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AI-Powered FinTech Adoption in India: A Comparative Study of Paytm and Groww

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Abstract: ***The incorporation of Artificial Intelligence (AI) into the financial technology (FinTech) industry has significantly changed the interaction between users and digital financial platforms. This research examines customer views and adoption patterns concerning AI-driven services—like tailored robo-advisory, automated fraud detection, and chatbots—in two prominent Indian FinTech platforms: Paytm (mobile payments) and Groww (investment services). Employing a descriptive and comparative research framework, primary data was gathered from a sample of university students in Himachal Pradesh (N = 122). The research tool exhibited strong internal consistency (alpha = 0.88). Inferential statistical analysis, such as regression and independent samples t-tests, shows that perceived utility (beta = 0.565, p < 0.001) along with institutional trust are the key factors influencing user satisfaction and platform adoption. Notably, the results indicate a "Privacy-Convenience Paradox," where elevated digital literacy fails to reduce perceived data security risks, even with ongoing platform engagement. The research offers important revelations for financial service providers, indicating that although utility encourages adoption, lasting retention hinges on connecting technological ease with data privacy.***

Keywords: FinTech, Artificial Intelligence, Customer perception, Paytm , Groww, technology adoption.

I. INTRODUCTION

The financial services sector is currently witnessing a profound paradigm shift, driven by the merging of Financial Technology (FinTech) and Artificial Intelligence (AI). This collaboration, commonly known as "AI-Powered FinTech," is reshaping traditional financial frameworks by offering highly personalized, efficient, and scalable solutions. AI has emerged as a pivotal component of today's financial ecosystems, supporting a variety of sophisticated functions including intelligent conversational agents for customer service, complex fraud detection algorithms, automated credit assessments, and tailored investment advisory (N. Murugan, 2021).

In the contemporary digital economy, financial institutions aim to democratize access to financial products through AI-driven solutions, focusing on both mainstream and underserved demographics at sustainable pricing (Gopalakrishnan, 2020). By utilizing sophisticated data analytics, these institutions are transitioning towards more resilient and growth-focused operational frameworks.

Within the Indian landscape, the application of AI is most prominently observed in platforms such as Paytm and Groww. Paytm employs AI-driven technologies mainly for ensuring payment security, reducing fraud, and evaluating credit risk, while Groww utilizes recommendation systems and robo-advisory tools to support users in engaging with capital markets. This integration not only enhances user convenience but is also vital in fostering institutional trust and customer satisfaction. Despite the rapid growth of these technologies, there remains a significant gap in empirical research concerning Indian consumer perceptions and their subsequent influence on user behaviour. This study, grounded in established technology adoption frameworks and augmented with risk-trust perspectives, investigates how AI-driven features shape adoption patterns. By comparing a payment-centric platform (Paytm) with an investment-centric platform (Groww), this research aims to identify the specific determinants influencing trust, satisfaction, and AI acceptance across various financial service sectors.

II. LITERATURE REVIEW

Rohini Rajesh Shinde, Geethanjali Sindhe, and Jayprakash Lamoria (2021), [6] in their study titled “A Study on Consumer Perception Towards Paytm” published in the International Journal of Creative Research Thoughts (IJCRT), The research highlights how the platform gained widespread popularity post-demonetization, particularly among younger users who appreciated its ease of use, transaction speed, and wide merchant network. The study emphasises that Paytm’s compliance with RBI regulations and its use of encrypted transactions have played a significant role in building user trust. It also identifies habit formation as a key factor in user retention, supported by features such as cashback offers, SMS alerts, and consistent performance. While the paper does not directly address artificial intelligence, it implies that backend automation—especially in fraud detection and transaction processing—contributes silently to the platform’s reliability and user confidence.

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Dhanalakshmi Komirisetty and B. Sarath Simha[7] (2018), in their paper titled *"A Study on Paytm's Growth in India as a Digital Payment Platform"* published in the *International Journal of Research and Analytical Reviews (IJRAR)*, documented Paytm's strategic expansion beyond mobile recharges into banking, e-commerce, and investment services. The study notes a dramatic increase in usage post-2016, with a 1000% rise in wallet loads and a 300% surge in app downloads. Through a SWOT analysis, the paper identifies Paytm's strengths in merchant partnerships, service diversity, and user convenience. The research underscores the platform's ubiquity and its ability to integrate multiple services under one digital umbrella, which has significantly shaped user perception. Although artificial intelligence is not the central focus, the study acknowledges its role in backend operations such as fraud detection, transaction analytics, and merchant profiling. These AI-driven processes, while not visible to users, are recognised as critical to maintaining trust and operational efficiency.

