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GREEN ISLAMIC MICROFINANCE: EMPIRICAL EVIDENCE FROM TUNISIA

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Abstract: *In the last decade, conventional microfinance institutions started to consider their environmental bottom line in addition to their financial and social objectives. Previous studies identify empirically the characteristics of conventional MFIs that are involved in environmental management in developed markets and their role in facing environmental and climate challenges in Arab countries. However, little is known about the triple bottom line of Islamic microfinance institutions. This paper aims to investigate the environmental performance of Islamic microfinance highlighting the synergies between Islamic microfinance and green inclusive finance. For that purpose, this research uses secondary data from multiple sources and descriptive data analysis. Basing our analysis on the Green Index framework to assess whether Tunisian Islamic MFIs are green institutions for the period between 2017 and 2021, we find growing scores of MFI's environmental performance. The results provide empirical evidence of the Islamic microfinance contribution to sustainable finance in Tunisia. The results indicate that the institution shows the interest of its shareholders in initiating environmental strategy while conventional institutions are in the process of planning or developing products and strategies. Meanwhile, the institution provides green financings last year, the awareness of environmental opportunities and risks seem less evident for the management of the Islamic MFI. This study contributes to the ongoing debate of whether Islamic microfinance has a triple bottom line. This research also provides insight into the environmental performance of IMFI in Tunisia. The findings provide useful information to managers, investors, and policymakers.*

Keywords: Islamic microfinance, Environmental performance, Green Microfinance.

1. Introduction

Climate change poses a major risk to worldwide economies, with large implications for business resilience and livelihoods. As climate change increases the vulnerability of low-income people, green inclusive finance in low and middle-income countries will have different roles to play in helping vulnerable people to respond to the challenges of climate change.

In the Middle East and North Africa (MENA) region especially, climate-induced events are becoming more frequent and severe. Water scarcity is a pressing concern in the region, which has the lowest per-capita water supply. The World Bank (2018) estimates that MENA will have the greatest economic losses from climate-related water scarcity in the world, at 6–

14% of GDP by 2050. Indeed, these climate risks would lead agriculture workers in rural areas to abandon their lands for other productive activities (Tahiri and Aaminou, 2023). Clean energy and electricity supply is another climate-related concern in the region where thirty percent of the population has no access to electricity and over a quarter suffer from prolonged blackouts and lack of power supply (Realpe Carrillo and Reviakin, 2022). Indeed, climate risks can become financial when the business development of low-income communities is harshly affected. The people most impacted by these changes are those living on low incomes and with small businesses, whose incomes can be precarious with few options to mitigate and adapt. Therefore, institutions would identify the adverse environmental impacts caused by clients' activities, such as greenhouse gas emissions, air, water, and soil pollution, deforestation, land degradation, waste production, and overexploitation of natural resources (Miller et al., 2022). In particular, microfinance institutions (MFIs) are inclusive financial services providers (FSPs) which have a key role to play in moderating the impacts of climate change through new sustainable models of development (Realpe Carrillo and Reviakin, 2022). By developing environmental strategies, implementing new practices that allow climate risk alleviation and offering green financial and non-financial products and services, Islamic MFIs can also ensure that the most vulnerable populations are equipped to mitigate and adapt to significant climate risk.

The rising interest of researchers and policymakers on environmental performance of microfinance institutions suggest a growing awareness about the role of MFIs to play in facing climate challenges (Tanin et al., 2019). Nonetheless, several studies on Islamic MFIs consider only their financial and social performance (Ashraf et al., 2014; Ben Salem and Abdelkader, 2023). While previous studies investigate the environmental strategies of conventional MFIs in Arab countries, the inclusive finance community lacks an overarching framework for understanding the nexus between green inclusive finance approach and Islamic finance. This paper aims to fill that gap by providing evidence of the green performance of an Islamic MFI in a country with an enabling environment for green finance as Tunisia. In particular, a case study of green microfinance in Tunisia suggests that a new regulation facilitates the allocation of green micro-credits (Abid and Kacem, 2018). We argue that the questions of whether Tunisian Islamic microfinance institution benefit from the regulation as conventional MFIs in the country by adding environmental objectives to its traditional double bottom line of financial and social performance have remained unexplored. To fill this gap, we consider the green performance of the unique Islamic microfinance institution in Tunisia.

