

Convergence of Robo-Advisors and Artificial Intelligence in FinTech: Insights, Challenges, and Innovations in the Indian Financial Services Market

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ABSTRACT

Introduction: The integration of artificial intelligence (AI) into robo-advisory services is reshaping India's financial sector, yet adoption faces challenges such as low trust, transparency gaps, and data security concerns. These barriers hinder the potential of AI-driven platforms to democratize investment opportunities in a rapidly growing market.

Objectives: This study examines how AI can enhance trust, transparency, and personalization in Indian robo-advisory services, while addressing generational disparities in adoption and aligning platforms with investor preferences in financial planning and portfolio diversification.

Methods: A mixed-methods approach was employed, combining secondary data analysis of global and Indian market trends with primary research via a structured questionnaire survey of 163 Indian investors. Regression analysis and path modelling were used to evaluate key drivers of adoption.

Results: Younger investors (20–40 years) showed higher receptiveness to AI-driven platforms, while older demographics remained cautious due to privacy concerns. Trust, though critical, had the weakest influence ($\beta = 0.22$), whereas ease of use ($\beta = 0.34$) and perceived benefits ($\beta = 0.28$) emerged as stronger predictors of adoption. Domestic platforms lagged behind international counterparts in user trust, with only 29.2% of assets managed locally.

Conclusions: To unlock growth, Indian robo-advisors must prioritize transparency, user-centric design, and hyper-localized solutions. Bridging trust gaps through regulatory frameworks and hybrid human-AI models could catalyse adoption in India's tech-savvy yet diverse investor landscape.

Keywords: Robo-advisors, AI integration, Indian financial market, Trust dynamics, Regression analysis.

INTRODUCTION

In recent years, the financial services sector has undergone a profound transformation, propelled by the swift adoption of financial technologies (FinTech), notably artificial intelligence (AI) (Lakhchini, Wahabi, & El Kabbouri, 2022; Belanche, Casalo, & Flavián, 2019; Bonelli & Döngül, 2023). Among these technological advancements, robo-advisors have risen to prominence, revolutionizing investment management and financial planning by providing automated, data-driven solutions to a wide range of clients (Deloitte, 2021). As FinTech continues to reshape global financial markets, innovations such as blockchain, predictive analytics, and AI are paving the way for enhanced automation, transparency, and customer-focused services.

India's financial services sector is no exception to this transformative trend, marked by rapid growth and accelerated digital adoption. The growing prevalence of robo-advisors, in conjunction with India's robust economic expansion, projected to grow at an annual rate of 8.5%, offers a unique opportunity to tackle market-specific challenges. These challenges include building trust, addressing data security concerns, and developing personalized investment solutions that cater to the diverse financial needs of Indian investors.

This paper investigates how AI can enhance robo-advisors to meet the evolving demands of the Indian market,

focusing on critical aspects such as trust, transparency, and user engagement. By examining these dimensions, the study aims to provide actionable insights into addressing the current limitations of robo-advisory services and unlocking their full potential within the Indian financial ecosystem.

1. The Global State of Robo-Advisors and AI Technology

Robo-advisors have rapidly gained popularity worldwide for their ability to provide automated and personalized investment solutions that was confirmed in a longitudinal study (Shanmuganathan, 2020). Driven by complex algorithms, these platforms consider individual risk profiles and financial goals to construct and manage portfolios (Sarea, Elsayed, & Bin-Nashwan, 2021), crypto asset allocation (Babaei, Giudici, & Raffinetti, 2022). AI, a cornerstone of robo-advisory technology, enables comprehensive data analysis, pattern recognition, and predictive modeling (Lakhchini et al., 2022). AI-powered robo-advisors, such as those offered by incumbents and startups, have the potential to revolutionize the financial industry by making investment opportunities more accessible and cost-effective (Babaei et al., 2022; Bhatia, Chandani, Atiq, Mehta, & Divekar, 2021; Bonelli & Döngül, 2023; Deloitte, 2021; Deo, 2022). The robo-advisors allow us to incorporate the global environment constraints in stock forecasts (Bonelli & Döngül, 2023). Discussing the barriers to adopt the advanced IA-powered robo-advisor technology is lack of trust, that is one of the main topics in customer studies in the last years over the world and over regional markets (Belanche et al., 2019, Bhatia et al., 2021; Cheng et al., 2019; Hentzen, Hoffmann, Dolan, & Pala, 2022; Nain & Rajan, 2023).

The explosion of AI has opened new horizons for advancing robo-advisory capabilities (Bhatia et al., 2021; Bonelli & Döngül, 2023; Hu, 2020). Integrating AI into robo-advisors allows for more accurate predictions, efficient risk assessment, and improved portfolio management (Schanzer-Larsen, 2023). Techniques like machine learning, deep learning, and natural language processing contribute to refining investment strategies and enhancing the customer experience (Lakhchini et al., 2022; Nain & Rajan, 2023). By harnessing the power of AI, robo-advisors can offer more robust and customized solutions, ultimately increasing investor satisfaction and engagement.

2. The Landscape of Robo-Advisory Technology in India

The rapid evolution of India's financial services sector, driven by technological advancements like AI, is evident in its burgeoning fintech landscape. A study by Kumar and Gupta (2023) highlights the increasing focus of the Indian banking industry on tech-savvy consumers who demand seamless digital banking experiences through digital money, e-banking, and real cash transfers. To meet these demands, financial institutions have expanded their services to include the retail, IT, and telecom sectors, allowing customers to access most banking services anytime and anywhere. While these advancements have improved customer relationships and service efficiency, they have also introduced challenges and operational costs, creating a trade-off between convenience and expenses.

Robo-advisors are emerging as a significant change agent, driving the democratization of investment opportunities across diverse strata. The trajectory of robo-advisory technology adoption in India is intricately linked to the nation's digital transformation, supported by rising digital literacy rates and expanding internet connectivity (Noonpakdee, 2020). However, a qualitative study by Nain and Rajan (2023) indicates that robo-advisory services in India are still in their early stages and require greater awareness and trust-building among investors for growth. To better serve Indian investors, FinTech companies should consider combining automated robo-advisory services with the personal touch of human wealth managers and focus on increasing awareness and financial literacy.

