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# THE IMPACT OF SUSTAINABLE FINANCE PRODUCTS ON BANK LENDING PRACTICES: THE MEDIATING ROLE OF ESG INTEGRATION AND MODERATING EFFECT OF REGULATORY POLICIES IN EMERGING MARKETS

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**Abstract**
The growing importance of sustainability in the financial sector has reshaped how banks align their lending practices with environmental, social, and governance (ESG) priorities. While sustainable finance has become central to policy and industry discourse, its practical impact on lending behavior, particularly in emerging markets, remains underexplored. Recent scholarship emphasizes the need to understand how ESG integration and regulatory frameworks shape the role of sustainable finance in banking operations, especially as financial institutions are increasingly expected to contribute to global goals such as the Sustainable Development Goals (SDGs). The purpose of this study is to investigate the influence of sustainable finance on bank lending practices, while examining the mediating role of ESG integration and the moderating effect of regulatory policies within an emerging market context. Stakeholder theory provides the guiding framework, suggesting that banks are accountable to multiple stakeholders who expect lending decisions to balance financial returns with broader social and environmental outcomes. A quantitative, cross-sectional research design was adopted, with data collected through structured questionnaires distributed to banking professionals. The measurement scales were drawn from validated instruments in prior literature. Data analysis employed SPSS for descriptive

and inferential statistics and SmartPLS for structural equation modeling, enabling rigorous testing of direct, indirect, and moderating effects. The findings reveal that sustainable finance positively influences bank lending practices, with ESG integration acting as a significant mediator that strengthens this relationship. However, regulatory policies exert a negative moderating effect, suggesting that stringent or inconsistent regulations may constrain the positive impact of sustainable finance. These results highlight the critical importance of aligning sustainability strategies with operational ESG mechanisms while designing regulatory policies that support, rather than hinder, banks' efforts to advance responsible lending practices.

**Keywords:** *Sustainable Finance Products, Lending Practices, ESG Integration, Regulatory Policies and Emerging Markets*

## INTRODUCTION

Over the past few years, the global financial sector has come under increasing scrutiny for its role in addressing environmental, social, and governance (ESG) risks, given growing concerns about climate change, social inequality, and governance transparency. Actors in finance including banks, investors, regulators, and civil society are asking how financial intermediation can not only avoid harm but actively promote sustainable outcomes. One strand of this larger discourse centers on the integration of sustainability-related criteria into core financial decision-making processes, especially in bank lending. Such integration involves considering ESG risks and opportunities when evaluating loans, setting credit terms, and monitoring portfolio exposures. The idea is that sustainable finance can guide capital toward activities that support environmental protection, social welfare, and good governance, while also safeguarding financial stability. Regulatory policies play a crucial role in shaping this transformation, by setting norms, requiring disclosures, and incentivizing or penalizing behaviour. In sum, the combination of sustainable finance, ESG integration, and regulatory oversight is increasingly seen as essential to aligning banking practices with both societal goals and long-term financial resilience.

Recent empirical work shows that ESG integration in banks is associated with improved credit risk outcomes. For example, Cantero-Saiz et al. (2024) found that banks with stronger ESG performance tend to have better asset quality, as measured by lower non-performing loans. Meanwhile, in the context of Pakistan, Zahid (2023) compared the pre-COVID and COVID periods and concluded that ESG practices in Pakistani banks could mitigate some adverse financial effects during crises. Furthermore, according to a systematic review of sustainable banking practices in emerging markets, scholars identify a sharp rise since 2016 in research on how ESG integration is operationalized, with many studies pointing to risk management, disclosure, and alignment with global norms as key dimensions (Boafo et al., 2025). However, despite increasing momentum, research also reveals variation: in many emerging economies, implementation is uneven, and metrics or methodologies for ESG integration differ widely across banks and regulatory regimes.

