customers' operating processes. Some participants point out that *«in the evaluation of the project, what weighs more is the investment return and the financial risk»* (MFI4) because *«the green microfinance operation is an operation that costs a lot»* (MFI13). One participant points out: *«If we choose a project that does not harm the environment, the financial return is not immediate and may bring additional costs»* (MFI5). Some participants argue that *«assessing the environmental impact of a project requires specialized knowledge, which represents costly additional funds»* (MFI7). Therefore, the

additional costs perceived for preserving the environment seem to be high, as indicated by one participant: «*Preserving the environment is not cheap, and we do not always have enough funds*» (MF115).

Brazilian MFI managers also argue that adopting green microfinance implies changes in the customers' operating processes. They believe that «*a powerful current exists among customers linked to agriculture and concerned with pesticide-free production, but the problem is the price they have to pay to change how they do business*» (MF111). One participant states: «*I must balance income with expenditure, considering that preserving the environment usually leads to changes in the operating system, and these changes are costly*» (MF12). In this vein, other participants argue that «*there should be a greater financial incentive because the family farmer, when working without pesticides or other chemical products, implies a much smaller production*» (MF14) and, consequently, insufficient «*to satisfy their short-term needs*» (MF112). However, some participants indicate they have «*clients who have invested in their companies to adapt their operations to environmental issues*» (MF111). «*For example, we have customers who previously operated with a wood-fired oven and had to switch to an electric oven to produce bread and other products*» (MF16), and «*there are some customers who use clean energy*» (MF15) «*in their operations*» (MF11). One participant indicates: «*Little by little, we are helping customers change their operations to ensure environmental protection*» (MF112). To this end, «*the best incentive is to provide green microfinance at a more affordable cost*» (MF114).

5.2.2. Institutional context

As in the case of Cabo Verde, Brazilian MFI managers' perceptions regarding the influence of the institutional context in their decision to engage their organizations in green microfinance were analysed. Both external and internal levels were addressed.

5.2.2.1. External level

Brazilian participants answered questions related to their perceptions about the external divers or barriers that can influence their decisions to develop green microfinance. Results are depicted in Figure 13.

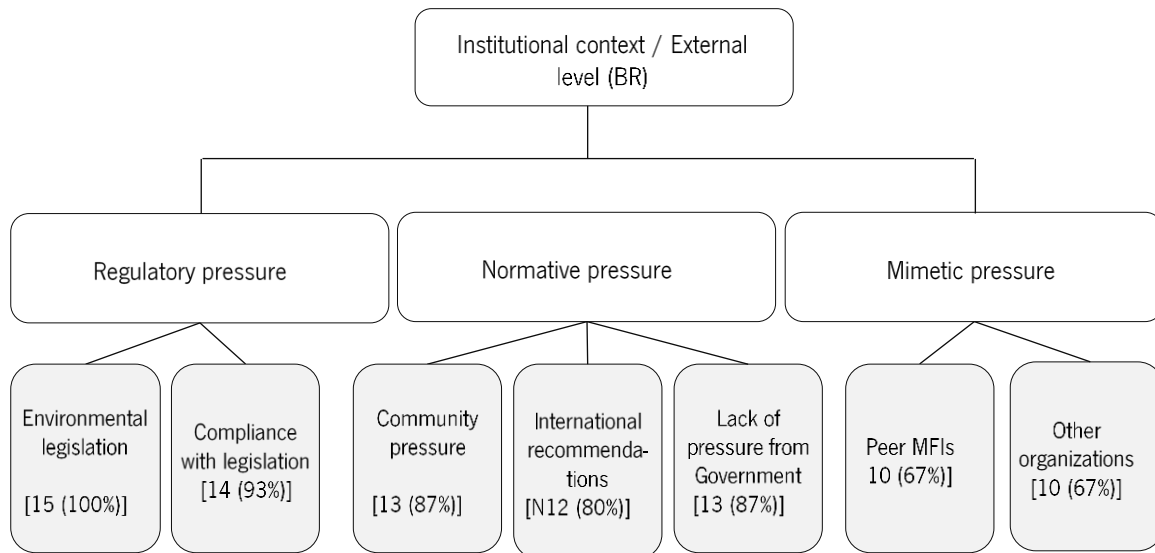


Figure 13. Perceptions about the external influences on MFI managers' decisions to engage their institutions in green microfinance

5.2.2.1.1. *Regulatory pressure*

This study analyses whether regulatory pressures emerge as barriers or incentives to promote green microfinance in Brazil. Regarding to regulatory pressures, Brazilian managers' narratives were also classified into perceptions about environmental legislation and compliance with legislation for green microfinance.

Environmental protection has been a cause for concern in Brazil since the 17th century, and these concerns resulted in environmental law decrees that underwent evolution over time until the promulgation of laws that, in turn, were updated (Garvão & Baia, 2018). The last update of the "Forest Code" occurred in 2012, with the approval of Law No. 12,651, of May 25, 2012. This regulation is acknowledged by participants, who recognize that «*Brazilian environmental protection gained strength with the creation of Law No. 6,938 of 1981, which supported the National Environmental Policy (PNMA)*» (MF17). According to Borges et al. (2009), this measure was reinforced with the creation of the 1988 Federal Constitution, which highlighted the right to a healthy environment as a fundamental constitutional right. This law has significantly changed over time (Borges et al., 2009). These changes gave rise to successive shifts in the organizational and management models to execute and enforce the National Environmental Policy, with Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis/Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA, acronym

in Portuguese) being the most recent and with reinforced government support after the creation of the Secretariat of the Environment linked to the Presidency of the Republic with Ministry status (Law No. 8,028/90, of April 12) (Borges et al., 2009; Vargas, 2021).

This study shows that the Brazilian MFI managers' perception of environment legislation influences on their decision to promote green microfinance. The results reveal that MFI managers are aware of environmental legislation and the obligation to comply with it, as one participant indicates: «*We have environment legislation to comply with*» (MF15). However, they consider that, in general, existing legislation does not cover the microfinance sector; as one interviewee, for example, summarizes, «*Brazil does not have specific environmental legislation for MFIs*» (MF12).

Most interviewees admit that general environmental legislation is, apparently, applied to MFIs. One participant emphasises that «*the agents are aware of [it]*» (MF13). Others specifically indicate that «*credit agreement talks about environmentally sustainable projects. It has a clause demonstrating [their] commitment to supporting legal and non-polluting activities*» (MF16) and that «*approving a project that negatively affects the environment would cause [them] great embarrassment [because they] are accountable*» (MF15).

MFIs are audited by «*internal and external auditors to ensure that MFIs comply with the regulations*» (MF14). Several institutions, including investors, audit them, as one participant indicates: «*There are institutions that audit monthly (e.g., BADESC), there are institutions that audit bimonthly (the Ministry of Labour) and quarterly (e.g., BNDES), and the Ministry of Justice that audits annually*» (MF15). In the case of cooperatives, they are regulated and supervised by the Central Bank that «*requires compliance with environmental standards*» (MF17). That is, it requires compliance with environmental legislation, as another participant states: «*We comply with environmental standards regardless of the regulatory body's requirements, which is the Central Bank*» (MF17).

Managers, in general, state that the contracts they sign with national investors, namely banks, contain clauses that impose loan conditions aimed only at entrepreneurs whose projects do not cause damage to nature (e.g., MF19; MF10; MF13). When analysing some contracts, we could find that the following is stated: «*The obligation not to apply the resources received, for microcredit, in measures and actions that cause damage to the environment, safety and occupational medicine*» (clause nine, VII, paragraph d, p. 11, MF16); and that all actions that «*result in race or gender discrimination, child labour or slave labour, moral or sexual harassment or crimes against the environment are subject to legal penalties*» (clause nine XXIV, line b, p. 14, MF11). Some participants explained that: «*there are*

limitations when the resources from BNDES and Bank Bradesco are allocated to productive-oriented microcredit» (MFI10); «We have to comply with everything that comes in the contracts and in the legislation» (MFI5).

The participants' perception of compliance (or not) with environmental legislation in Brazil was also analysed in this study. Participants state that they are aware of environmental legislation, but in practice, its compliance seems to depend significantly on the level of demand from financiers regulatory and supervisory entities.

Even though *«there are no specific environmental laws for the microfinance sector» (MFI7), it «has to comply with the rules of the national program of effective-oriented microcredit» (MFI10).* Environmental standards are targeted at specific projects: *«There are rules and regulations for some particular projects, for instance, for basic sanitation, it is evident that this is related to the environment» (MFI10).*

On the other hand, some interviewees raise doubts about MFIs' compliance with environmental legislation, alleging that some laws are violated, as one participant indicates: *«There are environmental laws that are violated. We see a lot of construction on the beaches, illegal sewage on the edge of the beaches» (MFI6).* Others question the need for MFIs to align their internal regulations with environmental legislation to guarantee their applicability in practice. As one interviewee states, *«We do not guarantee that, in practice, the requirements of environmental sustainability are implemented» (MFI8).* Some consider that legislation should be changed to be clearer regarding the use of pesticides. This is the case of a participant who highlights: *«I think we could change the legal regulation and put something more explicit about pesticides and sanitation, protecting water sources and the springs because there are plenty of them here» (MFI5).* Additionally, this participant comments: *«It must have some reference in the statutes, depending on the content of legislation» (MFI5).*

Some managers guarantee that their MFIs are rigorous in the application of environmental laws and that they have mechanisms to encourage good practices, as one participant indicates: *«We have certification bodies, created by our organizations, which verify that MFIs are complying with environmental standards – the certification is named participatory certification» (MFI7).*

On the other hand, some interviewees do not believe in the practical application of environmental legislation and indicate that there are no environmental impact indicators. They highlight that, despite contractual requirements, investors are more concerned with financial results. In this regard, some participants pointed out that, for example, *«BNDES inspects MFIs to grant credit. They*

came here not focusing on environment but on the financial problem» (MFI6), and *«these institutions are unable to audit compliance with the requirements they demand»* (MFI3). Furthermore, it appears that environmental aspects are not monitored by investors or financiers during the implementation of projects or activities, as argued by one participant: *«There is no monitoring of customers to verify that they comply with environmental legislation»* (MFI5).

