Exploring Motivation and Barriers to Green Banking Practices in Khyber Pakhtunkhwa

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Abstract

The primary objective of this research endeavor was to investigate the underlying factors that motivate and barriers that hinder the implementation of environmentally sustainable banking practices within the Khyber Pakhtunkhwa Province of Pakistan. The Primary data was collected using exploratory research interviews with various bank personnel, including branch managers, operational managers, credit managers, and environmental risk analyst. A comprehensive set of 26 interviews were conducted, encompassing bank officials from both public and commercial sectors and representatives from Islamic and conventional banking institutions based on saturation of data. Subsequently, the interview data was transcribed and analyzed through a thematic analysis approach. Upon conducting a comprehensive examination of the data for codes and themes, the findings indicated that various factors motivate the implementation of green banking practices. These factors are risk of default, reputational risk, environmental risk, competitive advantage, social responsibility, customer demand, sustainability, cost-effectiveness, innovation and digitalization, and regulatory compliance. The barriers hindering the adoption of green banking practices encompass several factors, including lack of awareness, regulatory hurdles, high costs, infrastructure investments, resistance to change, a limited range of green products, economic conditions, and a lack of collaboration among various stakeholders involved in the implementation of green banking practices. The study further recommends several factors to reduce barriers to green banking including, regulatory support, awareness campaigns, collaboration among stakeholders, financial support, training and development of employees, and the introduction of green financial products. This study holds significance for various stakeholders, such as regulators, policymakers, and academics. This research made a valuable contribution to the theory and practice of green banking practices by investigating the underlying reasons that motivate and obstacles that hinder the widespread adoption of environmentally sustainable banking practices.

Keywords: green banking practices, motivations, barriers, thematic analysis, Khyber Pakhtunkhwa

Introduction

Global warming and climate change has profound effects on agriculture, biodiversity, forestry, water resources, dry land and human well-being (Backlund et al., 2008; Kauppi et al., 2018). Pakistan,

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Bangladesh and India are facing adverse effect of climate change (Bhandari, 2013; Hussain et al., 2020; Mustafa, 2011). In today's environmentally aware business culture, the "Go Green" concept is pivotal across all business dimensions. Companies must shift their focus from pursuing profits alone to prioritizing both people and the environment in every facet of their operations. This transformation reflects a recognition that businesses can no longer operate solely for financial gain (Alshebami, 2021; Mir & Bhat, 2021).

Green banking (GB), is a term that is often used in academic and professional contexts and sometime called as ethical, sustainable, and socially responsible banking (Akter, 2018; Khairunnessa et al., 2021; Masukujjaman & Aktar, 2014; Rehman et al., 2021; Zhang et al., 2022). The term green banking was first coined in western countries and can also be termed as ethical banking or sustainable banking (Khan and Szegedi, 2019; Begum et al., 2021). The adoption of sustainable green banking practices improves the financial and economic performance of commercial banks (Jameel et al., 2020). Green banking means environmental friendly banking system. The banks are considered to be a non-polluting industry. However, it has a profound effect on environment indirectly. The emerging concept of green banking encourages banks to facilitate in reducing the carbon footprint, decreasing the waste and introducing pro-environmental practices, formulate environmental friendly lending policies and devise policies for reducing industrial waste and pollution (Alshebami, 2021; Sahoo & Nayak, 2007).

Both developed and developing countries face major environmental challenges and the development of green policies and green banking practices in developing countries like Pakistan is a need of the day (Samad & Manzoor, 2011; Ullah et al., 2023). Green growth means efficient utilization of resources including natural resources and reducing environmental degradation (Khan, 2002; Reilly, 2012; Wu et al., 2020). Green financing is a part of green banking practices and means providing funds to those industries that incorporate environmentally friendly business processes and operations.

Green financing is playing a very crucial role in the power supply market and increased dependency on renewable energy projects (Wang et al., 2022). Sustainable energy projects are required in Pakistan e.g. distributed renewable energy projects or Solar Pane energy solutions. There are three major challenges in the energy sector in Pakistan including (i) changing the fuel mix by reducing imported fuel mix and increasing reliance on local fuels (by implying a trade-off theory and looking into its pros and cons) (ii) reducing cost of electricity/energy and related subsidy burden, and (iii) enhancement of transmission and distribution (T&D) network for electricity (Malik et al., 2018).

Due to severe environmental hazards and widespread pressure to protect the environment, it requires additional research on sustainable banking practices and higher authority attention. Pakistan, India, and Bangladesh are among the frontline countries that experience environmental problems (Khan & Szegedi, 2019). The majority of earlier literature concentrated broadly on defining and practicing green banking in context of India (Meena, 2013), phases or stages for adopting the green banking practices in Bangladesh (Lalon, 2015), descriptive study on green financing in Bangladesh (Md. Shafiqul Islam, 2013), awareness of consumers towards green banking (Nath et al., 2014), measuring green practices in private banks of Serilanka (Shaumya & Arulrajah, 2016), factors influencing green banking in Vietnam (Tu and Dung, 2017), factors influencing customers expectation and green banking in Bangladesh (Shampa & Jobaid, 2017), green banking effect on environmental performance in Khathmandu, Nepal (Risal, & Joshi, 2018) and current status of green banking in India (Mir & Bhat, 2021). Most of these studies are descriptive in nature and some are empirical. This show a gap in the literature that very limited qualitative studies are there on green banking especially which focuses on motivation, barriers and factors mitigating barriers to green banking practice.

According to Rehman et al. (2021), virtually there is a little research on green banking practices in developing countries like Pakistan. Similarly, according to Bukhari et al. (2019) limited work has been undertaken on green banking adoption especially in Muslim countries. Aslam and Jawaid (2023) systematically reviewed the previous literature on the adoption of green banking practices and found that apart from empirical studies on the adoption of green banking practices there are very few qualitative studies available (only two qualitative studies after systematically analyzing the Scopus and google scholar data basis) on the adoption of green banking practices. In Pakistan, the idea of "green banking" is still in the stage of infancy and needs further research (Aslam and Jawaid, 2023). The literature cited earlier shows that a qualitative study is needed to explore the phenomenon more deliberately and therefore the current study focuses on factors motivating green banking practices, the challenges/barriers in the way of green banking, and factors mitigating barriers to green banking in Pakistan. To investigate the phenomenon, the following research questions are formulated:

1. What are the factors motivating the adoption/implementation of green banking practices in Khyber Pakhtunkhwa?
2. What are the challenges/barriers that are faced by banks and managers while "Going Green" in Khyber Pakhtunkhwa?
3. What factors mitigate those challenges and barriers faced by banks while going green?

Consequently, the research objectives are as follows:

1. To explore the factors motivating the adoption/implementation of green banking practices in Khyber Pakhtunkhwa.
2. To explore the challenges/barriers that are faced by banks and managers while "Going Green" in Khyber Pakhtunkhwa.
3. To identify factors mitigating barriers faced by banks while going green.

The research is based on a qualitative research design to fit the current research gap and to enhance knowledge regarding factors promoting green banking practices which will further aid to the practical implications of the study. The idea is original/novel and the author did not find any relevant study exploring the motivation and barriers and factors mitigating barriers towards green banking in Pakistan.

