



Gamification In Financial Technology Implementation: A Systematic Literature Review

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Abstract: *This study explores the use of gamification in financial technology (Fintech) through a systematic literature review (SLR). Using the PRISMA methodology, data were collected from Google Scholar, IEEE Xplore, Scopus, and JSTOR, applying specific inclusion and exclusion criteria. Out of 608 records, 12 relevant studies were selected for analysis. The findings show that common gamification elements in FinTech include rewards, badges, leaderboards, and progress tracking. These elements boost user engagement, encourage healthy financial habits, and support financial literacy. However, most studies focus on short-term impacts, with limited attention to long-term behavior change. This research provides insights into current trends, identifies gaps, and suggests future directions for more engaging and educational FinTech platforms.*

Keywords: *Gamification, Fintech, Financial Literacy, User Engagement, Systematic Literature Review.*

INTRODUCTION

In the era of digitalization, gamification has gained substantial traction in the field of Human-Computer Interaction. Research has primarily focused on education, aiming to nurture intrinsic motivation and make tedious tasks more enjoyable. This approach has spread to various fields, including finance, which has seen rapid growth in the 21st century but has often been overlooked in gamification trends (Jiwasiddi et al., 2019).

Financial technology, or "Fintech," has become one of the fastest-growing areas in e-business. Fintech is often defined as computer-supported technology used to enhance, revolutionize, and support financial services and products. The increasing popularity of digital payment methods, mobile banking, and investment platforms has spurred the widespread use of Fintech solutions worldwide.

Gamification involves the application of game design elements in non-game settings to enhance user engagement and motivation. By leveraging enjoyable components, it aims to achieve business objectives, such as improving customer experience, behavior, and overall engagement. Gamification is also connected to motivation theory, where fulfilling the needs

for competence, autonomy, and relatedness can increase user engagement, subsequently amplifying their intention to use the application and provide positive ratings (Lai & Langley, 2024).

Fintech, or financial technology, refers to technological innovations that are used to enhance and automate financial services and products. It encompasses a diverse range of applications and platforms, enabling users to manage their finances more effectively, covering areas such as banking, investment, and personal finance management. Fintech plays a crucial role in providing solutions that empower users to make more informed financial decisions (Prasetyo et al., 2023).

Studies indicate that gamified elements, such as rewards, challenges, and progress tracking, can motivate users to adopt healthier financial behaviors and maintain engagement with financial applications (Hamari et al., 2014; Deterding et al., 2011). The implementation of gamification in fintech aims to increase user engagement, financial awareness, and customer loyalty through various approaches such as savings and investment apps with rewards or badges after reaching savings targets, financial management tools with leaderboards and challenges to encourage responsible financial behavior, and digital payment services with gamification-based loyalty programs to drive increased transaction frequency.

Existing literature highlights the synergistic benefits of combining game mechanics with financial services, aiming to transform often complex and daunting tasks into more approachable and rewarding experiences (Sabilirasyad et al., 2024; Gurning & Rahmanita, 2023). Studies explore gamified elements like points, badges, and leaderboards, and their impact on user behavior within FinTech platforms, particularly concerning financial literacy, investment promotion, and customer retention. This leads to the general research questions, which will be researched in this work:

RQ1: What gamification elements are most often used in fintech implementations?

RQ2: What research methodologies are used in studies on gamification in fintech?

METHOD

This study used a systematic literature review (SLR) to answer the research questions presented in the Introduction section. The authors employed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to examine the advantages and disadvantages of gamification in the context of FinTech applications. The PRISMA approach ensures quality assurance throughout the review process, providing a transparent and replicable methodology for identifying, screening, and analyzing relevant studies (Khaldi et al., 2023).

1. Data Collection Techniques

The data for this study were acquired from academic databases, including Google Scholar, JSTOR, Scopus, and IEEE Xplore. The search process was conducted using **Publish or Perish** software, which extracts citation data from academic databases such as Google Scholar. The key terms "Gamification" OR "Fintech" OR "Financial Technology" were used in data extraction searches.