At a global level, climate risks (both physical and transition), regulatory tightening (e.g. obligations under international agreements), and demands from investors and stakeholders are pushing banks to re-examine lending practices. The COVID-19 pandemic, supply chain shocks, and extreme weather events have exposed how vulnerable many financial institutions are to ESG-related risks (IFC, 2023; Cantero-Saiz et al., 2024). Nationally, in Pakistan, recent catastrophic floods displaced millions and caused widespread economic disruption, highlighting environmental vulnerability and the urgency for financial institutions to integrate ESG considerations more seriously (IFC, 2023). Regulatory bodies in Pakistan have responded: the State Bank of Pakistan introduced Green Banking Guidelines (2017), later complemented by Guidelines on Environmental and Social Risk Management

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(ESRM), while SECP issued Green Bond Guidelines in 2021.Nonetheless, concerns remain: many banks lack capacity (technical, informational), variety in regulatory enforcement is high, and there's a question of how ESG integration concretely alters lending behaviour (e.g., which sectors get more or less credit) or the terms of credit.

Even though it has been proven in the literature that ESG integration and regulatory policies are significant, there exist still some significant gaps. To begin with, even though numerous articles document the relations between ESG performance and bank performance (asset quality, risk), there is relatively less causal evidence on how regulatory policies drive ESG integration, and subsequently how this subsequently alters lending habits (sectoral allocation, credit conditions, interest rates, collateral requirements, etc.). A lot of the available literature is cross-sectional or employs plain panel affiliations. Second, in most developing economies such as Pakistan, it is still not well documented: there are guidelines and regulatory frameworks, although there has not been much empirical research on how banks actually implement these in loan appraisal processes, or how ESG risk is measured in lending decisions (Anjum, Mushtaq, Rashid, & Arshad, 2025). This includes inconsistent disclosure practices and lack of standardized metrics (Anjum, Gul, Akram, & Gul, 2025). Third, there is a tension between regulatory intent and actual bank behaviour under different economic conditions; for example, in times of crisis banks may revert to traditional risk factors, downplaying ESG concerns. Fourth, sector-specific analyses are limited: how do regulatory policies and ESG integration affect lending to high-risk environmental sectors (e.g. agriculture, real estate, manufacturing)? There is limited research on whether regulatory policies are sufficient or whether additional incentives, capacity building or enforcement are needed to translate ESG integration into changed lending practices. Because of these gaps, the effectiveness of sustainable finance as a tool for steering bank lending remains under-explored.

This issue matters for multiple reasons. Academically, clarifying how regulatory policies shape ESG integration and bank lending contributes to theory about financial intermediation, risk management, and the role of non-financial factors in banking. From a policy perspective, identifying what works (and where) in ESG integration has relevance for regulators in Pakistan and elsewhere seeking to meet commitments under the Paris Agreement, the SDGs, or national climate plans. For example, Pakistan's Nationally Determined Contributions (NDCs) include ambitious emissions reductions and renewable energy targets. Sustainable finance and ESG integration in banking are central tools to mobilize finance toward these goals. Practically, better ESG integration could reduce banks' exposure to environmental and social risks (flooding, regulatory penalties, stranded assets), improve loan portfolio quality, and potentially lower costs (e.g. by avoiding defaults caused by environmental shocks). Also, as investors, customers, and international partners increasingly expect sustainable behaviour, banks lagging behind may face reputational, market, or competitive disadvantages. Lastly, aligning banking's lending practices with sustainability supports broader societal benefits: environmental protection, social welfare, job creation in green sectors, and resilience to climate impacts.

This study aims to fill the causal chain between regulatory policies, ESG integration, and changes in bank lending practices, with empirical evidence in an emerging-market setting. By combining data on banks' regulatory obligations, ESG integration metrics, and detailed lending-level data (sector, terms), it will illuminate which regulatory levers matter most. This approach is unique because it seeks not just to describe what ESG frameworks exist, but to assess how they translate into action. This can help practitioners and policy makers refine or adjust regulatory instruments for more effective sustainable finance. Theoretically, this research draws on institutional theory (how formal regulatory pressures and norms shape organizational behaviour) and stakeholder theory (how banks respond to stakeholder demands for ESG) to

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frame the causal process from regulatory policy ESG integration lending practices. Empirically, it is expected to contribute both to academia (by closing gaps in causality and sectoral understanding) and to policy (by identifying effective regulatory designs and areas for capacity building). In practical terms, findings could guide central banks, financial regulators, and banking institutions in emerging economies in designing or refining policies to align finance with sustainability goals.

