Bibliometric mapping of research on artificial intelligence applied to fintech and financial stability (2018–2024)

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Abstract

This article presents a bibliometric analysis of academic research on the integration of artificial intelligence (AI) into fintech and its implications for financial stability. Based on a corpus of 145 publications indexed in Scopus between 2018 and 2024, the study highlights the rapid yet fragmented growth of the field. Results identify four main axes: AI and machine learning as technological drivers, fintech as a conceptual pivot, stability and risk management as central concerns, and inclusion and regulation as normative horizons. Co-authorship and co-citation networks reveal institutional and geographic dispersion, confirming that the domain remains in an early stage of development. The analysis underscores both the opportunities of AI-fintech—innovation, inclusion, and enhanced supervision—and the risks of instability and theoretical fragmentation. It concludes by suggesting directions for future research on generative AI, central bank digital currencies, and green fintech.

Keywords: Artificial intelligence, Bibliometrics, Financial stability, Fintech, Inclusion, Regulation.

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Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
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1. Introduction

In recent years, the financial sector has undergone profound change as a result of the digital revolution. The emergence of digital finance and the rise of financial technologies (fintechs) have disrupted traditional banking and financial services models [1-3]. Artificial intelligence (AI) is at the heart of this transformation: it enables the automation of complex processes, the development of powerful predictive models, and enhanced transaction security. Concrete applications such as fraud detection, credit scoring, algorithmic portfolio management, and systemic risk analysis illustrate AI's ability to reshape the global financial architecture [4-6].

While these innovations offer considerable prospects in terms of performance and efficiency, they also raise new challenges. The widespread use of digital payments, the rise of cryptocurrencies, and experiments with central bank digital currencies (CBDCs) raise unprecedented questions about financial stability and regulation [7-10]. At the same time, the promise of greater financial inclusion enabled by digitalization and AI is accompanied by growing concerns about cybersecurity, data concentration, and dependence on algorithms [11-16].

These issues fit into a revealing timeline. The first applications of AI in finance date back to the 1990s, but it was only with the development of machine learning in the 2010s that its potential became apparent [17]. The 2008 global financial crisis paved the way for a wave of fintech innovations, driven by the search for more inclusive and effective solutions [18]. Financial inclusion then emerged as an international priority in the 2010s, particularly with the rise of mobile banking in Africa and Asia [19, 20]. Finally, financial regulation, already central since 2008, was renewed through the concepts of regtech and suptech from 2015 onwards [21]. The COVID-19 pandemic has accelerated the digitization of financial services [22] while the years 2022–2024 have seen the rise of generative AI and the first experiments with CBDCs, reinforcing the need for analysis of monetary stability [7, 23].

In this context, the central question is: "How has academic research since 2018 addressed the integration of AI into fintech in relation to financial stability, risk management, inclusion, and regulation, and what scientific dynamics are currently shaping this emerging field?" "

This study offers an original contribution by providing a comprehensive bibliometric mapping of this field, which has yet to be fully explored in the literature. It highlights not only the temporal and geographical evolution of publications, but also the networks of authors, institutions, and countries that shape this research. Unlike the few existing studies, our study is based on an updated corpus (2018–2024, 145 English-language publications from Scopus) and uses VOSviewer to analyze keyword co-occurrences and scientific collaborations, thus offering an integrated and systematic view of academic dynamics [24-26].

The article is structured as follows: after presenting the methodology and document selection criteria, we present the descriptive results (evolution of publications, sources of dissemination, authors, countries, and scientific fields). We then propose an advanced analysis using VOSviewer, before discussing the results in light of recent transformations in the global financial system and concluding with research contributions and perspectives.

2. Theoretical Framework

The study of the relationship between artificial intelligence, fintech, and financial stability can be informed by several classic theoretical approaches in economics and finance, but also by recent work highlighting new issues related to emerging technologies [27].

The theory of disruptive innovation [2] explains how emerging technologies are disrupting established structures, creating new markets and transforming modes of production and consumption. In the financial sector, AI and fintechs are fully in line with this logic: they are redefining traditional banking services while posing new challenges for established players [3]. Recent studies highlight the role of generative AI in the creation of new automated advisory and predictive modeling tools, but they also point to the risk of algorithmic opacity and errors that are difficult to trace [28].

At the same time, the theory of financial instability developed by Minsky [29] reminds us that innovation, far from being solely a driver of progress, can generate volatility and increase systemic risks. This perspective is particularly echoed in research on cryptocurrencies, CBDCs, and fintech platforms [18]. Several studies Bank for International Settlements [30] show that AI algorithms, when used on a large scale, can accentuate speculative dynamics and undermine macro-financial stability. However, the literature remains divided: some authors consider that CBDCs can reduce systemic risks by offering a stable public alternative, while others fear that they may shift fragility to new digital channels [22, 31].

