

The Inclusion of Fintech and Sustainable Investment Practices: The Intermediary Functions of Environmental Financial Literacy and Trust in ESG.

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ABSTRACT: This paper explores how adoption of FinTech can affect sustainable investment behaviour and Green financial literacy and ESG trust as the mediating variable. Though FinTech has revolutionized access to financial services and investment platforms, little is known about its contribution to encouraging the nature of investments that are based on sustainability. Based on survey data on 520 participants, this study uses the partial least squares structural equation modeling to evaluate the measurement model, and the structural model. The results indicate that FinTech usage positively influences the sustainable investment behavior, green financial literacy and ESG trust significantly. Moreover, the green financial literacy and ESG trust considerably increase the sustainable investment. The mediation analysis also supports the hypothesis that green financial literacy and ESG trust are important to mediate the relationship between FinTech adoption and sustainable investment behavior. The measurement model has a good indicator reliability, internal consistency reliability, convergent validity and discriminant validity. The structural model predictively explains behavior related to sustainable investment and accounts to 41.8 percent of the variance of sustainable investment behavior. These results indicate that adoption of FinTech plays a role in sustainable investment behaviour both directly and indirectly through enhancing the green financial literacy and confidence of investors in ESG related financial information. The paper adds to the existing FinTech, sustainable finance, and investor behavior literature by providing empirical insights into the technological, cognitive, and trust-based processes to sustain investment decisions.

KEYWORDS: The adoption of FinTech; green financial literacy; sustainable investment behavior; ESG trust; sustainable finance; PLS-SEM.

1. INTRODUCTION

The nature of the financial industry has been revolutionized by the use of financial technology, which has greatly influenced the production, provision and availability of financial services. Digital financial services, such as mobile banking, digital wallets, online banking, online investment platforms, and investment applications have transformed how people in the world transact their financial deals, access investment opportunities, and their engagement with financial institutions (Hussain et al., 2026). FinTech can allow users to more easily access financial products, access information related to investing faster, and be more flexible in their participation in financial markets by breaking down traditional barriers to financial participation.

Simultaneously, the aspect of sustainable investment has become an important aspect of financial decision making in the present day. Environmental, social and governance issues are becoming more and more important to the investors in addition to the traditional financial standards. The behavior of sustainable investment indicates an inclination to investor towards the inclusion of sustainability related issues in investment decisions (Alvi et al., 2025). This type of behavior is significant since investment decisions are growing to have both an individual and wider environmental and social impact.

The crossroads between the FinTech acceptance and sustainable investment behavior occurs as the subject matter of significant scholarly interest (Ozili, 2021). FinTech platforms can also support sustainable investment, enhancing the access of investors to information on ESG-related aspects, green financial instruments, digital investment platforms and services that are focused on sustainability. Nevertheless, a direct technological access might not be the only way in which the adoption of FinTech and sustainable investment behavior are connected (Pirnazarov, 2025). There is also a need among the investors in terms of knowledge and trust in making the sustainability-oriented investment decisions. Green financial literacy and ESG trust can be regarded as a key explanatory mechanism in this regard.

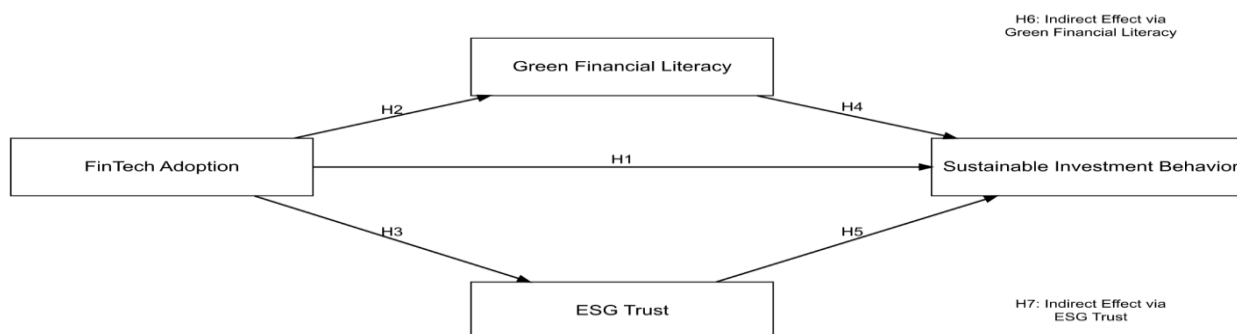
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Green financial literacy is the capacity of the investors to learn and analyze financial concepts, products and make decisions based on the green financial and sustainability of the environment (Parul Tandan et al., 2025). Greener financial literate investors will probably be in a better position to locate sustainable investment opportunities, analyse green financial products and determine the financial impact of ESG-related risks and opportunities. ESG trust on the other hand is the trust that investors have in ESG-related information, disclosure, ratings, institutions and financial products (Moro-Visconti et al., 2020). Trust is a key requirement since sustainable investment usually depends on the validity of sustainability assertions and ESG reports to motivate investors to act on financial information based on sustainability.

Though each of the constructs of FinTech adoption, financial literacy, trust, and sustainable investment behavior has been studied by scholars, few studies have combined these constructs into a cohesive empirical study. Specifically, the question of whether the implementation of the FinTech stimulates the behaviour of sustainable investments based on the idea of knowledge and trust deserves study (Agusta & Nalini, 2025). Meeting this gap is significant since digital financial platforms can only enhance sustainability-oriented investment after enhancing the knowledge of the investors regarding green finance and boosting trust in green information about ESG.

This paper will, therefore, analyze this effect of FinTech adoption on sustainable investment behaviour with green financial literacy and environmentally friendly trust as mediators. The research is dealt with in four research objectives (Geddamm et al., 2025). It will look at the immediate impact of the adoption of FinTech on sustainable investing behavior first. Second, it examines how the adoption of FinTech affects the green financial literacy and ESG trust. Third, it also assesses the impacts of green financial literacy as well as ESG trust to sustainable investment behavior. Fourth, it evaluates the mediation of FinTech adoption and green financial literacy and/or ESG trust, with sustainable investment behavior (Meiling et al., 2021).

According to the hypothesized relationships of the proposed theory, the conceptual framework of the study is given in Figure 1.



This paper contributes in a number of aspects (Buckley et al., 2020). First, it further broadens the FinTech adoption literature by connecting the use of digital financial services and sustainable behavior of investors. Second, it adds to the research of sustainable finance, establishing the significance of green financial literacy, ESG trust, as a key factor in the explanation of the sustainability-oriented investment behavior (Das et al., 2025). Third, it contributes to the behavioral finance literature by illustrating that the sustainability in investment behavior is determined by technological, cognitive and trust-based influences. Lastly, the research offers feasible solutions to FinTech providers, financial institutions, policymakers and regulators aiming at ensuring responsible investment by way of using digital financial platforms.

The rest of the paper will be structured in the following way (Boumaiza, 2025). The literature review and development of hypothesis is presented in section 2. The methodology of the research is introduced in Section 3. Section 4 presents the results of the empirical findings. The results are discussed in section 5. In section 6, contributions to theory are given. Practical implications are explained in Section 7. In section 8, limitations and future research directions are discussed. The study is completed in section 9.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 FinTech Adoption

FinTech adoption is used to describe the level to which people are accommodative and utilise technology-facilitated financial services (Pirnazarov, 2025). These services involve mobile banking, online wallets, online banking, online trading software and

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robo-advisor software among other online financial application. By adopting FinTech, people can carry out financial transactions, financial information, cash flow management, track investments, and take part in financial markets online (Guo, 2024).