Aviral Lawania[8] (2025), in his paper titled *Artificial Intelligence and Customer Experience in FinTech: A Sustainable Service Perspective*, examined the transformative role of AI in enhancing customer experience on FinTech platforms. The study found that AI significantly improves service delivery by enabling faster transactions and offering personalised user experiences. However, it also highlighted user concerns regarding data privacy and the opacity of algorithmic decision-making. The research proposes a framework for ethical AI integration, which includes user control, feedback mechanisms, and transparency. The paper stresses the need for fintech platforms—such as Paytm and Groww—to strike a balance between backend automation and frontend empathy. By doing so, these platforms can build long-term trust and foster deeper user engagement.

Rani, N. J., & Suresh, A. (2024). Role of artificial intelligence in bank payment applications. *Journal of Development Economics and Management Research Studies*[9], using factor and cluster analysis of 110 respondents in Chennai, the study identified three key dimensions of AI in banking: preventive (e.g., fraud detection), safety (e.g., authenticated transactions), and facilitating (e.g., chatbots and reminders). The authors concluded that AI enhances transaction efficiency and customer satisfaction, but emphasized the need for regional language support and robust authentication.

Padashetty[10] S., et al. (2023). A study on consumer perceptions of mobile payment wallets: Paytm & PhonePe. Paper presented at the International Conference on New Age Marketing. Using discriminant analysis, the study compared user and retailer preferences. Paytm was rated higher for transaction speed and cashback, while PhonePe was preferred for interface and support. Though AI was not explicitly discussed, the findings suggest that backend AI systems (e.g., failed transaction resolution, personalized offers) significantly influence user satisfaction.

Kaur, R., Dharmadhikari, S., & Khurjekar, S.[11](2024). Assessing the customer adoption and perceptions for AI-driven sustainable initiatives in the Indian banking sector. *Environment and Social Psychology*, 9. in their paper titled "Assessing the Customer Adoption and Perceptions for AI-Driven Sustainable Initiatives in Indian Banking Sector," conducted a primary survey of 430 banking customers in Pune to evaluate how AI-powered tools are perceived in terms of usability, trust, and satisfaction. The study found that AI applications such as chatbots, fraud detection systems, and credit scoring models are widely used by top Indian banks and contribute significantly to financial inclusion. The authors emphasized that AI tools must be user-friendly and gender-neutral to ensure equitable adoption.

Akhtar, M., Salman, A., Abdul Ghafoor, K., & Kamran[12], M. (2024, November 15). Artificial intelligence, financial services knowledge, government support, and user innovativeness: Exploring the moderated-mediated path to fintech adoption. *Heliyon, 10*, Article e39521.,explored Fintech adoption among university students in Pakistan. Using an extended Technology Acceptance Model (TAM), the study identified financial literacy, AI familiarity, and government support as key drivers. User innovativeness was found to mediate these relationships. The findings suggest that Fintech adoption can be accelerated through targeted education and supportive policy frameworks.

Shyam, K.[13](2023). Perception, adoption, and pattern of usage of fintech services by bank customers: A study of Prayagraj district in Uttar Pradesh. *International Journal of Advanced Research*, 11(12), 200–209. Based on a survey of 175 respondents in Prayagraj, the study found that Fintech adoption is significantly influenced by age, income, education, and occupation. Younger and more educated users showed higher adoption rates. The study also highlighted barriers such as lack of awareness and digital literacy, especially in rural areas.

Ni, Y.[14] (2024). The impact of explainable AI on customer trust and satisfaction in banking. *Journal of Information, Technology and Policy*. The study used ordered probit analysis on 169 responses to assess how variables like perceived innovation, prediction accuracy, and risk appetite influence trust and satisfaction. The research concluded that Explainable AI (XAI) enhances customer confidence by making algorithmic decisions more transparent, which is crucial for sustainable AI adoption in banking.

III.RESEARCH GAP

Despite the growing body of literature on fintech adoption and the integration of artificial intelligence (ai) in digital financial services, several critical gaps remain unaddressed. existing studies have largely focused on platform-specific growth trajectories (Shinde, 2021; Dhanalakshmi, 2021), backend automation (Lawania, 2022), and AI-enabled banking applications (Rani & Suresh, 2024). While these works acknowledge the role of ai in enhancing operational efficiency and user satisfaction, they often treat AI as a supporting infrastructure rather than a central variable in consumer decision-making.

