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Transforming Mutual Fund UX:
The Power of AI and Behavioural Science

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Executive Summary

As the mutual fund industry in India continues to grow, so does the opportunity for businesses to capture and retain users. But the key to driving profits isn't just about offering investment options—it's about understanding what truly motivates users and how to keep them coming back. Our research digs deep into the preferences of Indian investors, offering actionable insights that can enhance user experiences, boost engagement, and potentially increase revenue. These insights offer a clear path for refining mutual fund investment applications by leveraging behavioural science and advanced AI to achieve a competitive edge in the market, driving both growth and user loyalty.

Introduction

In recent years, the popularity of mobile applications for mutual fund investments in India has surged (Srivastav et al. 2024), providing investors with convenience and accessibility to the market. However, this rise has also exposed significant challenges such as poor interface design, complex onboarding, confusion due to informational overload, and inadequate customer support; issues we identified in our prior research (Sharma et al. 2023). Using a combination of methods, including qualitative interviews, and user journey mapping, AI-driven analysis of user reviews across leading asset management company (AMC) applications, we gained a comprehensive understanding of the pain points, and the features users appreciated, such as ease of use, visual appeal, and AI integration.

Building on these insights from our exploratory research (Sharma et al. 2023), we conducted a quantitative evaluation of mutual funds investment behaviour. We leveraged the Self-Determination Theory (SDT) (Ryan & Deci, 2001), as it is well suited to explain user motivation and behaviour in technology contexts (Tyack & Mekler, 2020). We also explored the role of gamification- applying game design elements in non-game context, a widely adopted strategy for increasing user engagement and influencing motivation (Faust, 2021).

Our research objectives were:

Understand the key drivers of investment behaviour:
Explore investor goals and fund characteristics that influence investment decisions.

Evaluate barriers to investment:
Identify factors perceived as obstacles by investors in mutual fund investments.

Explore user preferences for features aligned with SDT:
Investigate how incorporating elements of SDT-competence, autonomy, and relatedness-in mutual fund investment applications can enhance user engagement.

Examine user preferences for gamification features:
Assess user preferences for gamification elements in mutual fund investment applications.

To achieve our objectives, we employed a quantitative approach using a survey questionnaire with a sample of mutual fund investors who used digital platforms. Additionally, we discuss how AI integration in financial applications can enhance user experiences.

The Investment Ecosystem

In the mutual fund sector, the "investment ecosystem" encompasses a complex network of factors that shape individuals' investment decisions, including drivers that encourage investment, as well as, barriers that can impede the process. By thoroughly analysing these factors across different demographic groups, financial institutions and AMCs can tailor their services to better meet diverse investor needs. These insights enable the creation of targeted strategies to improve user support, satisfaction, and the design of more inclusive and user-centric investment solutions.

1. Key drivers to investment

Drivers refer to the motivational factors that influence individuals' investment decisions. These drivers can be factors internal to the users, such as personal goals and aspiration; or external, like the characteristics of AMCs or specific funds.

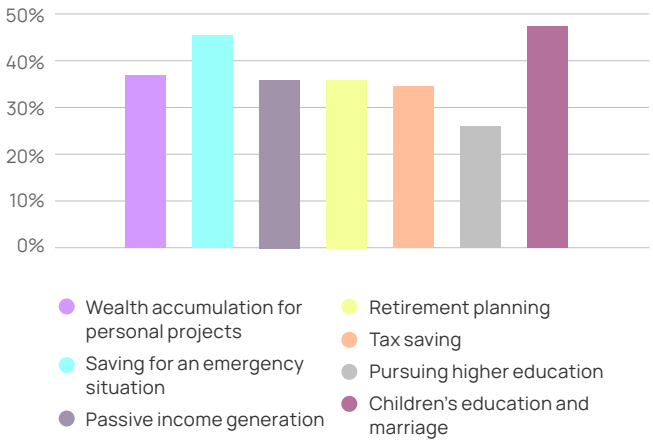
1.1. Internal drivers to investment:

Personal financial goals act as the core internal motivators that push individuals to invest. To gain a deeper understanding of users' financial aspirations, we analysed how the sample prioritized various financial goals, both in the near term and over the long term.

Short-term financial goals – The sample highlighted importance of investment objectives over the next 2 to 4 years.

Figure 1

Short-term financial goals



Note. The graph illustrates the percentage of users who prioritized different short-term goals.

The sample identified children's education, marriage, wealth accumulation for personal projects, and saving for emergencies as the major short-term goals (Figure 1), though these priorities varied by age group (Figure 2).

Figure 2

Age-group comparison of short-term goals

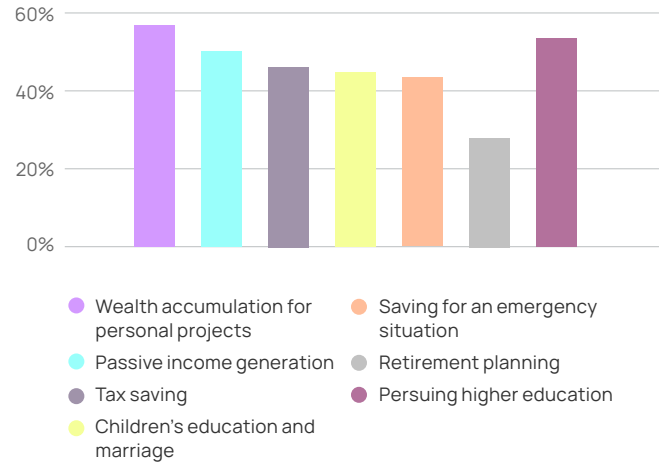
Note. The graph illustrates age-group comparisons of the percentage of users that prioritized different short-term goals.

