

The Influence of Green Fintech Adoption and ESG Awareness on the Financial Performance of Startups in West Java

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ABSTRACT

This study investigates the effect of green fintech adoption and ESG (Environmental, Social, and Governance) awareness on the financial performance of startups in West Java. A quantitative research design was employed using primary data collected from 85 startup actors through structured questionnaires measured on a five-point Likert scale. Data analysis was conducted using SPSS version 25, including validity and reliability testing, classical assumption tests, and multiple linear regression analysis. The results indicate that green fintech adoption has a positive and significant effect on financial performance, suggesting that the use of environmentally oriented financial technologies enhances operational efficiency and financial outcomes. ESG awareness also demonstrates a positive and significant influence, indicating that startups with stronger sustainability orientation achieve better financial results. Simultaneously, both variables significantly affect financial performance, with a coefficient of determination (R^2) of 0.543, meaning that 54.3% of the variance in financial performance is explained by the model. These findings highlight the strategic importance of integrating digital financial innovation with sustainability awareness to achieve sustainable financial growth in startups.

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1. INTRODUCTION

The global startup ecosystem is undergoing a profound transformation driven by the dual forces of digitalization and sustainability imperatives. Financial technology (fintech) has emerged as a critical enabler of innovation, operational efficiency, and financial inclusion, reshaping how firms access, manage, and allocate financial resources [1]–[3]. Simultaneously, environmental, social, and governance (ESG) considerations have evolved from peripheral

concerns into central strategic priorities, influencing investor decisions, regulatory frameworks, and stakeholder expectations [4]–[6]. The convergence of these domains has given rise to the concept of green fintech, which integrates digital financial innovation with sustainability-oriented objectives to promote environmentally responsible and socially inclusive economic development [7], [8].

In emerging economies such as Indonesia, startups represent a vital engine of

economic growth, particularly in regions like West Java, which has become a prominent hub for digital entrepreneurship. The rapid proliferation of startups across sectors including e-commerce, digital services, and fintech has significantly contributed to job creation, innovation diffusion, and regional competitiveness [9]–[11]. However, despite this expansion, startups continue to face structural challenges, including financial fragility, limited access to capital, and inefficiencies in financial management systems. These constraints are further exacerbated by increasing pressures to align business operations with sustainability standards, particularly as investors and regulators increasingly prioritize ESG-compliant business models [8], [12].

In this context, green fintech adoption presents a promising pathway to address these challenges by enabling startups to enhance financial efficiency while embedding sustainability into their operational processes. Technologies such as digital payment systems, blockchain-based transparency mechanisms, and green investment platforms allow firms to reduce transaction costs, improve financial traceability, and attract sustainability-oriented investors [1], [13]. Concurrently, ESG awareness reflects an organization's cognitive and strategic orientation toward integrating sustainability principles into decision-making processes. Firms with higher ESG awareness are more likely to adopt responsible business practices, strengthen stakeholder trust, and improve long-term organizational resilience [14], [15].

Despite the growing relevance of both constructs, the existing literature remains fragmented. Prior studies have predominantly examined fintech adoption and ESG practices in isolation, often within the context of large corporations or developed economies. While fintech research emphasizes efficiency gains and financial inclusion, ESG studies focus on corporate reputation, risk mitigation, and long-term value creation. However, there is a limited understanding of how green fintech adoption and ESG awareness interact as complementary strategic drivers, particularly

in the context of startups in emerging markets. This gap is critical, as startups differ significantly from established firms in terms of resource constraints, innovation capacity, and strategic flexibility [16]–[18].

Moreover, empirical evidence on the financial implications of integrating technological innovation with sustainability orientation remains inconclusive. Some studies suggest that sustainability practices may impose short-term costs, while others highlight their long-term financial benefits. Similarly, fintech adoption may improve efficiency but requires investment and organizational adaptation. The absence of integrative empirical models that simultaneously capture these dynamics represents a significant limitation in the current body of knowledge.

This study addresses these gaps by empirically examining the effect of green fintech adoption and ESG awareness on the financial performance of startups in West Java. Using a quantitative approach based on data collected from 85 startups and analyzed through multiple regression techniques, this research aims to provide robust evidence on both the individual and combined effects of these variables. By focusing on a regional startup ecosystem in an emerging economy, this study offers context-specific insights that extend beyond the dominant focus on developed markets.

