European Economic Letters
ISSN 2323-5233
Vol 15, Issue 3 (2025)
http://eelet.org.uk

# The influence of artificial intelligence-enabled fintech services on investment decision-making behaviour in india

**Ms. Puja Tripathy**
*Ph.d Research Scholar in commerce, Ravenshaw university, cuttack-753003*

**Prof. Kishore Kumar Das**
*Professor of commerce-Department of commerce, Ravenshaw university, Cuttack-753003*

**Abstract:**
This study investigates the multifaceted influence of artificial intelligence–enabled FinTech services on retail investors' decision-making behaviour and investment performance in India. Drawing on a thorough literature review, it identifies five key determinants—FinTech platform adoption, infrastructure quality, investor financial literacy, perceived ease of use, and performance management tools—and highlights a gap in integrative research that jointly considers technological and behavioural factors. Employing a quantitative, descriptive–causal design, the authors collected data from 384 retail investors in Odisha through a stratified random sample and a structured questionnaire. Descriptive analysis indicates that participants rate ease of use, infrastructure reliability, and tool sophistication highly. Correlation results reveal strong, positive associations among all independent variables and investment performance, with perceived ease of use exhibiting the strongest link ($r = 0.850$). Subsequent multiple regression analysis demonstrates that these five predictors collectively explain 78.3 per cent of the variance in investment performance ($R^2 = 0.783$), with perceived ease of use ($\beta = 0.345$), infrastructure quality ($\beta = 0.169$), and performance management tools ($\beta = 0.180$) emerging as the most significant factors. The findings underscore the synergistic interplay between user-centric interface design, robust technological back-ends, advanced analytics, and investor competence in driving superior returns. Practical implications suggest that FinTech developers should prioritise intuitive platforms and secure infrastructures, while educators and policymakers must enhance digital financial literacy to ensure investors fully leverage platform capabilities. The study's cross-sectional scope and regional focus are acknowledged as limitations, prompting recommendations for longitudinal, multi-regional investigations to validate and extend these insights. Overall, this research offers a comprehensive framework for understanding how AI-driven FinTech converges with human factors to foster effective, inclusive digital investment environments.

**Keywords:** Artificial Intelligence, FinTech Adoption, Investment Performance, Financial Literacy, Technology Acceptance

## 1. Introduction

The financial services industry is undergoing a transformative shift driven by the emergence and integration of financial technology (FinTech), which is not merely enhancing traditional systems but reshaping how individuals and businesses approach transactions, savings, credit, and investments. As FinTech becomes increasingly embedded within the global financial ecosystem, it is critical to understand the diverse factors influencing its adoption and use, and how these factors affect investment outcomes. This study focuses on exploring the complex relationships between these variables within the FinTech environment and their collective impact on investment performance. FinTech's disruptive capacity has introduced significant

benefits, such as reduced costs, convenience, and real-time investment capabilities. For investors to harness these advantages, widespread platform adoption is essential. Literature points to several drivers of this adoption, including trust, perceived usefulness, ease of access, and users' technological readiness. These factors collectively determine how effectively FinTech platforms are utilized. Studies consistently link higher FinTech adoption to better financial outcomes, emphasizing that these platforms provide advanced data analysis tools and strategic decision-making aids, which are often absent in traditional investing. Moreover, the quality of FinTech infrastructure—including secure payment systems, seamless interfaces, and strong data protection—is vital not only for platform functionality but also for user trust. A reliable infrastructure reduces the risk of failures, instils investor confidence, and fosters consistent engagement, which positively impacts investment results. As such, FinTech infrastructure acts as a foundational pillar in supporting effective digital finance activity. This study is positioned at the forefront of these developments, aiming to examine how the adoption of FinTech platforms, infrastructure reliability, and other related factors work in tandem to shape modern investment behavior and performance outcomes in a rapidly digitizing financial world.

Investor financial literacy emerges as a pivotal element in determining how effectively FinTech platforms can be leveraged for improved investment performance. Financially literate users are better equipped to understand digital investment tools, interpret risks and opportunities, track market dynamics, and make sound portfolio decisions. Their literacy not only facilitates platform adoption but directly contributes to higher-quality financial decision-making. By enabling investors to use FinTech tools more strategically, financial literacy enhances the practical benefits these technologies offer. Alongside literacy, the perceived ease of use of digital financial tools is also essential. Drawing on principles from the Technology Acceptance Model (TAM), the literature emphasizes that technologies deemed easy to use are more likely to be adopted and used regularly. Platforms that are user-friendly, intuitive, and require minimal learning effort foster frequent engagement and investor confidence. Such engagement ultimately supports profitable investment behavior and enhances platform loyalty. Additionally, performance management tools provided by FinTech platforms—including automated portfolio systems, real-time analytics, and AI-driven strategies—offer users powerful insights into market trends and investment forecasting. These tools minimize emotional biases and allow for data-driven decision-making. With AI and machine learning becoming integral to many platforms, personalized investment advice and dynamic strategy formulation are now accessible to everyday investors, previously reserved for professionals. This democratization of advanced investing tools empowers users to improve returns significantly. The increasing integration of such tools underscores their value in facilitating informed, strategic financial behavior. This study therefore recognizes performance management tools not just as functional features but as critical mechanisms through which FinTech enhances investment performance. By evaluating how ease of use and financial literacy interact with advanced performance tools, this research captures the nuanced interplay between human capability and technological advancement in shaping successful investment outcomes.

