

The Impact of Green Banking Activities on Bank's Sustainable Environmental Performance: A Green Finance Approach

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Abstract

Environmental issues affect every area of the global economy and have an impact on how they do business daily. The concept of green banking has received a lot of attention in contemporary green finance (GF) literature, largely due to the growing threat posed by global climate change. Consequently, this study's primary goal was to determine how green banking activities (GBA) affected the bank's sustainable environmental performance (BSEP). The relationship between green banking activities and BSEP in Pakistan is also identified, as is the moderating role that green financing plays in this relationship. For this study, 300 bank employees who answered a questionnaire on a five-point Likert scale provided primary data for analysis. The structural equation modeling (SEM) method was used to evaluate the connection between the study variables. The empirical findings showed that GBA has a substantial positive impact on BSEP and that there is a significant positive correlation between green banking activities and green funding sources. The study also discovered a strong positive correlation between BSEP and the sources of their green financing. Furthermore, it was found that the relationship between GBA and BSEP is mediated by green financing. Additionally, the study found that the main advantages of green banking development are that it helps the nation achieve sustainable economic development by making banks more competitive, offering online banking services, cutting long-term costs and expenses, and lowering carbon footprints. The study's findings will help banks understand the most important factors to take into account when implementing, creating, and approving green financing.

Keywords: *Green Banking, Sustainable Environmental Performance, Pakistan, SEM, Carbon Footprints*

Introduction

The effect of a business's operations on the atmosphere is known as ecological performance, and it entails the positive and systematic management of operations to meet specific, long-term

objectives of productivity growth and the preservation of natural resources (Zheng et al., 2021). Governments, policymakers, corporate organizations, and the general public have all expressed alarm over the shift in social attitudes toward environmentally friendly behaviors over the past few decades. This concern has been supported by numerous discussions on environmental protection and "climate change"-related topics. A variety of indicators, including slight ecological discharges, contamination control, waste reduction, and recycling actions, can be used to evaluate ecological performance (Lober, 1996). Environment-related issues were hardly significant to the financial sectors a few years ago (Shaumya and Arulrajah, 2017).

Promoting the adoption of environmentally friendly corporate practices can be greatly aided by the banking sector. Banks provide financing for various industrial projects, including those in the electricity, textiles, cement, fertilizers, and steel sectors (Zhang et al., 2022). These industries are known contributors to carbon emissions. Hence, the banking industry has the potential to serve as a mediator in facilitating the connection between economic development and environmental preservation, to advance investments that are both ecologically sustainable and socially responsible (Zheng, et al., 2021). In both academic and professional contexts, the term "green banking" also referred to as "green investment," is frequently used to refer to ethical, ecologically friendly, and socially responsible banking (Dörry, et al., 2018; Khairunnessa, 2021; Akter, 2018; Rehman, 2021; Masukujjaman, 2014). By incorporating social and environmental considerations into its operations, green banking attempts to protect the environment and preserve natural resources, it encompasses various financial activities and mechanisms that aim to promote the transition to a low-carbon and sustainable economy (Soundarrajan & Vivek, 2016). Green banking encourages environmentally beneficial behavior and lowers carbon footprints. This can be achieved through the use of tools like internet banking, opening an account with an online bank, paying bills online, and providing credit cards.

The interrelated fields of environmental policy, financial institution operations, and socioeconomic development are all significantly impacted by green banking (Khairunnessa et al., 2021). The advantages of green banking are significant due to its reduction in paper usage, as transactions and procedures are conducted online or electronically, resulting in a decrease in deforestation (Millat et al., 2013). Additionally, it fosters consciousness among business professionals regarding environmental and social obligations, thereby empowering them to engage in ecologically sustainable corporate practices. It can be claimed that the banking industry is vital for fostering the link between societal and economic advancement and environmental protection. This, in turn, promotes the development of investments that are both environmentally and socially responsible (Zheng, 2021; Zhixia, 2018). The importance of GF in facilitating the green transition is well recognized and gaining momentum in both developed and developing nations. Achieving sustainable development through the fusion of economic advancement, environmental conservation, and ecological protection is the main goal of GF (Zhou, et al., 2020). Bank environmental performance refers to its efforts and outcomes in managing and reducing its environmental impacts. Banks have the potential to influence and contribute to environmental sustainability through their operations, lending practices, and investment decisions (Gutner, et al., 2002).