Findings indicate that (Figure 2), between ages 20 to 30, there is a strong emphasis on passive income generation and wealth accumulation, reflecting their desire for financial independence and stability. During these years, saving for emergencies also holds importance, while retirement planning and tax saving are less of a priority. By the ages of 31 to 40, saving for emergencies, retirement planning, and considerations for children's education and marriage begin to take on greater significance, reflecting the dual focus on securing financial futures and addressing growing family responsibilities. In 40s and 50s, the focus increasingly shifts towards ensuring financial stability for both current and future generations. Passive income generation and children's education and marriage become dominant goals, especially between ages 41 to 50, as individuals seek to secure their family's future while maintaining financial independence. Retirement planning gains prominence, particularly in the 51 to 55 age group, as individuals prepare for the transition to retirement. During this period, wealth accumulation and tax-saving strategies become less central. This could be attributed to a shift in priorities towards securing a comfortable retirement and fulfilling family obligations.

Long-Term Financial Goals- The sample highlighted importance of investment objectives over the next 5 to 15 or more years.

Figure 3

Long-term financial goals



Note. The graph illustrates the percentage of users who prioritized different long-term goals.

In the long term, wealth accumulation, children's education and marriage, and saving for emergencies remained key goals, with age-specific differences (Figure 4).

Figure 4

Age-group comparison of long-term goals

Note. The graph above illustrates age-group comparisons of the percentage of users that prioritized different long-term goals.

Between ages 20-30 (Figure 4), individuals tend to focus on passive income generation and wealth accumulation as primary long-term financial goals. Saving for emergencies is also a significant priority during this stage. In the age group of 31 to 40, there's a notable shift towards retirement planning as a top concern. At this stage, investors also start prioritizing children's education and marriage, reflecting the growing importance of family-related financial responsibilities. In the ages 41 to 50, there is an emphasis on passive income generation and planning for children's education and marriage. There is also an increasing focus on retirement planning and tax saving as individuals approach the later stages of their careers. In the 50s, retirement planning becomes the most critical concern as they prepare their financial stability when they move out of the workforce.

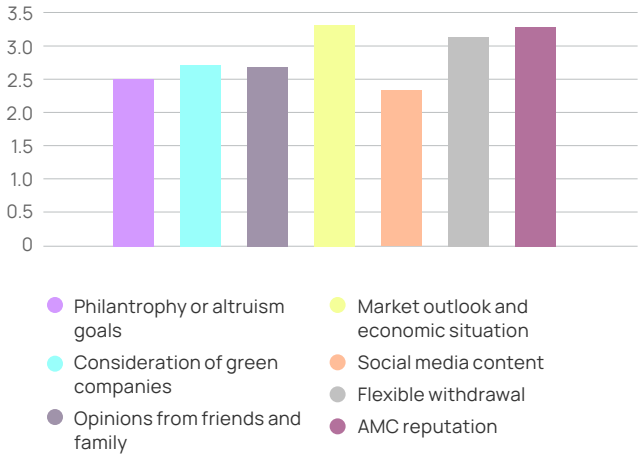
Investment goals, both short-term and long-term, shift across age groups mirroring the changing financial priorities at different life stages. This emphasizes the need for offering users flexible and customizable options to define and adjust their financial goals.

1.2. External drivers to investment:

These are the factors external to investors that influence investment decisions, such as AMC reputation, economic situation and so on which attract or draw in users. Additionally, specific attributes of some funds, such as a focus on eco-friendly businesses or companies with philanthropic initiatives, also impact investment preferences.

Figure 5

External factors influencing investment

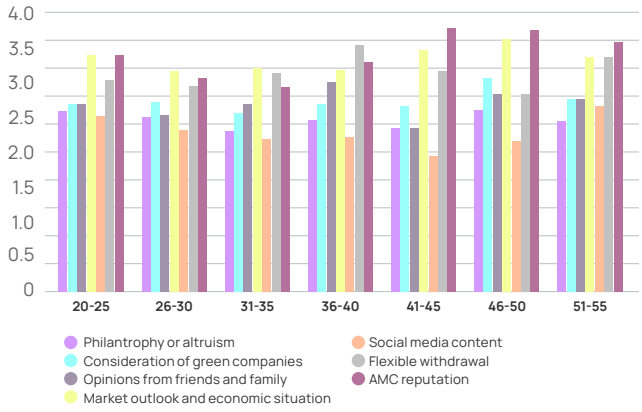


Note. The graph illustrates the mean sample ratings on a scale of 1 to 4, highlighting the impact of external factors that influence investment decisions.

Sample reported market outlook, AMC reputation, and availability of flexible withdrawal options as the top three factors influencing investment decisions (Figure 5), a pattern consistent across most age groups (Figure 6).

Figure 6

Age-group comparison of factors influencing investment



Note. The graph illustrates age-group comparison of the mean sample ratings on a scale of 1 to 4, highlighting the impact of external factors that influence investment decisions.

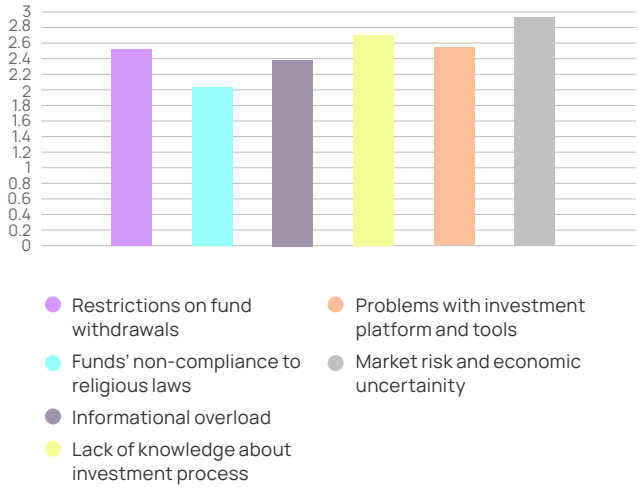
Findings (Figure 5 and 6) indicate that investors are highly aware of the broader economic environment and place significant value on a strong AMC reputation, which fosters a sense of security and confidence. Additionally, the preference for flexible withdrawal options, is likely driven by the autonomy it provides in accessing funds. This flexibility allows investors to feel secure and manage their investments according to their financial needs, thereby enhancing their overall confidence in the investment process.

