

Received: 16 November 2023, Accepted: 22 December 2023

DOI: <https://doi.org/10.33182/rr.vx9il.65>

DOES GREEN FINANCE PROMOTE ENVIRONMENT PERFORMANCE? EVIDENCE FROM PAKISTAN

Professor Yang Minghai¹, Waqar Akbar Khan², Khalid Khalil³, Yousaf Khan⁴, Athar Marwat⁵

¹School of Business Administration, Shandong University of Finance and Economics, China.

²School of Business Administration, Shandong University of Finance and Economics, China.

³Assistant Professor IQRA National University Swat Campus Pakistan

⁴National University of Modern Languages (NUML) Islamabad.

⁵Researcher, IQRA National University Pakistan

*Corresponding Author

Abstract

The current research presents a mediating concept to observe employee green behavior, green finance, employee innovation, and environmental performance in the banking industry. Also, explore employee innovation mediated impact between GF, EGB, and EP. Survey-based Data were collected from 375 samples of employees from the private banking sector in Lahore. Using path analysis through SPSS-AMOS, it was discovered that EGB significantly impacted GI and EP. GF positively impacted GI and GP. The results also point out that EGB fully mediates among GF, EP, and EGB, EP. Findings recommend promoting employee green behavior and providing green finance opportunities, which can increase employee innovation, positively impacting the banking industry's environmental performance. This research highlights the importance of considering employee behaviors, financial support, and innovation in creating a sustainable and environmentally friendly banking sector. The study concludes with practical and theoretical contributions to the banking industry.

Keywords: Employee green behavior, green finance, green innovation, environment performance

Introduction

Educators, professionals, and researchers are worried about climate change because of its repercussions. Recently, researchers and businesses have noticed how humans' activities negatively impact the environment, such as air pollution and water, the resource's indiscriminate use, and the use of hazardous chemicals (Wang et al., 2023). Ahshanul Mamun (2023) predicted that Lahore would be the warmest city ever based on previously described environmental issues. Therefore, it's become imperative for organizations to focus on activities and the environment (Thao & Xie, 2023). Recently, 'green' concerns have been recognized as a great stimulus for academic experts (Jia et al., 2023). Financial institutions play a big part in the fight against climate

change, whether in a rich country or a poor one (Khan, 2018). Thus, essential to investigate how Banks would further improve EP.

The influence of green finance on EP would be crucial for stable growth, and also recent studies highlighted further examination of merging green innovation and EGB primarily into one research is becoming important (Wang et al., 2023). According to studies, when workers are more actively involved in a setting that supports their growth, green organizational climate, their performance level tends to increase (Minghai et al., 2023). In addition, the function of employee green behavior is essential to doing green business in such an enhanced manner that considers environmental and societal concerns (Norton et al., 2017). Green finance (GF) is an example of a contemporary economic phenomenon. It brings together financial and social advantages with advancements in environmental protection (Han et al., 2022). Similarly, green finance (GF) is appropriate for economic growth that places EGB significance and EP (Zhong et al., 2022).

In addition, GI is considered to be an essential component in the process of determining sustainability performance (Thao & Xie, 2023), environmental performance (Wan et al., 2022), and business efficiency (Xie et al., 2022). EP is a complex interplay of organizational sustainability practices and policies (Rachmawati et al., 2020). Employee green behavior (EGB), green innovation, sustainability, and green finance (GF) all play vital roles in assuring long-term country economic development—the current study proposes to evaluate GF, EGB, EP, and GI relationships in developing economies. The following two research issues are addressed in an attempt to be answered by this study. Moreover, questions that need to be answered are whether there is a connection between EGB, EP, and GF in developing countries. Does GI mediate between EGB, EP, GF, and EP?

A conceptual model is developed and tested using data collected from the banks of developing economies such as Pakistan. Countries in the development process, such as Pakistan, need help dealing with the consequences of climate change on the environment (Klioutchnikov & Kliuchnikov, 2021). Researchers (Zhang et al., 2022) further declare that green finance, including green pay, rewards, and EGB increases EP. Additionally, the literature has suggested that employee green behavior (EGB), green finance, and green innovation need more research in developing countries' contexts and elaborating on EP within the banking industry.

Earlier research has concentrated on employee green behavior (EGB) on business performance (Susananto et al., 2023), sustainability performance (Yeşiltaş et al., 2022), and GI (Yeşiltaş et al., 2022). Less investigation discovered the influence of EGB on EP (Hove & Rathaha, 2021), and findings that have been conducted thus far have been mostly equivocal (Lapinskienė & Danilevičienė, 2023). Furthermore, research has demonstrated that GF has a significant influence on other aspects of performance, including financial performance (Gu & Liu, 2022), environmental performance (Qian & Yu, 2024), and sustainability performance (Yeşiltaş et al., 2022).

Experts continue to focus on this relationship even though several research studies have found an association between EGB and EP. This is because conclusions have been inconsistent. Thus, the existing study established and evaluated inclusive research depending on SET. Additionally, the concept of GF was added to the model to analyze the link between EGB, EP, and GF in the banking

industry and mediate the influence of GI. The present study offers a great deal to the field. It will have far-reaching consequences for scholars and practitioners in the banking sector of developing economies since it presents theoretical underpinnings on EGB, GF, GI, and EP. The present investigation is a pioneering effort that contributes to developing a research framework founded on SET and incorporating GF, GI, EGB, and EP. Previous scholars applied numerous theories to many types of organizations to examine GF, EGB, GI, and EP. However, current studies provide more novel theoretical contributions in this area.

