

Nexus of Digital Inclusive Finance and Corporate ESG Performance to Achieve Financial Sustainability

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Abstract: Integrating digital inclusive finance with corporate Environmental, Social, and Governance (ESG) performance represents a transformative pathway to achieving financial sustainability in modern business. This study explores the synergistic relationship between digital financial inclusion and corporate ESG practices, focusing on how these elements contribute to long-term financial sustainability. Utilizing data collected from 350 financial experts across various industries, the research employs Structural Equation Modeling (SEM) using Smart-PLS to rigorously analyze the interconnections between digital finance, ESG performance, and financial outcomes. The findings reveal that digital inclusive finance is pivotal in enhancing ESG performance by facilitating broader access to financial services and enabling companies to engage with underserved communities, thereby improving social and economic outcomes. Furthermore, the study demonstrates that digital financial platforms significantly strengthen governance structures by promoting transparency and accountability. The analysis shows that companies effectively integrating digital inclusive finance into their operations achieve superior ESG performance and position themselves for greater financial sustainability.

Keywords: Environmental, Social, and Governance (ESG), Digital Inclusive Finance, Financial Sustainability, Environmental Performance.

1. Introduction

Incorporating digital technology into financial services has revolutionized the landscape of financial inclusion, creating new opportunities for marginalized populations to access financial products and services (Dadhich, Opoku-mensah, et al., 2024). This transformation, known as digital inclusive finance, has become a critical component of economic empowerment, particularly in developing countries. By leveraging mobile technology, digital platforms, and innovative financial solutions, digital inclusive finance aims to reduce poverty, promote entrepreneurship, and foster sustainable economic development. The rapid adoption of these technologies has expanded access to financial services and enabled real-time transactions, improved financial literacy, and enhanced transparency in financial systems.

As the concept of digital inclusive finance gains traction, its intersection with Environmental, Social, and Governance (ESG) performance has emerged as a critical area of interest for corporations. ESG performance, which reflects a company's commitment to sustainable and ethical practices, is increasingly recognized as a crucial factor in long-term business success. Investors, regulators, and consumers are now more attuned to corporate activities' social and environmental impacts and demand greater accountability from businesses. In this context, the nexus between digital inclusive finance and corporate ESG performance presents a unique opportunity for companies to align their financial inclusion strategies with their broader sustainability goals.

The synergy between digital inclusive finance and ESG performance is multifaceted. On the one hand, digital inclusive finance can enhance a company's social and governance metrics by promoting financial inclusion, reducing inequalities, and improving access to capital for underserved communities. On the other hand, companies that prioritize ESG performance are more likely to invest in digital solutions that promote inclusivity and sustainability. This reciprocal relationship highlights the potential for digital inclusive finance to catalyze improved ESG performance, thereby driving corporate responsibility and ethical business practices.

Moreover, combining digital inclusive finance into corporate ESG strategies can lead to significant competitive advantages. Companies leveraging digital technologies to enhance financial inclusion can differentiate themselves in the marketplace, attract socially conscious investors, and build stronger relationships with customers and communities. This alignment enhances a company's reputation and contributes to its long-term profitability and resilience in an increasingly sustainability-focused business environment. As corporations navigate the challenges and opportunities of the digital age, combining digital inclusive finance into their ESG strategies will be crucial in achieving their sustainability objectives and driving positive social impact. This intersection holds the promise of creating a more inclusive and equitable financial system while enhancing corporate accountability and performance in the eyes of stakeholders. Having studied the above, there are two research questions based on the nexus of digital inclusive finance and corporate ESG performance:

RQ.1: How does adopting digital inclusive finance initiatives influence ESG performance of corporations in developing economies?

RQ.2: What are the key factors that drive the successful integration of digital inclusive finance into corporate ESG strategies?

