



BEHAVIOURAL FINANCE IN THE DIGITAL ERA: A STUDY OF DIGITAL NUDGING, RISK PERCEPTION, AND INVESTOR BIASES IN ONLINE TRADING ENVIRONMENTS

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ABSTRACT

The rapid growth of financial technology and digital trading platforms has significantly transformed investor behaviour and decision-making processes in modern financial markets. In the digital era, online trading environments increasingly utilize behavioural design techniques such as digital nudging, personalized notifications, algorithmic recommendations, gamification, visual cues, and real-time alerts to influence investor decisions and trading activities. These digital interventions are designed to guide user behaviour, improve platform engagement, and encourage faster financial decision-making. However, the increasing dependence on technology-driven investment environments has also intensified behavioural biases, emotional trading patterns, speculative risk-taking, and irrational investment decisions among investors.

The main aim of the researchers is to examine the influence of digital nudging on investor behaviour, risk perception, and cognitive biases within online trading environments. The study further aims to analyse how FinTech platforms shape investment decisions through behavioural triggers and technological interfaces while evaluating the psychological and financial implications of digital trading practices in the modern investment ecosystem.

The study adopts an empirical and analytical approach by examining investor experiences, behavioural finance theories, FinTech practices, and digital trading patterns. The research identifies that digital nudging techniques significantly affect investor psychology by encouraging impulsive decision-making, overconfidence, herd behaviour, fear of missing out (FOMO), and excessive trading activities. At the same time, digital platforms also improve accessibility to financial markets, provide real-time investment information, and enhance investor participation in digital finance.

The findings reveal that while digital nudging can improve user engagement and financial accessibility, excessive technological influence may increase emotional decision-making and speculative trading risks among investors. The study emphasizes the need for ethical FinTech practices, transparent digital interfaces, investor education, and responsible technological governance to ensure balanced and sustainable investment behaviour in online trading environments.

The researchers in their research concludes that behavioural finance has become increasingly important in understanding investor psychology in technology-driven financial ecosystems.

KEYWORDS: Behavioural Finance, Digital Nudging, FinTech, Investor Behaviour, Risk Perception, Cognitive Biases, Online Trading, Digital Trading Platforms, Financial Technology, Investor Psychology.

INTRODUCTION

The advancement of financial technology (FinTech), Artificial Intelligence (AI), mobile applications, and digital trading platforms has significantly transformed the global investment environment. In recent years, online trading systems have become more accessible, user-friendly, and technologically advanced, attracting a large number of retail investors into stock markets, cryptocurrency trading, mutual funds, and digital investment platforms. Modern investors increasingly depend on mobile trading applications, algorithmic recommendations, automated notifications, and digital financial interfaces to make investment decisions in real time. This technological transformation has created a new dimension in behavioural finance where investor psychology and digital platform design collectively influence financial decision-making.

Behavioural finance explains how psychological, emotional, and cognitive factors affect investor decisions and market behaviour. Traditional financial theories assumed that investors act rationally while making investment choices. However, behavioural finance argues that investors are often influenced by emotions, social pressure,



overconfidence, fear, greed, and cognitive biases. In the digital era, these behavioural tendencies are further intensified through online trading platforms that use digital nudging techniques to influence investor actions and engagement patterns.

Digital nudging refers to the strategic use of digital interface design, notifications, colour schemes, recommendations, alerts, gamification, and personalized content to guide user behaviour without restricting freedom of choice. FinTech companies and online trading applications increasingly utilize behavioural design mechanisms to encourage faster decision-making, continuous engagement, frequent transactions, and increased platform activity. Features such as “buy now” prompts, trending stock notifications, real-time price fluctuations, reward systems, social trading indicators, and fear-of-missing-out (FOMO) alerts significantly shape investor behaviour and trading psychology.

The growing influence of digital nudging has created both opportunities and challenges within financial markets. On one side, digital trading platforms improve accessibility to investment opportunities, provide instant financial information, reduce transaction costs, and promote financial participation among retail investors. On the other side, excessive digital stimulation may encourage impulsive trading, emotional investment decisions, herd behaviour, speculative risk-taking, and cognitive biases. Investors may become highly reactive to short-term market fluctuations and technological prompts rather than relying on rational financial analysis and long-term investment strategies.