Despite the lack of specific environmental legislation for MFIs, these organizations, through the contracts they sign with some investors, feel, in some way, pressured to have pro-environmental behaviour. Even so, environmental concern is not the same in all regions, as one participant indicates: *«In Brazil, we have two states that, through the law, established a certificate of compliance with socio-environmental care for companies and social organizations»* (MFI12).

5.2.2.1.2. Normative pressure

Normative pressure typically comes from external stakeholders, such as investors, communities, customers and associations (Berrone et al., 2013). In this category, the sub-categories community pressure, international recommendations, and lack of pressure from Government were also considered relevant for green microfinance in the case of Brazil.

Although most participants indicate that *«pressure from customers is practically non-existent»* (MFI11), some point out that *«there is much pressure from pro-environmental organizations»* (MFI17). This pressure was also mentioned by a Professor from the Catholic University of Rio Grande do Sul, who shared that *«In Brazil, since the 1980s, there has been pressure from environmental organizations to avoid acts that harm the environment»*. Furthermore, one participant indicated that *«in Brazil, there are pro-environmental activists everywhere, and they put strong pressure on all citizens»* (MFI14).

Participants indicated that there is pressure from some partners to comply with environmental standards. The partners referred to here are essentially investors. Investors appear to exert some pressure on MFIs to avoid supporting projects that could harm the environment. They mainly resort to contractual mechanisms to exert this pressure, as highlighted by one of the participants: *«In the forms we fill out, from financiers such as Oikocredit and rating companies, they ask if we have a specific line of credit for environmental issues»* (MFI6). Some participants point out that *«supporting only projects that do not harm the environment is a requirement from investors and [their] institution»* (MFI9). Most MFI managers indicate that the contracts they sign with national funding institutions contain requirements for preserving the environment, as indicated by one participant: *«The contracts have*

clauses stating that our credits cannot benefit activities that could harm the environment, admit slavery or child work» (MFI5). They perceive some commitment from financial institutions to preserve the environment and feel pressure to align with contractual environmental norms.

Some investors seem to be more demanding than others. Some require MFIs to create internal conditions for providing microcredit services oriented towards environmental protection. To meet this requirement, some MFIs created a specific department to evaluate and audit the environmental impact of projects, as the following participant shares: *«We have a compliance department where everything is written [...] the agent goes to the client's enterprise and checks if they have no debt, among other requirements. The collected data are confronted with internal rules demanded by our partners»* (MFI3). The contract that MFIs sign with investors *«states that we should not finance terrorism, projects that harm the environment or have a negative environmental impact»* (MFI3). On the one hand, some participants point out that, in addition to their environmental concerns, the entities that give them more support in this process are the investors BNDES and Banco Regional de Desenvolvimento do Extremo Sul/Regional Development Bank of the Far South (BRDE, acronym in Portuguese) (e.g., MFI13, MFI1), while others state that, in practice, investors do not seem very demanding, as they *«do not ask for any information or indicators on environmental sustainability»* (MFI9).

Managers' perceptions about international recommendations to support projects or activities that do not damage the environment were also explored in the data of this study. For example, some participants indicate that their strategies are, to a certain extent, aligned with international recommendations, as some participants point out: *«Our institution is supporting the SDGs movement [...] our actions are clearly aligned with most SDGs»* (MFI14); *«Our work also aims to contribute to SDGs»* (MFI15). Others argue that *«We must align our actions with international environmental recommendations»* (MFI1).

Regarding Government pressures, some managers report that the Federal Government has not given much importance to the impact of microfinance on the environment, as highlighted by the following quotes: *«There is some concern from the Central Government, but not as much as I would like. Considering Brazil's potential, the Government's performance could be better»* (MFI8); *«The Government provides some credit but has not shown concern for the environment in the microfinance area of activity»* (MFI2). Along the same lines, another participant states that *«so far, [they] have not felt any pressure from the Government to promote environmentally sustainable microfinance»* (MFI9). For these managers, *«Government bodies need to develop alternatives to help [them] make the changes*

and the required preservation» (MF12). However, some participants pointed out some pressure from the Municipal Government level, which shows concern about preserving the environment. To license certain types of business, the Municipal Government first checks whether these businesses will not harm the environment. For example, as one participant states, *«If we are going to finance a structure or we need working capital for a car wash project, we have to ask for the license documents from the Municipal Government, the license permit, precisely because of the environment»* (MF15).

Overall, it seems that lack of pressure from Government to develop green microfinance is noticed by the MFI managers. However, pressure from investors and international environmental recommendations appear to have contributed to some MFIs initiating strategies to foster green microfinance.

5.2.2.1.3. Mimetic pressure

Mimetic pressure, as a driving force, can influence MFIs in Brazil to promote green microfinance. Pressure can come both from peer MFIs and other organizations.

Some MFIs are already investing heavily in green microfinance, influenced by successful MFIs in this field, as one participant shows: *«Like other MFIs, we have a specific product for projects to build cesspools, bathrooms, sewers, and piped water into homes to prevent the population from harming the environment»* (MF13). Some MFIs benchmark with more experienced MFIs, as highlighted by some participants: *«A group of intermediate managers went to Canada for seven days looking for new technologies and getting to know other methods of environmental management»* (MF17). Another interviewee argues: *«I visited Rabobank in Holland, an organization that works a lot with green microcredit. I went to see their greenhouse system»* (MF18). They assume that those countries are much more advanced in green microfinance, as shown by one participant: *«They are much more advanced than we are»* (MF12); that is, *«this vision is more developed in [some neighbouring countries] and is more active due to the MFI's dimension and time in this activity»* (MF15).

By benchmarking successful competitors, organizations are able to defer to social legitimacy and are likely to survive (Perez-Batres et al., 2011). In Brazil, some participants mention Crediamigo, from Banco do Nordeste/Northeast Bank, as an organization that already has good experience in green microfinance (e.g., MF14, MF15). Regarding managers who still have little contact with green microfinance, they consider that they have to *«contribute to a sustainable environment, and [for such, they] learn from the most experienced MFIs»* (MF15).

Most participants stressed that they are aware of national organizations and other neighbouring countries, such as Peru, Bolivia, Colombia, in South America and Mexico, in Central America (e.g., MFI1, MFI12, MFI5, MFI6), which provide green microfinance to their customers. One participant indicated: «*I know that Colombia and Peru already offer green microfinance*» (MFI12). Peru and Bolivia are in the group of countries that lead green microfinance in terms of numbers and percentages (Forcella et al., 2017). «*Compartamos, from Mexico, has some activities in this regard. Unibanco, from Peru, also has programs in this field*» (MFI12). Hence, they understand that MFIs from the countries mentioned above are more advanced in green microfinance, as one of the participants points out: «*I got to know some of their programs, and they are much more advanced than we are in green microfinance*» (MFI12). Some participants became aware of green microfinance practices in the training programme they participated in, as one participant stated: «*We have participated in some training, and during those courses we were informed that some MFIs, namely in Mexico, deal with green microfinance*» (MFI5).

The data collected also highlights the Brazilian MFI managers' perceptions about the MFIs' internal conditions for green microfinance practice. These data are presented below.

5.2.2.2. Internal level: Governance to green practices

Respondents answered questions related to their perceptions about the existence of internal conditions in MFIs that may favour or barrier the development and provision of environmentally sustainable financial and non-financial services. Analysing Brazilian managers' perceptions about MFI's governance for green microfinance practices may reveal their potential to boost green microfinance products or services. Hence, MFI managers' perceptions about conditions for governance to green practices were analysed.

These conditions include a green governance approach related to the Board members' knowledge and experience of the environmental field and social sciences.; green budget that includes the promotion of green microfinance; and internal policies and procedures that encompass internal, formal, environmental responsibility policies and procedures, and whether these are mentioned in the MFIs' vision, mission or values (Figure 14).

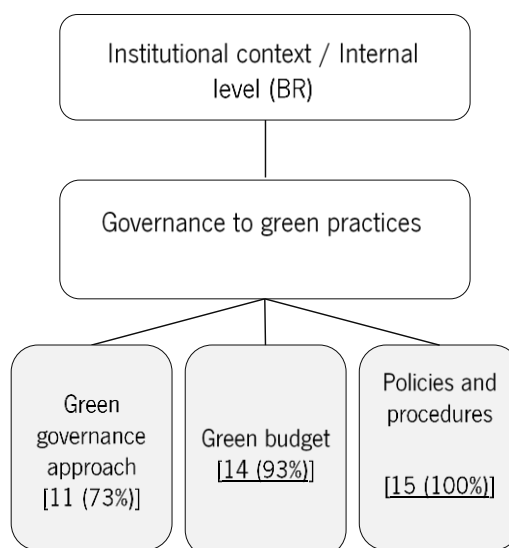


Figure 14. Perceptions about the internal influences on MFI managers' decisions to engage their institutions in green microfinance

In Brazil, MFI managers are backed by a team of managers, often constituting the Board of Directors. The Board of Directors «*is responsible for monitoring the entities' managers, contributing financially to these entities and working as a volunteer in them*» (MFI13). «*Therefore, the majority of members are independent, proactive and well-connected – a necessary condition to increase fundraising, thus favouring the formation of a solid public image*» (MFI11). This Board of Directors makes strategic decisions, but the «*Executive Board, normally made up of one or more members, also carries out day-to-day management*» (MFI1). Most MFIs have a solid connection with universities and include on their Board of Directors a university professor with knowledge and experience in the social area, as revealed by one interviewee: «*One of the members of the Board is a university professor who graduated in social sciences and has much experience*» (MFI8). The President of ABCRED stated that «*most MFIs have a university professor on the Board of Directors, who has knowledge of social and sometimes even environmental issues*».

Current management is guided by policies approved by the Board of Directors. Consequently, aligning policies and internal procedures with environmental issues will depend on the guidelines issued by this management body and, untimely, on their members' green governance approach. Nevertheless, few participants mentioned the existence of members of the Board of Directors with such orientation and, more specifically, with knowledge of environmental management.