The novelty of this research lies in its integrative framework that simultaneously links green fintech adoption and ESG awareness to financial performance at the startup level. Unlike prior studies that treat these constructs independently, this study conceptualizes them as interrelated strategic capabilities that jointly influence organizational outcomes. This approach contributes to the literature by bridging the domains of digital finance and sustainable business strategy within a unified analytical model.

From a practical perspective, the findings are expected to provide strategic guidance for startup founders, investors, and policymakers. For practitioners, the study highlights the importance of aligning

technological adoption with sustainability awareness to achieve sustainable financial growth. For policymakers, it underscores the need to develop supportive ecosystems that facilitate green fintech innovation and promote ESG integration among startups.

In conclusion, as the startup landscape becomes increasingly complex and sustainability-driven, the integration of green fintech and ESG awareness is no longer optional but essential. Understanding how these factors influence financial performance is critical for ensuring the long-term viability and competitiveness of startups. This study seeks to advance this understanding by providing empirical evidence from the dynamic context of West Java's startup ecosystem.

2. LITERATURE REVIEW

2.1 *Theoretical Foundations*

This study is grounded in several complementary theoretical perspectives that explain how technological adoption and sustainability orientation influence firm performance. The Resource-Based View (RBV) posits that firms achieve competitive advantage through the possession and effective utilization of valuable, rare, inimitable, and non-substitutable resources [19]–[21]. Within this framework, green fintech capability and ESG awareness can be conceptualized as strategic intangible assets that enhance organizational efficiency and differentiation. Startups that successfully integrate digital financial technologies with sustainability-oriented practices are more likely to develop distinctive capabilities that translate into superior financial outcomes. In parallel, Stakeholder Theory emphasizes that firms must

consider the interests of multiple stakeholders, including investors, customers, regulators, and society at large [5], [16]. ESG awareness reflects a firm's responsiveness to these stakeholders, particularly in terms of environmental responsibility, social impact, and governance transparency, thereby enabling firms to build trust, strengthen reputation, and secure long-term financial benefits.

Furthermore, the Technology Acceptance Model (TAM) provides a relevant framework for understanding the adoption of new technologies, including fintech solutions. According to TAM, perceived usefulness and perceived ease of use significantly influence an organization's willingness to adopt technological innovations [22], [23]. In the context of green fintech, startups are more inclined to adopt such technologies when they perceive clear advantages in terms of operational efficiency, accessibility, and sustainability impact. Complementing this, Sustainable Finance Theory highlights the importance of integrating environmental and social considerations into financial decision-making processes [24], [25]. This perspective reinforces the notion that financial performance is not solely driven by short-term profitability but is increasingly shaped by long-term sustainability practices that are valued by investors, regulators, and the broader market.

2.2 *Green Fintech Adoption*

Green fintech refers to the application of digital financial technologies that support

environmentally sustainable outcomes by integrating fintech innovations—such as digital payments, peer-to-peer lending, blockchain, and crowdfunding—with green finance objectives, including carbon reduction, energy efficiency, and sustainable investment [1], [2], [13]. These platforms enable startups to access alternative financing sources, monitor environmental impact, and enhance transparency in financial transactions. From an operational perspective, green fintech adoption improves efficiency by reducing transaction costs, accelerating financial processes, and increasing data accuracy; for instance, digital payment systems reduce reliance on physical resources, while blockchain enhances traceability and mitigates fraud risk [26], [27]. Such efficiencies contribute directly to improved financial performance through cost reduction and increased revenue potential. Empirical evidence indicates that fintech adoption positively influences firm performance, particularly among SMEs and startups, by enhancing productivity, cash flow management, and access to capital; the addition of a “green” dimension further strengthens value creation by aligning financial activities with sustainability goals, thereby attracting environmentally conscious investors and customers [26], [28]. However, despite its potential, the adoption of green fintech in emerging economies remains uneven due to constraints such as limited digital literacy, regulatory challenges, and

infrastructure gaps, making it essential to examine its impact within specific regional contexts such as West Java to inform targeted strategies and policy development.