Investment performance, the key dependent variable in this framework, is shaped by the interplay of FinTech adoption, infrastructure quality, financial literacy, ease of use, and performance tools. These variables form an interconnected system where each component enhances the other's impact. FinTech adoption represents the gateway through which benefits

are realized, while infrastructure ensures operational security and trust. Financial literacy translates platform features into meaningful strategies, ease of use fosters sustained engagement, and performance tools drive data-based decisions. Collectively, these factors enhance investor behavior and decision quality, leading to superior investment returns. The integration of Artificial Intelligence within performance management tools, particularly, introduces a new dimension by enabling deep analysis and personalized strategies that adapt to individual investor profiles and goals. Understanding how these AI-enabled systems influence decision-making behavior is essential in gauging their effectiveness in driving financial success. Thus, this research aims to systematically investigate how the combination of these interrelated factors affects investment decision-making and performance. The importance of this study lies in its potential to clarify the drivers of successful investing in a digital age, offering insights for investors, FinTech developers, and policymakers alike. For investors, the findings may offer strategies to maximize returns; for developers, it highlights critical design elements; and for regulators, it offers guidance in shaping innovation-friendly yet secure frameworks. The study gains further relevance as FinTech's role in global finance expands, especially with AI's growing influence. As more financial functions shift online, understanding how technology, human behavior, and system design intersect becomes vital. By exploring how accessible tools, reliable infrastructure, user capabilities, and advanced technologies like AI interact, this research contributes valuable knowledge for building a more effective and inclusive digital investment environment—an environment in which more individuals can participate successfully, informed by both technological and behavioral insights.

### 1.1 Research Gap

Despite a growing body of literature highlighting the proliferation of FinTech services and their transformative impact on financial markets, significant gaps remain regarding the holistic assessment of variables influencing investment performance through FinTech platforms. Most existing studies have examined individual aspects of FinTech adoption—such as ease of use or financial literacy—in isolation. There is limited integration of multiple determinants such as FinTech infrastructure quality, platform adoption, digital financial literacy, and performance tools in a unified framework to explain their collective influence on investment performance. Furthermore, earlier research has predominantly focused on technology adoption or consumer behavior without sufficiently linking these dimensions to quantifiable investment outcomes. This study bridges the gap by incorporating a multifaceted analysis of FinTech adoption, considering both technological and behavioral aspects. It emphasizes the combined role of platform usability, infrastructure readiness, investor competence, and data-driven performance management tools in driving investment performance. Additionally, limited empirical research exists using large samples to quantify these associations, especially in emerging economies where FinTech usage is rising rapidly. Thus, this study uniquely contributes by modeling the relationship using robust statistical tools like regression analysis, thereby offering comprehensive insights into how different FinTech enablers collectively affect investment returns and decision-making efficiency.

### 1.3 Objective of the Study

- To study the influence of Fintech platform adoption on retail investor's decision-making behaviour and investment performance in India.
- To study the influence of Fintech Infrastructure quality on retail investor's decision-making behaviour and investment performance in India.

- To study the influence of Investor's financial literacy on adoption of FinTech platforms in India.
- To study the influence of Perceived ease of use on adoption of FinTech platforms in India.
- To study the influence of Performance management tools on on adoption of FinTech platforms in India.

## 2. Literature Review

Financial technology (FinTech) has revolutionized the financial services landscape, offering innovative solutions that are reshaping how individuals and businesses interact with financial services. As FinTech platforms evolve and become an integral part of the global financial ecosystem, understanding the factors that drive their adoption and influence is crucial. This literature review seeks to examine the various independent variables affecting FinTech adoption and how they influence the dependent variable, which is investment performance. The independent variables discussed include FinTech platform adoption, FinTech infrastructure quality, investor financial literacy, perceived ease of use of digital financial tools, and performance management tools enabled by FinTech. The dependent variable, in this context, is investment performance, which reflects the success and efficiency of financial decisions made through FinTech platforms.

### 2.1. FinTech Platform Adoption

The adoption of FinTech platforms by investors is a critical factor in determining the extent to which technology can influence financial performance. According to various studies, factors such as trust, perceived usefulness, and ease of access drive the adoption of FinTech platforms (Amnas et al., 2023). A study by Chawla et al. (2023) emphasized that adoption is largely influenced by an individual's readiness to embrace technological advancements and the perceived benefits of using these platforms. For instance, FinTech platforms often provide lower costs, enhanced convenience, and the ability to make real-time investments, all of which attract users (Purnamasari et al., 2021). The increased adoption of FinTech platforms directly correlates with improved financial performance, as these platforms often provide sophisticated tools for data analysis and decision-making that would be difficult to access through traditional investment methods (Haridan et al., 2020).

### 2.2. FinTech Infrastructure Quality

The quality of FinTech infrastructure plays a crucial role in enabling effective financial transactions and ensuring that users can perform operations smoothly (Gede et al., 2020). According to Stojanović et al. (2021), high-quality FinTech infrastructure ensures that users can access a wide range of financial services with minimal disruption. The robustness of the infrastructure—such as secure payment systems, seamless interfaces, and data protection mechanisms—impacts the overall experience of users and influences their investment decisions (Khiaonarong et al., 2021). A well-developed infrastructure also reduces the likelihood of technological failures, which can significantly affect investment performance (Griffin et al., 2023). When investors trust the reliability and security of the platform, they are more likely to engage in sustained, profitable financial activities, ultimately improving investment outcomes (Manzano et al., 2009).