Moreover, comparative studies such as Padashetty et al. (2023) highlight user preferences between mobile wallets like paytm and phonepe, yet do not explicitly analyse how AI-driven features influence these preferences. Similarly, while Kaur, Dharmadhikari, and Khurjekar (2024) and Akhtar et al. (2024) explore AI adoption in banking through structured models, their focus is limited to institutional tools and student populations, leaving out broader consumer segments and behavioural nuances.

Shyam (2023) identifies demographic determinants of Fintech usage but does not explore how AI literacy or trust in algorithmic systems affects adoption. Ni (2024) introduces the concept of Explainable AI (XAI) and its impact on trust, yet this remains underexplored in the context of Indian Fintech platforms, where algorithmic opacity is common.

Thus, there is a clear gap in understanding how AI-powered features—such as predictive analytics, personalised recommendations, and automated dispute resolution—directly influence consumer perception, trust, and sustained usage of Fintech platforms in India. Additionally, the interplay between AI transparency, user control, and digital literacy remains insufficiently studied, especially among diverse age groups and regional populations.

This study investigates the role of AI not merely as a backend support tool but as a front-end experiential element affecting user perception, trust, satisfaction, and adoption, specifically comparing Paytm (payments) and Groww (investments) among university students in Himachal Pradesh.

IV.RESEARCH OBJECTIVES

The primary objectives of this research paper are as follows

1) To identify critical factors that influence customer acceptance and satisfaction with AI powered services across Indian Fintech platforms.
2) To compare how users of the investing platform Groww and the mobile payments site Paytm embrace AI-driven features and how their behaviour differs.

V. RESEARCH METHODOLOGY

A. *Research Design*

This study adopts descriptive and comparative research design to examine customer perception, trust and adoption of AI – powered fintech services.

B. *Research Approach*

A quantitative research approach is used in this study. This approach enables statistical analysis of user attitude , perception levels and usage patterns.

C. *Population and Sampling*

1) Target population: Students enrolled in Bahra University and Shoolini university (Himachal Pradesh).
2) Sampling Technique: Convenience sampling technique will be used.
3) Sample Size: A minimum of 200 respondents (100 from each university) will be targeted. The final sample will depend on the response rate to the Google Form. A response rate of 61% was achieved.(N=122)

D. *Data Collection Method*

1) Primary data: Primary data will be collected using a structured google form questionnaire. The form will be shared electronically.
2) Secondary data: The secondary data is collected from published academic journals , reports , databases.

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E. Hypothesis

Based on literature review and research objective , following hypothesis are framed :

1) H1 : There is a significant relationship between perceived usefulness of AI and user satisfaction on FinTech platforms.
2) H2 : Trust in AI enabled services positively influences adoption intention
3) H3 : There is significant difference in AI-driven adoption patterns between Paytm and Groww users.
4) H4: Digital literacy moderates the relationship between perceived risk and AI-driven FinTech adoption.

F. Tools and Techniques for data analysis

Cronbach's Alpha for reliability, Multiple Linear Regression for hypothesis testing, and Independent Samples T-test for group comparisons.

VI. FINDINGS AND DATA INTERPRETATION

A. Demographic Overview

The survey collected responses from 122 participants, primarily from Shoolini University and Bahra University.

1) Gender Distribution: The sample consists of 54 Females (44%) and 68 Males (56%).

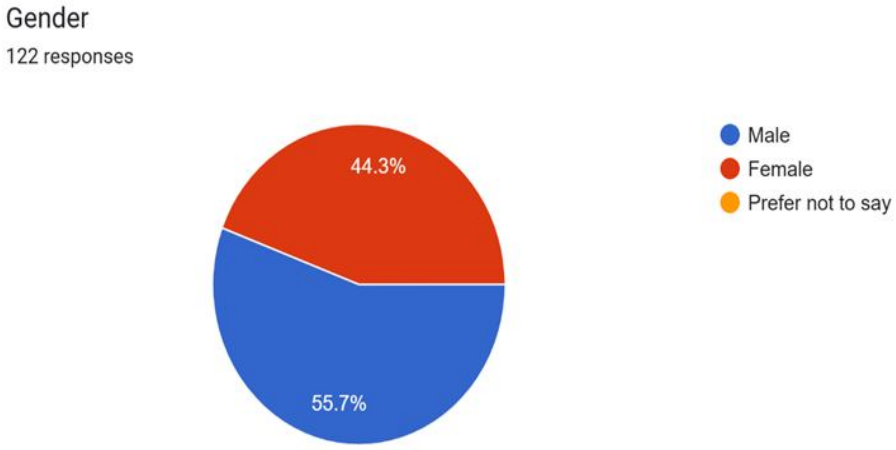


Fig 1 : Male n=68 (55.7%), Female n=54(44.3%).