The global recognition of sustainable development and environmental preservation has made it an imperative issue. To safeguard the earth from the harmful effects of climate change and global warming on living things, numerous international programs have been put in place. The primary objective of these programs is to mitigate the consumption of fossil fuels by the application of the 3R formula, encompassing reduction, reuse, and recycling. Banks have the capacity to play a major role in the implementation of these global dynamics, thereby enhancing the well-being of our planet and creating a more sustainable living environment (Kavitha, et al., 2016). Comparatively, to other businesses, banks are usually seen as being entities that exhibit environmental concern and demonstrate little environmental effect through their internal activities. The impact of banking activities on the environment is significant, as highlighted by Barhate et al. (2016).

According to Brundtland (1987), sustainable development entails the utilization of resources in a manner that satisfies the requirements of the current generation, while also ensuring that future generations are not deprived of the resources necessary to meet their own needs. Brundtland (1987) provided a definition of sustainable development that encompasses the concepts of need and restriction. The terms "need" and "limitation" here relate to the necessities for maintaining life and "constraints" to the environment's capacity to fulfill demands placed on it by the present level of technology and social structure and those that will be present in the future. According to Lele (1991), the major objective of sustainable development is to keep the economy growing and expanding while simultaneously protecting the value of the natural world. This entails the integration of policies that promote both environmental conservation and strategic development. To attain sustainable development, it is imperative to allocate resources towards initiatives that prioritize environmental compatibility, economic feasibility, and social accountability.

Developing and industrialized nations alike continue to face significant challenges due to climate change (Ngwenya & Simatele, 2020). Pakistan has experienced several environmental difficulties due to its fast-growing population, haphazard application of effective technology, and shoddy waste management practices (Bukhari, 2020). The question of how to implement the aforementioned recommendations and whether green banking is truly a useful tool for reducing such environmental threats to a minimum level or not emerges (Bukhari, 2020). In Pakistan's banking industry, the idea of "green banking" is emerging. According to the State Bank of Pakistan (SBP 2015), green banking is a strategy for improving environmentally friendly practices that aid banks and customers in reducing their carbon footprints. Numerous programs have been started to assist environmentally friendly business practices since 2017 to assess how effective they are in reducing the Carbon footprint of the banking sector (Bukhari 2020). Online bill payment alternatives, other financial transactions, and online banking are only a few of the banking skills that help the environment (i.e., through promoting online digital activities), (Miah et al., 2018). Research and awareness are still lacking, nevertheless, in the areas of company policy, personnel development, and customer-related activities (Bukhari 2020).

In the banking industry, "sustainable performance" refers to an organization's capacity to incorporate environmental, social, and governance (ESG) considerations into its operations without sacrificing long-term viability or profitability (Bachtiar & Nainggolan, 2023). This includes activities that support social responsibility, environmental sustainability, and general

financial stability, such as green finance initiatives, sustainable financing, and responsible investment strategies (Murshudli, 2023). Banks that use sustainable practices seek to improve their overall ESG performance, support environmentally friendly projects, eliminate the effects of climate change, and reduce greenhouse gas emissions (Chowdhury, 2023). Incorporating green banking practices, like issuing green bonds and distributing sustainable financing, will help banks engage investors who are seeking socially conscious and sustainable investment possibilities in addition to enhancing their financial performance (Nabil, 2023). Thus, the purpose of this study is to look at how green banking policies affect the long-term environmental performance of banks. In emerging economies like Pakistan, this study also looks into how green financing may act as a mediator in the relationship between green banking practices and banks' sustainable environmental performance.

The rest of the paper is set up as follows. A review of the literature is given in the following part, and the methodology is covered in section three. Data analysis and findings interpretations are covered in Section 4. The conclusion and suggestions will be presented in the final part.

Literature Review

The literature review serves the purpose of offering a comprehensive overview of the historical context relevant to your research. It encompasses an examination of various issues, debates, theories, concepts, and related studies.

