Journal of Infrastructure, Policy and Development 2024, 8(9), 4565.
https://doi.org/10.24294/jipd.v8i9.4565

Article

Green banking practices: Towards sustainable banking sector for financial inclusion in attaining Saudi Arabia's Vision 2030

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CITATION

Amuda YJ, Alamri RA. (2024). Green banking practices: Towards sustainable banking sector for financial inclusion in attaining Saudi Arabia's Vision 2030. Journal of Infrastructure, Policy and Development. 8(9): 4565. https://doi.org/10.24294/jipd.v8i9.4565

ARTICLE INFO

Received: 5 February 2024
Accepted: 26 April 2024
Available online: 11 September 2024

Abstract: Overwhelming studies unanimously agreed that preservation of the environment is a central climax in the discourse of green banking. There is a growing interest in exploring green banking practices for fostering financial inclusion, economic growth and sustainable development as part of Vision 2030 in Saudi Arabia. There are insufficient studies that examine this in the context of Saudi Arabia. This study aims at exploring the potential of green banking in order to attain sustainable banking and financial inclusion in achieving vision 2030 in the country. Qualitative content analysis is used as a methodology of the study. Data were gathered through different sources such as: Web of Science (WOS), related journals, newspapers, published references, research papers, library sources and environmental organizations reports. It is indicated that green banking initiatives can be instrumental in fostering sustainable economic and environmental development in the Kingdom. The paper highlighted various activities of green banking such as: renewable and clean energy, financing green agriculture/food security, high-quality infrastructure among others. Nonetheless, some impediments to the green banking practices such as: risks facing green banks, poor quality of financial services among others are also mentioned in this paper. The paper proffers solutions to the challenges impeding green banking practices. In conclusion, the financial and banking industries in Saudi Arabia has been proving reform of the sector through greening economy. It is there suggested that the stakeholders and policymakers should provide efficient and effective technical, operational legal frameworks for enhancing green economy in achieving Vision 2030 in the country.

Keywords: environmental degradation; green banking; green economy; sustainable development; banking sector; financial inclusion; Vision 2030

1. Introduction

Saudi Vision 2030 is explicitly shown in the country's policy statement and national economic plan. diversification of economy, the roles of financial institutions, climate changes and many others occupy central focuses in the Saudi's Vision 2030. Climate change has become one of the problems affecting societies at the international, national, and local levels since few decades ago. Scientists have agreed that increasing temperatures and sudden climate changes have immediate and long-term risks to the environmental and physical compositions of both citizens and societies (Ahmet, 2017) (Naser, 2014). Environmental damage significantly impacts real life by deteriorating resources like air, water, and soil, leading to ecosystem destruction and wildlife extinction. This damage is considered one of the ten major threats by the United Nations, affecting human health through various means such as chronic light exposure, radiation therapy, and skin reactions (Naser, 2014). The consequences of environmental damage extend to economic factors, with health quality being influenced by environmental conditions, genetic endowments, and healthcare systems. Catastrophic events, whether natural or human-induced, like earthquakes, epidemics, chemical pollution, and nuclear disasters, have devastating effects on individuals and societies, highlighting the interconnectedness of human well-being with the environment (Arshad et al., 2020). Overall, environmental damage poses a serious risk to human health, economic stability, and the overall quality of life (Arshad et al., 2020) This has drawn the attention of global organizations and the international community to reconsider projects that support the environment through the provision of the necessary funding.

Climate change impacts various areas and groups significantly. Vulnerable populations like children, the elderly, and socially disadvantaged individuals are at higher risk due to climate change, with effects on health such as increased asthma risks. Geographical vulnerability, nutritional vulnerability, socioeconomic vulnerabilities, water scarcity, sanitation systems vulnerability, and internally displaced populations are identified as vulnerable groups due to climate change (Mahmoud and Gan, 2018).

Cities face high risks from climate change hazards, affecting infrastructure, ecosystems, and communities, with potential maladaptation risks from adaptation measures (Hereher, 2016). Climate change influences the distribution and dynamics of pathogens, vectors, hosts, and reservoirs, impacting parasitic diseases like dog babesiosis, ehrlichiosis, and leishmaniasis. In regions like Pakistan, climate change has led to devastating floods, heatwaves, and air pollution, affecting health and livelihoods, especially in vulnerable populations (Mahmoud and Gan, 2018; Hereher, 2016). Hence, the need to adopt green banking and environmentally friendly practices has emerged, in order to protect the environment from the problems that occurred on the resources and land which harms the environment as well as to stop the repercussions of the depletion of natural resources (Elasa, 2010). Several practices have already been adopted in many countries around the world. The threat to human existence posed by resource scarcity and environmental degradation is growing. Green banking is a potential solution and new strategic imperative in addressing multifarious challenges emanating from environmental degradation (Waha et al., 2017). Nonetheless, there is still a funding gap between the sustainable development goals and global financing despite the efforts of the United Nations to protect the environment and the initiatives of nations around the world to adopt green practices in various areas to mitigate natural resource depletion and environmental degradation and preserve the environment (Elasa, 2010; Waha et al., 2017).

According to recent research, banks and financial organizations can help to successfully solve the issue of environmental pollution that is now prevalent despite the fact that banks have been initiating various programmes that are socially and ecologically compliant with. It is therefore necessary to explore the potentials of green banking in order to obtain an obvious and steady regulatory framework and financial policies to encourage banks to adopt long-term plans and stable decision-making rules for green finance (Elasa, 2010; Waha et al., 2017). Even though, there are many government's initiatives in the context of Saudi Arabia which are concerned with environmental conservation and sustainability. Nonetheless, there is lack of regulations and policies on the existing studies which the reason for the shortage of green banking practices in the country.

Financial inclusion in Saudi Arabia is explored using the Global F-index. Access and usage pillars significantly reduce the probability of being in lower income quintiles, indicating potential for poverty alleviation. Financially included individuals in Saudi Arabia have higher access to emergency funds for healthcare. Literature posits that to enhance inclusion, authorities should incentivize the excluded and promote diverse financial products (Mabrouk and Halid, 2021). The financial system in Saudi Arabia is evolving with digital technologies post-crises, enhancing financial inclusion through Vision 2030's diversification efforts and modernization of Islamic institutions. Financial inclusion in Saudi Arabia is measured using a comprehensive index. Policies aim to enhance inclusive finance, positively impacting human development but negatively affecting GDP, rural population share, and women's share. Fintech is promoted in Saudi Arabia to enhance financial inclusion through initiatives, regulations, and societal integration, aligning with Vision 2030 for economic diversification (Index, 2022). Financial inclusion in Saudi Arabia is progressing, with a focus on enhancing digital payments and financial education to promote effective account utilization, aligning with UN Sustainable Development Goals. Financial inclusion in Saudi Arabia can be enhanced through Islamic social economic activities like arisan and CSR, promoting community participation for inclusive finance, as discussed in previous studies (Index, 2022). Saudi Arabia faces an access digital divide due to unaffordable ICT and broadband services, particularly in regions with lower incomes. It is reiterated that improving household income, offering affordable broadband, utilizing mobile platforms, and promoting public-private partnerships are crucial in various sectors of the economy Shabir and Ali, 2022).

Literature contends that while global trends in Islamic and green finance have been rising over the past 20 years, these trends are seen differently in various parts of the world. This phenomenon may be the cause of the rising trend in Islamic and green financing across various areas and nations. This scenario is also applicable to the context of Saudi Arabia with an emphasis on effectiveness and efficiency of performance of green banking Shabir and Ali, 2022). Despite the fact that there overwhelming studies relating to the banking sector in Saudi Arabia, there is need to re-affirm the role of green banking in achieving the Kingdom's Vision 2030. So, the current research focuses on discussing the green banking by critically and analytically exploring this issue in the Kingdom of Saudi Arabia. The novelty of this research is that, it will shed the light on the banks' commitment to green banking policies and regulations which have been adopted on a voluntary basis. In addition, the banks' contributions in the banking sector, despite the fact that there is absence of the legislative aspect for shaping up a concrete regulation for green banking practices. This is necessary in achieving Vision 2030 in Saudi Arabia in a way that take the sustainable development goals into consideration. This paper explores the conceptual framework for the practices of green banking in order to enhance the sustainability of banking system in the country.