Despite the promising growth of robo-advisors, challenges remain. India's cultural diversity and language barriers present obstacles to making robo-advisory services accessible to all, while financial literacy still requires significant attention (Joshi, Sharma, & Ranjan, 2021). Addressing these challenges is crucial to fully harness the potential of AI-guided investment strategies in India's unique market landscape. The development of robo-advisory technology in India represents both a platform for digital innovation and a challenge that must be overcome to transform investment practices and unlock the full potential of AI and financial expertise in this dynamic market.

3. Identifying Gaps in the Indian Robo-Advisory Landscape

As robo-advisory platforms continue to weave themselves into the fabric of India's financial landscape, it becomes increasingly imperative to delve into their intricacies, uncovering potential gaps that warrant attention and improvements (Joshi et al., 2021; Nain & Rajan, 2023). The allure of AI-powered solutions is undeniable, yet a series of vital considerations stand as checkpoints on the journey towards building a foundation of investor trust and confidence.

First and foremost, the spotlight falls on the pivotal matters of data privacy, cybersecurity, and transparency (Poornima & Chitra, 2022; Sarea et al., 2021). As robo-advisors engage with sensitive financial data, the armor of robust security measures is paramount. Investors, rightfully so, need the assurance that their personal and financial information is shielded against breaches and vulnerabilities. Striking the balance between harnessing the power of AI and safeguarding individual privacy becomes a cardinal task in fortifying the robo-advisory ecosystem.

However, it's not just about safeguarding information; it's about crafting solutions that resonate with the varied tapestry of India's demographic and cultural mosaic. This is where the spotlight shifts to the art of tailoring robo-advisory services (Bonelli & Döngül, 2023; Hentzen et al., 2022; Shanmuganathan, 2020). Each pocket of India harbors unique financial aspirations, preferences, and needs. From bustling cities to serene villages, from tech-savvy millennials to seasoned retirees, the spectrum of potential investors is kaleidoscopic. To truly bridge gaps, robo-advisory platforms must adapt and adjust, offering experiences that resonate on a cultural and personal level. Only then can technology truly democratize financial access.

LITERATURE REVIEW

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However, it's not just about safeguarding information; it's about crafting solutions that resonate with the varied tapestry of India's demographic and cultural mosaic. This is where the spotlight shifts to the art of tailoring robo-advisory services (Bonelli & Döngül, 2023; Hentzen et al., 2022; Shanmuganathan, 2020). Each pocket of India harbors unique financial aspirations, preferences, and needs. From bustling cities to serene villages, from tech-savvy millennials to seasoned retirees, the spectrum of potential investors is kaleidoscopic. To truly bridge gaps, robo-advisory platforms must adapt and adjust, offering experiences that resonate on a cultural and personal level. Only then can technology truly democratize financial access.

ANALYSIS OF KEY ASPECTS

1. Evaluation of key aspects

a. Indian Financial Market Overview

b. Analysing the state of technology in India

c. Exploring opportunities for enhancing technology through the implementation of AI- driven solutions

d. Assessing the trust level of robo-advisors in India

2. Financial Market Overview

According to Statista (2023), India's financial market is undergoing a dynamic transformation, characterized by rapid growth and increasing alignment with global trends. Figure 1, a comparative bar chart, illustrates the sector's expansion and structural makeup, focusing on two key indicators: the total valuation of India's financial services sector and the contribution of its FinTech segment.

As shown in Figure 1, India's financial services sector reached a valuation of \$500 billion in 2021, highlighting its emergence as a major force in the global economy. Within this total, the FinTech sub-sector accounted for \$31 billion, reflecting its swift rise as a key driver of innovation and modernization in financial services.

India's financial sector is growing at an annual rate of 14.97%, more than double the global average of 6.8%. This

remarkable growth can be attributed to three interrelated factors:

Widespread Digital Adoption: Initiatives such as the Unified Payments Interface (UPI) and Aadhaar-enabled services have significantly boosted financial inclusion. With over 880 million internet users, India has seen a dramatic surge in digital transactions.

Demographic Dividend: With 65% of the population under 35, India's youthful demographic readily embraces technology, creating a fertile ground for FinTech adoption and innovation.

Supportive Policy Framework: Government-led reforms—including the Digital India campaign and the implementation of regulatory sandboxes for startups—have fostered a pro-innovation environment while maintaining regulatory oversight.

The FinTech sector's growth is particularly striking: it expanded by 87% between 2018 and 2021 (Nain & Rajan, 2023), driven by innovations in mobile banking, peer-to-peer lending, and AI-powered financial advisory services. Despite its impressive progress, the sector remains in its early stages compared to more developed markets, suggesting significant room for further expansion. As Nain and Rajan (2023) point out, this trajectory reflects India's broader economic vision—where robust digital infrastructure and a tech-savvy population converge to reshape financial accessibility.

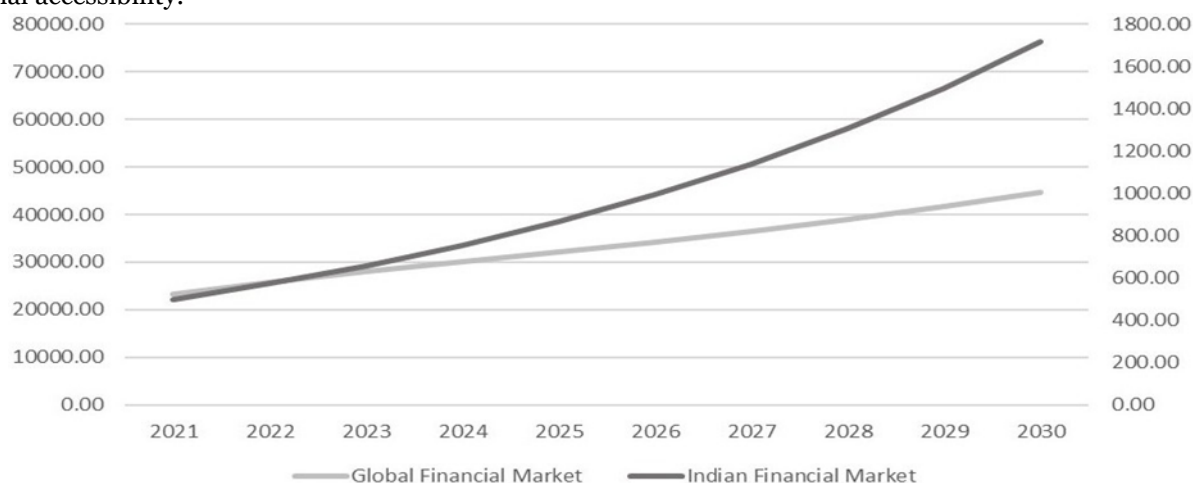


Figure 1: Financial Market Performances (Figure created by the author)

