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Article

The challenges and opportunities of green financing in Palestine from the perspective of banks

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Abstract: The study aimed to demonstrate that Palestinian banks have the potential to increase green financing by enhancing public sector understanding instead of focusing solely on the private sector, in addition to providing insights from employees of Palestinian banks listed on the Palestine Stock Exchange regarding the key challenges and opportunities related to green financing in Palestine specifically. It posed two central questions: What are the opportunities and challenges in implementing green finance in Palestine, and what level of government and private sector support exists? The study used the descriptive analytical approach, through interviews and surveys, the study targeted 10 heads of credit departments and a non-probability sample of 350 bank employees. The findings revealed a strong commitment from the government to promote green finance. At the same time, the private sector showed reluctance to engage in external investments. Key challenges included political instability and limited financial resources, though international aid was a significant opportunity to advance green finance. The study recommended increasing public awareness and fostering stronger coordination between the government and private sector, possibly incorporating competition from neighboring countries to further develop Palestine's green finance strategy.

Keywords: green finance; challenges; opportunities; Palestinian bank

1. Introduction

In recent years, green finance has gained global prominence as a critical tool in mitigating the effects of climate change, aligning with the objectives of the United Nations Sustainable Development Goals (SDGs) and Environmental, Social, and Governance (ESG) principles. Specifically, SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 13 (Climate Action) emphasize the need for sustainable financing to support a low-carbon, climate-resilient future. Similarly, the global push for adherence to ESG principles has led to increased investments in environmentally sustainable projects, with financial institutions playing a crucial role in transitioning economies towards greener practices (Chang et al., 2024; Rahman et al., 2023; Razia et al., 2024).

Recent literature (2023–2024) highlights the growing importance of green finance not just as a tool for environmental preservation but as a driver for economic innovation, particularly in regions facing complex environmental and political challenges. For example, studies have pointed to the role of international climate funds and cross-border cooperation in developing economies as crucial elements in accelerating green finance (World Bank, 2024). In this global context, Palestine's evolving green finance landscape reflects both the necessity and potential of sustainable development strategies to achieve long-term resilience.

Green finance, focusing on environmental sustainability investments, has gained global prominence in recent decades. In Palestine, its historical trajectory is intertwined with broader economic and political factors (Awwad and Zidan, 2021). The region has long faced challenges like political instability, occupation, and resource constraints, which have shaped its economic and environmental landscape.

The unique environmental and economic conditions in Palestine, influenced by geopolitical limitations and a lack of natural resources, underscore the significance of sustainable development (Awwad, 2018). Challenges encompass various aspects, from tackling environmental issues like water scarcity and waste management to bolstering economic stability amidst external pressures. Nevertheless, these challenges create opportunities for innovative financial approaches that prioritize eco-friendly projects. Green finance in Palestine holds the potential to address environmental risks and drive economic growth by investing in renewable energy, sustainable agriculture, and eco-friendly infrastructure. As global awareness of climate change grows, integrating green finance in Palestine emerges as both a strategic necessity and a pathway to a more sustainable and resilient future for the region.

Historically, Palestinian territories have addressed environmental issues such as water scarcity and land degradation. These challenges have spurred the exploration of sustainable financing. International organizations have supported eco-friendly projects to enhance ecological resilience and economic sustainability (Awwad, 2022).

The promotion of green finance in Palestine mirrors global trends favoring environmentally responsible investments. Sustainable development goals have led to an increased focus on renewable energy, energy efficiency, and conservation (Razia et al., 2023). Despite unique challenges like movement restrictions, efforts towards green finance continue to evolve.

Study problem

The problem of the study is that green finance is gaining global recognition for its role in mitigating climate change and promoting sustainable development. However, in Palestine, the unique economic, political, and environmental challenges—such as occupation, resource scarcity, and instability—hinder the advancement of green finance. There is a need to understand how green finance can overcome these barriers and contribute to a more sustainable and resilient future for the region.

While global literature on green finance is extensive, there is limited research specifically addressing the intersection of green finance, geopolitical constraints, and environmental challenges in Palestine. This study seeks to fill this gap by examining how sustainable financing can be adapted to Palestine's unique context, contributing to economic innovation and environmental sustainability.

Study objectives

This study seeks to provide a comprehensive vision of the key challenges and opportunities surrounding green finance in Palestine, examining the current landscape through the lens of SDGs, ESG, and climate action imperatives. By exploring how financial institutions can contribute to sustainability efforts, the research aims to highlight the role of green finance in shaping a more sustainable and resilient future for Palestine.

Study questions

1) What are the key challenges and opportunities for green finance in Palestine from the point of view of employees of Palestinian banks listed on the Palestine Stock Exchange?
2) What is the level of support provided by the government sector and the private sector for green financing in Palestine from the point of view of employees of Palestinian banks listed on the Palestine Stock Exchange?

2. Literature review

Green finance, as per the United Nations Environment Programme's "Green Finance Progress Report 2017" refers to financial products and services that integrate environmental and social considerations. It aims to promote sustainable development by directing capital towards projects that enhance environmental well-being. This definition highlights finance's role in fostering positive ecological outcomes and aligning economic activities with environmental stewardship goals (United Nations Environment Programme's, 2017).