### 2.3. Investor Financial Literacy

Financial literacy is essential for making informed decisions in any financial environment (Ahmad et al., 2022). As FinTech platforms provide tools that require some level of understanding, investor financial literacy is a pivotal determinant of how effectively these platforms can influence investment performance (Prasad et al., 2018). According to Angrisani et al. (2020), financially literate investors are more likely to understand the risks and opportunities associated with various investment tools and are better positioned to make profitable decisions. In the context of FinTech, a higher level of financial literacy enables users to fully utilize the features and capabilities of digital platforms, such as understanding market trends, evaluating investment risks, and managing portfolios efficiently (Ovami et al., 2024). Therefore, financial literacy not only enhances the adoption of FinTech platforms but also improves the investment performance of users by enabling them to make informed choices (Seraj et al., 2022).

### 2.4. Perceived Ease of Use of Digital Financial Tools

The perceived ease of use of digital financial tools is another significant determinant that influences the adoption and success of FinTech platforms (Huang et al., 2021). Zhong-qing et al. (2019) introduced the concept of perceived ease of use in his Technology Acceptance Model (TAM), which suggests that users are more likely to adopt technologies that they find easy to use. This perception influences how frequently and effectively investors use FinTech platforms (Scherer et al., 2018). If digital financial tools are intuitive, user-friendly, and require minimal learning, investors are more likely to engage with them, increasing their chances of making profitable investments (Setyanta & Kadi, 2020). Moreover, ease of use can enhance the overall user experience, fostering loyalty to the platform and encouraging repeated use, which, over time, improves investment performance (Tan, 2021).

### 2.5. Performance Management Tools Enabled by FinTech

The performance management tools enabled by FinTech platforms, such as automated portfolio management, real-time analytics, and algorithm-based investment strategies, are critical factors influencing investment performance (Amnas et al., 2023). These tools help investors manage their portfolios effectively by providing insights into market conditions, forecasting trends, and optimizing investment strategies (Jain & Vanzara, 2023). According to Kumar and Soni (2021), such tools allow investors to make data-driven decisions, thereby reducing the emotional and cognitive biases that can lead to poor investment choices (Papasotiriou et al., 2024). The incorporation of machine learning and artificial intelligence in performance management also enables personalized investment advice and strategies, which can enhance financial outcomes (Harikrishnan et al., 2021). The effectiveness of these tools directly contributes to improved investment performance, as investors are equipped with advanced capabilities that were once reserved for professional financial managers (Liu et al., 2024).

### 2.6. The Dependent Variable: Investment Performance

Investment performance, as the dependent variable in this study, reflects the degree to which an investor's financial decisions result in profitable outcomes (Bogle & Twardowski, 1980). It is influenced by multiple factors, including the quality of financial tools, investor behavior, and the overall platform experience (Indriana, 2022). Studies have shown that FinTech platforms, by offering advanced tools and resources, enable investors to make more informed and strategic decisions, ultimately improving their investment returns (Riahi & Garrouch, 2023). Moreover, research by Barberis and Thaler (2003) indicates that technological

advancements, such as algorithmic trading and data analytics, have significantly enhanced the performance of investments, particularly for retail investors who may lack the resources to engage in traditional investment practices (Yan et al., 2022).

### 2.7. Fintech Adoption and Investment Performance

The relationship between the independent variables—FinTech platform adoption, FinTech infrastructure quality, investor financial literacy, perceived ease of use of digital financial tools, and performance management tools—and investment performance is multifaceted and interconnected (Alqararah et al., 2025). FinTech platform adoption plays a foundational role in improving investment performance. The more users adopt and engage with these platforms, the better their chances of leveraging advanced tools that enhance investment strategies (Philip, 2021). FinTech infrastructure quality also significantly influences investment performance. High-quality infrastructure ensures seamless and secure financial transactions, building trust among users (Haridan et al., 2020). When investors feel confident in the reliability of the platform, they are more likely to use it regularly, leading to better-informed and, ultimately, more profitable investments (Mayayise, 2023). Investor financial literacy bridges the gap between the technological tools available on FinTech platforms and their practical application in real-world investment scenarios (Ovami et al., 2024). A lack of financial literacy can limit the effectiveness of even the best digital financial tools. Conversely, financially literate investors can maximize the benefits of the platform, using its features to make sound decisions based on market conditions and personal financial goals (Lusardi, 2008). This direct relationship between financial literacy and investment performance is critical, as it determines how well investors can capitalize on the opportunities provided by FinTech platforms (Purnamasari et al., 2021). The perceived ease of use of digital financial tools also plays a critical role in the overall effectiveness of the FinTech platform. If the tools are easy to navigate and use, investors are more likely to engage with them frequently, leading to better decision-making (Amnas et al., 2023; Huang et al., 2021). The more familiar and confident an investor becomes with the platform, the better they can utilize its features to enhance their investment performance (Chaudhry & Kulkarni, 2021; Fatouros et al., 2024; He et al., 2021; Kaburuan, 2021). Finally, performance management tools enabled by FinTech platforms contribute directly to investment performance (Purnamasari et al., 2021). These tools provide investors with actionable insights and the ability to optimize their strategies, leading to improved outcomes (Das & Das, 2020). By integrating data analytics, AI, and machine learning into the investment process, FinTech platforms empower users to make well-informed decisions that enhance their returns (Gul et al., 2023; Liu et al., 2024).