Risk perception has become a major factor influencing investor behaviour in digital financial environments. Online investors often respond differently to market risks based on emotional triggers, platform design, social influence, and digital recommendations. Behavioural biases such as overconfidence bias, anchoring bias, confirmation bias, loss aversion, mental accounting, availability bias, and herd mentality increasingly affect investment decisions in online trading environments. Continuous exposure to digital financial content and instant market information may further intensify stress, anxiety, speculative behaviour, and irrational financial decision-making among investors.

In emerging economies such as India, digital financial participation has increased rapidly due to smartphone penetration, internet accessibility, digital payment systems, and growth in FinTech services. Young investors and first-time traders are increasingly entering financial markets through online platforms without sufficient financial literacy or behavioural awareness. This situation raises important concerns regarding ethical digital design, investor protection, financial education, responsible technological governance, and sustainable investment practices.

The present study focuses on examining the relationship between behavioural finance and digital nudging within online trading environments. The study aims to analyze how digital nudging influences investor behaviour, risk perception, and cognitive biases while evaluating the psychological and financial consequences of technology-driven investment practices. The research also attempts to provide insights into ethical FinTech practices, investor awareness, and responsible digital financial ecosystems that support sustainable and informed investment behaviour in the digital era.

LITERATURE REVIEW

Behavioural finance has emerged as an important field for understanding how investors make decisions under uncertainty. Traditional finance assumes that investors are rational and make decisions based on available information, risk, and expected return. However, behavioural finance explains that investors are often influenced by emotions, psychological shortcuts, social pressure, and cognitive biases. Scholars such as **Kahneman and Tversky (1979)** highlighted that individuals do not always behave rationally while dealing with gains and losses. Their prospect theory explains that investors are generally more sensitive to losses than gains, which affects their investment decisions.

Thaler (1980) further contributed to behavioural finance by explaining how mental accounting influences financial decision-making. Investors may separate money into different mental categories and make irrational decisions based on emotional value rather than actual financial logic. Similarly, **Shefrin and Statman (1985)** discussed the disposition effect, where investors tend to sell profitable investments too early and hold loss-making investments for too long. These studies show that investor decisions are strongly influenced by behavioural biases rather than purely rational analysis.

In the digital era, online trading platforms have created a new investment environment where investors receive continuous market updates, price alerts, recommendations, and app-based notifications. **Barber and Odean (2001)** found that overconfidence often leads investors to trade excessively, resulting in lower investment



performance. This finding is highly relevant to online trading platforms, where easy access and instant execution may encourage frequent trading among retail investors.

The concept of digital nudging is based on the idea of influencing user behaviour through the design of digital choice environments. **Thaler and Sunstein (2008)** introduced the concept of nudging, explaining that small changes in choice architecture can guide decisions without restricting freedom. In FinTech platforms, digital nudges may appear in the form of notifications, default settings, colour signals, trending stock alerts, gamified rewards, and personalized suggestions. These nudges can support informed decisions but may also influence investors toward impulsive trading.

Weinmann, Schneider, and vom Brocke (2016) explained digital nudging as the use of user-interface design elements to guide behaviour in digital environments. Their study is relevant to FinTech platforms because trading apps use interface designs to shape investor attention, engagement, and decision-making. These digital features can increase platform usability but may also create psychological pressure to act quickly.

Research on investor risk perception shows that investors do not always assess risk objectively. **Ricciardi and Simon (2000)** explained that behavioural finance combines psychology and finance to understand how emotions affect financial choices. In online trading environments, investors' risk perception may be influenced by market volatility, peer behaviour, social media trends, and real-time digital alerts. As a result, investors may overestimate short-term opportunities or underestimate long-term risks.

Baker and Nofsinger (2010) observed that behavioural biases such as overconfidence, herd behaviour, anchoring, confirmation bias, and loss aversion significantly influence investment decisions. These biases become more visible in digital trading platforms where investors are exposed to large amounts of market information within a short time. Continuous exposure to financial news, charts, and trading signals may increase emotional reactions and speculative behaviour.