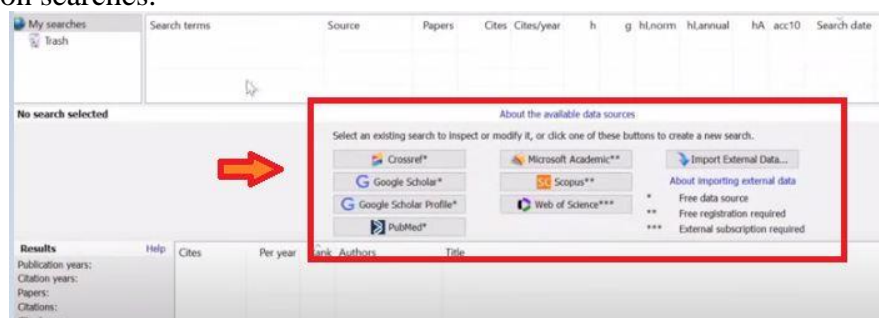


Figure 1. Data Collection Techniques

2. Data Analysis Methods

The research method followed the PRISMA guidelines to conduct a systematic review. The initial search queries included key terms such as "Gamification", "FinTech", and "Financial Technology Implementation". The search results were exported in CSV format and processed to remove duplicates and irrelevant sources.

Inclusion and Exclusion Criteria

The following criteria were applied to determine the eligibility of studies for inclusion:

Inclusion Criteria	Exclusion Criteria
1. Articles published in English	1. Articles not published in English
2. Peer-reviewed articles focusing on gamification in fintech	2. Non-article formats (e.g., conference abstracts, book chapters)
3. Studies that discuss the application and benefits of gamification in financial technology	3. Articles that do not specifically address gamification in financial technology

A manual screening process was then performed. First, duplicate data were removed using Microsoft Excel's conditional formatting and filtering features. Articles that did not align with the research topic were excluded. Subsequently, the full text of all remaining articles was reviewed to determine their inclusion or exclusion based on the eligibility criteria.

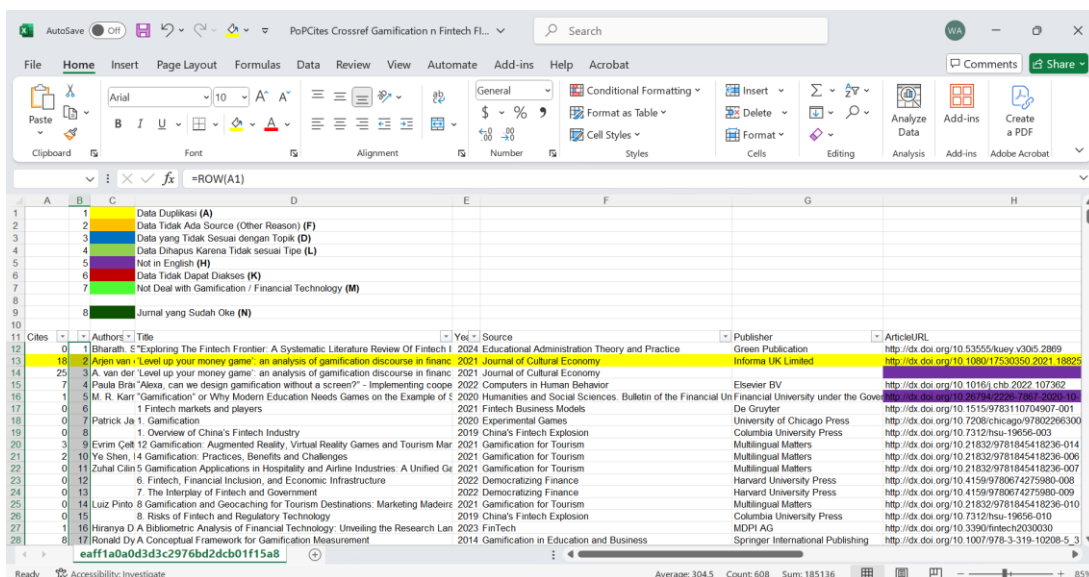


Figure 2. Screening Process

1. PRISMA Flow Diagram

The study's research process consisted of four key PRISMA phases:

