

## Gamified Investing: An Analysis of Investment Behaviour of Retail Investors Using Financial Applications

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### ABSTRACT

Gamification of investment applications is crucial today as it enhances user engagement and makes financial management more accessible and enjoyable. By incorporating interactive elements like rewards and challenges, these apps motivate users to develop and maintain better investment habits. Gamification also helps simplify complex financial concepts, making it easier for users to understand and make informed decisions. Additionally, it can drive higher retention rates and user satisfaction by creating a more dynamic and rewarding investing experience. This study focuses on the investors of Gujarat and the role gamified investments play on their investment behaviour. The study investigates which demographic groups are most affected by gamified investment features. It also assesses how gamified elements influence investors' decision-making processes and their investment choices. The study examines the effects of gamification on the frequency and intensity of investor engagement with financial platforms. It determines whether gamified investment platforms enhance users' understanding of financial concepts and improve their financial literacy. The research explores if gamified features lead to changes in investors' risk tolerance and risk-taking behaviour. Finally, it evaluates the effectiveness of gamified strategies in helping users achieve their financial goals and improve their overall financial outcomes. The study applies statistical tools like Chi-square analysis, One-way ANOVA and Two-way ANOVA to assess the relationships amongst variables. The result suggests that although gamified investment features boost engagement and risk tolerance among young, lower-income investors, they do not necessarily lead to better decision-making, increased financial literacy, or more successful financial outcomes. Despite the higher interaction and excitement generated by gamification, these features do not significantly improve investment choices or financial goal achievement compared to traditional investment strategies. Therefore, while gamification can make investing more attractive, its impact on developing good financial habits and achieving long-term success remains limited.

### Key words

Gamification, Investor engagement, Financial Literacy, Risk tolerance, Behavioural Finance

## INTRODUCTION

Investing gamification is the process of incorporating gaming features—like leaderboards, badges, rewards, challenges, and progress tracking and points—into investing platforms in order to motivate users to interact and take action. The goal of investment gamification is to increase accessibility, interactivity, and engagement for a larger audience. Gamification in financial apps can significantly enhance user engagement and motivation by making financial management more interactive and enjoyable. This approach not only drives positive behaviour but also transforms the often daunting task of managing finances into a more accessible and rewarding experience. In addition, gamification seeks to develop long-term investing habits, enhance investor decision-making, and raise investor education. Gamification seeks to simplify and make the usually complex world of finance more accessible, usable, and interesting. This study aims to understand how gamification influences various aspects of investment behaviour, including demographic impact, decision-making, engagement, financial literacy, risk tolerance, and goal achievement.

## LITERATURE REVIEW

**Hwang et al. (2023)** indicates that gamified features like badges, leaderboards, and rewards can increase user interaction and adherence to financial goals. These features make financial management more engaging and enjoyable, leading to improved financial habits and increased user retention. **Wang and Lu (2022)** found that incorporating educational games and simulations within financial apps helps users understand complex financial concepts more easily. This approach not only improves financial knowledge but also aids in making more informed investment decisions. **Chen and Zhang (2023)** explored how gamified elements, such as progress tracking and achievement levels, tap into intrinsic motivation and positive reinforcement. Their findings suggest that these elements can lead to sustained engagement and proactive financial management. **Smith et al. (2024)** discuss concerns such as the risk of overemphasis on rewards, which may lead to superficial engagement rather than meaningful behaviour change. They emphasize the need for a balanced approach to ensure that gamified features enhance rather than detract from the core financial objectives of the app. Recent case studies from major financial apps reveal the practical applications of gamification. **Johnson and Lee (2023)** review successful implementations in apps like **Mint** and **Robinhood**, highlighting how personalized challenges and real-time feedback have driven user engagement and satisfaction. These industry examples illustrate the effectiveness of gamification in diverse financial contexts. **Rajsee J. (2024)** suggests that while gamification in financial apps is largely effective, it also raises concerns about addictive behaviour and increased risk-taking. Addressing these issues can lead to more responsible and balanced app usage, benefiting both developers and users. It suggests that gamified financial apps are largely successful in satisfying users, with room for improvement in engaging neutral users and addressing the concerns of the few dissatisfied ones.