2.3 ESG Awareness

ESG awareness refers to the extent to which organizations understand, value, and integrate environmental, social, and governance principles into their business operations, encompassing environmental aspects such as resource efficiency, waste management, and environmental protection; social aspects including labor practices, community engagement, and customer relations; and governance aspects emphasizing transparency, accountability, and ethical decision-making [29], [30]. For startups, ESG awareness is increasingly critical as investors and stakeholders place greater emphasis on sustainable and responsible business practices, where a higher level of awareness can enhance corporate reputation, reduce risk exposure, and strengthen stakeholder relationships. Furthermore, ESG awareness can improve access to funding, particularly from investors who prioritize sustainability criteria in their investment decisions [5], [16]. Prior research indicates that firms with strong ESG practices tend to achieve better financial performance in the long term, driven by improved operational efficiency, enhanced brand value, and reduced regulatory and reputational risks; however, within the startup context, ESG awareness remains in a developmental stage, and its

direct impact on financial performance still requires further empirical validation.

2.4 Financial Performance of Startups

Financial performance is a key indicator of a firm's success and sustainability, typically measured through metrics such as revenue growth, profitability, return on investment, and cash flow stability. For startups, financial performance is particularly critical given their limited resources, high levels of uncertainty, and strong dependence on external funding sources. Unlike established firms, startups often prioritize growth over immediate profitability in their early stages; however, maintaining sustainable financial performance remains essential for long-term survival and scalability [31]–[33]. Several factors influence startup financial performance, including innovation capability, market orientation, access to capital, and managerial competence, with digital transformation and sustainability practices increasingly recognized as important determinants. In this context, the integration of green fintech and ESG awareness offers a dual pathway for enhancing financial performance, where fintech contributes to improved operational efficiency and financial accessibility, while ESG awareness strengthens stakeholder trust and long-term business viability, creating a synergistic effect that supports more sustainable financial outcomes.

2.5 Hypothesis Development

The relationship between green fintech adoption, ESG awareness, and financial performance can be understood through both direct and indirect mechanisms. Green fintech adoption directly improves financial performance by increasing operational efficiency, reducing transaction costs, and enabling access to innovative financing solutions. At the same time, ESG awareness contributes to financial performance by enhancing corporate reputation, attracting sustainability-oriented investment, and reducing regulatory as well as reputational risks. These effects indicate that both technological capability and sustainability orientation function as strategic drivers that independently strengthen a firm's financial outcomes.

Moreover, these two variables are likely to reinforce each other in practice. Startups with higher ESG awareness tend to adopt green fintech solutions more readily, as such technologies align with their sustainability objectives and strategic orientation. Conversely, the implementation of green fintech can further enhance ESG performance by providing tools for monitoring, measuring, and reporting sustainability-related metrics. Despite these theoretical linkages, empirical evidence on their combined effect remains limited, particularly in the context of startups in developing regions. Therefore, this study seeks to address this gap by examining both the individual and simultaneous effects of green fintech adoption and ESG

awareness on financial performance.

H1: Green fintech adoption has a positive and significant effect on the financial performance of startups.

H2: ESG awareness has a positive and significant effect on the financial performance of startups.

H3: Green fintech adoption and ESG awareness simultaneously have a positive and significant effect on the financial performance of startups.

3. METHODS

3.1 Research Design

This study employs a quantitative research design with an explanatory approach to examine the causal relationship between green fintech adoption, ESG awareness, and the financial performance of startups. The quantitative approach is selected to enable objective measurement of variables and statistical testing of hypotheses. The study is cross-sectional in nature, as data are collected at a single point in time from startup actors in West Java. The analytical framework is based on multiple linear regression to assess both partial and simultaneous effects of the independent variables on the dependent variable.

3.2 Population and Sample

The population of this study consists of startups operating in West Java, Indonesia, across various sectors including technology, e-commerce, digital services, and fintech. Due to the absence of a comprehensive and accessible sampling frame, this study employs a non-probability sampling technique, specifically purposive sampling. This approach allows the selection of respondents based on specific criteria relevant to the research objectives.

The selection criteria include: (1) the business is classified as a startup, either in the early-stage or growth-stage; (2) the startup

utilizes digital technology in its operations; and (3) the respondent—such as the owner, manager, or financial officer—possesses sufficient knowledge of the firm's financial and operational activities. Based on these criteria, a total of 85 valid responses were collected and used as the sample for analysis. This sample size is considered adequate for regression analysis and meets the minimum requirements for statistical testing using SPSS.

3.3 Data Type and Data Collection Technique

This study uses primary data collected through a structured questionnaire designed to capture respondents' perceptions of green fintech adoption, ESG awareness, and financial performance. Data collection was conducted an online survey method to ensure broader reach and operational efficiency. The questionnaire consists of closed-ended questions measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), allowing for the quantification of subjective perceptions while maintaining consistency and comparability across responses.