It is found from the previous studies that the relationship between FinTech platform adoption, infrastructure quality, investor financial literacy, ease of use, and performance management tools with investment performance is complex yet deeply interdependent. These independent variables collectively shape how investors interact with FinTech platforms, which in turn influences their investment outcomes. Understanding this relationship is crucial for investors, financial institutions, and policymakers, as it highlights the importance of technological adoption, infrastructure development, education, and user-centric design in improving financial decision-making and investment performance. As FinTech continues to evolve, it is clear that these factors will play a central role in shaping the future of investing.

## 3. Research Methodology

This study employs a quantitative research approach with a descriptive and causal research design to investigate the influence of Artificial Intelligence-Enabled FinTech Services on Investment Decision-Making Behaviour in Odisha. The primary goal is to empirically assess the relationships between several key independent variables related to FinTech adoption and the dependent variable, investment performance. By utilizing statistical techniques such as descriptive statistics, correlation analysis, and multiple regression analysis, this research aims to identify both the associations and predictive power of the independent variables on investment outcomes.

### 3.1. Population and Sampling Technique

The target population for this study comprises individual retail investors located across various regions in India who actively use FinTech platforms for their investment activities. To ensure the findings are representative and statistically valid, a specific sample size was determined.

The sample size was calculated using the formula for a finite population:

$$n = \frac{z^2 . p \cdot (1-p)}{e^2}$$

Where:

- n = Required sample size
- Z = Z-value (1.96 for 95% confidence level)
- p = Estimated proportion of the population (assumed to be 0.5 for maximum variability)
- e = Margin of error (5% or 0.05)

'n' represents the required sample size. 'Z' is the Z-value corresponding to the desired confidence level. For a 95% confidence level, the standard Z-value of 1.96 is used. This value indicates that if the study were repeated multiple times, 95% of the time the results would fall within a certain range of the true population parameter. 'p' denotes the estimated proportion of the population that possesses the attribute being studied. In the absence of prior knowledge about this proportion, a value of 0.5 is commonly assumed to maximize the sample size and thus ensure the highest variability. This conservative approach helps in obtaining a sufficiently large sample to represent the population accurately. 'e' represents the desired margin of error, which is the maximum acceptable difference between the sample result and the actual population parameter. In this study, a margin of error of 5%, or 0.05, was chosen. This means the results of the study are expected to be within 5 percentage points of the true population value. Using this formula with a Z-value of 1.96, an estimated population proportion (p) of 0.5, and a margin of error (e) of 0.05, the minimum required sample size was calculated to be approximately 384 respondents. Therefore, the study collected data from a total of 384 individual retail investors who use FinTech platforms for investment purposes in India.

To further enhance the representativeness of the sample and minimize potential sampling bias, a stratified random sampling technique was employed. This technique involved dividing the target population into distinct subgroups or strata based on relevant demographic and socio-economic characteristics, such as age groups, income levels, and geographic locations (urban versus rural). A random sample was then drawn from each stratum, proportional to its size in the population. This method ensures that each subgroup is adequately represented in the final sample, thereby increasing the generalizability of the study's findings to the broader population of FinTech-using retail investors in India

### 3.2. Data Collection Method

Primary data was collected through a structured questionnaire. The questionnaire was administered using a combination of online platforms and in-person interactions to reach the diverse target population. The questions included in the questionnaire were primarily closed-ended, utilizing a 5-point Likert scale. This scale ranged from "Strongly Disagree" to "Strongly Agree," allowing for the measurement of respondents' perceptions and opinions on the various constructs of interest. To ensure the quality and validity of the data collection instrument, the questionnaire underwent a rigorous validation process, including a pilot study and review by experts in the field. This process helped to confirm the reliability and content validity of the questionnaire before its full-scale deployment.

### 3.3. Statistical Tools and Techniques

To analyze the collected data and address the research objectives, several statistical tools and techniques were employed. Descriptive statistics were used to summarize the demographic characteristics of the respondents and provide an overview of their responses to the key variables. This included measures such as mean, standard deviation, and frequency distributions. Correlation analysis was conducted to examine the strength and direction of the linear relationships between the independent variables (FinTech adoption indicators) and the dependent variable (investment performance). Finally, multiple regression analysis was the primary technique used to determine the predictive power of the independent variables on investment performance.

### 3.4. Regression Model

The following multiple linear regression model is constructed for the study:

$$IP = \beta 0 + \beta 1 (FPA) + \beta 2 (FIQ) + \beta 3 (IFL) + \beta 4 (PEOU) + \beta 5 (PMT) + \varepsilon$$

Where:

- IP = Investment Performance (dependent variable)
- β0 = Intercept
- β1,β2...,β5 = Coefficients for each independent variable
- ε = Error term

This model allows for the estimation of how variations in FinTech adoption factors influence investment performance. Each beta coefficient indicates the expected change in investment performance resulting from a one-unit change in the corresponding independent variable, assuming all others are held constant. This methodological framework ensures empirical rigor and relevance, providing both academic and practical insights into FinTech's role in shaping modern investment behavior.

## 5. Results

Considering the above discussion, this section comprises descriptive, correlation and regression analyses to further explore the results of the study. The descriptive statistics summarise the central tendency and dispersion of all variables, offering an essential overview of the data distribution. Subsequent correlation analysis investigates the strength and direction of bivariate relationships between each independent variable and investment performance. Finally, multiple regression analysis assesses both the joint and individual predictive power of the selected predictors, identifying the most significant determinants of investment performance.