For their part, approaches focused on financial inclusion [12] highlight the potential of technological innovations to expand access to financial services, particularly in emerging economies [15]. By facilitating credit scoring and the management of microtransactions via mobile banking, AI is seen as a major driver of economic integration [13]. However, recent literature highlights the risks of algorithmic bias and inequalities in access linked to the digital divide, emphasizing that AI can both reinforce inclusion and exacerbate exclusion [8, 32]. This paradox reflects the lack of academic consensus: should fintech be seen as an instrument of social equity or as a factor of exclusion reinforced by technological asymmetries [20]?

Finally, work on financial regulation emphasizes the need to adapt legal and prudential frameworks in response to the rise of fintech and AI. The concepts of regtech and suptech, which emerged after 2015, reflect the growing integration of technology into financial governance [21]. More recently, debates have focused on the regulation of generative AI algorithms and crypto-assets, with contrasting positions: some advocate increased supervision of models [8] while others warn against overly burdensome regulation that would stifle innovation [32, 33]. At the same time, the concept of sustainable fintech is emerging, raising questions about the integration of sustainability and green finance objectives into AI-regulated systems [31, 34, 35].

These theoretical foundations fully justify the use of bibliometric analysis. Indeed, while the conceptual foundations exist, the literature remains limited, fragmented, and marked by contradictions. Bibliometrics can therefore be used to measure the evolution of the field, identify seminal contributions, and map interactions between authors, institutions, and disciplines. The theories mentioned above offer a prism through which to interpret these dynamics: the rise in publications illustrates the spread of disruptive innovations; the dispersion of sources reflects the absence of a consolidated framework, in line with Minsky's hypotheses on instability; the importance of certain emerging countries reflects the challenges associated with financial inclusion; and finally, debates around regulation and sustainable finance highlight the tensions between innovation, stability, and governance.

Table 1.
Theoretical frameworks, main contributions, and expected bibliometric translation.

Theory / Approach	Main Contributions	Expected Translation in Bibliometrics
Disruptive Innovation Rafiuddin [36]	Fintechs and AI are redefining financial services and weakening established players.	Rapid growth of publications after 2018; dispersion across multiple disciplines (finance, computer science, management).
Financial Instability Nasir and Nguyen [33]	Financial innovations create vulnerabilities and systemic risks.	Presence of thematic clusters around "risk," "stability," "crypto," "CBDC" in VOSviewer maps.
Financial Inclusion World Bank [31]	Fintechs and AI expand access to banking services but also pose risks of exclusion.	Publications concentrated in emerging economies (India, Nigeria, Morocco, etc.); authors working on credit access and mobile banking.
Regulation / Regtech / Suptech Nasir and Nguyen [33]	Regulation must integrate AI and fintechs through new digital tools.	Publications in law, economics, and finance journals; emergence of clusters linked to "regulation," "governance," "supervision."
Macroprudential / Stability World Bank [31]	Stability remains a central mission of central banks in the face of innovations.	Significant contribution from academic and international institutions (IMF, BIS, ECB); recurrent co-citations of institutional authors.

Source: Developed by the authors based on Christensen [37] and Mishkin [38] as well as recent work Han [28]; Ozili [7]; World Bank [31] and Rafiuddin [36].

The table highlights the diversity of theoretical frameworks that can be used to analyze the relationship between AI, fintech, and financial stability. It also shows that the literature combines traditional approaches (disruptive innovation, financial instability, inclusion, regulation) with more recent debates around generative AI, CBDCs, and sustainable fintech. This comparison highlights both the richness of the field and its lack of consolidation: theories offer insights, but they are not yet sufficient to structure a unified analytical framework.

3. Methodology

The methodology adopted in this study is based on a bibliometric approach, which is a preferred tool for exploring and mapping an emerging scientific field. Bibliometrics makes it possible to measure the quantitative evolution of academic output, identify collaboration networks, highlight dominant themes, and reveal underlying disciplinary structures [39-41]. The choice of the Scopus database and the VOSviewer tool is consistent with this approach. Scopus was chosen because of its international coverage, the quality of its metadata (titles, abstracts, affiliations, keywords, citations), and its compatibility with visualization software [24, 26]. Unlike Web of Science, which is more selective but more limited, and Dimensions, which is broader but less homogeneous, Scopus offers a balance between comprehensiveness and reliability [42].

3.1. Database And Search Key

The bibliometric analysis was conducted using Scopus. Data collection took place on January 15, 2025, ensuring the study's timeliness and reproducibility. The search was conducted in the TITLE–ABS–KEY fields in order to capture publications explicitly devoted to the relationship between AI, fintech, and financial stability.

("Artificial intelligence" OR "machine learning") AND ('fintech' OR "digital finance") AND ("financial stability" OR "financial risk" OR "financial inclusion" OR "financial regulation").