The International Finance Corporation (IFC), in its report on "Green Buildings: A Finance and Policy Blueprint for Emerging Markets," defines green finance as investments in projects or companies that significantly contribute to environmental sustainability. It emphasizes sectors like renewable energy, energy efficiency, and climate resilience to encourage environmentally conscious economic activities (International Finance Corporation (IFC), 2019).

The European Commission's "Action Plan on Financing Sustainable Growth" states that green finance involves financial activities tailored to support environmentally sustainable projects and facilitate the shift to a low-carbon, resource-efficient economy. The Commission's definition emphasizes green finance's dual purpose of promoting sustainability and driving economic transition (European Commission's, 2018).

The concept of green finance is based on the idea that financial systems are vital in tackling environmental issues and promoting sustainable development. Green finance involves incorporating environmental, social, and governance (ESG) criteria into investment decisions to support projects with positive ecological impacts. It underscores the importance of creating long-term value, managing environmental risks, and aligning financial activities with goals like combating climate change. Regulatory frameworks and standards help identify and disclose green investments, promoting transparency. Financial tools like green bonds and loans are tailored for eco-friendly projects. The framework also includes corporate social responsibility principles, focusing on stakeholder engagement and societal and environmental impacts. Collaboration on a global scale is encouraged to address environmental challenges, with innovation and technology adoption seen as key drivers for sustainability. In essence, green finance aims to integrate environmental concerns into financial practices to build a more resilient and responsible system (Van Niekerk, 2024).

ESG stands for environmental, social, and governance. ESG investing refers to how companies/industries score on these responsibility metrics and standards for potential actions. It means ESG is also a very related measurement for the companies and has a close relation to SDGs. The main reason for this. The transition from an industrialized past to a sustainable future has given rise to two influential frameworks that have captured the attention of governments, businesses, and individuals: environmental, social, and governance (ESG) principles and sustainable development goals (SDGs) (Ahmad et al., 2024).

Numerous studies have explored the challenges and opportunities of green finance, aiming to understand how to integrate environmental sustainability into financial systems. An International Monetary Fund (IMF) study looked into the obstacles of scaling up green finance initiatives, emphasizing the difficulty of accurately measuring environmental impact and the necessity for standardized metrics. It also highlighted the challenge of aligning financial incentives with long-term environmental goals amidst short-term economic pressures (International Monetary Fund, 2024).

On the positive side, a Global Sustainable Investment Alliance (GSIA) report analyzed the growth of sustainable and green finance worldwide, noting a significant increase in sustainable investment strategies due to rising environmental awareness among investors. It pointed out the potential for green finance not only to tackle ecological issues but also to stimulate economic growth and job opportunities (Global Sustainable Investment review, 2022); additionally, a review by the United Nations Environment Program Inquiry into the Design of a Sustainable Financial System examined the role of policy frameworks in promoting green finance. The study recognized the vital role of supportive regulatory environments.

A study by Krastev et al. (2024) revealed the growing global interest in green finance, with citation rates for research in the field showing significant growth over time. The study focused on the pivotal role of green finance in areas such as energy efficiency, renewable energy development, and promoting sustainable economic growth. It concluded that green finance is a key tool for policymakers, researchers, and practitioners in achieving sustainable development. The study also emphasized the importance of interdisciplinary collaboration and continued research efforts to advance the global sustainable finance agenda.

Several previous studies have examined aspects of green financing in terms of concepts, impacts, challenges, and opportunities. Some of these will be addressed, where Rohit Agrawal et al. (2023) study emphasized through a systematic review of literature and articles from 2016 to 2023 highlighted the increasing interest from governments and regulatory bodies in critical issues such as climate change, global warming, and the need for green innovation in public administration. Green financing involves the allocation of financial resources for the development of clean energy, eco-friendly products, and processes. Its policies aim to address financial challenges faced by industries through the introduction of new products, operations, and services. Another study by Abdul Gafoor et al. (2023) emphasized the rising environmental concerns and the demand for green and sustainable project financing, environmental protection, environmental regulations, and the establishment of green financing policies and tools. There is a call for more research on carbon credits and for policymakers and financing institutions to prioritize their efforts to achieve a green economy status. Furthermore, Rahman et al. (2022) highlighted the increasing interest among scholars and practitioners in understanding the relationship between financing and environmental sustainability. However, there is a lack of studies in developing countries that organize and present information in the context of green financing. Liu and Wu (2023) carried out a systematic literature review on green financing and the challenges related to disclosing sustainability and its economic impacts. Despite concerns about the lack of consistency, comparability, and assurance in these reports, there is a general agreement in the literature that green business practices are positively linked to financial performance and improve risk management and economic development.

A study by Megha (2021) examined the progress of green finance in India and on a global scale. Utilizing a range of data sources, the research assessed public awareness and the availability of financing options for green projects. The findings indicated that although public awareness and financing options have improved in India, further reducing information asymmetry through enhanced information management systems and fostering better coordination among stakeholders could facilitate more sustainable long-term economic growth. While the study of Mavlutova et al. (2023) aimed to examine the current trends and challenges in green finance, focusing on the role of green bonds in promoting sustainability, particularly in renewable energy supply. The authors conducted a bibliometric analysis of green finance and renewable energy, followed by an extensive literature review highlighting the advantages and obstacles of green bond investments. An empirical study, which included hypothesis testing and the clustering of EU (European Union) countries, was also performed, as these countries have not been extensively studied in this context. The research revealed that green bond investments positively impact carbon reduction and renewable energy supply in EU and OECD (Organisation for Economic Cooperation and Development) countries. Additionally, the cluster analysis showed a positive correlation between economic performance and overall ESG risk among European OECD countries.

