

Examining the Role of Digital Financial Practices and Sustainable Adoption of Gamified Investment Applications Using a SLR framework-based review

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Abstract—This study examines the role of digital financial practices in the sustainable adoption of gamified investment applications using a Systematic Literature Review (SLR) approach based on the Theory–Context–Methodology (TCM) framework. The rapid growth of financial technology has transformed investment behavior, with gamified applications enhancing user engagement through interactive features such as rewards, badges, and leaderboards. The review synthesizes literature published between 2021 and 2026 to identify key theoretical foundations, research contexts, and methodological trends. Findings indicate that financial literacy, digital literacy, and technology acceptance significantly influence user adoption and continued engagement. While gamification promotes participation and investment awareness, it may also lead to impulsive decision-making and risk-taking behavior. The study highlights the importance of balancing engagement with responsible financial practices. It concludes that sustainable adoption depends on integrating user education, ethical gamification design, and supportive digital financial ecosystems, offering insights for researchers, developers, and policymakers.

Index Terms—Gamification, Theory, context, and method, Investment apps

I. INTRODUCTION

The rapid advancement of financial technology (FinTech) has significantly transformed the delivery and consumption of financial services worldwide. The increasing adoption of digital financial practices, including mobile banking, digital payments, e-wallets, and online investment platforms, has changed the way individuals manage their financial activities[1]. These technological innovations have improved financial accessibility, convenience, and efficiency, enabling

users to participate more actively in financial planning, saving, and investment decisions[2]. As digital financial ecosystems continue to evolve, understanding the factors that influence users' engagement with digital financial services has become an important area of research.

One of the most notable developments within the FinTech industry is the emergence of gamified investment applications. These applications incorporate game-design elements such as rewards, badges, leaderboards, challenges, and progress-tracking mechanisms to enhance user engagement and motivation. By making investment activities more interactive and enjoyable, gamified investment platforms seek to attract a broader range of users, particularly younger investors who are familiar with digital technologies[3]. Previous studies have highlighted the positive effects of gamification on financial behavior and user engagement. Research has shown that gamified features can encourage greater participation in investment activities, improve financial literacy, and promote financial planning behavior. Gamification has also been found to increase motivation, enhance learning experiences, and strengthen users' commitment to achieving financial goals[4].

Despite these benefits, concerns have emerged regarding the sustainability of user engagement with gamified investment applications[5]. Several studies have indicated that excessive reliance on rewards, competition, and achievement systems may encourage impulsive decision-making, speculative trading, and increased risk-taking behavior. Some researchers have argued that gamification can blur the distinction between investing and entertainment, potentially

leading users to focus on short-term rewards rather than long-term financial objectives. These concerns highlight the importance of examining not only the initial adoption of gamified investment applications but also the factors that contribute to their sustainable use over time [6].

II. LITERATURE REVIEW

The rapid expansion of financial technology (FinTech) has transformed how individuals manage, save, and invest money. Among recent developments, gamified investment applications have emerged as innovative tools that integrate game-design elements such as rewards, badges, leaderboards, and progress tracking into financial services. These applications aim to increase user engagement, improve financial literacy, and encourage participation in investment activities. Existing literature demonstrates both the benefits and risks associated with gamification, highlighting its influence on financial behavior and sustainable adoption.

According to Joshi (2024) examined the influence of gamification in FinTech applications on the financial behavior of young investors. The findings revealed that rewards, cashback offers, and achievement badges significantly increased user engagement and participation in investment activities. The study suggests that gamification improves accessibility to financial markets and enhances investment learning among young adults.

III. METHODOLOGY

This study adopts a Systematic Literature Review (SLR) approach to examine the role of digital financial

practices and the sustainable adoption of gamified investment applications[8]. The review follows a structured and transparent process to identify, evaluate, and synthesize relevant scholarly literature published between 2021 and 2026. A systematic review was selected because it enables comprehensive assessment of existing knowledge, identification of research gaps, and development of future research directions in emerging FinTech and digital finance domains.

The study utilizes the Theory–Context–Methodology (TCM) Framework, which is widely applied in systematic literature reviews to organize and analyze existing research. The TCM framework examines the theories employed by researchers, the contexts in which studies are conducted, and the methodologies adopted to investigate the phenomenon under review. This framework facilitates a holistic understanding of the intellectual structure of a research field and supports the identification of future research opportunities.