2. Barriers to investment

Barriers include factors perceived as obstacles that prevent individuals from investing or create apprehension about the investment process. Our sample reported concerns about market uncertainty and the lack of flexible withdrawal options as barriers (Figure 7) that can impact investor confidence and deter them from pursuing investment opportunities.

Figure 7

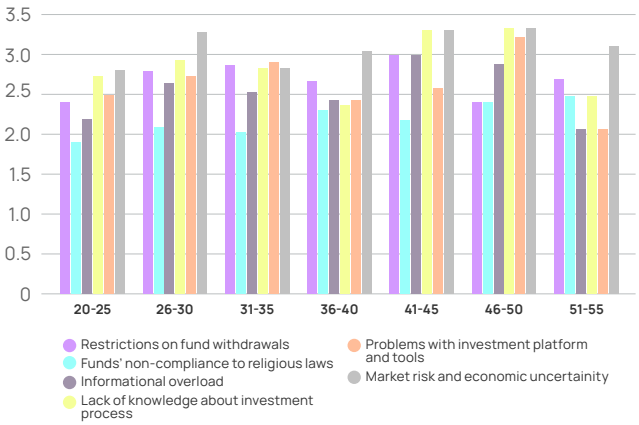
Barriers to investment



Note. The graph shows the mean sample ratings on a scale of 1 to 4, highlighting the extent to which each of these factors are perceived as a barrier.

Figure 8

Age-group comparison of barriers to investment



Note. The graph above illustrates the mean sample ratings on a scale of 1 to 4, highlighting the age-group comparison of barriers to investment.

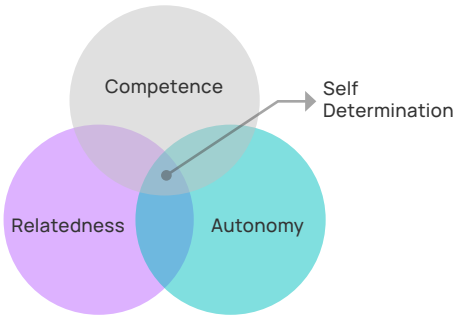
Sample reported market risk and economic uncertainty, and lack of knowledge about investment process as the dominant barriers (Figure 7), which remained significant across most age groups (Figure 8).

Between the age 20 to 30, concerns with limited access to withdrawal of funds and informational overload are prominent, indicating a struggle to navigate the complexities of investment information. This is usually the age when people enter the workforce and start exploring investment options and may face difficulties in understanding and managing the vast amount of information available, due to limited experience. Between ages 31 to 35, limited access to withdrawal of funds becomes a pressing concern, reflecting the need for liquidity and flexibility. Between ages 36 to 40, there is a slight decrease in concerns about informational overload, due to increased familiarity with the process of investment. Between ages of 41 to 50, individuals express higher levels of concern with informational overload and increased concerns about lack of knowledge. It is also accompanied by problems with investment platform and tools due to emergence of new market trends, terminology and technology. In their 50s, market risk and economic uncertainty become a salient barrier for people, reflecting a heightened awareness of financial risks due to technological changes.

Results indicate that for most age groups the common obstacles are market risk and economic uncertainty and lack of investment knowledge (Figure 8). While the market conditions are beyond control; improving users' financial literacy through better investment platforms and tools can empower them to manage their finances more effectively, leading to greater satisfaction. Our research also reported a positive correlation ($r = 0.48$, $p=0.00$) between satisfaction with investment experiences and investor knowledge in financial management. This suggests that individuals who feel more knowledgeable and confident about managing their finances tend to have more satisfying investment experiences. Thereby, investment applications that focus on enhancing user confidence and financial literacy can empower users to make informed decisions, driving higher satisfaction and engagement. To foster sustained long-term engagement, motivational frameworks like SDT can be utilized (Alberts et al., 2024), focusing on creating interfaces that nurtures users' core psychological needs. By ensuring these basic needs are met, long-term engagement can be achieved effectively.

3. Driving user engagement through self-determination theory

SDT suggests that peoples' motivation and behaviour are significantly influenced by the extent to which their basic psychological needs for autonomy, competence and relatedness are fulfilled. Autonomy is the desire to be in control of one's actions, competence is the need to feel capable and effective and relatedness is the need to feel connected to others.



In mobile applications, autonomy can be promoted through user customizable features like personalized goal setting, personalized dashboard, themes and so on. On the other hand, features like challenges and progress reports may enhance competence. (Zhao & Guo, 2019). For example, in Mint, an American personal finance management application (Image 1), users can create goals for saving or increasing investments and customize them according to their preferences, enhancing autonomy. In Qapital, (Image 2) another finance management application, users can set specific savings goals, and as they get closer to reaching those goals; the application visually displays a progress bar, enhancing competence.