A study by Falcone and Edgardo (2019) provides empirical evidence on the opportunities and challenges of green finance, particularly focusing on financial barriers affecting investment decisions in green companies. The research, which examined Italian biomass producers using discourse analysis and expert surveys, found that while green finance offers potential for environmentally sustainable innovation, it does not fully mitigate the institutional and financial challenges biomass producers face. These challenges include uncertainty around government policies, limited involvement of financial institutions, short-term financial instruments, and a lack of knowledge about financing options and technical expertise within companies. The study suggests that policy interventions should focus on long-term objectives to reduce the risks perceived by financial institutions in funding biomass projects.

Emerging markets are utilizing the potential of sustainable development to achieve carbon neutrality, considering the limitations of natural resources. Companies must embrace eco-friendly manufacturing to encourage a circular economy and green financing. A study by Kumar et al. (2023) connects green financing with environmental education, indicating its ability to support society, sustainability initiatives, climate change mitigation, and investments in the circular economy despite various challenges. These challenges include a limited understanding of green financing, a lack of consistency in legal structures for environmental education, and the absence of attractive financial incentives for investors and financial institutions willing to advance sustainability.

Another study by Rapi et al. (2021) identified various challenges and future development opportunities for green financing applications in certain countries. These challenges include general regulatory pressures, infrastructure investments, the development of green financing technologies, the existence of advanced capital markets, and issues in implementing green financial instruments in countries like Cheberyako et al. (2021) guided green financing development in the social and environmental context, particularly to enhance the use of these tools in both the public and private sectors, fostering partnerships and insurance against climate risks, investing in education, and consequently building a skilled workforce in green financing fields.

The study by Feng et al. (2023) presented challenges, policies, and future trends in green financing in China. The results indicated that China still faces significant challenges such as enhancing green insurance, establishing a unified green financial system, and addressing asymmetry in green financial information. On the other hand, a study by Zeng et al. (2023) highlighted the contribution of green financing through technological innovations in mitigating environmental impacts by reducing carbon emissions by transitioning from non-renewable to renewable energy sources. However, it was noted that some economies experienced deterioration due to increased consumption of nonrenewable energy, economic progress, foreign direct investment, and trade openness.

Additionally, a study by Ozili and Peterson (2022) outlined several observations regarding the challenges and opportunities of green financing across different countries. Key challenges included a lack of awareness about green financing, inconsistency in its definitions, weak coordination of green financing-related policies, and the absence of guaranteed incentives for investors and financial institutions to invest in green financing for climate change mitigation. Nevertheless, the results emphasized increasing efforts to make green investment profitable, leveraging technology, and building supportive agendas by financial institutions and regulatory bodies, highlighting the capacity of green financing to address significant disparities in the environment, society, and economic change.

The previous studies have identified a variety of challenges and opportunities related to green financing applications and their impact on sustainable development. However, these may not be directly applicable to the Palestinian context. While these studies share common concepts, they differ in the specifics relevant to an open economy in Palestine. Therefore, there is a research gap in understanding the Palestinian case and its unique implications. It is essential to address these factors in Palestine and offer recommendations to both the public and private sectors on the challenges and opportunities in adopting and implementing public policies for green financing.

3. Materials and methods

To achieve the study's objectives, the researcher used the descriptive-analytical method, employing both interviews and questionnaires. In the interviews, the study population focused on all heads of credit facilities departments in Palestinian banks listed on the Palestine Stock Exchange. A purposive sampling method was used to select representatives from the banks. The interview questions measured participants' perspectives on the challenges and opportunities of green finance in Palestine. The interview consisted of 10 main elements reflecting five challenges (geopolitical constraints, limited resources, political instability, institutional capacity, market dynamics) and five opportunities (international support, community involvement, technology transfer and innovation, policy support, capacity building, and education). These factors were mostly derived from existing literature, with some designed to fit the Palestinian context. Each element consisted of three questions, as shown in **Table 1**, and all questions were measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Table 1. Interviewee's perceptions regarding challenges and opportunities of green finance in Palestine.

