



From Algorithms to Emotions: Tracking the Shift in Fintech-Investor Research

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ABSTRACT

Financial technology (fintech) has brought long-lasting changes to investing by shifting researchers' attention from strict algorithms to the mental sides of investment choices. The paper studies the growth in fintech-investor relations by first tracing changes from blockchain, artificial intelligence and algorithmic trading tools, to a more complex understanding of how such technologies affect investor behaviour and decisions. Although innovations have improved how markets work, new risks linked to the behaviour of investors and hesitations have emerged among retail investors from emerging countries. With more mobile investment apps and online guides, many investors can now join the market, yet instant online trading and following the crowd is increasing. As a result, there are serious problems for markets and with regulations. The purpose of following the evolution from algorithms to emotions in fintech-investor studies is to point out the rising need to include behavioural finance in discussions of technology in financial markets.

KEYWORDS: Fintech, Investor Behaviour, Algorithmic Trading, Artificial Intelligence (AI), Blockchain Technology, Robo-Advisory Services, Retail Investors, Digital Investment Platforms, Social Media Influence

Received 15 June., 2025; Revised 27 June., 2025; Accepted 29 June., 2025 © The author(s) 2025.
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I. INTRODUCTION

Technological innovations in finance, popularly known as fintech, have rapidly changed the way investors act and make decisions in financial markets (Chan et al., 2022). New technologies such as blockchain, artificial intelligence, and algorithmic trading altered traditional investing methods. Blockchain technology created secure and transparent digital transactions, enabling safer and more trustworthy financial systems (Yaga et al., 2019; Zheng et al., 2017). Artificial intelligence tools emerged as valuable aids for investors, using big data analytics to predict market movements and automate trading advice through robo advisory services. Meanwhile, algorithmic trading shifted investment strategies from manual decision making to automated execution, which allowed faster, more precise trades (Baden-Fuller & Haeffliger, 2013). These technological advances led to more efficient financial markets but also brought increased risk, unpredictability, and ethical concerns, especially regarding automated trading and market stability.

Beyond technical efficiency, fintech significantly affected investor behaviour. Automated trading platforms and mobile investment apps became accessible globally, particularly in emerging economies, resulting in a rapid increase in market participation (Belanche et al., 2019). This ease of access encouraged many new, inexperienced investors to enter financial markets, influenced heavily by social media and digital platforms. While greater participation improved market liquidity, it also intensified behavioural biases (Yli-Huumo et al., 2016). Investors relying heavily on fintech tools often showed impulsive and emotionally driven trading behaviours. Such behavioural issues increased market volatility and created challenges for regulators aiming to maintain financial stability (Archibugi & Iammarino, 2002).

Given fintech's rapid growth and the fragmented state of research, a structured review of the existing literature became necessary. Many studies examined fintech's role in investment behaviour, but often in isolation, focusing only on single technologies or events (Arner et al., 2020; Belanche et al., 2019; Utami et al., 2021). Few studies attempted to consolidate this knowledge into a clear overview, leaving critical questions unanswered about

fintech's overall impact on investor psychology and market stability. In this context, conducting a bibliometric analysis helps researchers identify important patterns, influential studies, and major gaps in existing research (Bornmann et al., 2018). Bibliometric methods provide clarity by grouping similar research systematically, clearly highlighting dominant themes and gaps. Such structured analysis proves particularly valuable in rapidly evolving fields like fintech, where keeping track of key developments and emerging trends is challenging yet essential (Anthony F.J. van Raan, 2004).

This paper adopted bibliometric methods to systematically examine published research on fintech's influence on investment behaviour from 2020 to 2025. Using articles from the Web of Science Core Collection, this study identified main research trends, leading themes, influential authors, and critical gaps in existing knowledge. Specific attention was given to areas such as blockchain-based trading, artificial intelligence applications in investing, and algorithmic trading strategies. The study also highlighted how fintech intersects with behavioural finance, economic modelling, and regulatory issues. Identifying geographical collaboration patterns further clarified the global spread and interconnectedness of fintech research. Through keyword and thematic analyses, the paper clearly mapped how research interests evolved from initially exploring market efficiency and investment risks to focusing more recently on investor psychology, ethical considerations, and sustainability. By clearly outlining these research trends and gaps, the findings offer a structured foundation for future studies. These insights help researchers and policymakers better understand fintech's influence on investment behaviour and equip them to address emerging challenges related to technology-driven financial markets.

II. RESEARCH METHODOLOGY

The study used bibliometric analysis to systematically review existing research on fintech and investment behaviour. All research articles were collected from the Web of Science Core Collection, a trusted database containing articles published in peer reviewed journals. This database was chosen because it covers highly respected journals in finance, management, and technology fields. It ensured that only relevant, credible, and high-quality articles were considered.