2. Conceptual framework

This part presents the conceptual framework of the study which covers overview of green banking, sustainability of green banking system and financial inclusion. Each of these two concepts is explained in the subsequent subheading.

2.1. Definition of green banking

There is no specific definition for green banking, but several researchers and organizations have looked at it from different perspectives. Green banking is becoming more and more popular throughout the world, both as a component of the traditional banking system and as a stand-alone banking system in the form of wholly green banks like the Connecticut Green Bank and the New York Green Bank which is regarded as the first and foremost green bank as literature contends (Alshebami, 2021). In addition, green banking is an ethical banking concept that emphasizes environmental conservation and encourages social and environmental responsibility through the provision of environmentally friendly banking services as literature posits (Mabrouk and Halid, 2021). More importantly, Sharma and Akanksha (2021) defined green banking as a type of banking activity where banks take the initiative to carry out their everyday operations as conscientious institutions of society by taking internal and external environmental sustainability into consideration. Nevertheless, both definitions cover the economic, social, and environmental principles of sustainability. More essentially, the concept of a green bank has been evaluated by extant literature as being a priority for green investment as a strategy for providing quality for financial assets (Al-Mulla and Nobanee, 2020). Literature such as Julia et al. (2018) said that many concepts of Islam are going along with the principle of Green Bank and its practices (Bahl, 2012). However, the absence of guidelines and frameworks, in addition, the literature scattered are the reasons of people do not know the concept of Green Bank from the Islamic viewpoint as literature contends (Bouteraa, 2020; Bukhari and Amran, 2020). The International Finance Corporation-IFC-(2015) states that Green Banking is:

"The adoption and implementation of green finance principles and practices of banks, the volume and distribution of bank assets to green investment priorities, the impacts on the quality of financial assets from integrating environmental and social factors and avoidance of negative environmental and social (E&S) impacts and the achievement of positive impacts in core financing activities" (IFC, 215).

The abovementioned quotation has explicitly demonstrated that there are green financial practices in the banking sector whereby the accumulated assets of the banks are expanded through the priority for green investment in attaining sustainability of banking network (Index, 2022). The banks that engage in such initiatives are known as socially conscious, sustainable bank, green bank, or ethical banks as literature contends (Burhanudin et al., 2020).

2.2. An integrated model for adoption of banking system

Saudi Arabia has developed an integrated model for adoption of banking system, however, the financial system in consists of both conventional and Sharia-compliant banks, with the latter facing challenges related to product fragmentation and lack of liquidity and hedging instruments (Drobnjaković, 2013). Nonetheless, green banking in Saudi Arabia faces challenges due to the absence of explicit regulations and recommendations from regulatory bodies and the high cost of implementation in an oil-dependent market. However, the concept of green banking is being implemented in Shari'ah banks, leading to energy savings and cost reduction as a result of being compliant with Shari'ah principles as literature explains (International Finance

Corporation-IFC-2015; Abdullah et al., 2019). The adoption of green banking in Saudi Arabia is influenced by factors such as perceived privacy, security, usefulness, and task-technology fit. This is in line with assertion of previous studies that emphasized on the influence of government support and technology support in creating awareness about green banking in particular and Islamic banking in general (Julia et al., 2016). This is necessary to be pursued in the Kingdom in order to achieve the country's vision 2030 (Julia et al., 2018). There are various goals of green banking such as hitting emissions targets, divert private capital for green projects, reducing CoC of environmental projects, reducing energy costs, developing green technology markets and support development of local community as demonstrated in **Figure 1**.

Figure 1. Goals of green banking.

Figure 2. A typology of banking and sustainable development (Jecken, 2001).

Furthermore, one of the nations in the world to introduce green banking and sustainable finance is Saudi Arabia contributing both to the fulfillment of the Kingdom's Vision 2030 and the global SDGs. Green finance, the funding of renewable energy projects, the adoption of sustainable practices in business operations, and the provision of sustainable services have emphatically stressed the need for sustainable financial processes. In order to attain sustainability for the financial industry in Saudi Arabia, there is a need to strengthen green banking, its significance, advantages, and downsides. Islamic finance and green financing are expected to be based on Shari'ah law, forbids interest, uncertainty, and investing in industries that are considered to be forbidden by Islam. Green finance tries to foster the financing of investments that support the use of renewable energy sources, environmentally friendly practices, and sustainable development (Masnita et al., 2019). There are various aspects of green banking such as sustainable banking, offensive banking and defensive banking systems as shown in **Figure 2**.

2.3. Sustainability of green banking in Saudi Arabia

There is an advocacy for sustainability of various aspects of human endeavours including green banking across the world whereby literature emphatically stresses on the mapping of green finance for overall sustainable development (Höhne et al., 2012; Kingdom of Saudi Arabia, 2016). It is stressed that there is a pressing need for increased awareness and adoption of green banking practices in Saudi Arabia in particular and other Arab countries in general (Höhne et al., 2012; Kingdom of Saudi Arabia, 2016). More importantly, green banking positive impact of green human resource management (GHRM) in achieving sustainable sustainability has been stressed in the extant literature (Höhne et al., 2012). In other words, green banking initiatives, such as green human resource management (GHRM) and green innovation, have been found to have positive impacts on corporate social responsibility in particular and sustainable development in general as literature contends (Höhne et al., 2012). Green banking practices are important for promoting sustainability and achieving corporate social responsibility (CSR). Several studies have advocated for efficient performance of Islamic financial system (Saab and Sadik, 2018) and the incorporation of green banking can be regarded as part of future trends of Islamic finance which can spur financial inclusion and overall economic growth in Organization of Islamic Cooperation countries including Saudi Arabia (Haque and Aubhi, 2016). Conceptual model of green banking initiatives can be manifested in developing green products green CSR, green internal process which can consequently contribute to green brand image and green brand trust as shown in **Figure 3**.

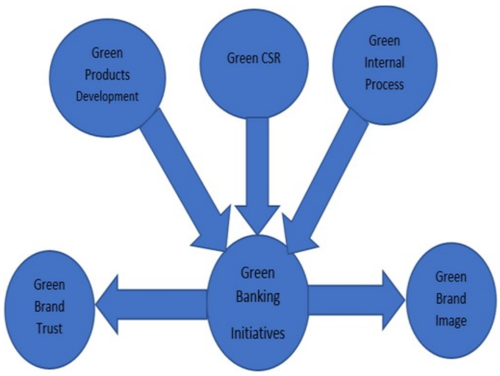

Figure 3. Conceptual model of green banking initiatives.

2.4. Green banking guidelines in Saudi Arabia for achieving sustainability in the financial sector

Green banking guidelines in Saudi Arabia are important for achieving sustainability in the financial sector. In order to encourage financial institutions to support sustainable projects, regulatory bodies should focus more on green banking and enact a regulatory framework that would indicates effectiveness green banking in the Kingdom (Haque and Aubhi, 2016; Saab and Sadik, 2018). Local adaptation of international guidelines is recommended to avoid duplication of work and reduce costs. Design guidelines for buildings in Saudi Arabia, considering energy conservation principles which can contribute to energy efficiency in the country can be learnt from the experiences of India and Bangladesh which can promote sustainable development which has been explicitly elucidated in previous studies (Haque and Aubhi, 2016; Saab and Sadik, 2018). Bank lending in Saudi Arabia is supported by strong bank balance sheets, higher growth of oil prices and non-oil private sector GDP, lower bank concentration, and stronger institutions (Heri et al., 2017). The financial system in Saudi Arabia consists of banks and financial companies, with SAMA regulating both Shariah-compliant and conventional banks. However, there are liquidity difficulties and concentration risk in lending.