- Identification:** A comprehensive search was conducted across multiple academic databases. A total of 608 records were identified through this initial database search and additional sources.
- Screening:** All identified records were imported into a reference management tool. Duplicate entries were removed, followed by manual screening to exclude irrelevant studies based on title and abstract. As a result, 558 records were excluded due to duplication and lack of relevance.
- Eligibility:** The remaining 119 full-text articles were assessed for eligibility against predefined inclusion and exclusion criteria. During this phase, 107 articles were excluded due to non-compliance with these criteria.

5. **Inclusion:** Ultimately, 12 studies met all eligibility requirements and were included in the qualitative synthesis.

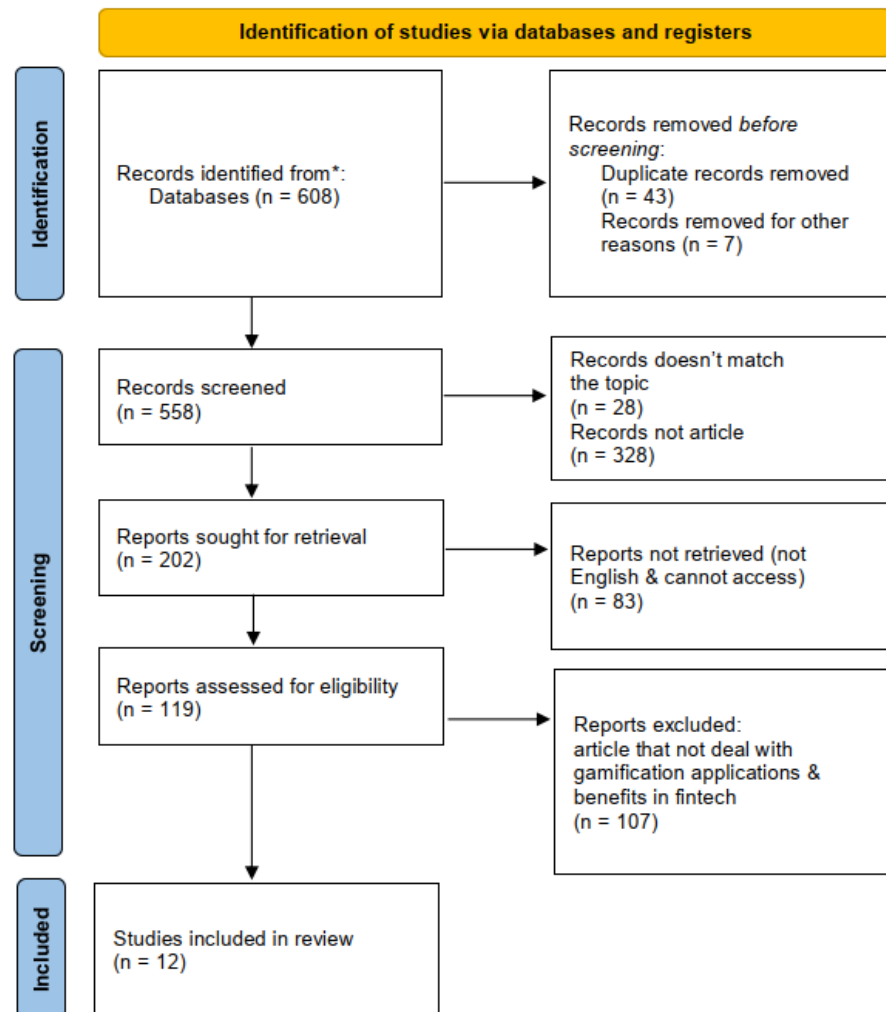


Figure 3. Flow Diagram

RESULTS AND DISCUSSION

Results

The study selection process followed the PRISMA guidelines, resulting in 12 studies that met the inclusion criteria for qualitative analysis. A total of 608 records were identified through database searching and additional sources. Forty-three duplicate articles were removed from the screening process. After that, non-articles ($n = 558$) were screened to apply inclusion criteria. Three hundred fifty-six articles were eliminated because they were inaccessible and not in English. After reviewing full papers, one hundred and seven publications were eliminated because they were not directly related to the subject.