Under the guise of stakeholder theory, (Li et al., 2022) examined how EGB affected the financial outcome. Rötzel et al. (2019) also utilize contingency theory to evaluate the relationship among EP. While Parshetty (2019) investigated the link between GI and EP through the lens of ability motivation-opportunity theory, Rötzel et al. (2019) investigated the relationship among employee green behaviors (EGB), GI, environmental strategy, and EP of major manufacturing businesses via RBV theory. To analyze the connection among employee green behaviors (EGB), G.F, G.I, and EP, the present study constructed a complete research model based on SET and generated an idea of GF.

The existing article includes a detailed literature review, hypothesis building, and a theoretical backbone. The research techniques are presented in Section 3, which includes samples and surveys used to collect adequate data to evaluate the estimated research model. Section-4 presents the testing results that were executed. The final portion contains discussions and conclusions that were drawn.

2. Literature Reviews and Hypothesis formation

Behavioral research guides examining organizational climate support, which states that employee experience obliges and reciprocates employee behavior depending on how much social exchange input they perceive (Zhang & Berhe, 2022) and (Rana et al., 2023). The Social Exchange Theory (SET), as applied in an environmental setting (Amrutha & Geetha, 2021), posits that individuals who get support and finance for green efforts are more likely to experience innovation and engage in green environmental performance (Saxena & Sharma, 2021).

Based on this idea, a study conducted by Hsu et al. (2021) discovered that when employees perceive support like green finance from their organization supervisors, they intend to increase their efforts to decrease environmental issues and engage in employee green behavior towards environment performance. Chen et al. (2022) defined GF as financing funds offering ecological benefits. Bhatti et al. (2022) employed social exchange theory (SET) to propose that EGB practices implementation, like GI, serves as a demonstration of environmental performance, hence enhancing through green finance of the organization. The social exchange mechanism provides empirical evidence that employee green behavior and green finance play substantial roles in mediating beneficial associations between GI and EP. Previous studies have found that organizations prioritizing green innovation and employee green behavior practices tend to have better environmental performance outcomes. These organizations are more likely to receive green finance, as financial institutions recognize the long-term benefits of investing in environmentally friendly initiatives. Thus, integrating green innovation, employee green behavior practices and green finance can create a positive feedback loop that drives continuous improvement in

environmental performance. This positive feedback loop can also have broader societal benefits. As organizations prioritize green innovation and employee green behavior practices, they become role models for other businesses and individuals. This can lead to a ripple effect, encouraging more organizations to adopt environmentally friendly practices and inspiring individuals to make sustainable choices in their personal lives. Ultimately, this collective effort can contribute to reducing carbon emissions and preserving natural resources, ensuring a greener and healthier planet for future generations. For this reason, we constructed and explored a framework to examine the link among EGB, GF, and EP in developing countries. However, the framework was founded on SET.

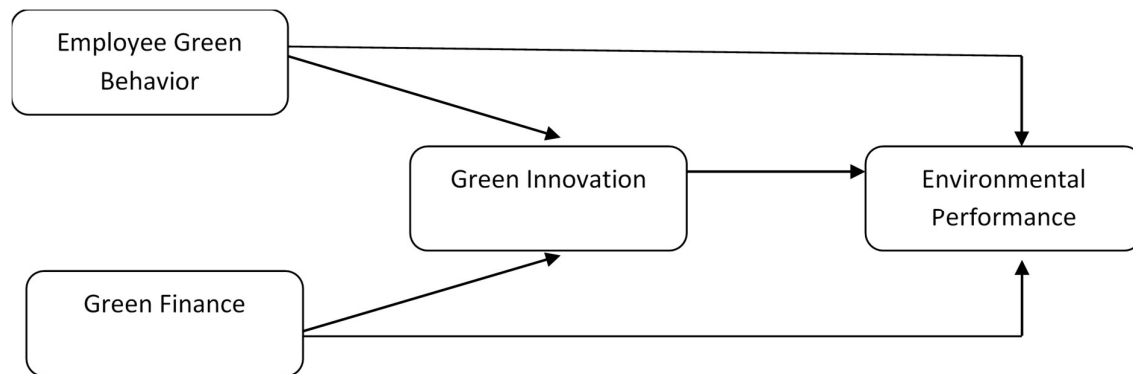


Figure 1: Conceptual framework

2.2. EGB, EP and GI

EGB, EP, and GI are interconnected factors crucial to sustainable business practices (Rehman et al., 2021). Employee green behavior refers to employees' actions and decisions to minimize their environmental impact (Shahzad et al., 2023). This behavior directly influences the overall environmental performance of the organization, which encompasses various aspects such as energy efficiency, waste management, and carbon footprint reduction. Moreover, a strong focus on employee green behavior and environmental performance can stimulate green innovation. To adopt green behavior, organizations can create a sustainability culture and environmental responsibility. Programs like eco-friendly practice training can be accomplished by implementing recycling programs and rewarding employees for environmentally conscious actions. When employees see the impact of green behavior on an organization's EP, it motivates them to embrace sustainable practices further and inspires others to follow suit. Integrating employee green behavior and EP can benefit the organization's bottom line and give a more sustainable future. Organizations can reduce their carbon footprint and conserve natural resources by encouraging employees to adopt eco-friendly practices. This could guide cost-savings through reduced energy consumption and waste management expenses.