This query combines the technological dimension (AI, machine learning), the financial dimension (fintech, digital finance) and macro-financial issues (stability, risk, inclusion, regulation). The period selected is 2018–2024, corresponding to the recent emergence of the field. Only documents published in English were included, in order to ensure linguistic consistency and international visibility.

3.2. Inclusion And Exclusion Criteria

To ensure the relevance of the corpus, filters were applied according to period, language, theme, document type, and metadata quality. This approach follows the methodological recommendations of Donthu, et al. [25] and Aria and Cuccurullo [24] which are widely used in contemporary bibliometric analyses.

Table 2.
Inclusion and exclusion criteria.

Category	Inclusion Criteria	Exclusion Criteria
Time frame	Articles published between 2018 and 2024 (emergence phase of the AI–fintech field)	Publications before 2018 or after 2024
Language	Articles in English	Articles in other languages (French, Chinese, Spanish, etc.)
Thematic relevance	Articles addressing AI applied to fintech and covering at least one issue: financial stability, risk, inclusion, regulation	Articles on AI outside finance (healthcare, industry, education), fintech without AI, or finance without stability/inclusion/regulation
Document type	Academic articles, indexed conference papers, literature reviews	Editorial notes, letters, reports, non-indexed book chapters
Data quality	Publications indexed in Scopus with complete metadata (title, abstract, keywords, citations)	Incomplete documents or duplicates

Source: Developed by the authors based on standard bibliometric criteria Donthu, et al. [25] and Aria and Cuccurullo [24].

3.3. Data processing

In order to ensure the reliability of the selected corpus, the data were cleaned and prepared in several stages [39]. First, duplicates were removed, particularly when certain publications appeared both as book chapters and academic articles. This sorting process prevented any artificial overestimation of the volume of scientific output.

Next, keywords were standardized in order to harmonize different lexical or spelling variants (e.g., "AI" and "artificial intelligence"; 'CBDC' and "central bank digital currency"), in accordance with the best practices recommended by Small [40]. This step ensured greater consistency in the analysis of co-occurrences and avoided dispersion of results.

Similar work was carried out on institutional affiliations, which often presented discrepancies in spelling. Thus, variations such as "Univ. of Cambridge" and "University of Cambridge" were standardized to more accurately reflect the actual collaboration structures ([41]. Finally, a systematic check of the metadata was carried out: only documents with a complete title, abstract, and keywords were retained.

3.4. Analysis Parameters and Replicability

The query used in Scopus focused on the TITLE-ABS-KEY field: ("artificial intelligence" OR "machine learning") AND ('fintech' OR "digital finance") AND ("financial stability" OR "financial risk" OR "financial inclusion" OR "financial regulation")

The time window selected covers the period 2018–2024, for English-language documents only. Data extraction was performed on January 15, 2025.

Cleaning and normalization work was then carried out to ensure the homogeneity of the corpus: removal of duplicates (based on DOI and title), harmonization of keywords (e.g., AI → artificial intelligence; CBDC → central bank digital currency), and standardization of institutional affiliations.

Bibliometric processing was performed using VOSviewer (version 1.6.20). The parameters used were as follows:
- Counting method: full counting;
- Normalization method: association strength;
- Inclusion thresholds: keywords ($\geq$ 5 occurrences), authors ($\geq$ 2 documents), institutions ($\geq$ 3 documents), countries ($\geq$ 3 documents), co-citations ($\geq$ 10 references).

Finally, robustness tests were carried out by varying the selection thresholds ($\pm$1). The results obtained proved to be stable, confirming the solidity of the structures identified.

3.5. Description of the Corpus

Following these operations, the final corpus comprises 145 publications. This figure, which is still modest, reflects the youth of the field and confirms its emerging nature. The documents selected fall into several categories: academic articles, papers presented at indexed international conferences, book chapters, and a few literature reviews.

This corpus forms the basis for the analysis conducted in the rest of the study. It first feeds into the descriptive examination—focusing on the temporal evolution of publications, the distribution by authors, countries, sources, and disciplines—before serving as a basis for an advanced analysis conducted with VOSviewer [26]. This tool made it possible to map keyword co-occurrences, co-author networks, and institutional collaborations.

The value of this approach lies in its originality: until now, no systematic study had proposed a complete mapping of the field at the intersection of AI, fintech, and financial stability. This research therefore offers two added values: on the one hand, it provides an updated corpus (2018–2024), and on the other, it combines quantitative bibliometric analysis with a theoretical perspective, drawing on the frameworks of innovation, regulation, and inclusion.