FinTech in investment can also affect the behavior of investors by enhancing convenience and lowering transaction costs, as well as access to information and exposure to financial products, making these impossible to achieve without FinTech (Hasan et al., 2024). The digital platforms may also avail to users' investment related information, ESG information, portfolio management tools as well as sustainability related investment options. Thus, the usage of FinTech can be both an access to financial inclusivity and an impetus behind informed and responsible investing practices (Alvi et al., 2025).

2.2 Sustainable Investment Behavior

Sustainable investment behavior is a trend where investors tend to integrate the environmental, social as well as governance concerns in financial decision-making (Tang, 2024). It indicates behavioral orientation where the investors do not base their decisions on investment options just because they are financially viable, but also because they are sustainable in performance, ethical accountability, long-term social worth and environmentally friendly (Joel Adetokunbo & Oluwasola Dada, 2024).

Behaviours related to sustainable investment can involve a bias towards ESG-compliant companies, green financial product, responsible investment funds, sustainability-oriented portfolios, and investment opportunities that are oriented towards the environment or social purpose (Zakaria et al., 2024). The reasons behind such behavior are the knowledge, attitudes, trust, perceived credibility of ESG information, access to financial products and ability to assess risks and opportunities related to sustainability (Hussain et al., 2026).

2.3 Green Financial Literacy

Green financial literacy is the knowledge of investors of environmental sustainability and green finance financial concepts, financial products, financial risks and financial opportunities (Vimal & Kumar, 2024). It encompasses the awareness about green investment products, environmental risk, sustainability of financial planning, climate related financial matters and principles in responsible investment.

Greener financial literate investors can be better underpinned to appreciate the importance of sustainability factors in making their financial decisions (Ellili, 2023). They can better assess green financial products, analyze information on ESG-related affairs, and how sustainability concerns can impact investment returns and financial performance over the long run. Hence, green financial literacy is likely to significantly contribute to the sound investment behavior (Zhang, 2023).

2.4 ESG Trust

ESG trust is a measure of how investors perceive that ESG related information, disclosure, ratings, institutions and financial products are trustworthy, credible and helpful in making investment choices (Danladi et al., 2023). Sustainable finance requires trust particularly due to the reliance of external sustainability information to assess firms, funds and investment products by investors.

ESG lacks trust can cut down the willingness of investors to invest in sustainable investment, especially where there have been fears of greenwashing, inadequate reporting or lack of clarity in the sustainability standards (Liu & You, 2023). On the contrary, in case investors believe in ESG information and sustainable financial products, they might be more ready to incorporate ESG-focus in decision-making processes regarding investments. ESG trust is thus a marker of an important condition of psychological and behavioural response towards sustainable investment behaviour (Benny Alexandri et al., 2023).

2.5 FinTech Adoption and Sustainable Investment Behavior

The use of FinTech can potentially have a positive impact on sustainable investment behavior, through enhanced access to digital investment platforms, information on sustainability, and financial products based on ESGs (Arner et al., 2020). Active users of FinTech services can have more information on sustainable financial products, and they might be more easily involved in investment activities (Siddik et al., 2023). Digital financial tools can also enable a solution to complexity by enabling users to compare investment options, track financial performance, and more easily access information regarding ESG.

Additionally, FinTech systems can raise levels of trust in investors to make investment decisions due to the real-time information and a simpler user interface (Wang et al., 2022). Using sustainable investment products available online, investors can be better persuaded to incorporate them in their financial decision making. Thus, the introduction of FinTech is likely to improve the sustainable investments (Das et al., 2025).

H1: The use of FinTech positively impacts sustainable investment.

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2.6 FinTech Adoption and Green Financial Literacy

Platforms of FinTech can be used as mediums of financial education. Digital financial service users tend to be subjected to financial dashboards, investment tools, product information, educational content and content about sustainability (Tamasiga et al., 2022). These attributes can enhance the knowledge base of the investors on green finance and raise awareness levels on investment opportunities of ESG nature.

The use of FinTech can thus lead to green financial literacy in terms of increased access to financial information and prompt users to engage with content related to investments (Guang-Wen & Siddik, 2022). Investors utilizing FinTech might be more acquainted with green financial products, sustainability risks as well as responsible investment opportunities. Therefore, the use of FinTech will probably have a beneficial impact on green financial literacy (Bayram et al., 2022).

H2: Green financial literacy is positively impacted by adoption of FinTech.

2.7 FinTech Adoption and ESG Trust

FinTech solutions can increase the level of ESG trust by making the financial services more transparent, accessible to information, and more dependable (Yan et al., 2022). Digital platforms have the potential to offer structured information, live-updates, product information, and information concerning sustainability in a manner that can be easily accessed by the investors. By providing ESG information in a clear manner using digital channels, investors are likely to be more confident in ESG-related investment products (Abdul-Rahim et al., 2022).

Moreover, FinTechs can decrease information asymmetry as they enable investors to compare financial products, look at features related to sustainability, and track the performance of investments (Rizwan & Mustafa, 2022). Such abilities will enhance the confidence of investors towards the ESG information and sustainable financial products. Thus, ESG trust is likely to be positively affected by the FinTech adoption.

H3: ESG trust is positively affected by the use of FinTech.

2.8 Green Financial Literacy and Sustainable Investment Behavior

Green financial literacy will give investors an understanding of how sustainability factors are crucial in making investment decisions. Greener financial literate investors tend to be more interested in realizing the applicability of the environmental risks, ESG performance, and responsible investment products (Pawłowska et al., 2022). Such knowledge can decrease uncertainty, and enhance the capability of investors to assess sustainable investment options.

Green financial literacy also might enhance perceived capacity of investors to undertake sustainable investment (Chueca Vergara & Ferruz Agudo, 2021). As soon as investors get ideas about the nature of green financial products, they could become more assured about choosing the means of investment oriented on sustainability (Meiling et al., 2021). Green financial literacy, thus, will have a positive impact on sustainable investment behaviour.

H4: Green financial literacy positively influences the sustainable investment behavior.

2.9 ESG Trust and Sustainable Investment Behavior

One of the essential aspects of making investment decisions is trust. Investors tend to use sustainability claims, ratings, sustainability claims and ESG disclosures in the context of sustainable finance (Ozili, 2021). When they have confidence in ESG-related information, the investors tend to employ the information in investment decision making.

ESG trust has the potential to minimise uncertainty, enhance perceived credibility and willingness to invest in sustainable financial products. On the other hand, the existence of low ESG trust can turn away sustainable investment despite the knowledge of the investors on the existence of ESG opportunities (Moro-Visconti et al., 2020). Thus, sustainable investment behavior is likely to be positively affected by the ESG trust.

H5: ESG trust positively impact on sustainable investment behavior.

2.10 Mediating Role of Green Financial Literacy

The adoption of FinTech can also induce a change in the sustainable investment behavior indirectly through the enhancement of green financial literacy (Buckley et al., 2020). The digital finance platforms may expose investors to financial information on sustainability, the opportunity to invest in green, and investment education tools. With increased awareness among investors on green finance, they will be more willing to include sustainability criteria in investments (Geddani et al., 2025).

This is an indication that green financial literacy can be an act of knowledge that relates to the adoption of FinTech to sustainable investment behavior (Arner et al., 2020). Thus, the hypothesis below is formulated:

H6: There is a mediating role of green financial literacy between FinTech adoption and sustainable investment behaviour.

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2.11 Mediating Role of ESG Trust

Adoption of FinTech can also have an indirect effect on sustainable investment behavior as enhancing ESG trust. The digital financial platforms have the potential to deliver transparent information, data that are structured in ESG and easy access to financial products of sustainability (Hussain et al., 2026). By trusting ESG-related information displayed in digital media, investors can be keener to invest in a sustainable manner.