Figure 1 thus tells a dual story: a traditional financial system undergoing rapid modernization and a fast-growing FinTech ecosystem that's reshaping service delivery. Together, these trends highlight India's transition from a predominantly cash-based economy to a digitally integrated financial powerhouse—poised for sustained growth and increasing global relevance.

3. Robo-Advisory Landscape in India

As illustrated in Figure 2(a), domestic robo-advisors dominate global markets, managing 94% of assets worldwide, reflecting strong local trust and regulatory alignment. In contrast, Figure 2(b) reveals that only 29.2% of managed assets in India are overseen by domestic platforms, with the remaining 70.8% controlled by international players (Vasylchenko & Bonelli, 2023). This disparity underscores the technological edge and global credibility of foreign platforms, which continue to attract Indian investors despite growing domestic capabilities.

The Indian market remains highly concentrated, with Fisdom managing nearly 50% of domestic assets and ranking 13th globally in assets under management (Top10StockBroker, 2022; Vasylchenko & Bonelli, 2023).

Such monopolistic dominance raises concerns about stifled competition, innovation, and service diversity, signaling an urgent need for regulatory and market interventions to foster a more dynamic ecosystem.

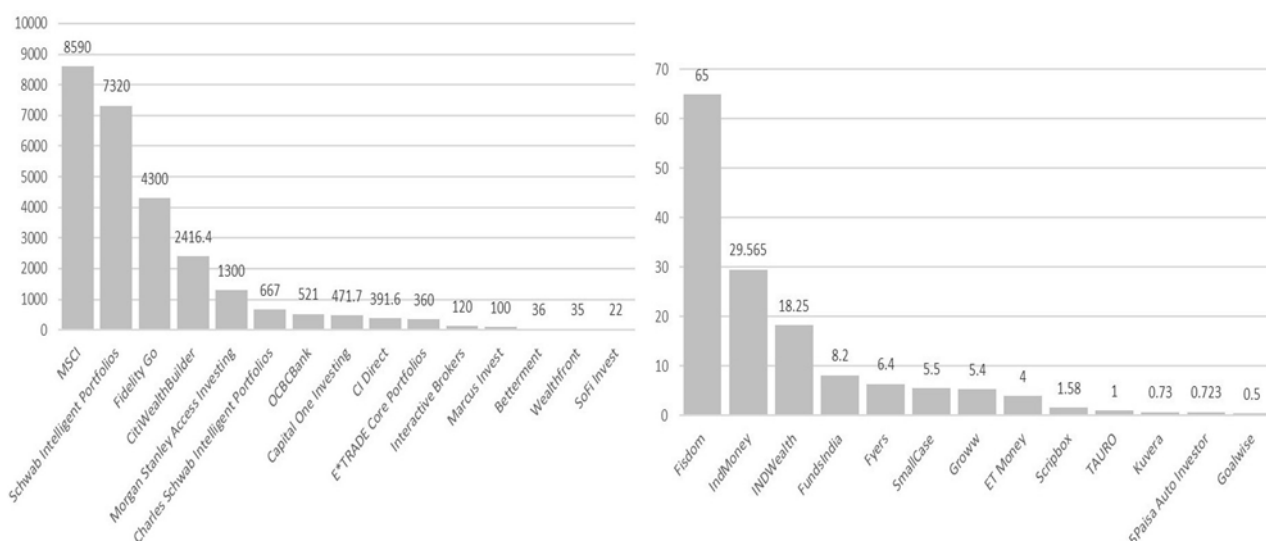


Figure 2(a) & 2(b): Top Robo-Advisors by Assets in Management (a. Worldwide and b. India, figures created by the author)

4. Global and Regional Trends in Advisor Preferences

As illustrated in Figure 3(a), global search interest in *AI Trading* has surged over the past year, surpassing queries for *Robo Advisor* and *Finance Advisor*. This trend aligns with the accelerating adoption of AI-driven algorithmic trading strategies, which leverage automation to optimize investment returns (Vasylchenko & Bonelli, 2023). In India, Figure 3(b) reveals a similar pattern, with *AI Trading* and *Robo Advisor* searches growing in tandem with global trends. However, Indian users demonstrate markedly lower interest in *Finance Advisor* compared to global averages, reflecting a cultural inclination toward self-directed investment platforms over traditional advisory services.

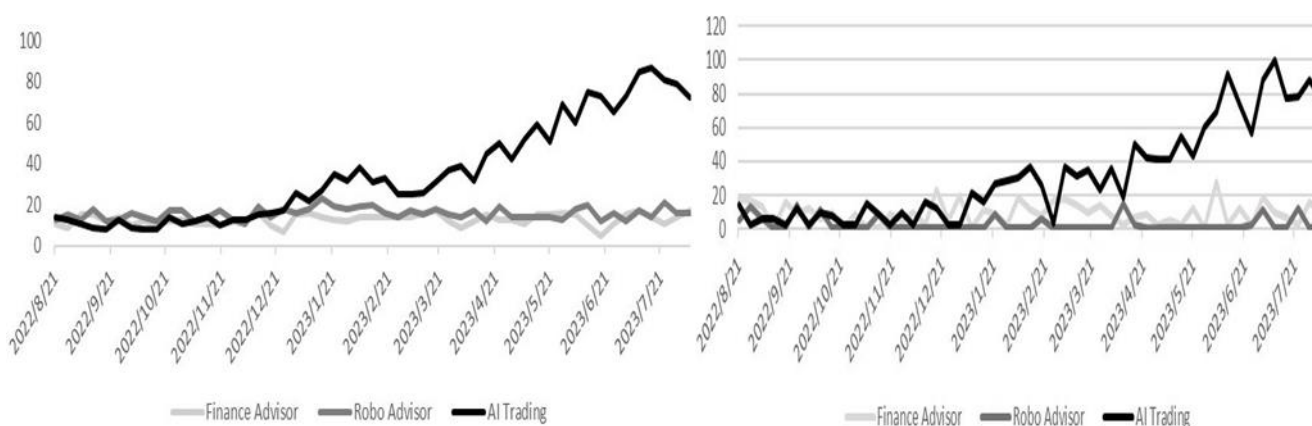


Figure 3(a) & (b): Interest to Advisors by Type (a. Worldwide and b. India, figures created by the author)