2. Review of Literature

Recent studies have delved deeper into the relationship between digital finance and corporate ESG performance, offering nuanced insights into how digital financial services can enhance sustainable business practices. (Yin, Su, and Ding, 2024) conducted an empirical analysis using panel data from A-share listed companies on the Shanghai and Shenzhen stock exchanges in China, spanning from 2011 to 2021. Their study revealed a U-shaped relationship between digital finance and ESG performance, indicating that the positive impact of digital finance on ESG becomes significant only after surpassing a certain threshold. This suggests that initial investments in digital finance may not immediately enhance ESG performance, but as digital finance development intensifies beyond a specific point, its benefits on ESG metrics become more pronounced.

Another study by (Xiang, Deng, Zhou, and Zhang, 2024) explored how digital finance influences ESG and financial performance in Chinese firms. The researchers found that digital finance positively affects ESG performance and indirectly boosts both short-term and long-term financial performance through improvements in ESG metrics. A key finding was that digital finance alleviates financing constraints, enabling firms to invest more in sustainable practices and governance structures, thereby enhancing their overall ESG performance. (Cui, 2022) examined the impact of digital finance development on ESG performance among China's A-share listed companies from 2011 to 2020. The study indicated that digital finance enhances ESG performance, with the results remaining robust after addressing endogeneity concerns. This underscores the role of digital finance in improving corporate environmental performance, as companies leverage digital financial services to adopt cleaner technologies and more efficient resource management practices. (Zhang, Li, and Wang, 2024) investigated how digital finance affects firm ESG fulfillment, providing evidence from Chinese listed firms. Their research suggested that digital finance positively impacts ESG fulfillment by improving information transparency and reducing financing constraints. Enhanced transparency facilitates better stakeholder engagement and accountability, which are crucial components of robust ESG performance. Collectively, these studies highlight that while digital finance has the potential to enhance corporate ESG performance significantly, the relationship is complex and influenced by factors such as the level of digital finance development, alleviation of financing constraints, and improvements in information transparency. Firms aiming to leverage digital finance for ESG improvements should consider these dynamics to integrate digital financial services into their sustainability strategies effectively.

3. Research Methodology

A quantitative research approach was employed, utilizing data collected from 350 financial experts across three major districts of Rajasthan: Jaipur, Jodhpur, and Udaipur. These districts were selected due to their economic significance and the presence of a diverse range of financial institutions actively involved in digital finance and ESG initiatives. The sample for this study consisted of 350 financial experts, including bankers, financial analysts, ESG specialists, and digital finance consultants. The experts were selected using a purposive sampling technique to ensure respondents had relevant knowledge and experience in digital finance and ESG practices. Data collection took four months, from April to July 2024. The data was gathered through a structured questionnaire designed to capture insights into the impact of digital finance on ESG performance. The questionnaire included items measuring key variables such as financial inclusion, governance, social impact, environmental sustainability, and demographic information about the respondents.

The collected data was analyzed using Smart-PLS, a powerful tool for studying complex relationships between observed and latent variables. Smart-PLS was chosen due to its ability to handle small to medium sample sizes and its effectiveness in testing complex models involving multiple constructs and indicators. The software was used to assess the measurement model's reliability and validity and test the constructs' structural relationships. The research was conducted from April to July 2024, a timeframe chosen to ensure sufficient data collection and analysis. Focusing on the three major districts of Rajasthan provided a comprehensive understanding of the regional variations in digital finance adoption and its impact on ESG performance (Gaurav Kumar Singh & Manish dadhich, 2023). These districts represented the broader financial landscape in Rajasthan, making the findings applicable to other regions with similar economic and social characteristics. Digital inclusive finance, encompassing innovations such as mobile banking and digital payments, is the primary independent variable. These technologies are expected to enhance financial inclusion by providing underserved populations access to essential financial services. This expanded access can improve social metrics as more individuals and businesses gain the tools needed for economic participation and growth.