In addition, implementation environmentally friendly policies and practices within the banking industry specifically by exploring job satisfaction and employees' performance in Saudi Arabia (Khavarinezhad and Biancone, 2019) which can promote overall sustainable development is an integral part of Saudi Vision 2030. The integration of financial innovation (FINV) and green finance (GRF) can immensely contribute to improved sustainability performance for businesses and organizations as integration of banking models has emphatically stressed in the Kingdom (Kamalu and Wan Hakimah, 2020). Green banking also plays a role in environmental protection and contributes to the UN Sustainable Development Goals through the promotion of sustainable finance and climate finance as literature contends (lromaihi et al., 2017; United Nations Environment Programme-UNEP-, 2021). The adoption of green banking practices can lead to a more environmentally friendly future and create long-term value for banks and industries. Overall, green banking is seen as a key strategy for driving sustainable growth and creating a greener world. This can be situated within the framework of Islamic objective of Shari'ah that can solve the challenges of Islamic banking system and enhance the performance and efficiency of Islamic banking system (lromaihi et al., 2017; United Nations Environment Programme-UNEP-, 2021).

2.5. Financial inclusion and green banking

Financial inclusion in Saudi Arabia has been a subject of study across various dimensions. Research indicates that financial inclusion positively impacts the availability of financing for small and medium enterprises (SMEs) in the Kingdom, contributing to their sustainability (Akram and Furqani, 2013).

Gender disparities exist in financial inclusion, with males in Saudi Arabia showing higher ownership and usage of financial products compared to females. Additionally, the relationship between financial market inclusion, economic growth, foreign direct investment, and trade openness has been explored, highlighting the importance of financial markets in influencing trade openness in the Saudi Arabian economy. Furthermore, financial inclusion has been linked to income inequality in Saudi Arabia, with indicators showing that access and usage pillars significantly reduce the probability of being in lower income quintiles, emphasizing the potential of financial inclusion to alleviate poverty and enhance income equality in the country (Akram and Furqani, 2013).

Green banking practices have been introduced to promote environmentally responsible investments in the country. Despite challenges like the absence of explicit regulations and high implementation costs, green banking is seen as crucial for sustainability in the financial sector (Askari et al., 2011). Research indicates that financial inclusion positively impacts the availability of financing for small and medium enterprises in Saudi Arabia, with a focus on promoting sustainability. Additionally, the study on environmental impact and financial inclusion in oil-exporting countries, including Saudi Arabia, highlights the importance of integrating financial inclusion with environmental policies to reduce carbon intensity and preserve the environment (Askari et al., 2011).

Financial inclusion in Saudi Arabia shows gender discrepancies, with males having higher ownership and usage of financial products compared to females. Financial inclusion positively impacts small and medium enterprises (SMEs) in the Kingdom, with credit availability being crucial for their sustainability. Efforts to enhance financial inclusion include the establishment of Fintech Saudi by the Saudi Central Bank and the Capital Market Authority, introducing new laws governing the fintech sector, and launching a regulatory sandbox for fintech activities (Beck et al., 2013). Financial inclusion also plays a role in reducing income inequality in Saudi Arabia, particularly through access and usage pillars, which significantly reduce the probability of being in lower income quintiles. These measures collectively aim to promote inclusive growth and empower both genders in alignment with Saudi Arabia's Vision 2030 goals (Beck et al., 2013).

The current state of financial inclusion in Saudi Arabia is being improved through initiatives like Fintech Saudi, regulatory sandboxes, and new laws governing fintech activities, enhancing access to financial services. Financial inclusion positively impacts small and medium enterprises in Saudi Arabia, with measures showing increased credit availability (Mozib, 2015). This promotes sustainability and survival of businesses in the Kingdom. Financial inclusion in Saudi Arabia shows gender disparity, with males having higher ownership and usage rates. Policy insights are suggested to enhance gender inclusion and align with Vision 2030 goals (Mozib, 2015).

3. Materials and methods

This research used the content analysis approach and secondary data from the key source for the collection as an integral part of the qualitative approach is taken into consideration. Systematic literature review was employed in this study as an integral part part of guidelines for academic practices (Razan, 2023; Uddin, 2018). It should be noted that databases were explored such as Web of Science (WOS), relevant journals, research papers, library sources etc. which are related to three main factors of this study namely: green banking, sustainable development of banking sector and financial inclusion (Razan, 2023; Uddin, 2018). The review and analysis of extant literature on green banking is done between 2013 and 2022 respectively as a novel idea in Saudi Arabia, is described in this study. Secondary data is also used to support the analysis, and a qualitative method is used to highlight the importance and characteristics of green banks through the view-lens of systematic literature review (Beck, Demirguc-Kunt and Merrouche, 2013; Mozib, 2015). Banking sector may address many problems to protect environmental degradation. The results and overall discussions of this study is divided into four five major themes namely: green finance and green economy; An overview of green banking and sustainable economic growth and development (Uddin and Ahmmed, 2018); activities of Green banking and its role in protecting the environment (Alamri, 2023); green banking and financial inclusion; impediments to the implementation of the green banking practices in Saudi Arabia and challenges facing green banks are discussed based on various the sub-divisions (poor quality of financial services for green initiatives, absence of legislative support, constraints connected with the market) (Uddin and Ahmmed, 2018). The total number of 84 articles are reviewed extensively in this study. Solutions to Impediments/Challenges of Green Banking. Thus, overall results of content analysis of cursory secondary data are presented subsequently.

4. Results and discussion

The results and discussion of overall content analysis of secondary are based on the five prime themes which are explicated accordingly in the subsequent sub-headings.

4.1. Green finance and green economy

Green economy is one of the modern economic concepts and models which have arisen as a constructive reaction to safeguard the environment from issues arising on resources and land that affect the environment as well as to stop the effects of resource depletion. The extant literature posits that green economy model can be considered as an economy that concentrates on optimal handling of economic resources, achieving efficiency in production and consumption of energy, in order to preserve the environment and achieve sustainable development generally through the use of renewable energy (Rashid, 2010).

Onwards, the idea of green finance as a component of the green economy emphasizes restructuring of economic activities to be more supportive of social and environmental development. In other words, this idea was developed to support environmental protection and conservation and is seen as a mechanism for achieving sustainable development (Rashid, 2010). Therefore, achieving monetary prosperity at the expense of escalating environmental hazards and social inequalities is not necessarily the goal of green economy.

Moreso, in order to increase production and consumption, financing is commonly defined as the provision of funds for investment spending and fixed capital construction. The term green finance was more specifically defined as funds meant for achieving medium- and long-term strategic balance of environmental and service objectives in the environmental sectors are achieved (Kraus et al., 2011). This is to ensure that the needs of individuals for goods and services are met and that environmental conservation and resources are sustainable and the significance of green finance is demonstrated by financing to ensure that it provides for investments in protected forests, freshwater fisheries, agriculture, and other environmental sectors (Kraus et al., 2011). Additionally, it can help reduce poverty by assuring sustainable development, maximizing the use of ecosystems and natural resources, and providing assistance directly to the poor. Also, lowering energy and materials in non-clean production processes, hence, minimizing waste and greenhouse gas emissions (Klimanov and Tretyak, 2019; Kraus et al., 2020). This assertion is in line with the position of Islamic legal system in respect of application of Islamic financial mechanisms in enhancing an inclusive Islamic financial activity, provision of social justice and addressing poverty and social inequality **(**Bougie and Sekaran, 2019; Khan et al., 2022). There is triadic interconnectedness between government, business communities and citizens with respect to promotion of green financing. In fostering green banking, the government provides regulatory framework, institutional setup, tariff designing, subsidies and guarantees. In addition, business communities attempt to provide financial share, technical innovation, managerial role, local knowledge, backward and forward linkages. Also, the citizens should be ready to support the government and business communities through their willingness to pay, awareness and will, environmentally friendly life styles. **Figure 4** provides diagramme green financing according to the explanation of UN environmental programme.