As for the second condition, having a green budget, Brazilian managers believe that financial issues indeed make an impact when approving green projects or activities. Hence, the extent to which Brazilian MFIs have a specific amount in their budget for pro-environmental projects or actions, and whether this budget originates from its funds or third-party funds, emerged from data.

The non-existence of a portion of the MFI global budget allocated to pro-environmental actions is shared by all respondents. The MFI plan and budget do not highlight actions with specific budgets for environmental protection, as pointed out by participants. For example, «*the MFI activity plan and budget do not have any amount earmarked explicitly for the environmental area*» (MFI9), or devoted to «*training or awareness actions on environmental issues*» (MFI5), or even «*to promote environmental behaviour*» (MFI13). Hence, «*in evaluating the project, the most important criterion is whether the business is economically viable*» (MFI5). An MFI expert and consultant indicated: «*I am unaware of any MFI that has part of its budget explicitly set aside to address environmental issues*».

Some interviewees point out that «*it may be necessary to define a specific budget for pro-environmental actions*» (MFI4), but this has not been possible because they have few financial resources, as some participants argue: «*We have financial limitations, which limit our actions in this area*» (MFI9), and «*we do not receive any state subsidy from the Government to add to our budget for green projects*» (MFI1). Others give examples of renewable energy projects they have tried to support but, in the end, were not approved, as one participant indicates: «*We already had a plan to support projects related to renewable energies, [...] We tried to form partnerships, but we saw that the value of the projects was beyond our reach because of our performance and volume of business*» (MFI5).

Most managers hold the Brazilian Federal Government responsible for the lack of greater engagement of MFIs in environmental issues since the Government's financial support is a relevant factor in this process, as one participant comments: «*We have been waiting for three or four years for the Federal Government, through BNDES, to make lines of credit available exclusively for environmentally sustainable activities. Unfortunately, there are many promises and few actions*» (MFI12). Another participant believes that «*the only way [we] have to make a difference and encourage projects to emerge, already contextualizing the socio-environmental issue, is linked to the condition of being able to make resources available at a differentiated rate*» (MFI13). To do this, they need to have financial slack that allows them to create conditions to offer more attractive rates for green projects or activities, communication and customer education, as indicated by some participants: «*It is essential to start to have [financial] incentives to financial projects*» (MFI13), to invest in the «*customers' education*»

(MF12), and communication, «*since communicating with clients requires financial resources, and we do not have enough*» (MF16), and «*the government does not give us a specific environmental subsidy*» (MF14).

In this context, environmental requirements are not necessarily considered in projects financed with MFIs own funds, but compliance with environmental standards is required in some projects financed with third-party resources. Consequently, in the first situation, environmental issues are left to the discretion of those who evaluate and decide which projects or activities should be funded. No internal pressure was mentioned to consider criteria that prevent the approval of projects harmful to the environment since the priority is to «*guarantee MFIs' financial sustainability*» (MF11). These findings align with the fact that the majority states that their «*budget does not include any amount earmarked explicitly for the environmental area*» (MF19) and, consequently, they «*do not have environmental indicators*» (MF13) to measure environmental performance.

Regarding the third condition, internal policies, aligning policies and internal procedures with environmental issues seems inconsistent. Most participants agree that «*there is no defined internal policy regarding environmental issues*» (MF10). In other words, they indicate that MFIs do not have a formal environmental protection policy. This data seems contradictory when, at the same time, they mention issues related to environmental protection in their statutes, as mentioned by some interviewees: «*In our statutes, there is also a reference to environmental protection*» (MF15). The MFI statutes we consulted include norms, such as «*promotion of ethics, peace, citizenship, human rights, democracy, respect for the environment and other universal values*» (e.g., MF15). Furthermore, concern for environmental preservation is not mentioned in the Vision, Mission or Values published on the official websites of the participating MFIs.

While some interviewees recognize that they do not have anything written about environmental procedures (e.g., MF11, MF111) that would prevent approving projects or activities that are harmful to the environment, others, however, report that they are «*aligned with the SDG*» (MF11) and that they analyse «*all factors that are critical*» (MF19) for the preservation of the environment before approving projects or activities. Some participants ensure that they are active in preserving the environment and that, to this end, they have formal policies and procedures to guide their actions, as indicated by some participants: «*We have an internal sustainability policy in which we have to comply with a series of rules related to the environment*» (MF18); «*We have certification bodies, which our organizations created*»

(MFI7). Consequently, following such a policy allow them to ensure that *«if [they] see that people are going to use credit in activities that are harmful to the environment, [they] do not grant credit»* (MFI2).

Furthermore, they monitor the performance of their clients, as one of them explains: *«We see if the entrepreneurs follow our environmental rules. For instance, we ask who the supplier of the products is, what kind of treatment the soy needs... how often they use insecticide... what amount they pay, etc., to check if they comply with our guidelines»* (MFI9). Another participant highlights that *«related to the projects in the agriculture area [they] analyse production techniques, how [their clients] harvest soybeans, if they have the production equipment, and how they produce, but mainly about the experience of the farmer»* (MFI14). However, in general, participants believe that they could be more rigorous in the project analysis process to assess environmental impacts if they had the right technological conditions; as one interviewee indicates, *«our computer system is closely linked to financial data, but it does not have socio-environmental information»* (MFI12).

Despite the optimism of some participants, in general they admit that the majority of Brazilian MFIs are not equipped with all the formal tools, namely internal pro-environmental policies and procedures, that allow them to act in a more sustainable way to preserve the environment, as stated by a member of Abcred: *«at Abcred, we do not know of any [MFI] that has an environmental policy»*, and one participant comments: *«We analyse whether the financial issue is not putting the existence of these tools into question»* (MFI10).

In general, the data points to an absence of policies and procedures aimed at promoting green microfinance, apparently since the Board of Directors does not have a member with an environmentalist vision or because the lack of financial capacity is a significant constraint. Consequently, MFIs do not provide a certain amount of their overall budget to promote green microfinance in Brazil. In short, the internal conditions of Brazilian MFIs seem to be some barrier to fostering green microfinance.

5.2.3. Brazilian managers' current practices and future intentions towards MFIs engagement in green microfinance

As in the case of Cabo Verde, based on PMT and IT, analyses were carried out to understand how the beliefs of Brazilian MFI managers about environmental sustainability and the role of microfinance in its promotion, as well as their perceptions about the institutional context, affect the involvement of their institutions in green microfinance. Brazilian MFI managers point out several barriers, mainly at the institutional level, to adhering to green microfinance. However, participants'

beliefs about the environmental threat, their capabilities to deal with it, and their beliefs in institutional changes can culminate in the intention to provide environmentally friendly responses.

Most respondents are generally optimistic and motivated to address both personal and institutional barriers to granting green microcredit to their customers. Some interviewed managers assume that most of the time, they prefer to approve projects *«that do not harm the environment because it is the only way [they] have to prevent scarce natural resources from disappearing»* (MFI14). For example, *«if a project for a car wash station does not have a layout defined by the city's fire department and space for waste treatment, this project will not be approved taking into account the damage it can cause to groundwater»* (MFI12). One participant guarantees: *«If we know that the activity has an environmental risk, we ask for an operating license, and If the client does not have one, we do not loan money»* (MFI15). In this sense, some express, categorically, that they repudiate the use of insecticides and other human actions that do not favour the environment, as one participant assumes: *«I am not a fan of this issue of poison [chemical products]»* (MFI17). They believe that approving projects that do not put future generations at risk is essential. It is an issue that must always be present in the process of analysing projects or activities to be financed by FMIs, in line with one of the participants, who argues: *«We are very in favour of projects that do not jeopardize the future generation, and we discuss this a lot»* (MFI13). However, MFI managers believe that there are still many barriers in the institutional context, but they intend to minimize them.

Some managers assure that, at the internal level, they are already working towards green products and services, as one participant maintains: *«We work with targeted, productive microcredit and are concerned with contributing to sustainable development, giving access to credit for those who do not have it»* (MFI13); *«We are open to anything that will support our mission: to improve the living conditions of the most underprivileged»* (MFI16) and that *«someone can contribute with less but can receive more at certain times»* (MFI8), in a perspective that it is possible to contribute to a healthier environment. From this perspective, most believe that approving economically profitable projects or activities *«can bring a financial advantage, but it can have a disadvantage in terms of environmental protection»* (MFI11). Thus, managers consider that *«it pays off if everyone does their part»* (MFI11) to create better living conditions for human beings and that there is no other alternative, as one participant indicates: *«I see that the only alternative is, in the medium and long term, to equate the conditions for humanity' survival»* (MFI12).

MFI managers point to financial issues as the most significant barrier they face at the internal level to adhering to or strengthening green microfinance. For example, one of them argues: «*We have the intention, and we want to introduce green microfinance into our plan, but the financial issue is the biggest problem*» (MFI14). However, some indicate that «*as soon as the institution has a stable financial situation*» (MFI13), «*they will promote green microfinance so that people can improve their quality of life*» (MFI12). Consequently, they can minimize poverty, especially in regions most affected by climate change, as highlighted by one of the participants: «*Here in our region, there is a lot of rain, wind, and storms*» (MFI15). To overcome the financial barrier, they also indicate that they are «*very involved in raising funds to guarantee financial stability to create the necessary conditions to support green microfinance*» (MFI19).

The intention of Brazilian MFI managers to join or reinforce green microfinance activities is strengthened by their willingness to invest in training their employees and in communicating with their clients, raising awareness of environmental issues, as several managers mention: «*We intend to invest in training on environmental issues*» (MFI15), and «*reinforce our actions toward contributing to preserving our wealth, which is nature*» (MFI14). Another participant argues: «*Working on promotion linked to the environment is very interesting and important. I will take this issue to the team that gives us orientation for communicating and marketing our products*» (MFI11). Another participant stresses: «*We will put information about environmental protection on flyers and our website. We have to materialize our intention*» (MFI16).