Additionally, the positive reputation gained from these initiatives could catch environment-conscious customers, benefiting organizational financial performance. Therefore, the integration of employee green behavior and environmental performance is not only a win for the organization but also for the planet as a whole. This can create a ripple effect, as employees may adopt eco-friendly habits outside work, such as recycling or reducing water usage. Ultimately, this collective

effort can contribute to a more sustainable future and help combat the global climate crisis. In this way, integrating employee green behavior and environmental performance becomes a powerful tool for positive change.

H1. EGB significantly enhances GI.

H2. EGB significantly enhances EP.

2.3. GF, GI and EP

So, GI is an abbreviation for "green infrastructure," which refers to technical improvements that save energy while simultaneously reducing waste, water consumption, air pollution, and oil, coal, and electricity burning (Jia et al., 2024). Climate change appears to be a significant obstacle that must be overcome (Schiederig et al., 2021), and it is essential to apply GI to lessen the impact of its adverse consequences (Yang et al., 2022). The GI greatly supports an organization's environmental strategy and boosts EP (Jia et al., 2024). GI also reduces the company's environmental effects and boosts social and financial success (Irfan et al., 2022). Yang et al. (2022) found that GI improves the organization's performance, including the EP.

Furthermore, Yin et al. (2023) found that the GI considerably impacted EP. Also, Schiederig et al. (2021) found that new innovative features improve export performance. Both of these findings are noteworthy. Researchers also believed that green finance affected big industrial companies' environmental performance (EP), with GI serving as a mediator (Liu et al., 2023). Studies that were mentioned above are unable to offer an evaluation of the degree to which GI can forecast environmental performance. As indicated by the findings of Irfan et al. (2022), GI affects EP; however, in more recent times, the research literature has demonstrated that GF considerably boosts the GI of corporations (Yu et al., 2021). As a result, GI may be illustrated in this study as the technological advances that banks have implemented, such as online green banking deposits and paper decline, with improving overall environmental performance. However, GI and EP relations still need to be completely clear (Fontoura & Coelho, 2022), and there is a need for more research to be conducted in the banking industry. More practical research on GF's influence on GI is needed as an additional point of interest. Prior research has confirmed a connection between EGB, GI, and EP (Ogiemwonyi et al., 2023), but these studies have yet to investigate GF's effects on GI. Accordingly, the following study hypotheses were created to accomplish the research objective, which needs to be investigated.

H-3 Green finance will have significant relations to environmental performance.

H-4 Green Finance will have significant relations with GI.

2.4. GF and EP

Zhang et al. (2022) assert that GF might gradually adversely affect environmental and social responsibilities. Furthermore, both GFs serve as examples of serving clients, including the general public and society, by helping organizations achieve financial and sustained success while avoiding gaps or environmental and social problems. According to Yu et al. (2021), green finance can help companies become more sustainable by providing funding for a variety of environmentally friendly initiatives, which are likely to result in substantial improvement in EP (Silal et al., 2021). Alternatively, Unsworth et al. (2021) noted that employee green performance

reward structures could significantly improve society and enterprises. Therefore, a company's GF and environmental performance (Sihal et al., 2021) would improve. In recent studies, researchers have shown that GF can dramatically improve the EP of banks (Huang & Zhang, 2021). Consequently, organizations would enhance green finance initiatives and environmental performance by investing in eco-friendly initiatives.

H5. GF would positive influence on EP

2.5. GI mediating role

Explanations provided in the past about the connection between EGB, GI, and EP have brought to light that EGB affects GI and improvement in EP. Prior research explains GI had a favorable impact on EP (Yang et al., 2022; Shahzad et al., 2023). EGB substantially impacts the environment (Al-Swidi et al., 2021) and organizations' performance that seeks to organize sustainable finances (Bhatti et al., 2022). Shahzad et al. (2023) explained that GI plays a key role in mediating connections among EGB and EP. It also mentions that the association between EGB and EP needs to be better understood and ought to be investigated further by including a variable that acts as a mediator. Social exchange theory determines an organization's competitive advantage by environmental practices and GI (Singh et al., 2020). This theory describes the relationship between ecological resources and their utilization. So, GI is employing a mediating influence among EGB and, EP and, the GF, and, EP in the Pakistan Bank industry. Hence

H6. GI mediated link among EGB and EP.

H7. GI mediated link among GF and EP.

3. Methodology

An examination of the conceptual framework constructed for the current study (Figure 1) and conducted within private banks operating in Lahore, Pakistan. Moreover, it's widely acknowledged that Pakistan is among the economies that are expanding at the quickest rate (Javeed et al., 2020), and significant investments, opportunities for growth, and green performance. Despite this, the nation faces numerous environmental issues due to climate change and its effects on ecosystems (Irfan et al., 2022). For instance, Pakistan is considered one of the nations susceptible to the impacts of climate change (Javeed et al., 2020). As a result, the banking industry, like Lahore's private banking sector in Pakistan, significantly impacts climate change's adverse effect on the environment. Therefore, studying how the banking industry might enhance environmental performance with EGB and GF is important.

