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The Role of AI-Enabled FinTech in Promoting Sustainable Financial Behavior Among Young Consumers: The Mediating Effects of Perceived Usefulness and Trust

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Abstract- *Artificial intelligence (AI)–enabled FinTech is increasingly reshaping how financial services are delivered and how young consumers manage their finances. Beyond improving efficiency and convenience, these technologies also have the potential to influence responsible and sustainable financial behavior. This study examines how perceived usefulness and trust mediate the relationship between AI-enabled FinTech features and sustainable financial behavior among young consumers. Primary data were collected from 146 respondents using a structured questionnaire. The analysis involved reliability and validity tests, multiple regression, and bootstrapped mediation analysis. The findings show that AI-enabled FinTech features positively influence both perceived usefulness and trust. Perceived usefulness strongly drives sustainable financial behavior, while trust plays a smaller yet meaningful role, mainly through indirect effects. Overall, the relationship is partially mediated by both factors, with perceived usefulness emerging as the main mediator.*

Keywords*: AI-enabled Fintech, Sustainable Financial Behavior, Perceived Usefulness, Trust, Young Consumers, Behavioral Finance*

I. INTRODUCTION

Artificial intelligence's (AI) quick development has altered financial technology (FinTech) landscape, influencing how individuals manage, spend, and plan their finances [1] [2]. AI-enabled FinTech applications, such as automated savings tools and personalized financial recommendations, are increasingly used by young consumers [3]. While prior studies have largely focused on FinTech adoption and usage, limited attention has been given to how AI-enabled FinTech contributes to sustainable financial behavior at the individual level [4]. Sustainable financial behavior refers to long-term, responsible, and forward-looking financial decision-making, including disciplined spending, regular saving, and prudent financial planning [5] [6]. AI-enabled FinTech can influence financial behavior through users' perceptions, particularly perceived usefulness and trust, which play a central role in translating technological features into behavioral outcomes [1], [8]. Against this background, this study examines the role of AI-enabled FinTech features in promoting sustainable financial behavior among young consumers. Specifically, it investigates the effects of AI-enabled FinTech features on perceived usefulness and trust, analyzes their influence on sustainable financial behavior, and assesses the mediating roles of perceived usefulness and trust.

II. PROBLEM STATEMENT

Although FinTech applications driven by AI are widely used by young consumers, empirical evidence explaining how these technologies influence sustainable financial practices remains limited. Most existing studies focus on adoption intention, usability, or financial inclusion outcomes, rather than on how individuals develop sustainability-oriented financial behaviors through these platforms [5]. Moreover, the mediating roles of perceived usefulness and trust in linking AI-enabled FinTech features to sustainable financial practices have received little research attention. This study addresses these gaps by examining how these key psychological factors shape sustainable financial behavior.

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III. REVIEW OF LITERATURE

Previous studies on FinTech have mostly focused on technology adoption, usage intention, financial inclusion, and digital financial behavior, particularly among younger user groups [1] [2]. With the growing integration of artificial intelligence into financial services, recent studies have increasingly examined AI-enabled FinTech applications and their role in supporting responsible financial decision-making through automation, personalization, and intelligent recommendations [3] [6] [10]. Despite these developments, behavioral constructs such as perceived usefulness and trust are still predominantly examined as drivers of FinTech adoption rather than as mechanisms shaping sustainable financial behavior [1] [9]. Furthermore, empirical evidence linking AI-enabled FinTech features to sustainability-oriented financial outcomes through perceptual mediators remains limited, particularly among young consumers [4], [5]. Addressing this gap, the present study investigates how AI-enabled FinTech features influence sustainable financial behavior through perceived usefulness and trust, thereby extending existing FinTech research from adoption-focused viewpoints on behavioural sustainability results.

IV. THEORETICAL FOUNDATIONS

This section explains the theoretical basis for the proposed research framework.

A. AI-Enabled Fintech Features

FinTech features enabled by AI are intelligent, automated, and personalized functions embedded in digital financial services. These features reduce complexity and support better financial decisions by providing real-time analysis, suggestions, and predictive support to users [1] [2].