Interviewees perceptions regarding the challenges of green financing in Palestine				
Rank	**The paragraph**	**Means**	**Response Rate**	**Degree**
Geopolitical Constraints				
1	The presence of ongoing conflict and occupation in Palestine imposes constraints on the implementation of green finance initiatives.	4.78	95.6%	High
2	Movement, trade, and infrastructure restrictions impede the implementation of green sustainability projects in Palestine.	4.52	90.4%	High
3	The political instability and uncertainty in Palestine deter investors from making long-term commitments to green projects.	4.27	85.4%	High
Overall		4.52	90.4%	High
Political Instability				
1	Given the political instability in Palestine, green financing projects become less appealing to investors and lenders.	4.80	96%	High
2	The instability of the political environment in Palestine diminishes investors' confidence in embracing green sustainable development initiatives.	4.32	86.4%	High
3	Due to the tense political situation in Palestine, the perceived risks of investment escalate, hindering support for green initiatives in the region.	4.12	82.4%	High
Overall		4.41	88.2%	High
Resource Limitations:				
1	The limited availability of essential resources like land, water, and energy constrains the execution of green initiatives in Palestine.	3.52	73.31%	middle
2	The Scarcity of essential resources hampers the viability of renewable energy initiatives and sustainable agricultural practices.	3.21	58.51%	middle
3	Limited access to essential resources hinders the establishment of environmentally friendly projects in Palestine.	3.08	52.64%	middle
Overall		3.27	65.4%	middle
Institutional Capacity				
1	The lack of a specific regulatory framework constitutes a major obstacle to green financing in Palestine.	2.32	46.4%	low
2	The lack of clear guidelines and regulations helps build technical knowledge and skills. which hinders investor support for green finance in Palestine.	2.06	41.2%	low
3	The lack of a specialized body for sustainable investment limits the flow of money to green projects.	1.97	39.4%	low
Overall		2.11	42.2%	low

Table 1. (*Cintinued*).

Interviewees perceptions regarding the challenges of green financing in Palestine				
Rank	**The paragraph**	**Means**	**Response Rate**	**Degree**
Market Dynamics				
1	Understanding market dynamics is important for the success of green finance initiatives in Palestine.	1.61	32.2%	low
2	The success of green financing projects in Palestine requires an understanding of the nature of economic conditions and the factors that affect consumer behavior.	1.43	28.6%	low
3	Promoting entrepreneurship and innovation helps in the growth of green businesses and technologies.	1.17	23.4%	low
Overall		1.40	28%	low
Interviewees perceptions regarding the opportunities of green financing in Palestine				
International Support				
1	Engagement with international organizations, agencies, and donor countries fosters the growth of green finance initiatives in Palestine.	4.92	98.4%	High
2	Leveraging resources and expertise through collaborative efforts with external partners addresses challenges in green finance in Palestine.	4.78	95.8%	High
3	Increased participation in discussions, forums, and programs led by international organizations enhances opportunities for green finance initiatives in Palestine.	4.26	85.2%	High
Overall		4.65	93%	High
Technology Transfer and Innovation				
1	Incorporating cutting-edge technology into the generation of renewable energy, such as wind and solar power, serves to broaden the energy mix in Palestine while diminishing reliance on fossil fuels.	4.43	8.86%	High
2	The adoption of progressive agricultural practices, including precision farming and drip irrigation systems, plays a pivotal role in enhancing productivity, minimizing resource consumption, and mitigating environmental harm.	4.21	84.2%	High
3	Advancements in waste management infrastructure are pivotal in curbing waste generation, elevating recycling rates, and mitigating pollution across Palestine.	4.07	81.4%	High
Overall		4.23	84.6%	High
Community Engagement				
1	Engaging local communities is vital for the longevity and triumph of environmentally friendly initiatives.	3.57	71.4%	middle
2	Incorporating cultural insights, traditions, and behaviors enriches the efficacy of green project planning. Fostering a sense of involvement,	3.49	69.8%	middle
3	Ownership and equitable sharing of advantages among community members bolster the sustainability of green endeavors over time.	3.38	67.6%	middle
Overall		3.48	69.6%	middle
Policy Support:				
1	Incentives and regulations are essential for bolstering green finance initiatives in Palestine.	2.31	46.2%	low
2	Encouraging investment in clean energy, such as solar and wind power, can be achieved through measures like feed-in tariffs and subsidies.	2.25	45%	low
3	Tax incentives also play a crucial role in alleviating the financial burden on companies and individuals engaged in environmentally friendly projects.	2.23	44.6%	low
Overall		2.62	45.2%	low

Table 1. (*Cintinued*).

Interviewees perceptions regarding the challenges of green financing in Palestine				
Rank	**The paragraph**	**Means**	**Response Rate**	**Degree**
Capacity Building and Education				
1	Investment in education, training, and awareness initiatives contribute to building human capital and fostering a culture of sustainability in Palestine.	1.88	37.5%	low
2	Do workshops and vocational training programs to empower individuals to seek professions in renewable energy and other green industries.	1.56	31.2%	low
3	Community outreach programs and public awareness campaigns contribute to raising awareness of the value of sustainable practices and environmental protection.	1.20	24%	low
Overall		1.54	30.8%	low

Degree; High Medium, Low.
Response Rate: more than 73.4%, 46.68%–73.4%, less than 46.6%+
Correction factor for the mean (3.67 and above: High), (2.34–3.67: Medium), (Below 2.33: Low).

Table 2. The perceived level of support for green finance from both governmental and private sectors, as perceived by the respondents.

