

Gamified Financialisation in The Light of Islamic Behavioural Economics: Psychological and Ethical Dimensions of Speculative Behaviour in Virtual Asset Markets

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Abstract

The phenomenon of gamification in virtual asset trading has transformed investment behavior into an activity driven by psychological mechanisms such as Fear of Missing Out (FOMO), overconfidence, herding behavior, and loss aversion. This study aims to analyze how gamified design in digital trading platforms fosters speculative behavior that violates Islamic ethical principles such as tawazun (balance between risk and benefit), gharar (excessive uncertainty), and maisir (gambling). Employing a qualitative approach through a systematic literature review of academic journals and industry reports, the study finds that features such as real-time notifications, leaderboards, and reward animations increase trading frequency, risk-taking, and market volatility. These dynamics create asymmetry in risk and reward, disproportionately harming low-literacy retail investors. The study concludes that digital financial innovation must be balanced with ethical regulation, financial literacy, and maslahah-based design to ensure market justice and sustainability in line with Islamic economic principles. This research contributes to strengthening Islamic financial ethics and integrating maqasid al-shariah values into modern digital finance innovation.

Keywords:

Gamified financialization; Islamic behavioural economics; Speculative behaviour; FOMO (Fear of Missing Out); Sharia-compliant digital finance.

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1. Introduction

The rapid expansion of the digital economy has ushered in an era where traditional economic paradigms are increasingly challenged by novel financial instruments and platforms. Among the most transformative developments is the burgeoning market for virtual assets, encompassing cryptocurrencies, non-fungible tokens (NFTs), and other digital collectibles.(Obasun, 2025). These markets, characterized by their decentralized nature and high volatility, have attracted a diverse range of participants, from institutional investors to a significant segment of retail investors seeking alternative investment opportunities and rapid wealth accumulation. (Liu & Chen, 2025). Concurrently, the pervasive influence of gamification the application of game-design elements and game principles in non-game contexts has permeated various aspects of daily life, including finance. Financial technology (fintech) platforms and virtual asset exchanges increasingly integrate gamified features, such as points, badges, leaderboards, and interactive challenges, to enhance user engagement and encourage specific behaviors.(Lai & Langley, 2024). This convergence of virtual asset markets and gamified design principles creates a unique and complex landscape, which we term "gamified financialization," warranting a thorough investigation into its underlying mechanisms and broader implications.

From an Islamic behavioral economics lens, gamified financialization poses deep psychological and ethical risks, especially through speculative practices that embody forbidden elements like *gharar* (excessive uncertainty), *maisir* (gambling), and *tadlis* (deception). Islamic jurisprudence condemns *gharar* in ambiguous or overly risky deals, as seen in platform-based speculation on volatile assets without clear outcomes . (Hardiati & Anwar, 2021)., echoing the Qur'anic ban on exploitative contracts (Qur'an 2:188). Likewise, *maisir* likens speculation to gambling, breeding discord and diverting resources from productive work, in accordance with the Qur'an, which prohibits games of chance (Surah Al-Maidah verse 90); this mirrors how gamified apps use reward-driven dopamine hits to push luck-based frequent trades over ethical wealth-building. *Tadlis* critiques misleading designs that hide risks to entice users, aligning with scholarly warnings that such tactics erode market justice and transparency. Islamic investment ethics stress stewardship (*amanah*), risk-sharing (*mudarabah*), and harm avoidance, favoring rational, socially beneficial conduct over gamification-fueled impulses.(Packin et al., 2024) Thus, while Islam encourages investing (Qur'an 59:18), it must follow Sharia to ensure sustainable economics, offering a framework to assess and redesign gamified tools for ethical compliance.

The growing accessibility and mainstream adoption of virtual assets are undeniable. For instance, global cryptocurrency market capitalization reached unprecedented highs in recent years, demonstrating a significant shift in investor interest towards digital alternatives. (Bushnell, 2022). Parallel to this, the NFT market experienced explosive growth, with trading volumes escalating dramatically, indicating a speculative frenzy driven by perceived scarcity and novelty.(Alshater et al., 2024). Within this dynamic environment, gamified elements are strategically employed by platforms to streamline onboarding, simplify complex financial concepts, and foster a sense of community and competition among users.(Shaheen et al., 2025). While proponents argue that gamification can democratize finance by making it more accessible and engaging, critics raise concerns about its potential to obscure inherent risks and encourage irrational or speculative behavior.(Van der Heide & Želinský, 2021). This tension highlights a critical gap in existing literature: a comprehensive understanding of how the interplay between psychological biases and

economic incentives, amplified by gamified interfaces, shapes investment decisions and market dynamics within virtual asset ecosystems.(Achuthan et al., 2025). Existing studies have explored behavioral biases in traditional financial markets and the impact of gamification on user engagement but few have directly addressed the specific nexus of gamified design, psychological drivers, and speculative outcomes in the unique context of virtual asset trading.(Aria et al., 2023).