This divergence underscores India's unique market dynamics, where tech-savvy investors prioritize autonomy and cost efficiency. For robo-advisory platforms to thrive, they must address this preference by simplifying user interfaces, localizing services to align with regional financial behaviors, and enhancing financial literacy initiatives to bridge trust gaps. Such adaptations are critical to transforming India's robo-advisory landscape into a competitive, inclusive ecosystem that caters to its diverse investor base.

5. Robo-Advisors in India: A Popularity Comparison

As previously depicted in Figure 2(b), India's robo-advisory market reveals a clear preference for domestic platforms, with *Groww* and *Fyers* achieving significantly higher popularity ratings than global giants like *Charles Schwab Intelligent Portfolios* and *Nutmeg*. This trend underscores the growing trust in local platforms, which are perceived as more attuned to India's regulatory framework and investor needs.

Figure 4 further highlights divergences in feature preferences between global and Indian users. While global investors show stronger interest in *Cognitive Computing* (-1.0% gap) and *Market Sentiment Analysis* (-1.4% gap), Indian users prioritize *Personalized Recommendations* and *Dynamic Asset Allocation*. This contrast reflects India's demand for hyper-customized, adaptable solutions that align with its diverse risk appetites and financial goals. The dominance of domestic platforms, coupled with India's distinct feature preferences, signals a market ripe for innovation. To solidify their competitive edge, robo-advisors must deepen their focus on personalization and dynamic portfolio adjustments while addressing gaps in advanced AI-driven analytics through localized education campaigns. By aligning technological capabilities with India's unique investor psyche, platforms can bridge the divide between global trends and regional demands, fostering a more inclusive and responsive advisory ecosystem. As depicted in Figure 4, global interest in features like Cognitive Computing and Market Sentiment Analysis surpasses Indian interest, showing negative gaps of -1.0% and -1.4%, respectively. Conversely, Personalized Recommendations and Dynamic Asset Allocation resonate more strongly with Indian users.

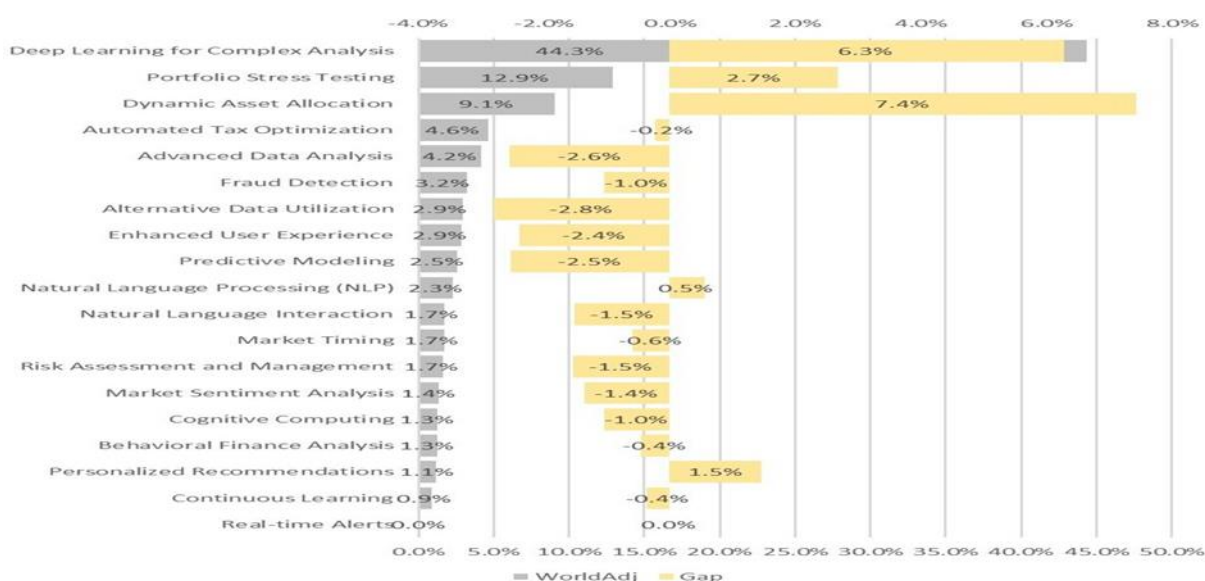


Figure 4: AI Enhancement Interest and Indian Gap (Figure created by the author)

As illustrated in the following Figure 5(a), the global robo-advisory market currently serves approximately 242 million users, reflecting widespread adoption across technologically advanced regions such as North America, Europe, and East Asia. This global footprint highlights the maturity and acceptance of automated investment platforms in economies with well-established digital infrastructure and high levels of financial literacy.

In contrast, Figure 5(b) shows that India accounts for 64 million users—a considerably smaller share, representing only about 26% of the global total. However, this figure, though modest in comparison, signals rapid and accelerating growth in a market where digital financial services are still evolving. The contrast between India's current usage and global benchmarks reveals a significant opportunity for expansion, especially as key enablers continue to mature.

The disparity becomes even more compelling when considered alongside India's broader digital landscape. As of 2023, India had more than 880 million internet users, placing it among the world's largest online populations. Additionally, India's demographic profile—with 65% of its population under the age of 35—offers an ideal foundation for the adoption of robo-advisors and other digital financial tools. This young, digitally fluent population is increasingly comfortable with mobile technology, algorithm-driven platforms, and app-based financial planning, making them natural adopters of FinTech solutions.