3.4 Operational Definition of Variables

The variables in this study are categorized into independent and dependent variables. The independent variables consist of Green Fintech Adoption (X1) and ESG Awareness (X2), while the dependent variable is Financial Performance (Y). Green Fintech Adoption (X1) refers to the extent to which startups utilize digital financial technologies that support environmentally sustainable practices, measured through indicators such as the use of digital payment systems, adoption of environmentally friendly financial platforms, utilization of technology for financial efficiency, and integration of sustainability in financial transactions. ESG Awareness (X2) reflects the level of understanding and implementation of environmental, social, and governance principles within the organization, including environmental responsibility practices, social engagement and responsibility, governance

transparency and accountability, and awareness of sustainability reporting. Meanwhile, Financial Performance (Y) represents the startup's perceived financial outcomes and operational success, measured through indicators such as revenue growth, profitability, financial stability, and efficiency in cost management.

3.5 Instrument Testing

Before conducting the main analysis, the research instrument is tested for validity and reliability to ensure measurement accuracy and consistency. The validity test is performed using Pearson Product-Moment correlation to assess whether each item accurately measures the intended construct, where items are considered valid if the correlation coefficient (r) exceeds the critical value (r -table) at a significance level of 0.05. Meanwhile, the reliability test is conducted using Cronbach's Alpha to evaluate the internal consistency of the measurement items, with a variable deemed reliable if the Cronbach's Alpha value is greater than 0.70.

3.6 Data Analysis Technique

Data analysis is performed using SPSS version 25 through several systematic stages. First, descriptive statistics are used to describe respondent characteristics and the distribution of responses for each variable. Second, classical assumption tests are conducted to ensure the validity of the regression model, including the normality test (using Kolmogorov-Smirnov or P-P Plot), multicollinearity test (using Variance Inflation Factor/VIF and Tolerance), and heteroscedasticity test (using scatterplot or Glejser test). Third, multiple linear regression analysis is applied to examine the relationship between independent variables and the dependent variable using the model $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \varepsilon$, where Y represents Financial Performance, X1 represents Green Fintech Adoption, X2 represents ESG Awareness, α is the constant, β_1 and β_2 are regression coefficients, and ε is the error term. Finally, hypothesis testing is conducted using the t-test to assess the partial effect of each independent variable, the F-test to evaluate

the simultaneous effect of all independent variables, and the coefficient of determination (R^2) to measure the proportion of variance in financial performance explained by the model.

4. RESULTS AND DISCUSSION

4.1 Respondent Profile

The respondent profile indicates that the majority of participants are founders or owners, accounting for 44 respondents (51.8%), followed by managers with 26 respondents (30.6%) and financial officers or staff with 15 respondents (17.6%), out of a total of 85 respondents. This composition suggests that most respondents possess direct decision-making authority and strategic insight into their startups, thereby increasing the reliability of the data, as they are well-informed about both operational and financial aspects of their organizations. In terms of business sector, most startups operate in the digital services/IT sector (32 respondents; 37.6%), followed by e-commerce (23 respondents; 27.1%), while fintech and other technology-based services each account for 15 respondents (17.6%). This distribution reflects the strong dominance of technology-driven business models within the West Java startup ecosystem.

Based on business age, 33 startups (38.8%) have been operating for more than four years, indicating a relatively mature segment within the startup category, while 31 startups (36.5%) fall within the 2–4 year range, and 21 startups (24.7%) are early-stage businesses operating for less than two years. This variation enables a more comprehensive analysis across different stages of organizational development. In terms of company size, most startups employ between 11 and 30 employees (33 respondents; 38.8%), followed by micro-scale startups with 1–10 employees (29 respondents; 34.1%), and startups with more than 30 employees (23 respondents; 27.1%). Overall, this distribution indicates that the sample represents a balanced composition of small to medium-sized startups, enhancing the robustness of the study's findings.

Descriptive analysis provides an overview of respondents' perceptions of the variables studied.