To overcome some barriers at the external level, one manager points out: «*We intend to strengthen our relationships with financial institutions and negotiate a lower rate for microfinance projects or activities green*» (MFI16). This position is shared by another manager, who intends to «*raise funds by negotiating with partners a specific line of credit for environmentally sustainable projects with more attractive interest rates*» (MFI12). Although one partner has already signalled that it can embrace this new trend, managers are not ruling out the possibility of moving forward with their own resources, as one of them indicates: «*BRDE will make specific resources available for green products at a lower interest rate than the other partners [...]. Otherwise, we can finance it with our resources*» (MFI13). They assume that «*as soon as [they restructure] the financial situation of the institution, [they] intend to create financial products to support socio-environmental projects or activities*» (MFI13), that is, «*provide a better rate and encourage clients to submit pro-environmental projects*» (MFI15).

«Since 2005, environmental, social, and governance (ESG) has gained space on the agenda of Brazilian executives, consultants, and investors» (MFI14). The experts, consultants and investors interviewed support the intention of most managers to adopt green microfinance. They point out their intention to embrace more effective actions and incentives to protect the environment. For example, the Oikocred Representative highlights that his institution *«will reinforce its intervention, as an investor, cooperating with MFIs committed to the environment»*. The President of ABCRED points out that *«To face the financial challenges, we will pressure the Government to negotiate with public banks to guarantee financial support for MFIs, with more attractive interest rates»*. However, one Expert argues that *«MFIs need more knowledge about green microfinance»*, and another adds that *«more research is also needed to understand the profile of MFIs and their target audience»*. *«Let us help MFIs»*, pointed out another interviewee. *«The adaptation of environmental legislation to MFIs, as well as stricter supervision of the MFIs' activities, will have to be carried out to guarantee the sustainable development of green microfinance in Brazil»*, the President of ABCRED mentions. A Consultant in the area of microfinance admitted that *«Brazil already has some experience in green microcredit, and this experience should be enhanced»*. *«For example, when I analyse MFIs' performance, I see that investors are not concerned with the MFIs' environmental performance and proof of this is the fact that MFIs do not have environmental performance indicators»*, the same consultant reinforces.

By and large, most participants mention their intention to *«promote or reinforce green microfinance»* (MFI15) in their institutions. Some of them point out that the *«Board of Directors has already talked about it»* (MFI5); hence, *«they can think about deepening their knowledge of green microfinance by exchanging experiences with other institutions and, along these lines, changing existing internal norms to introduce pro-environmental standards»* (MFI9). These requirements may lead to new policies, strategies and norms toward green microfinance, as pointed out by some participants: *«It may be necessary to define a specific budget for pro-environmental actions»* (MFI4). *«When we launch the new policy, it will undoubtedly have specific lines for green microcredit»* (MFI13); *«Maybe shortly we'll be able to go around and create something different, making this area of the environment even more viable»* (MFI5). However, some managers mention that they are ready to launch new products with pro-environmental purposes, for example, the creation of artesian wells, the launch of the sanitation program named *“Sanear”*, together with Abcred, which will culminate in the improvement of sewage and its channelling to places far from rivers, and wastewater treatment (e.g., MFI3, MFI5, MFI6). One of the participants states that in their institution, they *«already have a plan to support projects related to*

renewable energies» (MF15). Another indicates that they are «discussing the possibility of having a cheaper line of credit for hybrid or electric cars that do less harm to the environment» (MF18).

6. Conclusions and discussion of results

6.1. Main conclusions

This section discusses the results regarding MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the influences of the institutional context that may affect the involvement of their institutions in green microfinance. These results contribute to building knowledge on green microfinance by answering the research question: How do managers' beliefs about environmental sustainability and the role of microfinance in promoting it, and their perceptions about their institutional context, affect the engagement of their institutions in green microfinance? The study was guided by the aim to further the understanding about MFI managers' beliefs of the severity of the environmental threats and the effectiveness of microfinance to respond to them, their perceptions of the costs and benefits of green microfinance and the perceived influence of both internal and external institutional conditions on their decision to engage MFIs in green activities. Previous research has mainly emphasized the antecedents of green performance in the organizational context (Obeidat et al., 2020), while little attention has been given to the antecedents in the individual context (Kim et al., 2020; Pham et al., 2020). In this study, we understand that neglecting one of the two contexts would be a limitation. For example, if we had neglected the study of individual beliefs, we would be diminishing the role of the individual as a critical asset of an organization (Safavi & Bouzari, 2019) and as an agent that boosts green performance in organizations (Zhang et al., 2019), in this case in MFIs. We consider the two contexts or perspectives complementary since the first focuses more on the personal context and the second, essentially, on the institutional environment (Luu, 2020). In this sense, PMT (Maddux & Rogers, 1983; Rogers, 1975) and IT (DiMaggio & Powell, 1983) were used as guiding theories to grasp the specificities of the two contexts. We understand that applying both theoretical lenses provided more appropriate answers to this study's research question and objectives.

Results were derived from the analysis of a total of 34 semi-structured interviews with MFI managers and other informants from two cases, corresponding to two different developing countries. In Cabo Verde, the sample comprised 10 MFIs and five experts. In the case of Brazil, 15 MFI managers and four experts contributed to the study. Based on this analysis, we identified beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the institutional context that affect the involvement of their institutions in green microfinance. We

can draw several conclusions from this research concerning personal and intuitional context managers' beliefs.

First, MFI managers, in both Cabo Verde and Brazil cases, firmly believed that protecting the environment is important and that microfinance institutions can contribute by promoting green microfinance. According to Allet (2017), MFIs may be well-positioned to promote pro-environmental behaviour in micro-enterprises due to their intervention at the base of the pyramid and the synergies they can be creating by combining the use of financial services and information. This is what seems to be happening in these two cases. MFIs may be in good position to promote pro-environmental behaviour in micro-enterprises and activities developed by low-income entrepreneurs. That is a good potential for the development of green microfinance.

The results suggest that raising awareness of environmental issues among Cape Verdean and Brazilian MFI managers should not be needed as participants showed that they acknowledge the negative consequences of environmental problems for nature and humankind, in general, but above all, for their customers, in particular. MFI managers believe that the severity of environmental issues is a cause for concern because it contributes to an environment less conducive to human survival, especially for low-income people, because they are the ones who end up suffering more deeply their impact; they are most exposed to storms, which end up damaging their homes, causing more illnesses, putting their production and even their lives at risk. Besides, they are dependent on natural resources and have little ability to mitigate the negative effects of environmental degradation, as highlighted in previous literature (Ahmed et al., 2009; Hall & Lal, 2006; Leichenko & Silva, 2014; Liere & Dunlap, 1980; Lobell et al., 2011).

Second, most MFI managers in Cabo Verde and Brazil believe in their ability to respond to environmental threats. It seems clear that they are aware and willing to act in favour of a healthier environment. Mainly in Brazil, some have practical experience approving pro-environmental projects or activities. Therefore, they believe that flooding, erosion, drought, and other consequences of environmental severity are factors that cause disease, malnutrition, hunger and helplessness or homelessness among their clients. Hence, MFI managers understand that these problems can be minimized if their institutions engage in promoting green microfinance since they are closer to the poor population and the mission of responding to their needs, providing financial and non-financial services capable of integrating them into the economy. It is important to underline that low-income people do not have guarantees to access traditional commercial banks and are, therefore, considered an

unattractive segment for these institutions (Ghatak & Guinnane, 1999; McKernan, 2002; Serrano-Cinca & Gutiérrez-Nieto, 2014).

In Brazil, a few MFIs have experience dealing with green projects or activities. Some are already working on incentive for pro-environmental projects or activities. However, they understand that it is necessary to work with communities and make them aware of preserving the environment because, once guided and with alternatives, they will not work against the environment. In this sense, they deem it essential to disseminate information to customers about preserving the environment, leading them to develop projects that do not pollute the environment and educate children to take care of environment, among others. In Cabo Verde, managers have little initiative and experience dealing with environmental issues. What little they do is part of the Government's initiative that, in some projects implemented by MFIs, requires the application of pro-environmental standards. Typically, these are tree-planting projects and the ones linked to agriculture, mainly to save water. However, managers emphasize that, in recent years, some international partners, such as the World Bank, have integrated new requirements into their financing, which include safeguarding the environment. It is a requirement that should change the *modus operandi* of MFIs, directing them towards the development of green microfinance.

In general, the results from the two cases reveal that MFI managers have a positive attitude regarding the possibility of making decisions to approve environmentally sustainable projects or activities. They are willing and motivated to contribute because they are aware of and feel bad for the negative impact of environmental threats, particularly on the poorest. Also, they believe in the effectiveness of protective behaviours and feel they need to and can support this type of projects or activities. These feelings can be a more potent driver of this behaviour than rational decision-making processes (Lerner et al., 2015). Positive or negative feelings may impact people's experiences with the environment and their propensity to engage in pro-environmental behaviour because feelings encompass physiological, cognitive, and behavioural components (Böhm & Pfister, 2008; Mankad, 2012).

Third, the motivation to implement green microfinance initiatives in Cabo Verde and Brazil is driven by the belief among MFI managers that these projects or activities have the potential to yield significant environmental and social benefits. By providing financial support for environmentally friendly activities, they hope to create a ripple effect that will result in significant social benefits for the individuals involved. They anticipate that these initiatives will not only improve the financial stability of the beneficiaries but also boost their standing in their communities and enhance their quality of life. These

managers seem committed to the idea that their institutions have a critical role to play in promoting a more sustainable and equitable future for all. Despite their motivation towards green microfinance, several barriers may hinder both managers perceived self-efficacy and response efficacy, which translates into an expected slow transition to green microfinance, particularly in the case of Cabo Verde, where knowledge in green microfinance is still incipient among MFI managers. The study findings suggest that much is left to be done to speed up this process. For example, because this is a still new issue, training and technical support may be needed to strengthen the MFI managers' capabilities, as education and training is an effective way to develop sustainability-related competencies and performance (Ji et al., 2012; Schröder et al., 2023). This would not only allow them to make more informed decisions than just based on their sensitivity to environmental problems, but also create concrete guidelines and indicators to support the assessment and decision-making process, in line with Allet (2012), who points out that to improve its environmental performance, the MFI has to give itself the tools for reaching its environmental objectives. Also, such knowledge may have a replicating effect, since green microfinance programs may include actions to raise awareness and provide green competencies to their customers. In this way, MFIs can act as facilitators by supporting pro-environmental projects and activities, but they can be, at the same time, educators of their clients, so they can behave in a more environmentally friendly manner, as suggested by Rouf (2012).

