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To Study the Impact of Adoption and Trust In AI-Based Robo-Advisory Platforms Among Investors in Raipur

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Abstract- ***This research investigates the factors influencing the adoption of AI-based robo-advisory platforms among retail investors in Raipur, Chhattisgarh. As financial services transition toward automation, understanding how individual investors in emerging markets perceive non-human financial advice is critical. While most studies focus on Tier-1 metropolitan areas, this research addresses a significant geographical gap by providing localized insights into a Tier-2 commercial hub. Using a quantitative descriptive design, primary data was collected from 75 active investors through purposive sampling. The study utilizes the Technology Acceptance Model (TAM) to analyse how variables such as trust, perceived risk, and perceived ease of use affect an investor's willingness to use AI platforms. Furthermore, it bridges a behavioural gap by measuring actual capital allocation—the percentage of wealth investors are willing to entrust to algorithms. Data was analysed using Microsoft Excel, employing manual calculations for Pearson Correlation and Independent t-tests to verify hypotheses. The findings aim to assist fintech developers and financial institutions in building trust and increasing digital adoption within localized Indian markets. The study concludes that addressing the "trust deficit" is essential for the long-term success of AI-driven wealth management in regional economies.***

Keywords: Robo-Advisory, Artificial Intelligence, Wealth Management, Behavioural Finance, Trust Deficit, Algorithmic Aversion, Retail Investors, Fintech Adoption, Tier-2 Cities, Capital Allocation

I. INTRODUCTION

The provided introduction details the tectonic shift in the financial services industry as it moves from human-led consultancy to AI-driven Robo-Advisory.

These platforms leverage Machine Learning and Modern Portfolio Theory to automate asset management, effectively democratizing high-level financial engineering by lowering costs and capital requirements. While this transition eliminates human errors like cognitive bias and conflicts of interest, it introduces a significant psychological barrier: the "Trust Deficit." Investors often struggle with Algorithmic Aversion, hesitating to entrust their life savings to "black-box" code that lacks human empathy and accountability.

In the Indian context, this digital evolution is fuelled by robust public infrastructure like UPI and increased retail participation in Tier-2 cities. However, the paper notes that efficiency alone does not guarantee adoption. The core friction lies in the leap of faith required to move from using apps for simple data tracking to allowing AI to make autonomous execution decisions. This creates a complex dynamic where technological capability is constantly clashing with the investor's need for transparency and security.

Focusing specifically on Raipur, Chhattisgarh, the research highlights a unique cultural intersection. The city is caught between traditional financial preferences—such as gold and real estate—and a rising class of tech-savvy professionals seeking equity-based returns. The study aims to dissect the "anatomy of trust" in this specific market, analysing how factors like UI/UX, financial literacy, and perceived security influence the adoption of robo-advisors. Ultimately, the paper seeks to provide a roadmap for fintech platforms to bridge the gap between algorithmic sophistication and human trust in rapidly growing urban centres.

II. REVIEW OF LITERATURE

(Nain, 2024) The paper establishes that initial trust is a critical mediator in the adoption of financial robo-advisors (FRAs) among young retail investors, with trust directly influencing behavioural intentions to

use these platforms. Key findings highlight those higher levels of initial trust, shaped by reduced perceived risks, lead to greater willingness to adopt FRAs, underscoring the 'no trust, no use' dynamic in AI-driven financial advisory services.

(Oehler, 2021) Investor characteristics significantly influence the decision to adopt robo-advisors, with willingness to take risk and internal locus of control emerging as key predictors in multivariate analyses. While univariate tests highlight extraversion and optimism as factors, trust in robo-advisors is indirectly supported by higher investment amounts among adopters, though direct trust metrics are not explicitly measured. Participants using robo-advisors demonstrate greater overall investment engagement compared to non-users.

(Bhatia, 2020) The paper finds that robo-advisory adoption in India is in its nascent stage since 2015, with trust emerging as a critical factor influenced by the technology's ability to provide unbiased, algorithm-driven advice. Experts highlight that higher trust in robo-advisors stems from their potential to reduce emotional decision-making, though adoption remains limited due to familiarity with traditional advisors. Overall, building trust through transparency and proven performance is essential for wider acceptance among retail investors.

(Yi, 2023) The study reveals that trust in robo-advisory platforms significantly enhances millennials' willingness to adopt these AI-driven tools for wealth management. Financial knowledge and perceived usability further amplify this adoption, creating a positive interplay where higher trust levels correlate with increased engagement. These findings underscore trust as a pivotal element in overcoming reluctance among tech-savvy young investors, promoting sustainable financial practices.