3.6. Conceptual Diagram

To clarify the approach taken, the figure below presents a conceptual diagram of the relationships between AI, fintech, and macro-financial issues.
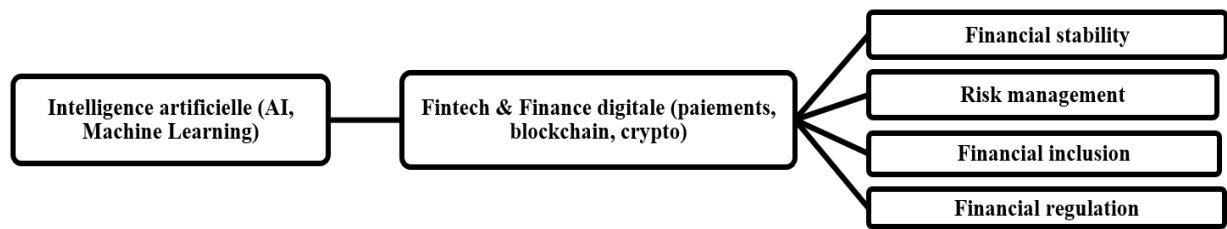
Figure 1.
Conceptual diagram of the relationships between AI, fintech, and macro-financial issues.

This diagram highlights the cross-cutting role of artificial intelligence (AI and machine learning), which is considered a driver of innovation. It directly fuels the development of fintech and digital finance, particularly through electronic payments, blockchain, cryptocurrencies, and mobile banking. These innovations, in turn, raise crucial macro-financial issues: the stability of markets and institutions, the management of risks related to complexity and volatility, financial inclusion through expanded access to banking services, and finally, financial regulation, which is essential to oversee and support these transformations.

3.7. PRISMA Selection Flow
The analysis follows the PRISMA protocol:
- Identified via Scopus: 298 results.
- Duplicates excluded: 22.
- After sorting by title/abstract: 91 excluded (irrelevant).
- Full articles reviewed: 185.
- Incomplete metadata: 4 excluded.
- Remaining eligible: 181.
- Final exclusions (non-compliant document type, language, relevance): 36.
- Final corpus: 145 publications.

Table 3.
PRISMA – Article selection process.

Step	N	Reason
Initial results (Scopus)	298	TITLE-ABS-KEY
Duplicates excluded	22	DOI / title
Remaining after deduplication	276	
Excluded based on title/abstract	91	Not relevant
Records screened	185	
Incomplete metadata	4	
Eligible	181	
Final exclusions	36	Document type, language, relevance
Included	145	Final corpus

Source: Prepared by the authors based on Scopus data (2025).

4. Descriptive Results

The descriptive analysis of the corpus of 145 publications provides an overview of the major trends in research on artificial intelligence applied to fintech and financial stability. This step is a prerequisite for advanced bibliometric analysis, as it highlights trends over time, the diversity of dissemination sources, the dispersion of authors, the geographical distribution of publications, and the scientific fields involved [24, 25].

4.1. Evolution of Publications Over Time

Documents by year
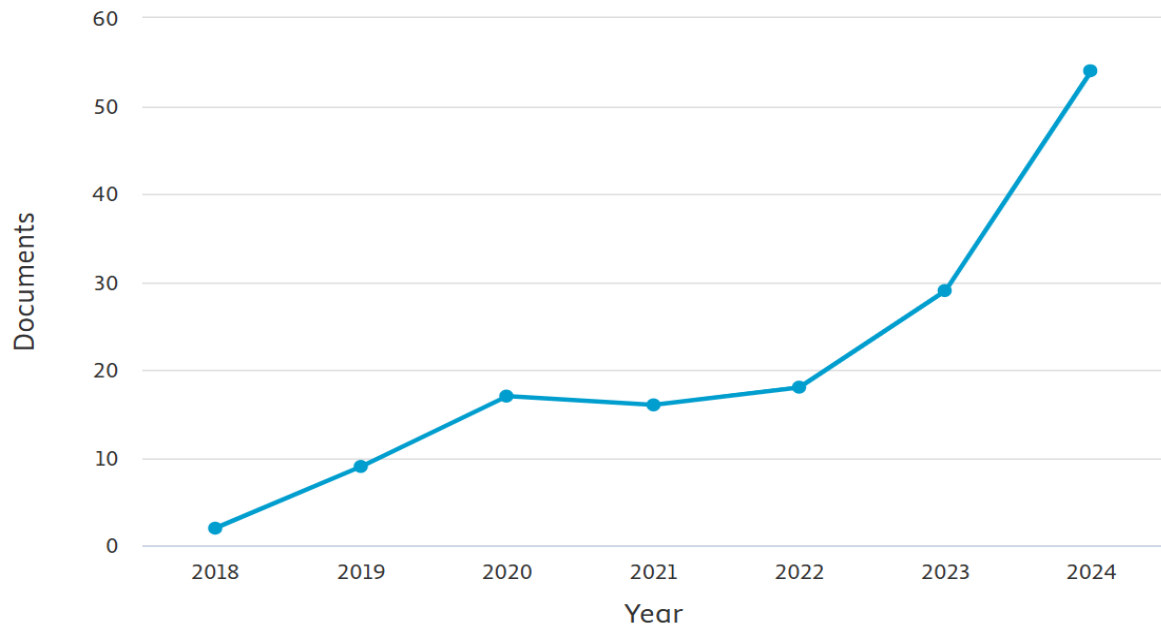
Figure 2.
Evolution of publications over time (2018–2024).