Green Finance

There are many distinct interpretations of the term "green finance," sometimes known as "green investment" (Mousa et al., 2015). Green funding, a relatively new phenomenon in the business industry that mixes financial benefits with ecological protection, is the best option for supporting green initiatives and organizations that support environmental protection. According to Masukujjaman et al. (2014), GF can be defined as the financing of multiple environmentally beneficial projects, including waste management, recycling, alternative energy, energy efficiency, and the development of green companies. The idea of "green banking" is dynamic and plays a significant role in the interrelated fields of financial institution operations, environmental policy, and socioeconomic growth (Khairunnessa et al., 2021). In addition, it is worth noting that the bank established a "Green Fund" in 1990 to support environmental initiatives. This initiative has since been recognized as a benchmark for other banks seeking to implement green banking practices (Islam, et al., 2013). GB is a kind of banking system in which banks take the initiative to behave as socially responsible institutions to achieve environmental sustainability both internally and externally (Sharma et al., 2021).

Green financing of GB activities can reduce the entire internal carbon footprint and external carbon emissions of banks (Zheng et al., 2021). Additionally, Zhang et al. (2019) pointed out that GF, which is a component of GB, is viewed as a vital financial instrument for the sustainable financial growth of any nation. Haque and Murtaz (2018) also showed that GB is one of the aspects inducing the improvement of sustainable financial growth in developing economies. To achieve sustainable economic development, it can be said that GB's efforts are crucial to enhancing banks' ecological performance and green financing (Zhang et al., 2022). Though, the goal of GF is to attain long-term growth by striking a balance between the advancement of

financial events, ecological protection, and environmental stability (Zhou et al., 2020). In addition, Zhang et al. (2019) noted that GF is seen as a crucial financial instrument for the long-term growth of any nation's economy. Green financing is used by banks to support green banking initiatives and minimize their overall internal and external carbon footprints.

Sustainable Environmental Performance

Environmental performance is described as “the influence of a business’s actions on the natural environment” (Klaseen et al., 2019). Environmental performance encompasses a variety of factors, such as the use of ecologically dangerous materials in products, decreased pollution, waste and carbon emissions at the source, enhanced energy efficiency, and resource efficiency (Zhu et al., 2010). Klassen et al. (1999) found that a business's ecological performance may be arbitrated through its operations and output. Tung et al. (2014) found that the most effective way to judge a business's ecological performance is through its efficient use of resources. Environmental performance is the efficient and consistent management of operations to achieve long-term goals for the preservation of natural capital and higher corporate productivity; it should not be confused with organizational environmental protection (Shaumya and Arulrajah, 2017). Low ecological releases, pollution anticipation, waste reduction, and recycling initiatives are a few examples of indicators that can be used to assess ecological performance (Lober, 1996). Thus, it is now essential to implement green banking, which encourages eco-friendly behaviors and reduces carbon emissions by creating internal banking procedures, physical infrastructure, and information technology that are environmentally friendly (Risal and Joshi, 2018).

Green Banking Practices (GBP)

Green financing supports GBP at both the corporate and policy levels to maintain ecological sustainability (Rehman et al., 2021). Banks, being a significant source of money for many different types of businesses and industries, bear a great deal of responsibility and liability because, in the event that they fail to impose stringent ecological safety measures on businesses and industries before providing financing, they may unintentionally contribute to environmental pollution (Aker et al., 2018). In recent years, the green banking method has been implemented to mitigate the negative environmental impact of banks. Still, banks are generally viewed as ecologically friendly when it comes to carbon emissions and environmental degradations because they are a significant component of the economy and have strong linkages to society (Shaumya and Arulrajah 2017). Banks can use it to enhance the general climate, quality of life, efficiency of substantial and energy use, provision quality, and properties even when environmental maintenance is not one of their primary goals (Masukujjaman, et al., 2014). Miah et al. (2018) used multiple regression analysis based on secondary data to investigate the factors influencing the environmental performance of the banking sector in Bangladesh, they revealed that banks with high profits are more attentive to environmental concerns. Rehman et al. (2021), used the socially responsible investing (SRI) paradigm, to explore how GB practices related to banks' environmental performances more recently. The results showed a high positive correlation between GB's green investments in Pakistan, daily operational practices, and policy-related practices.