Review of Literature

Factors Motivating Green Banking Adoption

According to Ahmad et al. (2013), the factors behind the green banking adoption in the Bangladesh banking sectors are; concern for the environment, risk minimization, image improvement, potential for profitability, and pressure from stakeholders. The pressure from stakeholder includes top management pressure, competitor pressure, customer pressure, and community pressure (Bukhari et al., 2019). Stakeholders emphasize environmental protection and preservation, putting pressure on organizations to reduce waste and limit harmful emissions. The climate change knowledge and awareness has a positive role fostering the green product purchase behavior (Kurowski et al., 2022). In Pakistan, customer pressure and competitor pressure have a significant and positive influence on adoption of green banking practices (Bukhari et al., 2022). External recognition also play an important role in motivating banks towards low carbon green economy. External recognition means awards and prizes & appreciation from government and/or any other institution for taking steps towards green practices (Miah et al., 2021).

Similarly, green credit, particularly with low-interest rates or financial incentives, reinforces the adoption of green banking. Additionally, central bank policy guidelines play a crucial role in shaping the adoption of green banking practices. The use of mobile banking and online banking systems can aid to paperless banking operations (Arumugam and Chirute, 2018; Meena, 2013). However, there are always drawbacks with each phenomenon like using mobile banking can have a significant negative effect on the job security of banking employees. Environmental threat is compelling the banks to go green and respond to the changing environment (Kim & Park, 2020). Customer awareness on green banking is positively related with green investment and electronic banking (Ellahi et al., 2023). Customer awareness on green banking can be driving force for environmental conscious banking.

Barriers to Green Banking Practices

The barriers in the way of green banking including the risk factors, behavioral factors, cultural factors, infrastructure factors, high cost and other factors affecting green banking implementation in Pakistan.

Analyzing and correctly assessing the environmental risk is one of the main challenge for financial industries to cope with (Maulani, 2015; Nath et al., 2014; Qureshi, & Hussain, 2022). Before investing in a specific project or company operation, the banking and financial industries must do an appropriate environmental risk assessment (GBG, 2017; Qureshi, & Hussain, 2022). This shows that environmental risk of an industry should be statistically gauged for assessing the actual and real effect it bears on environment. The financing should be based on these statistics.

Lack of customer awareness is a behavioral factor that restrains customers from embracing green products and services offered by banks (Ahuja, 2015; Qureshi, & Hussain, 2022; Zhang et al., 2022). In an empirical study conducted by Tandukar et al. (2021) in Nepalese commercial banks showed only 5.21 percent of the bank employees were highly aware of green banking, 18.40 percent were moderately aware and majority (76.38 percent) of population were less aware. Individuals' actions and attitudes towards the environment also came under the umbrella of behavioral risks (Ahmad et al., 2013; GBG, 2017; SBP, 2015 Qureshi, & Hussain, 2022). The general public's perception of waste management and societal well-being are cultural elements (Ahuja, 2015).

Three major infrastructure problems were identified by the Paris Agreement (2015) as Poor infrastructure, a lack of funding, and energy crises. The old technology used by bank employees and customers, as well as outdated technology in small and medium-sized businesses are examples of bad infrastructure (Qureshi, & Hussain, 2022). There are long-term projects that require long-term financing, and funding such projects using short-term financing is more risky (Taghizadeh-hesary and Yoshino, 2020). Long-term energy projects, such as hydroelectric and solar farm projects, require funding over an extended period. According to Taghizadeh-history and Yoshino (2020), the second major challenge in green energy investment is the presence of inherent risks associated with innovative technologies, including mechanical failures and natural disruptions. These risks can lead to substantial project disruptions and significant financial losses;

as green energy projects rely on expensive equipment. The third significant challenge in green investment projects is the lower rate of returns as compared to fossil fuel projects where the rate of return is higher, however, based on one of the tragedy in economics called the "tragedy of common" and externality that results in higher social costs, environmental degradation and ecological shifts. In a study by Hwang et al., (2017), a comprehensive survey was undertaken to ascertain the multifaceted risks inherent in green building construction projects. These risks encompass intricate approval procedures, an excessive initial cost burden, ambiguous proprietor requirements, and a dearth of accessible green materials and equipment. High cost associated with green projects is one of the major barriers banks are facing (Tu & Dung, 2017; Zhang et al., 2022).

Additionally, there exist various other challenges such as a deficit of universally applicable measurement tools, varying levels of technological advancement, and country-specific environmental contexts, lack of pressure, lack of legal power, lack of incentives etc. These elements collectively contribute to a diminished rate of adoption of green banking practices within developing nations (Owusu-Manu et al., 2016; Qureshi, & Hussain, 2022, Tu & Dung, 2017).

Factors Mitigating Barriers to Green Banking Practices

There is a need to educate customers/consumers for taking green initiatives and increasing consumer and public faith in environmentally friendly technologies, goods and services, and banking practices (Nath et al., 2014). Bank employees should get training and development through awareness campaigns, initiatives, programs, seminars, and handbooks on environmental literacy (GIB, 2017; SBP, 2017; UNEP, 2016). By boosting public confidence in utilizing green products, the well-being of society can be improved. The development of trust can be accomplished through raising literacy levels (UNEP, 2016).

Policy instruments can be important in adopting green practices by banks, these policies are micro-prudential policies, macro-prudential policies, credit allocation policies and market making policies (Dikau & Volz, 2018; Park & Kim, 2020). Awareness on ecofriendly environment is needed both at customer and public level in order to enhance green banking adoption (Nazeer et al., 2022). Increasing awareness play an important role in green banking (Tandukar et al., 2021).

Market participants, comprising government bodies, financial institutions, and investors, require access to information regarding green technology. The necessity to develop specialized green databases is evident to bolster the viability of the green projects. These databases will serve as valuable repositories, offering insights into green data and the environmental risks associated with specific projects. (Coady et al., 2017).

Public Financial Institutions (PFIs) can play a crucial role in providing long term funding to green projects, as seen in developed economies. In Europe, five PFIs, including the Caisse des Dépôts Group in France, the KfW Group in Germany, the Green Investment Bank (GIB) in the United Kingdom (UK), and the European Bank for Reconstruction and Development and the European Investment Bank, provided over €100 billion for various low-carbon green initiatives between 2010 and 2012 (Cochran et al., 2014; Geddes et al., 2018).

Non-bank financial institutions (NBFIs) contribute to investment by shifting their portfolios away from industries with high carbon emissions and toward those with lower carbon footprints and green sectors (Taghizadeh-hesary & Yoshino, 2020). In Pakistan we don't have such institution with a massive injection of funds into green projects and part of this issue is due to underdevelopment.

Research Methodology

Population and Sample Size of the Study

The study encompasses the entirety of scheduled banks, comprising both commercial and Islamic banks, within the province of Khyber Pakhtunkhwa as the target population. Some bank's managers refused to participate in the interviews, and give answer to the interview questions due to confidentiality. However, all those banks participated in the interviews are given in table 1 as a sample size of the study. This study used convenience sampling technique due to factors like researcher's workplace proximity, budget limitation, and time constraints. Further as the unit of analysis is same and have more standardization into its core operations across country and thus will barely have less effects on the overall results and finding of the research to include the subject units from other provinces.