3.2. Sampling

The primary purpose is to investigate the link among employee green behavior, green finance (GF), and environmental performance, as well as the function that GI plays as a mediator in the banking sector of developing economies such as Pakistan. The research was conducted to achieve the above objectives—the main information was gathered using a questionnaire survey and a sample method based on convenience. In convenience sampling, people are chosen to take part based on whether they meet certain criteria. Convenience sampling was a good option because it saved money and made it easy to get the answers needed (Chen et al., 2021). Thus, during January and February 2022, bankers at a selection of Private Commercial Banks in Lahore, Pakistan,

provided data. A total of 485 structured questionnaires were sent to gather data, and 374 replies were obtained, representing a reply rate of 77.11%. Ten surveys were removed because of the unreliability of data, which resulted in a total sample size of 364 questionnaires. Empirical data indicate that about 74.8 percent of respondents were men, whereas it was found that 26.2 percent of respondents were females.

63.3% of people who participated were between the ages of 20-25. Twenty-one point seven percent were between the ages of twenty to thirty years old, 15.7% were between the ages of 31-35 old, and the remaining individuals were 36 years old. In education, 72.6% of individuals who participated had master's degrees, 20% had bachelor's degrees, and only 10% had doctoral degrees.

3.3. Setting of Questionnaire

The constructed items included in the questionnaire were based on the current research and were used to assess the relevant components. These constructs were anchored in Likert scales with five points. Demography, EMB, GF, GI, and EP were the five information areas in the research questionnaire. Also, the demographic section inquires about essential respondents' characteristics, such as their gender, age, and qualification credentials, among other things. EGB was evaluated using five Su and Swanson (2019) items. Supervisors evaluated subordinates' green conduct. Sample items include "Employees adequately complete assigned duties in environmentally friendly ways". However, green finance includes three factors from prior studies (Zheng et al., 2021). Hence, Kraus et al. (2020) used five research-based items to quantify (GI). Finally, the EP includes six elements from past studies (Wang et al., 2021).

Table 1. Convergent Validity

Variables/Items	convergent-validity		reliability				descriptive -statistics		
	standard	loading	CA	C-R	A.V.E	M	S.D	skewness.	kurtosis.
	loadings	average							
green finance (GF)									
GF1	.910	.802	.753	.846	.649	4.08	.764	0.437	.343
GF2	.725					4.05	.707	0.307	.244
GF3	.771					4.08	.759	0.307	.244
Environmental Performance (EP)									
EP1	.776	.741	.854	.880	.553	4.08	.760	.490	.034

EP2	.633					4.00	.757	.508	.524
EP3	.721					4.03	.786	.434	.151
EP4	.819					4.01	.805	.631	0.604
EP5	.759					4.04	.776	.679	0.575
EP6	.739					4.06	.788	.481	0.113
Green Innovation (GI)									
GI1	.964	.813	.835	.897	.752	3.94	0.882	GI1	.964
GI2	.983					3.93	0.892	GI2	.983
GI3	.601					4.01	0.770	GI3	.601
GI4	.586					4.08	0.814	GI4	.586
GI5	.931					4.18	0.785	GI5	.931
Employee Green Behavior (EGB)									
EGB 1	.897	.751	.794	.840	.572	4.09	.757	.546	.208
EGB 2	.759					4.08	.777	.710	.965
EGB 3	.695					4.07	.746	.690	1.027
EGB 4	.651					4.05	.750	.681	1.000

4. Data Analysis and Results

To evaluate the hypotheses proposed in the study, the SEM technique and AMOS 26 were utilized. SEM is widely used to validate latent variable relationships (Gerbing & Anderson, 1988). Javeed et al. (2020) described SEM as better suitable for complicated and basic models. It indicated that CB-SEM is preferable to PLS-SEM in terms of the already included estimates estimates. PLS-SEM became appropriate for creation and prediction during the exploratory stage (Chen et al., 2022), whereas CB-based SEM was employed to investigate the current theory. In addition, CB-SEM was applied to analyze existing theory. Because the research framework was created via previous investigations, the researcher utilized CB-SEM.

Moreover, the primary data analysis was acquired through a 2-stage SEM approach introduced by Anderson & Gerbing (1988). CFA was also performed in the first phase, to evaluate model legality. In the second phase, the structural equation modeling (SEM) approach was utilized to discover structural linkages among latent constructs.

4.1. Structural Model.

For estimating structural models, it was necessary to evaluate the scales' psychometric properties and make adjustments to account for widespread method bias. According to the findings of this study, the robust maximum likelihood technique was applied in conjunction with the CFA results. Because of this, variables were analyzed through reliability and validity as part of evaluating the measurement. The results of this evaluation are summarized in Table 1. Individual item values are .586 and .983, higher than the recommended threshold range of 0.50 (Rehman et al., 2021). Based on this, there are no difficulties with the dependability of the individual items included.

Additionally, Cronbach's alpha (CA) and composite reliability (CR) were applied, and the model's internal consistency was investigated. Hair et al. (2010) determined that (CA) and (CR) values above .7 were suitable. According to the outcomes of the empirical research, the CA values could be between 0.7202 and 0.854, while CR values could be between 0.794 and .897. It is possible to conclude that the measurement constructs used are acceptable and fulfill internal consistency and reliability (Fornell & Larcker, 1981).