The data collection process involved searching this database using specific keywords related to fintech and investment behaviour. The exact search terms were: ("Technological Innovation" OR "FinTech" OR "Algorithmic Trading" OR "Robo-Advisory" OR "Blockchain Trading" OR "AI in Trading") AND ("Investment Behaviour" OR "Investor Behaviour" OR "Stock Market Investment" OR "Trading Behaviour") AND ("Structural Equation Modeling" OR "PLS-SEM" OR "Causal Relationship") AND ("stock markets" OR "capital markets"). These keywords clearly targeted articles examining how new financial technologies affect investor decisions and market activities. The search covered the years from 2020 to 2025 to capture the most recent research trends and developments in this fast-growing field.

After applying the search terms, the resulting dataset included 1,711 peer reviewed articles. This dataset represented research published across various international journals from diverse geographical locations. The period 2020 to 2025 was deliberately chosen to capture contemporary issues, rapid technological changes, and recent shifts in investor behaviour linked to technological advancements. The dataset's size ensured enough coverage for accurately identifying significant trends and research gaps without being overly large to manage effectively.

Table 1: Descriptive Statistics of the Data

Description	Results
Main Information About Data	
Timespan	2020:2025
Sources (Journals, Books, etc)	256
Documents	1711
Annual Growth Rate %	-24.4
Document Average Age	2.66
Average citations per doc	18.08
References	97049
Document Contents	
Keywords Plus (ID)	3316
Author's Keywords (DE)	5719

Authors	
Authors	4737
Authors of single-authored docs	138
Authors Collaboration	
Single-authored docs	140
Co-Authors per Doc	3.36
International co-authorships %	51.49
Document Types	
Articles	1711

Note: The table presents key bibliometric statistics, including publication trends, authorship patterns, and citation impact for the dataset spanning 2020–2025.

For analysing the collected articles, this study relied on citation analysis, keyword analysis, and thematic mapping. Citation analysis involved examining how frequently articles cited each other. This approach helped identify the most influential authors, journals, and individual studies in fintech and investor behaviour research. Citation patterns showed which studies had significantly impacted the field by frequently informing other research. Keyword analysis identified commonly used words across the dataset. Examining these keywords clearly revealed the most discussed topics, technologies, and issues within fintech research. Keyword frequency also indicated shifts in research interests and emerging areas needing further attention. Finally, thematic mapping involved grouping the identified keywords into themes to visualise connections between different research topics. This process provided a clear picture of how fintech research evolved over time, moving from earlier themes like market efficiency and investment risk towards newer concerns such as investor psychology, ethical issues, and sustainability. By combining these analytical approaches, the bibliometric analysis effectively structured existing research, making it easier to recognise key research directions and gaps needing further study.

III. RESULTS

3.1 Publication Trends

The analysis covered 1,711 journal articles published between 2020 and 2025. These articles focused on the relationship between fintech and investor behaviour. The average citation per article was 18.08, showing that the field attracted attention and produced influential research. However, one unusual trend stood out: the number of publications fell steadily during the period. The annual growth rate of publications declined by 24.4%, which is significant in a topic that is widely discussed both academically and practically (Figure 1).