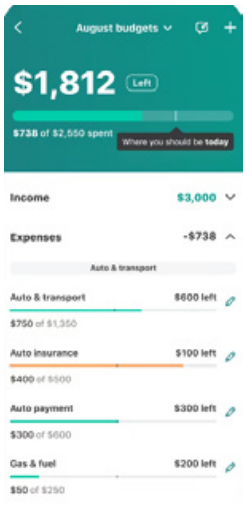


Image 1

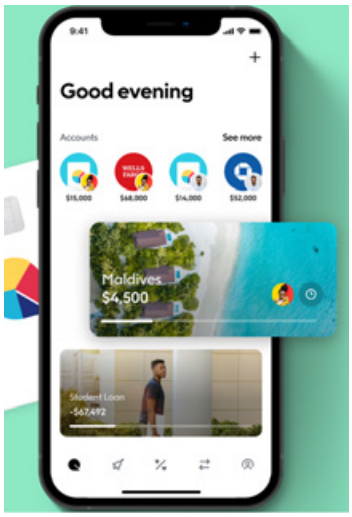


Image 2

Relatedness can be fostered by the ability to share progress with others through social features like discussion forums (Zhao & Guo, 2019). For example, StockEgde, an Indian stock trading application, has a dedicated product called StockEdge Social where users can engage in investment related discussions (Image 3).

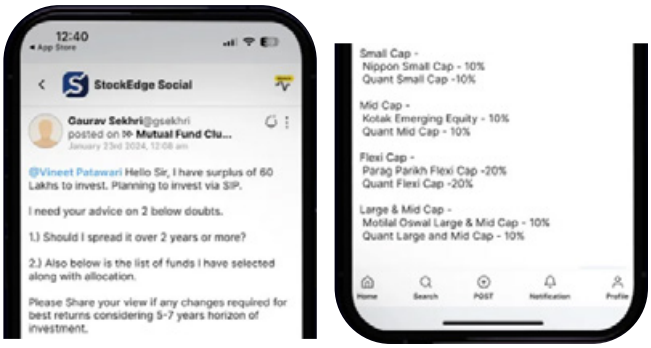
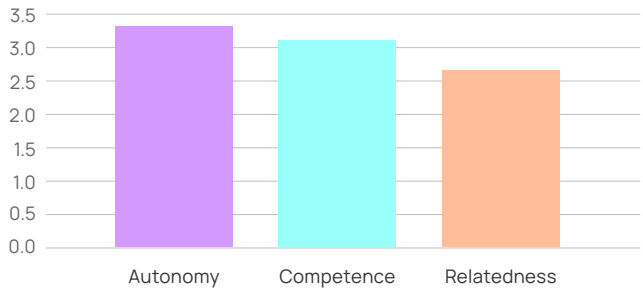


Image 3

However, finance typically involves private decision-making, where autonomy and competence are valued, but confidentiality is paramount. Relatedness, while important in some contexts, is less critical in financial applications due to privacy concerns inherent in financial decision-making (Skatova et al., 2023). Social features like sharing financial progress or discussing investments are often perceived as privacy risks (Skatova et al., 2023). In line with these observations, our research revealed similar trends (Figure 9). Since the SDT components were assessed with different numbers of survey items, differences in user preferences were evaluated by comparing the mean sample ratings of the normalized scores.

Figure 9

User preference for features promoting the SDT components

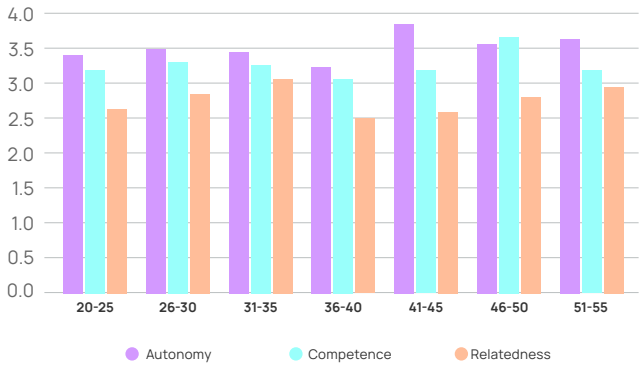


Note. The graph shows mean of the normalized scores of user preference ratings (scale 1 to 4) for features in a mutual fund investment application that promote the SDT components.

The sample reportedly preferred autonomy and competence promoting features in a mutual fund application, such as customizable screens, personalized investment options, investment guides, and progress tracking. Relatedness promoting features, such as sharing investment progress, building groups with friends and family were the least favored across all age groups (Figure 10).

Figure 10

Age-group comparision of user preference for features promoting the SDT components



Note: The graph presents the age group comparisons of mean of the normalized scores of user preference ratings (scale 1 to 4) for features in a mutual fund investment application that promote the SDT components.

Our research highlighted autonomy as a crucial factor in investment decisions. Key drivers, such as wealth accumulation for personal projects and flexible fund withdrawals, emphasize the importance of giving users control. Conversely, barriers like limited withdrawal options undermine autonomy, restricting how individuals manage their finances. This interplay between drivers and barriers reflects users' inherent desire for autonomy in managing their investments.

Likewise, competence also plays a significant role, with goals like retirement planning and emergency savings enhancing users' confidence in their financial readiness. Trust in the AMCs further bolsters this by increasing confidence in investment options. Conversely, a lack of financial literacy acts as a barrier, limiting users' sense of competence. Our findings stress the importance prioritizing autonomy and competence in mutual fund applications to effectively drive user engagement.

4. Gamifying finance

Gamification is an emerging area in finance (Van der Heide & Zelinsky, 2021), representing a growing trend reshaping how financial services are delivered and experienced.

› It makes complex financial concepts more accessible and enjoyable, appealing to a broader audience, including novice investors.

› It transforms financial education into an interactive experience, enabling users to grasp investment intricacies through gaming procedures and simulations. This boost understanding and retention (Inchamnan & Anunpattana, 2019).