Previous research conducted by Rohit Kumar, Sahiba Khan, Ranjit Singh, and Abhijeet Birari, entitled *"Speculative Investment Decisions in Cryptocurrency: A Structural Equation Modelling Approach"*,(Kumar Sharma et al., 2024) revealed the influence of subjective norms, domain knowledge, and self-control on speculative investment decisions in the crypto market using a structural equation modelling approach. However, the study still has several limitations. First, the research context was limited to investors in India, making the findings difficult to generalize to other countries with different market characteristics and regulatory environments. Second, the use of a cross-sectional self-report survey design is vulnerable to perceptual bias and fails to capture the temporal dynamics of speculative behavior. Third, the variables examined remain limited, as the study did not incorporate crucial factors such as digital financial literacy, trading platform design (e.g., gamification, notifications, and user interface features), and macroeconomic conditions such as price volatility. Furthermore, the study did not explore the role of moderators such as demographics, investment experience, or regulatory awareness, even though these factors could clarify variations in speculative behavior across investor groups. Thus, there remains ample room to expand the context, enrich the variables, and apply more diverse methodological approaches in order to provide a more comprehensive understanding of speculative investment behavior. Research conducted by Ilayda Nemlioglu, Wenjie Ding, and Qingwei Wang (2024), entitled *"Crypto Investing: A New Frontier of Gambling and Addiction?"*,(Nemlioglu et al., 2024) highlights the connection between cryptocurrency investment, gambling preferences, and the potential for addictive behavior. However, this study also faces several limitations. The analysis primarily focuses on the psychological aspects of gambling without examining how gamification features on crypto trading platforms such as points, badges, or instant rewards may reinforce speculative behavior. Moreover, the study does not integrate economic factors such as platform incentives, transaction costs, and systemic risks, nor is it supported by empirical user behavior data. Regulatory aspects are discussed only in general terms related to addiction, without considering the influence of gamification, while demographic characteristics and investment experience as factors of differential susceptibility to speculation are not explored. Hence, there is still significant research space to investigate gamified financialization more comprehensively by combining both psychological and economic dimensions within the context of virtual asset markets. Research by Philipp Chapkovski, Mariana Khapko, and Marius Zoican (2023), entitled *"Trading Gamification and Investor Behavior"*, also leaves important gaps. (Chapkovski et al., 2023). Although prior literature has extensively discussed gamification in financial platforms and psychological factors such as FOMO, overconfidence, and addictive tendencies that drive speculative behavior, studies that rigorously test the causal relationship between gamified UI/UX features and investors' economic decisions in virtual asset markets remain scarce. In addition, research integrating economic incentives embedded in tokenomics (such as staking, burning, or reward mechanisms) with users' psychological responses is still underdeveloped, especially in the context of GameFi and the

metaverse, which combine entertainment with financial activity. Existing empirical evidence also tends to be correlational and cross-sectional, with very few experimental or natural experiment designs that could uncover behavioral mechanisms more deeply. Consequently, there is a pressing need to develop new methodological approaches capable of explaining the interaction between gamification design, psychological drivers, and economic incentives in shaping speculative behavior within virtual asset markets.

This study aims to analyze the role of gamification design in virtual asset trading platforms as a primary driver of speculative behavior, with a focus on the interplay between psychological mechanisms (such as Fear of Missing Out (FOMO), overconfidence, herding behavior, and the disposition effect) and economic manifestations (including increased trading frequency, heightened risk-taking, and amplified market volatility), while integrating an Islamic economic perspective to explore violations of principles such as *tawazun* (balance between risk and benefit), *gharar* (excessive uncertainty), *maisir* (gambling), and *maslahah* (public welfare). Specifically, this research seeks to address existing gaps in the literature by examining the causal relationship between gamification UI/UX features (such as leaderboards, real-time notifications, copy trading, and visual reward effects) and irrational investment decisions in virtual asset markets, including the integration of economic incentives like tokenomics within GameFi and metaverse ecosystems that blend entertainment with financial activities. Through the hypothesis that gamification features exacerbate cognitive biases and foster excessive speculation, this study is expected to contribute theoretically to the understanding of behavioral economics, financialization theory, and gamification studies, while offering practical recommendations for responsible platform design, ethical regulatory frameworks, and financial literacy education programs to safeguard investors particularly novices and vulnerable groups—and maintain overall market stability.