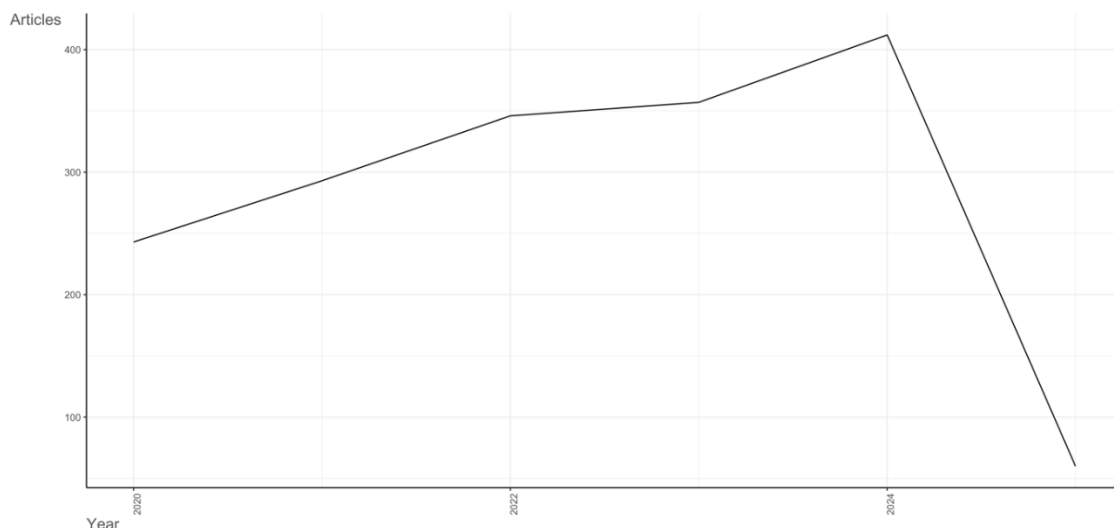


Figure 1: Annual Scientific Production

This decline raises several questions. It is unlikely that interest in fintech reduced so quickly. In fact, the opposite is seen in industry and policymaking spaces. Therefore, other explanations must be considered. One likely cause is the time lag in indexing new articles in large academic databases like the Web of Science. Journals often publish online ahead of print, and some papers take months or longer to appear in final form. As a result,

articles from late 2024 and early 2025 may not have been captured in the dataset, giving the impression of a drop. Another reason could be a shift in research priorities. After an initial surge of interest around 2020, many researchers may have moved from basic exploratory work to deeper empirical and theoretical studies. This often results in fewer papers being published, but with better quality and stronger impact. This is supported by the relatively high average citation rate. Fewer studies, but better ones, may now be shaping the field.

Another possible explanation is the consolidation of fintech studies into specific high-impact journals. As publication standards rise and peer review processes become more selective, acceptance rates drop. This results in a smaller number of accepted papers, even when submission volumes remain high. This shift from volume to quality could explain the observed pattern. Finally, it is also possible that some early topics, such as basic definitions or general fintech adoption patterns, reached saturation. As a field matures, repetition declines, and researchers turn to specialised themes or new technologies.

Taken together, while the number of articles declined, their influence remained high. This suggests that fintech research is entering a more focused and structured phase. Researchers now appear more selective in what they study and where they publish. This trend, though concerning at first glance, may actually reflect progress in the field.

3.2 Main Journals and Sources

The dataset revealed that a small group of journals accounted for most of the published studies on fintech and investor behaviour. This is consistent with Bradford's law, which states that in any subject area, a few journals usually produce a large share of articles while many others contribute only occasionally. In this study, three journals were clearly dominant: *Journal of Business Research*, *Technological Forecasting and Social Change*, and *Finance Research Letters*. These journals regularly published papers that explored how technological changes shaped investor decisions, trading behaviours, and market systems. Their articles covered a wide range of topics such as blockchain, robo advisory systems, machine learning in trading, and algorithm-based portfolio management.

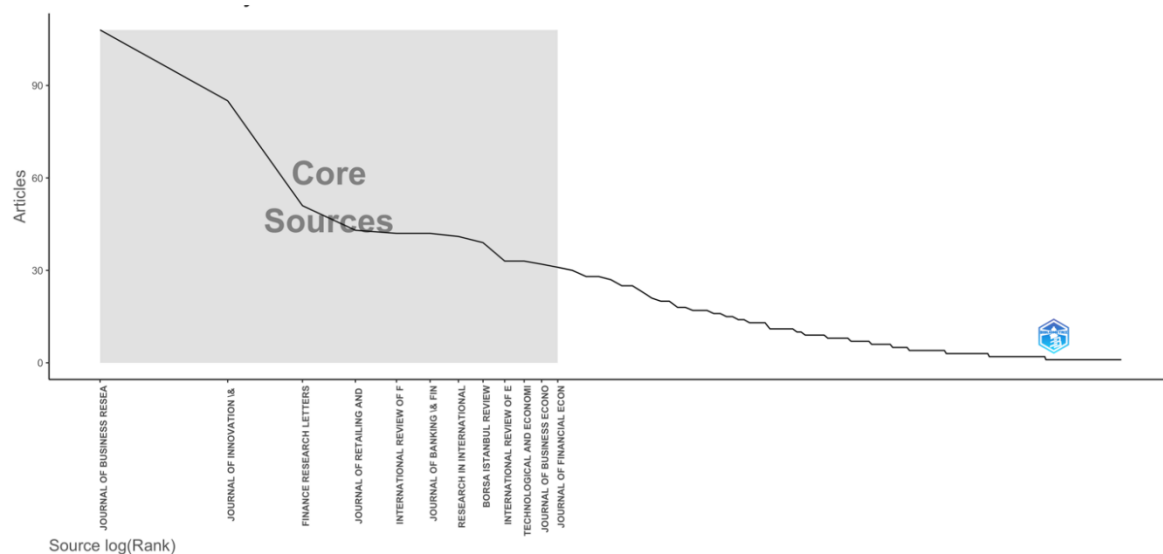


Figure 2: Bradford's Law

Journal of Business Research stood out for its ability to combine behavioural finance concepts with emerging technologies. It published several papers that examined how trust, familiarity, and user experience influenced the use of fintech tools. *Technological Forecasting and Social Change* contributed research that addressed long-term trends and the effects of fintech on financial markets and systems. This journal often linked technology with social and economic outcomes, which suited the study of investor behaviour well. *Finance Research Letters* focused more directly on financial market data and modelling. Many of its articles applied real-world data to test how fintech platforms affected returns, trading frequency, and volatility.