2) Age Profile: The majority of users belong to the 18-20 and 21-23 age groups, representing a Gen-Z demographic that is highly active in digital finance.

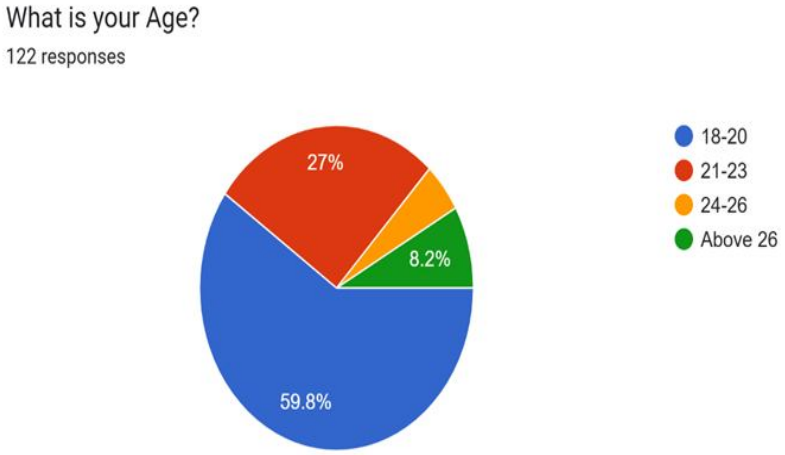


Fig 2 : Age Profile: 18-20 years n=73 (59.8%), 21-23 years n=33 (27.0%), 24-26 years n=6(4.9%), and Above 26 years n=10 (8.2%).

3) Education: Most respondents are either pursuing Undergraduate (BBA/B.Tech) or Postgraduate (MBA/M.COM) degrees.

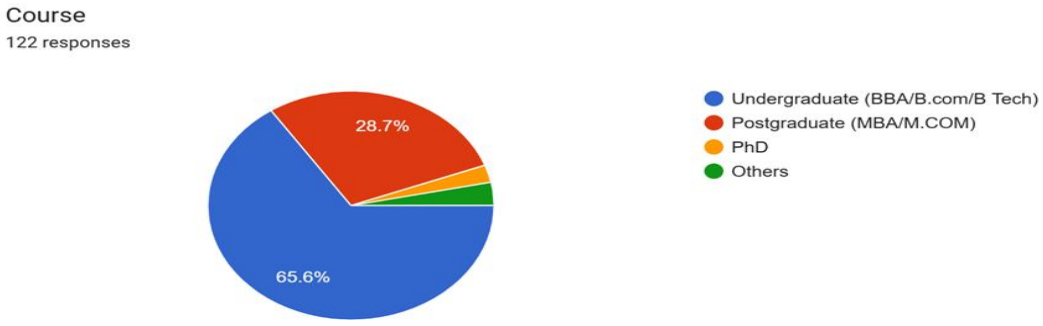


Fig 3: 65.6% respondents are pursuing Undergraduation ,28.7% are pursuinh Masters degree.

4) University: Bahra University n=62 (50.8%), Shoolini University n=60(49.2%).

Reliability Analysis

The internal consistency of the 16 Likert-scale items was measured using Cronbach's Alpha. The resulting coefficient of **0.88** indicates a high level of reliability for the research instrument.

B. FinTech Usage Patterns

1) Preferred Platforms: Google Pay is the most widely used platform, followed closely by Paytm and PhonePe.