2. Method

Within the nascent field of gamified financialization, this study employs a qualitative research design based on a comprehensive literature review. This methodological approach is particularly suited for exploring complex, emerging phenomena where empirical data might be scarce or fragmented across various disciplines.(Usman et al., 2025). Rather than generating new primary data, this study systematically analyzes and synthesizes a broad spectrum of secondary data derived from academic journals, conference proceedings, scholarly books, and reputable industry reports.

The data collection process involved a structured search across major academic databases, including Scopus, Web of Science, Google Scholar, and ACM Digital Library. Keywords and search strings were carefully formulated to capture relevant literature pertaining to: (1) gamification (e.g., "gamification in finance," "game design elements," "behavioral economics gamification"); (2) virtual asset markets (e.g., "cryptocurrency behavior," "NFT speculation," "digital asset trading"); (3) speculative behavior (e.g., "investor biases," "FOMO," "herding behavior in finance"); and (4) the intersection of these concepts (e.g., "gamified trading," "behavioral finance crypto"). The initial search yielded a substantial number of articles, which were then systematically filtered based on relevance to the research questions, publication quality (prioritizing peer-reviewed journals and highly cited works), and publication date, with a focus on literature from the last decade to capture the most recent developments in these rapidly evolving fields.

While a literature review does not involve direct human subjects, ethical considerations were implicitly maintained through rigorous citation practices, ensuring proper attribution of all sources and avoiding plagiarism. The study also acknowledges the inherent limitations of relying solely on secondary data. The findings are constrained by the scope and depth of existing published research, and the interpretations are based on the available evidence, which may not always capture the full complexity of real-world phenomena. Additionally, the rapid evolution of virtual asset markets means that some empirical observations in the literature might quickly become outdated. Despite these limitations, this comprehensive review provides a robust theoretical foundation and highlights crucial areas for future empirical research, enhancing transparency and serving as a reproducible basis for further scholarly inquiry.

3. Result and Discussion

3.1 Gamified Design As A Psychological Driver Of Speculation

Modern virtual asset trading platforms have extensively adopted gamified features, not merely as cosmetic additions but as strategic elements to enhance user engagement, foster loyalty, and subtly guide investment behavior.(Perälä, 2025). The integration of these features signifies a paradigm shift in user interface design, where financial activities are increasingly presented in formats resembling gaming experiences. A core component of this approach is the sophisticated reward system. Users are frequently recognized and incentivized through the acquisition of points and badges for completing transactions, achieving specific trading volumes, or participating in platform challenges.(Han et al., 2022). These points can be redeemed for various rewards, from reduced transaction fees to access to premium content or features, creating a positive feedback loop that encourages continuous activity. Badges, on the other hand, serve as visual acknowledgements of accomplishments, cultivating a sense of mastery and pride among traders.(Jung et al., 2021). Furthermore, leaderboards have become a common feature, showcasing top-performing traders and effectively stimulating healthy competition and a desire to excel among the user base, particularly when rankings are updated in real-time to maintain motivational momentum.(Celestin et al., 2024). Another layer of the reward system is the tiered membership levels, such as Bronze, Silver, Gold, and Diamond schemes, where each higher tier unlocks exclusive benefits and greater rewards, reinforcing user commitment to the platform.(Antwi, 2023).

Beyond extensive reward systems, these platforms leverage advanced progress tracking to provide visual feedback and encourage consistent participation. Interactive visualizations of portfolio growth enable users to monitor their investment performance in an engaging visual manner, transforming complex financial data into an intuitive personal progress narrative.(Zaheer, 2025). Features like Investment Streaks reward users for their consistency in making investments or trades over specific periods, such as daily or weekly streaks, fostering positive habits and reducing barriers to remaining active.(Chapkovski et al., 2024). Social and competitive elements further amplify these gamified aspects. In addition to their aforementioned motivational role, public leaderboards cultivate a sense of community and rivalry, prompting deeper interaction among traders.(Jirapanyayut et al., 2024). The Copy Trading feature is a prominent example of social integration, allowing novice users to automatically mimic the strategies of more experienced traders, which not only serves as an educational tool but also enhances potential for success and builds trust within the

community. The ability to socially share trading results or portfolios to external social media or within internal platform communities further encourages interaction, experience exchange, and social validation among traders.(J. Deng et al., 2024).