(Fan, 2020) The study identifies positive associations between robo-advisor adoption and factors such as the need to free up time, higher risk tolerance, higher subjective financial knowledge, and greater investable assets among individual investors. Interaction effects reveal that individuals under 65 with higher risk tolerance and greater perceived investment knowledge are more likely to adopt robo-advisors. Trust is not directly examined but implied through attitudinal factors like perceived knowledge, which may enhance confidence in automated platforms.

(Panwar, 2025) The paper highlights that adoption of AI-driven financial advisory services enhances the speed and accuracy of investment decision-making, fostering greater trust among investors in technology-integrated platforms. It identifies a positive correlation between perceived reliability of AI tools and investor confidence, though limitations such as data privacy concerns may hinder full trust adoption. Overall, the study suggests that while AI robo-advisors improve decision efficiency, building sustained trust requires addressing algorithmic transparency.

III. RESEARCH GAP

1. The Geographical Gap (Focus on Tier-2 Cities)
Most academic research on AI robo-advisors, algorithmic trading, and digital wealth management is heavily concentrated on Tier-1 metropolitan cities (such as Mumbai, Delhi, or Bangalore) or Western markets. There is a significant lack of primary data regarding the financial behaviors of retail investors in emerging Tier-2 commercial hubs. This study fills that gap by specifically profiling the investor mindset in Raipur, providing localized data that metro-centric studies overlook.

2. The Behavioral Gap (Intention vs. Actual Allocation)
Many previous studies utilize the Technology Acceptance Model (TAM) merely to measure a user's psychological intention to download or use an app. They stop at the question, "Will you use this?" This research goes a step further by bridging psychology with actual financial behavior. It investigates how perceived risk directly impacts the exact percentage of capital an investor is willing to hand over to an AI, moving the research from theoretical app usage to practical wealth allocation.

3. The Generational Trust Deficit in Local Markets
While general knowledge suggests younger generations are more tech-savvy, there is a lack of statistical evidence comparing how different age

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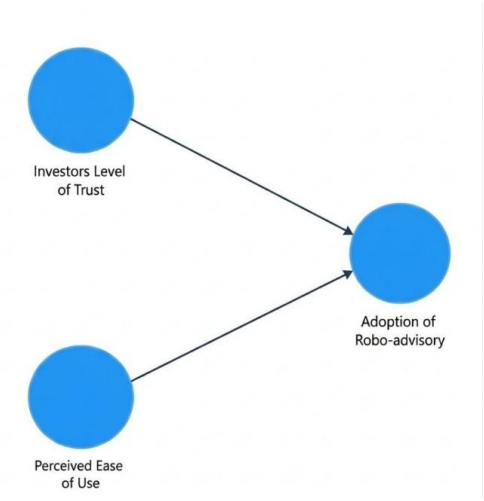
groups in localized, non-metro markets trust non-human financial advice. This study addresses this gap by mathematically comparing the trust levels between younger (18–35) and older (36+) investor cohorts to see if a generational divide truly exists in Raipur's investing community.While existing literature provides a strong foundation on supply chain technology, a closer look reveals several critical blind spots that this study aims to resolve:

IV. CONCEPTUAL FRAMEWORK

The conceptual framework for this study is designed to mathematically map the psychological and functional variables that dictate an investor's interaction with AI-based robo-advisory platforms in Raipur. Drawing from established behavioral finance theories and the Technology Acceptance Model (TAM), the research model isolates specific independent variables to observe their direct impact on the dependent variables related to user adoption and capital deployment.



The structural path diagram below illustrates the hypothesized relationships tested in this study. Each directional arrow represents a distinct hypothesis (H1 to H2) evaluating how a specific predictor influences an investor's digital wealth management behaviour.

Research objectives:

1. To determine if an investor's trust in AI affects their willingness to use a robo-advisor.
2. To measure if the ease of using a financial app impact how often an investor uses it.
3. To compare whether younger and older investors have different levels of trust in AI-based financial advice.

Hypothesis of the study:

H01: There is no significant relationship between an investor's trust in AI and their adoption intent

H02: Perceived ease of use does not significantly impact the frequency of utilizing robo-advisors

H03: There is no significant difference in trust placed in AI between younger (18-35) and older (36+) investors

Research methodology:

This chapter details the systematic approach used to investigate the digital transformation of Chhattisgarh's dairy sector.