Data Collection and Analysis

In this study, primary data was gathered utilizing a semi-structured exploratory interview approach. Exploratory interviews proved to be a more effective method for gathering the essential information required to formulate a new theory (Amaratunga et al., 2002; De Ruyter & Scholl, 1998; Sharma and Choubey 2022). A total of 26 interviews were undertaken within a tranquil setting, engaging branch managers and other bank personnel. These individuals were posed interview questions carefully crafted to align with the research inquiries and study objectives. Moreover, the content emanating from the interviews was subjected to a thematic analysis methodology, following the guidelines elucidated by Miles and Huberman (1994), to discern prevailing themes and patterns. The primary interview data was transcribed and the text is viewed for codes and themes. Different themes were gathered under the interview questions and merged where themes were same, separated where different and discarded where necessary. Further, interviewing has been stopped when the same theme and codes iterated thereof. The data become saturated on 26 interview and further interviews from bank officials were of no use as the codes were repeating constantly. Table 1 shows the banks where the interviews were conducted and includes same bank branches.

Table 1. Participants' position and designated Banks

S. No.	Participant's Position	Bank Name
1	Branch Manager	United bank limited
2	Credit Officer	UBL Regional Branch
3	Operational Manager	Allied Bank Limited
4	Branch Manager	Bank of Faisal
5	Branch Manager	National Bank of Pakistan
6	Branch Manager	Habib Bank Limited
7	Credit Officer	Meezan Bank Limited
8	Environmental Risk Analyst	BoK Regional Head office
9	Branch Manager	S.M.E. Bank Limited
10	Credit Officer	Allied Bank Limited
11	Operational Manager	Habib Bank Limited
12	Branch Manager	Dubai Islamic Bank Pakistan Limited
13	Credit Manager	Dubai Islamic Bank Pakistan Limited
14	Branch Manager	Standard Chartered Bank Pakistan Limited
15	Credit Officer	The Bank Of Punjab
16	Branch Manager	Soneri Bank Limited
17	Branch Manager	The Bank Of Punjab
18	Operational Manager	Meezan Bank Limited
19	Operational Manager	The Bank Of Punjab
20	Branch Manager	The Bank Of Punjab
21	Branch Manager	MCB Bank Limited
22	Branch Manager	Al Baraka Bank Pakistan Limited
23	Credit Officer	Al Baraka Bank Pakistan Limited
24	Credit Officer	MCB Bank Limited
25	Branch Manager	Askari Bank Limited
26	Operational Manager	Askari Bank Limited

Results and Discussions

This section is further segmented into three Sub-sections. The first section answers the study's very first research question and comprises factors motivating green banking practices. The second section answers the second research question of the study and is comprised of barriers to green banking practices. The third section answers the third research question and reports the factors mitigating barriers to green banking practices.

Factors Motivating GB Practices

Following a comprehensive analysis of the interview content, the researchers identified and delineated the motivating factors for green banking. The participants were presented with the following interview questions:

Q.1 What are the factors motivating the implementation of green banking practices?

Environmental Risk

Environmental risks, including but not limited to climate change, deforestation, pollution, and various ecological challenges, have garnered increased attention from consumers, regulators, and financial institutions.

> *"Environmental risk is another factor the banks are considering in their financing decisions so the environmental risk is a motivating factor banks should keep in mind while making decisions for industry financing"* ... Participant 1)

Environmental threats are compelling the banks to go green and respond to climate change (Kim & Park, 2020). Banks are encouraging to green banking to minimize their environmental risk (Ahmed et al., 2013).

Another participant said,

> *"Banks should also consider environmental risks when making financing decisions for various industries"* ... Participant 8)

The participant advocates for the inclusion of environmental risks in banks' financing decisions across diverse industries. This aligns with the guidance provided by the United Nations Environment Programme Finance Initiative (UNEP FI), which encourages banks to integrate environmental and social considerations into their lending and investment decisions (UNEP FI, 2020).

Reputational Risk

Reputational risk refers to the potential damage to a bank's reputation, resulting from negative publicity, public perception, or a breach of ethical standards. One of the participants added on reputational risk:

> *"Banks will face reputational risks if they do not adopt green practices, as consumers are becoming more environmentally conscious" ...* Participant 15*)*

Another participant added:

> "*Another key factor is risk management, as green banking practices can help mitigate the risk of default and reputational risks associated with non-compliance with environmental standards" ...* Participant 8)

The participant underscores that banks failing to embrace green practices could encounter reputational risks, given the increasing environmental consciousness among consumers. This perspective finds support in a study conducted by the United Nations Environment Programme Finance Initiative (UNEP FI) in collaboration with the Center for Responsible Banking and Finance at the University of St Andrews. The study revealed that financial institutions neglecting to account for environmental risks in their financing decisions are indeed susceptible to reputational risks.

Risk of Default

The risk of default can be effectively mitigated through the implementation of green banking practices. By integrating environmental and social factors into their lending and investment decisions, banks can enhance their risk management strategies concerning climate change and environmental degradation. This proactive approach aids in diminishing the risk of default associated with their lending activities.

> *"Another motivating factor is the risk of default, which can be controlled through the use of green banking practices*" … Participant 15)

> *"Banks may be exposed to default risk through their lending activities to companies that are highly dependent on natural resources or that operate in sectors that are particularly vulnerable to the impacts of climate change, such as agriculture, tourism, or real estate"* ... Participant-8)

The participant underscores the looming risk of default that banks may confront as a consequence of their financial support to companies heavily reliant on natural resources or operating within sectors notably susceptible to the repercussions of climate change.

Customer Demand

Customer demand for green banking refers to the increasing preference among customers for environmentally sustainable and socially responsible banking products and services.

> **"***The second important factor is customer demand for environmentally responsible banking services*" … Participant 20)

The desire for sustainable products and services transcends specific industries. For instance, within the automotive sector, there is a notable surge in the popularity of electric cars as consumers strive to minimize their carbon emissions. The International Energy Agency reported a record-breaking count of 10 million electric cars on the roads in 2020 (IEA, 2021). Likewise, in the realm of food, there is a growing trend towards organic and locally sourced products as customers actively seek sustainable and health-conscious alternatives.

> *"There has been a noticeable increase in customer demand for green products and services in recent years. Customers are becoming more environmentally conscious and seeking out products and services that align with their values."* … Participant 5)

A noticeable shift is occurring among customers who actively seek banking institutions that prioritize environmental sustainability. Consequently, there has been a notable uptick in the demand for green banking products and services.

Social Responsibility

Bank social responsibility encompasses the ethical and sustainable practices adopted by banks to actively contribute to the well-being of society and the environment. These practices may encompass responsible lending, community support initiatives, and efforts to minimize environmental impact through the integration of green banking practices (Belasri et al., 2020). One of the participants coined it as environmental stewardship, emphasizing the role of green banking practices in preserving and managing the environment responsibly.