Finally, instant feedback mechanisms are key to creating the highly engaging and responsive experience characteristic of games. Users receive real-time notifications regarding their achievements, significant price movements, or trading outcomes, keeping them constantly informed and motivated.(Laine & Lindberg, 2020). Visual effects such as celebratory win animations (e.g., confetti or special effects) that appear when users hit a target or secure a profit, add an element of fun and psychological satisfaction that reinforces desired behaviors.(Milfeld, 2025). Collectively, these gamified features have been shown to not only make trading activities more engaging and interactive but also significantly contribute to enhanced user education, involvement, and loyalty on virtual asset trading platforms. However, their profound effects on investor decision-making, particularly in the context of speculative behavior, warrant the deeper analysis undertaken in this research.

In the current digital era, heavily influenced by user-centric innovation, gamification has emerged as a strategic instrument transforming the trading experience into something more interactive, engaging, and even addictive. Yet, beneath its appealing veneer, the gamified design in modern trading applications subtly but systematically reinforces various psychological biases, leading traders away from rational decision-making. This mechanism is not neutral; it exploits inherent human cognitive vulnerabilities such as anxiety, illusions of control, and the tendency to follow the majority without logical consideration. Elements like leaderboards, push notifications, social feeds, and visual rewards are not merely entertainment features; they actively shape users' perceptions of risk, opportunity, and investment actions. While these elements are designed to foster engagement, they also create social and emotional pressures that accelerate impulsive responses. In practice, such features amplify biases like Fear of Missing Out (FOMO), overconfidence, herding behavior, and loss aversion, all of which contribute to speculative behaviors that jeopardize individual financial stability. This phenomenon demonstrates that gamification is no longer just a design tool; it has become a powerful psychological force shifting investment orientation from long-term strategies towards emotion-driven, instant gratification. Understanding these mechanisms is crucial so that we are not merely captivated by a pleasant user experience, but also critically aware of how our financial decisions are shaped, controlled, and often exploited by algorithms operating behind the screen.

Gamified design on virtual asset trading platforms demonstrably serves as a potent amplifier of various psychological biases, with the Fear of Missing Out (FOMO) emerging as a particularly prominent and concerning effect. Features such as leaderboards, real-time price notifications, and integrated social elements are not merely enhancing engagement; they are strategically engineered to foster speculative behavior and impulsive decision-making among users.(Bomnüter et al., 2023). The pervasive presence of leaderboards and social visualization mechanisms, for instance, publicly showcases the performance of top traders, inadvertently creating a pervasive sense of social pressure and an acute desire not to be left behind by peers.(T. Deng et al., 2025). This dynamic actively compels users towards swift and often unconsidered decisions, driven by an urgent need to "catch the train" of perceived immediate gains. Furthermore, the relentless stream of real-time price notifications and alerts, coupled with notifications of other users' achievements, significantly heightens the psychological urgency to act. (Rajan, 2025). This constant informational bombardment

triggers hurried trading decisions, frequently made without adequate deliberation or comprehensive analysis of underlying market fundamentals, directly contributing to impulsive trading. Complementing these elements, copy trading features and social sharing functionalities significantly reinforce the "bandwagon effect." The ease with which users can replicate the strategies of seemingly successful traders, or share their own trading outcomes on social media, cultivates a strong inclination to follow prevailing trends without conducting independent, in-depth analysis, thereby exacerbating speculative tendencies within the community.(Kim et al., 2023).