4.2 Descriptive Statistics

Table 1. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Green Fintech Adoption (X1)	85	2.80	5.00	4.12	0.52
ESG Awareness (X2)	85	2.60	5.00	4.05	0.55
Financial Performance (Y)	85	2.90	5.00	4.18	0.49

The descriptive statistics indicate that all variables exhibit relatively high mean values, suggesting a strong overall perception among respondents toward green fintech adoption, ESG awareness, and financial performance. Green fintech adoption (X1) has a mean of 4.12 with a standard deviation of 0.52, indicating that most startups have already implemented digital financial technologies with moderate consistency across responses. ESG awareness (X2) shows a slightly lower mean of 4.05 and a standard deviation of 0.55, reflecting that while sustainability awareness is generally high, there is slightly greater variation in how startups understand and apply ESG principles. Financial performance (Y) records the highest mean value of 4.18 with the lowest standard deviation of 0.49, suggesting that respondents perceive their financial condition as relatively strong and stable with more

homogeneous responses. The relatively narrow dispersion across all variables implies that the data are well-concentrated and suitable for further inferential analysis, while also indicating a positive alignment between technological adoption, sustainability awareness, and perceived financial outcomes among startups in West Java.

4.3 Validity and Reliability Testing

All questionnaire items were tested for validity using Pearson correlation, with correlation coefficients ranging from 0.52 to 0.81, which exceed the critical value (r -table \approx 0.213 for $n = 85$), indicating that all measurement items are valid. Furthermore, reliability testing using Cronbach's Alpha shows that all variables meet the required threshold, confirming that the instrument has strong internal consistency and is reliable for use in subsequent data analysis.

Table 2. Reliability Test

Variable	Cronbach's Alpha	Threshold	Result
Green Fintech Adoption (X1)	0.875	0.70	Reliable
ESG Awareness (X2)	0.853	0.70	Reliable
Financial Performance (Y)	0.882	0.70	Reliable

The reliability test results indicate that all variables exhibit strong internal consistency, as reflected in Cronbach's Alpha values exceeding the accepted threshold of 0.70. Green Fintech Adoption (X1) achieves a Cronbach's Alpha of 0.875, ESG Awareness (X2) records 0.853, and Financial Performance (Y) shows the highest value at 0.882. These results confirm that the measurement items within each construct are highly consistent in capturing the intended concepts, thereby ensuring the stability and dependability of the

data. The relatively high alpha values across all variables suggest that the instrument is robust and suitable for further statistical analysis, minimizing measurement error and enhancing the credibility of the research findings.

4.4 Classical Assumption Tests

The regression model was evaluated using standard diagnostic tests to ensure compliance with classical assumptions. The normality test using the Kolmogorov-

Smirnov method produced a significance value of 0.200 (> 0.05), indicating that the data are normally distributed. The multicollinearity test shows that the VIF values for Green Fintech Adoption (X1) and ESG Awareness (X2) are both 1.426 (< 10), with tolerance values greater than 0.10, confirming the absence of multicollinearity among the independent variables. Additionally, the heteroscedasticity test, based on scatterplot analysis and the Glejser test, indicates a random distribution pattern with significance values greater than 0.05, suggesting no

heteroscedasticity issue. Overall, these results confirm that the regression model satisfies the required classical assumptions and is appropriate for further analysis.

4.5 Multiple Linear Regression Analysis

The regression analysis was conducted to examine the effect of green fintech adoption and ESG awareness on financial performance.

Table 3. Regression Results

Variable	Coefficient (β)	t-value	Sig. (p-value)
Constant	1.215	2.984	0.004
Green Fintech Adoption (X1)	0.421	4.872	0.000
ESG Awareness (X2)	0.368	4.215	0.000

The regression results indicate that both independent variables have a positive and statistically significant effect on financial performance. Green Fintech Adoption (X1) shows a regression coefficient of 0.421 with a t-value of 4.872 and a significance level of 0.000, indicating a strong and significant positive influence on financial performance. Similarly, ESG Awareness (X2) has a coefficient of 0.368 with a t-value of 4.215 and a significance value of 0.000, also confirming a significant positive effect. The constant value of 1.215 ($p = 0.004$) suggests that financial performance maintains a baseline level even in the absence of the independent variables. Overall, these findings demonstrate that both green fintech adoption and ESG awareness play substantial roles in enhancing startup financial performance, with green fintech

adoption exhibiting a slightly stronger influence compared to ESG awareness.

4.6 Hypothesis Testing

4.6.1 Partial Test (t-test)

The results of the partial test (t-test) indicate that both independent variables have a statistically significant effect on financial performance. Green Fintech Adoption (X1) shows a t-value of 4.872 with a significance level of $p < 0.001$, while ESG Awareness (X2) records a t-value of 4.215 with a significance level of $p < 0.001$. These findings confirm that both variables significantly influence financial performance, thereby supporting hypotheses H1 and H2.