Given the research objectives of assessing environmental performance of Islamic microfinance, this study uses the Green Index (GI) framework for analyses to define the criterion of environmental performance score (EPS)[1]. The GI provides an overview of MFIs' commitment in green inclusive finance by instigating actions at the institutional and client level. Indeed, the level of engagement and awareness from the institution, the incentives to follow green inclusive finance will depend on the institutional context, market conditions and enabling environment of the MFI. Thus, this paper tries to investigate the environmental performance of Islamic microfinance in Tunisia. The section 2 presents the theoretical framework of green inclusive finance and green Islamic microfinance in Islam. Then, section

[1] We consider EPS whereas other studies (Tanin et al., 2019; Ashraf et al., 2021) consider that environmental, social and governance (ESG) rating tools may help institutions assess their environmental performance and commitments. Investors have their own tools for owing thoroughness and evaluation of the institution's environmental performance, along with their financial, social, and governance assessment.

3 explains the research methodology before discussion of results in section 4. The last section concludes with policy implications.

2. Conceptual framework: Islamic microfinance and green finance

Previous studies on green inclusive finance remain limited to conventional MFIs in developed countries (Allet and Hudon, 2013; Huybrechs et al., 2019) and Arab countries (Realpe Carrillo and Reviakin, 2022). Although, *maqasid al-Shariah* are the differences between Islamic and conventional MFIs, Islamic scholars developed a framework of greening Islamic finance based on the new interpretation of ethical principles of Islam that involve the environment preservation.

2.1 The framework of green microfinance

The framework of green microfinance appraises the actions that the MFIs carry out, tracking an environmental objective through the offer of green products and services and implanting environmental risk management. The purpose of green inclusive finance is to increase MFIs clients' climate resilience and, simultaneously protect the environment through three main actions (Forcella et al., 2022). First step consists on implementing an environmental strategy. The second action involves identifying and managing environmental risks and opportunities at the client and institutional level. After developing environmental performance management, microfinance institutions start proposing sustainable financial and non-financial services.

The axes of action mentioned above are modules where specific environmental performance assessment tools can guide MFIs in their green inclusive finance development. These actions reflect the framework used by the international institutions developing the tools to measure the environmental performance of financial services providers, called the Green Index. It is noteworthy that the framework of this tool is built on conventional approach for products offering to help MFIs how to better shape their financial products to respond to their clients' needs. However, conventional microfinance institutions are different from Islamic MFIs that provide interest-free financial and Sharia compliant services based on different framework of serving the purposes of Islamic Law (*maqasid al-Shariah*).

2.2 Green Islamic microfinance: an ethical approach of Islamic Law

In a recent literature review on Islamic microfinance, Rohman et al. (2021) show that few papers consider the interconnection between *maqasid al-Shariah* and Islamic microfinance. While previous studies focus on how Islamic MFIs contribute to serving central aspects of *maqasid al-Shariah*, this research emphasises on the new interpretation of *maqasid al-Shariah* (Najar,2008). Alkhan and Hassan (2020) suggest that the practice of Islamic microfinance serves purposes of Islamic law as the five key factors related to an Islamic economy and wealth. In a research published by Research Center for Islamic Legislation and Ethics (RCILE, 2017), Islamic Scholars define an ethical approach of green inclusive finance. Following the Islamic Law (or Shariah) principles, Islamic microfinance has some features based on the framework of *maqasid al-Shariah* (Kulsanofer, 2012). The purpose of Islamic Law define the framework of green Inclusive finance for Islamic MFIs that provide Sharia compliant products and services.

The preservation of *maqāṣid al-Sharī'ah* is crucial for alleviation of harm or evil (*mafsadah*), as well essential in preserving interests or good (*maslaÍah*) in the community. (Zain *et al.,* 2017) suggest that the Islamic social finance and its instruments have high potentials for the preservation and protection of *maqāṣid al-Shariah*. In a recent research, Kasri and Harun (2022) provide a showcase how the *maqasidiq* framework could shape green finance, in Malaysia[2]. They argue that funding environmental and sustainable activities echoes the objectives of Shariah (*maqasid al-Shariah*).

According to Najar (2008), the preservation and conservation of the environment are intrinsically rooted in *maqasid al-Shariah,* which aims to preserve the interests of human well-being (*jalb al-masalih*) and prevent harm (*daf'al-mafasid*) that can ruin their lives. To that end, Islamic microfinance can contribute in funding the preservation and conservation of the environment through green financings and Sharia compliant services. The alignment of green finance with *maqasid al-Shariah* is evident in the "green Islamic microfinance" through financing sustainable practices and implementing environmental strategy by Islamic microfinance institutions. Hence, it widens the framework of green inclusive finance with an ethical approach of Islamic Law that illustrate the interconnection between *maqasid al-Shariah* and the environment.

3. Methodology

This paper aims to investigate the environmental performance of an Islamic microfinance institution using secondary data from multiple sources and descriptive data analysis. Basing our analysis on the Green Index framework, we try to assess whether Tunisian Islamic microfinance have green strategy for the period between 2017 and 2021.