The cumulative impact of these gamified features on user behavior is profound. Studies consistently indicate that the integration of gamification, especially when coupled with FOMO, particularly among younger demographics, drives a higher frequency of trading, excessive risk-taking, and impulsive decisions that often lack sufficient informational basis.(Jajoo & Baag, 2025). This transformation frequently results in a decrease in personal satisfaction and overall investment outcomes, as continuous exposure to the perceived superior performance of others via leaderboards or social features can diminish individual contentment and compel users to pursue greater risks in an attempt to emulate those results, often leading to detrimental financial consequences.(Amo et al., 2020). Crucially, the pervasive nature of gamification subtly, yet powerfully, redefines the investment experience, causing trading to increasingly resemble gambling. By embedding financial activities within a game-like framework, the gravity of investment decisions is diluted, leading users to engage without thorough calculation, driven instead by heightened emotions, social pressures, and the thrill of the "game".(Packin et al., 2025). In essence, gamified design on virtual asset trading platforms not only enhances user engagement but also demonstrably reinforces psychological biases like FOMO, thereby actively encouraging speculative and impulsive behaviors that carry substantial risks for users, particularly those less experienced in the intricacies of investment.

Table 1 : Summary of the FOMO and Gamification Effects

Gamification Features	Psychological Effects	Impact on Behavior
Leaderboard	Upward social comparison	Increased risk, impulsive trading
Real-time notifications	Urgency, social pressure	Quick decisions, lack of analysis
Copy trading & sharing	Bandwagon effect	Bandwagon effect

Source: Data compiled by the author from the discussion above.

In the rapidly evolving landscape of digital trading, increasingly driven by technological innovation, gamified design has become a powerful tool for shaping user behavior. One of the most prominent psychological effects of this gamification is the emergence of overconfidence and an illusion of control over the market.(Şenol & Onay, 2022). Features such as badges for successful trades, leaderboards that trigger social competition, and simplified application interfaces create a false sense that users genuinely understand and control market dynamics.(Valecha, 2025). In reality, trading success is often more influenced by unpredictable market fluctuations rather than individual skill alone. When a user receives a badge for short-term success which might merely be the result of a transient market trend they begin to form a belief that this achievement stems from personal expertise.(Valecha, 2025). High rankings on leaderboards further reinforce this illusion by fostering a perception of superiority over other traders. Within the context of behavioral psychology, this not only

escalates overconfidence but also instills a false conviction that trading outcomes can be controlled through intuition or "feeling" rather than objective analysis.(Ramanathan, 2025). Application designs that streamline the asset buying and selling process to just a few clicks exacerbate the situation by making trading appear as a lighthearted, low-risk activity. Consequently, users are more prone to making impulsive transactions without deep consideration of risks, under the belief that they "master the game."(Ridgeway & Wason, 2023). Research indicates that traders experiencing overconfidence exhibit a higher propensity to continue making transactions even when confronted with negative information about their held assets. They show resistance to market warning signals, believing their analysis is superior to reality.(Wang et al., 2025). In the long term, this pattern leads to significantly increased trading frequency and volume, often accompanied by a disproportionate increase in risk-taking. Studies by the UK's Financial Conduct Authority (FCA) confirm that gamified features heighten speculative tendencies, particularly within vulnerable demographic groups such as young individuals and those with low financial literacy.(Kawas & Dockery, 2023). The consequences extend beyond personal financial losses, posing a potential for systemic market volatility. Therefore, serious efforts are required from regulators and application developers to balance innovation with consumer protection. Financial education that incorporates an understanding of psychological biases, alongside regulations limiting overly exploitative features, are crucial steps to prevent the irresponsible misuse of gamified design.(Pernell, 2020). In conclusion, while gamification can enhance user experience and engagement, its application in the trading context must be executed ethically and with a strong awareness of risks, to prevent it from becoming a boomerang that jeopardizes both individual and collective financial stability.

Herding behavior stands as one of the most influential psychological phenomena in the investment world, where individuals tend to follow the actions of the majority without conducting independent analysis. In the context of modern trading, saturated with enticing social and visual elements, this behavior is increasingly amplified by gamified design that actively highlights popular assets, showcases the activities of successful traders, and features leaderboards emphasizing top user performance.(Komalasari et al., 2022). When a trader observes the majority of users purchasing a certain asset or adopting a particular strategy, a strong impulse emerges to mimic these decisions, even without considering adequate fundamental or technical data. This is often triggered by a fear of being left out or missing opportunities (FOMO), as well as the psychological pressure to conform to what is perceived as the correct mainstream by the community.(Alabri, 2022). Herding behavior frequently arises not due to valid new information, but because investors feel uncertain about their personal assessments, especially during turbulent or opaque market conditions.(Saltik et al., 2024).

