

Behavioral Finance in the Digital Era: Understanding Investor Psychology in a High-Volatility Market

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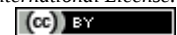
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Abstract

This study investigates the impact of digital information overload and market sentiment on investment decision-making in the digital era, with investor confidence examined as a mediating variable. Using a quantitative research design and data collected from active retail investors through an online survey, the analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The results reveal that digital information overload negatively influences both investor confidence and investment decisions, while market sentiment exerts a positive effect on both. Furthermore, investor confidence significantly mediates the relationship between the independent variables and investment decision-making, highlighting its central psychological role in the digital investment environment. These findings enrich the behavioral finance literature by incorporating digital-era constructs and provide actionable insights for financial platforms, educators, and regulators to foster more confident and rational investment behavior in volatile markets.

Keywords: Behavioral Finance, Digital Information Overload, Market Sentiment, Investor Confidence, Investment Decision-Making

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1. Introduction

In the increasingly complex landscape of modern finance, the emergence of behavioral finance as a vital field of study has challenged traditional economic models that assume investor rationality. Behavioral finance explores how psychological biases and emotional reactions influence financial decision-making, often leading to deviations from expected utility theory and market efficiency [1] [2]. In particular, the digital transformation of financial markets has significantly amplified the behavioral aspects of investment decisions, as technological innovations and real-time information flows continuously alter investor cognition and behavior [3]; [4]. The digital era has introduced a range of cognitive stressors such as information overload, algorithmic influence, and the viral spread of sentiment, all of which can distort investors' perceptions of risk and reward [5] [6].

Digital information overload, characterized by the excessive volume, velocity, and variety of financial data, often overwhelms individual investors, making it difficult to process, filter, and evaluate relevant information for decision-making [6] [7]. This phenomenon can contribute to irrational investment behaviors such as panic selling or herd following, especially during periods of market [8] [9]. At the same time, market sentiment—defined as the prevailing mood or collective outlook of investors—plays an increasingly influential role in driving asset prices and investment trends [10] [11]. The rapid dissemination of sentiment through digital platforms like financial news outlets, social media, and investment forums further

complicates the investment environment, blurring the lines between rational analysis and emotional reactions [12] [13].

Investor psychology, particularly in high-volatility market conditions, becomes more vulnerable to biases such as overconfidence, loss aversion, and confirmation bias [14] [15]. These biases, when reinforced by digital stimuli, can undermine the stability and predictability of investment decisions [16]. Notably, investor confidence serves as a psychological construct that mediates the impact of external variables—such as information overload and sentiment—on investment behavior [18] [19]. A high level of investor confidence can stabilize decision-making even under uncertain conditions, while low confidence may lead to heightened risk aversion and suboptimal portfolio choices [20] [21].

Despite growing interest in behavioral finance, existing literature has not fully addressed the interplay between digital-era variables and investor psychology in the context of market volatility. Previous studies have often treated digital information and investor sentiment in isolation, without integrating these factors within a comprehensive behavioral framework [19] [22]. Furthermore, empirical analyses on how these psychological variables influence actual investment decision-making remain limited, particularly in the context of emerging digital platforms that cater to retail investors [23] [24]. There is a pressing need to bridge this research gap by investigating how digital information overload and market sentiment interact with investor confidence to shape investment behavior in volatile environments.

This study aims to explore the relationships among digital information overload, market sentiment, investor confidence, and investment decision-making in the digital era. By focusing on investor psychology in high-volatility markets, this research contributes to the growing body of behavioral finance literature with a unique lens on digital transformation. It offers both theoretical insight and practical relevance for investors, financial technology platforms, and policymakers seeking to promote informed and resilient investment behaviors in an increasingly digital and emotionally reactive financial ecosystem [25]. Ultimately, this paper provides an empirical model that explains how cognitive and emotional factors interact in the digital age, thus enriching the understanding of investor behavior in modern financial markets. The following is the Conceptual Framework on Figure 1.