B. Perceived Usefulness

Perceived usefulness shows how much individuals believe that using a particular technology enhances their performance and efficiency. Given the context of FinTech, higher perceived usefulness is associated with improved financial management and more responsible financial behavior [3] [9].

C. Trust in AI-Enabled FinTech

Trust represents users' confidence in the reliability, security, and transparency of AI-enabled financial services. It is particularly critical in digital finance environments where automated systems play a central role in decision-making and data exchange [6] [10].

D. Sustainable Financial Behavior

Sustainable financial behavior refers to responsible financial practices that help with long-term financial health, including careful spending, regular saving, and effective debt management [5].

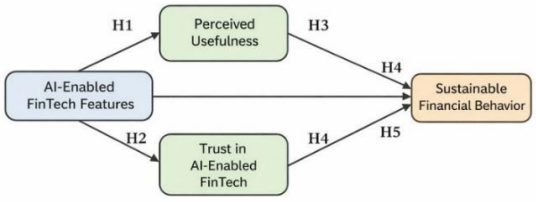

Fig. 1.Conceptual Framework

Fig. 1 shows the study's conceptual framework, proposing that AI-enabled FinTech features influence sustainable financial behavior among young consumers both directly and indirectly through perceived usefulness and trust.

V. METHODOLOGY

This section outlines the research design, hypotheses, data collection, and analysis methods.

A. Hypotheses Development

From the theoretical framework and existing literature, the following hypotheses are developed:

H1: AI-enabled FinTech feature characteristics have a positive influence on perceived usefulness for young consumers.

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H2: AI-enabled FinTech feature characteristics have a positive influence on trust in AI-enabled FinTech services for young consumers.

H3: Perceived usefulness has a positive influence on young consumers' sustainable financial practices.

H4: Trust positively impacts sustainable financial behavior for young consumers.

H5: Perceived usefulness and trust mediate the relationship between AI-enabled FinTech feature characteristics and sustainable financial behavior for young consumers.

B. Sample and Measures

Data were collected through a structured questionnaire. Although 150 responses were initially received, 146 were retained for analysis after data screening. All constructs were measured using multiple items adapted from prior studies and assessed on a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree).

C. Data Analysis Techniques

The data were analysed using reliability analysis, exploratory factor analysis (EFA), multiple regression, and bootstrapped mediation analysis. These techniques are widely used in behavioral finance and technology adoption research to examine measurement quality and test complex relationships between variables [9] [11].

D. Model Specification

The relationships suggested in the conceptual framework were investigated using a multiple regression model. The dependent variable was sustainable financial behaviour, and the independent variables were perceived utility, trust, and AI-enabled FinTech features. The expression for the regression model is:

$$SFB = \beta_0 + \beta_1 AI + \beta_2 PU + \beta_3 TR + \varepsilon \quad (1)$$

where SFB_i represents sustainable financial behavior, AI_idenotes AI-enabled FinTech features, PU_i represents perceived usefulness, TR_i represents trust, and ϵ_i is the error term. Further regression analyses were performed to examine the mediating functions of perceived usefulness and trust. The mediators were first predicted using AI-enabled FinTech features, and then sustainable financial behaviour was regressed on perceived usefulness, trust, and AI-enabled FinTech features.

VI. RESULTS

The results section presents the findings from reliability and validity tests, regression analysis, and mediation analysis.

A. Sample Profile

Table Demographics Profile Of The Respondents Included In The Study

Variable	Category	Frequency	Percentage (%)
Age Group	Below 18	1	0.67
	18–20	14	9.33
	21–24	103	68.67
	25–29	23	15.33
	30–34	5	3.33
Education Level	School	1	0.67
	Undergraduate	49	32.67
	Postgraduate	74	49.33
	Professional	21	14.00
	Business	1	0.67
Saving Behavior	I do not save	1	0.67
	I rarely save	23	15.33
	I save occasionally	61	40.67

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	I save regularly	61	40.67
FinTech Usage Frequency	Multiple times a day	60	40.00
	Once a day	20	13.33
	Several times a week	44	29.33
	Once a week	7	4.67
	Occasionally	10	6.67
	Rarely	5	3.33

Source: Author's Analysis

Table I presents the demographic profile of the respondents. The sample is predominantly composed of young consumers, reflecting the target population of the study.