This implies that ESG trust can serve as a trust-based tool that can interconnect adoption of FinTech and sustainable investment behaviour (Alvi et al., 2025). Thus, the hypothesis below is formulated:

H7: ESG trust interposes the connection between FinTech adoption and sustainable investment behavior.

3. RESEARCH METHODOLOGY

3.1 Research Design

The research design used in this study was a quantitative one, to explore the correlation between FinTech adoption, green financial literacy, ESG trust, and sustainable investment behavior. The survey-based methodology was taken due to the fact that the research question lies on the individual perceptions, financial knowledge, trust and investment behavior. Partial least squares structural equation modeling was used to test the model of the research.

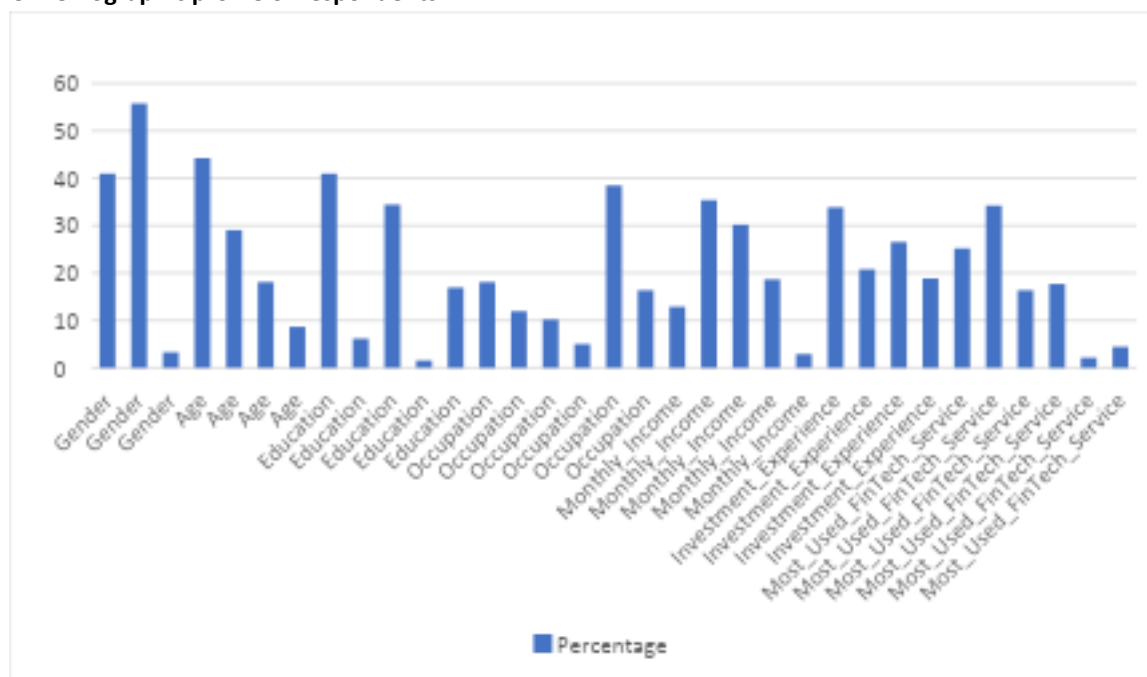
The choice of PLS-SEM is due to the fact that the model is applicable in the complex model that has more than one latent construct, mediation effect and the relationships are prediction oriented (Pirnazarov, 2025). The analysis has been done in two steps. Firstly, measurement model was evaluated in order to determine reliability and validity. Second, the structural model was tested to test the hypotheses and mediation effects proposed.

3.2 Sample and Data Collection

The analysis was based on survey information on 520 respondents. The respondents were a representative of various demographic categories, education levels, professional types, income, level of investment experience and FinTech usage trends (Parul Tandan et al., 2025). The sample comprised of mobile banking, digital wallets, online banking, and online investment/trading services, robo-advisory or investment applications, and other FinTech offerings users.

The demographic profile of the respondents is presented in Table 1.

Table 1 here: Demographic profile of respondents



The respondents included 55.77% male respondents, 40.96% female respondents and 3.27 percent respondents who did not want to specify their gender. The most significant population was the age groups of 20--29 years, 44.23 per cent and 30-39, 29.04 per cent. On the education front, 40.96% of the respondents were having a bachelor's degree whereas 34.42 percent were of a master's degree. The highest occupational category was the employees of the private service that represented 38.46% of the

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respondents. On income, the highest number of respondents earned between BDT 25,000-50,000 monthly. In terms of investment experience, 33.85% had one to three years of experience. The most common FinTech service was mobile banking, which was reported by 34.23% of the respondents.

3.3 Measurement of Constructs

There were four latent constructs in the study FinTech adoption, green financial literacy, ESG trust and sustainable investment behavior (Agusta & Nalini, 2025). There were five items to gauge the adoption of FinTech. There were five items that were used to measure green financial literacy. Five items were used to measure the ESG trust. There were six items that were used to measure sustainable investment behavior.

A five-point Likert scale (between 1 and 5) was used to measure all items. The higher scores were the greater the agreement with the following statements.

3.4 Data Analysis Procedure

The analysis of the data was carried out with the help of PLS-SEM. Outer loadings, Cronbach alpha, composite reliability rho A, composite reliability rho C, average variance extracted, Fornell Larcker criterion, cross loading and value of HTMT were used in measuring the measurement model (Geddam et al., 2025). The inner VIF values, the specific indirect effects, R² values, f² effect sizes, Q² predictive relevance and the model-fit index were used to evaluate the structural model.

4. RESULTS

4.1 Descriptive Statistics

The descriptive statistics of the measurement items are presented in Table 2.

Table 2 here: Descriptive statistics of measurement items

Item	Mean	Standard_Deviation	Minimum	Maximum	Skewness	Kurtosis
FTA1	3.356	1.232	1	5	-0.297	-0.875
FTA2	3.419	1.154	1	5	-0.224	-0.874
FTA3	3.431	1.254	1	5	-0.324	-0.94
FTA4	3.396	1.243	1	5	-0.324	-0.891
FTA5	3.327	1.298	1	5	-0.304	-0.984
GFL1	3.131	1.309	1	5	-0.087	-1.084
GFL2	3.265	1.281	1	5	-0.206	-1.047
GFL3	3.335	1.349	1	5	-0.269	-1.134
GFL4	3.254	1.283	1	5	-0.207	-1.012
GFL5	3.231	1.329	1	5	-0.196	-1.108
ESGT1	3.329	1.245	1	5	-0.262	-0.95
ESGT2	3.4	1.285	1	5	-0.322	-1.01
ESGT3	3.342	1.3	1	5	-0.299	-1.011
ESGT4	3.26	1.311	1	5	-0.209	-1.092
ESGT5	3.285	1.301	1	5	-0.232	-1.064
SIB1	3.237	1.257	1	5	-0.178	-0.992
SIB2	3.248	1.295	1	5	-0.212	-1.049
SIB3	3.292	1.279	1	5	-0.292	-0.96
SIB4	3.26	1.308	1	5	-0.197	-1.071
SIB5	3.233	1.241	1	5	-0.168	-1.031
SIB6	3.21	1.24	1	5	-0.22	-0.912

The mean scores of the FinTech adoption items had a range of between 3.327 and 3.431 which shows moderately good levels of FinTech adoption among the respondents. The average scores of green financial literacy questions were between 3.131 and 3.335 indicating moderate scores of green financial literacy. The mean values of the ESG trust items reported are between 3.260 and 3.400 which point to moderate scores on trust of ESG-related information and products. There were a moderate level of

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investment behavior related to sustainability as the mean values of the items of sustainable investment behavior were found to be between 3.210 and 3.292 (Das et al., 2025).