**THEORETICAL FOUNDATION**

Institutional Theory offers a powerful lens through which to understand how organizations adapt in response to external pressures, particularly in regulated sectors such as banking. Originating in sociology and organizational studies, Institutional Theory emerged prominently with the work of early thinkers like Philip Selznick (1957) and later, Talcott Parsons, who emphasized how institutions comprising formal rules, norms, and cultural-cognitive beliefs shape behaviour beyond purely economic rationality. The "old institutionalism" focused on organizations' embeddedness in social systems; later, in the 1970s-1980s, the “new” or neo-institutionalism (especially via Meyer & Rowan, and DiMaggio & Powell) refined the agenda by emphasizing processes of isomorphism: coercive, normative, and mimetic pressures, and the need for legitimacy in addition to efficiency. Over time, Institutional Theory has been refined. Scholars have deepened the understanding of how institutional pressures vary in strength depending on actor power, institutional field, cultural context, and regulatory capacity. More recent formulations include recognition of institutional agency (organizations not simply being passive recipients of pressure but acting strategically), hybrid institutional logics (when multiple normative systems coexist), and paradoxes of legitimacy (when conforming to one institution conflicts with another). Authors also examine how regulative (laws/regulations), normative (professional standards, norms), and cognitive (belief systems,

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taken-for-granted assumptions) pillars interact to produce institutional change or inertia.

Within the context of banking, regulation, and ESG integration, Institutional Theory is highly relevant. Banks operate in environments marked by strong regulatory oversight, stakeholder demands (investors, clients, civil society), and shifting norms regarding sustainability and climate risk. Institutional Theory underpins the chain from regulatory policies ESG integration changes in lending practices: regulatory policies are part of coercive pressures; ESG integration can be driven by normative and cognitive pressures; and banks modify their lending practices to maintain or enhance legitimacy with regulators, stakeholders, and society. Without invoking Institutional Theory, the interplays among external pressures, internal responses, and the ultimate transformation in lending risk being described only descriptively or piecemeal.

Recent research since 2022 provides empirical evidence of the applicability of Institutional Theory in very similar settings. For example, Institutional pressures and risk governance: evidence from Uganda's financial institutions (2023) examines how coercive, normative, and mimetic pressures influence risk governance in banks and financial institutions, finding that stronger institutional pressures lead to more robust risk governance practices. Another study, Bank diversification and ESG activities: A global perspective (2023), shows that governance disclosure (part of normative/regulatory pressures) changes diversification behaviour among banks in high-income and middle-income countries. Yet another, Sustainability Orientation Paradox: Do Banks Ensure Strategic Sustainable Development? examines how banks respond to regulatory, normative, and cognitive pressures to align with Sustainable Development Goals, highlighting that while pressures are real, responses may sometimes be superficial or paradoxical. Because Institutional Theory allows us to trace how regulatory policies (coercive pressures) work in conjunction with norms and beliefs (normative and cognitive pressures) to

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shape how ESG is integrated into bank policy and then reflected in lending practices, it serves as the intellectual foundation for this study. The theory guides our framework: we see regulatory policy not simply as one variable but as part of a broader institutional environment through which ESG practices become institutionalized in banking. The theory also helps explain variation: why some banks or jurisdictions move faster, or adopt more substantive ESG integration, and why others lag, even under similar regulatory regimes. In this way, Institutional Theory anchors both the conceptual model and the hypotheses of this work.