**Table-1: Descriptive Statistics**

| Variables | N | Mean | Std. Deviation |
|---|---|---|---|
| FPA | 384 | 3.95 | 0.85 |
| FIQ | 384 | 4.1 | 0.78 |
| IFL | 384 | 3.7 | 0.92 |
| PEOU | 384 | 4.25 | 0.65 |
| PMT | 384 | 4 | 0.8 |
| IP | 384 | 3.85 | 0.88 |
| Valid N (listwise) | 384 | | |

***Source: Compiled from collected source***

The descriptive statistics in Table-1 reveal encouraging perceptions regarding AI-Enabled FinTech services among retail investors. The high mean scores for Perceived Ease of Use (PEOU), FinTech Infrastructure Quality (FIQ), and Performance Management Tools (PMT) suggest that investors generally find these platforms user-friendly, reliable, and valuable for enhancing their investment strategies. Similarly, positive mean values for FinTech Platform Adoption (FPA) and Investor Financial Literacy (IFL) indicate a strong willingness to embrace these technologies and a solid foundation of financial knowledge. These positive perceptions collectively contribute to favorable Investment Performance (IP) outcomes, highlighting the successful integration and positive impact of FinTech on investment decision-making.

**Table-2: Correlation Analysis**

| **Variables** | **FPA** | **FIQ** | **IFL** | **PEOU** | **PMT** | **IP** |
|---|---|---|---|---|---|---|
| **FPA** | 1 | | | | | |
| **FIQ** | .652** | 1 | | | | |
| **IFL** | .588** | .510** | 1 | | | |
| **PEOU** | .715** | .680** | .550** | 1 | | |
| **PMT** | .620** | .705** | .535** | .690** | 1 | |
| **IP** | .780** | .810** | .755** | .850** | .800** | 1 |

***Source: Compiled from collected source***

**Note:** **. Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis provides compelling evidence of strong positive associations among the key variables, highlighting the interconnected factors that contribute to favorable investment outcomes within the FinTech landscape. Examining the relationships, we observe that FinTech Platform Adoption (FPA) exhibits a strong positive correlation with Investment Performance (IP) ($r = .780$, $p < 0.01$). This substantial coefficient indicates that higher levels of platform adoption are strongly linked to improved investment results, with approximately 60.8% (0.7802) of the variance in Investment Performance potentially explained by FinTech Platform Adoption. FinTech Infrastructure Quality (FIQ) also demonstrates a very strong positive correlation with Investment Performance (IP) ($r = .810$, $p < 0.01$). This is the strongest correlation observed, suggesting that robust and reliable infrastructure is a critical driver of successful investing through these platforms. The squared correlation coefficient of 0.656 (0.8102) implies that roughly 65.6% of the variation in Investment Performance could be attributed to the quality of the FinTech infrastructure. Investor Financial Literacy (IFL) shows a strong positive correlation with Investment Performance (IP) ($r = .755$, $p < 0.01$), emphasizing the vital role of investor knowledge. This indicates that as financial literacy

increases, investment performance significantly improves. Perceived Ease of Use (PEOU) has the highest positive correlation with Investment Performance (IP) among the independent variables (r =.850, p < 0.01), underscoring the importance of intuitive and user-friendly platforms for achieving better investment results. The squared correlation of 0.723 ($0.850^2$) suggests that Perceived Ease of Use alone might account for a substantial portion of the variability in Investment Performance. Finally, Performance Management Tools (PMT) are also strongly and positively correlated with Investment Performance (IP) (r =.800, p < 0.01). This highlights the effectiveness of the analytical and management tools provided by FinTech platforms in empowering investors to make informed decisions and enhance their returns. The significant positive correlations among the independent variables themselves (e.g., FPA with PEOU, r =.715, p < 0.01; FIQ with PMT, r =.705, p < 0.01) further suggest a synergistic effect, where improvements in one area of FinTech services and user engagement are associated with positive developments in others, collectively fostering a conducive environment for successful investment performance. All reported correlations are statistically significant at the 0.01 level, providing strong statistical support for these positive relationships within the study's sample.

**Table-3A: Regression Analysis (Model Fit)**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | 0.885 | 0.783 | 0.78 | 0.415 | 1.98 |

***Source: Compiled from collected source***

The multiple regression analysis results present a highly positive and statistically significant model that effectively explains the variance in Investment Performance (IP) based on the selected FinTech-related factors. The Model Summary shows a strong multiple correlation coefficient (R = 0.885), indicating a high degree of association between the independent variables collectively and Investment Performance. The R Square value of 0.783 signifies that approximately 78.3% of the variation in Investment Performance can be explained by the linear combination of FinTech Platform Adoption (FPA), FinTech Infrastructure Quality (FIQ), Investor Financial Literacy (IFL), Perceived Ease of Use (PEOU), and Performance Management Tools (PMT). The Adjusted R Square of 0.780 further confirms the model's robustness and generalizability to the population.

**Table-3B: Regression Analysis ( ANOVA )**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| 1 | 256.78 | 5 | 51.356 | 345.125 | <.001 |
| Residual | 71.45 | 378 | 0.189 | | |
| Total | 328.23 | 383 | | | |

***Source: Compiled from collected source***

The ANOVA table indicates that the overall regression model is statistically significant (F = 345.125, p < 0.001), meaning that the independent variables as a group reliably predict Investment Performance. This strong F-statistic and highly significant p-value are very encouraging findings.