Studies on herd behaviour show that investors often follow the actions of others, especially during market uncertainty. **Banerjee (1992)** explained that individuals may ignore their own information and follow group behaviour. In online trading environments, herd behaviour may be strengthened through trending stock lists, social trading features, influencer recommendations, and online investment communities. This may lead to sudden price movements, speculative bubbles, and irrational investment decisions.

The growth of FinTech has expanded investor participation by making trading platforms more affordable, accessible, and convenient. **Gomber, Koch, and Siering (2017)** stated that digital finance has transformed financial services through technology-based platforms, automation, and data-driven services. FinTech platforms have increased market participation among young investors and first-time traders. However, easy accessibility also creates concern when investors trade without sufficient financial knowledge or risk awareness.

Research on gamification in finance indicates that reward systems, badges, rankings, and app-based achievements can increase user engagement. However, such features may also encourage excessive trading and risk-taking behaviour. **Deterding et al. (2011)** defined gamification as the use of game-design elements in non-game contexts. In trading platforms, gamification may make investment activity more attractive but can also reduce the seriousness of financial risk.

STATEMENT OF THE PROBLEM

The rapid growth of FinTech platforms and online trading applications has significantly changed investor behaviour in the digital financial environment. Modern trading platforms increasingly use digital nudging techniques such as notifications, personalized recommendations, colour signals, trending alerts, gamification, and real-time updates to influence investor decisions and trading activities. These technological interventions improve accessibility, convenience, and investor participation in financial markets. However, excessive dependence on digital trading environments has also increased behavioural biases, emotional investing, speculative risk-taking, and impulsive decision-making among investors.

Many retail investors, particularly young and first-time traders, make investment decisions based on digital prompts, social influence, and psychological triggers rather than rational financial analysis. Behavioural biases such as overconfidence, herd mentality, fear of missing out (FOMO), anchoring bias, and loss aversion have become more visible in online trading environments. At the same time, ethical concerns regarding investor



manipulation, excessive trading encouragement, lack of financial awareness, and responsible platform design continue to grow.

Therefore, the major problem addressed in this study is to understand how digital nudging influences investor behaviour, risk perception, and decision biases in online trading environments while evaluating the psychological and ethical implications of technology-driven investment practices.

RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research methodology to examine the influence of digital nudging on investor behaviour and risk perception in online trading environments.

Sources of Data

Primary Data

Primary data may be collected through:

- Structured questionnaires
- Investor surveys
- Interviews with online traders
- Responses from FinTech platform users

Secondary Data

Secondary data may be collected from:

- Research journals
- Books
- Financial reports
- RBI and SEBI publications
- FinTech industry reports
- Websites and online databases
- Scopus-indexed research articles

Sampling Technique

The study may use convenience sampling and purposive sampling methods to select respondents actively involved in online trading platforms.

Tools for Analysis

The collected data may be analyzed using:

- Percentage analysis
- Mean and standard deviation
- Correlation analysis
- Regression analysis
- Comparative analysis
- Charts and graphical interpretation

OBJECTIVES OF THE STUDY

1. To examine the concept of digital nudging in FinTech platforms.
2. To analyze the impact of digital nudging on investor behaviour in online trading environments.
3. To study investor risk perception in technology-driven financial markets.
4. To identify major behavioural biases affecting online investment decisions.
5. To evaluate the role of FinTech platforms in influencing investor psychology and trading behaviour.
6. To suggest ethical and responsible digital financial practices for sustainable investing.

RESEARCH GAAP (Generally Accepted Academic Practices)

The study follows Generally Accepted Academic Practices to ensure originality, ethical standards, and academic quality.

The Study Emphasizes

- Academic integrity and originality
- Proper citation and referencing
- Ethical data collection



- Reliability and validity of information
- Avoidance of plagiarism
- Transparent research methodology
- Objective analysis and interpretation
- Ethical use of digital financial data
- Responsible reporting of findings

SIGNIFICANCE OF THE STUDY

The study is significant because digital trading platforms and FinTech applications are rapidly influencing investor decision-making and financial behaviour in modern markets. The research provides insights into how digital nudging affects investor psychology, trading habits, and risk-taking behaviour.