Fourth, the importance of the MFIs' role in promoting sustainable practices by micro-business (Allet, 2017) was reflected in this study by the shared examples of some embryonic concerns to incorporate environmental criteria in the decision-making process when assessing the projects to support, especially in the case of Brazil, where managers seem to have some knowledge about green microfinance and experience in evaluating and supporting some projects. It seems that managers, in general, are sensitive and personally motivated to move towards a more systematic assessment and approval of green projects or activities. However, it is noted that this practice is not regular because it depends on several factors pointed out by the respondents, namely the financial one. They argue that the fact that they rely on external financing conditions them to the requirements of the financiers, which are often not environmentally but financially-oriented. The response efficacy, therefore, appears to be intricately linked to financial issues. This indicates that any policy action aiming at advancing the green transition in microfinance needs to take into account the several stakeholders of the microfinance ecosystem and not just MFIs, as put by Shahidullah and Haque (2014).

These findings offer support our research proposition 1, which asserts that when MFI managers perceive environmental problems as severe and that their clients and the community, as a whole, are

vulnerable to environmental threats, they will be more sensitive and willing to involve their institutions in green microfinance activities, and the research proposition 2, which states that when MFI managers believe in green microfinance's effectiveness in minimizing the threat and their self-efficacy in implementing it in their institutions, this belief signals that they are willing to involve their institutions in developing green microfinance. These findings also fit research proposition 3, which hypothesizes that when MFI managers believe that providing green microfinance to their clients will minimize costs and increase benefits for both MFIs and their clients, this belief signals that they are willing to involve their institutions in developing green microfinance.

Fifth, managers argue that the engagement of their MFIs in green microfinance is highly conditioned by institutional factors, namely regulatory, normative and financial. They recognize the existence of environmental laws in the country. However, they consider that the Government needs to define appropriate environmental standards for the microfinance sector, as MFIs deal with micro and small projects that do not have the same requirements as large projects. They indicate that they deal with low-income people who contribute the least to environmental degradation but suffer the most from the consequences of the severity of environmental threats. Managers emphasize that there is no supervision of the environmental impact of their activities. However, the literature shows that both central and local Government needs to respond by establishing and enforcing additional laws and regulations (Zhu & Sarkis, 2007), given that government regulations are frequently mentioned in the literature as the primary driver for organizational environmental management (Agan et al., 2013; Walker et al., 2008; Williamson et al., 2006). This includes inspections and enforcement actions (Zhang et al., 2008).

Managers indicate that, because they depend on external financing, they are conditioned by the investors' demands, who are often not very concerned with environmental performance but rather with financial results. In the case of Cabo Verde, managers indicate that pressure from investors is practically non-existent. They believe investors' most significant interest is financial because they do not require environmental performance indicators. The Government is the one that, for some specific projects, requires compliance with standards that prevent environmental damage, but there is no monitoring. Therefore, they do not feel obliged to comply with existing standards. Some consider these standards to be designed for large projects. In the case of Brazil, the situation is similar, although there is some concern among managers about complying with current environmental standards, as this requirement is included in the contracts they sign with some investors, namely public banks. However, they indicate that they do not have environmental indicators and that the audits that investors carry out do not require

information on environmental performance. In general, managers point to a lack of investor engagement in the development of green microfinance in these two realities, despite the literature indicating that investors' actions are very important for the engagement of MFIs in green microfinance (Forcella & Hudon, 2016; Mahboubi & Fortes, 2015).

Managers from both cases highlight some pressure from the national and international community. At the national level, pressure comes from some pro-environmental organizations. At the international level, the data point to pressure from international environmental standards, namely SDGs, linked to the environment. The results of the two cases confirm conclusions from other studies (e.g., Forcella, 2013; Allet, 2014) that maximizing legitimacy with critical players in the field of microfinance can result in more opportunities to access capital and other benefits that can improve MFIs' activities. Managers are aware of international agreements for protecting the environment and the Government's commitment to these agreements. They are equally aware of the need and 'obligation' to align themselves with these agreements and pro-environmental policies. Managers believe that MFIs that do not align with these policies will not survive because the availability of resources from most partners, namely the World Bank, is subject to pro-environmental measures. For example, the fact that managers are aware of the SDGs for 2030 and the Government's commitment to achieving these objectives seems to create a need for some MFI managers to collaborate, promoting green microfinance. In this way, they maximize their legitimacy with the entities on which they depend. However, the results indicate that some managers are more optimistic, arguing that it is possible to achieve the SDGs. In contrast, others are more pessimistic, claiming that MFIs can do little or nothing to achieve these objectives. Despite some scepticism regarding the SDGs, in line with Gupta and Vegelin (2016), MFI managers are willing to contribute as they know these objectives are on the global agenda and the Governments of Cabo Verde and Brazil agendas in particular. Furthermore, MFIs' work in other countries can serve as an inspiring model for MFIs in both cases. These results, in general, align with the findings of Forcella (2013) and Allet (2014), who found that legitimacy is one of the central motivators for MFIs to go green. However, the results of the two cases did not show direct and consistent pressure from Governments and Regulators to promote green microfinance.

In neither case does the data point to client pressure as a stimulating factor for developing green microfinance. This finding suggests that clients are either unaware of the consequences of environmental threats and need to be educated and encouraged to preserve the environment or, given their poverty, they are more concerned with solving their basic needs than preserving the environment, as some studies suggest (Archer & Jones-Christensen, 2011; García-Pérez et al., 2020; Tavanti, 2013),.

Mimetic pressure is most evident in the case of Brazil, where MFI managers have more knowledge of other MFIs and organizations that already have experience in green microfinance. The results indicate a concern among some Brazilian managers in imitating some successful MFIs and organizations in green microfinance, both at the national level, as is the case with *Crediamigo* and *Agroamigo*, Northeast Bank, and the international level. The temptation to imitate others can occur when the less successful seek to mimic the more successful, that is, when organizations copy models from the most successful, legitimate and respectable companies to avoid uncertainty (Haveman, 1993).

Managers believe that normative and mimetic pressures are not enough to engage MFIs in green microfinance. They understand that the Government has a vital role in developing green microfinance by promoting specific environmental standards and policies for the microfinance sector. Although they perceive that the Government is committed to contributing to achieving the SDGs, they believe that its intervention in environmental issues is not regular and consistent. Some strongly criticize the Government, arguing that its speeches are not reflected in practice. This argument may harm, to some extent, the development of green microfinance.

The results indicate the need for Governments and Regulators to be more interventionist about regulating and supervising MFIs' activities on environmental issues. For example, defining specific environmental policies and standards for the microfinance sector seems essential, as is creating environmental performance indicators that can contribute to MFIs' engagement in green microfinance. Overall, managers suggest that they do not feel much pressure from regulatory, normative and mimetic forces regarding environmental issues, although the literature shows that coercive forces, through regulations and regulatory enforcement, have been the central pressures for environmental management practice adoption (Jennings & Zandbergen, 1995; Zhu & Sarkis, 2004). These perceptions of managers can act as barriers to green microfinance development, confirming our research proposition 4, which states that the regulatory, normative and mimetic institutional context influences MFI managers' willingness to engage their institutions in green microfinance activities.

Sixth, managers suggest that MFI's internal conditions must be created to align with green practices. Managers from Cabo Verde point to the non-existence of a Board of Directors, which implies that strategic decisions are made by a single person – the President of the MFI. Strategic decisions are concentrated, and the President has discretionary power in everything that does not have clear directives from the Government or the investor. The results point to the lack of a green budget, in line with data indicating the absence of internal policies and procedures that consider environmental protection.

Approving projects that do not harm the environment is at the discretion of each decision-maker. Managers indicate that the largest MFIs have some experience dealing with green activities and projects, usually financed by the Government. However, they are unaware that these activities are associated with green microfinance. Most presidents are men over fifty years old and with primary education. In the case of Brazil, managers point to the existence of a Board of Directors made up of non-executive members with recognized suitability, mostly men, over fifty years old and with a bachelor's degree in social areas. The Board of Directors makes strategic decisions for MFIs, and an executive manager executes these decisions. This government model seems to favour the implementation of green microfinance, inasmuch that the data shows that some Councils include members have knowledge and experience in environmental issues. The results also indicate the absence of a green budget and internal policies and procedures. However, managers state that they apply criteria that inhibit the approval of projects or activities that harm the environment. Managers seem to have some approach and internal conditions that favour green practices and, consequently, the development of green microfinance. These results are aligned with our research proposition 5, which hypothesizes that managers' perception of internal conditions in their MFIs concerning environmental protection influences their decisions to involve their institutions in green microfinance activities. They also confirm findings from literature that internal conditions are a successful driver of environmental, social and financial performance (Giovanni, 2012).

Results show that green microfinance is, indeed, conditioned by personal and institutional managers' beliefs. The two theories that guided this research allowed to identify beliefs and perceptions that influence Cabo Verde and Brazilian managers' decisions to engage their MFIs in green microfinance. Results reveal that the two theories can be accepted as complementary in studying phenomena of this nature. Whereas the application of PMT proved appropriate for exploring personal level beliefs, IT proved suitable for exploring institutional factors that can drive or impede the development of green microfinance. Next section summarizes the MFI manager's beliefs and perceptions about individual and institutional drivers and barriers identified in the previous section and how these can influence the engagement of their institutions in green microfinance. We also discuss the implications of the results for the implementation of green microfinance.