B. Reliability and Sampling Adequacy

Scale reliability was assessed using Cronbach's alpha.

Table Reliability Statistics

Construct	**Number of Items**	**Cronbach's α**
AI-Enabled Fintech Features	4	0.814
Perceived Usefulness	4	0.840
Trust in AI-Enabled FinTech	4	0.873
Sustainable Financial Behavior	5	0.781

Source: Author's Analysis

As reported in Table II, all constructs demonstrate good internal consistency, with alpha values ranging from 0.781 to 0.873, exceeding the recommended threshold level of 0.70. In addition, the 0.918 Kaiser-Meyer-Olkin (KMO) value confirms excellent sampling adequacy for further analysis.

C. Descriptive Statistics and Correlation Analysis

Table Descripitive Statistics And Correlations

Variable	Mean	SD	1	2	3	4
AI-Enabled FinTech Features	3.69	0.83	1			
Perceived Usefulness	3.77	0.81	0.775*	1		
Trust	3.65	0.84	0.588*	0.661*	1	
Sustainable Financial Behavior	3.62	0.77	0.657*	0.712*	0.567*	1

Source: Author's Analysis

The descriptive statistics and correlations among the variables are presented in Table III. All the correlations are positive and significant at $p < 0.01$, with values less than 0.85, thus no issues of multicollinearity.

D. Exploratory Factor Analysis Exploratory factor analysis was used to test the construct validity of the data. The Kaiser-Meyer-Olkin value was 0.918, which is excellent in terms of sampling adequacy. The items loaded adequately on their respective scales, and the factor loading was mostly above 0.50, thereby establishing the one-dimensionality and convergent validity of the scales used in measurement.

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Table Exploratory Factor Analysis Results

Construct	Item	Loading
AI-Enabled FinTech Features	AI1	0.756
	AI2	0.743
	AI3	0.624
	AI4	0.779
Perceived Usefulness	PU1	0.716
	PU2	0.862
	PU3	0.628
	PU4	0.822
Trust	TR1	0.787
	TR2	0.761
	TR3	0.823
	TR4	0.812
Sustainable Financial Behavior	SFB1	0.591
	SFB2	0.789
	SFB3	0.488
	SFB4	0.711
	SFB5	0.686

Source: Author's Analysis

Table IV reports the factor loadings, which exceed acceptable limits and confirm the convergent validity of the measurement items.

E. Regression Analysis and Hypothesis Testing

Multiple regression analysis was conducted to examine the direct effects of AI-enabled FinTech features, perceived usefulness, and trust on sustainable financial behavior. The overall model was statistically significant, with an R^2 value of 0.545, indicating that the predictors together explain 54.5% of the variation in sustainable financial behavior. The results show that AI-enabled FinTech features have a significant positive direct effect (β = 0.221, p = 0.010), supporting H1. The strongest predictor is perceived usefulness, which has a significant positive effect (β = 0.414, p < 0.001), supporting H3. Trust has a positive but statistically weak effect on sustainable financial behavior (β = 0.128, p = 0.070). This suggests there is limited empirical support for H4.

Table Multiple Regression Results

Predictor	**Coefficient (β)**	**Std. Error**	**t-value**	**p-value**
Intercept	0.779	0.225	3.461	0.001
AI-Enabled FinTech Features	**0.221**	0.084	2.626	**0.010**
Perceived Usefulness	**0.414**	0.093	4.443	**<0.001**
Trust	0.128	0.070	1.829	0.070

Source: Author's Analysis

Model Statistics:

R^2 = **0.545**, Adjusted R^2 = **0.536**, F = **56.74**, p < 0.001, Observations = **146**

The regression results in Table V indicate that AI-enabled FinTech features, perceived usefulness, and trust significantly influence sustainable financial behavior, with perceived usefulness exhibiting the strongest effect. The model explains 54.5% of the

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variance in financial behavior. This suggests that sustainable financial behaviour has a strong explanatory power.