3.1 The green Index:

Forcella et al. (2022) developed the Green Index (GI) to help MFIs conduct an in-depth analysis of their environmental performance. Accordingly, MFIs have a range of axes that they can pursue as requisite to manage and foster environmental protection at the institutional and client levels. This tool allows answering the question how MFIs can help low-income populations prepare for and respond to climate change while improving green outcomes. Therefore, GI defines the background to assess green inclusive finance from the offer perspective.

[2] According to Dr Marjan Muhammad, Research Quality Assurance & Publications of ISRA Research Management Centre, an imprint of the International Centre for Education in Islamic Finance (INCEIF) .

3.2 Environmental performance assessment

Following Allet (2011), we estimate the MFI's score to assess the environmental performance of the Islamic microfinance institution. The MFI's score include three main pillars of the environmental performance management:

-The first pillar relates to developing a sustainability strategy by defining objectives and strategy as the management and staff become involved in the sustainability agenda. It assesses the process that consists of resources allocation, documented strategy and compliance with international implementing standards and certifications.

-The second pillar reflects the implementation of green inclusive finance and to which extent the Islamic microfinance institution has progressed in implementing its environmental policy and risk management procedures. It entails that the institution developed internal capacities to track and manage climate risks and to raise awareness of these issues among its clients.

-The third pillar deals with the core business of the microfinance institution, i.e., the provision of financial and non-financial services for households/businesses and sustainable agriculture. It seeks out the green products and services allowing the institution to enhance the climate resilience of its clients. Therefore, the score takes value 100 when the institution already offer green financial products, mostly related to green technologies and sustainable agriculture practices. Each pillar has its criterions and weight in the final green score of the microfinance institution.

4. Research findings and Discussion

Previous studies suggest a supporting environment to green inclusive finance for financial institutions operating in Tunisia, where there is governmental initiatives (Abidi and Kacem, 2018; Tahiri and Aaminou, 2023). For instance, national polices support the development of green economies and environmental protection. Furthermore, there is already a regulation benefiting firms that work on the green economy and promote sustainable development through a financial support in 2021.

4.1 Islamic microfinance in Tunisia

The well-known microfinance institutions are Advans Tunisie, CFE (Centre Financier aux Entrepreneurs), Enda Tamweel, Microcred, Taysir Microfinance and Zitouna Tamkeen (ZT), the unique Islamic microfinance institution in the country. Inaugurated since May 2016, ZT has a network of 20 branches across all Tunisian governorates (Zitouni and BenJedidia, 2022). As a pioneer institution of Islamic microfinance in Tunisia, ZT provides personal "*tamweel*" and economic empowerment financing. The Islamic MFI offers a package of financial and non-financial services that reach seventy percent of its portfolio. The main financing products, based on Sharia concepts are essentially "Murabaha" and "Qardh Hassan" (free interest loans). Following inclusive finance purpose, the institution provides a wide range of Sharia-compliant products and services that involves agricultural raw materials "Tamweel", conveyor "Tamweel", equipment "Tamweel", merchandise "Tamweel", tools and materials"Tamweel", "Tamweel" food manufacturing products. In addition to Islamic micro-financial, "takaful"micro-insurance services, the institution provides non-financial services as training enabling young entrepreneurs and farmers to manage their projects. The officers provide training sessions in financial management, marketing, and product distribution with technical assistance required for the success of new projects. The IMFI financed more than 12,000 projects where 40% of beneficiaries are women (Zitouna and Ben Jedidia, 2022).

In Tunisia, MFIs used sustainable practices to contend with external threats to business continuity. For instance, developing green products has allowed Enda to rebuild business resilience shaken by the economic crisis. While, ZT provides financing for solar generators and water pumps that could help businesses to avoid inflated fuel costs and deal with fluctuation of electricity prices as reported in Table 1.

Table 1. Environmental Performance Management: Conventional vs Islamic microfinance

Beneficiaries/activities	**Conventional**	**Islamic**
waste collection and recycling activities	Environmental package since 2015: 1,638 "Eco-loans" contracted for an amount of 4 million dinars.	
Installation of irrigation and solar pumping systems.	Eco-Chams credits in 2020 and 2021 : Acquisition of solar water pumps in rural areas for date palm producers in the southern region of Tunisia	Financing solar water pumps
Sustainable agriculture practices	Solar dehydrators (solar crop dryers) and solar refrigerators for product storage.	
Management of the environmental risks at the institutional level	Awareness campaigns on climate change for the staff in partnership with the National Environmental Protection Agency	
Non-financial services (50 date producers in the oases)	Training in agriculture practices and treatment to fight against the proliferation of a mite that weaves a web around the dates and causes them to dry out.	
Non-financial services (the first beneficiaries of Eco-Chams loans)	Training in climate change issues, irrigation methods, composting, water management, and pest management.	