The study also showed how investments in green infrastructure and the influence of green ingenuities on policy decisions have become more significant in promoting a green climate.

Likewise, Shaumya and Arulrajah (2017) concluded that the environmental performance of banks was significantly and favorably impacted by GB practices. Additionally, to enhance banks' ecological performance, Kala (2020) identified the many green efforts incorporated into their procedures. Energy-saving techniques, GF, green initiatives, and green policy are only a few examples of GB practices. The study also showed that GB initiatives including employee environmental education, a green policy, and comprehensive green projects have a positive effect on BSEP. Similar to this, Risal and Joshi (2018) used multiple regression analysis to investigate the impact of GB practices affected banks' environmental performance in Nepal. As a result, several measures, such as low environmental emissions, pollution control, waste reduction, and recycling, can be used to evaluate an organization's environmental performance. Banks, on the other hand, primarily show their concern for the environment through their initiatives, such as GF, online banking, recycling activities, investing in eco-friendly projects and marketing, budgeting for climate risk, green credit cards, internet banking, reducing paper use, and evaluating environmental risk in projects (Kala et al., 2020; Jha, 2013; Hoque, et al., 2019).

Research Hypothesis

H1: Green banking activities have a positive relationship with banks sustainable environmental performance

H2: Green banking activities have a positive relationship with green finance

H3: Green finance has a positive relationship with bank sustainable environmental performance

Theoretical Foundation

Institutional theory provides the framework for comprehending how green banking practices affect a bank's long-term environmental performance. According to this theory, organizations seek legitimacy, resources, and survival by conforming to the norms, values, and expectations of their institutional environment (DiMaggio & Powell, 1983). This theory aids in explaining how banks embrace ecologically friendly activities in the context of green banking because of pressure from regulations, social norms, and the need to gain a competitive edge. For example, banks may use green banking strategies and green finance to fulfill legal requirements, satisfy public pressure for environmental responsibility, and set themselves apart in an increasingly competitive environment (Fakhira et al., 2023). By aligning their operations with environmental sustainability standards, banks can enhance their reputation, attract environmentally conscious customers, and gain a competitive edge (Suchman, 1995).

Research Methodology

Research Design

Research design is an complete framework or plan for the actions to be commenced during the courses of a research study. It directs the use of the research instruments and the sampling strategy and acts as a roadmap for data collecting and analysis. The study has used both descriptive and exploratory research designs to test the research hypothesis. The research framework of the study is presented in Figure 3.1

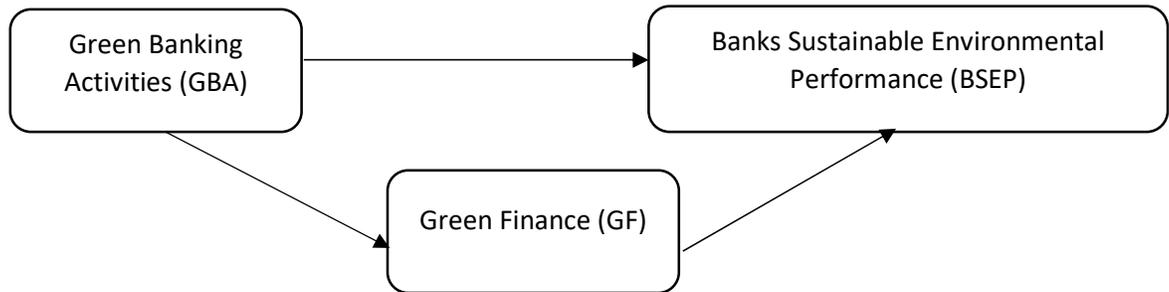


Figure 3.1: Theoretical model

Study Sample and Data Collection

The study's participants include both officers (i.e. Manager, Operation Manager, Head teller) and assistant-level (i.e. Customer services officer, Relationship Manager, Universal Teller, Personal Banking officer) employees working in the banks operating in the area of Hassan Abdal, and Wah Cantt. Till now there are twenty-two commercial banks in Pakistan. Nineteen banks are selected from this group for the research project depending on their branch. 300 employees who work for these banks make up the total population of the responders. Data for this study came from the respondents after they completed a structured questionnaire. In Hassan Abdal, and Wah Cantt, the researcher visited the sampled banks. After receiving approval from the Head of Department, the researcher also meets with Branch managers and their staff from the individual banks to ask questions and administer the questionnaire to the staff. This procedure reduced the likelihood of misinterpretation, improved the questionnaire's legibility, and helped it become more precise.