F. Multicollinearity Assessment The presence of multicollinearity was checked using the Variance Inflation Factor (VIF). VIF values ranged from 1.82 to 2.99, significantly less than the recommended 5. This confirms that there is no problem of multicollinearity, and the regression estimates are reliable.

G. Graphical Representation of Results

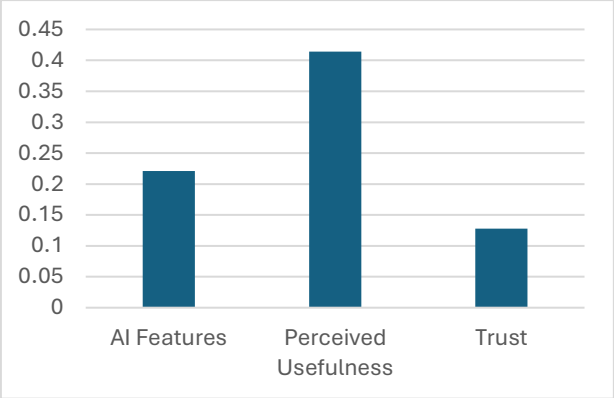

Fig. 2. Standardized Regression Coefficients

Figure 2 shows that the relative impact of the predictors is graphically compared. Perceived usefulness has the impact on sustainable financial behavior with a coefficient of 0.414. Features from FinTech that use AI have an effect, with a coefficient of 0.221. Trust has an effect with a coefficient of 0.128. Perceived usefulness has the biggest impact among the predictors.

H. Mediation Analysis

Bootstrapped mediation analysis with 5,000 resamples was conducted to test H5. The results indicate that perceived usefulness significantly mediates the relationship between AI-enabled FinTech features and sustainable financial behavior (ACME = 0.365, $p < 0.001$), accounting for 59.9% of the total effect. Trust also acts as a significant mediator (ACME = 0.151, $p < 0.001$), explaining 24.4% of the total effect. Overall, the results confirm partial mediation, with perceived usefulness emerging as the stronger mediator.

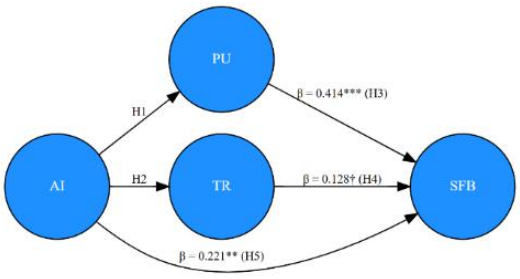

Fig. 3. Regression based path model

Fig. 3 shows the regression-based path diagram that illustrates the direct and indirect effects of AI-enabled FinTech features on sustainable financial behavior. The diagram indicates that perceived usefulness has the strongest influence on sustainable financial behavior, while trust supports this influence, confirming the partial mediating effects found in the analysis.

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Table Mediation Analysis Results

Mediator	ACME	ADE	Total Effect	Proportion Mediated
Perceived Usefulness	0.365	0.245	0.610	0.599
Trust	0.151	0.460	0.611	0.244

Source: Author's Analysis

Table VI demonstrates that perceived usefulness and trust partially mediate the relationship between AI-enabled FinTech features and sustainable financial behavior.

I. Robustness Check

A robustness check using a Random Forest model further confirmed the relative importance of perceived usefulness, AI-enabled FinTech features, and trust in predicting sustainable financial behavior.

Table Random Forest Feature Importance

Predictor	Importance Score
Perceived Usefulness	**0.502**
AI-Enabled FinTech Features	**0.266**
Trust	**0.232**

Source: Author's Analysis

Table VII presents the feature importance results from the robustness analysis, indicating that perceived usefulness is the most influential predictor of sustainable financial behavior, followed by AI-enabled FinTech features and trust, thereby supporting the primary regression and mediation findings.

VII. DISCUSSION

The results show that AI-enabled FinTech significantly contributes to encouraging sustainable financial habits among young consumers. Perceived usefulness is the strongest predictor. These results are in line with earlier FinTech research that found perceived utility to be a major factor in technology-enabled financial decision-making. This suggests that when FinTech applications provide clear practical benefits, young consumers adopt sustainable financial practices [1] [9]. This supports earlier studies that show perceived usefulness is an important way digital technologies influence responsible financial decision-making.