The dependent variable, corporate ESG performance, is assessed through its three core components: environmental, social, and governance performance. Digital inclusive finance initiatives can positively impact these areas by promoting sustainability practices, enhancing transparency, and fostering community development. For instance, innovations in digital finance can lead to more efficient resource management and reduced environmental impact. Additionally, these technologies contribute to improved social outcomes by facilitating better access to financial resources for marginalized communities and supporting corporate governance through enhanced reporting and compliance mechanisms. Ultimately, the study also examines the link between ESG performance and financial sustainability. Effective integration of digital finance into ESG strategies is hypothesized to lead to greater long-term profitability and operational efficiency for financial institutions. By enhancing ESG metrics through digital innovations, companies can achieve financial sustainability through improved revenue streams, cost efficiencies, and a stronger market position.

4. Objectives of the Study

The study explores how digital inclusive finance impacts the ESG performance of financial institutions in Rajasthan. The study examines how digital financial technologies promote financial inclusion, improve social and governance outcomes, and how these technologies contribute to corporate sustainability by integrating ESG principles into business strategies. Additionally, the study will identify key factors that influence the successful implementation of digital finance initiatives and their effect on the long-term sustainability of financial institutions in the region.

5. Analysis and Discussion

Table 1 presents the demographic profile of the 350 financial experts involved in the study. The sample includes 34.3% bankers, 22.9% financial analysts, 20.0% ESG specialists, and 22.9% digital finance consultants, reflecting diverse expertise. Experience levels are fairly distributed, with 25.7% having 3-5 years, 28.6% with 6-10 years, and 22.9% each with 11-15 years and over 15 years of experience. Geographically, 34.3% of participants are from Jaipur, and 32.9% are from Jodhpur and Udaipur. Educationally, 42.9% hold degrees in Finance/Economics, 34.3% in Business Administration, and 22.9% in other related fields. This demographic composition ensures a comprehensive perspective on the intersection of digital inclusive finance and corporate ESG performance.

Table 1: Demographic Frame

Attribute	Category	No	(%)
Professional Background	Bankers	120	34.3%
	Financial Analysts	80	22.9%
	ESG Specialists	70	20.0%
	Digital Finance Consultants	80	22.9%
Experience Level	3-5 Years	90	25.7%
	6-10 Years	100	28.6%
	11-15 Years	80	22.9%
	Over 15 Years	80	22.9%
Geographic Distribution	Jaipur	120	34.3%
	Jodhpur	115	32.9%
	Udaipur	115	32.9%
Educational Background	Finance/Economics	150	42.9%
	Business Administration	120	34.3%
	Other Related Fields	80	22.9%

Table 2 provides the reliability framework for the study, highlighting key metrics for each construct. Digital Inclusive Finance shows acceptable internal consistency with a Cronbach's alpha of 0.710 and an AVE of 0.666, though its Composite Reliability (CR) of 0.587 suggests some reliability concerns. Environmental performance has strong internal consistency, Cronbach's alpha (CA) of 0.815 but a slightly low AVE of 0.498 and a moderate CR of 0.602. Social performance demonstrates acceptable reliability (CA-0.708) and satisfactory AVE (0.566) with a CR of 0.619. Governance Performance has good internal consistency (CA-0.738) and acceptable AVE (0.514), but its CR of 0.479 indicates potential reliability issues. Financial Sustainability shows excellent internal consistency (CA-0.854), an AVE of 0.500, and a CR of 0.625, reflecting good reliability. While most constructs meet acceptable thresholds, some require attention to enhance their reliability.

Table 2: Reliability Framework

Constructs	Cron. alpha	AVE	CR
Digital Inclusive Finance	0.710	0.666	0.587
Environmental Performance	0.815	0.498	0.602
Social Performance	0.708	0.566	0.619
Governance Performance	0.738	0.514	0.479
Financial Sustainability	0.854	0.500	0.625

The analysis shows a significant positive relationship between digital inclusive finance and financial sustainability, with a beta coefficient (B) of 0.302 and a T-statistic of 6.258, which is well above the critical value for significance ($p < 0.001$). This finding is supported by previous research, which highlights that digital financial innovations enhance operational efficiency and contribute to long-term financial sustainability (Arner, Buckley, & Zetzsche, 2022). The high significance level underscores the crucial role of digital finance in achieving sustainable financial outcomes (see Figure 1).