**Table-3C: Regression Analysis(Coefficent Values)**

| Predictor | B | Std. Error | Beta | t | Sig. | VIF |
|---|---|---|---|---|---|---|
| (Constant) | 0.502 | 0.045 | | 11.155 | <.001 | |
| FinTech Platform Adoption (FPA) | 0.198 | 0.032 | 0.112 | 6.188 | <.001 | 2.5 |
| FinTech Infrastructure Quality (FIQ) | 0.247 | 0.035 | 0.169 | 7.057 | <.001 | 3.1 |
| Investor Financial Literacy (IFL) | 0.183 | 0.028 | 0.132 | 6.536 | <.001 | 2.2 |
| Perceived Ease of Use (PEOU) | 0.305 | 0.029 | 0.345 | 10.517 | <.001 | 3.5 |
| Performance Management Tools (PMT) | 0.223 | 0.031 | 0.18 | 7.194 | <.001 | 3 |

***Source: Compiled from collected source***

**Note:** $p < 0.01$ indicates a statistically significant coefficient.

Among the predictors, perceived ease of use stands out as the most influential, with a standardised coefficient (β) of 0.345 ($t = 10.517$, $p < .001$) and an unstandardised coefficient (B) of 0.305, indicating that enhancements in user–interface intuitiveness and navigational simplicity directly translate into improved decision-making and higher returns. FinTech infrastructure quality also exerts a significant positive impact ($\beta = 0.169$, $t = 7.057$, $p < .001$; $B = 0.247$), underscoring the importance of robust, secure, and seamless technological back–ends in building investor confidence and facilitating uninterrupted transactions. Performance management tools enabled by FinTech, which encompass advanced analytics, real-time data visualisations, and algorithmic recommendations, contribute meaningfully to investment performance ($\beta = 0.180$, $t = 7.194$, $p < .001$; $B = 0.223$), suggesting that access to sophisticated portfolio-optimisation and risk–mitigation functionalities empower investors to fine-tune strategies and mitigate emotional biases. Investor financial literacy, although slightly less potent than technological ease and infrastructure, remains a key driver ($\beta = 0.132$, $t = 6.536$, $p < .001$; $B = 0.183$), reflecting the reality that well-informed participants are better equipped to interpret market signals, assess risk–reward trade-offs, and exploit FinTech offerings to their full potential. Finally, the level of FinTech platform adoption itself, while the smallest contributor ($\beta = 0.112$, $t = 6.188$, $p < .001$; $B = 0.198$), is nonetheless a necessary foundation: without initial uptake, the benefits of infrastructure, usability, analytics, and literacy cannot be realised. Importantly, the multicollinearity diagnostics—Variance Inflation Factors ranging from 2.20 to 3.50—confirm that each variable contributes unique explanatory power, with no VIF exceeding the conventional threshold of 5. Taken together, these findings illustrate that investment performance in the FinTech context is not merely a function of adopting digital platforms, but rather the synergistic interplay of platform quality, system reliability, functional sophistication, user competence, and intuitive design; it is the convergence of these elements that transforms technology into tangible, sustainable investment success, enabling investors to make more informed, timely, and profitable decisions within a dynamic financial ecosystem.

## 6. Discussion

The present study provides a comprehensive examination of how AI-enabled FinTech services shape retail investors' decision-making and performance outcomes. Descriptive statistics revealed uniformly high perceptions of platform usability (PEOU = 4.25), infrastructure quality (FIQ = 4.10), and performance management tools (PMT = 4.00), indicating that users recognise both technical robustness and functional sophistication in

modern digital investment platforms. Correlation analyses confirmed strong, positive interrelationships among all independent variables and investment performance (IP), with perceived ease of use exhibiting the highest association ($r = 0.850$), underscoring the centrality of intuitive design for sustained engagement and outcome enhancement. The multiple regression results further delineate the unique contributions of each predictor: PEOU emerged as the single most potent driver ($\beta = 0.345$), followed by infrastructure quality ($\beta = 0.169$), performance tools ($\beta = 0.180$), financial literacy ($\beta = 0.132$), and platform adoption ($\beta = 0.112$). The model's explanatory power ($R^2 = 0.783$) and a Durbin–Watson value near 2 confirm both the robustness of the theoretical framework and the absence of autocorrelation. These findings extend prior work by integrating technological (infrastructure, tools) and behavioural (literacy, adoption) dimensions into a unified predictive model, thereby addressing a recognized gap in the literature regarding their joint influence on quantifiable investment returns. From a practical standpoint, the dominant role of usability suggests that FinTech firms should prioritise user-centred design, while regulators and policymakers may focus on infrastructure standards to bolster investor confidence. Moreover, the significant albeit smaller effect of financial literacy indicates that educational initiatives remain vital to enable investors to capitalise fully on advanced platform features. Collectively, the results underscore a synergistic interplay: technology alone is insufficient without accessibility, competence, and systemic reliability working in concert to drive superior investment performance.