In addition to these core publishing sources, other journals, although publishing fewer fintech-related articles, made a strong impact through their citation counts. *Journal of Finance* and *Journal of Financial Economics* were the most cited sources across the dataset, even though they published fewer articles on fintech directly. Their influence came from foundational theories and models that researchers applied in newer fintech

contexts. For example, concepts such as market efficiency, capital structure, and risk-return tradeoffs from these journals continued to guide research on AI-driven trading and decentralised finance.

The presence of both highly specialised journals and general finance outlets highlighted the wide academic reach of fintech research. This also showed that while some journals regularly publish new empirical work, others remain central because of their theoretical importance. Future researchers aiming to contribute to the field should take note of both types of sources. Publishing in core journals helps connect with ongoing debates, while referencing foundational journals helps build strong arguments.

Overall, the findings confirmed that fintech research is now well established in a clear group of academic outlets. These journals guide what topics are discussed, what methods are accepted, and what themes are likely to shape future research.

3.3 Geographic Patterns

The analysis of country-level contributions showed that fintech and investor behaviour research was concentrated in a few leading countries. The United States, China, the United Kingdom, and India together produced the highest number of articles during the 2020 to 2025 period. These four countries formed the core of global research in this field. China published the most papers overall. This could be linked to the country's rapid adoption of financial technologies, such as mobile payment systems, blockchain platforms, and artificial intelligence in consumer finance. Chinese universities and research centres have shown strong interest in studying how these changes affect both markets and individual investors.

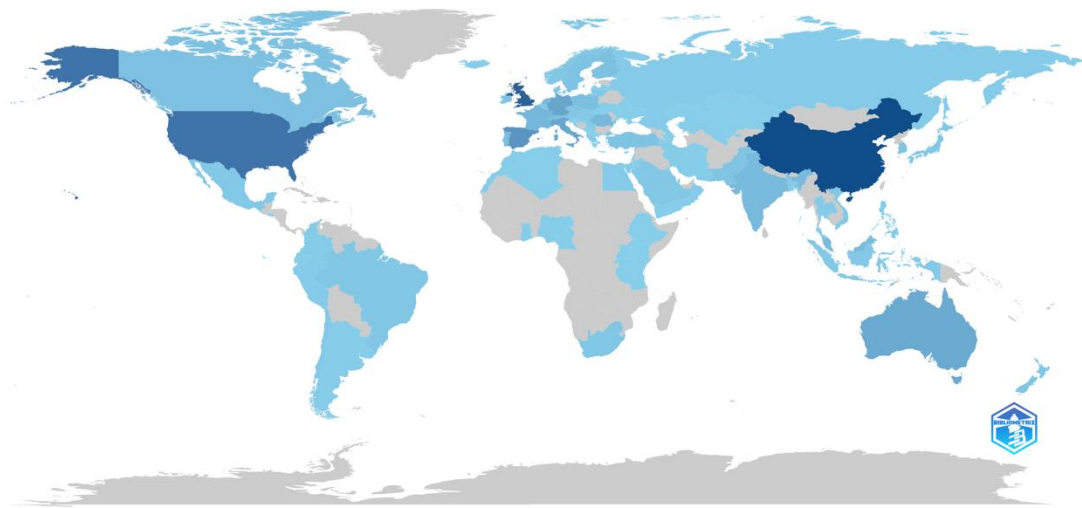


Figure 3: Country Scientific Production

The United States also made a large contribution. It had many articles that focused on the use of algorithmic trading, digital finance regulations, and behavioural responses to fintech platforms. The presence of major technology firms and financial institutions likely supported this academic activity. The UK also featured prominently in the dataset. Its research often focused on financial regulation, ethical issues in AI, and financial inclusion in the context of digital services. India, although producing fewer papers than the other three, showed steady growth in its research output. The Indian studies often focused on mobile trading apps, behavioural finance in rural markets, and government-supported digital finance initiatives.