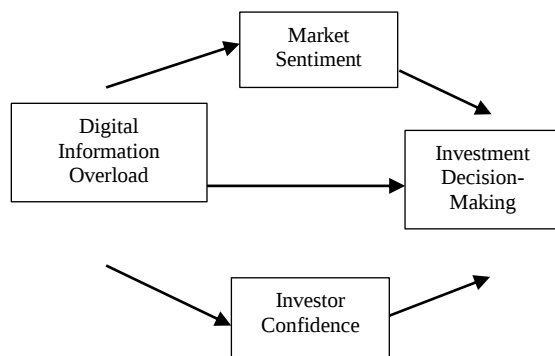


Figure 1. Framework

2. Research Method

The present study adopts a quantitative research design to empirically examine the influence of digital information overload and market sentiment on investment decision-making, with investor confidence acting as a mediating variable. This approach is appropriate given the objective to quantify relationships among latent psychological constructs in a digital financial environment. A structured questionnaire was developed using previously validated measurement items to ensure content validity and facilitate comparability with prior research [26]. The items measuring digital information overload, market sentiment, investor confidence, and investment decision-making were adapted from existing scales and refined to fit the context of digital investing behavior. The constructs were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The population of this study comprised active retail investors who utilize digital investment platforms in high-volatility markets, such as cryptocurrency or equity markets during macroeconomic uncertainty. A purposive sampling technique was employed to target respondents with relevant experience and active trading history, as such individuals are more likely to encounter digital cognitive stressors and market sentiment shifts [27] [28].

The data collection was conducted via an online survey distributed through investment forums, digital trading communities, and social media channels frequented by

retail investors. Upon screening for completeness and consistency, the valid responses were processed using SmartPLS 4.0, which enables simultaneous estimation of both measurement and structural models, making it suitable for complex models with mediating variables and non-normal data distributions [29] [30]. The Partial Least Squares Structural Equation Modeling (PLS-SEM) technique was selected for its robustness in handling reflective constructs and its effectiveness in exploratory research with predictive objectives. Reliability and validity were assessed through composite reliability, Cronbach's alpha, average variance extracted (AVE), and discriminant validity using the Fornell-Larcker criterion and HTMT ratio. Path analysis was employed to examine direct, indirect, and mediating effects among the variables. The use of SmartPLS aligns with methodological rigor and allows for a nuanced understanding of how psychological factors interact under the influence of digital financial environments, thereby contributing to the behavioral finance literature in a data-driven and statistically validated manner [30].

3. Result and Discussion

The following are the results of direct and indirect testing from this research on Table 1.

Table 1. Hypothesis Testing Results

Path	Original Sample	P - Value	Decision
DIO → IC	-0.412	0.000	Supported
MS → IC	0.368	0.002	Supported
DIO → IDM	-0.251	0.009	Supported
MS → IDM	0.305	0.001	Supported
IC → IDM	0.462	0.000	Supported
DIO → IC → IDM	-0.190	0.011	Supported
MS → IC → IDM	0.170	0.014	Supported

The findings of this study offer comprehensive insights into the complex interrelations among digital information overload (DIO), market sentiment (MS), investor confidence (IC), and investment decision-making (IDM) in the digital financial ecosystem. The hypothesis testing results demonstrate statistically significant relationships that not only validate theoretical assumptions but also enrich the behavioral finance literature by elucidating the mediating role of investor confidence in a high-volatility market context. These results are particularly relevant in an era marked by rapid digitalization, where cognitive and emotional factors increasingly influence financial behavior [1].