6.2. Drivers and barriers to engage in green microfinance

Figure 15 illustrates the main drivers and barriers identified by managers at both the individual and institutional levels in each case. Results follow a similar pattern in both countries, with only small differences in the MFI managers' opinions. In the individual context, managers from Cabo Verde and Brazil can be motivated by their beliefs in the environmental threat's consequences on health, the source of resources that can be devastated by storms, and the future of humanity. Managers stressed that the poorest are the most exposed to climate events that end up damaging their homes, causing more diseases and putting their production and even their lives at risk. In the case of Brazil, managers pointed to examples of very serious situations, such as landslides, which have occurred and caused many human deaths. Rabbani et al. (2012) found that impacts of climate change are a growing concern as climate change-related hazards such as floods, droughts, salinity intrusion, cyclones and storms, the water system, and erratic rainfall behaviour have direct and indirect adverse impacts on the water resources and human health. Thus, MFI managers' beliefs about the severity of environmental problems, that the poorest are the ones who end up suffering more deeply their impact because of their dependence on natural resources and little ability to mitigate the negative effects of environmental degradation, which has been highlighted in previous literature (Ahmed et al., 2009; Leichenko & Silva, 2014; Liere & Dunlap, 1980; Lobell et al., 2011). Hall and Lal (2006), were found to be a strong motivator to engage in green microfinance activities, as predicted by PMT (Kothe et al., 2019).

	Drivers		Barriers	
Individual context (personal attitudes and beliefs)	CV - BR CV - BR CV - BR CV CV - BR BR CV - BR CV - BR	• Perceived severity of the threat consequences on health, the source of resources, and future of human sustainability. • Perceived vulnerability of the poorest, MFIs own customers. • Successful past experience in some green activities. • Environmental awareness. • Perceived environmental benefits. • Perceived better quality of life • Financial advantages. • Reputational gain.	CV - BR CV - BR CV - BR CV - BR	• Lack of/low technical and scientific knowledge in green microfinance. • Poor internal and external communication. • Cost of additional funds to engage in green microfinance. • Cost of changing operating processes to engage in green microfinance.
Institutional context (internal level)	CV BR BR	• Specific initiatives with the aim of protecting the environment (green activities). • Some experience in green microfinance. • Green governance approach	CV - BR CV CV - BR CV BR	• No specific budget to support green microfinance. • Lack of environmental education and information. • Lack of financial capacity • No internal environmental norms or criteria. • Lack of policies and procedures associated with environmental issues
Institutional context (external level)	CV CV - BR CV CV BR BR BR	• Maximizing legitimacy with the main stakeholders. • International recommendations. • SDGs. • Knowledge of positive experiences in MFIs from other countries • Interest in pursuing peer organizations strategy • Awareness of the need for specific environmental legislation for MFIs. • Some pressure from partners to avoid supporting projects or activities that harm the environment	CV - BR CV CV BR CV - BR BR	• No specific environment legislation for the microfinance sector. • Lack/weak supervision of MFIs regarding environmental protection. • Lack of pressure from community. • Skepticism concerning the performance of the Government. • Lack of pressure from Government. • No environmental subsidy from Government

Notes: CV = Cabo Verde; BR = Brazil

Figure 15. Drivers and barriers to engage in green microfinance

Findings reveal that MFI managers have a positive feeling about implementing green microfinance programs to support environmentally sustainable projects or activities. They are willing and motivated to make their contribution, because not only they are aware of the negative impact of the environmental consequences of not doing so, but because they believe in the effectiveness of protective behaviour. To this may be contributing to past successful activities in this domain that seem to provide proofs that such protective behaviour can be put in place, benefiting the environment and the quality of life of the most affected by environmental threats. Brazilian MFI managers, in particular, strongly believe that investing in the development of green microfinance improves the quality of life of their clients and society, close to previous studies (e.g., Allet, 2014; Rippey, 2012; Rouf, 2012; Van Elteren, 2007; Zutshi & Sohal, 2004). The recognised benefits of engaging in green microfinance extend to the MFI itself in terms of providing access to new financial opportunities. Managers also find other institutional benefits, such as reputational and commercial, of engaging in such behaviour. At the institutional level, the motivation of microfinance managers to promote green microfinance is influenced both by internal and external factors. At the internal level, motivation comes from the manager's need to gain legitimacy from stakeholders to access more funds, in line with Allet (2014).

A green governance approach appears to support MFI governance toward green practices. In this regard, the case of Brazil seems more appropriate, as, in MFIs, strategic decisions are taken by a Board of Directors composed of independent members with academic training in various areas of knowledge, including sociology and environmental studies. They have a solid connection with universities, and in most MFIs, one of the members of the Board of Directors is a university professor. In Cabo Verde, strategic decisions are made by the president, who is also the CEO of the MFI. Thus, the size and composition of the Board of Directors of Brazilian MFIs can be an asset for promoting green microfinance, similar to the conclusions of Hussain et al. (2021), who suggest that the independent Board of Directors and the size of the Board make it easier for MFIs to become sustainable. Motivations also come from existing experiences in supporting green activities or projects and a perceived willingness to continue. However, the internal motivations differ slightly between the two cases. In Cabo Verde, motivation is mainly related to prior experience in specific initiatives with the aim of protecting the environment, although managers do not necessarily associate these activities with green microfinance. For example, they mentioned they had experience supporting activities such as planting trees on slopes, building dikes to prevent floods and landslides, and protecting turtles and endemic species. However, they seemed unaware they were acting in favour of the environment. In Brazil, managers are motivated by some experiences in green microfinance, partly due to pressure from

investors, who impose environmental criteria for project selection. MFI managers do not design a specifically green credit product, but they are aware that some of their clients use their credit products (i.e., performing credits, consumer loans, etc.), at least in part, to finance projects or green activities. Furthermore, managers advocate a green approach. They state that, internally, they are concerned about not approving projects that harm the environment but feel that they need to give more attention to educating their customers. They point out that they will establish communication that includes environmental education through all available means, such as their websites.

Externally, MFI managers' biggest concern is to maximize legitimacy among the main stakeholders because they depend on them to achieve their objectives. For them, having a good reputation and a good image among the main stakeholders guarantees access to the funds they need to serve their customers. Therefore, they seek to ensure compliance with the demands of investors and donors. They believe that, this way, it will be possible to gain legitimacy from stakeholders, mainly from investors and donors, and access to more funding, as indicated by IT (Alajoutsijärvi et al., 2014; Haveman & Rao, 1997). In the case of Cabo Verde, managers point out that they feel practically no pressure from investors. They say that investors' biggest concern is the financial results. The little pressure they feel comes directly from the Ministry of Agriculture, which imposes environmental protection rules on the projects or activities they finance. In the case of Brazil, managers indicate that they feel pressure from investors and that the contracts they sign with them indicate that they cannot support projects that are harmful to the environment. Managers argue that they feel some pressure from international environmental protection recommendations and that, within their limitations, they seek to be aligned with the SDGs. Mainly in the case of Brazil, managers argue that they are aware of positive experiences in MFIs in other countries and that they are interested in following the strategy of successful peer organizations in green microfinance. Furthermore, they indicate that they feel some pressure from partners to avoid supporting projects that harm the environment. Overall, the results point to some normative and mimetic pressure.

Despite the managers' well-intentioned efforts, they do not seem to think of the environmental issue as something that deserves urgent attention. The study also found several other barriers that may hinder both managers perceived self-efficacy and response efficacy towards green microfinance, which translates into an expected slow transition to green microfinance. According to Moss et al. (2010), the implications of climate change for the environment and society depend on the response of the Earth system and the way humanity will respond through changes in technology, economies, lifestyles and policies. The study findings from the two cases suggest that much is left to be made to speed up this

process. For example, because this is a still new issue, training and technical support may be needed to strengthen the MFI managers' capabilities, as education and training is an effective way to develop sustainability related competencies and performance (Ji et al., 2012; Schröder et al., 2023). This would not only allow them to make more informed decisions than just based on their sensitivity to environmental problems but also create concrete guidelines and indicators to support the assessment and decision-making process. Also, such knowledge may have a replicating effect, as green microfinance programs may include actions to raise awareness and provide green competencies to their customers. In this way, MFIs can act as facilitators by supporting pro-environmental projects and activities, but they can be, at the same time, educators of their clients, so they can behave in a more environmentally friendly manner, as suggested by Rouf (2012). The results indicate that internal and external communication on environmental issues is practically non-existent and, consequently, is a barrier to the development of green microfinance. This study points to the need for consistent and effective communication and awareness-raising actions to educate clients and communities. Environmental education is a powerful tool for generating green behaviour among citizens and significantly influencing environmental awareness (Varela-Candamio et al., 2018; Zsóka et al., 2013).

Another barrier highlighted in these results relates to the cost of additional funds to engage in green microfinance. These costs are considered barriers to green microfinance if public donors do not provide seed capital/subsidies to MFIs to cover some of their initial operation costs. The literature indicates that MFIs serving lower-income communities charge high-interest rates, face high costs of monitoring clients relatively intensively, and have limited ability to leverage their assets (Conning & Morduch, 2011). According to the literature on green microfinance, it is often highlighted that developing environmental programs can be a difficult and costly task for MFIs at a technical and operational level (Araya & Christen, 2004; Wenner et al., 2004). Therefore, the cost-benefit ratio of going green is likely to be lower for larger MFIs compared to smaller ones, making them less likely to invest in environmental management (Allet & Hudon, 2015; Mia et al., 2018). However, some studies indicate that the costs of changing operating processes to engage in green microfinance may seem very high for many MFIs. Still, management may consider them as an investment strategy to avoid worse and more expensive consequences in the future (Dowla, 2018; Rippey, 2012). The results still indicate a set of internal barriers to MFIs that may condition their engagement in green microfinance, namely a specific budget to support green microfinance, lack of environmental education and information, lack of financial capacity to cover green initiatives, no internal environmental norms or criteria to select projects or activities, and lack of policies and procedures associated with environmental issues.

Although MFI managers argue that the Government is committed to contributing to the achievement of the SDGs, they feel that the Government's intervention in environmental issues is not regular and is restricted to only a few projects or activities financed by them. Some of them strongly criticize the Government, arguing that Government's speeches are not in line with practice. In other words, there is a pro-environmental discourse, but, in practice, the performance is very weak. According to them, the lack of internal norms related to environmental protection is another limitation. In the case of Cabo Verde, all MFI managers have the autonomy to act in accordance with their own judgment. They argue that what matters is their environmental awareness, so they try to minimize the negative impact on the projects they approve. In the case of Brazil, although MFIs feel pressured by the contracts they sign with investors, which require environmental protection, they are not audited and not required to present environmental indicators. According to participants of the two cases, regulatory pressure does not exist. Thus, it can make the decision-making process for the approval of environmentally sustainable projects or activities inconsistent and irregular. Some authors, for instance Lin and Ho (2011), found that regulatory pressure has a significant positive influence on green practice adoption. In the same direction, Ranta et al. (2018) argue that regulatory measures have driven increased recycling efforts.