**LITERATURE REVIEW**

**HYPOTHESES**

Over the past few years, the issue of financial institutions incorporating sustainability within their strategic and operational decisions has been studied by scholars. As a node in the process of capital distribution, however, banking is largely vulnerable to social demands and standards, financial regulations, and changing standards regarding environmental and social responsibilities. The changes in the practices within the organization should take place in Institutional Theory through coercive regulatory forces, normative pressure of industry standards and the changes in the thinking of the society (DiMaggio and Powell, 1983; Selznick, 1957). The latest studies mention the fact that sustainable finance products such as green loans or social bonds can not only be seen as the instrument on the financial market, yet, they represent the institutional response to the necessity to gain the legitimacy, manage risks, and integrate into the global systems of sustainability (Boafo et al., 2025; Cantero-Saiz et al., 2024). Simultaneously, the studies show that although certain banks incorporate these products into the depths of lending policy, others use them symbolically, pointing to a possibility of heterogeneity in the institutional adoption (Zahid, 2023). This contradictory evidence highlights the necessity of conducting additional empirical studies on the impact of the sustainability of finance products on the key banking operations.

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Placing sustainable finance as a strategic response and as a legitimacy-seeking response, recent scholarship suggests that the existence and the design of these products can redefine bank lending, such as the activities of credit allocation, loan terms, and portfolio diversification (IFC, 2023; Huang and Lee, 2022). However, there is little empirical understanding of the causal impact of the sustainable finance provision on the change of the lending behaviour, particularly in the emerging economies where the institutional pressure as well as the regulative enforcement vary significantly. Based on the Institutional Theory, also known to pay more attention to how organizational practices change in regulatory, normative, and cognitive forces, one can infer that sustainable finance products cannot be on the margins but they can act proactively in shaping the way banks extend credit. Therefore, it is hypothesized that

**H1: Sustainable finance products positively influence the sustainability orientation of bank lending practices.**

Scholarly debates increasingly recognize that the adoption of sustainable finance products does not directly and uniformly alter bank lending behaviour but often operates through internal organizational mechanisms that reshape risk assessment and decision-making processes (Anjum et al., 2025). The Institutional Theory emphasizes the role of coercive regulation, normative standards, and expectations all of which put pressure on an organization to adopt new practices (DiMaggio and Powell, 1983). ESG incorporation is one of these mechanisms and it is an institutionalized practice that converts sustainability commitment-based commitments into operation lending requirements. Recent studies also prove that banks that have a better ESG structure are more prone to be more systematic in terms of sustainability concerns in the loans they grant, the portfolios they maintain, and the risk pricing (Cantero-Saiz et al., 2024; Boafo et al., 2025). Sustainable finance products should carry ESG principles to ensure that they do not stay symbolic, but they can have a impact on the lending changes. This is an indication that

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the ESG integration offers the institutional channel through which sustainable finance will attain its desired results.

Simultaneously, there is new evidence that indicates that sustainable finance projects in most markets are at risk of being under-realized unless endorsed within the framework of ESGs which govern day-to-day operations. Indicatively, as observed by Zahid (2023), ESG-driven activities among Pakistani banks became more popular when associated with operational lending policies, and not when publicly advanced as slogans. On the same note, global research indicates that the lack of ESG integration means that, in most instances, sustainable financial products do not have effectiveness in influencing credit-allocation patterns (Huang and Lee, 2022). In line with the Institutional Theory, we can say that the ESG integration represents the mediating factor that directs the external institutional forces into the internal practices which, in turn, redefine the results of lending. Therefore, it is hypothesized that

**H2: ESG integration mediates the relationship between sustainable finance products and bank lending practices.**

In emerging markets, where institutional frameworks are often less mature, regulatory policies play a particularly critical role in shaping how sustainability is embedded in financial systems. In Institutional Theory, it is stressed that the presence of coercive forces by regulators may increase the speed at which an organization comes to conform to new norms in cases when normative and cognitive supports are underdeveloped (DiMaggio, and Powell, 1983). In the banking sector, sustainable finance and ESG integration tend to become popular when supported by regulatory requirements, like disclosure policies or risk management principles, or green lending principles. In recent studies, it is said that regulated by strong management, financial institutions are likely to consider implementing ESG in their decisions to provide loans to customers until it becomes material and not nominal compliance on an implementation of sustainable practices (Boafo et al., 2025; IFC, 2023).