The path coefficient from DIO to IC is negative and significant ($\beta = -0.412$, $p < 0.001$), confirming the first hypothesis that higher levels of digital information overload undermine investor confidence. This finding aligns with prior studies emphasizing the detrimental effects of cognitive overload on financial judgment and decision quality [8]. In an environment inundated with real-time financial data, social media commentary, and algorithmic recommendations, investors may struggle to identify relevant information, leading to confusion and reduced trust in their own ability to make sound decisions. The anxiety and uncertainty induced by

excessive digital stimuli erode confidence, making investors more susceptible to emotional biases and reactive behaviors [9] [10]. This result underscores the necessity for digital platforms to improve the quality, clarity, and structure of information presentation to reduce psychological strain and promote informed confidence among users.

Similarly, the path from MS to IC is positive and significant ($\beta = 0.368$, $p = 0.002$), supporting the second hypothesis that favorable market sentiment enhances investor confidence. This finding is consistent with existing literature suggesting that investor confidence is highly sensitive to the collective mood of the market [11] [18]. Positive sentiment, often communicated through financial news, online communities, and peer discussions, serves as a psychological reinforcement mechanism that boosts individuals' perceptions of market predictability and personal investment efficacy. This phenomenon is particularly salient in digital environments, where the virality of optimistic narratives can amplify investor enthusiasm and trust [14] [15]. It also aligns with affect-as-information theory, which posits that people rely on their affective states as heuristics in judgment and decision-making [32]. In this light, the optimism embedded in market sentiment translates into higher confidence levels, even when fundamental analysis may not support such outlooks [31].

The third hypothesis, asserting that DIO negatively affects IDM, is also supported ($\beta = -0.251$, $p = 0.009$). This result corroborates prior empirical research demonstrating that cognitive overload can impair financial decision-making by introducing noise and reducing the ability to perform critical analysis [5] [19]. When investors are overwhelmed by a torrent of fragmented, redundant, or conflicting information, they may rely on cognitive shortcuts or heuristics, leading to biased or suboptimal investment decisions [15] [16]. The negative direct effect of DIO on IDM highlights the dual burden of information excess: it not only lowers confidence but also directly deteriorates decision quality. This insight has practical implications for fintech developers and regulators, who must consider not just the quantity but also the usability of financial information provided to retail investors.

Conversely, the path from MS to IDM yields a positive and significant effect ($\beta = 0.305$, $p = 0.001$), validating the fourth hypothesis and reinforcing the notion that optimistic market sentiment can directly influence investment decisions. The impact of market sentiment on decision-making can be attributed to behavioral contagion, whereby emotional cues shared within investment communities foster collective action that may deviate from fundamental valuations [22]. Investors often mirror the emotional tone of prevailing sentiment, adopting bullish or bearish stances not because of intrinsic analysis but due to a desire for social validation and perceived [25]. This dynamic demonstrates how sentiment can serve both as a heuristic and a catalyst for momentum-based trading,

contributing to price volatility and market bubbles. As such, the direct influence of MS on IDM presents both opportunities and risks, depending on the rationality and sustainability of sentiment-driven behaviors.

The significant positive relationship between IC and IDM ($\beta = 0.462$, $p < 0.001$) supports the fifth hypothesis and emphasizes the central role of investor confidence in shaping investment decisions. Investor confidence operates as a psychological buffer that enables more consistent, rational, and forward-looking decisions, even amid uncertainty. High confidence encourages proactive portfolio management, while low confidence may trigger excessive risk aversion or impulsive selling. This finding echoes the tenets of self-efficacy theory, which posits that belief in one's capabilities enhances goal-directed behavior and performance outcomes. In the context of financial decision-making, confident investors are more likely to adhere to their strategies, assess risks accurately, and resist emotional biases, leading to more optimal outcomes. Therefore, fostering investor confidence emerges as a strategic imperative for digital investment platforms and educational initiatives.