While India's current share of the robo-advisory market is still emerging, the combination of growing internet access, demographic momentum, and rising financial inclusion efforts positions the country as a high-potential frontier for the next phase of global robo-advisory expansion. The current gap is not merely a reflection of underperformance but rather a marker of the latent growth potential in one of the world's most dynamic digital economies.

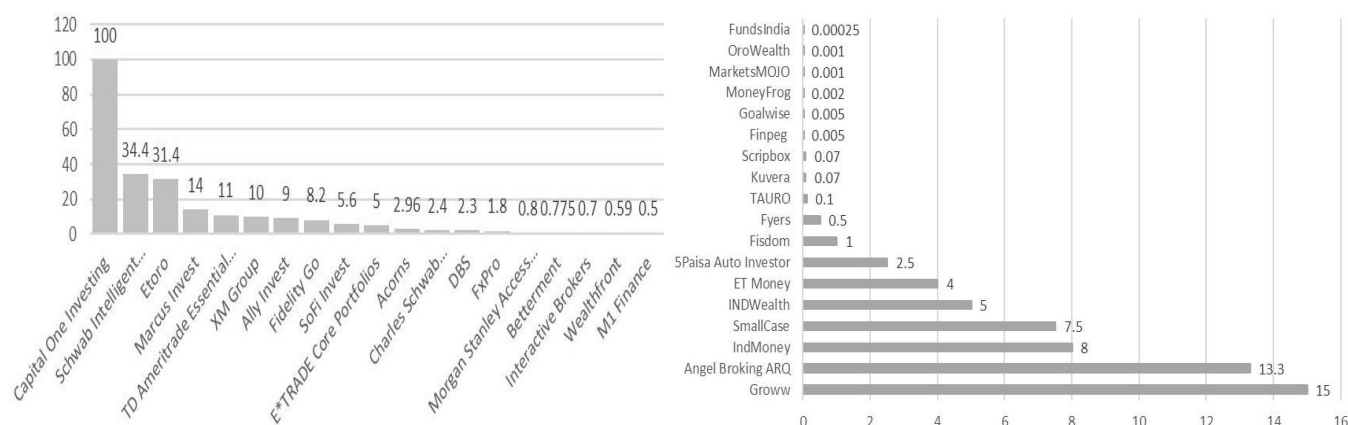


Figure 5(a) & (b): Market Penetration and User Base Comparison (a. Worldwide and b. India, figures created by the author)

6. Trust level of Robo-Advisors in India

As depicted in Figure 6, trust remains a critical barrier for robo-advisors in India, despite the country's growing enthusiasm for AI-driven trading tools. While global markets show robust adoption of robo-advisory services—with international platforms managing 71% of global robo-advised assets—Indian investors remain skeptical of domestic providers. This skepticism stems from a lack of transparency in user statistics, assets under management (AUM), and financial performance disclosures, which contrasts sharply with the detailed metrics shared by global counterparts.

Figure 6 highlights two key trends:

1. **Trust Deficit:** Indian search interest in robo-advisors lags behind global averages, reflecting lower confidence in domestic platforms.
2. **Contradictory Enthusiasm:** Despite this trust gap, Indian investors exhibit strong interest in AI-powered trading, mirroring global trends.

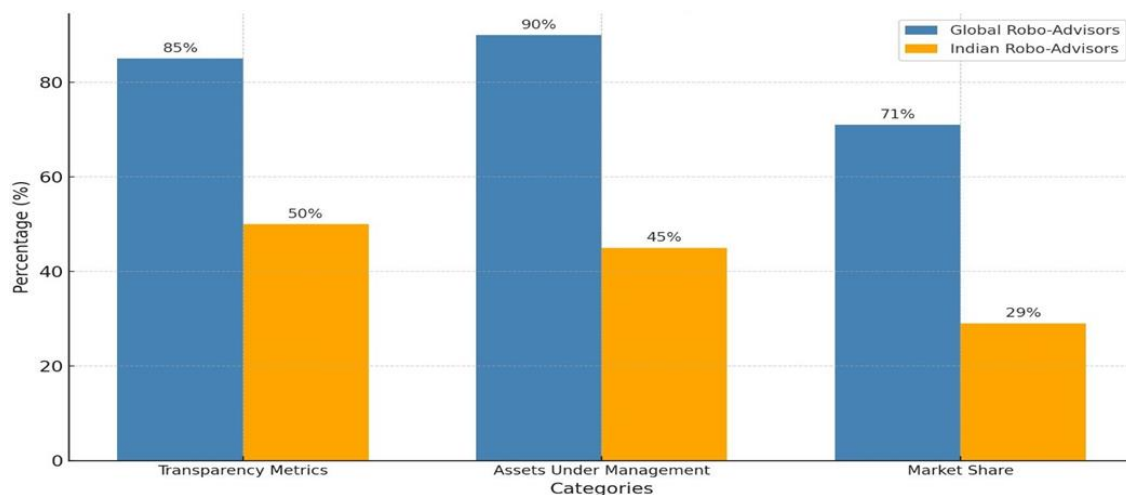


Figure 6: Global vs. Indian Robo-Advisors Adoption and Trust Levels (Figure created by the author)

This divergence underscores a critical mismatch: Indian users embrace AI-driven financial tools but hesitate to trust local robo-advisors. A primary reason is the profit-centric mindset of Indian investors, who prioritize services like *asset allocation* and *portfolio diversification* over risk assessment. To bridge this gap, domestic platforms must enhance transparency (e.g., publishing audited performance reports) and integrate robust risk management tools while aligning with India's preference for high-return strategies.

While secondary data reveals these challenges, a forthcoming survey of Indian investors will provide deeper insights

into their trust dynamics. By adopting global best practices in transparency and tailoring services to local preferences, Indian robo-advisors can transform skepticism into trust, unlocking growth in one of the world's fastest-growing financial markets.

HYPOTHESES

Hypothesis 1: Trust in Robo-Advisors (T)

Trust is pivotal for adopting robo-advisors, encompassing secure data handling, reliable and unbiased algorithms, and transparent operations, such as clear explanations of investment strategies and fee structures. This hypothesis posits that higher trust levels directly enhance investor willingness to adopt robo-advisory services.

