

UNDERSTANDING ROBO-ADVISOR ADOPTION IN EMERGING MARKETS: AN EMPIRICAL INVESTIGATION OF UTILITARIAN, SOCIAL, AND MODERATING FACTORS IN KARNATAKA, INDIA

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ABSTRACT

The quick rise of robo-advisory services in FinTech suggests that wealth management will be more accessible and efficient. Due to psychological and societal obstacles, however, adoption is still restricted. The Technology Acceptance Model (TAM) is expanded upon in this study to investigate how perceived usefulness, perceived ease of use, subjective norms, and prior exposure to robots influence the adoption of robo-advisors. The study, which uses structural equation modeling (SEM) on survey responses from 150 digitally engaged consumers in Karnataka, India, demonstrates that the impact of perceived usefulness on behavioral intent is entirely mediated by attitude toward robo-advisors. Demographic variables (age and gender) show no significant moderation, but subjective norms have a significant impact on purpose among users unfamiliar with robots. The results emphasize the value of targeted social proof marketing and user-centered design in developing economies, as well as the “utility paradox” that they reveal. The theoretical and administrative ramifications for FinTech companies are examined.

KEYWORDS: *Robo-advisors, FinTech, Technology Acceptance, AI familiarity.*

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Introduction

The fast development of robots and artificial intelligence (AI) has brought about a dramatic paradigm change in the way that value is co-created and delivered throughout the world's service sectors, fundamentally changing conventional methods. The rise of robo-advisors, which are specialized, automated platforms that use AI algorithms to deliver financial planning and portfolio management with minimal human involvement, is the most obvious change occurring in the expanding Financial Technology (FinTech) industry. These technologies call into question established norms of professional knowledge and confidence in the financial industry as they move from "back-office" support functions to "front-office" client-facing roles. In spite of the technical efficiency and potential for democratizing wealth management by drastically lowering costs and offering around-the-clock access, there is still a significant adoption gap among the general population. The disparity between the technology's availability and its widespread adoption is caused by the fact that many would-be investors are still wary of entrusting their financial futures to non-human organizations. This reluctance indicates that the barriers to entry are not just financial or technical but are also firmly entrenched in the psychological and social attitudes of today's consumers. As a result, for the development of the FinTech environment, it is essential to comprehend the complex factors that influence technology adoption. By determining the precise practical and social drivers-perceived usefulness, perceived ease of use, and subjective norms-that influence the adoption of robo-advisors across various cultural contexts, this study attempts to close the existing knowledge gap. This study provides a thorough framework for comprehending how prospective clients make the complicated choice to use financial services powered by artificial intelligence, by adding the impact of mass media and interpersonal social circles to conventional models of technology acceptance.

Literature Review & Theoretical Framework

The Development of Robo-Advisory Services. Robo-advisors are seen by Belanche, Casaló, and Flavián (2019) as a key disruptive innovation in the FinTech market, which is characterized by the capacity of these robots to offer automated, algorithm-driven

financial advice with little human interaction. Jung et al. (2018) have expanded this notion, contending that the main value proposition of robo-advisors is “algorithmic objectivity,” which is the systematic elimination of human emotional bias from unpredictable investment choices. Additionally, D’Acunto et al. (2019) emphasize that these platforms democratize access to complex wealth management but also demand a radical change in the investor’s role from being a passive recipient of advice to being an active monitor of digital interfaces. When taken together, these studies point to the fact that robo-advisors are more than simply a technological tool; they represent a structural shift in the relationship between providers and clients.

The Cognitive Framework for Technology Acceptance. Recent research has included more sophisticated psychological factors to account for the acceptance of high-stakes AI, even though the conventional Technology Acceptance Model (TAM) focuses on perceived usefulness and ease of use. Through the lens of the Unified Theory of Acceptance and Use of Technology (UTAUT2), Venkatesh et al. (2012) argue that in customer-facing FinTech, “Price Value” and “Habit” are just as important as practical functionality. Additional nuances are added by studies showing that trust is largely contingent upon how users subjectively perceive the system’s cognitive capacity. As a result, people are more likely to view the adoption of robo-advisors as a tradeoff between their evaluation of the machine’s computing capability and their perception of its capacity to manage their personal finances.

Psychological Obstacles:

Trust and Algorithmic Aversion. The psychological concept of “algorithmic aversion” frequently gets in the way of the connection between a system’s utility and its real adoption. After observing an error, even if the algorithm is statistically more accurate, users tend to lose faith in algorithms more quickly than in human counselors, as Dietvorst, Simmons, and Massey (2015) discovered. In the context of financial management, Castelo et al. (2019) discovered that consumers are more willing to delegate “objective” responsibilities, like mathematical rebalancing, to AI, while being hesitant to outsource “subjective” ones, like setting long-term life goals. For an

AI creature to be accepted, it must go beyond its practical advantages and create a feeling of kindness that assures the user that it is in line with their own needs.

The Impact of Social Influence and External Validation. Social validation becomes a key driver of behavior as a result of the sometimes-disruptive character of robo-advisory services, which can leave prospective users feeling extremely unsure. According to research, social influence is especially effective in the initial phases of adoption, when social evidence serves as a crucial risk-reduction strategy. Furthermore, research indicates that the “herding effect,” in which people follow media stories or replicate the digital adoption patterns of their social peers, might frequently outweigh a person’s rational evaluation of a platform’s technical attributes. This highlights that the switch to AI-driven finance is a social as well as a technological trend.