An examination of the evolution over time shows that this is still a young field, with production really taking off in 2018 with only two publications. The period 2020–2022 marks a phase of consolidation with around 15 articles per year, reflecting the emergence of sustained scientific interest. From 2023 onwards, the momentum accelerates sharply with 29 articles, then 54 in 2024, representing more than a third of the total corpus.

This growth reflects several contextual factors:

- The COVID-19 pandemic, which accelerated the digitization of payments and expanded the uses of mobile banking [20, 22]
- Debates surrounding the volatility of cryptocurrencies and experiments with CBDCs [9, 10]
- And the recent rise of generative AI (2022–2024), opening up new possibilities in fraud detection, credit scoring, and financial supervision [23, 28].

The exponential growth since 2023 thus illustrates not only growing academic interest, but also the recognition of these issues by international institutions [31] which have helped to legitimize the field [31].

4.2. Distribution by Source
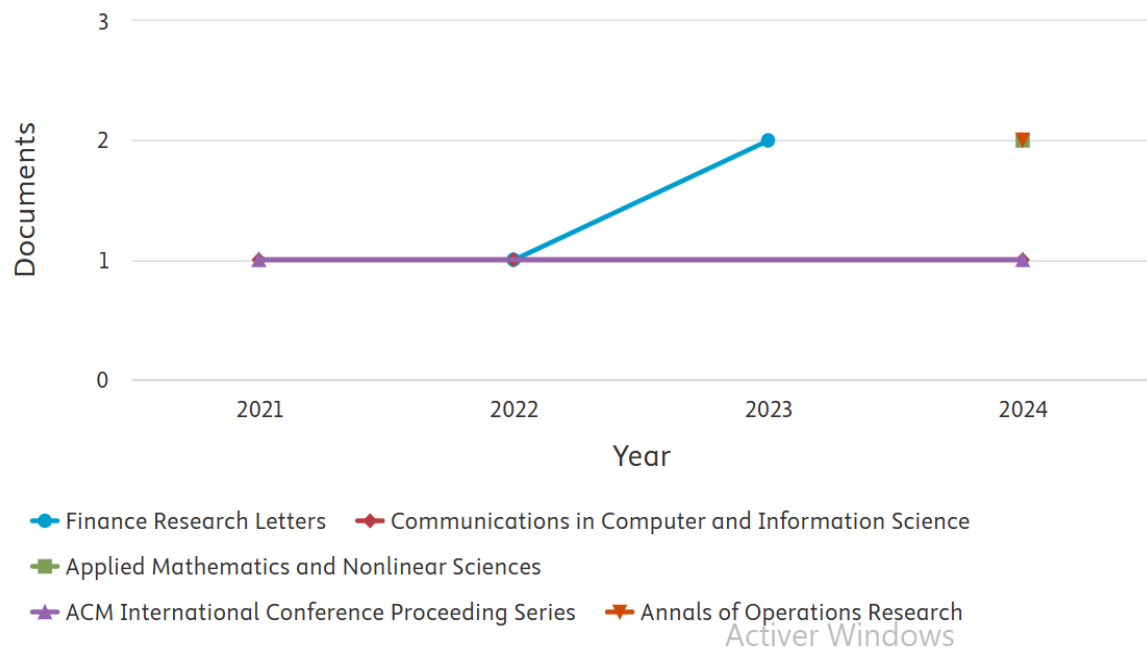
Figure 3.
Distribution of publications by source (Scopus, 2018–2024).

The distribution by source confirms that the field is still fragmented and under construction. No single journal truly dominates: publications are scattered between Finance Research Letters, Annals of Operations Research, Applied Mathematics and Nonlinear Sciences, and various conference proceedings.
This dispersion reflects two realities:
- An interdisciplinary nature, with dual legitimacy in finance and computer science [6]
- A lack of a consolidated editorial core, a sign that the field is still in the process of structuring itself [39].