According to Amrutha, V. N., & Geetha's (2021) recommendation, AVE would utilize convergent validity. The results emphasized in Table 1 indicate that AVE values vary from 0.532 to 0.753, which is greater than 0.50 (Hsu et al., 2021). Accordingly, the convergent validity condition of an AVE value of 0.50 or above is satisfied (Hsu et al., 2021). In addition, the Fornell and Larcker techniques and the HTMT approach were utilized to investigate discriminate validity. Empirical findings (Table 2) indicate that AVE was greater than square correlation (Wang et al., 2023). The HTMT values for all variables were lower than 0.90, verifying no difficulties with discriminate validity (Thao & Xie, 2023). As a result, concluded that assessed discriminate validity among the variables has been validated and is considered to be satisfactory (Fornell & Larcker, 1981)

As a result of the fact that the current investigation relied on questionnaires to gather data on endogenous/exogenous factors from a single source, there are possibilities that Common Method Bias (CMB) happened, which would have led to biased results. Assuring respondents that their information would remain anonymous during the data-collecting process is an essential step for researchers to take.

The CMB is a major issue generally associated with self-survey reports, as Podsakoff and Organ (1986) stated. Conway and Lance (2010) indicated that the CMB can overestimate the association between the parameters being assessed. Additionally, the CMB is computed in this work using the single-factor technique developed by Harman. Findings show that single-factor discloses 27.529% total variance, and CMB does not present any problems (Podsakoff & Organ, 1991). Podsakoff and Organ (1991) described that a total variance value must be greater than fifty percent to indicate the existence of (MB, and discovering that a CMB value of less than fifty percent says no CMB exists. Finally, model fit indices were utilized to verify the measurement model as $-X^2/df = 1.76$;

$p = .000$; $SRMR = .039$; $GFI = .911$; $IFI = .932$; and $RMSEA = .046$. Hence, the measurement model fit is satisfied.

Table 2 VIF and validity

items	EP	G.I	EGB	GF	VIF
EP	.743				-
GI	.733	.867			1.522
EGB	.479	.526	.729		1.389
GF	.475	.512	.415	.806	1.195

Table (3) HTMT

items	EP	G.I	EGB	GF
EP				
GI	.547	.553		
EGB	.519	.444	.286	
GF	.685	.485	.421	

4.2. Hypotheses Testing and Structural Analysis

To evaluate the hypotheses of the research, the SEM model was utilized by maximum-likelihood estimates employing AMOS. To determine whether or not a collinearity problem exists, an investigation into its existence was carried out. Additionally, the Variance Inflation is a factor. VIF was investigated to identify collinearity concerns among research items. Empirical data indicated vary from 1.193 to 1.522, indicating values are lower than the commonly acknowledged threshold value of 3.3 (Hair et al.,2010). The different model fit indices were utilized to evaluate the structural model's appropriateness (Table 4). Some of fit indices that calculated are follows: $X^2/df = 1.794$; $p\text{-value} = 0.000$; $SRMR = .037$; $GFI = .906$; $IFI = .928$; and $RMSEA = .047$ (Hair et al., 2010). It was noted that all of the fit indices were well within the cut-off levels that the academic professionals advised. As a consequence of this, it is possible to acknowledge that the overall structural model is appropriate.

Figure 2 and Table 4 present the results of the developed structural model. Results showed that EGB had a substantial favorable influence on GI ($b = .497$, $z = 10.512$, and $p = \text{significant}$), which showed that the first hypothesis was not supported. A further illustration of the EGB actions found a substantial positive influence on EP ($b = .286$, $z = 4.959$, and $p = \text{significant}$), supporting Hypothesis 2. Because empirical findings demonstrated that the GI has a statistically significant relationship with the EP ($b = .322$, $z = 4.987$, and p is significant), Hypothesis 3 is supported.

Along the same lines, it is evident from the results that the GF had a substantial impact on GI ($b = 0.190, z = 3.469, \text{ and } p = 0.001$), which lends credence to Hypothesis 4. Furthermore, the research demonstrated that the GF had a noteworthy and favorable influence on EP ($b = .161, z = 2.900, \text{ and } p = .004$), which suggests that Hypothesis 5 is supported. The standard error of association between two variables is denoted by SEa.both the independent variable and the mediator, with SEb representing the standard error of the connection between the mediator variable and the studied variable (the dependent variable). In the Sobel test, z is more than 1.96, showing that there was full mediation between independent variables and those that were dependent. Therefore, findings from the mediation study indicated that GI significantly mediated the link between EGB and EP ($b = .160, z = 4.506, \text{ and } p = .000$) GF and EP ($b = .061, z = 2.848, \text{ and } p = .005$), which supported H-6 and 7.

Table 4. Hypothesis Results.

Hypotheses.	Paths	Value	z-Values	p-Values	Remarks
H1	EGB- GI	.497	10.512	.000 ***	Supported
H2	EGB - EP	.286	4.959	.000 ***	Supported
H3	GI-EP	.322	4.987	.000 ***	Supported
H4	GF-GI	.190	3.469	.001 **	Supported
H5	GF-EP	.161	2.900	.004 **	Supported
H6	EGB-GI-EP	.160	4.506	.000 ***	Full mediation
H7	GF-GI-EP	.061	2.848	.005 **	Full mediation
Model fit indices					
χ^2/df	p-value	SRMR	GFI	IFI	RMSEA
1.794	0.000	0.037	0.906	0.928	0.047