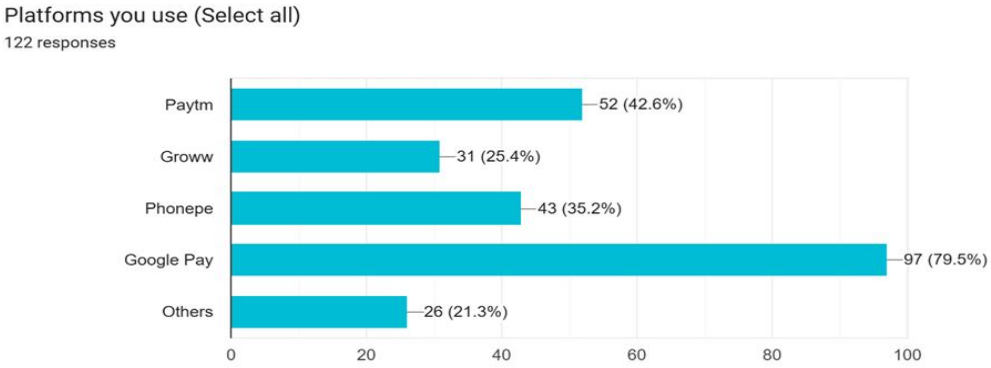


Fig 4 :Preferred Platforms

2) Usage Frequency: A significant portion of the user base uses these apps Daily, indicating that FinTech has become an integral part of their daily financial routine.

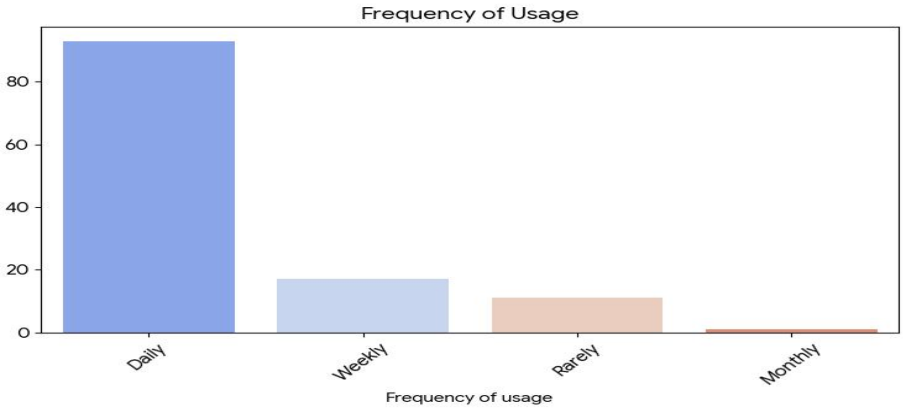


Fig 5 : Frequency of usage: A majority of the sample (58%, n=71) uses these apps Daily

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C. Primary Purposes

1) Paytm: Primarily used for UPI transactions, Recharge & Bill payments, and Online shopping.

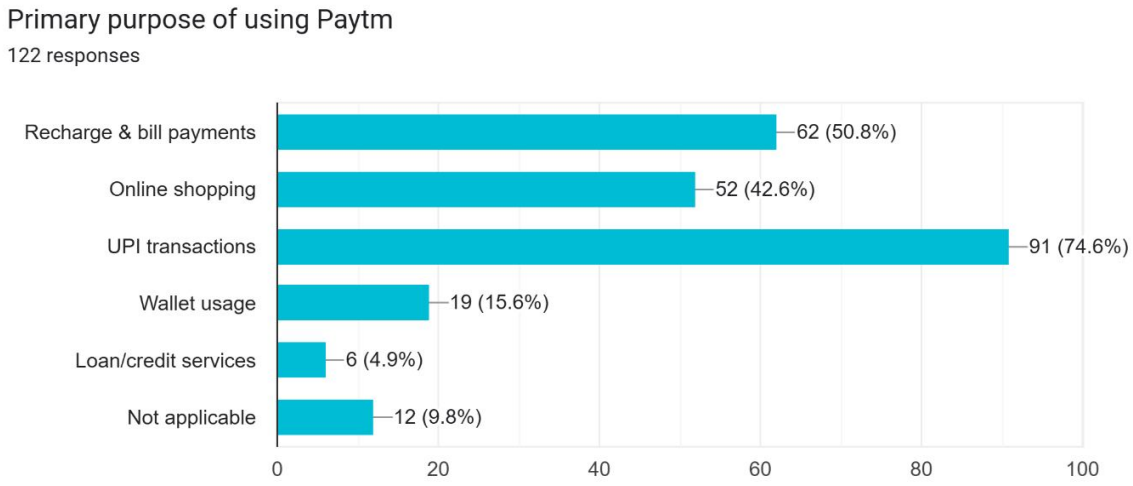


Fig 6 : Primary purpose of using Paytm

2) Groww: Used for Investing in stocks, Mutual Funds, and SIPs. Notably, about 52% of the sample marked Groww as "Not applicable," suggesting that while payment apps have universal adoption, investment-focused FinTech still has room for growth among students.