Hypothesis 2: Ease of Use (E)

Ease of use is a critical factor in adopting robo-advisors, encompassing intuitive navigation, simple account setup, accessible investment options, and clear data visualizations. This hypothesis posits that a user-friendly platform that minimizes complexity and effort significantly enhances investor willingness to adopt robo-advisory services.

Hypothesis 3: Perceived Benefits (PB)

Perceived benefits, such as lower fees, 24/7 accessibility, data-driven performance, personalized recommendations, portfolio diversification, and automated processes, play a pivotal role in adopting robo-advisors. This hypothesis posits that the greater the recognition of these advantages, the higher the likelihood of investors adopting robo-advisory services.

Hypothesis 4: Behavioral Intention to Adopt (BI)

Behavioral intention to adopt robo-advisors reflects investors' readiness to integrate these services into their financial decision-making. Influenced by trust, ease of use, and perceived benefits, this hypothesis posits that the interplay of these factors significantly shapes investors' willingness, ultimately driving adoption rates.

Proposed Relationships

Trust in Robo-Advisors (T) → Behavioral Intention to Adopt (BI): Investors with greater trust in the reliability and transparency of robo-advisors are more inclined to adopt these platforms.

Ease of Use (E) → Behavioral Intention to Adopt (BI): A seamless and intuitive user experience reduces barriers to adoption, positively influencing intentions.

Perceived Benefits (PB) → Behavioral Intention to Adopt (BI): When investors perceive substantial advantages in terms of cost, performance, and convenience, their likelihood to adopt increases.

Moderating and Mediating Effects: The interactions among these variables (e.g., ease of use enhancing the perceived benefits or trust mediating perceived risk) will also be explored to gain deeper insights into investor behavior.

By examining these hypotheses, the study aims to identify the key drivers influencing the adoption of robo-advisory services, providing actionable insights for enhancing these platforms to better align with investor preferences and needs.

1. Research Design and Analysis: Questionnaire-Based Survey

This study employed a structured questionnaire to generate primary data on investor attitudes and behavioral intentions regarding robo-advisors. By targeting key latent variables—**Trust (T)**, **Ease of Use (E)**, **Perceived Benefits (PB)**, and **Behavioral Intention to Adopt (BI)**—the survey provided insights into the drivers of robo-advisory adoption. Additionally, demographic data contextualized these findings, enabling a deeper understanding of adoption patterns across diverse investor profiles.

2. Questionnaire Structure

Section 1: Demographics

The first section captured respondent characteristics, including:

Gender (male, female, prefer not to say)

Age Group (20–30, 31–40, 41–50, 51+)

Investment Experience (beginner, intermediate, advanced)

Prior Usage of Robo-Advisors (yes, no)

This data facilitated the segmentation of responses, highlighting trends such as generational preferences and the role of investment expertise in influencing trust and adoption.

Section 2: Latent Variables

The second section used a Likert scale to measure the hypothesized constructs:

Trust (T): The extent to which investors feel secure and confident in robo-advisory platforms, measured through statements on data security, reliability, and transparency.

Ease of Use (E): Perceptions of simplicity and intuitiveness, focusing on ease of navigation, effort reduction, and user-friendly interfaces.

Perceived Benefits (PB): The value investors associate with robo-advisors, such as cost efficiency, accessibility, and enhanced portfolio performance.

Behavioral Intention (BI): Willingness to adopt and recommend robo-advisors, reflecting their appeal as an alternative to human advisors.

3. Data Collection and Overview

The questionnaire was distributed electronically to 163 respondents through financial networks and forums, ensuring diverse participation.

Demographic Insights:

Gender: Male (58%), Female (42%)

Age: Most respondents were aged 31–40 (40%), followed by 20–30 (30%).

Experience: Half were beginners (50%), with fewer intermediate (30%) and advanced (20%) investors.

Prior Usage: 40% had used robo-advisors, while 60% were new to the concept.

This distribution highlights a balanced mix of experienced and novice investors, providing a comprehensive dataset to analyze potential adoption drivers.

Descriptive Statistics of Latent Variables

The analysis of latent variables yielded the following descriptive statistics (see Table 1). These results indicate generally favorable perceptions across constructs, with Ease of Use scoring the highest mean, suggesting its importance in influencing adoption.

Validity and Reliability Assessment

To ensure the robustness of the measurement model, construct validity and reliability were tested:

4. Construct Validity

Table 1: Statistical Characteristics of Latent Variables

Latent Variable	Dimensions*	Mean	Standard Deviation
Trust (T)	T1, T2, T3	4.1	0.85
Ease of Use (E)	E1, E2, E3	4.2	0.78
Perceived Benefits (PB)	PB1, PB2, PB3	4.0	0.80
Behavioral Intention (BI)	BI1, BI2, BI3	3.9	0.90

Note: Dimensions correspond to Likert-scale survey items

Convergent Validity: The Average Variance Extracted (AVE) values for all constructs exceeded the recommended threshold of 0.50, confirming that each latent variable sufficiently explains its associated indicators. For instance, the AVE for *Ease of Use* was 0.61, demonstrating robust explanatory power.

Discriminant Validity: Applying the Fornell-Larcker criterion, the square root of each construct's AVE (e.g., $\sqrt{0.61} = 0.78$ for *Ease of Use*) was greater than its correlations with other constructs (e.g., the correlation between *Trust* and *Ease of Use* was 0.42). This confirms adequate discriminant validity, ensuring constructs are distinct and non-redundant.

The results affirm the measurement model's rigor, with both reliability and validity metrics aligning with established psychometric standards.

5. Reliability

Cronbach's Alpha: All constructs demonstrated strong internal consistency, with values exceeding the 0.70 threshold (e.g., *Trust* = 0.87, *Behavioral Intention* = 0.88).

Composite Reliability (CR): Each construct surpassed the 0.70 benchmark, confirming robust reliability (e.g., *Perceived Benefits* achieved a CR of 0.88).