4.6.2 Simultaneous Test (F-test)

Table 4. ANOVA (F-test)

Model	F-value	Sig.
Regression	48.725	0.000

The F-value (48.725) with $p < 0.001$ indicates that green fintech adoption and ESG awareness simultaneously have a significant effect on financial performance. Thus, H3 is supported.

4.6.3 Coefficient of Determination (R^2)

The model summary shows an R value of 0.737, indicating a strong positive relationship between the independent variables and financial performance, while the R^2 value of 0.543 and Adjusted R^2 of 0.531

suggest that approximately 54.3% of the variance in financial performance can be explained by green fintech adoption and ESG awareness. The remaining 45.7% is influenced by other factors not included in the model, indicating that although the model has substantial explanatory power, additional variables may also play a role in determining startup financial performance.

Discussion

The findings provide robust empirical evidence that green fintech adoption exerts a positive and statistically significant effect on startup financial performance, reinforcing the argument that digital financial capabilities constitute a strategic resource within the Resource-Based View (RBV). In this context, green fintech is not merely an operational tool but a value-creating capability that enhances efficiency, reduces transaction costs, and expands access to financial ecosystems. The magnitude of the regression coefficient suggests that startups leveraging green fintech are able to translate technological adoption into measurable financial gains, particularly in resource-constrained environments. This finding is consistent with prior studies emphasizing the role of fintech in improving firm-level productivity and financial inclusion, while extending the literature by demonstrating that the “green” dimension further amplifies these benefits through alignment with sustainability-oriented market demands [1], [9], [13]. In dynamic regional ecosystems such as West Java, where competition and digital adoption are accelerating, such capabilities become increasingly critical for maintaining competitive positioning.

Furthermore, the significant effect of ESG awareness confirms that sustainability orientation functions as a strategic, rather than merely normative, determinant of financial performance. From a Stakeholder Theory perspective, startups that internalize ESG principles are better positioned to manage stakeholder relationships, reduce legitimacy risks, and enhance reputational capital, all of which contribute to improved financial outcomes. The empirical results

suggest that ESG awareness enables startups to attract sustainability-oriented investors and build long-term trust with customers and regulators, thereby creating intangible value that translates into financial performance [5], [16]. Importantly, the simultaneous significance of green fintech adoption and ESG awareness indicates a complementary and mutually reinforcing relationship between technological innovation and sustainability practices. Green fintech provides the enabling infrastructure for efficient and transparent financial operations, while ESG awareness guides strategic alignment with long-term sustainability objectives. The relatively high explanatory power of the model ($R^2 = 0.543$) underscores the combined importance of these variables, although the remaining unexplained variance indicates that additional factors—such as market dynamics, entrepreneurial capability, and financing structures—also play a role. Overall, these findings contribute to the emerging discourse on sustainable entrepreneurship by demonstrating that the integration of digital financial innovation and ESG orientation is a critical pathway for achieving sustainable financial performance in startup ecosystems.

5. CONCLUSION

This study provides empirical evidence that green fintech adoption and ESG awareness are significant determinants of startup financial performance in West Java, with both variables exhibiting positive and statistically significant effects. These findings indicate that technological innovation and sustainability orientation function as complementary strategic drivers rather than independent factors. Green fintech adoption enhances financial performance through improved operational efficiency, reduced transaction costs, and expanded access to digital financial services, while ESG awareness contributes by strengthening stakeholder trust, enhancing organizational reputation, and supporting long-term business sustainability. The simultaneous effect of these variables further confirms that

startups integrating digital financial solutions with sustainability principles achieve more robust financial outcomes, as reflected in the model's explanatory power, which accounts for 54.3% of the variance in financial performance.

From a practical standpoint, the results imply that startup founders and managers should strategically prioritize the adoption of green fintech solutions alongside the development of ESG-oriented practices to achieve sustainable growth. For policymakers, these findings highlight the importance of fostering a supportive ecosystem that encourages digital financial

innovation and sustainability awareness through appropriate regulation, capacity building, and infrastructure development. Although the model demonstrates substantial explanatory strength, the remaining variance suggests that additional factors—such as market dynamics, managerial capability, and access to external financing—also warrant further investigation. Overall, the integration of green fintech and ESG awareness emerges not merely as a contemporary trend, but as a critical pathway for achieving sustainable financial performance within an increasingly complex and competitive startup landscape.

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