Measurement Items

Based on previous research on GF, GBA, and BSEP, a questionnaire was created. In this study, the factors were rated on a five-point Likert scale that went from strongly disagree (1) to strongly agree (5). The survey items used in the study are displayed in Table 1.

Table3.1: Research Questionnaire

Variable and References	Items	Description
Green Banking Activities (GBA)	GBA1.	Presenting energy-efficient techniques, methods, and solutions.
	GBA2.	Introducing the convenience of online banking.
	GBA3.	Lending money for environmentally beneficial projects.
	GBA4.	putting together conferences and workshops to encourage environmentally responsible behavior.
	GBA5	creation of more green branches

		GBA6	Decrease in the use of paper.
		GBA7	Encouraging clients to use environmentally friendly banking services like electronic statements, remote deposits, and online bill paying.
		GBA8	E-waste management techniques are used by banks.
		GBA9	Energy-efficient equipment, system solutions, and practices have been implemented by my bank.
Sources Of Green Financing (SGF)		SGF1	Establishing green branches—that is, energy-efficient, environmentally friendly buildings—is something my bank does.
		SGF2	My bank has agreements with the appropriate parties and stakeholders (suppliers, consumers, etc.) for environmental matters.
		SGF3	At the corporate level, my bank advocates for ecologically responsible policies.
		SGF4	Loans for initiatives pertaining to energy conservation and environmental protection are offered by my bank.
		SGF5	My bank has increased its investments in the fields of renewable energy.
		SGF6	More money has been invested by my bank in energy-saving initiatives.
		SGF7	More money has been put into recycling and recyclable goods by my bank.
		SGF8	My bank has increased its investments in environmentally friendly programs like waste management.
Banks Environmental (BSEP)	Sustainability Performance	BESP1	Educating employees on energy and paper conservation through green training.
		BESP2	Green finance significantly increases our bank’s revenue and market share.
		BESP3	Our bank’s operational expenses are significantly reduced by green financing.
		BESP4	In our bank, the use of paper and energy is significantly decreased by green financing.
		BESP5	Green financing enhances banks’ adherence to environmental regulations.
		BESP6	Green finance strengthens ties between stakeholders and the community.
		BESP7	The bank’s image and reputation are enhanced by green funding.

Results and Findings

The respondents' demographic profile, descriptive statistics, construct validity, and reliability are covered in this section.

Respondent Profile

Table 4.1 below demonstrates that the majority of the participants of the survey were males comprising 82% as compared to 18% females. While looking at the frequency of response from the audience, in this study 27 respondents were in the undergraduate category of education and their proportion is 9%, 31% of respondents were graduates, and 60% were master's degree holders which is the highest among the education distribution with the frequencies of 180. These frequencies show that a major portion of the respondents were well-educated. Among the age distribution, 72 respondents were of the age between 18-28 years comprising 24% of the total 300 respondents, 55% were of age between 29-38 years, 20% were of the age group 39-48 years and 1% respondent were 49 years or above of age. The survey response shows that youngsters and middle-aged had the major portion of respondents. 46% of respondents were married and 54% were unmarried. 52% of the participants were from Hassan Abdal and 48% from Wah Cantt.