› It incentivizes learning through rewards and challenges, making financial decision-making dynamic and engaging.

› Gamified applications can motivate users to adopt positive financial behaviours, such as saving more, budgeting effectively, and investing wisely.

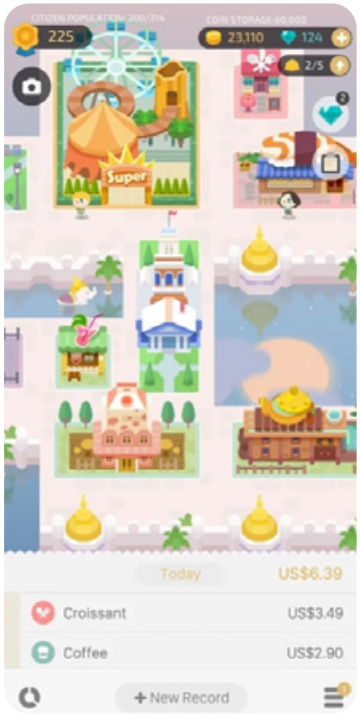
This approach not only educates users but also empowers them to take control of their financial futures through virtual engagement and personalized learning pathways (Romano et al., 2021; FM Contributors, 2023). The strategic integration of gamification with SDT can potentially create a synergistic approach that enhances user engagement, encourages long-term usage and fosters greater loyalty to financial platforms.

Autonomy promoting gamified features

Empowering users to personalize their financial journey based on their specific financial needs and preferences.

FORTUNE CITY

Forune City is a Chinese simulation game, where users construct and manage a virtual town by recording expenses or income.



Offering a customizable experience where users can create their own financial circumstances and learn decision-making.

IAMFAM

iAMFAM in collaboration with the American Insurance Company, enables users to create digital avatars, purchase virtual houses, plan careers and use them to select suitable insurance plans.

Helping users track spending, create budgets, and set financial goals, with autonomy in goal-setting and progress tracking.

MINT

Mint helps users track their spending, create budgets, and set financial goals.

Competence promoting gamified features

Providing financial simulations or scenarios to help users understand the potential outcomes of different financial decisions.

COASTAL WORLD

Coastal World, an initiative by the Coastal Community bank, helps explore financial tools, and online banking options through a simulated-game that naviagates you through various levels.

Implementing reward systems tied to achieving financial milestones, such as unlocking badges or reaching savings goals.

CRED

CRED, an Indian application offers incentives like CRED coins for timely bill payments, teaching responsible credit card usage.

Offering interactive quizzes or challenges on financial literacy topics to improve users' financial knowledge and skills.

MONEFY

Monefy, an Indian expense tracking application, encourages responsible financial management with quizzes and personalized suggestions.

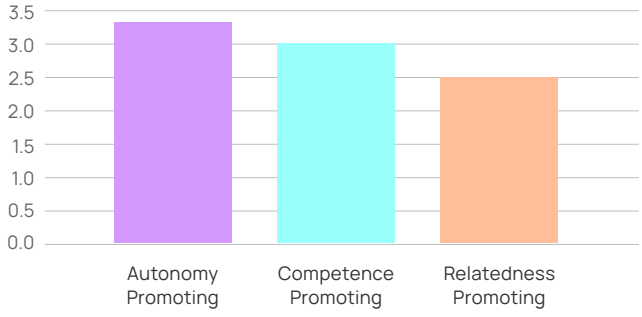
5. Turning theory into action strategies for user engagement

We propose a widely used strategy that bridges theory and practice by integrating SDT with gamification (Faust, 2021). By addressing users' intrinsic psychological needs and harnessing the dynamic, interactive nature of gamification, mutual fund applications can create compelling user experiences. This approach allows for fostering autonomy and competence through personalized, interactive, and user-centric experiences. To test this, we analysed user preferences for gamified features in a mutual fund investment application.

Since the gamification promoting SDT components were assessed with different numbers of survey items, differences in user preferences were evaluated by comparing the mean sample ratings of the normalized scores. Findings revealed (Figure 11) a clear preference for gamified features that enhance autonomy like personalized goal setting, followed by gamified features promoting competence like earning badges, celebratory animations. Relatedness-promoting gamified features, such as investment progress sharing, group creation, were least preferred. This holds true for all age groups (Figure 12), emphasizing a desire for gamified features promoting autonomy and competence in mutual fund investment applications.

Figure 11

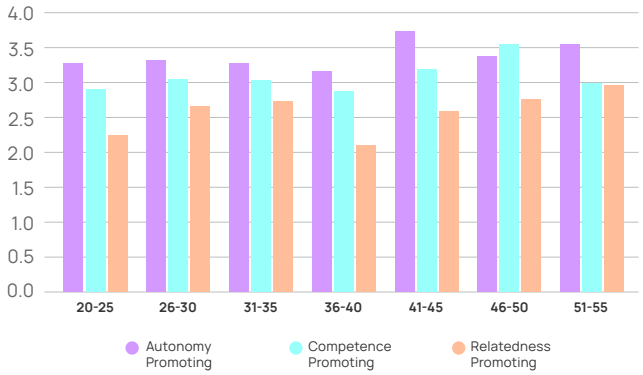
User preference for gamified features promoting the SDT components



Note. The graph shows mean of the normalized scores of user preference ratings (scale 1 to 4) for gamified features that promote the SDT components in a mutual fund investment application.