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Conversely, when regulatory regimes are poorly timed, puzzled in their activities, there may be products of sustainable finance, but they do not contribute to the metamorphosis of the fundamental lending behaviour and there exists the unemployment between the functions of the policy and reality (Zahid, 2023).

In fact, the empirical studies have also provided an extra dimension suggesting that regulatory interventions are not only likely to contribute to the increased usage of products of sustainable finance, but also the viability of the given EU concept as far as its capacity to alter the procedures of credit supply. Incidentally, comparative analysis has shown that the banks of the emerging markets that are already having the strict sustainability reporting structure and environmental risk management rules are more resolute in the integration of ESG compared to the banks that lack such structures (Huang and Lee, 2022). This is in line with the Institutional Theory that states that coercive forces enhance organizational conformity to the institutional demands in particular circumstances in which legitimacy and market trust are in question. In line with this, it is possible to expect regulatory policies to alleviate the association between sustainable finance and lending practice by strengthening ESG integration. Therefore, it is hypothesized that

**H3: Regulatory policies positively moderate the relationship between sustainable finance products and bank lending practices in emerging markets**

## METHODOLOGY

This study adopts a quantitative, cross-sectional research design, which is appropriate for testing hypothesized relationships between sustainable finance products, ESG integration, regulatory policies, and bank lending practices. A quantitative approach enables the systematic collection of numerical data and the application of statistical techniques to examine causal pathways and assess the robustness of proposed relationships, thereby ensuring objectivity and replicability (Apuke, 2022). The cross-sectional

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design is particularly justified, as it allows the capture of data at a single point in time across multiple banks, which is suitable for contexts where regulatory policies and ESG practices are relatively recent but evolving. By focusing on observable patterns within the banking sector, the design provides empirical insights into how sustainability-oriented financial products and institutional pressures are influencing lending behaviour in emerging markets.

The target population for this study consists of banking professionals employed in commercial banks, development banks, and Islamic banks operating in Pakistan, an emerging economy where regulatory frameworks for sustainable finance are in a formative stage. This sector is particularly relevant because banks are central to capital allocation and therefore serve as key actors in advancing sustainability objectives under national and international frameworks, such as the Sustainable Development Goals (SDGs). The sampling method employed is stratified random sampling, ensuring that respondents are proportionately drawn from different tiers of management (senior, middle, and operational) across banks. The sample size is determined using Krejcie and Morgan's (1970) formula, complemented by Item Response Theory considerations to ensure statistical adequacy and representativeness, which strengthens generalizability while accounting for model complexity in structural equation modeling. This approach is particularly suitable given the study's reliance on partial least squares structural equation modeling (PLS-SEM), which requires adequate sample sizes to achieve stable and reliable parameter estimates (Hair et al., 2022).

The research method is the structured questionnaire that will be based on the validated measurement scale, which is concluded on the basis of the previous empirical research on sustainable finance, ESG integration, and bank lending practices. Every construct is defined using multiple items (between four and seven indicators) and has a range of seven-point Likert scale (1 = strongly disagree to 7 = strongly agree), which offers an adequate variability and increases the sensitivity of measurement (Kusmaryono et al., 2022). In

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order to guarantee the rigor of the methods, the data will be processed by SPSS in the first place to provide descriptive statistics, reliability tests, and initial inferential tests. Thereafter, SmartPLS will be employed for structural equation modeling, enabling the testing of direct, mediating, and moderating relationships as proposed in the conceptual framework. The use of SmartPLS is justified because it is well suited for complex models involving mediation and moderation, accommodates smaller sample sizes compared to covariance-based SEM, and provides robust estimates even when normality assumptions are violated (Hair et al., 2022). This dual-analytical strategy ensures the reliability, validity, and robustness of findings, aligning with contemporary standards in quantitative research.