The government role in supporting green financing in Palestine				
Rank	**The paragraph**	**Means**	**Response Rate**	**Degree**
1	The government promotes regional and international cooperation in green finance.	3.52	80%	High
2	Governmental support is provided to local administrations for the development of green finance.	3.11	70.68%	Moderate
3	Key government legislation is in place to encourage shifts in consumption and investment patterns towards green finance.	2.95	67%	Moderate
4	There is a distinct governmental objective to establish a green financial system.	2.69	61.09%	Moderate
5	Efforts are underway by the government to strengthen the role of the securities market in supporting green investment.	1.11	25.20%	Very low
Overall		2.67	60.79%	Moderate
The role of the private sector in supporting green finance in Palestine				
Rank	**The paragraph**	**Means**	**Response Rate**	**Degree**
1	Private sector company managements possess a thorough understanding of the concept of green finance.	3.22	%73.31	middle
2	The private sector exhibits a reluctance to invest in green finance projects.	2.57	%58.51	low
3	The financial sector is actively engaged in devising new financing mechanisms to expedite the expansion of green finance.	2.31	%52.64	low
4	The private sector is actively implementing measures to enhance the efficiency of renewable energy.	2.32	%50.87	low
5	The private sector is engaged in developing low-carbon strategies to produce environmentally friendly products.	1.32	29%	Very low
Overall		2.40	%52.86	low

Degree; Very low, Low, Moderate, High. Very high.
Response Rate: Less than 50%, 50%–59%, 60%–75%, 76%–89%, 90%+
Correction factor for mean; 1–1.80, 1.81–2.61, 2.62–3.42, 3.43–4.23, 4.24–5.

To assess the extent of public and private sector involvement in coordinating support for green finance policies and procedures in Palestine, the researcher designed and distributed a questionnaire to 350 employees in Palestinian banks listed on the Palestine Stock Exchange, including department heads and managers. Each questionnaire comprised five questions, as detailed in **Table 2**. The reliability of the scales used in the questionnaire was verified through Cronbach's alpha, resulting in a reliability coefficient of 84.5% for both sets of questions.

4. Terminology of study

Figures 1 and **2** depict the entirety of the factors representing challenges and opportunities in green finance tailored to the Palestinian context.

Figure 1. Challenges of green finance in Palestine.
Source: Author, 2024.

Figure 2. Opportunities of green finance in Palestine.
Source: Author, 2024

4.1. Challenges of green finance in Palestine

Geopolitical Constraints: Palestine's geopolitical situation, including occupation and conflict, creates barriers to accessing funding and implementing green finance initiatives. Restrictions on movement, trade, and infrastructure development hinder the deployment of sustainable projects.

Resource Limitations: Limited access to essential resources such as land, water, and energy presents challenges for implementing green initiatives. Water scarcity and land-use restrictions particularly constrain the feasibility of renewable energy projects and sustainable agriculture practices.

Political Instability: Political instability in Palestine introduces uncertainties for investors and lenders, reducing the attractiveness of green finance projects. Perceived higher risks associated with investing in a politically volatile region lead to reluctance to fund such initiatives.

Institutional Capacity: Building institutional capacity for green finance, including regulatory frameworks, financial institutions, and technical expertise, is essential for project success. However, Palestine faces challenges in developing and strengthening these capacities.

Market Dynamics: Understanding local market dynamics, consumer preferences, and business opportunities is crucial for the viability of green finance initiatives. Adapting global best practices to the local context and fostering entrepreneurship can drive innovation and stimulate market growth.

4.2. Opportunities of green finance in Palestine

International Support: Engaging with international organizations, development agencies, and donor countries can provide opportunities for funding, technical assistance, and knowledge sharing. Collaborative efforts can leverage resources and expertise to address green finance challenges in Palestine.

Community Engagement: Involving local communities in the planning, implementation, and benefits of green projects is essential for their sustainability and success. Community participation enhances project acceptance, ownership, and long-term impact.

Technology Transfer and Innovation: Promoting technology transfer and innovation in clean energy, sustainable agriculture, waste management, and other sectors unlocks new opportunities for green finance in Palestine. Leveraging technological advancements enhances efficiency, productivity, and environmental sustainability.

Policy Support: Establishing supportive policies, incentives, and regulations creates an enabling environment for green finance initiatives. Measures such as feed-in tariffs, tax incentives, and subsidies for renewable energy, energy efficiency, and sustainable practices are crucial.

Capacity Building and Education: Investing in education, training, and awareness initiatives builds human capital and fosters a culture of sustainability in Palestine. Enhancing skills and knowledge in renewable energy, environmental conservation, and sustainable development empowers individuals and communities to actively contribute to green finance efforts.

5. Results and discussion

5.1. Challenges and opportunities of green finance in Palestine

Palestine faces a unique set of challenges and opportunities in the realm of green financing, reflecting both its geopolitical context and its aspirations for sustainable development. Amidst political instability and limited access to resources, the pursuit of green financing initiatives encounters obstacles yet holds promise for environmental stewardship and economic resilience.

This study explores the multifaceted landscape of challenges and opportunities shaping green financing in Palestine, by extracting the interviewee's perceptions of the sample members, the level of adopted dimensions and percentage, and the degree of appreciation for the questionnaire items, can be observed, as shown in **Table 1**.

Figures 3 and **4** illustrate the percentage breakdown of interviewees' perceptions concerning the assessment of the foremost priorities, challenges, and opportunities for green finance in Palestine.