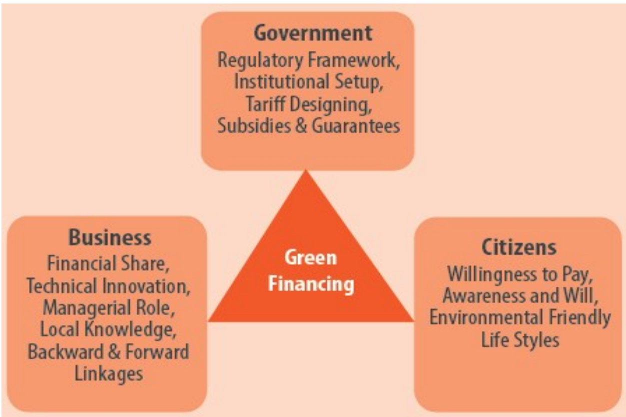

Figure 4. Green financing (UN environmental programme).

Furthermore, studies have established that green banking has a number of benefits. For instance, IFC has summed up the value that may be obtained through green banking as the avoidance of adverse environmental impacts and the attainment of positive environmental impacts in core financing activities. A multitude of hazards, including as credit risk, legal risk, reputational risk, and environmental risk, can be reduced for banks by implementing green banking (Kraus et al., 2023). Even if there are a large number of advantages to adopting green banking, many nations are still facing several obstacles. Literature contends that, banks can do much more to protect the environment than only encourage online banking (Nazamul et al., 2019). It is essential to emphasize on different aspects such as: constructing more energy-efficient branches, implementing more energy-efficient operational methods, providing transportation services for staff, and carefully vetting its lending in environmentally hazardous industries, a truly green bank may lower its carbon footprint. It is noteworthy to posit that development of green products such as green financial products, loans for renewable energies, green lending and environmental management methods, are an integral part of green marketing in banks which enhance their reputation and contribute to overall sustainability (Nazamul et al., 2019). This has driven a number of banks implementing green policies in Saudi Arabia to spend in building their environmental image in order to prepare for upcoming events and development in the country.

The analysis of the results of cursory literature revealed that the incentives, education, organizational culture, human resource policies and practices of green banking system have a positive impact on the overall banking system in the country (Sharma and Akanksha, 2021). Competitiveness of the banking sector in the Kingdom of Saudi Arabia can be fostered through the activities of green banking. In addition, the performance of the baking industry in the country is directly impacted by the effective implementation of green banking with its alignment with technology management. This is in agreement with the study by thew extant literature that green banking is the fusion of innovation and technology to provide stakeholders with financial goods and services which gives room for competition and efficient performance (Sharma and Akanksha, 2021). This study has re-established this assertion in the context of Saudi Arabia that green banking in connection with the performance and competitiveness of the banking sector has significant impact in enhancing sustainable development. It is further indicated that that the implementation of green banking has a big impact on the performance's competitiveness and competitiveness results of the overall banking system in the Kingdom (Organization for Economic Co-operation and Development, 2016). Indeed, the performance of the baking sector in the kingdom is directly impacted by adequate technological implementation as well as alignment with technology management. The study is crucial because the Kingdom's banking sector plays vital role for competition and attainment of the country's vision 2030. There are various aspects with respect to green banking that should be strengthened such as green investment, credit expansion, economic growth, firm illiquidity, households' portfolio choice and price corporate bonds. **Figure 5** shows multifarious dimensions of Green Banking that need to be improved.

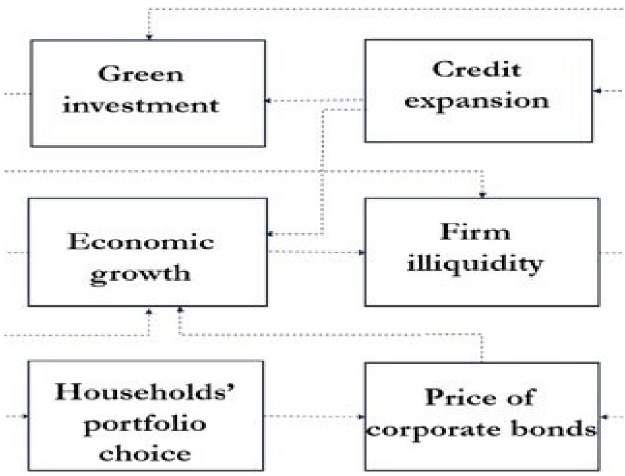

Figure 5. Multifarious dimensions of green banking to be strengthened.

4.2. Green banking and sustainable economic development

The banking industry has a significant impact on the nation's economic growth and development. Thus, environmental sustainability is a crucial component of banks' social responsibility initiatives, it has therefore become necessary for them to address environmental issues in their operations due to the potential effects of climate change on various economic sectors. Undoubtedly, financial institutions, regulators, and governments have therefore started to adopt various green banking programmes in several countries in an effort to reduce the negative effects of environmental degradation (International Renewable Energy Agency, 2019). Green banking, which uses banking and finance as methods to support green initiatives and safeguard the environment could be regarded as one of the practical processes of the green economy.

Reiteratively, when it comes to implementing green banking initiatives, banks are at the forefront of financial organizations. According to the European Banking Federation Conference (2017), the banking industry can therefore contribute more impactfully than any other sector in financing the shift to a green economy. This can be significantly done by opening up private investments that will help to bridge the gap between supply and demand, taking economic and environmental factors into account as well as evaluating risks and projects accordingly (Omer, 2017). Therefore, the term green banking could be considered as promoting environmentally friendly practices, lowering the carbon footprint of banking activities, as well as improving processes and technologies to be used for more friendly environment. It also denotes changing customer behaviour to be more environmentally friendly with regards to banking activities. In order to protect the environment, green banking is therefore similar to traditional banking because it also considers social and environmental factors when conducting business (Omer, 2019, Noreen et al., 2023). As a result, it involves conducting banking business while taking into account the social and environmental impacts of its activities.

Green banks may use financial instruments like long-term loans, low-interest loans, revolving loan funds, insurance products like loan guarantees, loan loss reserves, or inexpensive public investments. They may also construct a variety of structures, make use of various general savings instruments, and create a variety of financial products as literature contends (Pradeep et al., 2021). To protect the environment through resource reuse, waste recycling, and energy efficiency, green banking nevertheless necessitates different considerations than traditional banking. As a result, green banks must minimize paper transactions and place a greater emphasis on electronic ones like ATM, mobile, and online banking respectively (Pradeep et al., 2021). The goal of green banking is to establish a link between the economy and the environment by implementing sound economic and financial policies to protect the environment, as environmental concerns fall under the United Nations' definition of the green economy, which is explicitly defined as an economy that significantly reduces environmental risks and ecological scarcity while improving human well-being and social equity (Pradeep et al., 2021).

Moreso, the green economy is understood to be one in resource utilization is made more efficient. Similarly, banks can minimize external factors by financing projects and businesses that reduce pollution and embrace green technologies. As a result, sustainable banking, which is included in the green economy which is the provision of services and goods by a bank to its clients while considering the environmental and social effects of their operations (Omer and 2019; Pradeep et al., 2021). The effectiveness of green banking is also known as using money to make a positive and long-lasting change for society and the environment. This can be achieved by funding businesses, institutions, and initiatives that add value and benefit people and the environment with the help of savers and investors who help to improve the country in particular and world in general (Aziz and Mohamad, 2016). The importance of green banking became apparent after many non-profit and civil society organizations around the world. This gives pressure to the banks to incorporate environmental considerations into their lending policies and daily operations after banks were accused of funding projects that were extremely harmful to the environment and society (Ahmed, and Salleh, 2016; Alaa, and Reef, 2019). Hence, various aspects of green economy need serious and painstaking attention such as bio-based economy by addressing multifarious challenges relating to sustainable economy and among others. **Figure 6** shows diagram depicting different economies in Green Economy.