Literature Summary

The following table presents a comprehensive summary of the 12 selected studies:

No	Study	Research Aim	Method	Gamification Elements	Key Findings	Gamification Benefits
1	Lai & Langley (2024)	Impact of gamification in Fintech apps on financial	Qualitative (documents, press releases, industry	Rewards, badges, ranking	Reshapes intermediation and influences financial	Enhances engagement, financial management,

		intermediation	events)		behavior	and market reach
2	Rahman et al. (2024)	Effects of gamification & trust on m-wallet use in Vietnam	Quantitative (survey of m-wallet users)	Rewards, interactive elements	Gamification boosts adoption, trust is key for retention	Improves user experience, fosters trust in digital payments
3	Sharma & Mishra (2024)	Evolution of sustainability in Fintech banking	Case study	ESG-based assessment	Need for tailored ESG rating mechanisms for Fintech	Encourages responsible practices and sustainable innovation
4	Jiwasiddi et al. (2019)	Millennials' attitudes toward Fintech adoption	Quantitative (interviews)	Points, challenges, rewards	Brand trust, ease of use, and usefulness drive adoption	Enhances financial product understanding and engagement
5	Bayuk & Altobello (2019)	Gamification's impact on financial behavior & well-being	Quantitative (survey)	Competition, badges, progress tracking, avatars	App expertise moderates engagement; social features boost retention	Increases financial literacy, saving motivation, and engagement
6	Hastuti (2022)	Gamification in Shopee for customer loyalty	Quantitative (SEM, 200 respondents)	Shopee Tanam, rewards, interactive games	Customer engagement is key for loyalty, not gamification alone	Enhances loyalty and interactive shopping experiences
7	Yawin & Wang (2022)	Gamification's effect on digital payment service usage	Quantitative	Points, badges, rewards, daily check-ins	Gamification boosts motivation and engagement	Improves user retention
8	Raza et al. (2023)	Gamification in financial service apps	Quantitative	Points, rewards, challenges	Immediate rewards are more effective in increasing engagement	Boosts user experience and purchase intent
9	Saputra & Rahmatia (2021)	Gamification for financial stress relief during the pandemic	Qualitative (literature review & interviews)	MDA framework	Reduces stress & enhances emotional engagement in financial management	Provides enjoyment, improves financial literacy, and motivation
10	Yang et al. (2023)	Factors influencing gamified mobile wallet adoption	Qualitative	Performance expectancy, perceived value, social influence	Specific factor combinations drive higher adoption	Enhances user engagement and Fintech adoption
11	Dzandu et al. (2022)	Gamification in mobile money for customer value in emerging economies	Mixed-method (survey & interviews)	Points, badges, rewards, challenges	Well-integrated gamification boosts engagement, satisfaction, and loyalty	Improves product understanding and aligns with local cultures
12	Yulianto et al. (2024)	Gamification in financial education for students	Quantitative (survey of 289 students)	Games, prizes, challenges, leaderboards	Gamification increases engagement, which mediates financial literacy	Enhances motivation, knowledge retention, and decision-making

Gamification Elements Identified

This study identified several common gamification elements implemented in financial technology (Fintech) platforms:

1. **Rewards:** These can take the form of points or monetary incentives awarded to users for accomplishing specific objectives, serving to incentivize user engagement and encourage users to take action towards their financial goals.
2. **Badges:** Badges function as acknowledgments of user accomplishments or capabilities acquired within the application, evoking a feeling of achievement and motivating users to persist in their engagement.
3. **Leaderboards:** These features present users' results in comparison to others, promoting a sense of constructive competition and enabling users to gauge their standing relative to their peers.
4. **Progress Tracking:** This functionality enables users to track their financial progression in a transparent and quantifiable way, heightening their understanding of their advancement.
5. **Challenges:** These activities encourage users to engage in specific tasks or confront obstacles within their financial management endeavors, fostering active participation.