Hypotheses	Paths	SEM Outputs			MR Outputs			Remarks
		Value	z-Values	p-Values	Value	z-Values	p-Values	
H1	EGB- GI	.497	10.512	.000	.493	10.769	.000	satisfied
H2	EGB - EP	.286	4.959	.000	.292	5.680	.000	satisfied
H3	GI-EP	.322	4.987	.000	.315	6.074	.000	satisfied
H4	GF-GI	.190	3.469	.001	.189	4.134	.000	satisfied

H5	GF-EP	.161	2.900	.004	.152	3.327	.001	satisfied
H6	EGB-GI-EP	.160	4.506	.000	.155	5.291	.000	satisfied
H7	GF-GI-EP	.061	2.848	.005	.059	3.417	.001	satisfied

4.3. Robustness Tests

Further, the study applied hierarchical multiple regression (MR) analysis and the Sobel test for mediation to corroborate the result of structural equation modeling (SEM), as seen in Table (5). This was done to ensure the conceptual model was as robust as possible. The hierarchical MR was utilized with the assistance of SPSS-26. By the SEM and hierarchical MR analysis results, every hypothesis has been validated and supported. Conceptual model robustness that was employed was demonstrated by the fact that it is feasible to conclude that the findings obtained from various models are substantially comparable to one another.

Table 5.

Hypotheses	Paths	SEM Outputs			MR Outputs			Remarks
		Value	z-Values	p-Values	Value	z-Values	p-Values	
H1	EGB- GI	.497	10.512	.000	.493	10.769	.000	Verified
H2	EGB - EP	.286	4.959	.000	.292	5.680	.000	Verified
H3	GI-EP	.322	4.987	.000	.315	6.074	.000	Verified
H4	GF-GI	.190	3.469	.001	.189	4.134	.000	Verified
H5	GF-EP	.161	2.900	.004	.152	3.327	.001	Verified
H6	EGB-GI-EP	.160	4.506	.000	.155	5.291	.000	Verified
H7	GF-GI-EP	.061	2.848	.005	.059	3.417	.001	Verified

5. Discussion

The purpose was to investigate ways via EGB, GF, and EP were related to one another, as well as the function that GI plays as a mediator in the banking sectors of a rising country. According to the study's empirical investigation findings, a considerable positive association between EGB and GI was shown to exist. These discoveries are the findings of previous research conducted by (Irfan et al., 2022; Schiederig et al., 2021) that support the notion that EGB exerts a major impact on the gastrointestinal tract. Additionally, a research study on environmental employee green

performance and innovation (Schiederig et al., 2021) partially confirms these findings. Moreover, the empirical data demonstrated that employee green behavior has a considerable impact on the earnings per share of financial institutions.

These findings are comparable to research (Fontoura & Coelho, 2022), which revealed that employee green behavior (EGB) considerably enhances organizational performance. Aside from that, the empirical finding agrees with the legitimacy theory, which explains the participation of banking institutions in spending and implementation of EGB initiatives. Social pressure and regulatory standards have required businesses to use EGB practices to promote social acceptance and environmental sustainability. Furthermore, Thao & Xie (2023) found that environmental, social, and economic aspects of employee green behavior (EGB) considerably improve the economic performance of small and medium-sized enterprises (SMEs) in Spain. The findings contradict the conclusions of research [4], which concluded that EGB did not affect the EP of manufacturing companies in Malaysia. Since the current study's empirical findings suggested that employee green behavior (EGB) has a large beneficial influence on employee performance (EP), it is recommended that managers and owners engage in EGB activities. Previous research has demonstrated that EGB is key in predicting organizational performance.

As predicted, the findings suggest that GI has a key role in determining the EP of financial institutions. This suggests that green efforts, such as green technology, banking, online banking, and customer service, improve the banking industry's technical innovation. GI has a considerable influence on the EP of major industrial organizations, according to findings (Thao & Xie, 2023), which reported comparable conclusions. The study results showed that green financing has a strong positive impact on green innovation (GI), which suggests that green financing has a big influence on businesses' green innovation. As a result, it is recommended that managers of a business should place a greater emphasis on financing environmentally friendly initiatives because doing so boosts the development of green innovation inside the firm.

This conclusion is reinforced by the research conducted by (Rehman et al., 2021), who discovered that green funding considerably enhances EI. Moreover, GF has a crucial role in determining the environmental performance of the banking industry. This means that financing different environmentally friendly projects, such as renewable energy, green industry growth, and waste management, in addition to typical projects, contributes to improving environmental sustainability within the business. According to the findings of (Yu et al., 2021), which show that GF considerably boosts EP, this conclusion agrees with those findings.

As a result, green funding significantly contributes to enhancing green innovation and environmental performance inside enterprises.

Last, the data demonstrated that the GI substantially mediated the connection between EGB and EP. These results align with the findings of the research carried out by (Unsworth et al., 2021), in which it was shown that EGB did not directly influence EP. Still, it does have an indirect influence through mediating components, such as environmentally friendly innovation, being present. A further connection may be made between the arguments and the legitimacy theory, which asserts that GI is responsible for justifying the connection between EGB and EP (Unsworth et al., 2021).