**DATA ANALYSIS**

**TABLE 1: REGRESSION WEIGHTS**

| Variables | Items | BP | ESG | RP | SF |
|---|---|---|---|---|---|
| **Bank Lending Practices** | **BP1** | 0.875 | | | |
| | **BP2** | 0.907 | | | |
| | **BP3** | 0.871 | | | |
| | **BP4** | 0.918 | | | |
| | **BP5** | 0.854 | | | |
| | **BP6** | 0.863 | | | |
| **ESG Integration** | **ESG2** | | 0.795 | | |
| | **ESG3** | | 0.767 | | |
| | **ESG4** | | 0.800 | | |
| | **ESG5** | | 0.861 | | |
| | **ESG6** | | 0.808 | | |
| | **ESG7** | | 0.813 | | |
| **Regulatory Policies** | **RP1** | | | 0.823 | |
| | **RP2** | | | 0.827 | |

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| | | | |
|---|---|---|---|
| | **RP3** | 0.818 | |
| | **RP4** | 0.871 | |
| | **RP5** | 0.861 | |
| | **RP6** | 0.792 | |
| **Sustainable Finance** | **SF1** | | 0.884 |
| | **SF2** | | 0.869 |
| | **SF3** | | 0.847 |
| | **SF4** | | 0.827 |
| | **SF5** | | 0.862 |
| | **SF6** | | 0.894 |
| | **SF7** | | 0.809 |
| | **SF8** | | 0.907 |

The factor loadings presented for Bank Lending Practices (0.854–0.918), ESG Integration (0.767–0.861), Regulatory Policies (0.792–0.871), and Sustainable Finance (0.809–0.907) all exceed the commonly recommended threshold of 0.70. This indicates that the indicators demonstrate satisfactory reliability and contribute meaningfully to their respective constructs (Hair et al., 2022). The convergent validity can be also supported by high values and each group of measures is significantly associated with its latent measure (Sarstedt et al., 2022). Besides, absence of weak loadings means that there are no items needed to be dropped, therefore suggesting the appropriateness of the measurement model that will be used in future structural analysis. Findings are consistent with the best practice related to the partial least squares structural equation modeling (PLS-SEM) where high outer loadings are considered as a conditioning factor of conducting strict hypothesis testing (Henseler, 2023).

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**TABLE 2: RELIABILITY ANALYSIS**

| Variables | Cronbach's alpha | (rho_c) | Average variance extracted |
|---|---|---|---|
| **Bank Lending Practices** | 0.943 | 0.954 | 0.777 |
| **ESG Integration** | 0.893 | 0.918 | 0.653 |
| **Regulatory Policies** | 0.911 | 0.931 | 0.693 |
| **Sustainable Finance** | 0.951 | 0.959 | 0.745 |

There is also high internal consistency of the constructs, all values of Cronbach alpha range between 0.893 to 0.951 and all are above 0.70 which is the suggested minimum (Hair et al., 2022). The measures also turn out to be stable and reliable as the composite reliability scores are high (0.918-0.959). In addition to it, the measures of the Average Variance Extracted (AVE) are revealed to be between 0.653 and 0.777, exceeding the 0.50 value, demonstrating the convergent validity (Sarstedt et al., 2022). The findings indicate that the measure model utilized is both reliable and valid as well as robust to undergo structural analysis as well.

**TABLE 3: DISCRIMINANT VALIDITY**

| | BP | ESG | RP | SF |
|---|---|---|---|---|
| **Bank Lending Practices** | | | | |
| **ESG Integration** | 0.492 | | | |
| **Regulatory Policies** | 0.615 | 0.513 | | |
| **Sustainable Finance** | 0.583 | 0.422 | 0.648 | |

The values contained in the constructs in the HTMT are all lower than the conservative mark of 0.85 (Henseler et al., 2015) and 0.90 (Hair et al., 2022), which is more liberal. This also implies that; there must be a demonstrated discriminant validity as all the constructs are empirically distinct. The moderate links (e.g., the correlation of 0.615 between Bank Lending practices

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and regulation policies) show significant yet disjointed links, which suggests the construct theoretically independent nature and the probability of substantive theoretical connections.