Figure 12

Age-group comparison of user preference for gamified features promoting the SDT components

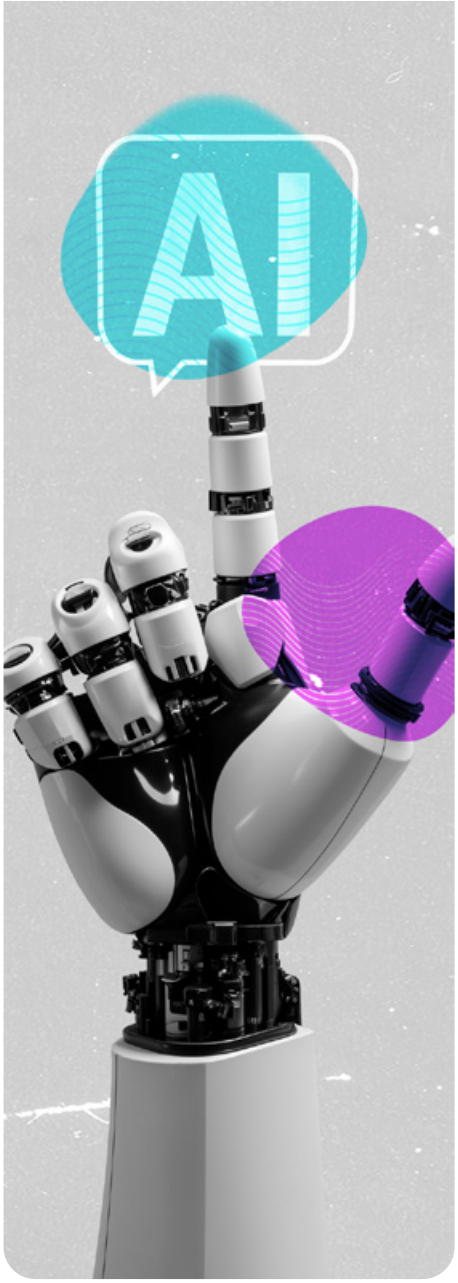


Note. The graph shows the age group comparison of the mean of the normalized scores of user preference ratings (scale 1 to 4) for gamified features that promote the SDT components in a mutual fund investment application.

Smart Investments: AI-Driven Innovation in Mutual Fund Applications

As the mutual fund industry evolves, stakeholders must adopt technology-driven solutions to address current challenges and future trends. Our research highlights the need for mutual fund applications that not only meet financial goals but also engage users' psychological motivations, such as autonomy and competence. Users value flexibility and control, but face barriers like limited investment knowledge and inefficient platforms, often leading to feelings of incompetence and user frustration. To overcome these challenges, we recommend integrating AI into mutual fund applications to enhance user autonomy, and competence through financial literacy, and engage users through gamification. This approach not only boosts user satisfaction but also removes barriers to investment, positioning AI as essential for the future of financial services.

AI-driven strategies for enhancing autonomy



1 Adaptive investment profiles:

AI-driven financial models can leverage deep learning (DL) to monitor changes in user behaviour, investment goals, and user financial knowledge. Based on these insights, AI systems can provide information that empowers users to dynamically adjust their investment profiles and stay actively engaged in their financial journey. For example-AI can assess shifts in users' risk tolerance and provide tailored recommendations for a more conservative or aggressive portfolio accordingly.

2 Customizable features:

AI's capacity for real-time data analysis can empower users by offering highly customizable investment features that allow for autonomous decision-making. For example, AI systems can alert users when critical thresholds are breached - whether detecting heightened portfolio risks, identifying significant shifts in asset performance, or recognizing emerging market patterns that warrant attention. Using machine learning (ML) algorithms, the system can perform predictive analysis on this information, identifying patterns and generate personalized recommendations for users to manage investment strategies.

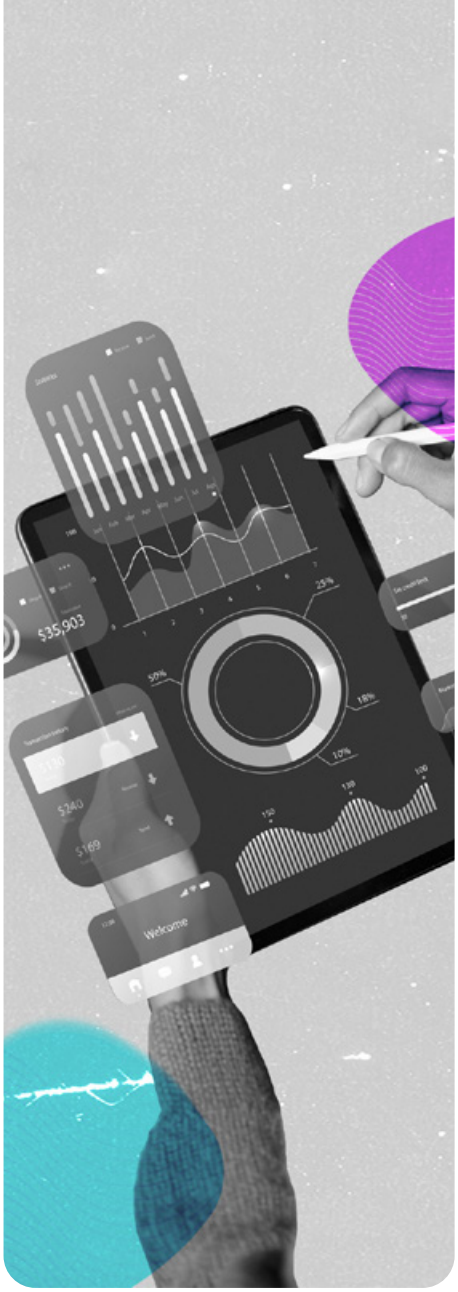
3 AI-powered decision pathways:

AI can create decision pathways based on real-time market data, user preferences, and previous decisions. Users can be presented with real-time "what-if" scenarios by analysing historical data, user preferences, and past behaviour through ML. It allows investors to visualize potential outcomes of various investment decisions. Users can explore multiple scenarios aligned with their financial goals, considering factors like market data, risk tolerance, and previous investment patterns.