The skewness values ranged from -0.087 to -0.324, while kurtosis values ranged from -0.875 to -1.134. These coefficients suggest that there was no extreme non-normality of data and such data could be further analyzed with the help of PLS-SEM.

4.2 Measurement Model Assessment

Measurement model, which was evaluated based on indicator reliability, internal consistency reliability, convergent and discriminant validity.

4.2.1 Indicator Reliability

The outer loading results are presented in Table 3.

Table 3 here: Outer loadings

Construct	Item	Outer_Loading	Decision
FinTech Adoption	FTA1	0.893	Retained
FinTech Adoption	FTA2	0.878	Retained
FinTech Adoption	FTA3	0.898	Retained
FinTech Adoption	FTA4	0.894	Retained
FinTech Adoption	FTA5	0.904	Retained
Green Financial Literacy	GFL1	0.89	Retained
Green Financial Literacy	GFL2	0.878	Retained
Green Financial Literacy	GFL3	0.888	Retained
Green Financial Literacy	GFL4	0.87	Retained
Green Financial Literacy	GFL5	0.875	Retained
ESG Trust	ESGT1	0.887	Retained
ESG Trust	ESGT2	0.895	Retained
ESG Trust	ESGT3	0.897	Retained
ESG Trust	ESGT4	0.878	Retained
ESG Trust	ESGT5	0.891	Retained
Sustainable Investment Behavior	SIB1	0.859	Retained
Sustainable Investment Behavior	SIB2	0.877	Retained
Sustainable Investment Behavior	SIB3	0.874	Retained
Sustainable Investment Behavior	SIB4	0.892	Retained
Sustainable Investment Behavior	SIB5	0.862	Retained
Sustainable Investment Behavior	SIB6	0.864	Retained

All the indices exceeded the recommended limit of 0.70 and were maintained. The outer loadings of FinTech adoption consisted between 0.878 and 0.904. Outer loadings of the green financial literacy were between 0.870 and 0.890. The external loads of ESG trust were between 0.878 and 0.897. The loading of the outer behavior of sustainable investment was between 0.859 and 0.892. These results affirm that all the indicators were reliable enough and had an impact on their corresponding constructs.

4.2.2 Internal Consistency Reliability

The construct reliability results are presented in Table 4.

Table 4 here: Construct reliability

Construct	Cronbachs_Alpha	Composite_Reliability_rho_a	Composite_Reliability_rho_c	Decision
FinTech Adoption	0.937	0.937	0.952	Review

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Green Financial Literacy	0.927	0.928	0.945	Acceptable
ESG Trust	0.934	0.934	0.95	Acceptable
Sustainable Investment Behavior	0.937	0.937	0.95	Acceptable

The alpha coefficients of Cronbach were between 0.927 and 0.937 which showed excellent internal consistency. The value of composite reliability rho A was between 0.928 and 0.937 and the value of composite reliability rho C was between 0.945 and 0.952. All the constructs had satisfactory internal consistency reliability, as shown by these results.

Even though the values of reliability are high, they are satisfactory in terms of reflective constructs and show that the measurement items are always reflective of their respective latent variables (Boumaiza, 2025).

4.2.3 Convergent Validity

The convergent validity results are presented in Table 5.

Table 5 here: Convergent validity

Construct	AVE	Decision
ESG Trust	0.791	Acceptable
FinTech Adoption	0.798	Acceptable
Green Financial Literacy	0.775	Acceptable
Sustainable Investment Behavior	0.759	Acceptable

The AVE of adoption of FinTech, green financial literacy, ESG trust and sustainable investment behavior were 0.798, 0.775, 0.791 and 0.759, respectively. Given that all the AVEs were more than the suggested level of 0.50, convergent validity was achieved. These findings reveal that all the constructs had a significant percentage of variance in their indicators (Guo, 2024).

4.2.4 Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion, cross-loadings, and HTMT values.

The Fornell–Larcker results are presented in Table 6.

Table 6 here: Fornell–Larcker criterion

Construct	FinTech Adoption	Green Financial Literacy	ESG Trust	Sustainable Investment Behavior
FinTech Adoption	0.893	0.514	0.554	0.54
Green Financial Literacy	0.514	0.88	0.234	0.478
ESG Trust	0.554	0.234	0.89	0.508
Sustainable Investment Behavior	0.54	0.478	0.508	0.871

The square root of AVE of each construct was higher than the relationships it had with other constructs. In particular, the square root of AVE of the elements of the FinTech adoption, green financial literacy, ESG trust, and sustainable investment behavior were 0.893 and 0.871, respectively. These values were higher than the inter-construct correlations as they proved the discriminant validity.

The cross-loading results are presented in Table 7.

Table 7 here: Cross-loading assessment]

Construct	Item	FinTech Adoption	Green Financial Literacy	ESG Trust	Sustainable Investment Behavior	Highest Loading Construct	Decision
FinTech Adoption	FTA1	0.893	0.454	0.504	0.493	FTA	Acceptable

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FinTech Adoption	FTA 2	0.878	0.443	0.463	0.464	FTA	Accept able
FinTech Adoption	FTA 3	0.898	0.454	0.495	0.456	FTA	Accept able
FinTech Adoption	FTA 4	0.894	0.469	0.492	0.48	FTA	Accept able
FinTech Adoption	FTA 5	0.904	0.474	0.517	0.515	FTA	Accept able
Green Financial Literacy	GFL 1	0.448	0.89	0.224	0.426	GFL	Accept able
Green Financial Literacy	GFL 2	0.435	0.878	0.187	0.42	GFL	Accept able
Green Financial Literacy	GFL 3	0.466	0.888	0.186	0.402	GFL	Accept able
Green Financial Literacy	GFL 4	0.464	0.87	0.225	0.447	GFL	Accept able
Green Financial Literacy	GFL 5	0.447	0.875	0.205	0.405	GFL	Accept able
ESG Trust	ESG T1	0.496	0.236	0.887	0.447	ESGT	Accept able
ESG Trust	ESG T2	0.479	0.199	0.895	0.447	ESGT	Accept able
ESG Trust	ESG T3	0.485	0.179	0.897	0.449	ESGT	Accept able
ESG Trust	ESG T4	0.517	0.212	0.878	0.448	ESGT	Accept able
ESG Trust	ESG T5	0.484	0.212	0.891	0.468	ESGT	Accept able
Sustainable Investment Behavior	SIB 1	0.474	0.429	0.479	0.859	SIB	Accept able
Sustainable Investment Behavior	SIB 2	0.466	0.394	0.447	0.877	SIB	Accept able
Sustainable Investment Behavior	SIB 3	0.45	0.431	0.45	0.874	SIB	Accept able
Sustainable Investment Behavior	SIB 4	0.464	0.419	0.435	0.892	SIB	Accept able
Sustainable Investment Behavior	SIB 5	0.494	0.43	0.402	0.862	SIB	Accept able
Sustainable Investment Behavior	SIB 6	0.476	0.394	0.44	0.864	SIB	Accept able

The cross-loading results show that each indicator loaded highest on its intended construct compared with other constructs. This further supports discriminant validity.

The HTMT results are presented in Table 8.

Table 8 here: HTMT matrix and decision

Construct	FinTech Adoption	Green Financial Literacy	ESG Trust	Sustainable Investment Behavior
FinTech Adoption	1	0.551	0.591	0.576
Green Financial Literacy	0.551	1	0.25	0.512

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ESG Trust		0.591	0.25	1	0.542
Sustainable Investment Behavior		0.576	0.512	0.542	1

The HTMT values ranged from 0.250 to 0.591. All the values were less than the rigid criterion of 0.85, and acceptable criterion of 0.90. Thus, discriminant validity was ensured.

4.3 Structural Model Assessment

The structural model came after validation of the sufficiency of the measurement model. Figure 2 shows the standardized model of the structural equation - with beta coefficients and R².