> *"This is also a bank social responsibility and environmental stewardship, as banks can contribute to reduce the climate change phenomenon and enhance the sustainability"* … Participant-5)

The other participant more elaborately linked the importance of green banking imperative for sustainability:

> *"Banks are recognizing the importance of social responsibility and the role they can play in promoting sustainability"* … Participant 23

The interviewee indicates a growing trend towards green banking practices and the recognition of the importance of social responsibility among banks.

Competitive Advantage

Green banking can indeed confer a competitive advantage by yielding cost reductions and enhancing efficiency.

> *"Adopting green banking practices can differentiate banks from their competitors and attract environmentally conscious customers, thus providing them with a competitive advantage".* Participant-23)

Another participant shared his views on the competitive advantage of green banking practices over conventional banking practices

> *"Green banking practices can provide a competitive advantage to banks in several ways."* …. Participant-26)

The participant underscores the strategic advantage of green banking over competitors and elucidates the potential competitive edge banks can achieve through the adoption of green banking practices. According to Zhang et al. (2022), the integration of environmentally sustainable policies and practices can set banks apart from their competitors and appeal to environmentally conscious customers.

Cost-effectiveness

Green banking can be cost-effective for banks over the long term. One of the interviewee's opinions about the cost-effectiveness of green banking over the long run is as follows:

> *"As you mentioned, businesses that are internally motivated towards green practices are demanding green loans from banks. This is because they see the value in investing in energy-efficient technology and reducing their environmental impact, which can also lead to cost savings in the long run"* …. Participant 17)

The aforementioned statement indicates that businesses are beginning to see the financial benefits of adopting green practices beyond just the social and environmental benefits.

Another participant shared his views regarding factors motivating green banking practices;

> *"Green banking practices, such as energy-efficient buildings, renewable energy sources, and paperless transactions, can result in significant cost savings for banks over the long term"* … Participant-23)

As stated in a report from the International Finance Corporation (IFC), the utilization of eco-friendly structures can potentially lead to a 30% decrease in energy usage and a 40% reduction in water consumption.

Sustainability

Sustainability can serve as a compelling incentive for banks to embrace eco-friendly initiatives. In Pakistan, green banking, particularly green financial products, has not garnered significant attention, as expressed by one of the participants:

> *"Governments and regulatory bodies should take interest in promoting green banking practices as part of their efforts to combat climate change and promote sustainable development" …* Participant 23)

The attainment of sustainability in the long term hinges on the promotion of green banking. Similarly, another participant, with a strong focus on sustainability concerns, emphasizes:

"We have to safeguard our planet from unusual weather patterns, declining air quality, and rising greenhouse gases. We have to ensure environmental sustainability which is among one of the millennium goals" … Participant 2)

Environmental sustainability is the conscientious utilization and stewardship of natural resources to fulfill the current generation's requirements without jeopardizing the capacity of future generations to fulfill their own needs.

In a parallel vein, another participant's perspective on sustainability and its correlation with green banking is as follows:

> *"Finally, financial institutions can take a leadership role in promoting green banking by demonstrating their commitment to sustainability through their operations and investments" …* Participant-12)

Further;

> *"Sustainability issues, including the depletion of natural resources, are becoming more pressing, and green financing is an important tool for conserving these resources" …* Participant 16)

This is a well-acknowledged issue, especially with the expanding global population and consumption habits placing ever-greater stress on finite resources. Additionally, the participant underscores the significance of green financing as a means to safeguard and preserve these precious natural resources.

Regulatory Compliance

Regulatory compliance pertains to the procedures aimed at guaranteeing that banks adhere to the legal statutes and regulations connected to environmental sustainability.

> *"Banks are doing whatever is ordered by the regulatory body like state banks and other governing bodies like the ministry of finance and government."…* Participant-1)

Furthermore, regulatory compliance can play a role in establishing equitable conditions for banks and motivating them to vie on the grounds of environmental sustainability. Through the establishment of fundamental environmental benchmarks and prerequisites, regulatory authorities can stimulate banks to embrace sustainable measures and avert a downward spiral of environmental standards.

> *"As a result, commercial banks operate under the guidance of regulatory bodies like State Bank of Pakistan (SBP) and Ministry of Finance and must follow any instructions they provide"* ... Participant-13)

Innovation and Digitalization

During an interview, one of the participants expressed apprehension about the transformative influence of innovation on the evolution of green banking practices.

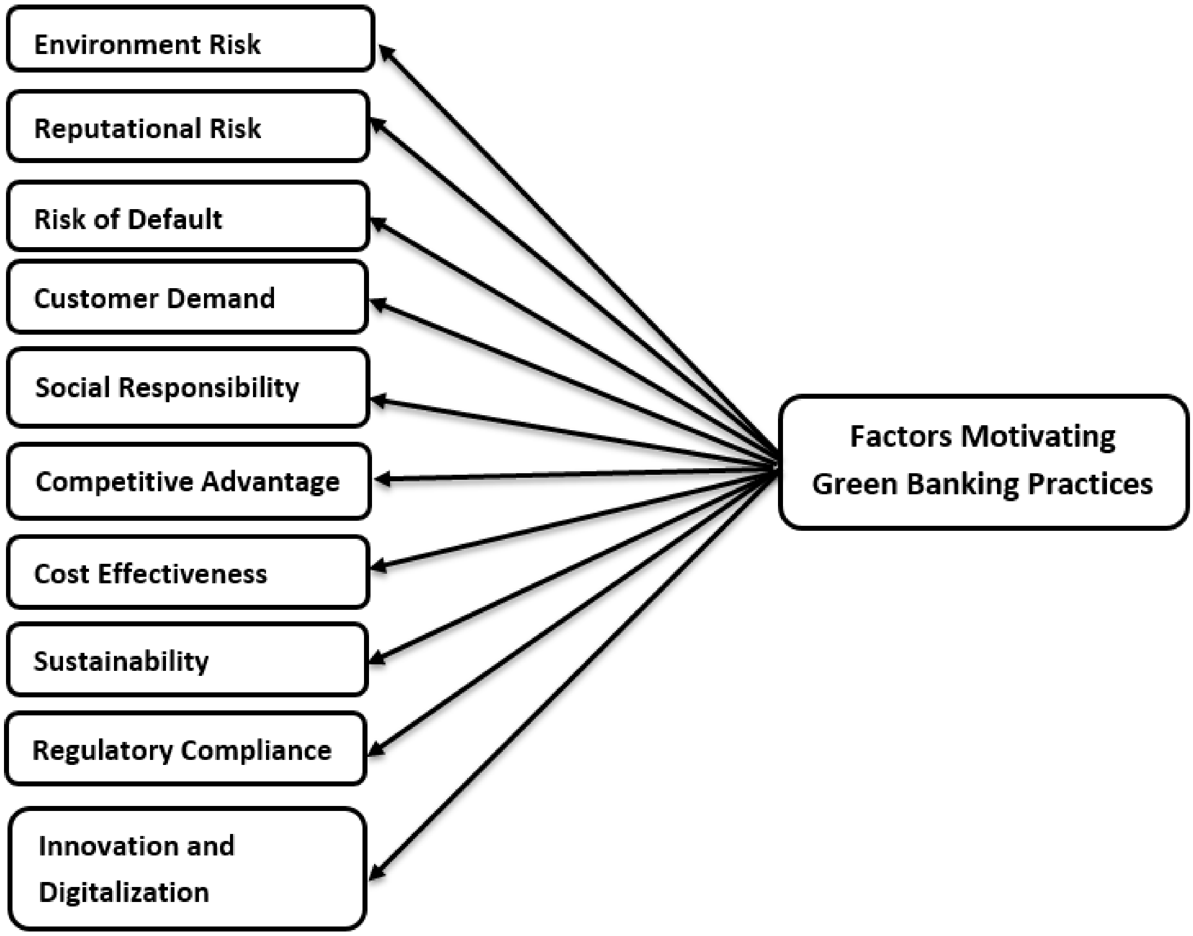
> *"With modern tools and efficient machines, rapid digitalization has made it possible for banks to offer e-bank statements and easy online payments and receipts to clients, all at their fingertips"* … Participant-18)