4.3. Distribution by Author
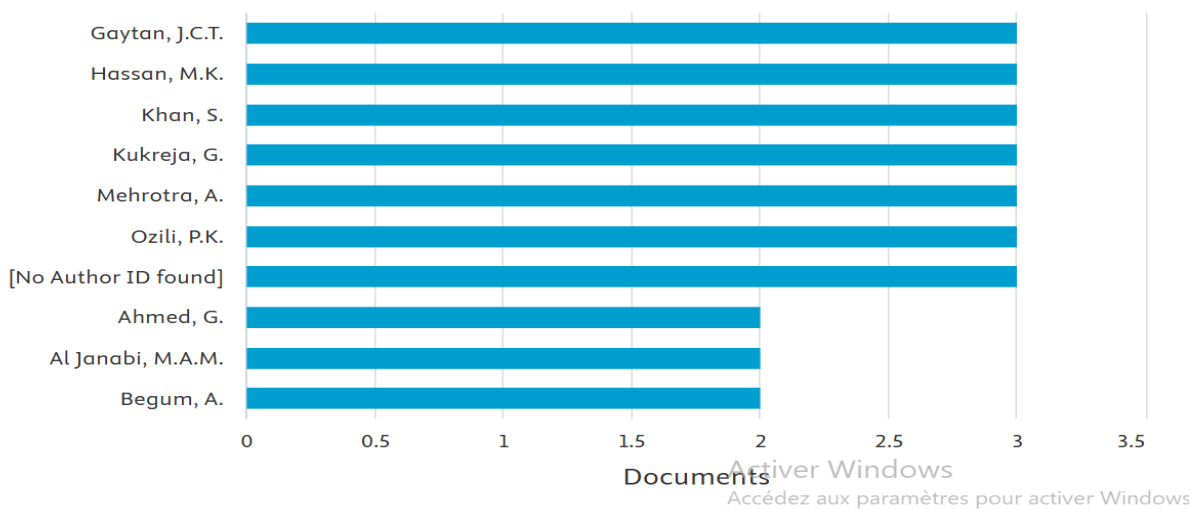
Figure 4.
Distribution of publications by author (Scopus, 2018–2024)

Production is marked by a high degree of dispersion. Only a few authors [7, 8] stand out with three publications each, while the majority of researchers appear only once.

This reflects an emerging field, still driven by isolated contributions, without consolidated networks of academic "leaders." However, the presence of recurring pioneers (notably Ozili [7] on inclusion and regulation) suggests a trend towards progressive specialization [33].

4.4. Distribution by Country
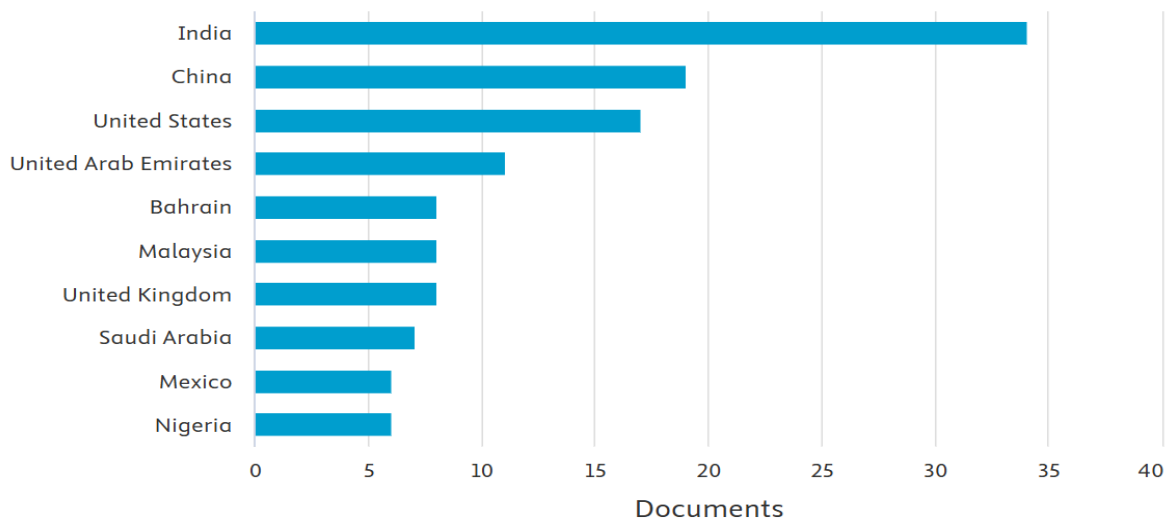
Figure 5.
Distribution of publications by country (Scopus, 2018–2024).

Geographical analysis reveals India's dominance (34 articles), followed by China (19) and the United States (17). India's prominence calls for critical interpretation: it reflects both the size of its fintech ecosystem and the high level of academic activity in computer science applied to finance, but may also reflect a publication bias linked to local journals indexed in Scopus [42].

The strong presence of the United Arab Emirates and Bahrain illustrates the Gulf countries' interest in regulating digital Islamic finance [43]. African countries, including Nigeria (6) and South Africa (5), appear mainly in the context of financial inclusion, driven by mobile banking [14]. Finally, Morocco, with three publications, has a modest but significant presence in this field, reflecting its growing interest in financial digitization and regulation [19].