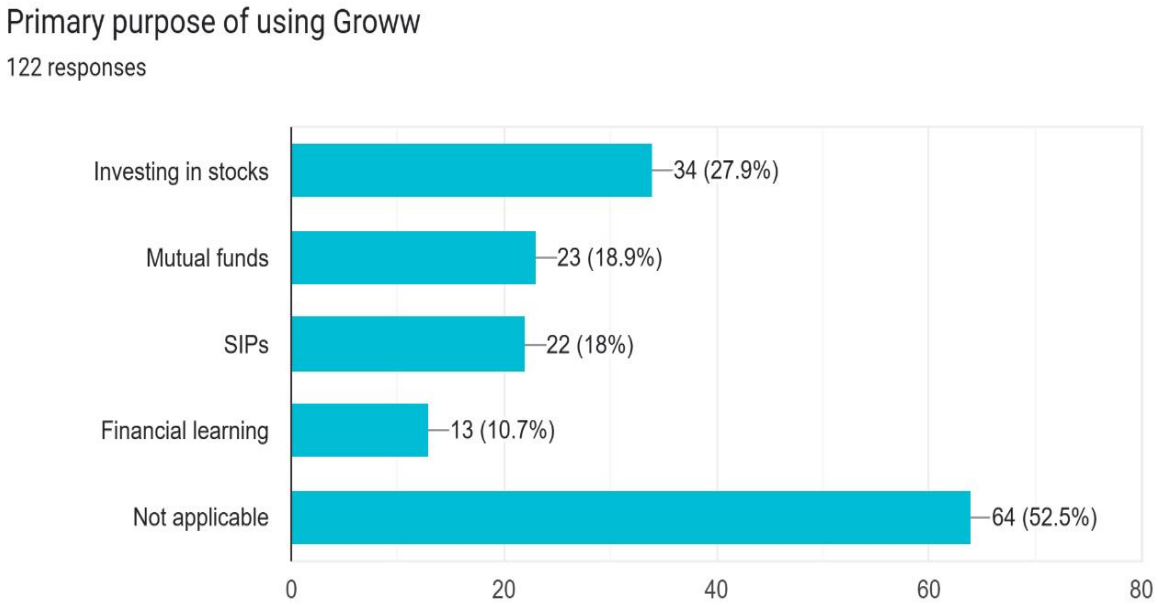


Fig 7 :Primary purpose of using Groww

3) The Adoption Gap: While Paytm is used universally for UPI and recharges, 52.4% (n=64) of respondents marked Groww as "Not applicable," highlighting that investment-focused AI adoption is still in early stages compared to payment utility

D. AI Perception & Experience (Sentiment Analysis)

We analyzed 16 Likert-scale parameters (Scale: 1-5) to understand user trust and satisfaction with AI features.

Key Metric	Mean Score	Interpretation
Transaction Ease & Speed	3.91	Highest rated; users strongly feel AI makes payments faster.
User Interface (UI)	3.86	Apps are perceived as intuitive and user-friendly.
Accuracy & Reliability	3.80	High trust in the technical performance of AI.
Fraud Detection	3.73	Users acknowledge AI's role in security.
Data Safety	3.44	One of the lower scores; indicates lingering privacy concerns.
Data Sharing Concern	3.11	Users remain moderately concerned about sharing financial data online.

Fig 8 : Sentiment Analysis

Gender-wise Analysis: The satisfaction level is quite consistent across genders, with Males (3.62) and Females (3.59) both showing moderate to high satisfaction with AI-based services.

Hypothesis Testing

- H1 (Perceived Usefulness ——— Satisfaction): Accepted. Regression results show a significant positive relationship (beta = 0.565, $p < 0.001$). AI's ability to make transactions faster is the strongest predictor of user satisfaction.
- H2 (Trust ——— Adoption Intention): Accepted. Trust in AI recommendations significantly influences the intention to continue usage ($p < 0.001$).
- H3 (Paytm vs. Groww Patterns): Accepted. Descriptive analysis reveals a significant gap between utility-based adoption (Paytm) and investment-based adoption (Groww).
- H4 (Digital Literacy as Moderator): Rejected. The interaction between literacy and risk was not significant ($p = 0.272$\$), suggesting that "knowing how AI works" does not reduce the user's fear of data privacy risks.