The quoted statement underscores the profound influence of swift digitalization on the banking sector, empowering banks to provide a diverse range of digital services to their clients. Innovation holds a pivotal role in advancing the adoption of green banking practices. Banks are progressively harnessing innovative technologies and novel business models to curtail their ecological footprint, enhance operational efficiency, and forge fresh avenues for generating revenue, as documented in the work by Sharma and Choubey (2022)..

> *"The Banks can explore new technologies and innovations that can help reduce their environmental impact, such as using renewable energy sources, reducing paper usage, and utilizing digital banking services"* ... Participant 5)

By harnessing solar or wind power for electricity generation, banks can effectively curtail their greenhouse gas emissions and play a role in fostering a more sustainable energy framework. Based on the aforementioned discussion the Framework for factors motivating green banking adoption is given as in Fig. 1.

Fig 1 Framework for factors motivating green banking adoption



Source: (Based on thematic analysis of interviews)

Barriers to Green Banking Practices

The interview question regarding the barriers in the way going green is as follows:

Q.2 What are the barriers in the way of adopting green banking practices?

After a thorough analysis of transcribed interviews, the following factors that impede and hinder the adoption of green banking practices in Khyber Pakhtunkhwa were identified:

Lack of Awareness

The absence of awareness among consumers presents a significant hurdle to the uptake of green banking practices.

> *"Lack of awareness is another issue banks are facing. The employees of the banks are not fully aware of the concepts of green banking and how to implement it."* ... Participant-4)

Numerous banks have not yet fully integrated green banking practices into their operations, primarily because of insufficient awareness or an inadequate grasp of the advantages of sustainability.

> *"Lack of awareness is one of the major hindrances in the way of adopting green banking practices. People are not aware of the benefits and environmental outcomes we can derive from the green banking practices"* … Participant-5)

The same lines were repeated by another participant:

> *"One of the significant barriers to green banking is the lack of awareness among the public and bank employees about the benefits of green banking practices"* ... Participant-19)

Further;

> *"Furthermore, lack of awareness and expertise can also be significant barriers for banks. Without a clear understanding of the benefits and implementation of green banking practices, bank employees may not be able to effectively implement sustainable initiatives. This highlights the need for increased awareness campaigns and training programs for bank employees to build their expertise in sustainable banking practices"* ... Participant 24)

Participant 24's viewpoint underscores that the absence of awareness and expertise can pose substantial obstacles for banks when it comes to implementing green banking practices. The banks staff views are aligned with findings as documented in previous literature (Ahuja, 2015; Qureshi, & Hussain, 2022; Zhang et al., 2022).

In India it is discovered that nearly three-quarters of individuals utilizing online banking services offered by their banks had little to no awareness of the concept of green banking, often confusing it with digital banking (Maheshwari, 2014; Sharma et al., 2014; Sharma and Choubey 2022; Sindhu, 2015).

Lack of Consumer Knowledge

The main hurdle in advancing sustainability within the banking sector is the dearth of consumer awareness regarding the advantages of green banking practices.

> *"One of the main challenges is the lack of consumer knowledge about the benefits of green banking practices for the environment and society. If consumers are not aware of these benefits, they are less likely to use green products and contribute to the overall process"* ... Participant 14)

Research has indicated that consumer knowledge and awareness play a crucial role in motivating sustainable consumption behaviors. As exemplified by a study conducted by the United Nations Environment Programme, a comprehensive grasp of environmental issues and their repercussions can have a favorable impact on consumers' willingness to engage in sustainable consumption (UNEP, 2016).

> *"The main barriers faced by banks in green banking are lack of consumer knowledge" ...* Participant-25)

Regulatory Hurdles

The implementation of green banking practices faces substantial obstacles in the form of regulatory hurdles. The absence of uniform and transparent regulations stands out as a significant barrier to the advancement of sustainable finance endeavors.

> *"Banks are facing regulatory hurdles in implementing green banking practices due to the lack of clear guidelines or regulatory support" ...* Participant-19)

To tackle these challenges, regulatory bodies must engage in collaborative efforts with banks and other financial institutions to formulate and enforce unambiguous, uniform regulations that foster the embrace of sustainable finance initiatives.

> *"Similarly, if the government were to take action towards promoting green banking and ask the State Bank to finance this sector, we would certainly follow suit. However, as of yet, no instructions have been given by the government in this regard." ...* Participant-13)

The participant expresses the perspective that they diligently adhere to regulations, circulars, and instructions issued by the State Bank or the government. Nevertheless, it is regrettable that the government and the State Bank of Pakistan have not accorded a high level of importance to green banking practices or sustainable initiatives.

High Cost

One of the challenges encountered by green banking is the substantial cost associated with investing in sustainable projects. As noted in a report by the International Energy Agency (IEA), meeting global climate objectives will necessitate a surge in investments in clean energy, from $1.7 trillion in 2016 to $4.4 trillion by 2040 (IEA, 2017). Achieving this will demand substantial capital investments from banks, which can potentially affect their profitability and expose them to heightened risks, as highlighted by one of the participants.

> *"The second major hindrance is associated high Costs with green financing" ...*Participant-19)

High cost in the participant-10 opinion:

> *"Additionally, the high cost of investing in green innovations can often make it difficult for small and medium-sized enterprises (SMEs) to make such shifts owing to uncertain payback periods and return on investment"* … Participant-10)

High cost associated with green projects is one of the major barriers banks are facing (Tu & Dung, 2017; Zhang et al., 2022).

Infrastructure Expenditure

The necessity for infrastructure investments to bolster green banking is apparent. Such investments entail significant outlays for novel systems, including energy-efficient data centers and digital banking platforms, aimed at curbing the carbon footprint of banking operations, as detailed in the IFC report of 2018. Some of the participants share views on the financial commitments required for this infrastructure development.

> *"Infrastructure expenditure is another challenge, as banks may need to invest in new technologies and systems to support green banking practices. This can be a significant cost, particularly for smaller or less well-established banks"* … Participant 22)

Another participant added:

> *"There is a need for infrastructure expenditure to go green"* … Participant 8)

Further;

> *"Additionally, implementing green banking practices often requires significant infrastructure expenditure"…* Participant-14)

As per the United Nations Environment Programme, smaller or less established banks may encounter challenges in competing with larger banks that possess the financial resources required for investing in green banking technologies and systems (UNEP, 2018). Out dated technology can be an example of bad infrastructure (Qureshi, & Hussain, 2022)

Resistance to Change

Traditional practices can impede the integration of green banking practices in certain banks, often stemming from resistance to change. This viewpoint aligns with findings from several studies and reports, as emphasized by one of the participants.