One key trend across these countries was the high rate of international collaboration. Over 50 percent of the articles involved authors from more than one country. This level of cooperation reflects the global nature of fintech and the shared interest in understanding its influence on markets and behaviour. International collaboration is important in this field because fintech systems often function across borders. A single trading app or blockchain platform can affect users in many countries. Studying these systems requires diverse perspectives and shared data, which researchers seem to have actively pursued.

The data also showed that many collaborations occurred between developed and developing countries. For instance, partnerships between researchers in the US and India, or the UK and China, were common. These collaborations brought together different experiences with technology adoption, user behaviour, and financial regulation. This mix added depth to the findings and helped in forming a more realistic picture of how investors from various backgrounds respond to fintech tools.

Geographic patterns in this dataset highlighted a few key points. First, the research was driven by countries that either developed major fintech tools or adopted them quickly. Second, international collaboration

was not only common but essential, given the global reach of these technologies. Lastly, countries with emerging markets like India were clearly becoming more active in academic research, which will likely influence the direction of future studies.

3.4 Author Productivity

The analysis of author productivity revealed that most contributors in the field of fintech and investor behaviour published only one or two articles. This pattern followed Lotka's law, which describes how a small number of authors are usually responsible for most of the output in any academic field. In this study, a few authors stood out for their consistent contributions and influence. These authors produced multiple studies that shaped the ongoing research conversation and introduced new ideas about how investors respond to financial technology.

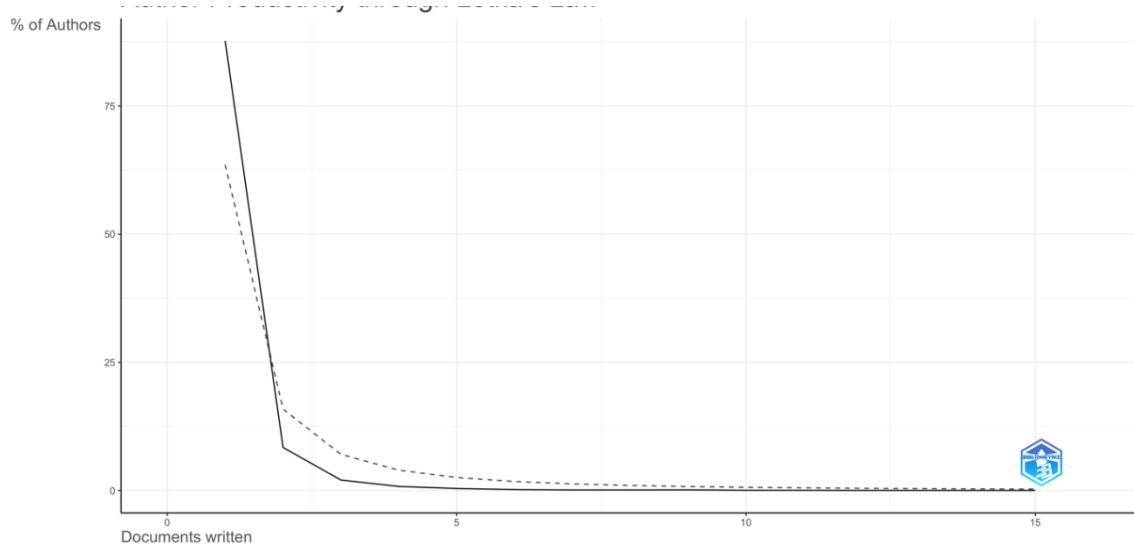


Figure 4: Lotka's Law

Among the most productive and influential researchers were Victor Murinde, Ahmet Demir, and Yizhe Wang. Each of these authors focused on different but connected themes. Murinde published studies that explored how fintech tools helped financial systems evolve, especially in emerging markets. His work also touched on the role of regulation and policy in managing these changes. He often examined how fintech adoption affected financial access and inclusion for different groups of investors.

Demir focused heavily on artificial intelligence and its growing role in investment decisions. His research explained how algorithm-based systems changed how people invest, especially when using robo advisory platforms. He also wrote about how AI could create both benefits and new risks, such as over-reliance on automated systems or unexpected market reactions to algorithmic trades. His work combined technical analysis with insights from behavioural finance, which made it useful for both theory and practice.