Managers did not report any pressure from customers. This finding is in line with the results of previous studies (Archer & Jones-Christensen, 2011; Tavanti, 2013), which show that low-income customers are basically more concerned with solving their basic needs (García-Pérez et al., 2020) than with environmental sustainability. MFI managers revealed that they are concerned about legitimacy, imitation, and external pressures, which can positively influence their attitude and behaviour in the decision-making process to support environmentally sustainable projects. However, when these concerns are not pressured by external forces, they may not affect the intention of MFI managers to engage their institutions in green microfinance activities.

In sum, the importance of the MFIs' role in promoting sustainable practices by micro-business (Allet, 2017) was reflected in this study by the shared examples of some embryonic concerns to incorporate environmental criteria in the decision-making process when assessing the projects to support in Cabo Verde and Brazil. It seems that managers, in general, are sensitive and personally motivated to move towards a more systematic assessment and approval of green projects or activities. However, it is noted that this practice is not regular because it depends on several factors pointed out by the respondents, namely the financial one. They argue that given that they rely on external financing, they are conditioned by the financiers' requirements, which are often not environmentally but financially-

oriented. The response efficacy, therefore, appears to be intricately linked to financial issues. This indicates that any policy action aiming at advancing the green transition in microfinance needs to consider the several stakeholders of the microfinance ecosystem and not just MFIs. Additionally, implementing green microfinance also involves a shift of MFI clients' activities towards a more sustainable direction, which may entail additional costs and lower their financial performance, as previous research indicates (Shevchenko et al., 2020).

6.3. Contributions and recommendations

Studies on green microfinance began to gain momentum in the second decade of this century, which is why it is still considered a new research area. Its domain has not yet been completely delineated, and a consensual definition for the concept has not even been reached (Forcella et al., 2017). Therefore, recommendations were made that green microfinance should evolve into application-oriented research to develop approaches adapted to the specificities of microfinance (Forcella et al., 2017). The results of the present study offer several contributions for theory, practice, policy formulation and the SDGs. However, like any scientific study, some limitations also conditioned our research. In this section, we highlight the most relevant contributions of the study and recognize its main limitations, suggesting how these limitations can translate into future research opportunities, where appropriate.

This study contributes to the development of theory on green microfinance, its potential development and growth, a topic still little explored (Allet & Hudon, 2015; Effendi, 2013; Forcella & Hudon, 2016; Shahidullah & Haque, 2014). It brought to light knowledge about managers' beliefs that, on the one hand, can open avenues for new investigations in the field of green microfinance and, on the other hand, favour the development of more appropriate policies for developing this sector. Also, in the domain of MFI governance, our results link the beliefs of top managers to the environmental performance of MFIs and show that the composition of the Board of Directors and the vision of its members are paramount for the promotion of green microfinance. MFIs' environmental performance is part of several studies (e.g., Ait Sidhoum & Serra, 2018; Friede et al., 2015; Jung et al., 2017). Such knowledge not only contributes to the theory of green microfinance but also provides new inputs that can help in the formulation of new policies and practical actions that favour its promotion in developing countries.

This study was innovative in applying qualitatively two Theories – PMT and IT – to deepen the understanding of managers' beliefs that can contribute to the engagement of their MFIs in green

microfinance. It demonstrated that the two can be accepted as complementary in the study of phenomena of this nature, as the application of PMT proved to be suitable for exploring beliefs at a personal level, and IT proved to be suitable for exploring managers' beliefs about institutional factors that can boost or hinder the development of green microfinance. Ultimately, this study filled a gap found in the literature regarding the understanding of how MFI managers' beliefs about environmental sustainability and the role of microfinance in promoting it, as well as their perceptions about the institutional context, affect the involvement of their institutions in green microfinance.

This study also offers contributions to practice by identifying motivating factors for developing green microfinance and barriers that managers may face. The results show that managers are aware of the severity of environmental threats and their consequences for health, resource sources and the future of humanity. These results point to a set of challenges that managers have to face to minimize the severity of environmental threats, mainly for their clients, who are the most vulnerable because they depend on natural resources and suffer disproportionately the effects of climate change on their homes, livelihood, and quality of life (Rabbani et al., 2012). However, studies reveal that managers are self-confident and feel motivated to work to overcome the barriers they believe exist, mainly from an institutional point of view, both internally and externally. They believe this is a good time to get involved in green practices as they deem that they have a relevant role to play due to their influence on MFIs' strategy. Along these lines, our results offer relevant insights to managers who seek to strengthen their motivations and overcome barriers to engage their MFIs in developing green financial and non-financial environmentally sustainable products and services, that is, green microfinance.

Specifically, the results of the study allow offering the following practical recommendations for MFIs to follow in the green path. First, since studies indicate that managers have little knowledge and experience in green microfinance, an urgent measure would be to seek more knowledge on this topic, mainly through benchmarking with peer MFIs and other organizations with experience and recognized successes in this area. This approach may help managers overcoming internal skills gaps in environmental management. In this matter, MFI associations can play a fundamental role in facilitating the process of forming partnership networks between MFIs and other national and international institutions experienced in the area of green microfinance. These associations could serve as interlocutors with Governments to help MFIs overcoming the financial constraints that prevent them from embracing a green approach.

Second, it would be necessary to provide MFIs with management instruments that can facilitate and accelerate the process of implementing green microfinance, i.e., the inclusion of environmental protection policies in their strategic plan and a green budget to support projects and services that aim at environmental protection in their operational plan. This budget would be devoted to investment in environmentally sustainable projects, employee training, education, and awareness raising of customers and potential customers, as well as the acquisition of support technologies to accelerate processes and innovation and minimize operational costs. With regard to employee training, the study's conclusions point to the need to invest in the training of those responsible for analysing and approving projects or activities to increase their technical capacity to evaluate the environmental profile of these projects. Regarding customer education and awareness, this study suggests the creation of programs that include a pro-environmental approach and the development of communication actions to raise awareness among customers and communities about environmental risks and their mitigation. This study shows that MFI clients and communities have low environmental awareness. Consequently, training programs can play an important role in persuading uneducated people to be more aware of environmental issues, which is in line with the results of previous studies (Effendi, 2013; Forcella et al., 2017; Olli et al., 2001). In this way, MFIs can demand that their clients have environmentally friendly businesses and even encourage them to create community groups dedicated to preserving the environment (Effendi, 2013). Some experts claim that MFIs can play a role in promoting pro-environmental behaviours among their micro-entrepreneurial clients (Allet, 2012). MFIs can, through their financing, educate people about the significant benefits of green finance in their lives and society and also educate individuals to be conservative in everyday life, for example, by saving water, electricity, etc. (Uddin et al., 2021).

Third, internal standards and procedures for MFIs should be adopted, including environmental criteria in the selection of projects or activities that do not harm the environment. Managers can also create incentives, such as offering lines of credit that allow clients to invest in green projects or activities; that is, managers can offer lower rates for pro-environmental projects and awards for the most innovative projects. As Rouf (2012) advises, through the use of loans, MFIs can provide incentives to businesses that reduce or recycle waste, thus contributing to the reduction of environmental degradation and better quality of life.

Fourth, our results signal the need for creating and monitoring environmental performance indicators. This measure would contribute to increasing the MFIs' legitimacy among stakeholders, namely investors interested in green performance. The use of performance monitoring systems allows organizations to optimize their processes, providing performance gains. Specifically, they provide

mechanisms to focus efforts, identify problem areas, and measure progress toward defined objectives (Florida et al., 2001). Legitimacy with stakeholders can provide access to additional funds aimed at developing green microfinance. Partnerships can be extended to civil society organizations whose mission is to protect the environment.

In fact, our results corroborate, to some extent, those of Florida et al. (2001), who state that organizational factors matter significantly in adopting environmentally conscious manufacturing. In addition, our results suggest that MFIs need external support to better understand the topic, implement appropriate green training for their members and be able to identify relevant partner actors who can support green practices among their members.

Concerning the contributions of the study to policymaking, our results reveal that the promotion of green microfinance requires an immediate response in the form of environmental policy measures with an impact on the management of MFIs. A policy-oriented strategy emphasizes policy changes, urging central and local Governments, investors, MFIs, and development partners to facilitate environmental orientation for community microenterprises and promote greening efforts institutionally (Shahidullah & Haque, 2014). This study suggests a more holistic and coordinated strategy to encourage environmentally friendly practices within MFIs, as increased environmental awareness can contribute to sustainable business practices and, therefore, poverty reduction. In this context, our results offer several relevant clues. First, they highlight the need for formulation of specific laws and regulations for MFIs, in line with Uddin et al.(2021), as well as environmental performance measures, their implementation and monitoring strategies that contest existing political discourses and challenge entrenched economic interests and power relations that can act as barriers to the process (Armitage, 2002). As Uddin et al. (2021) show, enhancing government regulatory and supervisory pressure can accelerate green microfinance.

Second, results suggest that public intervention could be beneficial in supporting MFIs in developing green products. Governments can further intervene by creating programs encouraging green microfinance. For example, Governments can support MFIs in their initiatives by providing subsidies to compensate for reduced fees for environmentally sustainable projects and for acquiring new technologies to support the development of green microfinance. Atahau et al. (2021) found that better green loans encourage conditions for MFI members to develop eco-friendly businesses.

Third, regulators or supervisory bodies should create governance, supervision and environmental accountability mechanisms specific to MFIs. A ranking of environmentally sustainable MFIs could also be established, promoting greater dynamics in this sector.

Finally, investors should be encouraged to be more demanding in defining environmental criteria for projects or activities to be financed by MFIs. The results suggest that these measures can motivate MFI managers to include pro-environmental requirements in their institutions' internal regulations. However, it is necessary to ensure a pro-environmental approach that will not divert MFIs from their core purpose of poverty reduction, a risk that could constitute mission drift (Allet, 2014; Arrassen, 2017; D'Espallier et al., 2017; Xu et al., 2016).