The mediation analyses further reveal nuanced insights into the psychological mechanisms at play. The indirect effect of DIO on IDM via IC is negative and significant ($\beta = -0.190$, $p = 0.011$), indicating that part of the detrimental impact of information overload on decision-making is channeled through diminished confidence. This partial mediation supports the argument that cognitive overload does not merely confuse but also disempowers investors, reducing their self-assurance and leading to hasty or overly conservative choices [17] [29]. This finding is particularly relevant in the design of robo-advisors and AI-driven platforms, which should not only simplify data but also provide users with actionable insights that build confidence rather than overwhelm them.

Likewise, the mediation effect of IC in the relationship between MS and IDM is positive and significant ($\beta = 0.170$, $p = 0.014$), indicating that investor confidence acts as a conduit through which optimistic sentiment translates into investment action. This confirms that confidence amplifies the influence of sentiment on behavior, in line with dual-process theories of cognition that distinguish between affective and deliberative systems. While sentiment triggers emotional reactions, confidence modulates whether these emotions manifest in action. For instance, an investor exposed to positive sentiment may feel optimistic, but only those with high confidence are likely to act on that sentiment by adjusting their portfolios. This layered understanding enhances the explanatory power of the behavioral model and calls for integrated strategies that address both emotional and cognitive dimensions of investor behavior.

Taken together, the results highlight the centrality of investor psychology in the digital financial age, where traditional financial literacy is no longer sufficient to ensure rational behavior. Instead, psychological

literacy—an understanding of how cognitive load, emotion, and self-perception interact—becomes equally vital. The findings suggest that digital financial environments must be reimagined to support both rational analysis and psychological resilience. Reducing information complexity, curating sentiment cues, and enhancing confidence through user-centered design and behavioral nudges are potential interventions that could improve investor outcomes.

From a theoretical standpoint, this study reinforces the relevance of behavioral finance frameworks such as prospect theory, affect heuristic, and bounded rationality in explaining modern investor behavior. It extends existing literature by empirically integrating digital-era constructs—namely DIO and MS—into a unified model mediated by IC, thus bridging gaps between behavioral theory and digital finance. The strong predictive power of the model, evidenced by significant path coefficients and mediating effects, affirms the utility of Partial Least Squares Structural Equation Modeling (PLS-SEM) in behavioral finance research. Methodologically, the use of SmartPLS enables nuanced exploration of latent constructs and their interactions, offering a replicable and robust approach for future studies.

On a practical level, the findings have implications for multiple stakeholders. For investors, the study underscores the need to develop self-awareness regarding their psychological responses to information and sentiment. For platform providers, the results call for ethical design principles that mitigate overload and foster constructive sentiment rather than manipulation. Financial educators and policymakers can also leverage these insights to craft interventions aimed at boosting investor confidence through targeted training and cognitive aids. Furthermore, regulators may consider establishing guidelines for the presentation and dissemination of financial information to ensure that digital platforms do not inadvertently foster confusion or irrational exuberance.

Despite these contributions, the study is not without limitations. The use of self-reported survey data may introduce common method bias, although efforts were made to ensure anonymity and minimize social desirability effects (Podsakoff et al., 2003). Additionally, while the sample was purposively selected to capture experienced digital investors, generalizability may be limited to similar demographic and regional contexts. Future research could enhance external validity by employing cross-cultural samples, experimental designs, or longitudinal data to examine how psychological variables evolve over time and under different market conditions.

4. Conclusion

In conclusion, this study demonstrates that investor behavior in the digital era is significantly shaped by psychological factors, particularly digital information overload and market sentiment, both of which directly and indirectly influence investment decision-making

through the mediating role of investor confidence. The findings highlight that excessive information negatively impacts confidence and decisions, while positive market sentiment enhances confidence and promotes proactive investment behavior. The central role of investor confidence as both a buffer against cognitive stress and a channel for affective influence underscores its importance in shaping rational financial behavior. These insights advance the behavioral finance literature by integrating digital-era constructs into a cohesive model and offer practical implications for platform designers, financial educators, and policymakers aiming to support more informed and confident investors in high-volatility markets.

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