6. Model Analysis

Path Analysis

The structural model, expressed as a multiple linear regression equation, is defined as:

$$BI = \beta_1 T + \beta_2 E + \beta_3 PB + \epsilon$$

where:

- **BI:** Behavioral Intention to adopt robo-advisors
- **T, E, PB:** Trust, Ease of Use, and Perceived Benefits
- **$\beta_1, \beta_2, \beta_3$:** Standardized path coefficients
- **ϵ :** Error term accounting for unexplained variance

Table 2: Relationships Between Latent Variables and Behavioral Intention

Path	Coefficient (β)	t-value	p-value
Trust → Behavioral Intention	0.22	3.87	<0.01
Ease of Use → Behavioral Intention	0.34	5.12	<0.01
Perceived Benefits → Behavioral Intention	0.28	4.59	<0.01

Model Fit:

- **R² for Behavioral Intention:** 0.58, indicating that 58% of the variance in adoption intention is explained by the predictors.

- **Goodness-of-Fit Indices:**

Standardized Root Mean Square Residual (SRMR) = 0.045 (≤ 0.08)

Normed Fit Index (NFI) = 0.92 (≥ 0.90)

7. Influential Factors

With the highest path coefficient ($\beta_2 = 0.34$), **Ease of Use** emerged as the most influential factor in shaping behavioral intention. This underscores the importance of intuitive interfaces and minimal effort requirements in attracting users. **Perceived Benefits:** The second strongest predictor ($\beta_3 = 0.28$) highlights the importance of communicating advantages such as cost-efficiency and accessibility to enhance adoption likelihood. **Trust:** Although its effect was weaker ($\beta_1 = 0.22$), trust plays a supportive role by addressing concerns about security and transparency. Strengthening these aspects can further encourage adoption.

ANALYSIS AND DISCUSSION**1. Hypothesis Testing**

The study set out to explore the key drivers influencing the adoption of robo-advisory services, with a particular focus on **Trust (T)**, **Ease of Use (E)**, and **Perceived Benefits (PB)**, and their collective impact on **Behavioral Intention to Adopt (BI)**. Each of these constructs was hypothesized to play a role in shaping the intention of investors to adopt robo-advisory platforms. The findings, based on path analysis, provide valuable insights into the relative influence of these variables and the practical implications for enhancing robo-advisory services.

2. Trust in Robo-Advisors (T)

The results indicate that Trust is a key determinant of adoption, though it exhibits the weakest effect on Behavioral Intention to Adopt (BI), with a path coefficient of $\beta_1 = 0.22$. This suggests that while trust is important, it is not the primary driver of adoption, aligning with prior research that found trust necessary but not sufficient for technology adoption in the financial sector (Cheng et al., 2019). The relatively low path coefficient indicates that other factors, such as Ease of Use and Perceived Benefits, may exert a stronger influence on adoption decisions.

Further analysis revealed that trust in robo-advisors is strongly associated with perceptions of data security, platform reliability, and operational transparency. Investors must feel confident that their personal data is secure, that the platform's recommendations are grounded in sound financial principles, and that the operations of the robo-advisor are transparent. These findings suggest that for robo-advisory services to increase trust, efforts must be made to ensure robust security measures, clear communication about data usage, and transparency in how investment strategies are developed and executed.

3. Ease of Use (E)

The hypothesis that **Ease of Use (E)** would positively influence behavioral intention to adopt was strongly

supported, with the path coefficient for ease of use being the highest at $\beta_2 = 0.34$. This highlights the critical role of simplicity and intuitiveness in fostering adoption, particularly for investors with limited technical or financial expertise. As ease of use explains a significant proportion of adoption behavior, it emphasizes the need for robo-advisory platforms to prioritize user-centric design. Investors, especially novices, are more likely to adopt a platform that reduces complexity and cognitive load.

This finding aligns with literature on user experience design (Lu, Cai, & Gursoy, 2019), which suggests that simplifying the user interface and streamlining processes for platform navigation can lower the barriers to adoption. Robo-advisory platforms should invest in designing seamless registration processes, intuitive portfolio management tools, and easily understandable performance indicators, which would collectively enhance user satisfaction and drive adoption, especially among less tech-savvy individuals.

4. Perceived Benefits (PB)

Perceived Benefits (PB) emerged as a significant driver of adoption, with a moderate path coefficient of $\beta_3 = 0.28$. These benefits primarily include cost efficiency, increased accessibility, and the potential for superior portfolio performance through data-driven decision-making. The results indicate that when investors perceive robo-advisors as offering clear, tangible advantages over traditional financial advisory services, their likelihood of adopting these platforms increases.

This aligns with the literature on the value proposition of FinTech services, which highlights the importance of communicating the distinct advantages that digital platforms offer (Cheng et al., 2019). Robo-advisory services should continue to emphasize lower fees, greater convenience, and personalized recommendations tailored to investors' individual financial goals. Demonstrating the effectiveness of robo-advisors in providing consistent, high-quality financial advice could further increase their attractiveness, particularly for cost-conscious investors who seek accessible, low-cost alternatives to traditional advisory services.

5. Behavioral Intention to Adopt (BI)

Behavioral intention plays a crucial role as an intermediary construct, directly predicting the actual adoption of robo-advisory services. The study confirmed that behavioral intention is significantly influenced by trust, ease of use, and perceived benefits, with the model explaining 58% of the variance in behavioral intention. This finding underscores the strong explanatory power of these three factors in determining the likelihood of adoption.

The results suggest that increasing the levels of trust, ease of use, and perceived benefits will strengthen investors' intentions to adopt robo-advisors. Therefore, these three dimensions serve as key leverage points for developers and financial institutions looking to increase adoption rates and enhance the overall success of robo-advisory platforms.

6. Comparison with Existing Literature

The study's findings reinforce the importance of **trust**, **ease of use**, and **perceived benefits** in shaping behavioral intention to adopt robo-advisors in the Indian context. Trust, though statistically significant, has a lesser effect on adoption, a result consistent with Cheng et al. (2019), who noted trust as a necessary but not sole factor for adoption. Our results support the notion that while trust in the reliability and transparency of robo-advisors is important, it must be accompanied by other factors such as ease of use and perceived benefits to drive adoption.