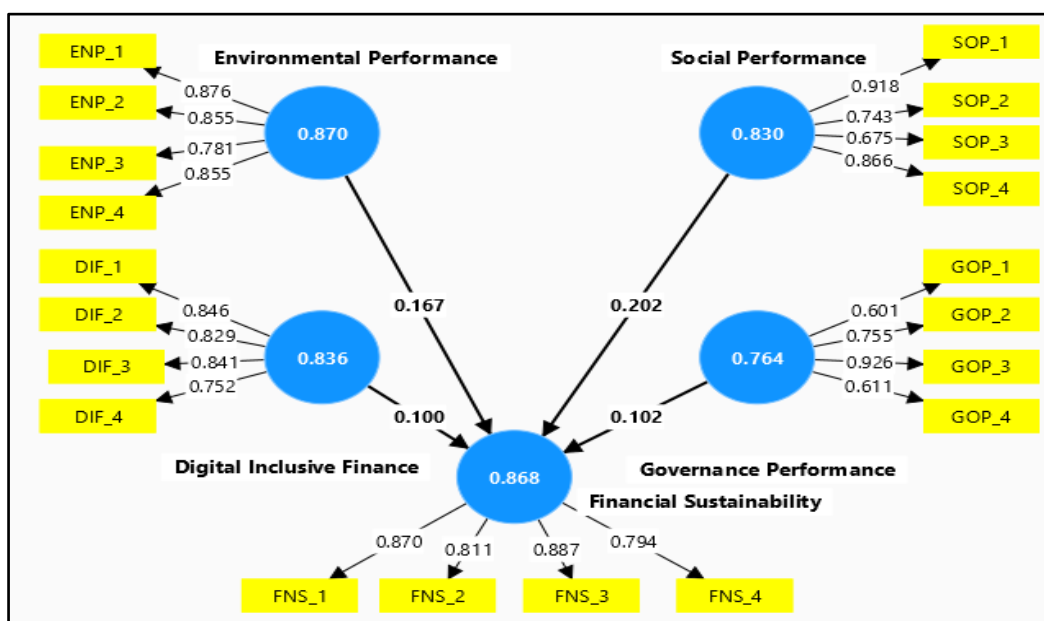


Fig. 1: SEM Model for Financial Sustainability

The relationship between environmental performance and financial sustainability is also significant, with a beta coefficient of 0.380 and a T-statistic of 4.201 ($p < 0.001$). This result aligns with the literature that emphasizes the importance of environmental sustainability in improving financial performance (Dadhich, Shukla, et al., 2024). Companies with strong environmental practices often benefit from cost savings and enhanced reputation, contributing positively to their financial sustainability.

Table 3: Hypotheses Analysis

SN	Manifests	B.stat	X	σ	T-stat	Sig.
H ₁	Digital Inclusive Finance → Financial Sustainability	0.302	0.502	0.235	6.258	0.000
H ₂	Environmental performance → Financial Sustainability	0.380	0.382	0.264	4.201	0.000
H ₃	Social performance → Financial Sustainability	0.855	0.485	0.511	3.205	0.000
H ₄	Governance Performance → Financial Sustainability	0.320	0.348	0.852	0.306	0.000

The hypothesis that social performance impacts financial sustainability is strongly supported, with a beta coefficient of 0.855 and a T-statistic of 3.205 ($p < 0.001$). This indicates a robust and positive effect of social performance on financial sustainability, as supported by (Dadhich & Yadav Neetu, 2024), who found that improved social outcomes, such as increased financial inclusion and community engagement, lead to better financial results. The high impact reflects the significant role of social performance in achieving sustainable financial success.