4.2 Green performance of Islamic microfinance: a case study

The green performance of the Islamic MFI involves three dimensions. The first dimension assesses whether the institution integrate the environmental mission in its bottom line strategy and manage its environmental performance. The second dimension consider the potential for microfinance provider to identify and manage green opportunities and threats.

Thirdly, the last dimension consists of providing financial and non-financial green products and services.

For each criterion, a score is calculated. These scores are equally weighted to provide a final assessment of the MFI's environmental performance measured by the resulting normalized indicator score (EPS). Therefore, the total score equal 100 for the MFI that implemented all the dimensions. The progress of this score over the period 2017- 2021 show higher green performance of the Tunisian Islamic microfinance institution as reported in figure 1. The findings suggest the increasing awareness of IMFI's managers on the green inclusive finance and the environmental performance management. The EP scores indicate that the Islamic microfinance institution moves from the stage of initiator (EPS lower to 25) to the step of implementing environmental performance management (EPS higher to 50). However, the development of green Islamic microfinance remain trivial relatively to green inclusive finance.

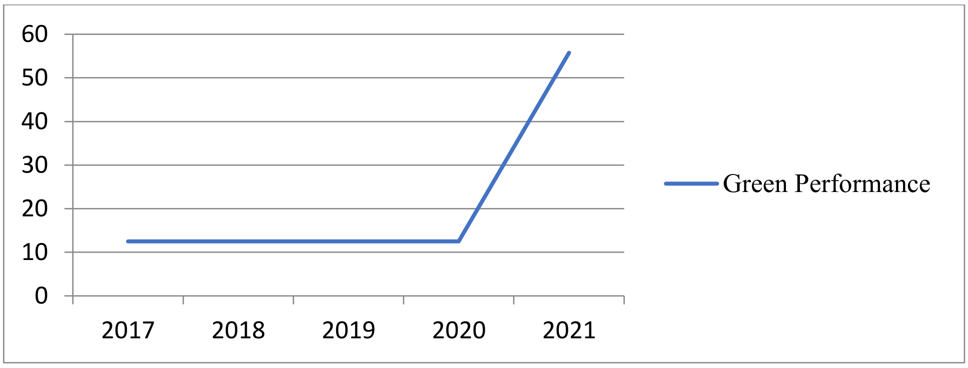

Figure 1. EPS of Islamic microfinance in Tunisia (2017_2021)

While some conventional MFIs have already their environmental and social risk management system, the unique Islamic MFI in Tunisia begins later with mainly "green financings". For instance, *Enda Tamweel* has developed its environmental strategy since 2017. It was also committed to promote responsible practices through awareness campaigns as shown in table 1. In order to improve its environmental performance, the managers assert the ambition to develop environmental scoring system for the activities they finance. As regards the offer of green loans, new financial products responding the needs of the Eco entrepreneurs will be developed, according to the Head of Agricultural and Environmental strategy. For example, sustainable transportation, ecological housing or responsible agriculture are the future market target of the MFI to encourage the adoption of new ecological practices.

5. Conclusion

The aim of this study is to spotlight on the interaction between green finance and Islamic finance. For that purpose, we consider the environmental performance of an Islamic microfinance institution based on the approach of the Green Index, launched in 2022. The GI suggests that financial services contribute to help low-income people and enterprises transition towards more sustainable livelihoods at the client level. In the other side, this framework proves how MFIs implement actions at the institutional level to make their operations more sustainable and prioritize environmental protection. Given the features of Islamic microfinance, this research highlight the *maqasidiq* framework involving the preservation and conservation of the environment, which could shape an overarching framework for assessing the green performance of Islamic microfinance institutions.

Using descriptive data analysis of the green performance of an IMFI, this study provides an empirical evidence of the Islamic microfinance contribution to sustainable finance in Tunisia. Our results suggest that the Islamic microfinance institution moves from the stage of initiator to the step of implementing environmental performance management. Indeed, conventional MFIs are at an earlier stage than Islamic MFIs, as regards environmental strategies and risk management. The progress in developing the first pillar depends on the maturity of the institutions. Therefore, Islamic MFI, as a young and small institution can benefit from awareness raising and exploratory workshops on the topics. Although conventional MFIs that are larger and well established benefited from technical assistance on their environmental risk management at prior stage, they could give a benchmark to Islamic MFIs for the technical side of environmental management system. The assessment of environmental performance for other MFIs in the country will be useful for the policymakers, the donors and the stakeholders in climate finance to identify the more efficient institutions in implementing environmental performance management.

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