Familiarity and the Trust Transfer Process. The impact of a user’s prior technological environment on their financial choices is the subject of the last pillar of the existing theoretical discussion. According to Schepman and Rodway (2020), general attitudes about artificial intelligence (GAAIS) are shaped by low-stakes encounters with commonplace AI, like virtual assistants or recommendation algorithms. According to this “trust transfer” hypothesis, people’s reluctance to use automated wealth management decreases as they get used to AI in non-financial settings. Raising a community’s AI literacy level is a successful strategy for reducing psychological barriers to entry, enabling users to compare robo-advisors using performance data rather than a fear of the unfamiliar.

Hypotheses

- H1: Gender moderates the effect of the drivers of robo-advisor adoption.
- H2: Perceived ease of use has a beneficial influence on the perceived value of robo-advisors.
- H3: Interpersonal subjective norms (influence from friends, relatives, and peers) have a favorable impact on the desire to use robo-advisors.
- H4: Familiarity with robots regulates the link between subjective

norms and intention to use robo-advisors (the association is stronger for those with minimal familiarity).

Methodology

Data Gathering and Research Design: A quantitative, cross-sectional study design was employed in this investigation. The data were gathered using a structured online poll aimed at 150 respondents in Karnataka, India, a major center for financial and technological innovation worldwide. By using a localized approach, we may analyze in detail how investors in emerging markets move from conventional relationship-based banking to automated, algorithmic wealth management.

Participant Selection and Sampling Method. In order to guarantee that respondents had the essential technical background to assess robo-advisory services, a deliberate sampling strategy was used. Prior experience with digital payment platforms or online banking (such as UPI or mobile banking apps) was the main inclusion criterion. By accounting for overall digital illiteracy, this filtering procedure isolates psychological motivators of AI adoption.

Statistical Analysis: Structural Equation Modeling (SEM). Structural Equation Modeling (SEM), chosen for its capacity to simultaneously assess the measurement model (reliability and validity of survey items) and the structural model (hypothesized paths), was the main analytical framework. Age, gender, and familiarity with robots were used as moderators in a multisample analysis conducted within the SEM framework by comparing path coefficients between subgroups.

Findings and Outcomes Using attitude as the main behavioral anchor, the structural analysis supports the hypothesis that attitude is the most effective and straightforward predictor of one's intention to utilize. The last barrier to adoption is a consumer's internal assessment, which includes their cognitive and emotional predisposition toward the AI.

The Utility Paradox: Perceived usefulness's indirect effect. The "utility paradox" is a crucial discovery, in which perceived utility (PU) exhibits a robust positive association with attitude ($\beta = 0.62, p < 0.001$), but is unable to demonstrate a clear, statistically significant link to behavioral intention. This suggests that in high-

stakes financial situations, merely being “useful” is not enough to encourage adoption; usefulness serves as a hygiene element that fosters a positive outlook. Perceived ease of usage had a positive impact on perceived utility (backing H3).

The Moderating Effects of Familiarity and Social Influence. Subjective norms became the major entry point for new users ($\beta = 0.48$, $p < 0.01$ for the complete sample). Nevertheless, there is a distinct separation between those who are acquainted with robots and those who are not. The route from subjective norms to intent was much stronger for participants with less familiarity ($\Delta\chi^2$ significant at $p < 0.05$), providing evidence for H5. The impact of social norms was less for users with a high degree of familiarity, and acceptance was mostly based on an internal evaluation of utility and usability. The general public favored H4.

Consistency in demographics, age, and gender did not significantly modify the main drivers, which is contrary to popular belief (H1 and H2 not supported). This implies that psychological obstacles to AI adoption are rather prevalent throughout demographic groups in the area, and that technological preparedness is a better indicator than chronological or biological factors. The model fit well (CFI = 0.94, RMSEA = 0.06).

Implications and Conclusion Recommendations for Management:

The Primacy of Experience-Driven Utility. Market penetration depends on more than just algorithmic technical superiority; the user interface must also be user-friendly. Developers must prioritize designs that are user-centric and emphasize transparency and ease of movement. A smooth digital experience serves as the main mechanism for establishing cognitive trust because perceived ease of use is a fundamental predictor of perceived usefulness.

Strategic Marketing:

Segmenting Based on Tech Literacy. Marketing frameworks should be divided according to the target audience’s level of AI understanding:

- For tech-novice audiences: Highlight social proof by using community-based success stories, influencer endorsements, and

peer testimonials.

- Concentrate on functional transparency, performance measures, and advanced features for tech-savvy segments (such as those in innovation hubs like Bengaluru).

Practical and Theoretical Contributions. By incorporating social and moderating variables in a high-stakes financial environment, this study builds upon the Technology Acceptance Model. It supports the idea that in developing markets like India, the “human element”—expressed via social influence and individual mindset—remains essential to the acceptance of technology.

Restrictions and Future Research. Because of its cross-sectional design, regional emphasis (Karnataka), and intentional sample of online users, the research has several limitations. Future studies may improve causal inferences by using longitudinal designs, bigger national samples, or experimental manipulation of interface characteristics.

Conclusion

The integration of robotic advisory services into the Indian financial industry will be successful if social acceptability and practical usefulness are in harmony. Despite the utility paradox showing that objective effectiveness alone does not ensure use, the significant functions of subjective norms and attitude offer a clear path for institutional expansion. As AI literacy spreads throughout Karnataka and beyond, we may anticipate that people will rely less on group social evidence and make choices that are more independent and utility-driven. By humanizing the automated experience with social endorsement and flawless user interface design, financial organizations must close the trust gap that now exists.

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