The consequences of this tendency are stark: the formation of asset prices that do not reflect their intrinsic value, high market volatility, and the emergence of price bubbles due to irrational mass purchasing.(Ooi, 2024). When these bubbles inevitably burst, investors who blindly followed the trend incur significant losses, lacking the analytical basis to anticipate market reversals. In the long term, herding behavior creates market inefficiencies detrimental not only to individual investors but also to the stability of the financial system at large. (Vieito et al., 2023).Therefore, it is crucial for investors to cultivate habits of critical and independent thinking, relying on data-driven analytical approaches rather than collective emotions. The use of assistive tools such as stock screeners or analytical

dashboards can also help minimize the tendency to follow the crowd, as decisions are made based on objective parameters, not transient trends. In an increasingly social and interactive trading ecosystem, understanding and anticipating the impact of herding behavior becomes essential for maintaining the rationality of investment decisions and the sustainability of long-term portfolios.

In the digital trading landscape, increasingly shaped by sophisticated digital design and gamified elements, two crucial behavioral psychology concepts loss aversion and the disposition effect have become even more salient in explaining irrational investment decision patterns.(Chen, 2025). Loss aversion describes the psychological tendency for humans to experience the pain of losses with significantly greater intensity than the pleasure derived from equivalent gains. In practical terms, this means a trader fears losing \$1 million far more than they rejoice in gaining \$1 million. This pain is so dominant that investors frequently refuse to sell assets whose values are declining, simply because they are reluctant to confront the bitter reality of having incurred a loss. Conversely, they tend to rush to sell assets that show even a slight profit, merely to secure that fleeting positive feeling. This phenomenon is termed the disposition effect: the tendency to sell winning positions too early and hold onto losing positions for too long.

Within gamified trading application environments, these biases are systematically reinforced through visual framing designed to manipulate the perception of profit and loss. Application displays that prominently showcase small gains with visual effects like confetti, celebratory animations, or winning notifications compel users to immediately "secure" these profits, without considering potentially larger long-term gains.(Lewis, 2025). Conversely, losses are often disguised, not visualized with the same emotional impact, or even not displayed directly, leading users to feel they still retain control over the position. This exacerbates the tendency to hold onto assets whose value continues to decline.(Zeng et al., 2025). As a result, traders not only make suboptimal decisions from an investment rationality standpoint but also face greater emotional distress including stress, regret, and decreased self-confidence as they constantly grapple with the disparity between expectations and market reality. Research in behavioral economics has demonstrated that these biases are universal and difficult to avoid without strong self-awareness and control strategies.(Chandu et al., 2023). In the digital context, gamification amplifies these effects by delivering a gratifying experience for positive outcomes while minimizing the emotional experience of losses. Therefore, it is critical for traders to recognize these pitfalls and take corrective steps, such as building objective data-driven portfolio evaluation systems, diligently setting stop-loss and take-profit limits, and cultivating self-awareness of emotions that influence decisions. Only by understanding the mechanics of loss aversion and the disposition effect especially when reinforced by gamified design can investors begin to make more rational, emotionally stable, and long-term oriented decisions.

3.2 Islamic Economic Manifestations of Gamified Speculative Behavior in Digital Trading

The psychological drivers, significantly amplified by gamified interfaces, translate directly into observable economic behaviors within virtual asset markets. Our comprehensive review identified several key economic manifestations that underscore the profound impact of gamified financialization.(Van der Heide & Želinský, 2021). These include a notable increase in trading frequency and volume, as the constant stream of notifications, immediate rewards for activity, and the inherent desire to "level up" within a platform's system encourage a high-velocity, short-term trading approach. This pursuit of micro-rewards often overshadows

long-term value accumulation strategies.(Chapkovski et al., 2024). Furthermore, fueled by the amplified overconfidence and FOMO, investors exposed to gamified features demonstrate a heightened risk-taking propensity, increasingly allocating capital to highly volatile or nascent virtual assets. The game-like environment can subtly desensitize users to the actual financial risks involved, portraying speculation as a low-stakes or even exhilarating activity. Finally, the collective impact of this impulsive, frequent, and high-risk trading, driven by the described psychological mechanisms, directly contributes to the amplification of market volatility characteristic of virtual asset markets, creating positive feedback loops where rapid price movements attract even more speculators, thereby increasing market instability.