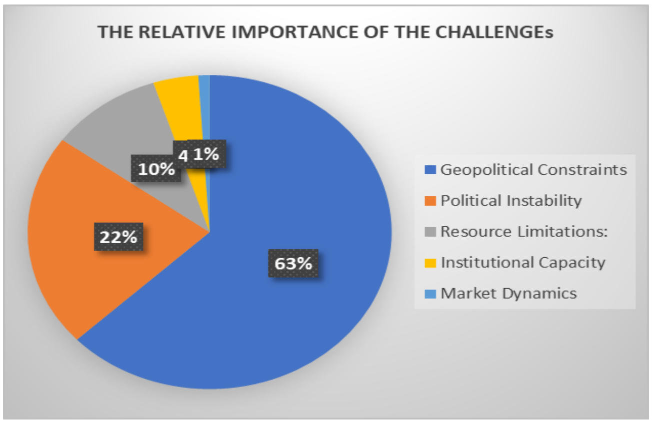

Figure 3. Distribution of the sample's opinions in ranking green finance challenges in Palestine.
Source: Author, 2024.

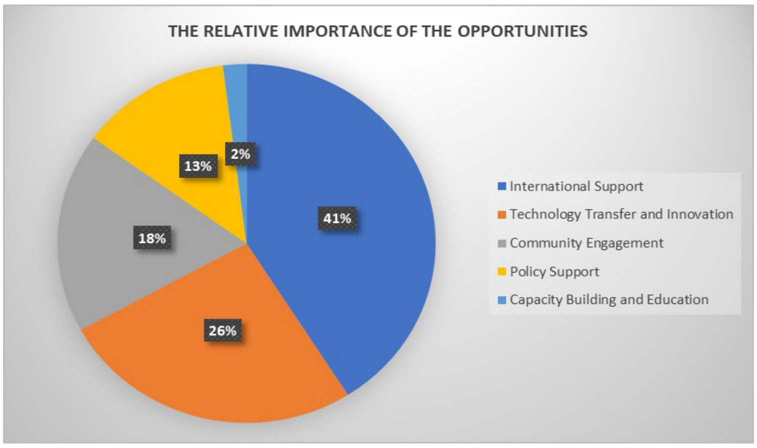

Figure 4. Distribution of the sample's opinions in ranking green financing opportunities in Palestine.
Source: Author, 2024.

The results from the interview sample in **Table 1** provide a nuanced understanding of both the challenges and opportunities facing green finance in Palestine. A closer look at these findings reveals the deep-rooted obstacles posed by the region's geopolitical context, as well as the potential avenues for overcoming these barriers through international support, innovation, and community engagement.

5.2. Challenges in green finance

5.2.1. Geopolitical restrictions and instability (90% and 88%)

The overwhelming majority of respondents identify geopolitical restrictions and the overall instability in Palestine as primary obstacles to green finance. This highlights the unique political landscape in Palestine, where ongoing conflict, occupation, and border restrictions significantly hinder the implementation of long-term financial projects, particularly those that require large-scale infrastructure investments, such as renewable energy or sustainable agriculture. These challenges not only deter international investors but also complicate internal efforts to launch and sustain green finance initiatives. The lack of political stability creates a climate of uncertainty, making it difficult for financial institutions and stakeholders to commit to long-term green investments.

5.2.2. Resource scarcity (65%)

Although slightly less significant than geopolitical instability, resource scarcity remains a key challenge in Palestine. The limited availability of natural resources, such as water and arable land, restricts the ability to implement green projects that rely on these critical inputs. For example, sustainable agriculture and water-efficient technologies require a certain level of baseline resource availability, which may be difficult to secure in a region already grappling with environmental degradation and water shortages. Despite this, it is noteworthy that resource scarcity is not viewed as an insurmountable barrier, as indicated by a lower percentage of respondents (65%) compared to geopolitical issues.

5.2.3. Institutional capacity and market dynamics (42% and 28%)

Challenges related to institutional capacity and market dynamics, while still relevant, are perceived by fewer respondents as significant compared to geopolitical and resource issues. This could imply that although institutions in Palestine face limitations in terms of expertise, governance, and regulatory frameworks, these challenges are not seen as fundamental barriers to green finance. Instead, they may represent areas where improvements can be made with relative ease, especially through capacity-building initiatives, policy reforms, and targeted market interventions. Similarly, market dynamics, such as the demand for green products or the availability of green finance instruments, appear to be less pressing concerns but still need attention to fully unlock the potential of green finance in the region.

5.3. Opportunities in green finance

5.3.1. International support and technology transfer (93% and 84%)

A large majority of respondents view international support and the transfer of technology and innovation as the most promising avenues for advancing green finance in Palestine. This suggests a strong belief that external assistance, whether in the form of financial aid, technical expertise, or technology sharing, can play a pivotal role in overcoming local challenges. International climate funds, multilateral development banks, and partnerships with foreign governments or non-governmental organizations (NGOs) could be instrumental in providing the necessary resources and know-how to launch green projects. Moreover, technology transfer could introduce cutting-edge solutions, such as renewable energy technologies or water-saving innovations, which are essential for tackling Palestine's environmental challenges.

5.3.2. Community participation (69%)

A notable portion of respondents emphasize the importance of community participation in green finance strategies, indicating that grassroots involvement is crucial to the success of such initiatives. This finding reflects the idea that sustainable development requires local buy-in, with communities playing an active role in shaping and implementing green projects. Engaging communities not only increases awareness and education about green finance but also ensures that projects are tailored to the specific needs and conditions of local populations. Community participation can help build trust, promote sustainable practices, and create a sense of ownership that enhances the long-term viability of green finance initiatives.