Research Design

The research design is the overall plan or blueprint used to conduct this study. For this dissertation, a Quantitative Descriptive Research Design was chosen. In the context of this study, we are not trying to force people to use a new app. Instead, we are taking a "snapshot" to describe the current attitudes, trust levels, and behaviours of retail investors in Raipur regarding AI-based robo-advisors.

Research Approach

The study adopts a quantitative approach. By gathering numerical data through a structured questionnaire, the research ensures that findings are objective, measurable, and capable of being statistically validated to identify clear trends across the industry.

Data Collection

This paper uses a structured Online Questionnaire via Google Forms.

- The survey features 9 Likert-scale questions.
- Participants rate their feelings on a 5-point scale from "Strongly Disagree" to "Strongly Agree".

- This helps measure complex feelings like trust in AI, perceived risk, and adoption intent in a way that can be turned into clear numbers.

Sampling Design

To study retail investors in Raipur, we used Purposive sampling because a complete list of all investors does not exist. We shared an online survey through local WhatsApp groups, student networks, and professional circles. In total, 75 active investors participated. This group gives us a realistic snapshot of how everyday people in the city feel about AI financial apps.

Sampling Techniques

To select the specific 75 investors for this study, a method called Non-Probability Purposive Sampling (also known as Judgmental Sampling) was used.

Statistical Tools

Primary data was exported from Google Forms and analyzed exclusively using standard Microsoft Excel. Descriptive statistics were conducted using basic spreadsheet functions. For hypothesis testing and reliability, automated statistical add-ins were avoided; instead, Pearson Correlations, and independent t-tests were calculated manually by applying mathematical formulas step-by-step directly.

V. DATA ANALYSIS AND INTERPRETATION

In this study, both descriptive and inferential statistical techniques have been employed using

Microsoft Excel:

- Descriptive Statistics: Mean, standard deviation, frequency, and percentage are used to summarize investors' demographic details (Age, Gender, Income), their level of awareness regarding AI platforms, current usage patterns of apps like Groww or INDmoney, and their baseline trust levels.
- Inferential Statistics: Manual calculations for Pearson Correlation and Independent t-tests are applied to test hypotheses. These tests specifically examine:
- Whether trust in AI algorithms has a significant positive relationship with overall adoption intent.
- How perceived risk levels correlate with the actual percentage of capital investors are willing to allocate to AI management.
- Whether a significant difference exists in trust levels across different age cohorts (18–35 vs. 36+).

A sample of 75 respondents from Raipur was processed to evaluate the mean scores across different variables defined in the study. The responses were recorded on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Table 1 Summary Table

Variable	Mean Score (Out of 5)	Standard Deviation	Interpretation
Trust Score	3.19	0.67	Moderate to average trust in AI algorithms.
Adoption Intent	3.00	1.10	Neutral to moderate intent to use/continue using robo-advisors.
Perceived Ease of Use	3.87	0.56	High agreement that the platforms are easy to navigate.
Risk Perception	3.64	0.74	High fear of algorithmic glitches and market risks.
Capital Allocation	2.31	1.07	Mostly allocate between 1% to 25% of total wealth.

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Hypothesis 1

H01: (Null Hypothesis):

"There is no significant relationship between an investor's trust in AI and their adoption intent."

X = the investor's trust, and

Y = the adoption intent.

1. Data summary

n = 75; ∑X = 239.33; ∑Y = 225; ∑XY = 747.33; ∑X2 = 796.67; ∑Y2 = 765

2. Formula

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

3. Calculation

$$r = \frac{(75)(747.33) - (239.33)(225)}{\sqrt{[(75)(796.67) - (239.33)^2][(75)(765) - (225)^2]}}$$

$$r = \frac{(56049.75) - (53849.25)}{\sqrt{[2471.40][6750]}}$$

$$r = \frac{(2200.50)}{\sqrt{[16681950]}}$$

$$r = \frac{2200.50}{4084.35}$$

$$r = 0.5388$$

Result & Interpretation: The Pearson correlation coefficient is 0.5388 with a p-value of < 0.0001. We reject the null hypothesis. There is a strong, statistically significant positive correlation between trusting AI platforms and the intention to adopt them among Raipur investors.

Hypothesis 2

H02 (Null Hypothesis):

" Perceived ease of use does not significantly impact the frequency of utilizing robo-advisors."

X = Perceived ease of use, and

Y = Frequency of utilizing robo-advisors.