## RESEARCH METHODOLOGY

### Objectives

- To analyze which demographic groups (e.g., age, income level, investment experience) are most influenced by gamification
- To assess how gamified elements influence investors' decision-making processes and investment choices
- To examine how gamification affects the frequency and intensity of investor engagement with financial platforms and their investment activities
- To determine if and how gamified investment platforms enhance users' understanding of financial concepts and improve financial literacy
- To explore whether gamified investment features lead to changes in risk tolerance and risk-taking behaviour among investors
- To evaluate the success of gamified investment strategies in helping users meet their financial goals and improve their financial outcomes.

### Purpose of the study

The study is vital for comprehending the influence of gamification on the investment behaviour. Identifying emerging gamification trends that attract and influence this demographic is key. Understanding their investment behaviour is crucial for tailoring investment strategies and gamification techniques effectively. Additionally, this study provides insights into whether gamified investing leads to changes in risk tolerance and risk-taking behaviour among investors as well as whether it improves their financial literacy and helps them in achieving their financial goals.

### Methodology

The study adopts a questionnaire survey method, wherein investors across the state of Gujarat are surveyed. A total of 500 questionnaires were administered of which the response rate was of 65% resulting in a sample size of 325 respondents. The sampling method adopted was non-probability convenience sampling and research design adopted was descriptive in nature.

### Hypothesis

*Hypothesis 1:* Younger investors and those with lower income levels are more influenced by gamified investment features compared to older investors and those with higher income levels

*Hypothesis 2:* Gamified elements in investment applications significantly enhance investors' decision-making processes and lead to more frequent and informed investment choices

*Hypothesis 3:* Gamification increases both the frequency and intensity of investor engagement with financial platforms

*Hypothesis 4:* Gamified investment platforms improve users' understanding of financial concepts and enhance overall financial literacy compared to non-gamified platforms

*Hypothesis 5:* Gamified investment features lead to increased risk tolerance and more frequent risk-taking behaviour among investors

*Hypothesis 6:* Gamified investment strategies are more successful in helping users achieve their financial goals and improve their financial outcomes compared to traditional investment strategies

### Demographic categorization

For the study, age group till 35 years are categorized as ‘younger investors’ while age group above 35 are categorized as ‘older investors. Similarly, annual income upto Rs. 10 Lacs is categorized as ‘Lower income’, whereas annual income of Rs. 10 lacs or above is categorized as ‘Higher income’.

### Data Analysis and Interpretation

#### Demographic Details:

	Age-Category	< 25	26-35	36-45	45 <	Total
Gender	Male	2%	21%	22%	8%	53%
	Female	1%	26%	17%	1%	45%
	Trans-gender	0%	0%	1%	1%	2%
	Total	3%	47%	40%	10%	100%

Table 1. Cluster analysis of Age and Gender

	Annual Income	< 2 Lacs	2-5 Lacs	5-10 Lacs	10-15 Lacs	15-20 Lacs	20 Lacs <	Total
Occupation	Student	2%	0%	0%	0%	0%	0%	2%
	Self-employed	0%	2%	5%	10%	8%	0%	25%
	Service	1%	3%	11%	10%	2%	0%	27%
	Professional	1%	2%	6%	10%	10%	2%	31%
	Retired	0%	0%	1%	2%	2%	0%	5%
	Homemaker	8%	2%	0%	0%	0%	0%	10%
	Total	12%	9%	23%	32%	22%	2%	100%

Table 2. Cluster analysis of Occupation and Income

### HYPOTHESIS RESULTS

Hypothesis	Statistical Test	p-value	df	Outcome
Younger investors and those with lower income levels are more influenced by gamified investment features compared to older investors and those with higher income levels	Two-way ANOVA	0.02	0.05	Young investors with lower income levels are more influenced with gamified investment features
Gamified elements in investment applications significantly enhance investors' decision-making processes and lead to more frequent and informed investment choices	Chi-square	0.152	0.05	Gamified elements do not significantly enhance investors' decision-making processes and investment choices