> *"Resistance to change can be a significant barrier to the adoption of green banking practices, especially in banks where traditional practices are deeply ingrained"* …Participant-19)

Resistance to change can indeed serve as a substantial impediment to the embrace of green banking practices, particularly in banks where conventional practices have deep roots. This observation is substantiated by various research and reports. Furthermore, resistance to change can emanate from the customer's side, as underscored by one of the participants.

"Another challenge is the reluctance of the elderly population to change from traditional banking methods. Many elderly individuals are not familiar with the use of smartphones and touchscreens and may perceive a lack of security with digital banking" ... Participant-14)

The provided text underscores the difficulty of persuading the older generation to transition from traditional banking methods to digital banking. As per a study by Accenture, mentioned in a Forbes article, "two-thirds of seniors worldwide do not use mobile banking at all, with only 17% using it regularly." This statistic reflects the significant gap in digital banking adoption among the elderly population.

Limited Range of Green Products

The scarcity of green financial products can indeed create difficulties for customers seeking investment options that resonate with their environmental and social principles. This perspective is shared by one of the participants concerning the limitations of green products.

"Another challenge is the limited range of green financial products available to customers, which may not be as attractive as traditional financial products. This can limit the demand for green financial products and services."... Participant-12)

The other interviewee reported that:

"The limited range of green financial products can also be a challenge for banks looking to promote green banking practices. Banks may struggle to develop and offer green financial products that are attractive to customers, particularly those that offer competitive rates of return"... Participant 5)

As stated in a report by the European Commission, "There is a noteworthy scarcity of investment choices in the green sector, especially for retail investors, primarily because of the limited availability of green financial products and green bond issuances" (EC, 2020).

Lack of Collaboration

Insufficient collaboration among various stakeholders within the finance industry presents another hurdle to the expansion of green banking. The cooperation of banks, regulatory bodies, investors, and other key players is vital in establishing an enabling environment for green finance and advancing the adoption of sustainable practices throughout the financial system.

"External partnership and stakeholder engagement barriers may arise from a lack of collaboration between Banks, SMEs,

and other organizations, such as suppliers or customers, to implement green practices. This can result in a lack of motivation or incentives to pursue green practices" … Participant 17)

The absence of such collaboration can result in external partnership and stakeholder engagement challenges, which can impede SMEs in their efforts to adopt green practices. This is consistent with the study of (Jayadatta & Nitin, 2017; BCG, 2009).

The branch manager, when discussing the obstacles and challenges in green banking, expressed the following:

"The lack of collaboration can create differences among industry practices and bank practices which can impede the implementation of green practices" … Participant 19)

The branch manager highlights that the absence of collaboration between banks and other stakeholders can result in a misalignment between industry practices and bank operations, which in turn may impede the progress and execution of green practices.

Economic Conditions

Green banking can indeed pose particular challenges amid challenging economic conditions, such as economic downturns or recessions. During these periods, banks often encounter heightened financial stress and may adopt a more risk-averse stance, which can complicate the pursuit of sustainable practices and investments.

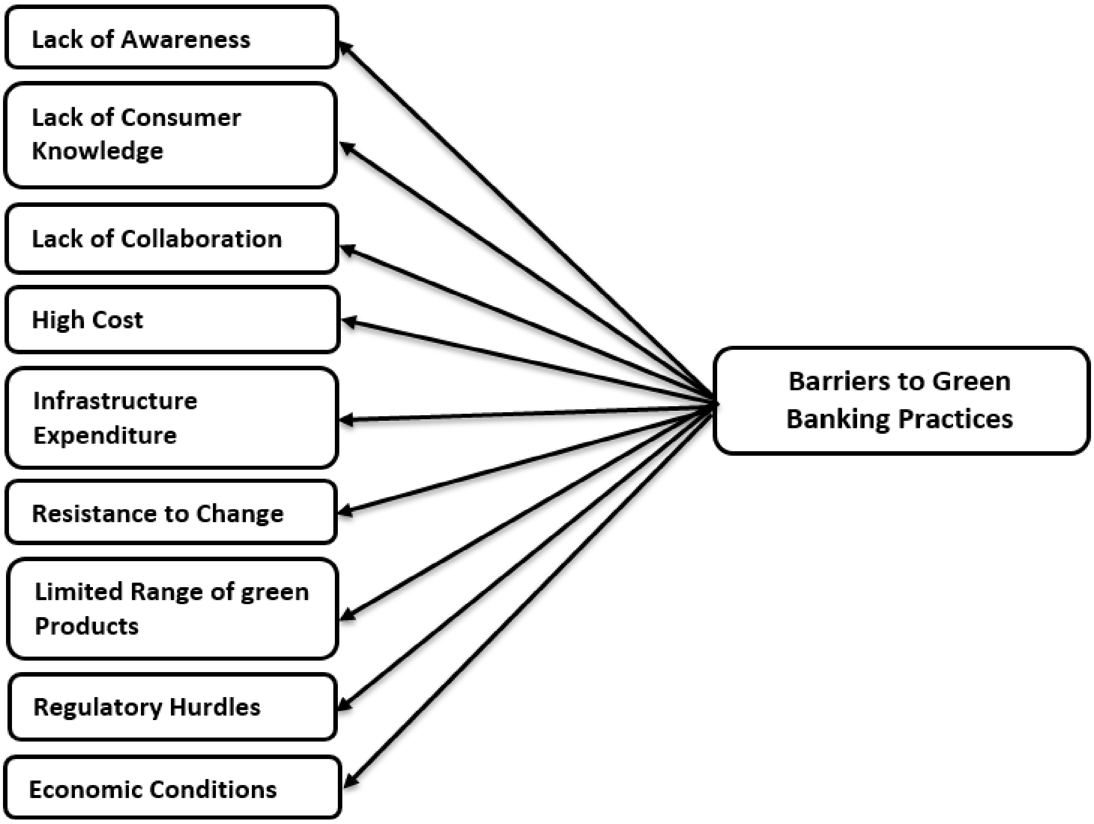
"The current position of the economy is very adverse and we even don't have money for import bills. In this situation, even the government is not capable of financing such a project though it's necessary for a sustainable environment and sustainable development. By the time the economic situation of our country gets stabilized, maybe the government become responsive towards green banking. E.g. importing Electric cars and financing electric cars. The developed countries are going green because they have enough reserves and enough funds to finance this sector. However, all the developing countries are in the initial stage of implementation of green banking" ... Participant-6)

Another participant's opinion:

"The current global economic situation, as well as the economic situation of Pakistan, poses a significant barrier to the adoption of green banking" ... Participant 11)

One of the primary challenges for banks in challenging economic conditions is striking a balance between short-term financial stability and long-term sustainability objectives. During tough times, banks may prioritize maintaining profitability and liquidity, which can create difficulties in justifying investments in sustainability that might not offer immediate financial returns. The need to navigate these conflicting goals can be a complex task for financial institutions (World Bank, 2018). Fig. 2 shows the framework for barriers to green banking practices

Fig. 2 Framework for barriers to green banking practices



Source: (Based on thematic analysis of interviews)

Factors Mitigating Barriers to Green Banking Practices

In this section, we elucidate the factors that help alleviate the obstacles hindering the transition to environmentally friendly practices. Following a comprehensive analysis of the transcribed interviews, the exploration revealed the following key factors that can mitigate the barriers associated with adopting green initiatives. The interview question related to these barrier-mitigating factors is as follows:

Q.3 What strategies should be adopted to mitigate those challenges and issues faced by banks while adopting green banking practices?