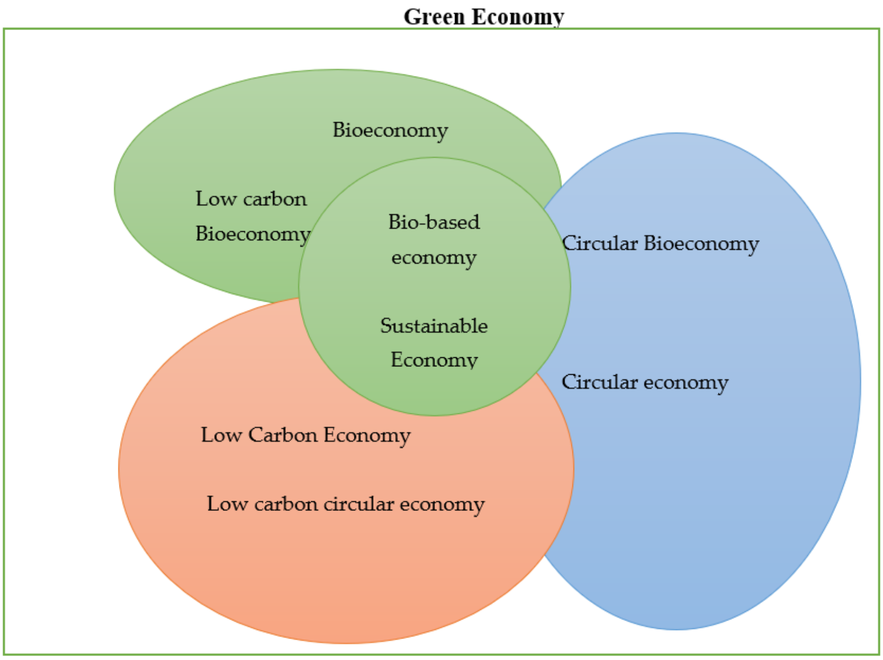

Figure 6. Diagram depicting different economies in green economy.

Hence, the significance of green banking among others is that, it helps to protect the environment. This is in agreement with a number of studies that contend that green banking has a potential of reducing and mitigating climate change risks (Ahmed and Salleh, 2016). Assisting with climate change adaptation by reallocating funding to sectors that are most affected by the change in climate (Ahmed and Salleh, 2016), granting loans to projects that benefit society and the environment (Alaa and Reef Mohammad, 2019). Similarly, banks can invest on various projects such as lighting, air conditioning, electronic equipment, information technology, paper, among others. In addition, banks can lessen the negative effects of carbon on their internal operations by employing renewable energy, automation, and other strategies. This is in consonance with the existing body of knowledge that emphasized on the appropriate use of natural resources can be ensured by banks by giving credit to businesses that care about the environment (Alaa and Reef, 2019). More importantly, banks can effectively promote environmental and social responsibilities of businesses. This is necessary because green banking avoids environmentally damaging activities, helps to reduce logging and preserves green space for future generations which consequently contribute to ethical banking and sustainable banking respectively. **Figure 7** shows Sustainable Development Goals in fostering Green Banking.

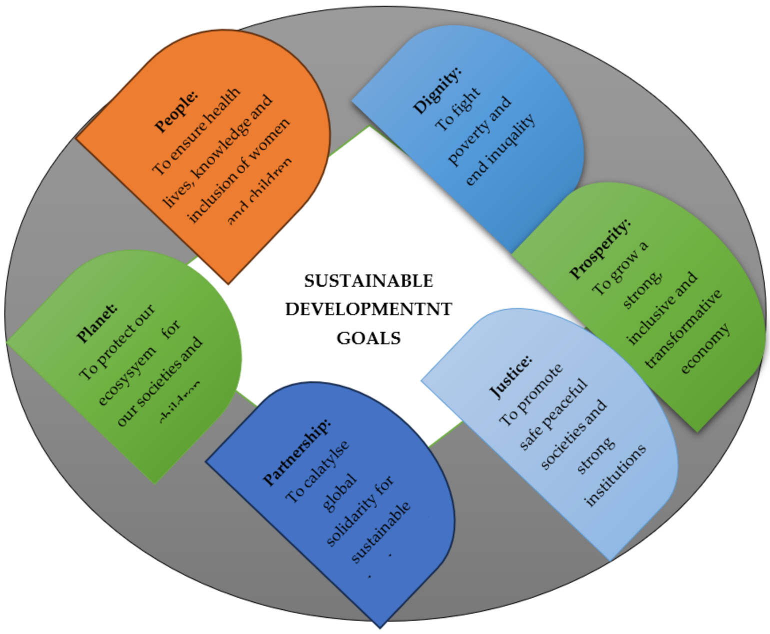

Figure 7. Sustainable development goals in green banking.

4.3. Activities of green banking and its role in protecting the environment

It is noteworthy to say that green banks engage in many activities that targeted at fostering green economic development which make them to be distinctive from ordinary banks. Even though it is a new idea, protecting the environment is of utmost importance because, it is stated at the European Banking Federation conference (2017) that, the banking industry can contribute more than any other sector to financing the shift to a green economy. As the primary financier of numerous industrial, real estate, energy, and other environment-related projects, banks have a significant role to play in society and the global economy (Shamal, et al., 2023). The development of the green economy requires state-level initiatives, as well as financial and economic regulation that supports green financing and mitigates the risks associated with it. Many Saudi banking initiatives that reflect various types of green banking have evolved in recent years, mainly through internal bank operations related to lowering the usage of paper workers, energy reduction, digital banking, and funding environmental projects (Sadik-Zada and Gatto, 2021).

It is essential to note that Saudi Arabia is concerned about Shari'ah-compliance in all aspects of human endeavours including banking sector which will reflect Islamic finance with the framework of objectives of Shari'ah in order to achieve inclusive Islamic financial activities (Carfora et al., 2019)

. It is thus noteworthy to say that green banking is not antagonistic to the principles of Islamic legal system especially in relation to Islamic banking and finance system. Literature contends that Shari'ah has incorporated the idea of green goods, loans, cards, and portfolios in order to implement green banking in Shari'ah banking and reduce expenses and energy usage as demonstrated previous studies (Carfora et al., 2019). However, currently, there is absence of explicit regulations and recommendations for green banking in Saudi Arabia, suggesting the need for a regulatory framework to encourage sustainability in the financial sector in order to achieve the country's vision 2030.

As a result, the management of financial institutions in the context of Saudi Arabia are expected to realize the cruciality of promoting green banking and embracing other policies that lessen the negative impacts of banking on the environment. Undoubtedly, banks have adopted electronic methods of sending data and bank statements to customers instead of printing on regular paper, which shows banks' contribution to environmental conservation and sustainability under the risks of global climate change as literature suggests (Topu and Tugcu, 2020). In addition, banks have also significantly decreased their use of paper in their interactions with customers. The country can enhance efficiency and effectiveness of various activities of green banking such as: renewable and clean energy, financing green agriculture/food security, Provision of loan, sustainable education and skills, provision of high-quality infrastructure as literature contends (Topu and Tugcu, 2020; Soliman et al., 2022).

First, renewable and clean energy is an important aspect of several notable initiatives by the green banks across the world including Saudi Arabia. For instance, green banking system can immensely contribute to energy as the main motivator behind any manufacturing operations. Thus, choosing renewable and clean energy sources such as solar, wind, and sea waves are essential in fostering sustainable development in the context of Saudi Arabia as literature posits (Hathroubi, 2019).