In the realm of digital trading, the substantial increase in trading frequency and volume has been demonstrably influenced by the implementation of Digital Engagement Practices (DEPs), such as continuous notifications, instant rewards, and gamified elements like leveling systems or leaderboards. These practices systematically cultivate a short-term mindset, orienting users towards achieving micro-rewards rather than long-term investment value accumulation.(George et al., 2021). Experimental research highlights the crucial role of push notifications in driving retail trading intensity. For instance, Robinhood app users experienced a 25% surge in transactions within 15 minutes of receiving a notification related to a 5% stock price movement. This mechanism works by abruptly focusing investors' attention on specific assets, triggering rapid reactions often driven by momentary impulses rather than in-depth analysis. Furthermore, gamified elements like points, prize draws, and social rankings augment trading participation by fostering a sense of competition and social comparison among users. In controlled experiments, the combination of notifications and reward systems has been shown to increase transaction volume by approximately 11-12%, a significant figure from a market behavior perspective.(Gathergood et al., 2024).

Table 2: Impact of Push Notifications and Gamification on Retail Trading Intensity

Factors	Effects	Quantification
Push Notifications	Increases retail trading intensity	A 25% increase in transactions within 15 minutes after notification of a 5% movement in stock prices.
Investor Focus	Notifications focus investors' attention on specific assets	Triggers a quick reaction, often based on momentary impulse.
Gamification Elements (points, prize draws, social rankings)	Increases trading participation through competition and social comparison	-
Combination of Notifications and Reward Systems	Increases transaction volume	An 11-12% increase in transaction volume.

Source: Data compiled by the author from the discussion above.

The consequence of such design is the formation of a high-velocity trading style that is highly responsive to short-term incentives, yet frequently contradicts principles of long-term (EB1) oriented investment directly violating the Islamic principle of *tawazun* (balance between risk and benefit), which mandates proportional exposure to risk only when matched by commensurate, sustainable returns. The financial implications of this behavior are serious, as high trading frequency is generally associated with increased transaction

costs and a propensity for poor decision-making such as selling profitable shares too quickly or persistently holding onto losing ones.(Myklebust, 2020). Notifications also lower the friction cost of market monitoring, making trading activities more accessible but simultaneously more vulnerable to detrimental impulsive behavior. In this context, engagement features are not merely marketing tools; they are psychological engines that reconfigure how investors process information and make decisions.(Chapkovski et al., 2024). Therefore, it can be concluded that digital trading platforms adopting DEPs not only alter the rhythm of trade but also drive a profound transformation in how individuals interact with risk, time, and financial value often amplifying *gharar* (excessive uncertainty) by encouraging speculation detached from real economic value. If not accompanied by strong self-understanding and control, this style of interaction potentially leads to suboptimal investment outcomes and a decline in traders' long-term financial well-being, undermining *maslahah* (public welfare) in digital finance.

Trading platforms that implement gamified elements significantly increase investors' propensity for higher risk-taking, especially among novice users and those with low financial literacy. This effect is primarily driven by the reinforcement of psychological biases such as overconfidence and Fear of Missing Out (FOMO), which are cultivated through features like achievement badges, motivational messages, leaderboards, and celebratory animations that effectively obscure the underlying financial realities and risks.(Hüller et al., 2023) Experimental studies demonstrate that within a gamified trading environment, investors tend to engage more actively in highly volatile assets, such as cryptocurrencies or derivative options, and are more inclined to utilize high leverage. Such risky decisions become even more intense when undertaken by younger and less experienced investors, who are frequently enticed by the game-like application experience and do not fully comprehend the long-term economic consequences of their actions.(Şenol & Onay, 2022).

This gamified environment makes speculative activities appear lighthearted and enjoyable, thereby masking real risks and encouraging impulsive herd trading behavior ungrounded in fundamental analysis behavior that clearly constitutes *gharar fahish* (excessive uncertainty) and borders on *maisir* (gambling) under Islamic jurisprudence. Research further indicates that an increase in financial literacy can significantly reduce the effect of gamification on risk-taking tendencies even a one-standard-deviation increase in financial literacy can mitigate this impact by over 50 percent (Izzuddin et al., 2025). This fact underscores the critical importance of education as a mitigating tool within an increasingly automated and psychologically driven digital trading ecosystem, aligning with *maslahah*-oriented design that prioritizes long-term investor welfare. Regulatory concerns are also mounting, as many destructive investment decisions are evidently triggered by platform algorithms designed to maximize engagement rather than users' financial sustainability (Lestari et al., 2025). Consequently, several jurisdictions are beginning to develop new regulations that limit conflicts of interest within recommendation and gamification systems, while simultaneously promoting transparency and ethical accountability in product design. Ultimately, the investment experience framed as a "game" induces a distorted perception of risk, enticing users to act more speculatively than strategically, and placing them in a financially vulnerable position if not accompanied by adequate understanding.(Hüller et al., 2023). Gamification, rather than merely being an innovative tool for increasing market participation, has thus become a double-edged sword demanding balanced educational and regulatory intervention(Ramachandran, 2022). The pronounced volatility observed in virtual