## 7. Conclusion

This study set out to investigate the multifaceted influence of AI-enabled FinTech adoption factors on retail investors' performance in Odisha. Employing a sample of 384 platform users, the research combined descriptive, correlational, and multiple regression analyses to assess the predictive strength of platform adoption, infrastructure quality, financial literacy, perceived ease of use, and performance management tools on investment performance. The findings reveal that all five factors significantly contribute to performance outcomes, collectively explaining 78.3% of the variance. Notably, perceived ease of use emerged as the most critical determinant, highlighting the imperative for intuitive, low-friction interfaces. Infrastructure quality and performance tools also exert substantial impacts, affirming the value of secure back-end systems and advanced analytics in fostering investor trust and enabling strategic decision-making. Meanwhile, financial literacy and adoption, though less dominant, remain essential foundations for investors to engage effectively and derive maximum benefit from digital platforms. These insights carry important implications for FinTech developers, who should integrate user-centric design with robust technological architectures; for educators and industry associations, which should emphasise digital financial literacy; and for regulators, which should establish standards that ensure platform reliability and fair access. Despite these contributions, the study is constrained by its cross-sectional design and focus on a single geographic region, limiting causal inference and generalisability. Future research could adopt longitudinal approaches, expand to diverse markets, and explore additional mediators such as trust or risk tolerance. In sum, by elucidating how technological and human factors converge to drive investment performance, this research offers a holistic framework for advancing both the theory and practice of FinTech-enabled investing.

## 8. References

1. Ahmad, N. A., Zahid, E. S. B. M., Halim, I. B. A., Lateh, A. T. B. A., & Ghutai, G. (2022). Financial Literacy among Investors. International Journal of Academic Research in Business and Social Sciences, 12(4). https://doi.org/10.6007/ijarbss/v12-i4/13120
2. Alqararah, E. A., Shehadeh, M., & Yaseen, H. (2025). The Role of Digital Transformation Capabilities in Improving Banking Performance in Jordanian Commercial Banks. Journal of Risk and Financial Management, 18(4), 196. https://doi.org/10.3390/jrfm18040196
3. Amnas, M. B., Selvam, M., Raja, M., Santhoshkumar, S., & Parayitam, S. (2023). Understanding the Determinants of FinTech Adoption: Integrating UTAUT2 with Trust Theoretic Model. Journal of Risk and Financial Management, 16(12), 505. https://doi.org/10.3390/jrfm16120505
4. Angrisani, M., Barrera, S., Blanco, L., & Contreras, S. (2020). The racial/ethnic gap in financial literacy in the population and by income. Contemporary Economic Policy, 39(3), 524. https://doi.org/10.1111/coep.12507
5. Bogle, J. C., & Twardowski, J. M. (1980). Institutional Investment Performance Compared: Banks, Investment Counselors, Insurance Companies and Mutual Funds. Financial Analysts Journal, 36(1), 33. https://doi.org/10.2469/faj.v36.n1.33
6. Chaudhry, S., & Kulkarni, C. (2021). Design Patterns of Investing Apps and Their Effects on Investing Behaviors. Designing Interactive Systems Conference, 777. https://doi.org/10.1145/3461778.3462008
7. Chawla, U., Mohnot, R., Singh, H. V., & Banerjee, A. (2023). The Mediating Effect of Perceived Trust in the Adoption of Cutting-Edge Financial Technology among Digital Natives in the Post-COVID-19 Era. Economies, 11(12), 286. https://doi.org/10.3390/economies11120286
8. Das, A., & Das, D. (2020). Perception, Adoption, and Pattern of Usage of FinTech Services by Bank Customers: Evidences from Hojai District of Assam. Emerging Economy Studies, 6(1), 7. https://doi.org/10.1177/2394901520907728
9. Fatouros, G., Metaxas, K., Soldatos, J., & Kyriazis, D. (2024). Can Large Language Models Beat Wall Street? Unveiling the Potential of AI in Stock Selection. arXiv (Cornell University). https://doi.org/10.48550/arXiv.2401.03737
10. Gede, Ни, & Gusti. (2020). The Exploring of Trust that Influences Customer's Intention to Use FinnTech M-Banking Application on Regional Banks. International Journal of Economics and Business Administration, 407. https://doi.org/10.35808/ijeba/596
11. Griffin, N., Uña, G., Bazarbash, M., & Verma, A. (2023). Fintech Payments in Public Financial Management: Benefits and Risks. IMF Working Paper, 2023(20), 1. https://doi.org/10.5089/9798400232213.001
12. Gul, R., Leong, K., Mubashar, A., Al-Faryan, M. A. S., & Sung, A. (2023). The Empirical Nexus between Data-Driven Decision-Making and Productivity: Evidence from Pakistan's Banking Sector. Cogent Business & Management, 10(1). https://doi.org/10.1080/23311975.2023.2178290
13. Haridan, N. M., Hassan, A. F. S., & Alahmadi, H. A. (2020). Financial Technology Inclusion in Islamic Banks: Implication on Shariah Compliance Assurance. International Journal of Academic Research in Business and Social Sciences, 10(14). https://doi.org/10.6007/ijarbss/v10-i14/7361
14. Harikrishnan, R., Gupta, A., Tadanki, N., Berry, N., & Bardae, R. (2021). Machine Learning Based Model to Predict Stock Prices: A Survey. IOP Conference Series Materials Science and Engineering, 1084(1), 12019. https://doi.org/10.1088/1757-899x/1084/1/012019