Second, green banks are required to finance environmentally friendly initiatives such as financing green agriculture in developing nations that has an impact on reducing poverty, increasing investments in natural resources used by the poor in their daily lives, and supporting projects aimed at developing water resources because they are essential to supporting agriculture and by extension, the local economy (Kara et al., 2021). Green bank projects for food security place a strong emphasis on boosting agricultural productivity in order to secure food security at the local and regional levels as well as the preservation of agricultural land and water.

Third, green banks can also implement programmes that can combat poverty and unemployment which will consequently benefit the needy through the provision of interest free loans and without the guarantees and limits imposed by regular banks. Reiteratively, Shari'ah-compliance while granting loan should be given prime importance in the activities of green banking in the country. Green banks have a major role to play in reducing and mitigating climate change risks by granting loans and investing in projects that benefit society and the environment (Hathroubi, 2019).

Fourth, when they adopt education programmes that adhere to international standards and principles that advance sustainable development in education and the development of skills, green banks can have a positive impact on the education sector. This is essential because education is bedrock of any development in a given society. Hence, Saudi Arabia can utilize the potential of green banking in developing the education sector especially in the aspects of energy consumption in propelling economic growth (Khan and Alhadi, 2022).

Fifth, the green banks can do this by providing high-quality infrastructure, cutting-edge technology, and financial resources for teaching staff. Last but not least, assist small company and housing projects, green banks support initiatives like building with environmentally friendly building materials made from clean energy projects and undertakings with a single owner who is fully responsible for management which will be helpful in solving the problem of inequality among low-income households (Alhammad, 2017). **Figure 8** shows the activities of green banking.

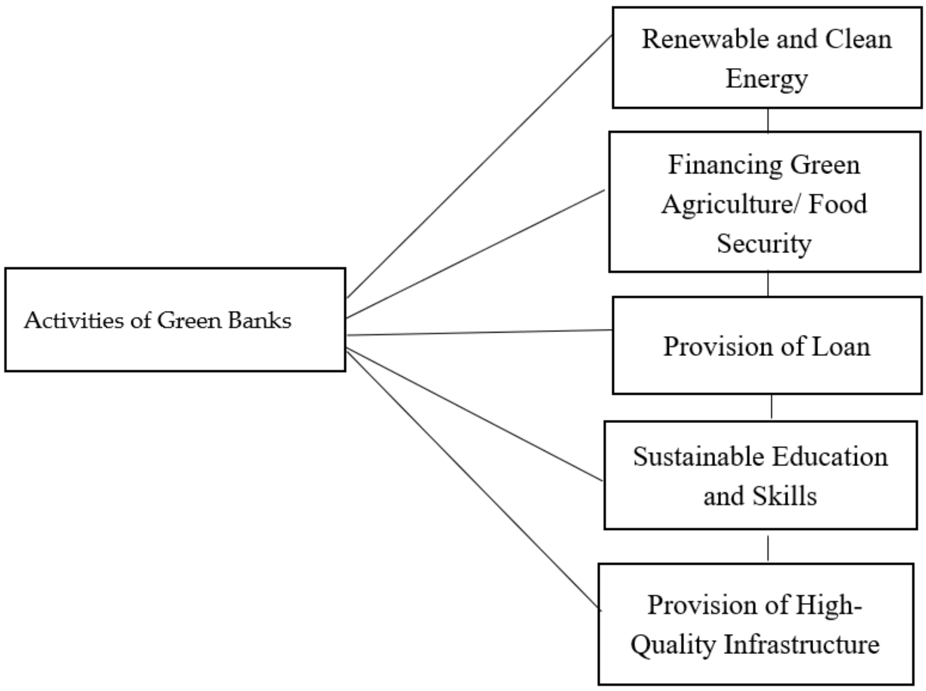

Figure 8. Activities of green banking: Adapted from (Azam, 2019; Carfora et al., 2019; Omer, 2017, Omer, 2019; Sadik-Zada and Gatto, 2021; Shamal et al., 2023; Topu and Tugcu, 2020).

4.4. Strides for enhancing financial inclusion in Saudi Arabia

Financial inclusion in Saudi Arabia has shown disparities across gender. The country has made significant strides to enhance financial inclusion, with initiatives like Fintech Saudi and regulatory sandboxes for fintech activities. Studies indicate that financial inclusion positively impacts the availability of financing for small and medium enterprises, contributing to their sustainability. Additionally, financial inclusion has been linked to reducing income inequality in Saudi Arabia, particularly through access and usage pillars (Khan and Alhadi, 2022). Efforts to promote financial inclusion have also been associated with improved access to healthcare, as financially included individuals have higher probabilities of borrowing for medical purposes and accessing emergency funds. These findings underscore the importance of ongoing measures to bolster financial inclusion in Saudi Arabia for economic growth and societal well-being (Khan and Alhadi, 2022).

Challenges of financial inclusion in Saudi Arabia stem from various factors highlighted in the re-search papers. Financial accessibility barriers for social entrepreneurship hinder sustainable development, while financial exclusions impact healthcare access, especially for low-income individuals. The financial system faces hurdles due to a sluggish economy, necessitating reforms exacerbated by the COVID-19 pan-demic. Additionally, people with disabilities encounter financial, social, and cultural barriers to social inclusion, reflecting a gap between rights on paper and in practice. Income inequality is linked to financial inclusion, with pillars like access and usage significantly impacting income quintiles, showcasing financial inclusion's potential to reduce inequality. These challenges underscore the need for comprehensive reforms to enhance financial inclusion across various sectors in Saudi Arabia (Kahia et al., 2021).

The Saudi Arabian government has made efforts to address financial inclusion challenges through various initiatives. These include promoting financial accessibility for social entrepreneurship (SE), measuring the relationship between financial inclusion and sustainability for small and medium enterprises, analyzing financial inclusion across gender, exploring the association between income inequality and financial inclusion, and estimating the effects of financial inclusion on healthcare access. Successes include positive impacts on small and medium enterprises' financing availability, survival, and sustainability, and the potential role of financial inclusion in reducing income inequality and poverty (Al-Hanawi et al., 2020). However, limitations persist, such as gender disparities in financial inclusion and challenges faced by financially excluded individuals in accessing healthcare.

Financial inclusion barriers in Saudi Arabia include limited financial infrastructure, lack of regulatory framework, dearth of field expertise, and limited awareness of opportunities. Additionally, gender dis-parity is evident, with 82% of males owning bank accounts compared to only 60% of females. In contrast, other countries face barriers like cultural norms restricting women's workforce participation, as seen in Saudi Arabia where women face limitations due to traditional values and guardianship laws (Alshebami, 2021). Moreover, inclusive education barriers for children with disabilities in Saudi kindergartens include the nature and severity of dis-abilities, absence of special education aides, large class sizes, and inadequate professional training. These unique barriers in Saudi Arabia highlight the need for tailored strategies to enhance financial inclusion and overcome societal challenges (Alshebami, 2021).

Private sector actors, including banks and microfinance institutions, play a crucial role in promoting financial inclusion in Saudi Arabia. They provide financial services, credit, and access to financing for vulnerable groups and small and medium enterprises (SMEs). However, these actors face challenges such as government policies and regulations, technological advances, high competition, and economic changes, which are specific to the Saudi business environment (Prastowo, 2015). Additionally, challenges like weak financial culture among the public, legal and regulatory obstacles, and financing issues related to capital hinder the efforts of private sector actors in enhancing financial inclusion in the region. Overcoming these challenges is essential for private sector actors to effectively contribute to expanding financial inclusion in Saudi Arabia (Prastowo, 2015).

The Saudi government addresses financial inclusion challenges through initiatives like the SFD and KAUST Social Venture Fund. Successes include market access, but limitations persist due to inadequate infrastructure. The Saudi government promotes financial inclusion to enhance small and medium enterprises' sustainability. Successful efforts include increased credit availability, aiding in enterprises' survival, with limitations not specified in the study. The Saudi government has pursued financial inclusion reforms to improve healthcare access. Successes include increased emergency fund availability for financially included individuals, while limitations persist for low-income brackets. The Saudi Arabian government has aimed to enhance financial inclusion. Successes include positive correlation with human development, while limitations involve negative associations with GDP, rural population, and women's share (Moghul and Safar, 2014).