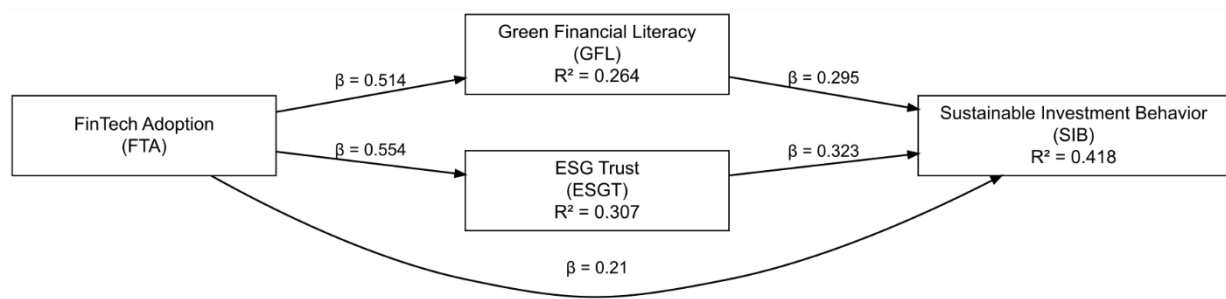


Figure 2 here: PLS-SEM structural model with beta and R² values

The structural model assessment included collinearity diagnostics, direct effect analysis, mediation analysis, explanatory power, effect size, predictive relevance, and model-fit evaluation.

4.3.1 Collinearity Assessment

The inner VIF values are presented in Table 9.

Table 9 here: Inner VIF values

Endogenous_Construct	Predictor_Construct	VIF	Decision
Green Financial Literacy	FinTech Adoption	1	No collinearity issue
ESG Trust	FinTech Adoption	1	No collinearity issue
Sustainable Investment Behavior	FinTech Adoption	1.862	No collinearity issue
Sustainable Investment Behavior	Green Financial Literacy	1.366	No collinearity issue
Sustainable Investment Behavior	ESG Trust	1.45	No collinearity issue

The inner VIFs showed that the value of all concepts were lower than the suggested value, which implies there was no issue of collinearity. The values of VIF were 1.000 in Fintech adoption as a predictor of green financial literacy and ESG trust. To achieve sustainable investment behavior, the VIF values were 1.862 of FinTech adoption, 1.366 of green financial literacy and 1.450 of ESG trust. Such findings affirm that the structural model did not have any issues of multicollinearity (Hasan et al., 2024).

4.3.2 Direct Path Coefficients

The direct path coefficient results are presented in Table 10.

Table 10 here: Direct path coefficients

Hypothesis	Relationship	Beta	Standard_Deviation	T_Value	P_Value	Decision
H2	FinTech Adoption -> Green Financial Literacy	0.514	0.033	15.706	0	Supported
H3	FinTech Adoption -> ESG Trust	0.554	0.031	17.65	0	Supported

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H1	FinTech Adoption -> Sustainable Investment Behavior	0.21	0.046	4.561	0	Supported
H4	Green Financial Literacy -> Sustainable Investment Behavior	0.295	0.039	7.502	0	Supported
H5	ESG Trust -> Sustainable Investment Behavior	0.323	0.04	8.006	0	Supported

The findings indicate that the impact of FinTech on the sustainable investment behavior was very large (without any real significance) with $\beta = -0.210$, $t = 4.561$, $p = 0.001$. H1 was thus justified.

The positive impact of FinTech on green financial literacy was very high (and the $\beta = 0.514$, $t = 15.706$ and $p < 0.001$). As such, H2 was validated.

FinTech adoption had a significant positive effect on ESG trust, with $\beta = 0.554$, $t = 17.650$, and $p < 0.001$. H3 was thus supported. The positive impact of green financial literacy on sustainable investment behavior was high with $0.295 = 0.295$, $t = 7.502$, and $p = 0.001$. Thus, H4 was approved.

The impact of ESG trust on sustainable investment behavior was also highly positive, and the $\beta = 0.323$, $t = 8.006$, and $p = 0.001$. Thus, H5 was confirmed.

ESG trust was the strongest and direct predictor of sustainable investment behavior, and then, green financial literacy and adoption of the FinTech. It implies that the level of trust in ESG related information is a rather key driver to explain the sustainable investment behavior (Tang, 2024).

4.3.3 Mediation Analysis

The specific indirect effects are presented in Table 11.

Table 11 here: Specific indirect effects

HYPOTHESIS	RELATIONS	INDIRECT BETA	STANDARD DEVIATION	T-VALUE	P-VALUE	CI_LOWER	CI_UPPER	DECISION	MEDIATION_TYPE
H6	FinTech Adoption -> Green Financial Literacy -> Sustainable Investment Behavior	0.151	0.024	6.182	0	0.106	0.202	Supported	Complementary partial mediation
H7	FinTech Adoption -> ESG Trust -> Sustainable Investment Behavior	0.179	0.025	7.135	0	0.131	0.228	Supported	Complementary partial mediation

The correlation between the FinTech adoption and the sustainable investment behaviour due to the green financial literacy was high with the following values: $0.151 = 6.182 = 0.001$. The confidence was 0.106 0.202 which was not equal to zero. Thus, H6 was validated. Because the direct impact of adoption of FinTech on sustainable investment behavior was also important, the use of green financial literacy has been determined to be a complementary partial mediator (Joel Adetokunbo & Oluwasola Dada, 2024). The indirect impact of the adopting FinTech on the sustainable investment behavior in terms of ESG trust was also substantial with $\beta = 0.179$, $t = 7.135$, and $p = 0.001$. The confidence interval was between 0.131 and 0.228 and zero was not in the interval. Thus,

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the H7 was confirmed. ESG trust was also found to be a complementary partial mediator as the direct effect was also found to be significant.

The ESG trust indirect effect was stronger as compared to the indirect effect of green financial literacy. This suggests that ESG trust might be a stronger mediating variable in the connection between the adoption of FinTech and a sustainable investment behaviors.

4.3.4 Explanatory Power

The coefficient of determination results is presented in Table 12.

Table 12 here: R-square values

ENDOGENOUS_CONSTRUCT	R_SQUARE	ADJUSTED_R_SQUARE	VARIANCE_EXPLAINED_PERCENTAGE	INTERPRETATION
GREEN FINANCIAL LITERACY	0.264	0.263	26.4	Weak
ESG TRUST	0.307	0.305	30.7	Weak
SUSTAINABLE INVESTMENT BEHAVIOR	0.418	0.415	41.8	Weak

The use of FinTech accounted 26.4% of the variance in green financial literacy with the R-square of 0.264 and the adjusted R-square of 0.263. The adoption of FinTech indicated 30.7% variation in the ESG trust with an R² value of 0.307 and adjusted R² value of 0.305.

To have sustainable investment behavior, the adoption of FinTech, green financial literacy, and ESG trust were used to explain the variance of 41.8 percent, having an R² value of 0.418 and adjusted R² value of 0.415. The outcome of this result shows that there is an interesting explanatory power of the model to predict sustainable investment behavior.

4.3.5 Effect Size

The f² effect size results are presented in Table 13.