The clear effect of AI-powered FinTech tools shows that smart financial resources can help people save consistently, spend wisely, and plan for the future. This, in turn, supports individual financial sustainability [3] [5] [10]. On the other hand, trust has a weaker but still positive effect. This suggests that while trust is important for ongoing use of AI-driven financial services, it is not enough on its own to promote sustainable financial habits without real usefulness [6] [8].

The mediation analysis shows that perceived usefulness and trust both partially influence the link between AI-enabled FinTech features and sustainable financial behavior. However, perceived usefulness plays a bigger role in this indirect effect. Overall, these findings enhance the FinTech literature by shifting the emphasis from just adopting technology to the behavioral sustainability outcomes among young consumers [1] [7].

VIII. CONCLUSION

This study examined how AI-powered FinTech features influence sustainable financial behavior in young consumers. It specifically considered the roles of perceived usefulness and trust.

The results show that the most significant variable influencing sustainable financial behaviour is perceived usefulness. This indicates that young consumers are more likely to engage in responsible financial practices when AI-enabled FinTech applications show clear and practical benefits. These features also have a notable direct impact on sustainable financial behavior, while trust plays a helpful but weaker role. The relationship is partially

explained by both perceived usefulness and trust, according to the mediation results, with perceived usefulness accounting for a larger portion of the indirect effect.

Overall, the study contributes to the FinTech literature base by shifting the focus from technology adoption to sustainable financial behaviors. Practically speaking, the research indicates that AI-enabled FinTech applications should be designed to offer consumers useful information and assistance in developing disciplined saving habits and long-term financial planning. Though the research is limited in its generalizability due to the use of cross-sectional data and a sample of young consumers, future research should consider longitudinal methods and a wider scope of consumers to further examine the long-term effects of AI-enabled FinTech.

REFERENCES

1. I. Lee and Y. J. Shin, "FinTech: Ecosystem, business models, investment decisions, and challenges," *Business Horizons*, vol. 61, no. 1, pp. 35–46, 2018.
2. M. A. M. Abu Daqar, S. Arqawi, and S. Abu Karsh, "FinTech in the eyes of Millennials and Generation Z: Financial behavior and FinTech perception," *Banks and Bank Systems*, vol. 15, no. 3, pp. 20–28, 2020.
3. A. Dash and G. Mohanta, "Drivers of sustainable financial consumerism: Exploring the impact of artificial intelligence, finfluencers, financial literacy, and product quality on sustainable development," *Cleaner and Responsible Consumption*, vol. 18, Art. no. 100306, 2025.
4. D. Gupta, D. Singh, and R. Verma, "Greening the wallet: FinTech's influence on the financial behavior of Gen Z and Millennials," *International Journal of Environmental Sciences*, vol. 11, no. 19, pp. 195–210, 2025.
5. A. Filfilan and M. I. Alattas, "The role of FinTech in promoting environmentally and economically sustainable consumer behavior," *Archives for Technical Sciences*, vol. 17, no. 32, pp. 33–43, 2025.
6. V. Sharma and B. Priya, "Bridging the gap: AI-powered FinTech and its impact on financial inclusion and financial well-being," *Discover Artificial Intelligence*, vol. 5, Art. no. 290, 2025.
7. M. Hasan, A. Hoque, M. Z. Abedin, and D. Gasbarro, "FinTech and sustainable development: A systematic thematic analysis using human- and machine-generated processing," *International Review of Financial Analysis*, vol. 95, 2024.
8. M. Jesse and D. Jannach, "Digital nudging with recommender systems: Survey and future directions," *Computers in Human Behavior Reports*, vol. 3, 2021.
9. F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989.
10. A. Chen *et al.*, "FinTech adoption for ESG integration through robo-advisors, personalization, and perceived trust," *Scientific Reports*, vol. 15, 2025.
11. V. Vasile and O. Manta, "FinTech and AI as opportunities for a sustainable economy," *FinTech*, vol. 4, no. 2, 2025.