Key Findings

1. Gamification elements play a crucial role in driving user interaction with Fintech applications.
2. User engagement increases due to gamification; however, attention must be paid to its long-term effects.
3. A gap exists in the research regarding how cultural contexts and individual preferences influence the effectiveness of gamification.

Benefits of Gamification

1. **Increased Engagement:** Gamification creates an enjoyable, interactive user experience, leading to enhanced involvement with the application.
2. **Encouragement of Positive Behavior:** Through challenges and rewards, users are motivated to adopt healthy financial habits, such as saving and investing regularly.
3. **Enhanced Financial Literacy:** Gamification can simplify complex financial concepts, making them easier to understand and more approachable.
4. **Community Building:** Features like leaderboards and challenges foster a community atmosphere among users, encouraging them to support each other on their financial journeys.
5. **Intrinsic and Extrinsic Motivation:** Gamification combines both types of motivation, helping users feel rewarded for their achievements and fostering a deeper connection to financial management.

Discussion

To address all points, the author has answered the research questions discussed earlier in this study.

RQ1: What gamification elements are most often used in fintech implementations?

According to the existing literature, common gamification elements implemented in FinTech applications include rewards, badges, leaderboards, challenges, points, and progress tracking. These elements are designed to enhance users' intrinsic motivation by providing an interactive and rewarding experience. For example, the use of leaderboards and badges creates healthy competition that encourages higher engagement (Deterding et al., 2011; Hamari et al., 2014). Additionally, progress tracking helps users feel more accountable for

their financial decisions, increasing their loyalty to FinTech applications (Bayuk & Altobello, 2019).

RQ2: What research methodologies are used in studies on gamification in fintech?

Analysis of the 12 selected studies shows that most studies use quantitative approaches (8 studies), followed by qualitative approaches (3 studies) and mixed-method (1 study). Common data collection methods include surveys, interviews, case studies, and document analysis. Several studies use theoretical frameworks such as motivation theory to understand the adoption and effectiveness of gamification.

Existing research suggests that while gamification can effectively increase user engagement in the short run, the long-term sustainability of its impact remains a significant concern. Several studies have found that although users may initially interact with a platform for a limited duration, the resulting effects on their long-term financial behaviors are not fully assured. This highlights the need for further scholarly investigation to explore how gamification design can be optimized to foster lasting engagement and support positive behavioral transformations over time.

CONCLUSION

This systematic literature review explored the implementation of gamification strategies within financial technology (Fintech) systems. The findings demonstrate the potential of gamification for transforming complex and often daunting financial tasks into more approachable and rewarding experiences. The review process adhered to the PRISMA guidelines, ensuring transparent and comprehensive reporting.

The most commonly identified gamification elements in Fintech implementation include rewards, badges, leaderboards, progress tracking, and challenges. These elements have proven effective in enhancing user engagement, encouraging healthy financial habits, and supporting financial literacy. In terms of methodology, most research uses quantitative approaches with various theoretical frameworks to understand the adoption and effectiveness of gamification.

However, this research also identifies several limitations in the existing literature. Most studies focus on short-term impacts with limited attention to long-term behavior change. Additionally, contextual factors such as individual preferences and cultural differences have not been fully considered in the effectiveness of gamification implementation. The study only includes research available in the databases used for the systematic literature review, so it does not cover all relevant studies.

Based on findings from previous studies, it is recommended that Fintech app development should integrate more gamification features to increase user satisfaction and financial understanding. Fintech apps can utilize educational elements such as interactive tutorials, game-based learning, and simulations to help users understand more complex financial concepts. By optimizing gamification, Fintech apps can increase user satisfaction and have a positive impact on their financial management.

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