5.3.3. Policy support, capacity building, and education (45% and 30%)

While fewer respondents view policy support, capacity building, and education as key opportunities, these areas remain vital for advancing green finance in Palestine. Strengthening policy frameworks to encourage green investments, such as offering tax incentives or establishing green bond markets, could provide the necessary regulatory support to drive green finance. Capacity-building initiatives are equally important, as they would help improve the institutional capabilities of local banks, government agencies, and private sector actors, enabling them to effectively manage and implement green projects. Finally, education plays a critical role in raising awareness about the benefits of green finance and fostering a culture of sustainability across all sectors of society.

The results illustrate a complex landscape where the advancement of green finance in Palestine is both highly challenging and highly promising. On one hand, geopolitical instability and resource constraints pose substantial barriers that cannot be ignored. On the other hand, the strong potential for international collaboration, technology transfer, and community involvement presents clear pathways to overcoming these challenges. By focusing on building institutional capacity, fostering policy reforms, and ensuring broad-based community engagement, Palestine can unlock the potential of green finance to address its environmental and economic needs. These results are consistent with Kumar et al. (2023), Rapi et al. (2021), Ozili and Peterson (2022), Megha (2021).

Ultimately, the interplay between these challenges and opportunities highlights the importance of a multi-faceted approach to green finance in Palestine. By leveraging external support while addressing internal capacity gaps and by promoting both top-down and bottom-up initiatives, green finance can become a cornerstone of Palestine's strategy for sustainable development and long-term resilience.

The challenges and opportunities of green finance in Palestine can be discerned and organized based on the overall viewpoint of the interviewees through **Figures 3** and **4**.

According to **Figure 3**, the majority of the sample, comprising 63%, identifies geopolitical constraints as the primary challenge for green finance in Palestine. Conversely, only 4% and 1% perceive institutional capacity and market dynamics as the least significant challenges in this domain. The remaining challenges vary between 10% and 22%.

In **Figure 4**, it is evident that 41% of the sample views international support as the most significant opportunity for facilitating green financing in Palestine. Conversely, only 2% regard capacity building and education as the least important opportunities in this regard. The remaining opportunities span from 13% to 26%.

5.3.4. Efforts from both the public and private sectors to bolster green financing in Palestine

After identifying the primary challenges and opportunities for green finance in Palestine through previous tables, the researcher developed a questionnaire to assess the sample's views on the level of government and private sector support for green finance trends. The questionnaire's validity and reliability were established by incorporating feedback from specialists and calculating the Cronbach alpha coefficient, which reached 82%. **Table 2** displays the percentage and degree of appreciation for the questionnaire items.

The results from **Table 2** offer a detailed view of the levels of government and private sector support for green finance initiatives in Palestine, highlighting both their contributions and limitations. The findings reveal a moderate but somewhat fragmented approach from the government, while the private sector's involvement is significantly weaker. Let's break down the results in more detail:

5.4. Government support for green finance

5.4.1. High commitment to regional and international cooperation (80%)

The most prominent finding is that 80% of respondents recognize the government's commitment to fostering regional and international cooperation. This high level of support indicates that the government sees the value in collaborating with external partners, such as international development organizations, foreign governments, and climate funds, to advance green finance. Such cooperation could bring essential resources, technical expertise, and financial aid to overcome local challenges. This is particularly important for Palestine, where geopolitical and resource constraints necessitate external support to drive significant green finance initiatives.

This strong emphasis on external cooperation also suggests that the Palestinian government is looking beyond domestic limitations, recognizing the importance of global partnerships to align with international climate goals and Sustainable Development Goals (SDGs). However, it also raises questions about the extent of internal capacity and the ability to independently drive green finance, given the reliance on external support.

5.4.2. Moderate support for legislative development and local administration (60%–71%)

Government support for legislative development, goal clarity, and the administration of green financing initiatives in Palestine ranges from 60% to 71%. This moderate level suggests that while there are efforts to establish clear goals and develop supportive legislative frameworks, more work is needed to fully solidify these aspects. Legislative clarity is crucial for creating a conducive environment for green finance by establishing regulations, tax incentives, or subsidies that encourage green investment.

The figures indicate that the government is somewhat engaged in building the institutional framework for green finance but may lack the full commitment or resources needed to drive comprehensive policy reforms. This moderate support can hinder the pace of green finance development, as clear policies and legislative backing are essential to attracting investment and ensuring project stability.

5.4.3. Low focus on financial market development (25%)

One of the most critical weaknesses identified is the lack of focus on integrating green finance into Palestine's financial markets, with only 25% of respondents noting efforts in this area. Financial markets play a pivotal role in green financing by providing mechanisms such as green bonds, sustainable investment funds, or other financial instruments that can attract investors to eco-friendly projects.

The absence of substantial government efforts to develop green financial markets suggests a major gap in the overall strategy. Without robust financial markets, it will be difficult for green projects to secure long-term funding, and the private sector may be less incentivized to invest in green initiatives. The lack of market-driven incentives can also limit the scope for innovation and the scaling of sustainable projects.

5.5. Private sector involvement in green finance

5.5.1. High understanding of green finance concepts (73%)

Interestingly, a substantial 73% of respondents acknowledge that private sector management in Palestine has a strong grasp of green finance concepts. This suggests that the private sector is well-informed and understands the potential benefits and importance of investing in environmentally sustainable projects. Knowledge, however, does not necessarily translate into action.