Regulatory Support

Regulatory support is pivotal for advancing green banking. Governments can incentivize banks through tax benefits, subsidies, and favorable loans, driving investments in eco-friendly projects and sustainable practices. Furthermore, environmental regulations and reporting mandates for all banks, including commercial and Islamic institutions, can promote accountability and motivate carbon footprint reduction (Chen et al., 2022)

> *"There is a need for regulatory support. Governments can play a vital role in promoting green banking by introducing supportive regulations, such as tax incentives, subsidies, and favorable loan schemes."…* Participant-5)

Regulatory support is essential as it fosters fairness among banks and enforces accountability for their environmental impact. Moreover, it establishes a transparent framework that simplifies the adoption of sustainable practices by banks.

> *"Despite some regulatory support, it is not sufficient to encourage widespread adoption of environmentally friendly banking practices. While some regulations have been issued, they do not provide sufficient financial incentives to motivate banks to adopt green practices" …* Participant 20)

A notable hindrance to embracing green banking practices is the absence of financial incentives. Given the profit-oriented nature of many banks, without compelling financial motivations, they might not prioritize eco-friendly investments. Hence, government provision of substantial financial incentives is imperative to stimulate the adoption of sustainable practices by banks (Moravecz, 2021).

Awareness Campaign

Launching an awareness campaign for green banking is a crucial move to encourage sustainable practices within the banking sector. This campaign can heighten awareness among both banks and their clientele regarding the significance of embracing eco-friendly measures and investing in sustainable projects.

> *"To promote the adoption of green banking practices, it is essential to run an awareness campaign on both bank and public levels. This campaign should include electronic media, as well as training programs for bank staff to ensure that they understand the benefits of green banking practices."* … Participant-8)

The interviewee underscores the significance of a comprehensive awareness campaign for green banking. This campaign should target both banks and the public and encompass activities like electronic media promotion, staff training, and other awareness initiatives.

The study by Ellahi et al. (2021) endorses the pivotal role of awareness campaigns in advancing green banking practices. It proposes that banks can enhance their dedication to environmental sustainability by formulating and enacting green banking policies while simultaneously fostering awareness among their employees and customers regarding sustainability's significance. The findings are consistent with Meena (2013) that emphasizes the need for banks to engage in awareness-raising initiatives to promote sustainable practices.

> *"Awareness campaigns are crucial for increasing understanding and to promote adoption of green banking practices among both banks and the general public"...* Participant-15)

The campaign encompasses diverse activities, including workshops, seminars, and conferences to educate banks and staff about the advantages of green banking. Bank employees should get training and development through awareness campaigns, initiatives, programs, seminars, and handbooks on environmental literacy (GIB, 2017; Qureshi, & Hussain, 2022; Tandukar et al., 2021; SBP, 2017; UNEP, 2016).

Collaboration among Different Stakeholders

Establishing linkages and fostering collaboration among the government, regulatory bodies, and the industry, along with other stakeholders, is essential. Such cooperation can facilitate the creation of a conducive environment for the uptake of sustainable practices, driving innovation and the evolution of fresh technologies and business models.

> *"Collaboration between industries, government or regulatory bodies, and banks is also necessary to ensure the timely implementation of green banking practices" ...* Participant 8)

Sharma and Choubey's (2022) research underscores the significance of collaboration in advancing green banking practices, particularly in addressing challenges linked to sustainable practices. In parallel, Khatun et al. (2021) study highlights the crucial role of government and banking sector collaboration in promoting sustainable development.

"Collaboration between industries, government or regulatory bodies, and banks can facilitate the exchange of knowledge, expertise, and resources, which can help overcome the barriers to the implementation of sustainable practices" ... Participant 20)

The interviewee emphasizes that stakeholder collaboration can aid banks in surmounting obstacles in implementing sustainable practices, including customer awareness, regulatory support, and skilled workforce deficits. This collaboration can also facilitate the creation of sustainable financial products, foster a supportive environment for green banking adoption, and drive progress in the sector.

Financial Support

Financial support holds a crucial role in green banking, enabling banks to fund eco-friendly projects and products. This support can originate from diverse channels, including government subsidies, tax incentives, and the issuance of green bonds.

> *"Governments and regulatory bodies can also provide financial support to banks to help them invest in sustainable infrastructure, such as energy-efficient buildings or renewable energy sources, overcoming the high upfront costs associated with green banking practices"* … Participant 23)

Similarly, another participant added:

> *"Providing low-interest green loans and other financial incentives can encourage SMEs to adopt green practices"* ... Participant 17)

Government subsidies and tax incentives are prevalent financial mechanisms for promoting green banking. They provide financial incentives to banks for adopting eco-friendly practices, like backing renewable energy projects and funding green enterprises. Furthermore, governments can extend tax benefits to customers choosing sustainable financial products, such as green mortgages and eco-conscious car loans.

Training and Development of Employees

Training and developing bank employees are vital for promoting green banking. Employees play a pivotal role in fostering eco-friendly practices within banks and advancing sustainable development.

> *"Along with general awareness campaign, the bank staff including management and employees needs special training and development programs for adopting green banking practices"* ... Participant-5)

The participants suggested the implementation of training programs to empower bank employees with the knowledge and skills required to champion green practices. These programs may encompass training in environmental impact awareness related to banking activities, like lending and investments, along with strategies for advancing sustainable development.

> *"The bank employees should be trained for assessment of environmental risk inherent in the bank's core investment and financing activities."* … Participant-8)

Another participant recommended that training programs should concentrate on particular facets of green banking, including green financing, investments in renewable energy, and environmental risk assessment. By delivering targeted training in these domains, banks can enhance their workforce's capacity and expertise to drive green initiatives within the organization. Bank employees should get training and development through awareness campaigns, initiatives, programs, seminars, and handbooks on environmental literacy (GIB, 2017; SBP, 2017; UNEP, 2016).

Furthermore, cultivating a green culture in the banking sector necessitates continuous education and awareness-raising efforts. These initiatives may encompass workshops, seminars, and various training programs aimed at advancing sustainability and fostering the adoption of environmentally friendly practices (Bukhari et al., 2021).