Table 13 here: f-square effect size

Relationship	Endogenous_Construct	Predictor_Construct	R_Square_Included	R_Square_Excluded	f_Square	Interpretation
FinTech Adoption -> Sustainable Investment Behavior	Sustainable Investment Behavior	FinTech Adoption	0.418	0.394	0.041	Small effect
FinTech Adoption -> Green Financial Literacy	Green Financial Literacy	FinTech Adoption	0.264	0	0.359	Large effect
FinTech Adoption -> ESG Trust	ESG Trust	FinTech Adoption	0.307	0	0.442	Large effect
Green Financial Literacy -> Sustainable Investment Behavior	Sustainable Investment Behavior	Green Financial Literacy	0.418	0.354	0.109	Small effect
ESG Trust -> Sustainable Investment Behavior	Sustainable Investment Behavior	ESG Trust	0.418	0.346	0.123	Small effect

The direct impact of the FinTech usage on the sustainable investment behavior was not high, with f² = 0.041. Nevertheless, the adoption of FinTech influenced the green financial literacy with a large effect, f² = 0.359, and ESG trust with a large effect, f² = 0.442. Financial literacy on green had a small impact on sustainable investment behavior with f² = 0.109 and ESG trust had a small impact on sustainable investment behavior with f² = 0.123.

The implications of these results are that FinTech usage is an even stronger predictor of the mediating constructs compared to sustainable investment behavior. This confirms the relevance of green financial literacy and ESG trust as tools whereby adoption of FinTech will help in sustainable investment behavior (Zakaria et al., 2024).

4.3.6 Predictive Relevance

The Q² predictive relevance results are presented in Table 14.

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Table 14 here: Q-square predictive relevance

Endogenous_Construct	Q_Square	Decision
Green Financial Literacy	0.257	Predictive relevance established
ESG Trust	0.299	Predictive relevance established
Sustainable Investment Behavior	0.409	Predictive relevance established

The Q^2 of the green financial literacy, ESG trust, sustainable investment behavior were 0.257, 0.299 and 0.409 respectively. All values of Q^2 were above zero, hence, it showed predictive relevance of the model to all the endogenous constructs. The largest Q^2 value was found with the behavior of sustainable investment, which means that the model could be effectively used to predict the main outcome construct.

4.3.7 Model Fit

The model-fit summary is presented in Table 15.

Table 15 here: Model fit summary

Fit_Index	Value	Recommended_Threshold	Decision
SRMR		SRMR < 0.08 good; SRMR < 0.10 acceptable	Enter SmartPLS value
d_ULS		Lower value indicates better fit	Enter SmartPLS value
d_G		Lower value indicates better fit	Enter SmartPLS value
NFI		Closer to 1 indicates better fit	Enter SmartPLS value

SRMR, d_ULS, d G and NFI were used to check the model fit. Nevertheless, the values of SmartPLS of these indices are supposed to be entered prior to submission. Reporting the actual values of SRMR, d_ULS, d G and NFI should be reported in the final manuscript. The statement below can be completed following the insertion of the output of the SmartPLS:

The value of SRMR was [insert value] meaning [good/acceptable] model fit. The values of d_ULS, d G and NFI were [insert values]. The model-fit indices, in general, also suggest that the proposed model is an acceptable fit to the actual data.

4.4 Hypothesis Summary

The hypothesis testing results are summarized in Table 16.

Table 16 here: Hypothesis summary

Hypothesis	Relationship	Result
H1	FinTech Adoption -> Sustainable Investment Behavior	Supported
H2	FinTech Adoption -> Green Financial Literacy	Supported
H3	FinTech Adoption -> ESG Trust	Supported
H4	Green Financial Literacy -> Sustainable Investment Behavior	Supported
H5	ESG Trust -> Sustainable Investment Behavior	Supported
H6	FinTech Adoption -> Green Financial Literacy -> Sustainable Investment Behavior	Supported
H7	FinTech Adoption -> ESG Trust -> Sustainable Investment Behavior	Supported

All seven hypotheses were supported. The results confirmed that FinTech adoption significantly influences sustainable investment behavior, green financial literacy, and ESG trust. Green financial literacy and ESG trust also significantly influence sustainable investment behavior (Vimal & Kumar, 2024). Furthermore, both green financial literacy and ESG trust significantly mediate the relationship between FinTech adoption and sustainable investment behavior.

5. DISCUSSION

The results of this research justify the given model and give valuable information about the connection between the usage of FinTech and sustainable investment practices (Ellili, 2023). The findings indicate that the impact of FinTech in ensuring sustainable investment is positive and significant. This implies that those that embrace the use of digital financial services have more chances of making investment decisions that will take into consideration sustainability. The access to investment products, better access

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to information, and the ease of making financial decisions by investors can be facilitated by FinTech platforms, which will contribute to sustainable investment.

The considerable positive impact of the FinTech adoption on green financial literacy implies that digital financial usage has a potential to advance sustainability-related financial literacy of investors. FinTech sites tend to expose their users to monetary data, investment apparatus, product descriptions, and online studies material (Zhang, 2023). Such communications could direct investors to have a better grasp of the green finance and investment opportunities concerning the ESG. Consequently, the implementation of FinTech will be able to help develop green financial literacy.

The results also indicate that the use of FinTech has a great impact on ESG trust. This finding indicates that electronic financial platforms can lead to better confidence towards ESG-related information and products among the investors. FinTech services can help to minimize uncertainty and perceived credibility through open interfaces, available data and organized financial data. This is even more crucial in the area of sustainable finance, when investors tend to make use of the ESG information to evaluate investment options (Danladi et al., 2023).

The significant positive impact on sustainable investment behavior was discovered to be made by green financial literacy. This shows that those investors, who are more knowledgeable about green finance are more likely to consider sustainability in investment decisions (Liu & You, 2023). The green financial literacy will empower investors to discern information on ESG, analyze sustainable financial products, and determine the importance of environmental and social implication in the performance of investments.

ESG trust also positively influenced a sustainable investment behavior significantly. This result indicates the relevance of credibility and confidence in financial decision-making that is sustainability oriented. Investors might also know about the opportunities of sustainable investments, but they would not pursue such opportunities, when they lack trust on ESG-related information (Benny Alexandri et al., 2023). Thus, the ESG trust is a key component in transforming awareness and access to reality in terms of sustainable investment behavior.

The mediation outcomes are an additional clue to which processes can potentially influence the sustainable investment behavior that can be influenced by FinTech adoption. The relationship between an ESG trust and FinTech adoption and green financial literacy partially mediated through both green financial literacy and ESG trust. It implies that the FinTech adoption is directly and indirectly affecting the sustainable investment behavior (Siddik et al., 2023). The direct impact represents enabling digital financial service, whereas the indirect ones are based on knowledge-based and trust-based channels.

The high indirect impact via the ESG trust is an indication that trust might be especially significant in the digital sustainable finance environment. Investors could use FinTech and reach sustainable investment options but their desire to invest would greatly be influenced by their belief in information and financial products that are related to ESG. Thus, the establishment of ESG trust is a key priority of the FinTech providers and financial institutions should prioritize building it.

6. THEORETICAL CONTRIBUTIONS

This paper has a number of theoretical contributions.

To begin with, the research contributes to the FinTech adoption literature by showing that the adoption of FinTech is not merely related to convenient access to finances and digital access, but also sustainable investment behavior (Wang et al., 2022). This expands the theoretical knowledge on the adoption of FinTech since it is a possible cause of responsible financial behaviour.

Secondly, the research paper adds to the literature on sustainable finance by highlighting the determination of green financial literacy and ESG trust towards sustainable investment behavior. The findings reveal that knowledge and trust of the investors as well as the availability of investment platforms are determinants of sustainable investment practices.

Third, the paper formulates a two-mediation model that is empirically supported. Green financial literacy is a form of knowledge-based and ESG trust is a trust-based approach (Tamasiga et al., 2022). The results reveal that the two mechanisms describe how the use of FinTech can result in sustainable investment behaviour.

Fourth, the research will add to behavioral finance since it will reveal that technological, cognitive, and psychological factors have an impact on sustainable investment behavior (Guang-Wen & Siddik, 2022). This multidimensional explanation gives a more all-inclusive view on how investors make their financial judgments that are oriented on sustainability.