**TABLE 4: COEFFICIENT OF DETERMINATION**

| | R-square | R-square adjusted |
|---|---|---|
| **Bank Lending Practices** | 0.441 | 0.433 |
| **ESG Integration** | 0.154 | 0.152 |

The $R^2$ values indicate that the model explains 44.1% of the variance in Bank Lending Practices and 15.4% of the variance in ESG Integration. According to Hair et al. (2022), these values represent a moderate level of explanatory power for Bank Lending Practices and a weak to moderate level for ESG Integration. The adjusted $R^2$ values (0.433 and 0.152, respectively) are only slightly lower, suggesting that the model is robust with minimal risk of overfitting.

**FINDINGS**

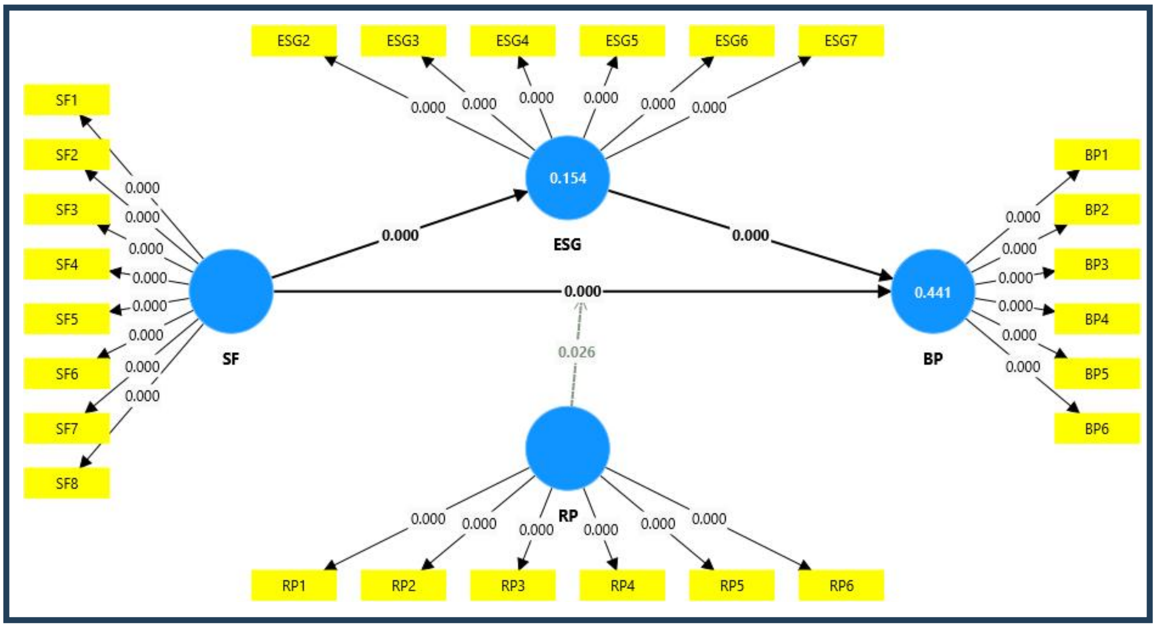

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**TABLE 5: HYPOTHESES RESULTS**

| | Original sample | Sample mean | Standard deviation | T statistics | P values |
|---|---|---|---|---|---|
| **Sustainable Finance -> Bank Lending Practices** | 0.317 | 0.316 | 0.058 | 5.420 | 0.000 |
| **Sustainable Finance -> ESG Integration -> Bank Lending Practices** | 0.075 | 0.076 | 0.024 | 3.070 | 0.002 |
| **Regulatory Policies x Sustainable Finance -> Bank Lending Practices** | -0.099 | -0.097 | 0.044 | 2.233 | 0.026 |