Table No 4. 1 Respondent Profile

Demography	Indicator	Frequency	Percent	Valid Percentage	Cumulative Percentage
Gender	Male	246	82.0	82.0	82.0
	Female	54	18.0	18.0	100.0
Education	Undergraduate	27	9.0	9.0	9.0
	Graduate	93	31.0	31.0	40.0
	Masters	180	60.0	60.0	100.0
Age Group	18-28 Years	72	24.0	24.0	24.0
	29-38 Year	165	55.0	55.0	79.0
	39-48 Years	60	20.0	20.0	99.0
	49 -Above	3	1.0	1.0	100.0
Marital Status	Married	138	46.0	46.0	46.0
	Unmarried	162	54.0	54.0	100.0
Region	Hassan Abdal	156	52.0	52.0	52.0
	Wah Cantt	144	48.0	48.0	100.0

Source: The authors' calculations.

Descriptive Analysis

The descriptive analysis summarizes the data characteristics which is a representation of a population or sample. Central tendency describes the most common pattern of gathered responses whereas standard deviation describes the dispersion of a data set relative to the mean of a particular variable. Table 4.2 shows the descriptive statistics of selected variables.

Table No 4. 2 Descriptive Statistics

Constructs	N	Minimum	Maximum	Mean	Std. Deviation
GBA	300	1.00	3.00	1.9233	.51567
BESP	300	1.14	3.71	1.9271	.56149
SGF	300	1.00	3.88	2.0392	.58713

Source: The authors' calculations.

Table 4.3 shows the results of EFA using the principal component Analysis (PCA). The purpose of the EFA was to determine whether it could adequately elucidate the three apparent proportions of the eigenvalue of each component that was generated. These factors included several facets of GF, green banking, and BSEP of the sample banks. Due to inadequate factor loading, a few items (BSEP3, GBA3, GBA4, GBA6, SGF2, SGF7, and GDF8) were eliminated. To confirm the internal precision of the respective measurement, the reliability coefficient alpha was calculated for each factor. The alpha values were found to vary from 0.735 to 0.819, indicating the validity and reliability of the instrument that was constructed (Nunnally, 1975).

Table No 4. 3. Factor extraction outcomes of the EFA and Model estimates.

Variables	Factor Loading			
	Items	1	2	3
Banks Sustainability Environmental Performance (BSEP)	BSEP1	0.790		
	BSEP2	0.808		
	BSEP3	0.420		
	BSEP4	0.599		
	BSEP5	0.727		
	BSEP6	0.782		
	BSEP7	0.530		
Green Banking Activities (GBA)	GBA1		0.606	
	GBA2		0.629	
	GBA3		0.498	
	GBA4		0.473	
	GBA5		0.607	
	GBA6		0.379	
	GBA7		0.705	
	GBA8		0.798	
	GBA9		0.774	
Sources Of Green Financing (SGF)	SGF1			0.706
	SGF2			0.467
	SGF3			0.762
	SGF4			0.595

SGF5	0.785
SGF6	0.768
SGF7	0.193
SGF8	0.474

Source: The authors' calculations.

Discriminant Validity

Discriminant validity was confirmed in this investigation based on Fornell and Larcker (1981). Every construct in our investigation had a larger square root of AVE than its connection with another construct, as seen in Table 4.4. Furthermore, values of heterotrait monotrait (HTMT) should be less than 0.90, according to Henseler et al. (2015). This shows that the study's constructs are different from each other and do not measure the same thing. The results of Henseler et al. (2015) and Fornell and Larcker (1981) show that the measures utilized in this study have strong discriminant validity.

Table No 4.4. Discriminant Validity

Variables	Fornell-Lacker Criterion			Heterotrait–Monotrait RatioHTMT Criterion		
	BESP	GBA	SGF	BESP	GBA	SGF
BESP	0.724					
GBA	0.508	0.713		0.588		
SGF	0.837	0.539	0.740	0.958	0.629	

Source: The authors' calculations.