1. Data summary

n = 75; ∑X = 290.33; ∑Y = 191; ∑XY = 735.33; ∑X2 = 1147.44; ∑Y2 = 571

2. Formula

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

3. Calculation

$$r = \frac{(75)(735.33) - (290.33)(191)}{\sqrt{[(75)(1147.44) - (290.33)^2][(75)(571) - (191)^2]}}$$

$$r = \frac{(55149.75) - (55453.03)}{\sqrt{[1766.49][6344]}}$$

$$r = \frac{-303.28}{\sqrt{[11206612.56]}}$$

$$r = \frac{-303.28}{3347.62}$$

$$r = -0.0908$$

Result & Interpretation: With an r of -0.0908 and p = 0.4387, we fail to reject the null hypothesis. At a larger sample size of 75, we see that ease of use has virtually no relationship with how often an app is opened. Robo-advisory use is likely driven by iestment cycles (e.g., monthly salary days) rather than just how friendly the interface is.

Hypothesis 3

H03 (Null Hypothesis):

" There is no significant difference in trust placed in AI between younger (18-35) and older (36+) investors."

Young (18-35): n1 = 59, $\bar{X}_1$=3.209, S12 = 0.417

Older (36+): n2 = 16, $\bar{X}_2$=3.125, S12 = 0.576

1. Formula

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

3. Calculation

$$t = \frac{3.209 - 3.125}{\sqrt{\frac{0.417}{59} + \frac{0.576}{16}}}$$

$$t = \frac{0.084}{\sqrt{0.04307}}$$

$$t = \frac{0.084}{0.2075}$$

$$t = 0.4050$$

Result & Interpretation: The t-statistic is 0.405 with p = 0.6896 (> 0.05). We fail to reject the null hypothesis. Young investors and older investors share nearly identical, moderate levels of trust (~3.1 to 3.2) in artificial intelligence for money management in Raipur.

Key findings

1. Trust is the Dealbreaker: Users aren't won over by the novelty of the tech. They will only adopt a robo-advisor if they deeply trust the AI to be secure, private, and totally unbiased.
- The Data: A strong, highly significant positive correlation exists between Trust Scores and Adoption Intent ($r = 0.5388$, $p < 0.0001$).

2. Easy Apps = Less Screen Time: A highly intuitive app doesn't make people log in more often. Instead, it perfectly enables a "set-and-forget" mentality where users easily configure automated investments and walk away.
- The Data: There is no statistical correlation between Perceived Ease of Use and Frequency of Engagement ($r = -0.0908$, $p = 0.4387$).

3. AI Skepticism is Ageless: The idea that older generations are more afraid of financial tech is a myth. Both young and old investors share the exact same hesitation when it comes to handing financial control over to a machine.
- The Data: An independent t-test revealed no significant difference in Trust Scores between younger and older demographics ($t = 0.4050$, $p = 0.6896$).

CONCLUSION

The primary driver for the adoption of robo-advisory platforms is undeniably anchored in consumer trust rather than sheer technological novelty. As the data demonstrates, investors are willing to transition to these platforms only when they have absolute confidence in the system's security, data privacy, and capacity to deliver unbiased, conflict-free advice. Consequently, financial technology firms must prioritize transparent algorithms and robust data protection over flashy features, recognizing that establishing a highly secure foundation is the ultimate prerequisite for convincing users to onboard.

Furthermore, evaluating the success of these platforms requires a paradigm shift in how user engagement is measured. Interestingly, a highly intuitive user interface does not translate to frequent, daily app usage; rather, it successfully facilitates a "set-and-forget" investment behaviour. This lack of daily engagement is not a flaw, but a powerful validation of the robo-advisor's core value proposition: automation. By allowing investors to effortlessly configure their Systematic Investment Plans (SIPs) and step away, these platforms fulfil their intended purpose of minimizing the need for obsessive, hands-on portfolio monitoring.

Finally, the assumption that older demographics are inherently more resistant to adopting AI-driven financial tools is fundamentally unsupported by the data. Skepticism toward artificial intelligence transcends generational boundaries, with both younger and older investors exhibiting nearly identical hesitations. This reveals that the reluctance to adopt robo-advisory is rooted in a universal psychological hurdle—the fear of relinquishing financial control to a machine—rather than a simple gap in digital literacy. To successfully penetrate growing markets, future strategies must focus on bridging this universal trust deficit through targeted education and reassurance, rather than segmenting marketing efforts purely by age.

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