5. Impediments to the implementation of the green banking practices in Saudi Arabia

Although, there are many banks and financial institutions in Saudi Arabia that use a variety of green banking applications. Hence, these applications and practices are still in their infancy and are anticipated to grow over the coming years in order to meet the goals of Vision 2030. Therefore, it is crucial to comprehend many barriers that may prevent Saudi Arabia from implementing green banking practices in order to address them. Various impediments (challenges of risks facing green banks, poor quality of financial services for green initiatives, absence of legislative support and constraints connected with the market) are highlighted in the subsequent sub-headings.

5.1. Challenges of risks facing green banks

Due to the fact that green projects typically have a long capital recovery period and are also subject to a number of risks, particularly agricultural projects, which are impacted by factors like water scarcity or low rainfall leading to crop damage, the banks that finance these projects may experience a decline in the level of cash flow to invest in green projects. Another issue facing green banks is the lack of trustworthy sources for evaluating green investments (Mabrouk and Halid, 2021). Banks need trustworthy data to evaluate the environmental effects of green investments, but trustworthy data are typically not available to many banks. Nonetheless, there is a general impression that the establishment of a formal organization that offers trustworthy data to evaluate the effects of environmental pollution for green projects will solve this issue as literature contends (Mabrouk and Halid, 2021).

5.2. Poor quality of financial services for green initiatives

Another barrier for green banks is the poor quality of financial services for green initiatives. Since it takes longer to deliver these services, the number of consumers for such activities is significantly limited. Low earnings from green projects could also be a problem because they are not as profitable as they could be because the goal of green banking services is to encourage initiatives that support sustainable development and environmental protection rather than making a profit (Almazari and Alzahrani, 2020). Another crucial issue to keep in mind is that green banks may be exposed to banking risks due to insufficient data to evaluate green projects. Additionally, banks occasionally risk falling into the dirty financing trap by funding projects that could be harmful to the environment or society, such as funding drug or herbal projects, which could harm the bank's reputation for doing so (Almazari and Alzahrani, 2020). As a result of the fact that, the idea of green banks is new to the banking industry and thus requires formal legislation from the government in order to support green banks financially and legally, the lack of clear principles to adopt the work of green banks is the most significant challenge facing them.

5.3. Absence of legislative support

Although there are many government initiatives concerned with environmental conservation and sustainability, they are not mandatory, as the requirements for adherence to sustainable financing and green banking policies and rules are adopted on a voluntary basis. Guidelines for funding, reporting, and disclosure related to the environment, society, and governance are still optional (Alquliti, 2022). Therefore, in order to prevent unfavorable competition among financial institutions with regard to the standards demanded by customers. Hence, it is necessary to enact explicit financial regulations relating to environmental protection, to adopt environmentally friendly practices. More importantly, to ensure enforcement of these regulations by ensuring compliance with green and sustainable policies is paramount (Alquliti, 2022). Since projects are less likely to be commercially and financially viable due to complex conditions, difficulties with long-term risk assessment, and substantial financial guarantees, the regulatory organizations must collaborate with banks to implement best practices in the management of environmental issues. Regulatory actions and policies that provide facilities and incentives for long-term financing of projects that fall within the sustainable development classification can overcome some of these obstacles. It can be argued that a clear and stable regulatory framework and public financial policies are required to encourage banks to adopt long-term planning and solid decision-making rules for green finance based on the experiences of nations that have enacted green banking regulations (Alquliti, 2022). Because of this, commercial banks and other private sources of funding must share the risks associated with certain types of financing with public institutions on a national and worldwide level.

5.4. Constraints connected with the market

The issue of a restricted supply of green project funding may be brought on by the challenge of locating and structuring green investment opportunities. This hinders the growth of a viable market for funding eco-friendly and environmental initiatives, which in turn limits financial institutions' ability to increase sustainable financing (Alamri, 2023). The degree of risk-related returns may also be to blame for the drop in private investment in green projects, given that the majority of these initiatives demand substantial sums of money and carry a very high risk.

Investors and financial donors may be constrained by a lack of understanding of the advantages of green sustainable finance and the significance of green banking, which is seen as a barrier to the growth of sustainable financial markets. In addition, some financial institutions still view the incorporation of environmental and social risk assessment systems into their business model as a charitable practice, despite the fact that it is a strategic factor that must be taken into account in business (Shabri and Ali, 2022).

In short, because green banking is still relatively new, there are scanty studies to track and record Saudi Arabia's green banking activities, and it is challenging to document each one individually. However, there is some evidences to imply that the Kingdom of Saudi Arabia has a significant interest in this area, which is shown via the initiatives in the financial and banking sectors that the country has adopted (Shabri and Ali, 2022). Although, these practices are still in their infancy, it is anticipated that they will evolve quickly in the near future in order to meet the objectives of Vision 2030. **Figure 9** illustrates the summary of multifarious impediments to green banking in attaining sustainable development.

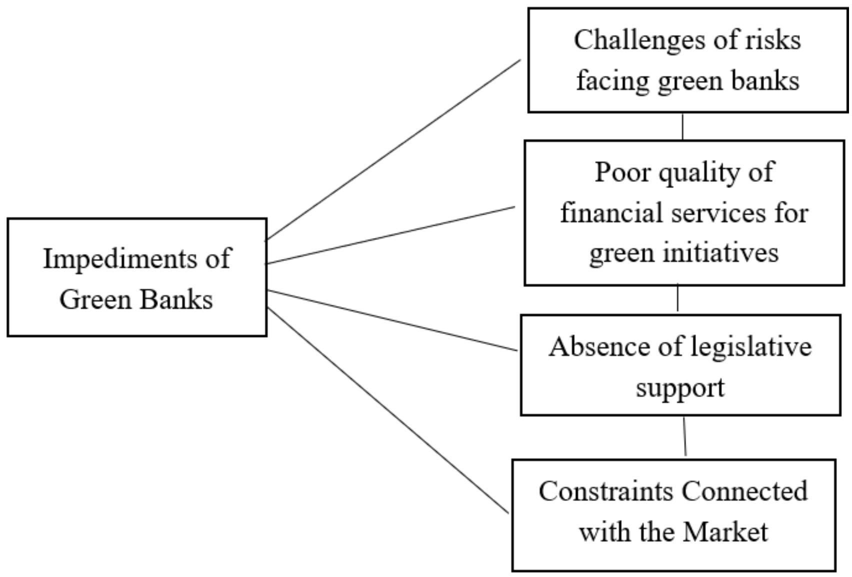

Figure 9. Impediments of green banking (Adopted from: Uddin, 2016; Azam, 2019; Razan, 2023; Saab and Sadik, 2018; Uddin and Ahmmed, 2018).

6. Solutions to impediments/challenges of green banking

The United Nations Development Programme (UNDP) recommended a set of measures for banks to apply to finance projects that are built on green foundations and can successfully promote financial inclusion for sustainable development and economic growth in order to successfully solve the aforementioned highlighted challenges or impediments.

First, there measures meant for addressing risks associated with green banking. Due to its reliance on fossil fuels, Saudi Arabia faces risks associated with converting to other energy sources that could jeopardize its financial stability. For instance, giving financial assistance in the sense of allocating it to sectors that stand to gain by its survival, as the reform plan may reallocate funds to areas that are more important for public spending, such as the energy sector, solar, renewable energy (Miah, 2021; Wejdan and Mohammed, 2023). In addition, the risks associated with delaying economic change remain far higher. In so doing the challenges of risks associated with green banking can be unequivocally addressed.