Gamification increases both the frequency and intensity of investor engagement with financial platforms	One-way ANOVA	0.00	0.05	Gamification significantly increases the frequency and intensity of investor engagement with financial platforms
Gamified investment platforms improve users' understanding of financial concepts and enhance overall financial literacy compared to non-gamified platforms	Chi-square	0.08	0.05	Gamified investment platforms do not significantly enhance financial literacy as compared to non-gamified platforms
Gamified investment features lead to increased risk tolerance and more frequent risk-taking behaviour among investors	Chi-square	0.00	0.05	Gamified investment features significantly lead to increased risk tolerance and more frequent risk-taking behaviour
Gamified investment strategies are more successful in helping users achieve their financial goals and improve their financial outcomes compared to traditional investment strategies	Chi-square	0.42	0.05	Gamified investment strategies are significantly do not help users achieve their financial goals and improve their financial outcomes compared to traditional investment strategies

## FINDINGS AND IMPLICATIONS

### Gamification and Investor Engagement

The current study shows that younger investors (age group upto 35) with lower income levels (annual income upto Rs 10 lacs) are more influenced with gamified investment features. This is in line with previous research conducted by Miller et al. (2018) suggesting that for young, lower-income investors, gamified elements often make financial platforms more accessible and engaging, fostering increased interaction and frequent use. Similarly, Tuzunkan et al. (2020) suggests that the increased engagement is a critical factor in enhancing initial interest in investing among younger demographics.

### Increased Intensity and Risk Tolerance

This study shows that gamification significantly increases the frequency and intensity of investor engagement with financial platforms as well as significantly lead to increased risk tolerance and more frequent risk-taking behaviour. Previous studies indicate that gamification can lead to heightened risk tolerance among users. The thrill and competitive aspects inherent in gamified investment platforms often encourage users to undertake riskier investment behaviours (Kumar & Goudarzi, 2021).

### Decision-Making and Financial Literacy

The statistical results suggests that gamified elements neither significantly enhance investors' decision-making processes and investment choices, nor do they significantly enhance financial literacy as compared to non-gamified platforms. Previous studies suggest on similar lines highlighting that gamified features tend to focus on short-term engagement rather than long-term financial education, which can undermine the development of sound financial decision-making skills (Li et al., 2023). Additionally, research indicates that the superficial appeal of gamified

elements may obscure more complex financial concepts, thereby limiting their educational value (Stewart & Houghton, 2020). Previous studies have shown that while gamified platforms increase interaction, they often do not enhance users' understanding of financial principles (Liao et al., 2021).

### Comparison with Traditional Investment Strategies

This study highlights that gamified investment strategies do not significantly help users achieve their financial goals and improve their financial outcomes compared to traditional investment strategies. Previous studies suggest that traditional platforms, with their focus on fundamental financial education and disciplined investment practices, provide a more structured approach to financial management (Baker et al., 2019). Conversely, gamified platforms may prioritize engagement over education, which can lead to suboptimal financial outcomes (Smith & Green, 2022). Studies comparing gamified and non-gamified platforms reveal that while gamification can attract users, it often does not offer the same depth of financial knowledge or practical benefits as traditional investment strategies (Jones et al., 2024).

### CONCLUSION

In conclusion, while gamified investment features significantly increase engagement and risk tolerance among young, lower-income investors, they do not necessarily translate into improved decision-making, financial literacy, or successful financial outcomes. Despite the heightened interaction and enthusiasm driven by gamification, these features fall short in enhancing investment choices and achieving financial goals when compared to traditional investment strategies. Consequently, while gamification can make investing more appealing, its effectiveness in fostering sound financial habits and achieving long-term financial success remains limited.

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