4.5. Breakdown by Type of Document

Figure 6.
Breakdown of publications by type of document.

Journal articles dominate (36%), confirming the academic legitimacy of the field. Book chapters and conference papers also occupy an important place, reflecting a strong exploratory and interdisciplinary dimension. The low proportion of review articles (4.8%) confirms that the field is still in the process of theoretical construction.

4.6. Breakdown by Type of Document

Documents by subject area
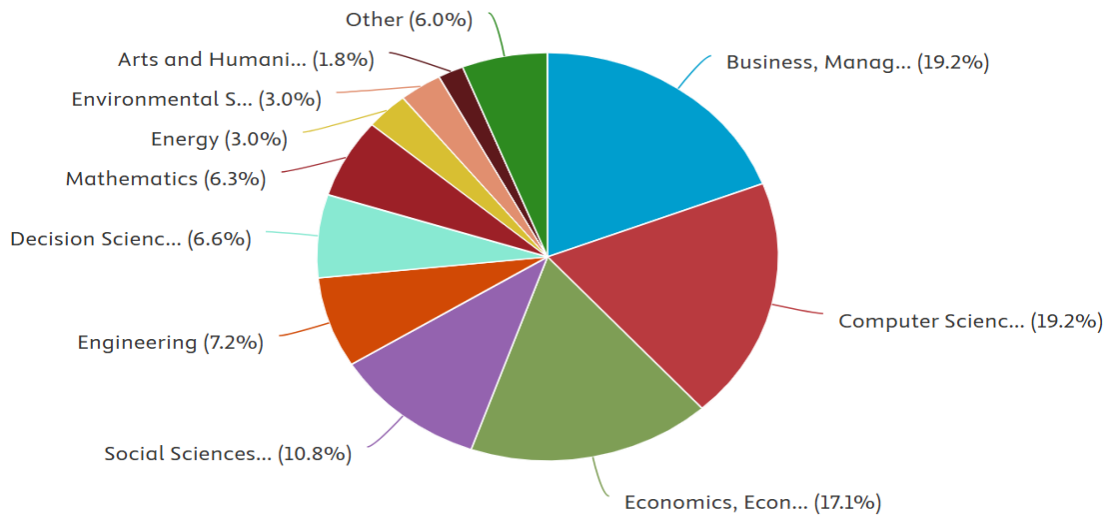
Figure 7.
Distribution of publications by scientific field.

Three areas dominate: management/finance, computer science, and economics/econometrics, which account for nearly 60% of publications. This structure shows that the field is developing at the frontier between financial economics and data science [27].

The presence of related disciplines (social sciences, mathematics, engineering, environment) confirms the multidisciplinary nature of the field, but it also reflects a dispersion that may hinder the development of a consolidated theoretical framework [23, 40].
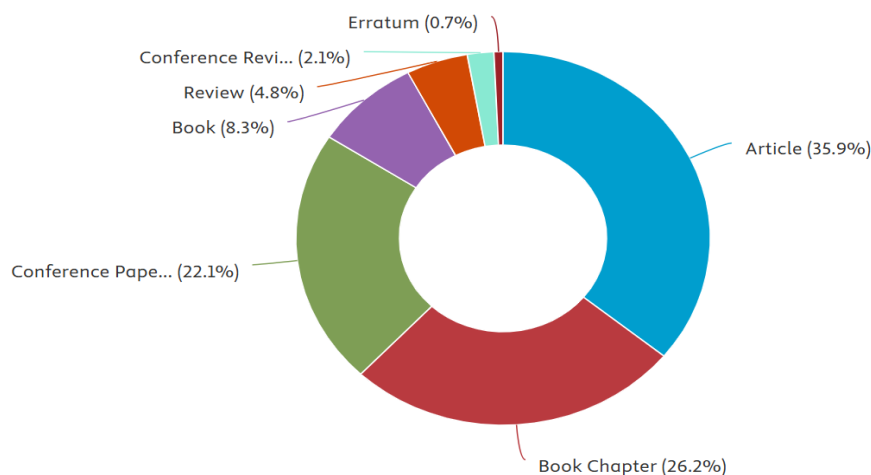
4.7. Summary Table of Descriptive Indicators

In order to summarize the main descriptive results of the bibliometric analysis, Table 4 presents a set of key indicators covering the period, the volume of publications, the distribution of documents, the most active countries and authors, and the dominant sources. This overview provides a quick glimpse into the structure of a scientific field that is still young but rapidly expanding.

Table 4.
Descriptive statistics from Scopus (Scopus, 2018–2024).