Furthermore, the empirical data demonstrated that the link between GF and EP is characterized by GI has a crucial role in mediating the relationship. This groundbreaking study investigates the link between GF and EP in the financial institution setting by utilizing the mediating variable of GI. The study was carried out to investigate the relationship. In addition, the findings established that GI is a complete mediator and reduces the strength of the relationships between these factors. Because the GI is the most significant element that impacts how effectively banks take care of the environment, this connection has altered. The next most important factors are employee green behavior (EGB) and green finance. Therefore, GI significantly improves the environmental performance of financial institutions by reducing carbon emissions and energy consumption and providing personnel with green training on what they can do to save energy and paper. Then, some of the most significant theoretical and practical contributions are examined further.

5.1. Theoretical and Practical Implications

Empirical findings contribute to the existing literature on employee green behavior (EGB), global governance (GF), global economics (EP), and global governance (GI) in the context of financial institutions in developing economies. To begin, this is one of the earliest studies to examine the link between EGB, GF, GI, and EP in the context of financial institutions in a developing country. This is one of the most significant theoretical contributions that our study has made. The legitimacy theory is the foundation upon which this study is founded. Previous scholars have applied the stakeholder, natural RBV, and contingency theories for employee green behavior (EGB), GI, and EP (Amrutha & Geetha, 2021; Yu et al., 2021; Rachmawati et al., 2020). The theoretical model built in this work can be applied to new situations or other developing nations in general. The measurement scales have been confirmed via statistical analytic techniques such as structural equation modeling (SEM). Second, the study's findings contribute to the existing body of research by considering the function that GI plays as a mediator in the link between EGB and EP and the relationship between GF and EP. This is something that previous studies should have considered in the context of financial institutions. In a previous study, Singh et al. (2020) found that environmental strategy and GI play a substantial role in mediating the connection between employee green behavior (EGB) and environmental performance in the setting of big manufacturing companies. Third, the study's findings validated and expanded upon the legitimacy theory by demonstrating how organizations that incorporate EGB, GF, and GI initiatives into their operational processes help them gain, maintain, and restore legitimacy while also assisting them in achieving overall environmental sustainability. This was accomplished by adding a new dimension to the legitimacy theory.

Research conclusions have substantial repercussions for those who run banks, those who are academics, and lawmakers in developing nations like Pakistan. However, the research guides banks on the influence of EGB, GF, and GI on EPs. The legislators are concentrating on environmental protection, they could easily make environmental protection in developing countries to lessen, emissions, and industrial pollution and to conserve water, electricity, and renewable and non-renewable resources, all contributing to improved environmental protection. It was discovered that EGB and GF have a favorable influence on EP mediated via GI. Since previous research has demonstrated that EGB activities promote EP (Unsworth et al., 2021), managers should incorporate EGB and GF into evaluating EP.

Additionally, the findings could assist bank managers in promoting corporate brands and contributing to social welfare through EGB activities. Therefore, EGB, GF, and GI are the areas that bank managers and lawmakers need to concentrate on to evaluate EP. In addition, empirical research demonstrated that the EGB and EP of banks are significantly improved through GI. GI influences green innovation and the environment since these banks focus more on EGB. Therefore, this study's findings will also benefit other developing nations in attaining green finance and adopting EGB activities and, GI.

5.3. Limitation and future research:

Like other research that has come before, this present study has several constraints. These limitations raise the possibility that usefulness will be diminished, but they also provide prospective topic ideas for researchers in the future. The research was conducted using the cross-sectional technique, and experts are still determining the results in banks if EGB, GF, and GI provide the same effects. Thus, researchers could study using the longitudinal methodology to see whether results change or remain the same. However, future researchers might gather information from different financial companies to examine outcomes. Data was obtained from bankers working for private commercial banks in Lahore, Pakistan. Green behavior (GF) and EGB could be employed as mediators among employee green behavior (EGB) and environmental performance (EP) in future research studies. Moreover, the present study was conducted in Pakistan, which has a distinct civilization. So, researchers in the future will be able to carry out similar studies in other emerging nations such as Iran, Nepal, Sri Lanka, and Saudi Arabia to investigate how things have evolved

References:

- Abdou, A. H., Hassan, T. H., Salem, A. E., Albakhit, A. I., Almkhayitah, M. Y., & Salama, W. (2022). The Nexus between Environmentally Sustainable Practices, Green Satisfaction, and Customer Citizenship Behavior in Eco-Friendly Hotels: Social Exchange Theory Perspective. *Sustainability*, 14(19), 12791.
- Ahshanul Mamun, A. M. (2023, July). Motivating green behaviour in Bangladeshi employees: Self-determination theory application. *Heliyon*, 9(7), e18155. <https://doi.org/10.1016/j.heliyon.2023.e18155>
- Al-Swidi, A. K., Gelaidan, H. M., & Saleh, R. M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance. *Journal of Cleaner Production*, 316, 128112.
- Amrutha, V. N., & Geetha, S. N. (2021). Linking organizational green training and voluntary workplace green behavior: Mediating role of green supporting climate and employees' green satisfaction. *Journal of Cleaner Production*, 290, 125876.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411.
- Bhatti, S. H., Saleem, F., Murtaza, G., & Haq, T. U. (2022). Exploring the impact of green human resource management on environmental performance: the roles of perceived organizational

support and innovative environmental behavior. *International Journal of Manpower*, 43(3), 742-762.

Chen, J., Siddik, A. B., Zheng, G. W., Masukujjaman, M., & Bekhzod, S. (2022). The effect of green banking practices on banks' environmental performance and green financing: An empirical study. *Energies*, 15(4), 1292.