asset markets, particularly cryptocurrencies, stems from a confluence of self-reinforcing collective psychological mechanisms that create positive feedback loops rapid price movements attract more speculators, thereby triggering increasingly sharp fluctuations a dynamic that fundamentally disrupts *tawazun* and necessitates *maslahah* driven redesign of digital platforms to restore ethical equilibrium in financial behavior.

The pronounced volatility observed in virtual asset markets, particularly cryptocurrencies, stems from a confluence of self-reinforcing collective psychological mechanisms that create positive feedback loops rapid price movements attract more speculators, thereby triggering increasingly sharp fluctuations (Hossain, 2025). The herd mentality leads investors to uncritically follow the crowd; when price charts surge due to social media buzz, FOMO compels the masses to "jump into" the same asset without fundamental analysis, leading to uncontrolled price spikes that frequently foster speculative bubbles. Simultaneously, emotional triggers greed during price rallies, panic during downturns, and the pervasive hope that rallies will persist shift decisions from the rational domain to impulsive reactions, generating extreme buy-sell waves that widen the volatility range.(Ivantchev & Ivantcheva, 2024). Confirmation bias exacerbates this situation, as traders disregard negative data and selectively absorb information that only confirms their bullish convictions, causing price movements to detach further from intrinsic value. On the other hand, fervent market sentiment drives high-velocity speculative trading practices; optimism inflates transaction volumes, while momentary negative sentiment might momentarily curb momentum but more often accelerates panic selling. All these dynamics are intensified by high-frequency trading algorithms that execute automated orders in milliseconds, magnifying price swings even for relatively minor market movements.(Vrizzi et al., 2024). Such market behavior stands in stark opposition to Islamic financial ethics, which demand *tawazun* in risk exposure, prohibit *gharar* in transactions lacking clarity and fairness, and uphold *maslahah* by safeguarding community welfare from the systemic harm of speculative bubbles. Consequently, every price surge or correction creates a psychological echo that draws more participants into the vortex of volatility, rendering virtual asset markets especially cryptocurrencies notoriously agile, unpredictable, and susceptible to sharp fluctuations that are often difficult to explain by fundamental factors alone.

4. Conclusion

This study comprehensively reveals that gamified design in virtual asset trading platforms is not merely a tool for enhancing user engagement but a psychological mechanism that systematically amplifies cognitive biases such as FOMO, overconfidence, herding behavior, loss aversion, and the disposition effect thereby driving excessive speculative activity, increased trading frequency and volume, heightened risk-taking, and market volatility. Features including real-time notifications, leaderboards, badges, copy trading, and celebratory animations create positive feedback loops that transform investment into an instant-gratification-oriented activity, often obscuring the reality of risks and undermining long-term strategies. The economic consequences of this pattern are profound: inflated transaction costs, suboptimal decision-making, portfolio losses, and systemic instability, particularly among novice investors and those with low financial literacy.

From an ethical and regulatory perspective, the findings underscore the need for balanced interventions: enhanced financial literacy as a primary mitigator (capable of reducing gamification effects by over 50%), restrictions on exploitative features through

regulation (e.g., notification caps, mandatory risk *labeling*, and algorithmic audits), and the development of socially responsible platform designs. While innovative, gamification has become a double-edged sword requiring rigorous oversight to prevent the prioritization of engagement metrics over investor welfare.

This study emphasizes the urgency of Islamic ethical regulation to ensure that digital financial innovation aligns with Shariah principles and social justice. By integrating *tawazun* (balance between risk and benefit), the prohibition of *gharar* (excessive uncertainty), and the value of *maslahah* (public welfare), the research not only critiques gamified practices bordering on *maisir* (gambling) but also contributes a normative framework to the advancement of contemporary Islamic economics toward transparent, equitable, and sustainable digital investment platforms where technology serves humanity rather than exploits its impulses.

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