Ease of use emerged as the dominant factor influencing adoption, corroborating the findings of Lu et al. (2019), who emphasized the critical role of usability in the acceptance of AI-driven services. In our study, ease of use not only contributed directly to adoption but also positively influenced perceptions of the platform's benefits, making it a dual driver of adoption.

Perceived benefits, such as cost efficiency and improved performance, also played a significant role in adoption, reinforcing previous literature (Cheng et al., 2019) that underscores the importance of clearly communicated value propositions in increasing platform adoption.

Gender differences in the influence of these factors were minimal in our sample, contradicting the findings of Zhang, Cheung, and Lee (2014), who found trust to have a stronger impact on women. Our results suggest that, in the Indian

market, trust, ease of use, and perceived benefits equally shape adoption decisions across genders. This could be attributed to a high level of technological familiarity and digital engagement among female investors in our sample, potentially reducing any gender-based disparities in adoption behavior.

In conclusion, the findings of this study provide a comprehensive understanding of the factors influencing the adoption of robo-advisory services in India. By focusing on enhancing trust, simplifying user interfaces, and emphasizing the tangible benefits of robo-advisors, financial institutions and FinTech companies can strategically position themselves to increase adoption in a rapidly evolving digital financial landscape.

POLICY AND PRACTICAL IMPLICATIONS

To harness the full potential of robo-advisors in India, collaborative efforts between policymakers and FinTech providers must address both systemic barriers and user-centric challenges. Below are actionable recommendations structured to enhance adoption, trust, and inclusivity:

For Policymakers:

1. Strengthen Regulatory Frameworks

- Prioritize data security, privacy protection, and operational transparency in regulations to build investor trust.
- Establish mandatory disclosure standards for robo-advisors, requiring clear communication of fees, risks, and algorithmic decision-making processes.

2. Promote Financial Literacy

- Launch nationwide campaigns to educate novice investors about robo-advisory benefits, risks, and functionalities.
- Partner with educational institutions and FinTech firms to develop tailored workshops and digital tools that simplify complex financial concepts.

3. Prevent Financial Exclusion

- Introduce usability guidelines to ensure platforms accommodate users with varying digital literacy levels (e.g., multilingual interfaces, voice-assisted navigation).
- Incentivize innovation in underserved regions through grants or tax breaks for FinTech startups targeting rural populations.

For FinTech Companies:

1. Optimize User Experience

- Design intuitive interfaces with seamless onboarding, real-time portfolio tracking, and interactive dashboards.
- Incorporate clear data visualizations (e.g., graphs, risk meters) to help users understand investment strategies and outcomes.

2. Enhance Trust Through Transparency

- Adopt **third-party certifications** (e.g., ISO 27001 for data security) to validate platform reliability.
- Publish **annual transparency reports** detailing algorithmic performance, data usage policies, and audit results.

3. Leverage Hybrid Advisory Models

- Integrate human-AI collaboration, allowing users to consult human advisors during critical decisions (e.g., major portfolio adjustments).
- Offer tiered service plans (e.g., basic automated plans vs. premium hybrid options) to cater to diverse investor preferences.

Strategic Marketing and Communication:

- Highlight Value Propositions: Emphasize cost-efficiency, 24/7 accessibility, and personalized solutions in marketing campaigns, particularly targeting first-time investors.
- Manage Expectations: Use plain language to explain potential returns, risks, and limitations, reducing mismatches between investor expectations and actual outcomes.

Long-Term Sustainability:

While ease of use drives initial adoption, trust is critical for retention. Continuous efforts to upgrade cybersecurity protocols (e.g., blockchain-based encryption), coupled with ethical AI practices, will solidify user confidence. Simultaneously, fostering partnerships between regulators, educators, and innovators can create a cohesive ecosystem where robo-advisors thrive as inclusive, trustworthy tools for wealth management.

By aligning regulatory rigor with user-centric innovation, India can position itself as a global leader in democratizing AI-driven financial services.

CONCLUSIVE REMARKS

This study offers a comprehensive exploration of the evolution and growing potential of robo-advisors, with particular emphasis on the integration of artificial intelligence (AI) and its transformative impact on both global and Indian financial landscapes. The analysis of secondary data highlights the rapid advancement of AI in financial services worldwide, where robo-advisors are increasingly reshaping investment strategies by delivering automated, personalized portfolio management and enhanced risk mitigation tools (Lakhchini et al., 2022; Schanzer-Larsen, 2023). These developments mark a fundamental shift toward accessible and efficient investment solutions, yet challenges remain—particularly around data privacy and transparency—which continue to impede broader adoption, especially within emerging markets like India (Poornima & Chitra, 2022).

Findings from the primary survey provide further insight into India's distinct barriers to robo-advisory adoption. These include persistent language diversity, uneven levels of financial literacy, and significant technological anxiety, particularly among older or less tech-savvy investors (Joshi et al., 2021; Venkatesh, Morris, Davis, & Davis, 2003). A central theme that emerges across the data is trust, which plays a critical role in influencing user acceptance of robo-advisors. Among more experienced investors, performance expectancy—the belief that the system will help them achieve financial gains—also significantly affects adoption intentions (Zhang, Zhao, Cheung, & Lee, 2014; Bhatia et al., 2021; Díez & McIntosh, 2009).

Generational differences are also evident. Younger investors show a stronger preference for robo-advisory platforms compared to older individuals, primarily due to their greater familiarity and confidence in digital technologies (Brenner & Meyll, 2020). Moreover, investor anxiety influences adoption patterns in nuanced ways: those with lower financial knowledge tend to exhibit higher anxiety, which in turn diminishes trust and engagement, while more informed investors may experience less apprehension (Dixon et al., 2014; Nourallah, Öhman, & Amin, 2022).

To fully unlock the potential of AI-powered robo-advisors in the Indian market, it is essential to address these trust deficits and mitigate concerns surrounding data privacy and technological complexity. Efforts should be made to improve financial literacy and digital inclusivity, particularly among underserved and older demographic groups. Customizing robo-advisory services to accommodate diverse investor profiles—ranging from digitally native youth to cautious older adults—can facilitate broader adoption and ensure that the benefits of AI-driven investment tools are equitably distributed. In doing so, robo-advisors could serve as a powerful catalyst for financial empowerment and long-term inclusion in India's rapidly evolving digital economy.

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