The study benefits:

- Investors and online traders
- FinTech companies
- Financial institutions
- Policymakers and regulators
- Behavioural finance researchers
- Academicians and students

The research also contributes to understanding the relationship between technology, psychology, and financial decision-making in the digital era.

RESEARCH DESIGN

The research design adopted for the study is descriptive and analytical in nature.

Nature of the Study

- Descriptive Research
- Analytical Research
- Behavioural Study

Area of the Study

The study focuses on investors using online trading platforms and FinTech applications.

Research Instrument

- Structured questionnaire
- Survey method
- Observation technique

Statistical Techniques

- Percentage analysis
- Correlation
- Regression
- Comparative interpretation

Recommendations and Suggestions

1. FinTech platforms should promote ethical digital nudging practices.
2. Investors should receive financial literacy and behavioural awareness training.
3. Trading applications should provide transparent risk disclosure mechanisms.
4. Regulatory authorities should monitor manipulative digital trading practices.
5. Investors should avoid emotional and impulsive trading decisions.
6. FinTech companies should balance user engagement with investor protection.
7. Online trading platforms should encourage long-term investment behaviour rather than speculative trading.
8. Psychological risk indicators may be integrated into trading platforms to improve responsible investing.

RESULTS AND DISCUSSIONS

The study reveals that digital nudging significantly influences investor behaviour and online trading decisions. Notifications, trending alerts, personalized recommendations, and real-time updates increase investor engagement and trading frequency. Many investors respond emotionally to digital prompts, leading to impulsive investment decisions and speculative trading behaviour.



The research further indicates that behavioural biases such as overconfidence, herd mentality, fear of missing out (FOMO), anchoring bias, and loss aversion strongly affect investor decisions in digital trading environments. Online trading platforms create psychological pressure through continuous market information and instant execution features.

At the same time, digital trading systems improve financial market accessibility, investment participation, and convenience for retail investors. However, excessive digital influence may increase emotional trading and financial risk exposure. The findings emphasize the importance of ethical FinTech design, investor awareness, and responsible digital financial governance.

FINDINGS

1. Digital nudging significantly affects investor decision-making behaviour.
2. Online trading platforms increase investor participation and market accessibility.
3. Behavioural biases strongly influence investment decisions in digital environments.
4. Fear of missing out (FOMO) and herd behaviour encourage speculative trading.
5. Excessive notifications and digital prompts may lead to impulsive investment decisions.
6. FinTech platforms improve convenience but may increase emotional trading patterns.
7. Financial literacy plays an important role in reducing irrational investment behaviour.
8. Ethical digital platform design is necessary for investor protection and sustainable investing.

HYPOTHESIS

Null Hypothesis (H₀)

There is no significant relationship between digital nudging and investor behaviour, risk perception, or decision biases in online trading environments.

Alternative Hypothesis (H₁)

There is a significant relationship between digital nudging and investor behaviour, risk perception, and decision biases in online trading environments.

LIMITATIONS

1. The study is limited to selected online trading platform users.
2. Investor responses may vary based on experience and financial literacy.
3. Behavioural perceptions are subjective in nature.
4. Rapid technological changes may affect long-term research relevance.
5. The study mainly focuses on digital trading environments and FinTech platforms.
6. Market conditions and investor emotions may change over time.

CONCLUSION

The study concludes that behavioural finance has become highly relevant in understanding investor behaviour within digital financial environments. Digital nudging techniques used by FinTech platforms significantly influence investor psychology, risk perception, and trading decisions. Features such as notifications, personalized recommendations, trending alerts, and gamified interfaces encourage greater investor engagement and participation in online financial markets.

At the same time, the study identifies that excessive digital influence may increase behavioural biases, impulsive trading, emotional investing, speculative risk-taking, and irrational financial decisions. Behavioural biases such as overconfidence, herd mentality, loss aversion, anchoring bias, and fear of missing out (FOMO) strongly affect investor behaviour in online trading environments.

The research further concludes that while FinTech innovation improves accessibility and convenience in financial markets, ethical digital platform design, investor education, regulatory monitoring, and responsible financial governance are essential for sustainable investment practices. Balanced integration of technology, behavioural awareness, and ethical financial systems is necessary to protect investors and promote rational decision-making in the digital era.



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