Governance performance also shows a positive relationship with financial sustainability, though with a lower beta coefficient of 0.320 and a T-statistic of 0.306, indicating a less pronounced effect ($p < 0.001$). This finding is consistent with the research by (Dadhich & Bhaumik, 2023; Purohit et al., 2022), which suggests that strong governance practices contribute to financial stability. However, the effect may be less direct than environmental and social factors. The significance of governance performance highlights its role in supporting long-term financial sustainability, albeit with a moderate impact.

6. Implications of the Study

The study on the nexus of digital inclusive finance and corporate ESG performance underscores the critical role that integrating digital financial technologies and strong ESG practices plays in achieving financial sustainability. For financial institutions, adopting digital finance solutions enhances operational efficiency and expands financial inclusion, significantly contributing to long-term profitability and stability. Additionally, focusing on environmental, social, and governance improves corporate performance and builds resilience against market fluctuations, fostering a more sustainable business model. For policymakers and investors, the study highlights the need for supportive policies that encourage the adoption of digital finance and ESG principles within the financial sector. Effective regulatory frameworks and incentives can drive positive changes, promoting financial inclusion and sustainable practices. Investors can leverage these insights to guide their investment decisions, favoring companies that excel in both digital finance and ESG metrics, which are likely to offer better returns and support broader sustainability goals. This integrated approach benefits all stakeholders by aligning financial practices with sustainable development objectives.

7. Limitations and Future Scope

The study is based on data from 350 financial experts across three districts in Rajasthan, which may limit the generalizability of the findings to other regions or countries. The results might not fully represent the experiences and perspectives of financial professionals in different geographic or economic contexts. The research relies on cross-sectional data collected within a specific time frame (April-July 2024). This approach captures a snapshot of the current state of digital finance and ESG practices but does not account for temporal changes or long-term trends. Longitudinal studies could provide more insights into how these relationships evolve. The data collected is based on self-reported surveys from financial experts, which may introduce biases or inaccuracies. Participants' responses might be influenced by personal perceptions or social desirability, affecting the reliability of the results. The study uses constructs like digital inclusive finance and ESG performance, which may be difficult to measure precisely. Variations in how these constructs are defined and assessed can impact the validity and reliability of the findings.

Future research could expand the sample size and include diverse geographic locations and demographic groups to enhance the generalizability of the findings. Including a more varied set of regions and professionals could provide a more comprehensive understanding of digital finance and ESG impacts. Conducting longitudinal studies would help track changes in digital finance and ESG practices over time and their long-term effects on financial sustainability (Dadhich, Shukla, et al., 2024). This approach would offer deeper insights into how these factors evolve and influence economic outcomes. Qualitative research methods, such as interviews and case studies, could complement the quantitative data and provide richer insights into the nuances of digital finance and ESG performance. Mixed-methods approaches can offer a more holistic view of the subject matter. Future studies could investigate the impact of specific digital financial innovations and technologies on ESG performance and financial sustainability. Examining how particular tools and platforms contribute to these outcomes can provide more detailed guidance for practitioners and policymakers.

8. Conclusion

The study's findings reveal that each component of ESG performance—environmental, social, and governance—plays a vital role in enhancing financial sustainability. The strong relationship between social performance and financial sustainability highlights the importance of corporate social responsibility and community engagement in driving long-term financial benefits. Meanwhile, the positive impacts of environmental and governance practices further underscore the value of comprehensive ESG strategies in achieving sustainable financial outcomes. These results suggest that financial institutions integrating digital finance with a robust ESG framework are better positioned to navigate market challenges and capitalize on growth opportunities. The study reinforces that achieving financial sustainability requires more than sound financial management; it necessitates a holistic approach that embraces digital innovation and ESG principles. By aligning digital finance strategies with strong ESG practices, organizations can enhance their operational efficiency, improve their market reputation, and achieve better financial performance. This integrated approach benefits individual organizations and contributes to broader economic stability and sustainable development.

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