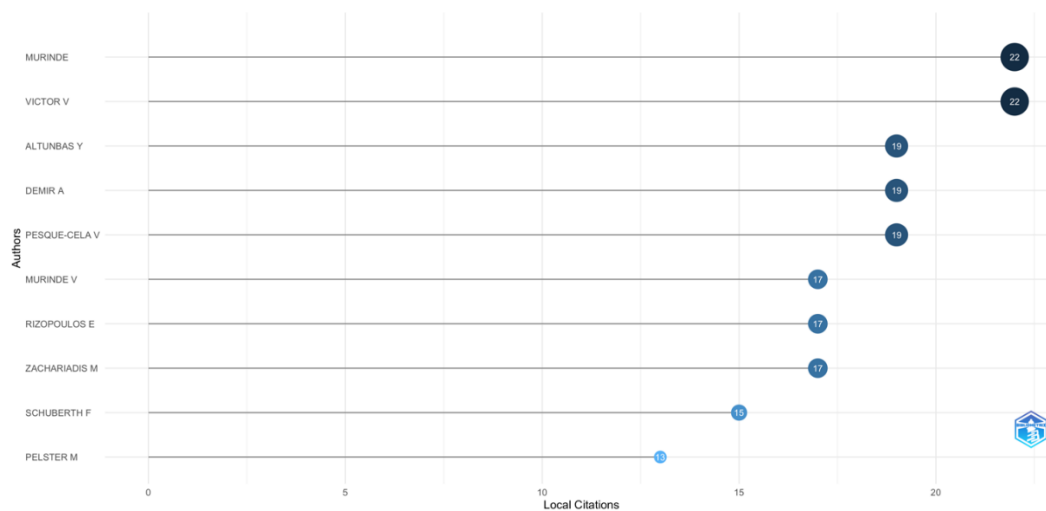


Figure 5: Most local cited authors

played a key role in technology use. Over time, researchers moved beyond simple user adoption to investigate deeper behavioural shifts, including biases triggered by real-time data and algorithmic cues.

Artificial intelligence and its use in trading were another strong area of interest. Researchers focused on how AI tools such as machine learning and predictive analytics were used to manage portfolios, execute trades, and identify market opportunities. Keywords like “AI in trading,” “robo advisory,” and “machine learning” appeared frequently. These studies often aimed to understand how investors reacted to AI-generated recommendations and what risks these systems introduced. The growing role of AI raised new questions about investor dependence on automated advice and the ability of users to assess algorithmic outcomes.

Blockchain was also a recurring theme, especially after 2020. Many studies explored how blockchain improved transparency and trust in trading environments. Common keywords included “blockchain trading,” “decentralised finance,” and “trust.” Researchers examined how these systems reduced the need for intermediaries and how that affected investor confidence. The emergence of DeFi (decentralised finance) platforms attracted attention, especially in relation to governance structures, token-based investments, and peer-to-peer trading systems. These technologies raised both interest and concern, particularly regarding data privacy, security, and regulation.

The fourth cluster of keywords focused on volatility, market risk, and uncertainty. These studies analysed how fintech systems, especially high-frequency trading and algorithmic platforms, affected price swings and investor reactions. Words like “market volatility,” “uncertainty,” and “risk” were common in this group. Some papers used real-time data from trading platforms to explore how fintech tools amplified or reduced market movements. This theme connected closely with behavioural studies, as researchers attempted to link investor sentiment and panic behaviour with digital trading environments.

A fifth group of keywords related to policy, ethics, and governance. As fintech tools became more advanced, many articles began to ask how regulations should adapt. Keywords such as “regulation,” “financial governance,” and “policy” appeared more often in studies published from 2023 onward. These papers often dealt with issues like algorithmic transparency, ethical use of investor data, and regulatory responses to digital finance risks. Some studies also began to explore environmental and social concerns, linking fintech to broader ideas such as responsible investing and sustainable finance.

The thematic evolution of these keywords over time was clearly visible in Figure 6. In the earlier years (2020–2021), research mostly focused on volatility, liquidity, and the technical aspects of fintech. These studies aimed to understand how fintech changed traditional investment systems. But from 2022 onwards, newer themes appeared. Terms like “trust,” “adoption,” “customer satisfaction,” and “user experience” became more common. This reflected a shift toward studying the human side of fintech—how investors think, feel, and behave in digital settings. Also, new interest emerged around ethical concerns, particularly with AI, showing that researchers were beginning to ask deeper questions about responsibility and fairness in financial technology.