By furthering the knowledge about the drivers of green microfinance in developing countries, the findings of this study also contribute to the SDGs. The fact that MFIs have as their primary mission to provide financial and non-financial products to low-income clients and, consequently, the reduction of extreme poverty around the world, currently measured as people living on less than 1.25 dollars a day (Atkinson, 2017), makes it reasonable to say that this study contributes, even if indirectly, to SDG 1 (no poverty). In other words, MFIs can and should guarantee the poor and vulnerable the right to financial resources and access to basic services and natural resources, providing them with better quality of life. Although this study focuses on MFI green transition, we believe microfinance success should be approached considering the triple bottom line.

This study also contributes to SDG 8 (decent work and economic growth) in that it suggests development-oriented policies and actions that support sustainable, productive activities and, consequently, the creation of decent jobs, the promotion of green entrepreneurship, creativity and innovation in the development of green financial products and services, which, in turn, will encourage the formalization and growth of micro, small and medium-sized companies, namely through access to green financial products and services. These actions will provide decent and sustainable employment for young people at the base of the pyramid, favouring economic growth, as found in other studies (e.g., Klapper et al., 2016).

The results of this study also contribute to SDG 10 (reduced inequalities), since the measures suggested in the study guarantee, in some way, equal opportunities and the reduction of social inequalities in an environmentally sustainable way. For example, it suggests specific environmental regulations for MFIs, their implementation and monitoring. Klapper et al. (2016) suggest that "people

with access to financial services are better positioned to succeed economically and build a decent life, ultimately making it easier to reduce inequality” (p. 9), which they consider in line with SDG 10.

Ultimately, this study is thought to be beneficial for organizations and policymakers in increasing the contribution of MFIs in addressing the environmental issues in Cabo Verde and Brazil. Generally speaking, our study suggests that for MFIs to go green, managers’ personal and institutional (internal and external) beliefs matter. The two dimensions or contexts operate as a system.

6.4. Limitations and Future Research Directions

Studies in management are subject to limitations rooted in the methodological choices (Brutus et al., 2013), and our study is no exception. In fact, the results are necessarily limited by the subjective nature of the chosen data collection method, which we assumed from the beginning of the research. The study never intended to generalize the results. Furthermore, researchers accept that all qualitative studies involve subjectivity, something also assumed to some extent in quantitative studies (Ratner, 2002), although it is safe to say that, in qualitative studies, subjectivity is higher.

Aware of the limitations of our methodological choice, we deem it appropriate, given the level of development of the theory and the nature of our research questions and objectives, as explained in the Methodology section (see Section 4). Even acknowledging that every qualitative study involves some level of interpretation and subjectivity inherent to the researcher (Armstrong et al., 1997), we were careful to minimize the level of subjectivity in the interpretation and coding of the content, using analysis and agreement between coders.

Another limitation of the study, which is also related to our methodological choices, is that we relied mainly on data from interviews in both cases analysed. Although we also carried out document analysis, we are aware that the study would benefit from a more extensive triangulation of information sources as a possible technique to improve the quality of qualitative analysis (Patton, 1999). Furthermore, we recognize that self-reported data may be subject to various recall biases. Some relevant information may be forgotten or not even noticed and therefore not stored in memory, while other may be added to fill in the gaps in memory reconstruction (Tourangeau, 1999).

Also, we only interviewed the top manager of the participant MFIs. The choice to interview only the manager, who is primarily responsible for decisions made in the MFIs, was due to several reasons. Firstly, because most MFI decisions are made by a single person in a large part of the MFIs that were

part of this study, and with discretionary powers in these organizations. Secondly, in cases where several people participate in the decision-making processes, it was not always possible to interview more than one person due to financial and time constraints and managers' scheduling difficulties. A considerable part of the participating MFIs is very small, and a single person must take on several tasks, making their participation in this type of study difficult. In fact, in only two MFIs the manager was interviewed accompanied by another employee who also participated by providing additional information. The choice to interview only one top manager in each MFI, although not ideal, was also made by other researchers following methodological procedures similar to ours (Allet, 2014; González-Benito & González-Benito, 2005). However, interviewing more than one person at each MFI would allow us to obtain a more accurate account of the beliefs and perceptions that may influence MFIs' engagement in green microfinance, not only as perceived by the main decision maker, the manager, but also by other employees of the MFIs, although some outside observers' opinions were included in the cases analysis.

This study's conclusions, although significant to furthering the knowledge about the transition to green microfinance in general, and in developing countries in particular, where poor people are disproportionally affected by environmental problems, need to be situated within the specific cases studied. Thus, future studies should extend this exploration to other geographies and make comprehensive intercultural comparisons.

Although environmental threats are a global issue, how people, in general, and decision-makers, in particular, perceive them and their environmental attitudes vary across countries, as they are associated with cultural values (Schultz, 2002). Through a longitudinal study, the follow-up of the green microfinance situation in Cabo Verde and Brazil would also be relevant to address the intention-behaviour dynamics, as the current research focuses only on the antecedents of the intentions to develop a greener approach.

The findings obtained from the qualitative and deductive approaches, along with the theoretical framework, show similarities. However, if we had used a grounded theory, which is primarily inductive, we could have obtained more comprehensive insights. Hence, future research can consider taking this approach.

The two cases under consideration are very similar, which is why their results are also homogeneous. Although this homogeneity lends credibility to the results, it also limits the diversity. For this reason, future studies should focus on more heterogeneous cases.

Other studies could also assess the possibility of MFIs deviating from their mission if they start supporting projects with a higher focus on environmentally sustainable criteria. Studies will also be needed to assess customers' behaviour, understand their beliefs and analyse their propensity to favour green projects or activities. The same study can be done for investors.

It is pertinent to carry out more studies to measure the evolution of the impact of green microfinance on SDGs, in line with Uddin et al. (2021). The authors found that green microfinance contributes to SDG 1, SDG 2, SDG 3, SDG 4, and SDG 5. We found that green microfinance can also contribute to the SDG 8 and SDG 10.

Also, studies on a cooperation model between players (central and local Governments, investors, MFIs, development, peer MFIs and other organizations) resulting in a holistic strategy can make a significant contribution to the development of green microfinance. We encourage other researchers to use this conceptual approach and to subject the concepts, claims and findings presented here to rigorous empirical testing in larger samples of countries and their MFIs. We believe that comprehensive studies could add value to the theory of green microfinance.

We also believe that it will be relevant to assess the extent to which having a higher level of competence in green microfinance, namely through formal training, can leverage the managers' ability to think effectively and engage their MFIs in green microfinance. We concluded that MFI managers and employees need to know and be more familiar with the topic, its implementation and monitoring. Therefore, more research is needed to confirm, on the one hand, whether or not higher proficiency in green microfinance helps boost green beliefs and, on the other hand, whether it can work in conjunction with an effective way of taking action to increase the possibility of making decisions to engage MFIs in green microfinance.

We suggest a comparative study between MFIs managed by a single top manager and those in which a Board of Directors makes strategic decisions. This study could make a contribution to the theory in that it could demonstrate in which case the engagement of MFIs is easier and faster.

Finally, and returning to the question about managers' decision to engage their MFIs in green microfinance, much research is still needed. In fact, we found indications in our study that managers are willing to engage their MFIs in green microfinance. However, more research would be helpful to assess whether green MFIs are more profitable than traditional MFIs. Other studies indicate that it is necessary to evaluate whether environmental risk management programs are cost-effective compared

to other approaches to promote pro-environmental behaviour in developing countries' microenterprises (Allet, 2017).

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APPENDICES

APPENDIX 1. Interview guide

Sections	Exemplary questions	Purpose
Appraisal of the environmental threat	What environmental threats do you recognise nowadays?	To assess the perceived severity (Perceived level of negative consequences for oneself, others and the environment, in general, from environmental threats and from not supporting environmentally sustainable projects).
	How serious do you think these environmental threats are, in general, and the ones caused by microfinanced projects that do not consider an environmental concern?	
	Who suffers the most from the consequences of environmental threats?	To assess the perceived vulnerability (perceived probability of occurring environmental impacts if MFIs do not support environmentally sustainable projects).
Appraisal of green microfinance as a coping mechanism	How susceptible do you feel to the environmental consequences of projects that present environmental threats?	
	Do you feel you have the tools and the knowledge needed to selectively support more sustainable projects instead of others?	To assess the self-efficacy (perceived ability/capability of the manager or MFI to perform the coping response, i.e., supporting environmentally sustainable projects).
	How effective do you believe green microfinance is in mitigating environmental threats?	To assess perceptions about the response efficacy (perceived efficacy of the proposed protective behaviour, i.e., supporting environmentally sustainable projects, at averting the threat).
Benefits and costs	What benefits and costs do you associate with green microfinance activities?	To assess perceived gains and pains of applying protective behaviour
External institutional context	How do think environmental laws and regulations influence your decision process regarding green microfinance activities?	To assess perceptions about the pressure exerted by regulatory forces towards environmental protective microfinance activity, including regulatory requirements, law and regulations enforcement, penalties for 'violations', recognition for good practices, etc...
	Does your institution comply with current environmental laws?	
	Is environmental protection part of your bottom line? How do you think MFIs should behave to be considered sustainable organizations?	To assess perceptions about the pressure exerted by normative forces towards environmental protective microfinance activity, including certifications and accreditations, but also moral obligations towards protecting the environment.
	What is the norm in the MFI sector regarding protecting the environment? What good example do you identify that you would like to follow?	To assess perceptions about the pressure exerted by cultural-cognitive forces towards environmental protective microfinance activity, including values, beliefs and assumptions about shared logics of action in the business community.

Internal institutional context	Do you believe your MFI satisfies all of the internal requirements to engage in green microfinance?	To assess perceptions about the internal conditions towards environmental protective microfinance activity, including internal policies, norms, procedures, specific budget, etc., towards protecting the environment.
Intention to engage in green microfinance	Do you intend to start supporting more environmental projects and develop other green microfinance activities in the future?	Assess behavioural intentions towards the decision to support or to oppose environmentally sustainable projects.