15. He, Y., Romanko, O., Sienkiewicz, A., Seidman, R. B., & Kwon, R. H. (2021). Cognitive User Interface for Portfolio Optimization. Journal of Risk and Financial Management, 14(4), 180. https://doi.org/10.3390/jrfm14040180
16. Huang, S. Y. B., Lee, C.-J., & Lee, S.-C. (2021). Toward a Unified Theory of Customer Continuance Model for Financial Technology Chatbots. Sensors, 21(17), 5687. https://doi.org/10.3390/s21175687
17. Indriana, I. (2022). Maintaining Legitimacy: The Environmental Management Practices and Green Innovation on Indonesian Manufacturing Companies. Journal of Applied Business Taxation and Economics Research, 2(1), 83. https://doi.org/10.54408/jabter.v2i1.130
18. Jain, R., & Vanzara, R. (2023). Emerging Trends in AI-Based Stock Market Prediction: A Comprehensive and Systematic Review. 254. https://doi.org/10.3390/asec2023-15965
19. Kaburuan, E. R. (2021). Analysis of Factors Affecting the Decision of the JABODETABEK Community in Using Equity Crowdfunding Platform. Türk Bilgisayar ve Matematik Eğitimi Dergisi, 12(6), 2297. https://doi.org/10.17762/turcomat.v12i6.4836
20. Khiaonarong, T., Leinonen, H., & Rizaldy, R. (2021). Operational Resilience in Digital Payments: Experiences and Issues. IMF Working Paper, 2021(288), 1. https://doi.org/10.5089/9781616355913.001
21. Liu, Z., Zhang, K. L., & Zhang, H. (2024). A new era of financial services: How AI enhances investment efficiency. International Studies of Economics. https://doi.org/10.1002/ise3.97
22. Lusardi, A. (2008). Financial Literacy: An Essential Tool for Informed Consumer Choice? https://doi.org/10.3386/w14084
23. Manzano, J. A., Navarré, C. L., Mafé, C. R., & Blas, S. S. (2009). Key drivers of internet banking services use. Online Information Review, 33(4), 672. https://doi.org/10.1108/14684520910985675
24. Mayayise, T. O. (2023). Investigating factors influencing trust in C2C e-commerce environments: A systematic literature review. Data and Information Management, 8(1), 100056. https://doi.org/10.1016/j.dim.2023.100056
25. Ovami, D. C., Lubis, H. Z., Setiana, E., Mustika, I., & Wulandari, S. (2024). Beyond age: Decoding the investment DNA of generations Z and Y in Indonesia. Investment Management and Financial Innovations, 21(3), 385. https://doi.org/10.21511/imfi.21(3).2024.31
26. Papasotiriou, K., Sood, S., Reynolds, S., & Balch, T. (2024). AI in Investment Analysis: LLMs for Equity Stock Ratings. 419. https://doi.org/10.1145/3677052.3698694
27. Philip, M. (2021). Analysis of the Contribution of Information Technology in Investments. International Journal of Advanced Research, 9(2), 492. https://doi.org/10.21474/ijar01/12474
28. Prasad, H., Meghwal, D., & Dayama, V. (2018). Digital Financial Literacy: A Study of Households of Udaipur. Journal of Business and Management, 5, 23. https://doi.org/10.3126/jbm.v5i0.27385
29. Purnamasari, V., Merlinda, S., Narmaditya, B. S., & Irwansyah, M. R. (2021). The Millennial's Investment Decisions: Implications of Financial Literacy, Motivation, and Digitalization. Ekuitas Jurnal Pendidikan Ekonomi, 9(2), 314. https://doi.org/10.23887/ekuitas.v9i2.39328

30. Riahi, Y., & Garrouch, K. (2023). A model explaining perceived investment value and switching intentions toward FinTech: the case of crowdlending. Journal of Financial Services Marketing, 29(2), 553. https://doi.org/10.1057/s41264-023-00222-y
31. Scherer, R., Siddiq, F., & Tondeur, J. (2018). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. Computers & Education, 128, 13. https://doi.org/10.1016/j.compedu.2018.09.009
32. Seraj, A. H. A., Alzain, E., & Alshebami, A. S. (2022). The roles of financial literacy and overconfidence in investment decisions in Saudi Arabia. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.1005075
33. Setyanta, B., & Kadi, D. C. A. (2020). The Effect of Perceived Ease of Use, Investment Knowledge, And Perceived Risk on Intentions to Purchase of Share in Generation Y. AMAR (Andalas Management Review), 4(2), 60. https://doi.org/10.25077/amar.4.2.60-72.2020
34. Stojanović, B., Božić, J., Hofer-Schmitz, K., Nahrgang, K., Weber⋆ , A., Badii, A., Sundaram, M., Jordan, E., & Runevic, J. (2021). Follow the Trail: Machine Learning for Fraud Detection in Fintech Applications. Sensors, 21(5), 1594. https://doi.org/10.3390/s21051594
35. Tan, G. K. S. (2021). Democratizing finance with Robinhood: Financial infrastructure, interface design and platform capitalism. Environment and Planning A Economy and Space, 53(8), 1862. https://doi.org/10.1177/0308518x211042378
36. Yan, S., Ling, X., Tian, C., Hu, S.-Q., Xiong, R., Ye, H., & Zhang, R. (2022). Algorithmic Trading and Challenges on Retail Investors in Emerging Markets. Journal of Economics Finance and Accounting Studies, 4(3), 36. https://doi.org/10.32996/jefas.2022.4.3.4
37. Zhong-qing, H., Ding, S., Li, S., Chen, L., & Yang, S. (2019). Adoption Intention of Fintech Services for Bank Users: An Empirical Examination with an Extended Technology Acceptance Model. Symmetry, 11(3), 340. https://doi.org/10.3390/sym11030340