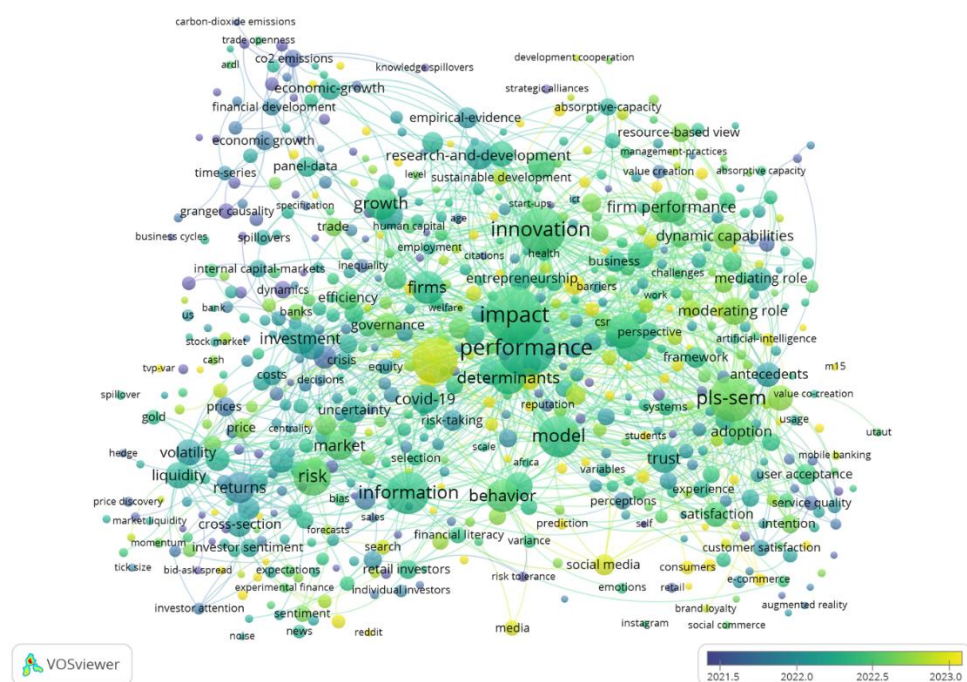


Figure 7: Thematic Evolution Map

The analysis also revealed a growing use of structured methods to examine these themes. Many papers applied structural equation modelling (SEM) to test how different factors, like trust or risk perception, influenced fintech use. Others used econometric models to measure how fintech platforms affected investment returns or volatility. These methods helped researchers move beyond theory to provide evidence-based insights. They also signalled a shift towards more data-driven research in the field.

In summary, the keyword and thematic analysis showed that fintech research had grown from a technical focus to a behavioural and ethical one. Investor psychology, trust, and experience were now central themes. At the same time, researchers continued to explore how technologies like AI and blockchain shaped market activity. This balance between human and system-focused research suggests that future studies must look closely at both technology design and investor response. The field is likely to keep expanding in this direction, particularly as fintech becomes more integrated into everyday financial decisions.

IV. Discussion

This study examined published research on fintech and investor behaviour between 2020 and 2025. The findings clearly showed that the number of publications in this area declined each year, with a negative growth rate of -24.4%. This trend appeared unusual, especially given the increasing attention that fintech has received in practice. However, the quality and impact of the published studies remained high. Each article received an average of 18 citations, showing that the work was influential and frequently used by other researchers. The combination of fewer articles and high citation counts suggested a shift in the field from large volumes of exploratory work to more focused, high-impact studies. This pattern was further supported by the concentration of publications in a few leading journals, such as *Journal of Business Research*, *Technological Forecasting and Social Change*, and *Finance Research Letters*. These journals published much of the core work that shaped current thinking on fintech applications and investor decisions.

The study also revealed strong global participation in fintech research. The United States, China, the United Kingdom, and India emerged as the top contributors. More than half of the articles involved authors from different countries, showing a high level of international collaboration. This cooperation was important because fintech technologies often operate across borders. Researchers from different regions brought together diverse experiences with regulation, technology adoption, and investor behaviour. Such collaborative research offered more realistic insights into how financial technology is used and understood worldwide. The spread of research across disciplines was also notable. Authors from finance, behavioural science, and information systems often worked together. This interdisciplinary approach helped explain how technologies influence financial markets, while also exploring how people interact with these tools.

While the field has made clear progress, several research gaps remain. One major gap is the limited understanding of the psychological impact of fintech on investors. Many studies focused on adoption or usage patterns but did not fully explore how technology changes the way investors think, feel, or respond to financial risks. Behavioural finance offers strong tools for this kind of analysis, but these are still underused in fintech studies. For example, very few papers examined emotional decision making, overconfidence, or the role of digital trust in investor choices. As more investors rely on digital tools for financial decisions, understanding these psychological effects becomes increasingly important.

Another gap is the lack of standard frameworks for studying fintech and investor behaviour. Researchers used many different models, often adapted from general technology adoption theories. While these models provided useful starting points, they did not fully capture the complex relationships between digital platforms, market conditions, and investor responses. The absence of a shared structure made it harder to compare studies or build cumulative knowledge. There is a need to develop clear and flexible frameworks that combine finance, behavioural science, and technology. Such frameworks should be capable of explaining both user behaviour and market-level changes.