Fontoura, P., & Coelho, A. (2022). How to boost green innovation and performance through collaboration in the supply chain: Insights into a more sustainable economy. *Journal of Cleaner Production*, 359, 132005.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis: Pearson new international edition*. Essex: Pearson Education Limited, 1(2).

Hsu, C. C., Quang-Thanh, N., Chien, F., Li, L., & Mohsin, M. (2021). Evaluating green innovation and performance of financial development: mediating concerns of environmental regulation. *Environmental Science and Pollution Research*, 28(40), 57386-57397.

Huang, H., & Zhang, J. (2021). Research on the environmental effect of green finance policy based on the analysis of pilot zones for green finance reform and innovations. *Sustainability*, 13(7), 3754.

Irfan, M., Razaq, A., Sharif, A., & Yang, X. (2022). Influence mechanism between green finance and green innovation: exploring regional policy intervention effects in China. *Technological Forecasting and Social Change*, 182, 121882.

Javeed, S. A., Latief, R., & Lefen, L. (2020). An analysis of relationship between environmental regulations and firm performance with moderating effects of product market competition: Empirical evidence from Pakistan. *Journal of Cleaner Production*, 254, 120197.

Jia, X., Wang, J., & Liu, T. (2024). The impact of business-to-government relationship emphasis on green innovation: An empirical analysis. *Technovation*, 129, 102919.

Khan, B. F. (2018). Triggering Green Transformation of the Private Sector Through Central Bank-led Initiatives: The Role of Bangladesh Bank in Mainstreaming Green Finance in Bangladesh. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3259357>

Liu, K., Dong, S., & Han, M. (2023). Exploring the impact of green innovation on carbon emission intensity in Chinese metropolitan areas. *Ecological Indicators*, 156, 111115.

Minghai, Y., Shinwari, M. N., Khan, W. A., Benlaria, H., Wenqing, L., Iqbal, S., Shafqat, A., & Naseer, M. A., (2023). Unlocking Creativity: Exploring the Impact of Organizational Climate on Employee Innovation in Public Institutions. *Res Militaris*, 13(4);12-21. Retrieved from <https://resmilitaris.net/menu-script/index.php/resmilitaris/article/view/4066>

Ogiemwonyi, O., Alam, M. N., & Alotaibi, H. S. (2023). Pathways toward environmental performance: Link between green human resource management, green innovation, and green behavior at work in manufacturing companies. *Journal of Cleaner Production*, 425, 138949.

Rana, M. I, Khan, W. A., Yasir, W., Taseer, N. A., & Kishwar, R. (2023). Effect of Job Satisfaction of Elementary School Teachers on School Effectiveness. *Journal of Social Sciences Review*, 3(1), 833-845. <https://doi.org/10.54183/jssr.v3i1.232>

Rachmawati, R., Arnan, S. G., Herawati, S. D., & R, R. L. (2020, February 12). Environmental Performance of Financial Performance and Moderated Environmental Disclosure. *International Journal of Psychosocial Rehabilitation*, 24(02), 3056–3066. <https://doi.org/10.37200/ijpr/v24i2/pr200609>

Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change*, 163, 120481.

Schiederig, T., Tietze, F., & Herstatt, C. (2012). Green innovation in technology and innovation management—an exploratory literature review. *R&d Management*, 42(2), 180-192.

Shahzad, M. A., Jianguo, D., & Junaid, M. (2023). Impact of green HRM practices on sustainable performance: mediating role of green innovation, green culture, and green employees' behavior. *Environmental Science and Pollution Research*, 30(38), 88524-88547.

Silal, P., & Saha, D. (2021). Impact of national e-participation levels on inclusive human development and environmental performance: The mediating role of corruption control. *Government Information Quarterly*, 38(4), 101615.

Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological forecasting and social change*, 150, 119762.

Thao, H. T., & Xie, X. (2023, May 30). Fostering green innovation performance through open innovation strategies: do green subsidies work? *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-023-03409-4>

Thao, H. T., & Xie, X. (2023, May 30). Fostering green innovation performance through open innovation strategies: do green subsidies work? *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-023-03409-4>

Unsworth, K. L., Davis, M. C., Russell, S. V., & Bretter, C. (2021). Employee green behaviour: How organizations can help the environment. *Current Opinion in Psychology*, 42, 1-6.

Wan, X., Wang, Y., Qiu, L., Zhang, K., & Zuo, J. (2022, September 23). Executive green investment vision, stakeholders' green innovation concerns and enterprise green innovation performance. *Frontiers in Environmental Science*, 10. <https://doi.org/10.3389/fenvs.2022.997865>

Wang, M., Li, Y., Wang, Z., Shi, Y., & Zhou, J. (2023, September 5). The synergy impact of external environmental pressures and corporate environmental commitment on innovations in green technology. *Corporate Social Responsibility and Environmental Management*. <https://doi.org/10.1002/csr.2604>

Yang, Q. C., Zheng, M., & Chang, C. P. (2022). Energy policy and green innovation: A quantile investigation into renewable energy. *Renewable Energy*, 189, 1166-1175.

Yin, X., Chen, D., & Ji, J. (2023). How does environmental regulation influence green technological innovation? Moderating effect of green finance. *Journal of Environmental Management*, 342, 118112.

Yu, C. H., Wu, X., Zhang, D., Chen, S., & Zhao, J. (2021). Demand for green finance: Resolving financing constraints on green innovation in China. *Energy Policy*, 153, 112255.