Convergent Validity

The degree of correlation between the variables in a specific construct is measured under convergent validity. AVE (Average variance extracted) is assessed for convergent validity (Fornell and Larcker, 1981). The minimum acceptable range for the AVE value is from 0.36 to 0.5. Fornell and Bookstein, (1982) suggested these approaches investigate convergent validity i.e., outer loading (factor loading), Cronbach's alpha, AVE) and composite reliability. Each item's strength on the corresponding construct is showed by factor loading numbers. Fornell and Larcker, (1981) suggested that item loading values 0.50 or above are acceptable for multivariate analysis. The following table shows that the loading values of almost all items were above the acceptable range of 0.50. The flawless value for composite reliability is 0.70 which is proposed by Hair et al., (2010), and the table demonstrates that these values lie between 0.882 to 0.951. The ideal value for AVE is above 0.50. Table 4.6 shows that AVE values are in the range of 0.508 to 0.547 (Hair et al., 2010). The results declare that the model has convergent validity. Cronbach's alpha values also lie between good to excellent range i.e., between 0.797 to 0.815. Summarized results are displayed in Table 4.5.

Table No 4. 5: Convergent validity

Variables	Items	Loading	Composite reliability	Cronbach's Alpha	Average variance extracted (AVE)
BESP	BESP1	0.800***	0.842	0.815	0.524
	BESP2	0.820***			
	BESP4	0.619***			
	BESP5	0.722***			
	BESP6	0.795***			
	BESP7	0.542***			
	GBA	GBA1			
GBA2		0.682***			
GBA5		0.588***			
GBA7		0.723***			
GBA8		0.842***			
GBA9		0.819***			
SGF	SGF1	0.727***	0.816	0.797	0.547
	SGF3	0.792***			
	SGF4	0.622***			
	SGF5	0.764***			
	SGF6	0.780***			

Source: The authors' calculations.

PLS-SEM Model

The structural model, or PLS-SEM, was used in this work as the estimation approach for each construct. This was used to make sure the study's findings were more exact and accurate. To improve comprehension of the data, the PLS-SEM model enables the estimation of several constructs and their connections with one another. In addition, the R² coefficients of determination for each of the endogenous constructs examined in this study were computed in order to assess the validity of the structural model. Considering the outcomes (Table 4.6), the structural model accounts for 70.5% of BESP, and 29% of SGF. After the calculation of the R² value, Q² i.e., the predictive sample reuse technique is being used as a benchmark for measuring predictive relevance. The predictive relevance Q² values of 0.35 signal a strong model, 0.15 as moderate, and 0.02 signal a weak model. Q² value which is 0.248 shows moderate predictive relevance of the model. Figure 4.1 shows the theoretical model with three constructs that were put in analysis in PLS.

Table 4.6. Predictive relevance and model effect size

	R-square	R-square adjusted	Q²predict
BESP	0.705	0.703	0.248
SGF	0.290	0.288	0.278

Source: The authors’ calculations.