The gap between understanding and implementation could be due to several factors, such as risk aversion, a lack of financial incentives, or limited access to green financial instruments. Despite this knowledge, the private sector's overall hesitancy to engage in green finance might be a reflection of broader structural barriers, such as political uncertainty or weak market demand for green products.

5.5.2. Low engagement in low-carbon strategy development (29%)

Only 29% of respondents reported that the private sector is actively involved in developing low-carbon strategies for eco-friendly product development. This low level of engagement suggests that while the private sector may understand green finance, it is not fully integrating these concepts into its business models or strategic planning.

This could be due to various factors, such as the absence of regulatory pressure, insufficient financial incentives, or concerns about the profitability of green investments in a market that may not yet be mature enough to support widespread demand for sustainable products. The lack of engagement in low-carbon strategies also implies that the private sector is not yet viewing sustainability as a core business objective, which could limit the potential for innovation and green growth.

5.5.3. Hesitation in green finance mechanisms and renewable energy investments (50%–59%)

The hesitation of the private sector to invest in and innovate green financing mechanisms, as well as in improving renewable energy efficiency, falls within the range of 50%–59%. This suggests a significant level of reluctance, with half or more of the private sector still resistant to engaging in green finance. The reasons for this hesitation could include high perceived risks, limited access to financing, or uncertainty about the return on investment for green projects.

Additionally, the lack of government support in financial markets (as previously discussed) may contribute to this hesitance. Without a supportive financial ecosystem, private companies may be reluctant to allocate resources to green projects, particularly in the absence of clear financial rewards or policy incentives. Moreover, political and economic uncertainty in Palestine likely exacerbates this reluctance, as businesses prioritize stability over long-term green investments in a fragile market.

5.6. Synthesis of government and private sector roles

The results indicate a somewhat lopsided dynamic between government and private sector involvement in green finance in Palestine. While the government shows moderate support, especially in international cooperation and legislative development, it has not sufficiently mobilized financial markets to support green investment. This gap likely contributes to the private sector's hesitation to engage more fully in green finance, despite having a relatively strong understanding of the concept. These results are consistent with Cheberyako et al. (2021), Falcone and Edgardo (2019), Rapi et al. (2021).

For green finance to thrive in Palestine, stronger efforts are needed from both sectors. The government should focus on developing financial markets, offering clear incentives, and creating a regulatory environment conducive to green investment. The private sector, on the other hand, must transition from merely understanding green finance to actively participating in low-carbon strategies, innovating green finance mechanisms, and investing in renewable energy. By closing the gap between knowledge and action, and fostering better collaboration between the government and private sector, Palestine could significantly enhance its green finance ecosystem.

6. Conclusion

In Palestine, green finance encounters a host of challenges intertwined with promising opportunities. The political landscape, marked by ongoing conflicts and occupation, poses a significant hurdle, deterring potential investors and impeding the development of sustainable financial initiatives. Limited access to essential resources such as land, water, and energy further complicates matters, inhibiting the widespread adoption of green technologies and practices. Additionally, inadequate infrastructure, including renewable energy grids and waste management systems, presents obstacles to the implementation of green finance projects. Access to finance remains constrained, particularly for small and medium-sized enterprises, hampering the growth of green businesses and sustainable ventures.

However, aimed at these challenges, Palestine also stands on the brink of numerous opportunities. International aid and support from organizations such as the United Nations and the World Bank offer avenues for financing sustainable development projects. The region's abundant potential in renewable energy, particularly solar and wind energy, provides opportunities to reduce reliance on fossil fuels and drive sustainable development. Locally driven innovation, coupled with a growing interest in green technologies and practices, holds promise for the emergence of tailored solutions tailored to Palestine's unique context. Collaboration with neighboring countries and regional partners can facilitate knowledge exchange, technology transfer, and joint investments in green infrastructure. Furthermore, the increasing emphasis on social impact investment opens avenues for financing projects that yield both financial returns and positive social or environmental outcomes in Palestine. By addressing these challenges and leveraging available opportunities, Palestine can advance its green finance agenda, foster sustainable development, and contribute to global efforts toward environmental conservation.

To navigate the uncertainties of climate policy shifts, ongoing conflicts, pandemics, and economic instability, Palestine should focus on developing resilient and adaptable policy frameworks that can accommodate changing conditions while pursuing long-term sustainability goals. Strengthening international partnerships with donors, development agencies, and NGOs can provide essential resources and technical support while diversifying financing mechanisms such as blended finance, impact investing, and green bonds can reduce dependency on single sources of funding. Investing in local capacity building and training programs will enhance skills and innovation, and incorporating scenario planning and risk management into projects can address potential risks and unexpected developments. Increasing community engagement and education about green finance and sustainable practices will foster local support, and leveraging technological advancements and innovative solutions can offer cost-effective and scalable approaches. By implementing these strategies, Palestine can better manage the complexities of green finance and advance sustainable development amidst prevailing uncertainties.

In conclusion, the respondents affirmed that the Palestinian government is continuously striving to support, develop, and implement policies and procedures for green finance in Palestine. However, they noted that the private sector remains hesitant to embrace the requisites and applications of green finance.

To gain a comprehensive understanding of green financing in Palestine, the researcher suggests future studies to assess the backing extended by international institutions and organizations to non-profit entities and civil associations.

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