Green Financial Products

One of the participants shares his views on green services at ATMs:

> *"Nowadays if we go to ATMs, it will show you whether you need your statement or go green ... Going green means that you will not get a hard copy of your statement from ATM, it will only show your balance."* Participant-6)

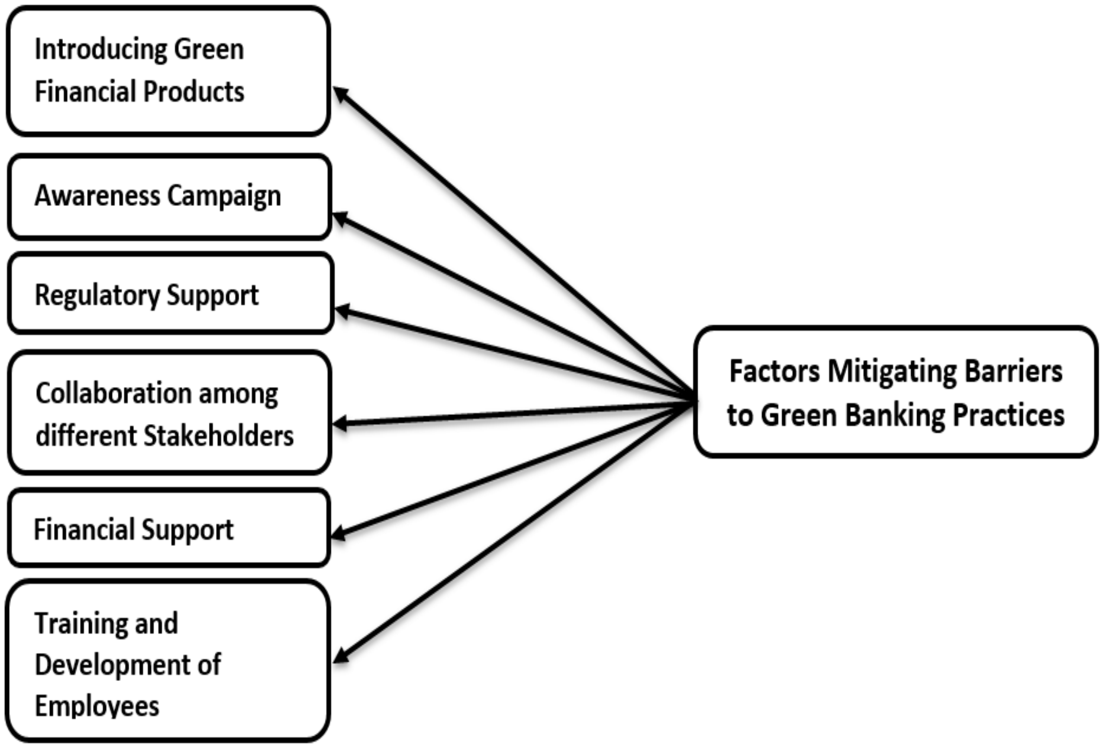
Numerous banks now provide customers with the choice of receiving either a physical paper statement or an electronic version, aligning with broader bank initiatives to minimize paper usage and enhance their environmental sustainability. Opting for eco-friendly practices not only aids in decreasing paper waste but also promotes a sustainable environment. Moreover, electronic statements offer enhanced security compared to paper statements, as they are less susceptible to loss or theft.

Similarly, another participant added:

> *"Encouraging the use of mobile banking, online and internet banking, and ATM services can also help reduce the carbon footprint associated with traditional banking methods."...* Participant-9)

Promoting the utilization of mobile banking, online banking, and ATM services can substantially lower the carbon footprint linked to conventional banking approaches. Fig. 3 shows the factors mitigating barriers to green banking practices

Fig. 3 Framework for factors mitigating barriers to green banking practices



Source: (Based on thematic analysis of interviews)

Conclusion

The main aim of this research study was to examine the elements that contribute to or impede the adoption of environmentally sustainable banking practices in the Khyber Pakhtunkhwa Province of Pakistan. Primary data is gathered through exploratory research interviews conducted with a range of bank workers, including branch managers, credit managers, operational managers, and environmental risk analysts. A detailed series of 26 interviews was undertaken, involving bank officials from both the public and commercial sectors and representatives from Islamic and conventional financial organizations. Following the completion of the interviews, the data obtained from the interviews was transcribed and subsequently subjected to analysis using a theme analysis approach.

The research emphasizes the key drivers behind the implementation of environmentally friendly banking practices, alongside the obstacles and difficulties that impede the process of adoption. The research revealed that multiple drivers incentivize banks to embrace green banking practices, encompassing the reduction of various risk elements such as environmental risk, reputational risk, and risk of default. Additional motivating elements encompass customer demand, social responsibility, competitive advantage, cost-effectiveness, sustainability, regulatory compliance, and innovation.

However, several obstacles and difficulties have been discovered that impede the implementation of environmentally friendly banking practices. The factors that contribute to the challenges in implementing sustainable practices encompass insufficient awareness and consumer knowledge, regulatory challenges, high costs, infrastructure investments, resistance to change from both customers and banks, a limited range of green products, prevailing economic conditions, and a lack of collaboration among various stakeholders involved in the implementation of green banking practices.

To address and overcome these obstacles and difficulties, the research outlines several aspects that can be utilized to facilitate the implementation of environmentally friendly banking practices. These factors encompass regulatory support, awareness campaigns, collaboration among diverse stakeholders, financial support, staff training and development, and the introduction of green financial products.

Recommendations

- The study recommends that policymakers make clear and succinct green banking policies for easy implementation and adoption.
- The state banks need to make necessary arrangements for the implementation of green banking practices and collaborate between industries, banks, and the government.
- The government can contribute financially to this very nascent sector which needs upfront investments.
- There is a need for awareness both at the public level, industry, and bank-level for understanding the green banking prospects and preservation of environmental resources.
- The banks should introduce green financial products like green bonds, green investment vehicles and green loan specially designed to meet the ecofriendly environmental needs of the country.
- Banks should choose green banking practices for different reasons including managing the bank reputational risk, environmental risk and risk of default.
- The commercial banks should embrace green banking practices based on ethical and social responsibility as well as based on energy efficiency, customer demand and sustainability.

Implications of the study

This study is beneficial both in theory and practice. The study can be used by bank regulatory bodies to ensure what motivates and drives green banking practices. By significantly lowering the barriers identified in the study, a bank could gain a competitive advantage over its competitors. Green banking is an important aspect of the overall economy and can have a profound impact on economic development.

Adopting green practices can significantly change the profitability potentials, risk mitigation, and cost-effectiveness of the banking sector. Removing barriers can potentially enhance the bank's financial performance.

Banks can reduce greenhouse gases and embrace sustainability by adopting green banking practices. It not only saves the environment but also increases the bank's reputation and potentially reduces bank risks.

Limitation of the Study

This study is limited to the banking sector of Pakistan in Khyber Pakhtunkhwa only. The study is limited to one-time data collection through semi-structured interviews and is not a longitudinal study which provides more insight into the phenomenon. The study is investigating broadly factors motivating or promoting green banking practices and does not allow for deep interpretations of motivations' theoretical underpinnings.

Direction for Future Research

There is a need for further research in the area of green banking implementation and adoption process and how the overall adoption process can be segmented into different phases. Future research studies can focus on green financial products that can be introduced in Pakistan with long-term viability and good environmental effects. The phenomenon of motivational factors can further be broken down into subcategories as and when needed according to theories of motivations.

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