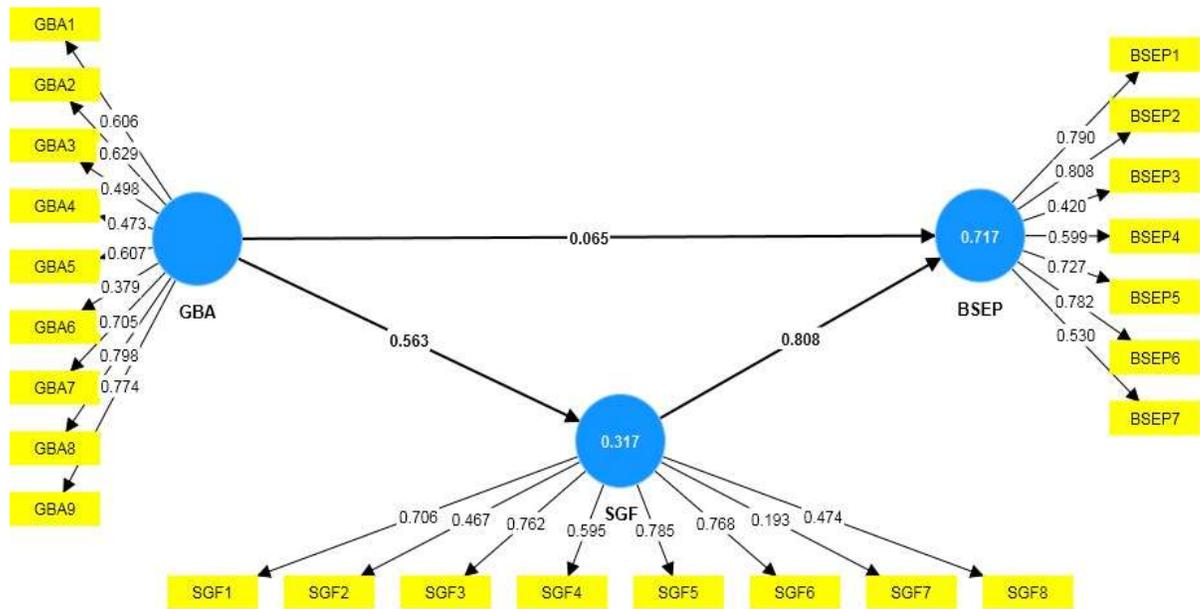


Figure No: 4.1: PLS Model

Hypothesis Testing

Table 4.7 shows the results of the hypothesis testing based on the structural model. Whether the model fits the data well or not is determined by the results of the hypothesis test. The significance of each path coefficient was evaluated using a bootstrapping technique on a 3000 sample. The empirical findings indicated that there exists a significant positive relationship between GBA and BSEP (Path coefficient= 0.081, T-Value= 1.966, P-Value=0.049), indicating that H1 is supported. Likewise, the findings revealed that there exists a significant positive relationship between GBA and sources of green financing (Path coefficient =0.539, T-Value= 14.549, P-Value= 0.000), indicating that H2 is supported. The finding for hypothesis H3 is also supported and justifies that there is a significant relationship between sources of green financing and BSEP (Path coefficient =0.793, T-Value= 27.898, P-Value= 0.000). Finally, for the mediation effect the results (Path coefficient =0.427, T- Value=13.192 and P-Value=0.000) indicated the significant mediating role of GF in the relationship between GBA and BSEP implying the validity of Hypothesis 4.

Table No 4. 71 Summarized Results of Hypotheses Testing

Direct Effect	Path coefficient	T statistics	P values	Decision
GBA -> BSEP	0.081	1.966	0.049	Accepted
GBA -> SGF	0.539	14.549	0.000	Accepted
SGF -> BSEP	0.793	27.898	0.000	Accepted
Indirect Effect				
GBA -> SGF -> BESP	0.427	13.192	0.000	Accepted

Source: The authors' calculations.

Conclusion and Recommendations

In the last two decades, academics, researchers, and professionals have given considerable attention to the subject of GF and green banking in both developed and developing countries. The purpose of this study was to ascertain how green banking practices affect banks' ability to operate sustainably in the environment. Additionally, it looked into how green financing functions to moderate the relationship between green banking practices and bank sustainability in the environment in developing nations like Pakistan.

In particular, this study adds to the body of knowledge regarding GF, GB, and banks' environmental performance in the following ways: The current study, which is based on bankers' knowledge in Pakistan's banking industry, first examines the research gap by conducting an empirical and theoretical analysis of the various GB practices. Second, while prior research has mostly utilized multiple regression analysis and descriptive statistics to validate the correlations between study variables, this study uses structural equation modeling (SEM) to measure the impact of GB practices on banks' environmental performance. Third, using primary data collected from bank employees, this innovative study examines the connection between different GB practices and the banks' sources of GF. The results of the empirical study showed that BSEP is significantly and favorably affected by the GBA and GSF.

The current study's findings have important implications for Pakistani scholars, banking institutions, bankers, and government representatives by encouraging GB and providing green funding to banks to improve their ecological performances and, in turn, the nation's long term financial growth. The study's findings can be used by bank managers to improve their institution's environmental performance, build their brand's reputation, and possibly draw in eco-aware customers by prioritizing green banking initiatives. Governments can help create a more environmentally conscious financial sector by creating rules that encourage and regulate institutions to use sustainable practices. By utilizing the results, banking institutions can create innovative products and services that meet the expanding need for sustainable financing, opening up new markets and boosting their competitiveness. The promotion of green banking practices through training programs and incentives can help individual bankers achieve their professional and personal goals in addition to broader environmental objectives. Generally, bank managers, government organizations, banking institutions, and bankers can all work together to promote good environmental effect while improving financial performance and societal well-being by coordinating their actions with the study's conclusions.

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