4 User oversight:

While AI acts as a smart assistant that facilitates decision-making by offering data-driven recommendations, users retain full control over how much AI is involved in the interface experience. Humans must always have the authority to approve or override the suggestions, preserving autonomy in the investment process. Furthermore, allowing users to set level of autonomy they prefer, choosing whether they want to receive AI suggestions; can manage user cognitive load.

AI-driven strategies for enhancing competence



1. **AI-powered investment learning platforms:**

   Instead of static content, AI could use natural language processing (NLP) to detect when users struggle with specific concepts, automatically offering to explain complex financial topics in easy-to-understand terms. This would boost competence by breaking down intimidating financial jargon and concepts into digestible parts.

2. **Automated market sentiment analysis:**

   AI, leveraging NLP technologies and generative AI, can offer users real-time insights into market trends based on sentiment analysis of existing news sources, expert reports and other verified sources. This way, even users with limited investment knowledge can stay updated about market and sector scenarios to make data-driven decisions.

3. **Progress tracking and real-time feedback:**

   AI-powered personalized dashboards can empower investors by allowing them to tailor visualizations that align with their unique preferences, making it easier to comprehend and manage their investments. For instance, using ML and NLP capacities, the dashboard could enable users to customize the display of portfolio performance—choosing between line charts, heatmaps, or sector-wise pie charts—and compare these metrics against chosen benchmark indices. Additionally, NLP can translate complex financial data into straightforward insights in clear language.

4. **Interactive support:**

   AI support bots can effectively address user issues by generating accurate responses using Generative AI and NLP. With sentiment analysis, these bots can detect user frustration and smoothly escalate complex cases to human support executives, ensuring a seamless resolution process. Additionally, AI systems can assist human support executives by ensuring consistent, high-quality support. Using DL algorithms, these systems can continuously learn from interactions, improving their accuracy and adaptability over time.

Engaging gamification

1. **Simulated investment games:**

   AI-driven simulated games create immersive, risk-free environments where users can explore and refine investment strategies through hands-on experience without the fear of real-world losses. One key benefit of these games is their ability to assess users' risk appetite more effectively than traditional surveys. By analyzing behavioural patterns during gameplay, AI identifies individual tendencies and preferences, offering detailed insights into risk profiles. This data enables personalized feedback and actionable recommendations, helping users make more informed financial decisions. Simulated games also enhance financial literacy, encourage strategic thinking, and build confidence in user decision-making.

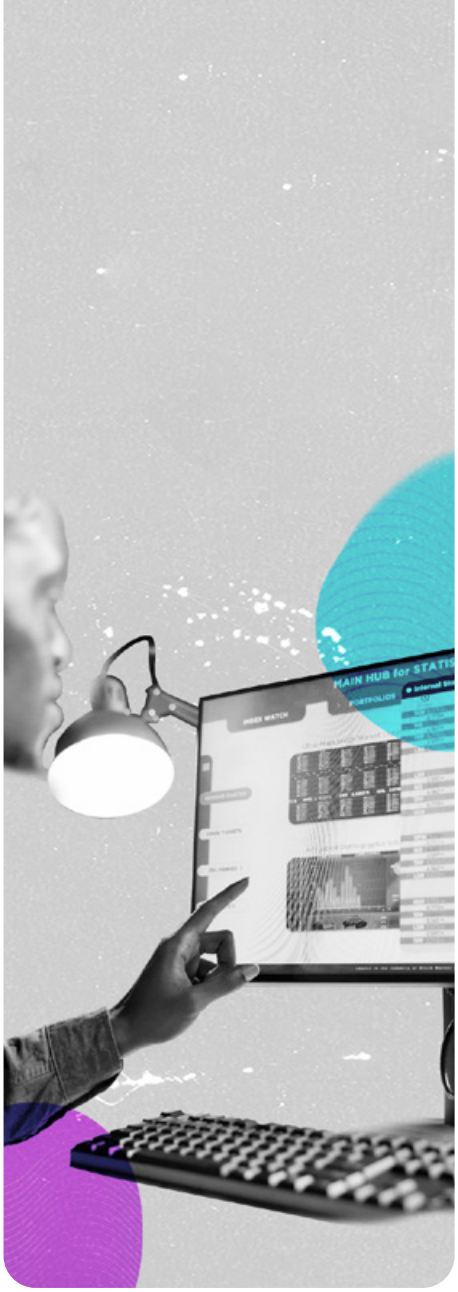
2. **Personalized investment challenges:**

   Using DL, AI can create personalized challenges aligning with users' financial goals, such as increasing monthly savings or diversifying investments. These challenges can be recommended and adjusted based on user behaviour, providing rewards like badges and scores for achieving financial milestones.

3. **Social gamification:**

   While users may be reluctant to engage with social features when discussing personal financial matters, social gamification can significantly enhance learning of the investment process. By presenting real-world investment scenarios as interactive games, users can achieve learning milestones, participate in peer challenges, and track progress through features like leaderboard. This approach makes investment education more engaging and dynamic, and when combined with AI-driven connections to forums or other users with similar learning goals, it offers a personalized experience that aligns with users' financial educational pursuits.