A third gap concerns the long-term effects and ethical questions related to algorithmic trading and AI-based investment tools. Most studies looked at short-term results, such as trading efficiency or adoption rates. Few explored whether these systems increased systemic risks, created unfair advantages, or led to investor overdependence on automation. Ethical concerns were mentioned in some papers, but often only briefly. Issues such as transparency, accountability, and data privacy need more attention. The use of AI in investment platforms raises real risks if investors do not understand how decisions are made or cannot challenge those decisions when problems occur.

To address these gaps, future research must take a more focused and structured approach. First, more empirical studies should examine how fintech influences investor psychology. These studies should use behavioural models and real-world data to test how investors react to risk, uncertainty, and digital interfaces. They should also explore how emotions, trust, and learning affect long-term behaviour. This kind of research can help developers and policymakers design better tools and rules that protect users without limiting innovation.

Second, there is a need to build integrated research frameworks. These frameworks should combine insights from finance, behavioural science, and digital technologies. They should allow researchers to study both the individual and system-level effects of fintech. Such frameworks would make it easier to compare findings, identify consistent patterns, and build theory over time. This step is necessary to move the field from scattered insights to a more connected and structured knowledge base.

Third, future research should pay closer attention to the ethical and social consequences of fintech. This includes studying how algorithmic trading may increase inequality, how data is collected and used, and how regulation should adapt to fast-changing technologies. Research in this area must go beyond technical performance and consider broader impacts on trust, fairness, and investor well-being. This will require cooperation between researchers, developers, and regulators to ensure that fintech serves public interest as well as private innovation.

In short, the field of fintech and investor behaviour has made clear progress. The research is now more focused and influential, with strong collaboration and a growing interest in behavioural and ethical questions. Still, important gaps remain. Addressing these will require more detailed, structured, and collaborative research. Future studies must move beyond surface-level findings and look closely at the long-term, real-world effects of technology on how people invest, decide, and experience financial systems.

V. Conclusion

This study set out to map the structure of academic research on financial technologies and investor behaviour. It aimed to identify key trends, core themes, influential sources, and gaps in the existing literature. The findings responded clearly to the research questions by showing that scholarly attention was concentrated in a few core journals and shaped by contributions from a small group of authors and institutions. While the total number of publications declined over the study period, the citation patterns and thematic richness suggested that the field had matured and become more focused.

The results showed that early research focused on technical efficiency, market volatility, and fintech adoption, while more recent work shifted toward understanding investor psychology, trust, and ethical concerns. These findings directly addressed the research questions related to dominant themes, methodological trends, and the evolution of ideas over time. Geographical analysis confirmed that the United States, China, the United Kingdom, and India were central contributors, and international collaboration played a key role in shaping the field. These patterns aligned with the objective of identifying where research is taking place and who is driving it.

The discussion section highlighted several important gaps, including the limited exploration of psychological responses to fintech tools, the lack of standardised research frameworks, and the need for greater attention to the long-term effects and ethical risks of algorithmic trading. These observations directly supported the final research question and aligned with the original purpose of offering guidance for future inquiry.

The study makes a clear contribution by organising fragmented literature into a coherent structure. It connects behavioural finance with emerging technologies and highlights the need for empirical and theoretical work that links investor experience with digital innovation. For researchers, this offers a reference point for designing new studies that address unexplored dimensions. For policymakers, the findings suggest that regulation must keep pace with changing investor behaviours shaped by automation and decentralised platforms. By combining bibliometric methods with a clear set of guiding questions, the study provides a grounded basis for understanding how fintech is reshaping the way investors act, decide, and interact with financial systems.

VI. Limitations and Future research Directions

This study offered a structured view of how academic research has addressed the relationship between financial technologies and investor behaviour. While the analysis captured key publication trends, leading journals, major themes, and global collaboration patterns, the findings should be viewed as part of a broader research context. There remains scope for future studies to revisit these patterns using additional sources and more diverse forms of academic output to provide a wider lens on global developments. There is also further room to explore emerging technologies that have not yet been widely studied, particularly in regional or applied settings. Future research should build on the identified themes by investigating how investors interact with digital tools over time, with particular attention to judgement, trust, and emotional responses in technology-led environments. Developing integrated frameworks that connect behavioural finance, digital infrastructure, and regulatory perspectives will be important in supporting both academic inquiry and practical innovation. There is growing need for research that not only tests the effectiveness of fintech systems, but also considers their long-term impact on decision-making, access, and fairness. These directions will strengthen the foundation for future work and help align financial innovation with more responsible and inclusive outcomes.

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