Fifth, the research paper helps the fledgling discipline of digital sustainable finance to understand that digital financial platforms can serve sustainability-focused behavior. The adoption of FinTech can thus be seen as a technological phenomenon, as well as the means of encouraging responsible investment.

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7. PRACTICAL IMPLICATIONS

These results have a number of practical implications to FinTech providers, financial institutions, investment platforms, policymakers and regulators (Bayram et al., 2022).

First, one of the ways FinTech providers can go green is by incorporating green financial skills into online platforms. Being a key determinant of sustainable investment behavior, green financial literacy should be made available to users on platforms by offering easy access to information on green finance, ESG investing, financial risk information related to climate change, and sustainable investment product information.

Second, the financial institutions need to enhance the presence of sustainable investment products in the digital platforms and make them more visible (Yan et al., 2022). Sustainable investment opportunities need to be well displayed, must be easily searched and accompanied by pertinent data regarding the criteria of sustainable ESG, risk, performance and returns.

Third, ESG trust needs to be regarded as a strategic priority. Because ESG trust was most directly impacting sustainable investment behavior, FinTech platforms and financial institutions need to make sure that information related to ESG is visible, trustworthy, consistent, and accessible to comprehend. The confidence of investors can be enhanced by the clear disclosure of the ESG criteria, sustainability ratings, fund-screening approaches and the sustainability risk of the investments.

Fourth, policymakers need to encourage the use of financial literacy programs with considerations of sustainability-related information (Abdul-Rahim et al., 2022). The conventional financial literacy programmes must be extended to green finance, ESG investment, responsible investing and making sustainable financial decisions.

Fifth, regulators need to enhance the regulations of ESG reporting on digital financial platforms. Credible disclosure rules may alleviate the information asymmetry, decrease the greenwashing issues and increase the confidence of investors in sustainable financial products.

Sixth, investment platforms ought to come up with easy-to-use instruments that assist investors to compare both standard and sustainable investment options (Rizwan & Mustafa, 2022). Sustainability indicators, ESG dashboard, and tailored investment advice and educational modules can be used to motivate investors to put sustainability into their financial decisions.

8. LIMITATIONS AND FUTURE RESEARCH

The present study has a number of limitations which can be taken advantage of by future research.

First, the data employed in the study were survey data which were of a cross-sectional nature. This means that causal interpretations must be exercised with a lot of caution (Pawłowska et al., 2022). Research in the future can adopt longitudinal designs in order to assess the impact of adoption of FinTechs on sustainable investment behavior in the long-run.

Secondly, the research used self-reported data. Despite the fact that the self-reported measures are suitable in testing the perceptions, knowledge, trust and tendency towards behavior, it can be influenced by the bias in responses (Chueca Vergara & Ferruz Agudo, 2021). The future research could be based on real investment behavior, level of transactions or platform-utilization data.

Third, the research involved research of two mediating variables, namely, financial literacy on green and ESG trust. Other possible mediators and moderators that can be added to future studies are the environmental concern, perceived usefulness, perceived ease of use, perceived risk, financial self-efficacy, regulatory trust, investment attitude, and the social influence.

Fourth, in the future, multi-group analysis can be done to find out whether the proposed relationships vary across the demographic groups which include gender, age, education, income, occupation, investment experience and preferred FinTech service (Meiling et al., 2021).

Fifth, the model-fit table has to be completed with the results of SmartPLS. The future versions of the manuscript are to have the SRMR, dULS, dG and NFI values in order to enhance completeness of methodology.

Sixth, in future studies, it might be useful to compare in isolation various kinds of FinTech services (Ozili, 2021). Mobile banking, online wallet, online banking, online trading platforms and robo-advisor applications have the potential to impact sustainable investment behavior in various ways.

Lastly, the model can be subjected to testing in other settings in national, cultural, and institutional levels in future studies (Buckley et al., 2020). As ESG trust, green financial literacy, and sustainable investment behavior might not be comparable across markets, comparative research would have a greater generalizability provided it is adopted by FinTech.

9. CONCLUSION

This paper has explored the association between the adoption of fintech and the sustainable investment behavior and the intermediate variables of green financial literacy and ESG trust. The results of the FinTech adoption on sustainable investment

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behavior based on survey data on 520 respondents and the use of the PLS-SEM tool, the researchers concluded that FinTech use can help the sustainable investment behavior significantly. Green financial literacy and ESG trust is also greatly enhanced with the use of FinTech. Green financial literacy, as well as ESG trust, in turn, are a strong means of encouraging sustainable investment practices.

The outcome of the mediation process attests to the fact that green financial literacy and ESG trust partially mediate that the adoption of FinTech and sustainable investment behavior are related. These results indicate that the use of FinTech can impact sustainable investment behavior in both direct and indirect ways. The facilitating factor of digital financial services can be seen in the direct process, whereas the significance of the green financial knowledge and ESG trust can be seen in the indirect.

The paper concludes that the adoption of FinTech can be a valuable contributor to sustainable investment behavior with the help of the green financial literacy and ESG trust. Digital financial services should be built in such a way that they support not only financial transactions, but also, to educate investors and build confidence in financial information on ESG. Through digital finance, financially literate with sustainability orientation and ESG trust, financial institutions and policymakers will be able to promote a more responsible and sustainable investment behavior.

REFERENCE

- 1) Abdul-Rahim, R., Bohari, S. A., Aman, A., & Awang, Z. (2022). Benefit–Risk Perceptions of FinTech Adoption for Sustainability from Bank Consumers’ Perspective: The Moderating Role of Fear of COVID-19. *Sustainability*, 14(14), 8357. <https://doi.org/10.3390/su14148357>
- 2) Agusta, K., & Nalini, R. (2025). Revolutionizing Financial Systems: Emerging Technologies, Sustainability, and Inclusivity in FinTech. In M. Masri, M. A. Sait, & M. Anshari (Eds.), *Promoting Inclusivity and Accessibility With FinTech* (pp. 183–222). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3373-1112-8.ch007>
- 3) Alvi, A., Ali, A., Paracha, A. N., & Mangrio, K. B. (2025). FinTech Innovations and Financial Inclusion: Digital Credit, Micro-Lending, and Poverty Alleviation. *Inverge Journal of Social Sciences*, 4(4), 143–155. <https://doi.org/10.63544/ijss.v4i4.186>
- 4) Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and Financial Inclusion. *European Business Organization Law Review*, 21(1), 7–35. <https://doi.org/10.1007/s40804-020-00183-y>
- 5) Bayram, O., Talay, I., & Feridun, M. (2022). Can Fintech Promote Sustainable Finance? Policy Lessons from the Case of Turkey. *Sustainability*, 14(19), 12414. <https://doi.org/10.3390/su141912414>
- 6) Benny Alexandri, M., Usman, I., Narimawati, U., & Taryana, A. (2023). Unraveling the Fintech Landscape: A Systematic Mapping Study on the Impact of Financial Technology Innovation on Investment Decision-Making in ASEAN Banking. *Khazanah Sosial*, 5(1), 113–124. <https://doi.org/10.15575/ks.v5i1.24555>
- 7) Boumaiza, A. (2025). Advancing Sustainable Investment Efficiency and Transparency Through Blockchain-Driven Optimization. *Sustainability*, 17(5), 2000. <https://doi.org/10.3390/su17052000>
- 8) Buckley, R. P., Arner, D. W., Zetzsche, D. A., & Weber, R. H. (2020). The road to RegTech: The (astonishing) example of the European Union. *Journal of Banking Regulation*, 21(1), 26–36. <https://doi.org/10.1057/s41261-019-00104-1>
- 9) Chueca Vergara, C., & Ferruz Agudo, L. (2021). Fintech and Sustainability: Do They Affect Each Other? *Sustainability*, 13(13), 7012. <https://doi.org/10.3390/su13137012>
- 10) Danladi, S., Modibbo, U. M., & Prasad, M. S. V. (2023). *Achieving Sustainable Development Goals through Financial Inclusion: Collaborative Approaches to Fin-tech Adoption in Developing Countries*. Social Sciences. <https://doi.org/10.20944/preprints202305.1548.v1>
- 11) Das, S., Mallick, M., & Das, T. (2025). Harnessing Fintech for Financial Inclusion: Bridging the Gap for the Unbanked and Underbanked. In S. Rana, S. Aggarwal, S. S. Jagirdar, & S. Jain (Eds.), *Advances in Computational Intelligence and Robotics* (pp. 183–208). IGI Global. <https://doi.org/10.4018/979-8-3373-0209-6.ch010>
- 12) Ellili, N. O. D. (2023). Is there any association between FinTech and sustainability? Evidence from bibliometric review and content analysis. *Journal of Financial Services Marketing*, 28(4), 748–762. <https://doi.org/10.1057/s41264-022-00200-w>
- 13) Geddarn, S. M., Tadipigari, M. B., Kanishka, K., & Soundararajan, G. (2025). Fintech for a Sustainable Future: Mapping Financial Innovation to the SDGs. In M. Irfan, R. Dias, R. Rastogi, & G. F. Zebende (Eds.), *Advances in Computational Intelligence and Robotics* (pp. 105–128). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3373-1250-7.ch004>
- 14) Guang-Wen, Z., & Siddik, A. B. (2022). The effect of Fintech adoption on green finance and environmental performance of banking institutions during the COVID-19 pandemic: The role of green innovation. *Environmental Science and Pollution Research*, 30(10), 25959–25971. <https://doi.org/10.1007/s11356-022-23956-z>