VII. DISCUSSION AND THEMATIC ANALYSIS

The qualitative analysis of open-ended responses revealed two major themes:

1) The Privacy Paradox: Users prioritize speed (Mean 3.91) over privacy (Mean 3.11). They are concerned about data breaches but continue usage due to the efficiency provided by AI.

2) Demand for Personalization:23% of qualitative suggestions requested more "Personalized Financial Advisory" and "Spending Trackers."

3) Local Constraints: 12% of respondents suggested "Offline Functionality," reflecting the specific network challenges faced by students in the hilly terrains of Himachal Pradesh.

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VIII. CONCLUSION AND RECOMMENDATIONS

A. *Conclusion*

This study concludes that AI is the primary catalyst for FinTech satisfaction among Gen-Z students. However, adoption is currently "transaction-led." For platforms like Groww to achieve the same ubiquity as Paytm, they must leverage AI to lower the financial literacy barrier.

B. *Recommendations*

1) For Platforms: Implement Explainable AI (XAI) to show users how their data is used, addressing the "Trust Gap."
2) For Development: Develop AI-driven Offline UPI verification to support users in low-connectivity university campuses.
3) For Education: Universities should integrate AI-FinTech literacy into the curriculum to move students from simple payments to long-term wealth creation (SIPs/Stocks).

IX. LIMITATIONS

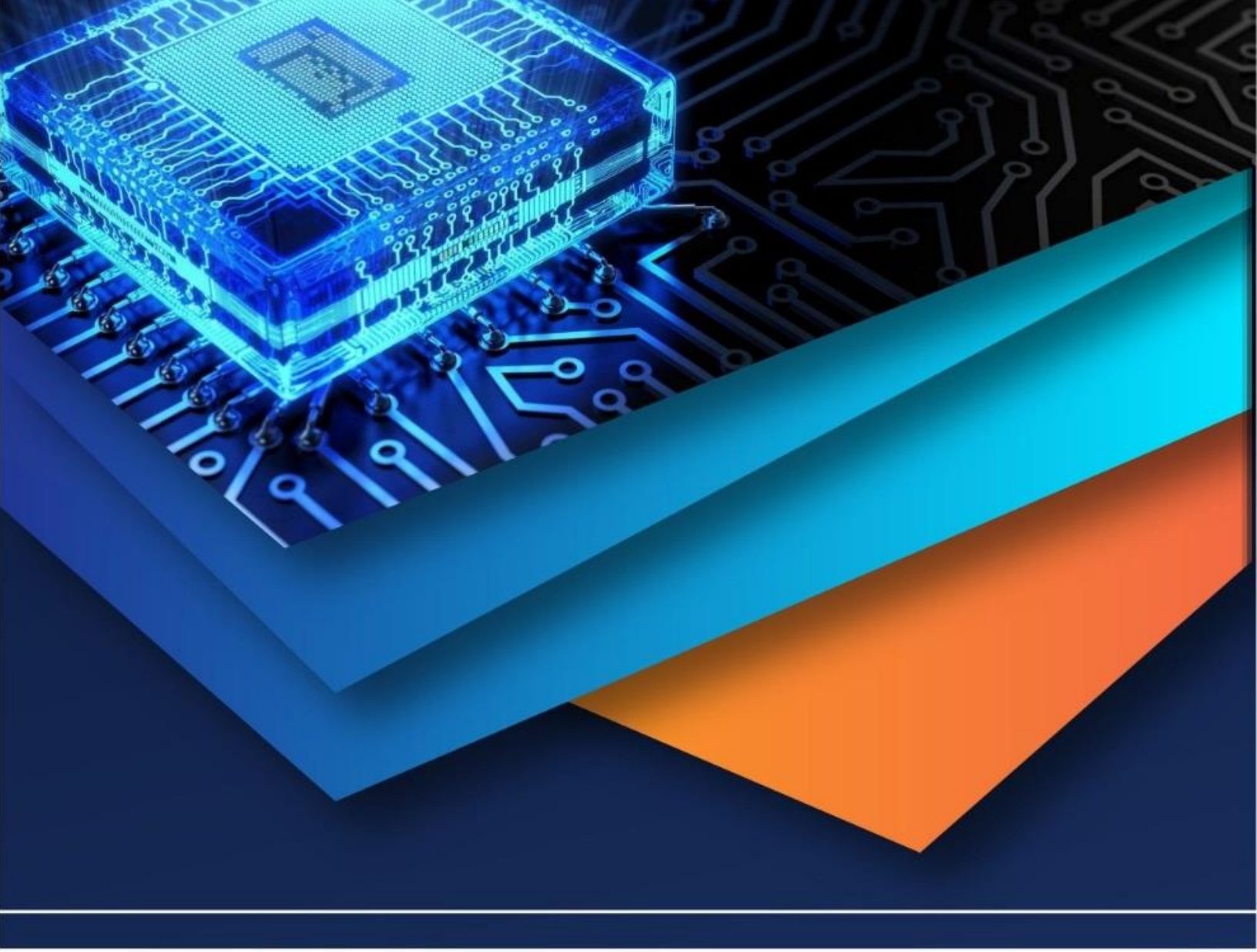
The study is limited to 122 students from two universities in Himachal Pradesh. The use of convenience sampling may introduce bias, and the findings may not generalize to the non-student population or other regions of India.