AI powered personalization



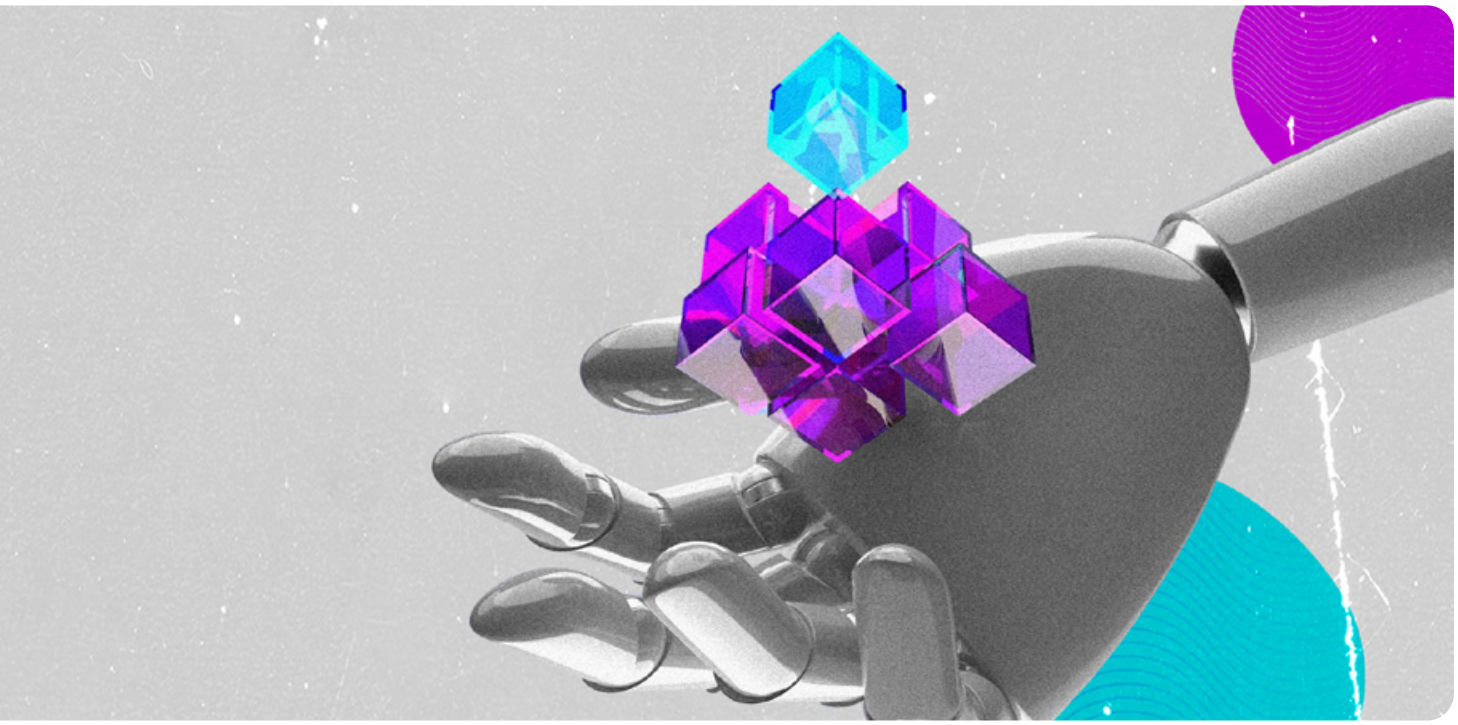
1. **Real-time customizable dashboards:**

   Instead of predefined user interfaces, generative AI and ML algorithms can dynamically generate dashboard designs that best suit each user's goals, providing personalized insights such as "Your portfolio performance today" or "Opportunities in emerging markets" based on user's preferences and goals.

2. **Dynamic user flows:**

   Using generative AI and ML, user interfaces can be auto-adjusted based on user behaviour. For example, if a user consistently checks portfolio performance in the morning, the application can automatically rearrange their dashboard to highlight those metrics in the morning.

> As early as 2017, a Forbes article, referencing survey findings by Pegasystems Inc., reported that 56% of top-performing companies were actively investing in AI technologies to enhance and personalize customer interactions, as compared to 41% of lower performing companies. This underscores the importance of AI-driven personalization as a key strategy for driving superior customer engagement.
>
> Source: Forbes



The Next Frontier for Mutual Fund Success

In the rapidly evolving India's mutual fund industry, our research unveils critical insights into user engagement and investment behavior. The current investor base of 21.65 crore (as recorded in October 2024) represents a mere fraction of potential market opportunities, signalling substantial room for expansion. By addressing key barriers such as platform complexity, financial literacy gaps, and informational overload, companies can unlock significant business potential through strategic technological and design innovations. The competitive advantages of incorporating behavioural science principles are compelling: platforms that prioritize user autonomy and competence can dramatically reduce user friction, lower customer acquisition costs, and increase retention rates. Integrating gamification can potentially reduce customer churn by 20-30%, a transformative metric in the financial services industry.

The integration of AI can significantly enhance personalization by moving beyond the traditional focus on risk appetite. While most mutual fund applications currently tailor experiences based solely on an individual's risk tolerance, our qualitative study (Sharma et al., 2023) highlighted additional factors that influence investment behaviour. AI can leverage these factors to create deeply customized experiences, such as catering to the growing segment of socially conscious investors by incorporating Socially Responsible Investment strategies. By developing Socially Responsible Investment strategies that integrate Environmental, Social, and Governance (ESG) factors, applications can attract a new generation of investors who seek alignment between financial goals and personal values. This approach not only expands market reach but also positions companies as forward-thinking, purpose-driven organizations capable of addressing diverse investor needs.

This research provides a blueprint for financial technology firms to transform mutual fund applications from transactional tools to engaging, user-centric platforms. By embracing these innovative strategies, businesses can drive growth, enhance user satisfaction, and significantly expand the investor ecosystem beyond its current limitations.

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