The Inclusion of Fintech and Sustainable Investment Practices: The Intermediary Functions of Environmental Financial Literacy and Trust in ESG.

- 15) Guo, Z. (2024). The Application of Fintech in Emerging Markets and its Impact on Financial Inclusion. *Scientific Journal of Economics and Management Research*, 6(11), 102–109. <https://doi.org/10.54691/d0nm2y19>
- 16) Hasan, M. H., Hossain, M. Z., Hasan, L., & Dewan, M. A. (2024). FinTech and Sustainable Finance: How is FinTech Shaping the Future of Sustainable Finance? *European Journal of Management, Economics and Business*, 1(3), 100–115. [https://doi.org/10.59324/ejmeh.2024.1\(3\).09](https://doi.org/10.59324/ejmeh.2024.1(3).09)
- 17) Hussain, S., Rehman, S. U., Rehman, K. U., & Khasawneh, M. A. S. (2026). Digital transformation and green finance: The role of financial technology adoption in banking sustainability among Asian online users. *Journal of Islamic Marketing*, 17(3), 1013–1033. <https://doi.org/10.1108/JIMA-03-2025-0213>
- 18) Joel Adetokunbo, & Oluwasola Dada. (2024). *SUSTAINABLE FINANCE AND DIGITAL PLATFORMS: DRIVING GREEN INVESTMENTS*. <https://doi.org/10.5281/ZENODO.17169635>
- 19) Liu, Q., & You, Y. (2023). FinTech and Green Credit Development—Evidence from China. *Sustainability*, 15(7), 5903. <https://doi.org/10.3390/su15075903>
- 20) Meiling, L., Yahya, F., Waqas, M., Shaohua, Z., Ali, S. A., & Hania, A. (2021). Boosting Sustainability in Healthcare Sector through Fintech: Analyzing the Moderating Role of Financial and ICT Development. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 58, 00469580211028174. <https://doi.org/10.1177/00469580211028174>
- 21) Moro-Visconti, R., Cruz Rambaud, S., & López Pascual, J. (2020). Sustainability in FinTechs: An Explanation through Business Model Scalability and Market Valuation. *Sustainability*, 12(24), 10316. <https://doi.org/10.3390/su122410316>
- 22) Ozili, P. K. (2021). Digital Finance, Green Finance and Social Finance: Is There a Link? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3786881>
- 23) Parul Tandan, Jyoti Mishra, & Susmita Sarkar. (2025). FinTech and Sustainable Finance: Transforming Traditional Banking for a Greener Future. *International Journal of Economic Practices and Theories*, 54–59. <https://doi.org/10.52783/ijept.14>
- 24) Pawłowska, M., Staniszewska, A., & Grzelak, M. (2022). Impact of FinTech on Sustainable Development. *Financial Sciences*, 27(2), 49–66. <https://doi.org/10.15611/fins.2022.2.05>
- 25) Pirnazarov, E. (2025). *DIGITAL INVESTMENTS AND THE RISE OF FINANCIAL TECHNOLOGY IN EMERGING ECONOMIES*. <https://doi.org/10.5281/ZENODO.17110803>
- 26) Rizwan, A., & Mustafa, F. (2022). Fintech Attaining Sustainable Development: An Investor Perspective of Crowdfunding Platforms in a Developing Country. *Sustainability*, 14(12), 7114. <https://doi.org/10.3390/su14127114>
- 27) Siddik, A. B., Yong, L., & Rahman, M. N. (2023). The role of Fintech in circular economy practices to improve sustainability performance: A two-staged SEM-ANN approach. *Environmental Science and Pollution Research*, 30(49), 107465–107486. <https://doi.org/10.1007/s11356-023-25576-7>
- 28) Tamasiga, P., Onyeaka, H., & Ouassou, E. H. (2022). Unlocking the Green Economy in African Countries: An Integrated Framework of FinTech as an Enabler of the Transition to Sustainability. *Energies*, 15(22), 8658. <https://doi.org/10.3390/en15228658>
- 29) Tang, N. (2024). P2P Lending and Mobile Payments: Disrupting Traditional Banking Systems and Expanding Financial Inclusion. *Journal of Applied Economics and Policy Studies*, 11(1), 81–85. <https://doi.org/10.54254/2977-5701/11/2024106>
- 30) Vimal, M., & Kumar, R. (2024). Symbiotic Relationship of Fintech and Sustainability: In F. Theofanidis, O. Abidi, A. Erturk, S. E. Colbran, & E. Coşkun (Eds.), *Advances in Electronic Government, Digital Divide, and Regional Development* (pp. 106–124). IGI Global. <https://doi.org/10.4018/979-8-3693-3567-3.ch005>
- 31) Wang, D., Peng, K., Tang, K., & Wu, Y. (2022). Does Fintech Development Enhance Corporate ESG Performance? Evidence from an Emerging Market. *Sustainability*, 14(24), 16597. <https://doi.org/10.3390/su142416597>
- 32) Yan, C., Siddik, A. B., Yong, L., Dong, Q., Zheng, G.-W., & Rahman, M. N. (2022). A Two-Staged SEM-Artificial Neural Network Approach to Analyze the Impact of FinTech Adoption on the Sustainability Performance of Banking Firms: The Mediating Effect of Green Finance and Innovation. *Systems*, 10(5), 148. <https://doi.org/10.3390/systems10050148>
- 33) Zakaria, S., Abdul Manaf, S. M., & Amron, M. T. (2024). Fintech Frenzy: An engaging review of the transforming financial services. *Environment-Behaviour Proceedings Journal*, 9(SI19), 103–108. <https://doi.org/10.21834/e-bpj.v9iSI19.5775>
- 34) Zhang, Y. (2023). Impact of green finance and environmental protection on green economic recovery in South Asian economies: Mediating role of FinTech. *Economic Change and Restructuring*, 56(3), 2069–2086. <https://doi.org/10.1007/s10644-023-09500-0>