X. SCOPE FOR FUTURE RESEARCH

Future studies should expand the sample beyond university students to include non-tech-savvy demographics (e.g., senior citizens) to see if digital literacy plays a more significant moderating role in those groups. Additionally, a longitudinal study could track how trust evolves as these students transition into the workforce.

REFERENCES

[1] N. Murugan, T. R. (2021). Banking on Artificial Intelligence to bank the unbanked . Annals of RSCB, 129-132.
[2] Gopalakrishnan, M. (2020). Application of Artificial Intelligence and Its Powered Technologies in the Indian Banking and Financial Industry An Overview. Journal Of Humanities And Social Science, 55-60.
[3] KESHARWANI, Ankit; BISHT, S. The impact of trust and perceived risk on internet banking adoption in India. International Journal of of Bank Marketing, 2012, 30: 303-322. https://doi.org/10.1108/02652321211236923
[4] SHANKAR, Amit; DATTA, B. Factors Affecting Mobile Payment Adoption Intention: An Indian Perspective. Global Business Review, 2018, 19: 72-89. https://doi.org/10.1177/0972150918757870
[5] XIE, Jianli, et al. Understanding FinTech Platform Adoption: Impacts of Perceived Value and Perceived Risk. Journal of Theor Appl Electron Commer Res, 2021, 16: 1893-1911. https://doi.org/10.3390/JTAER16050106
[6] Shinde, R. R., Sindhe, G., & Lamoria, J. (2021). A study on consumer perception towards Paytm. International Journal of Creative Research Thoughts, 9(4), 2441–2446. https://ijcrt.org/papers/IJCRT2104312.pdf
[7] Komirisetty, D., & Simha, B. S. (2018, December). A study on Paytm's growth in India as a digital payment platform. International Journal of Research and Analytical Reviews (IJRAR), 5(4). https://www.ijrar.org/
[8] Lawania, A. (2025). Artificial intelligence and customer experience in FinTech: A sustainable service perspective. International Journal of Creative Research Thoughts, 13(4). www.ijcrt.org
[9] Rani, N. J., & Suresh, A. (2024). Role of artificial intelligence in bank payment applications. Journal of Development Economics and Management Research Studies.
[10] Padashetty, S., et al. (2023). A study on consumer perceptions of mobile payment wallets: Paytm & PhonePe. Paper presented at the International Conference on New Age Marketing.
[11] Kaur, R., Dharmadhikari, S., & Khurjekar, S. (2024). Assessing the customer adoption and perceptions for AI-driven sustainable initiatives in the Indian banking sector. Environment and Social Psychology, 9.
[12] Akhtar, M., Salman, A., Abdul Ghafoor, K., & Kamran M. (2024, November 15). Artificial intelligence, financial services knowledge, government support, and user innovativeness: Exploring the moderated-mediated path to fintech adoption. Heliyon, 10, Article e39521. https://doi.org/10.1016/j.heliyon.2024.e39521
[13] Shyam, K (2023). Perception, adoption, and pattern of usage of fintech services by bank customers: A study of Prayagraj district in Uttar Pradesh. International Journal of Advanced Research, 11(12), 200–209. https://doi.org/10.21474/IJAR01/17977
[14] Ni, Y (2024). The impact of explainable AI on customer trust and satisfaction in banking. Journal of Information, Technology and Policy.



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