The findings reveal that Sustainable Finance has a significant positive effect on Bank Lending Practices ($\beta = 0.317$, $t = 5.420$, $p < 0.001$), confirming its direct role in enhancing lending behavior. Furthermore, the indirect effect through ESG Integration is also significant ($\beta = 0.075$, $t = 3.070$, $p = 0.002$), indicating that ESG practices partially mediate the relationship, thereby reinforcing the importance of sustainability-driven mechanisms in shaping bank lending. The interaction between Regulatory Policies and Sustainable Finance shows a significant negative moderating effect ($\beta = -0.099$, $t = 2.233$, $p = 0.026$), suggesting that while sustainable finance generally promotes responsible lending, the presence of stringent regulatory policies may dampen this positive influence, potentially by imposing compliance costs or restricting lending flexibility.

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**DISCUSSION**

The results of this study confirm that sustainable finance has a significant positive effect on bank lending practices, providing empirical support to the argument that sustainability-oriented financial products shape lending behavior in meaningful ways. This result can be related to the stakeholder theory which states that the organizations have to be increasingly accountable not only because of their ability to generate profits but also because of their roles in meeting the social and environmental aspirations of the greater society (Freeman et al., 2023). Recent data indicates that those banks with financially sustainable financial models have more robust lending portfolios, which are more profit-driven and also consider environmental and social factors (Bose et al., 2022). High direct impact of this study indicates that sustainable finance has entirely stopped to be a side practice but a fundamental part of the banking strategies, especially the market that is emerging where demand of using responsible products of investment is rising rapidly at very high rates.

It was also confirmed that the ESG integration plays the mediating role in bringing sustainable finance and bank lending practices in the interconnection and the sustainability-oriented finance proves to be more efficient when integrated in a systematic ESG framework. The given finding is in line with the existing literature implying that ESG mechanisms provide the operative channels in which sustainable finance is translated into tangible lending provisions (Mishra and Ghosh, 2023). The banks which will take ESG into account in the process of establishing credit risk will ensure that lending facilities are both responsible and financial. The importance of this mediation effect explains how sustainable finance can be ineffective until it is coupled with a strong ESG adoption, which streamlines and direct lending policies according to the global sustainability norms.

Interestingly, the moderating effect of regulatory policies showed a negative association, and this indicates that where the regulatory environment is very

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strict, the positive influence of sustainable finance on bank lending could be decreased. To the extent that regulatory frameworks are differentiated to enhance accountability and financial stability, excessive regulations can to some extent entail compliance burdens that depress the ability of banks to grow sustainable lending portfolios (Ali et al., 2022). This result is inconsistent with certain previous research that emphasized the facilitation of regulation in the development of green finance (Zhang and Zhang, 2022), but similar to the claims that overregulation may decrease innovativeness and the desire to transition to new financial norms (Li et al., 2023). These issues can be aggravated by regulatory inconsistencies and regulation gaps in the emerging markets which, in turn, will reduce the anticipated positive synergy between sustainable finance and lending practices in the said markets. This result demands more balanced approach of policy which will help in achieving sustainable goals and which will not overburden the financial institutions.

**LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

- The use of a quantitative, cross-sectional design restricts causal inferences.
- Findings capture associations at one point in time but do not reflect long-term dynamics.
- Future studies could adopt longitudinal or mixed-method designs for stronger causal explanations.
- The focus on banking institutions in one emerging market limits generalizability.
- Validated scales were used, but objective measures such as financial disclosures or ESG ratings were not included.
- Future studies should combine perceptual and secondary data for greater measurement precision.
- The model excluded other relevant factors such as corporate governance, fintech adoption, and institutional pressures.
- Moderators like organizational culture and environmental uncertainty, or mediators such as innovation capabilities, may further explain outcomes.

- Future research should expand the framework by integrating these additional constructs.
- Examine differences between supportive and restrictive regulatory regimes as moderators.
- Investigate the influence of global policy frameworks (e.g., SDGs, Paris Agreement) on sustainable finance and lending practices.
- Apply advanced analytical methods (e.g., multi-group SEM) to assess differences across bank size, ownership, and market maturity.

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