Second, there is need to provide mechanism mainly to prioritize investment in environmentally friendly sectors, using green subsidies like price breaks and tax breaks to support environmentally friendly industries like the renewable energy sector (Shamal, et al., 2023). Public interest support or advantageous externalities can also be used as a potent catalyst for the shift to a green economy. In so doing, the problem of poor quality of financial services for green initiatives would be addressed. Saudi Arabia is aware of this, and as a result has undertaken ambitious economic diversification plans along with significant financial investments in energy efficiency and renewable sources as literature posits (Liu, 2022).

Third, using tax policy as a tool to encourage investment in the green industry. For instance, integrating the cost of external factors like pollution, health effects, and productivity loss into the price of the good or service through a corrective tax or specific fees to avoid many issues affecting the environment (Fatma and Imran, 2023). Legal framework or legislative support can be instrumental in solving the problem of absence of legislative support which will further strengthen effectiveness of green banking in the country (Alamri, 2023).

Fourth, strengthening green banking market with the compliance of international environmental governance is an important mechanism for solving the problem facing green banking system. In addition, multilateral environmental accords that create the institutional and legal framework for addressing global environmental concerns can play a significant role in supporting sustainable economic growth, sustainable finance and climate finance literature contends (Gunawan, 2022).

Fifth, banks provide loans to finance numerous initiatives, but some of these projects might not adequately take the environment into account. Therefore, the banks should give preference to the sectors that support the environmentally friendly activities. For instance, providing green loans to promote solar energy, biogas plants, and energy saving output practices would be instrumental in contributing to green economy as a pathway to economic diversification (Belouadah, 2023).

In not shell, as the primary financier of numerous industrial, real estate, energy, and other environment-related projects, banks have a significant role to play in the administrations of these banks which are becoming more aware of the significance of embracing green banking and promoting environmentally friendly practices that help to lessen the environmental impact of banking activities.

7. Policy implications of the study

This part presents the policy implications of the study. Green banking is becoming more popular throughout the world, both as a component of the traditional banking system and as a stand-alone banking organization in the form of wholly green banks like the Connecticut Green Bank and the New York Green Bank, the first green bank.

Since the development of the environmental protection industry requires significant upfront investment capital and has a lengthy return time, the sector must have its own special financing route. Together with reform and cutting-edge financial technologies, the appropriate green finance policies can help the government’s funding crisis to some extent. The policies cover two areas namely: the reform and improvement of current financial instruments which can foster fiscal policy and the workable method of funding green finance development. The reform of the current fiscal revenue management and distribution policy, which focuses the effectiveness and direction of how fiscal monies are used. It is paramount to note that banking and financial institutions should create environmental risk and liability criteria for developing protective measures for the projects they finance or invest in one of the main sources of finance for commercial initiatives. Hence, banking industry is one of the most crucial economic activities for attaining economic growth. As a result, the banking industry may significantly contribute to the promotion of ecologically and socially responsible investment.

In light of this, the financial and banking industries in Saudi Arabia are currently undergoing a change in their organizational structure on all fronts, including technical, operational, and regulatory. Based on the information presented and discussed in this study, it could be argued that the kingdom of Saudi Arabia has succeeded in making steady progress towards the establishment of an inclusive financial sector and a non-monetary economy. The reforms were intended to promote financial inclusion and digitization to ensure the transition to non-monetary economies, which is motivated by the pursuit of national financial inclusion. The initiatives' main goal was to motivate business to contribute to the greening of the economy in general.

8. Conclusion

The main objective of the study is to get conversant of the concept of green banking practices as well as identify the green banking practices of Saudi banks. In addition, discussing the challenges that are facing the banks towards going green. Green banking practices are crucial for achieving sustainable financial sectors aligned with national visions like Saudi Arabia's Vision 2030. These practices involve incorporating ESG considerations, promoting green initiatives, and enhancing bank reputation through environmental awareness. Sustainable banking not only mitigates risks but also boosts financial inclusion, brand reputation, and investor confidence. However, challenges persist, such as the lack of explicit regulations and high implementation costs, especially in oil-dependent markets like Saudi Arabia. Stakeholders, including banking customers, play a vital role in shaping green banking perceptions and practices, with a need for increased awareness and clarity on the benefits and costs associated with green banking initiatives. Regulatory bodies must prioritize green banking frameworks to drive sustainability in the financial sector and support Vision 2030 goals in Saudi Arabia. The paper has explicitly established the paramount importance of green banking and its role in economic growth and development as one of the mechanisms for achieving sustainable development in the context of Saudi Arabia. It has been demonstrated that the role of banks in protecting the environment alongside the challenges that might face green banks are explained. In other words, it is clear from the foregoing that various other studies have established different activities of green banking that the idea of green banking means encouraging environmentally friendly practices low-carbon of banking activities with the aim of protecting the environment for the benefit of current and future generations. Various impediments that may limit the implementations of the green banking practices in Saudi Arabia are elaborated. Similarly, solutions to the aforementioned impediments or challenges are elucidated.

It is evident that in recent years, interest in projects that support the environment has increased as a result of the environmental imbalance that has arisen as a result of the neglect of environmental considerations in the implementation and development of industrial projects aimed at economic development in industry, after analyzing and discussing the attempts to move towards environmentally sound sustainable development and green banking practices.

9. Future directions of the study

The following are highlighted as part of future directions towards sustainable green economy and green banking system for financial inclusion in attaining vision 2030 in the country:

1) Future studies should empirically investigate reallocation of funds in some fundamental areas such as solar, energy sector, which will enhance finance stability through the activities of green banking in the country.
2) Future Studies should explore the efforts of the governments in supporting the banking sector through the prioritization of investment by utilizing green subsidies by supporting various and key industries in the country.
3) Future studies can explore the potentiality of legal framework in strengthening the efficiency and effectiveness of green banking system in the country.
4) Effective mechanisms of providing green loans to the key sectors of economy that be instrumental as a pathway for economic diversification in the country.

10. Limitations and suggestions

It is not disagreeable to contend that there are some limitations associated with this study. For instance, the use of secondary data for the content analysis could be regarded as a limitation. More importantly, the study focuses on green banking practices in the context of Saudi Arabia and with the use of secondary data, it has provided substantial direction for future research in expanding the scholarly studies on green banking in achieving sustainable development in the Kingdom of Saudi Arabia through the use of primary data. Therefore, the following suggestions are made for enhancing green bank for sustainable banking in the context of Saudi Arabia:

1) The policymakers should emphatically stress on the importance of green banking system in order to achieve financial inclusion through financial sector in promoting greening economy and creating new tools and services for opportunities for sustainable climate change investments in Saudi Arabia.
2) Saudi Arabia's green banking practices should integrate digital innovation in fostering some green initiatives in the financial and banking sectors in the country.
3) Green bank can provide transformation of the landscape of financial inclusion, economic growth and sustainable development as an integral part of the implementation of green banking practices in the Kingdom.
4) There is need to provide holistic framework covering technical, operational legal aspects in ameliorating the negative consequences of environmental degradation and promoting green banking in particular and green economy in achieving Vision 2030 in the country.

5) The government of Saudi Arabia should strengthen the operations and products of green banking in compliance with Shari'ah in order to enhance efficiency and effectiveness of the green economy.
6) There is need for strong green bank in particular and green economy in general in order to achieve the National Transformation Programme (NTP) and Vision 2030 in the country.

Author contributions: Conceptualization, RAA and YJA; methodology, YJA; software, YJA; validation, RAA and YJA; formal analysis, RAA; investigation, YJA; resources, RAA; data curation, YJA; writing—original draft preparation, RAA; writing—review and editing, YJA; visualization, RAA; supervision, YJA; project administration, RAA; funding acquisition, YJA. All authors have read and agreed to the published version of the manuscript

Acknowledgments: The authors would like to acknowledge the support of Prince Sultan University for paying the Article Processing Charges (APC) of this publication.

Conflict of interest: The authors declare no conflict of interest.

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