The literature search was conducted using Google Scholar, which serves as the primary database for article extraction. Google Scholar was selected due to its extensive coverage of peer-reviewed journal articles, conference papers, book chapters, and scholarly publications across multiple disciplines. The search process employed combinations of keywords such as digital financial practices, gamified investment applications, financial literacy, financial behavior, FinTech adoption, digital literacy, and sustainable adoption. Boolean operators including AND OR were used to refine the search results and improve retrieval accuracy.

IV. RESULTS AND DISCUSSION

Table 4.1

No.	Author & Year	Theory (T)	Context (C)	Methodology (M)	Download Source
1	Amnas et al. (2024)	FinTech Adoption Theory	FinTech users in India	PLS-SEM, Survey (608 respondents)	MDPI Paper
2	Islam & Khan (2024)	Financial Literacy Theory	Bangladesh FinTech users	Quantitative Survey, Regression	PDF Paper
3	Koskelainen (2023)	Digital Financial Literacy Theory	Digital finance ecosystem	Conceptual Review	Wiley Article
4	PourMohammadBagher & Safarabadi (2024)	Social Impact Theory	Gamified FinTech applications	Literature Review	ArXiv PDF

5	To (2026)	Goal-Directed Design Theory	Personal finance applications	Design Science & Usability Testing	ArXiv PDF
6	Reddy & Pushpa (2026)	Financial Literacy Theory	Teachers in Bengaluru	Survey & Regression Analysis	Journal Article
7	UNICEF (2026)	Digital Finance Adoption	Youth investment and savings apps	Landscape Review	UNICEF PDF
8	Rajitha (2026)	Financial Inclusion Theory	Indian FinTech ecosystem	Descriptive Research	IJRAR PDF

This study employed the Theory–Context–Methodology (TCM) framework to systematically review literature related to digital financial practices and the sustainable adoption of gamified investment applications between 2021 and 2026. The analysis of fifteen selected studies revealed significant insights regarding theoretical foundations, research contexts, and methodological approaches adopted in this emerging field.

Theory (T)

The review identified several dominant theories used to explain the adoption and usage of digital financial services and gamified investment applications. Among the most frequently applied theories were the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Financial Literacy Theory, Behavioral Finance Theory, Financial Inclusion Theory, and Gamification Theory.

Technology-based theories such as TAM and UTAUT were widely used to explain how perceived usefulness, ease of use, and user attitudes influence the adoption of digital financial platforms. These theories highlighted that users are more likely to adopt gamified investment applications when they perceive them as useful, convenient, and easy to navigate. Financial Literacy Theory was another prominent theoretical perspective, emphasizing that individuals with higher financial knowledge and digital literacy tend to make better investment decisions and demonstrate greater confidence in using digital financial applications.

Context (C)

The contextual analysis revealed that the majority of studies were conducted within the FinTech and digital finance ecosystem. Research primarily focused on developing economies, particularly India, Bangladesh, and other emerging Asian markets, where digital financial services have experienced rapid growth.

Young investors, especially Generation Z and Millennials, were identified as the most frequently studied population due to their high levels of digital engagement and willingness to adopt innovative financial technologies.

Methodology (M)

The methodological analysis showed that quantitative research approaches dominated the literature. Most studies utilized survey-based research designs and collected primary data from users of digital financial services. Sample sizes varied across studies, ranging from small-scale surveys to large datasets involving several hundred respondents.

Structural Equation Modeling (SEM) and Partial Least Squares Structural Equation Modeling (PLS-SEM) were among the most frequently employed analytical techniques. These methods were used to examine relationships among variables such as financial literacy, technology acceptance, user engagement, and investment behavior. Regression analysis and descriptive statistics were also commonly applied to evaluate factors influencing FinTech adoption.

V. CONCLUSION

In conclusion, this study highlights the significant role of digital financial practices in shaping the sustainable adoption of gamified investment applications. The findings from the SLR using the TCM framework reveal that technological factors, financial and digital literacy, and behavioral influences collectively determine user engagement and long-term adoption. While gamification enhances participation, motivation, and financial awareness, it also introduces risks such as impulsive decision-making and speculative behavior. Therefore, sustainable adoption depends on achieving a balance between engagement and responsible investment practices.

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