Indicator	Result
Total number of publications	145 documents
Time period covered	2018 – 2024
Average number of publications/year	≈ 21 (strong growth since 2023)
Peak of publications	2024 (54 articles, 37% of total)
Document types	Journal articles (35.9%), Book chapters (26.2%), Conference papers (22.1%), Books (8.3%), Reviews (4.8%), Others (2.7%)
Language retained	100% English
Most prolific countries	India (34), China (19), United States (17), United Arab Emirates (11), Bahrain/Malaysia/United Kingdom (8 each), Saudi Arabia (7), Morocco (3), other countries (1–6 each)
Leading institutions	Data not consolidated (e.g., notable presence of universities in India, China, USA, and Gulf countries; to be completed by VOSviewer institutional analysis)
Dominant journals	*Finance Research Letters* (3), *Communications in Computer and Information Science* (3), *Annals of Operations Research* (2), *Applied Mathematics and Nonlinear Sciences* (2), *Journal of Risk and Financial Management* (2) — strong dispersion across sources

Most productive authors	Gaytan, J.C.T. (3), Hassan, M.K. (3), Khan, S. (3), Kukreja, G. (3), Mehrotra, A. (3), Ozili, P.K. (3), followed by about fifteen authors with 2 publications each
Most cited articles	To be identified via Scopus export (Cited by function). Likely concentrated on the works of Ozili, Hassan, and Mhlanga on AI, fintech, and financial inclusion/stability.

The corpus comprises 145 documents published between 2018 and 2024, confirming that research on the link between AI, fintech, stability, inclusion, and regulation is recent and emerging. With an average of around 21 publications per year, the trend shows exponential growth from 2023 onwards, peaking in 2024 (54 articles, or 37% of the total). This recent acceleration reflects the integration of the subject into the international academic agenda.

The diversity of document types is also notable: while journal articles (35.9%) dominate, confirming the academic legitimacy of the field, book chapters (26.2%) and conference papers (22.1%) reveal the interdisciplinary nature and dissemination of these themes in different scientific circles.

The language of publication is exclusively English, reflecting the desire for international visibility. Geographically, India (34), China (19), and the United States (17) dominate, confirming their leading role in both fintech ecosystems and academic research. Morocco, with three publications, still appears modest, but its position is significant given the size of its scientific community and its reforms in financial digitization.

In terms of sources, no journal emerges as dominant: publications are scattered between Finance Research Letters, Communications in Computer and Information Science, Annals of Operations Research, and other media. This dispersion is characteristic of an interdisciplinary field that has not yet been consolidated.

In terms of authors, a small group of researchers [7, 43] stand out with three publications each, while the majority have only one or two articles. This low concentration confirms that research is still driven by a plurality of isolated contributions.

Finally, the most cited articles remain to be identified via Scopus's "Cited by" export, but it is likely that the work of [7, 8, 43] occupies a central place, particularly on financial inclusion and stability in a context of technological innovation.

5. Advanced Bibliometric Analysis

The descriptive analysis highlighted the major trends in scientific output. In order to further explore these results, a mapping of scientific networks was carried out using VOSviewer software, widely used for the visualization of bibliometric data. This approach makes it possible to identify the dominant themes, collaborations between authors and institutions, as well as structuring international cooperation. Unlike a simple description, it offers a relational reading of the field, linking the concepts, researchers, and journals that shape research.

5.1. Keyword co-occurrences

Figure 8 illustrates the keyword co-occurrence map (Scopus, 2018–2024), which visualizes the dominant themes in the field of AI–fintech–financial stability.

Figure 8.
Distribution of publications by scientific field

The co-occurrence analysis of keywords highlights four major clusters:

- The central core (orange), dominated by fintech (75 occurrences), linked to financial inclusion and digital finance. This centrality illustrates the place of fintech as a conceptual pivot, confirming the disruptive innovation approach [37].
- The technology cluster (red) includes artificial intelligence, machine learning, and deep learning. It reflects the importance of algorithms as instruments of innovation, but also the risks associated with opacity and algorithmic dependence.
- The stability and risk cluster (green) includes financial stability, risk management, cybersecurity, and regulatory compliance. This grouping directly illustrates [29] hypothesis: financial innovations generate both opportunities and systemic vulnerabilities.
- The inclusion and regulation cluster (blue/purple) links financial regulation, digital inclusion, sustainable development goals, and Islamic finance. This positioning confirms that AI-fintech is also perceived as a tool for development, but one whose success depends on robust regulatory frameworks.

The peripheral keywords (blockchain, big data, metaverse, COVID-19) reflect recent themes that are still secondary but expanding. Their appearance confirms that the field remains fragmented and under construction, without a consolidated theoretical core, which ties in with the idea of dispersion evoked by Minsky.

5.2. Co-Author Networks: Collaborations Between Researchers

The analysis of co-authors makes it possible to map the dynamics of collaboration between researchers active in the field of "AI – fintech – financial stability." It highlights the structuring networks as well as the still limited connections between research teams.
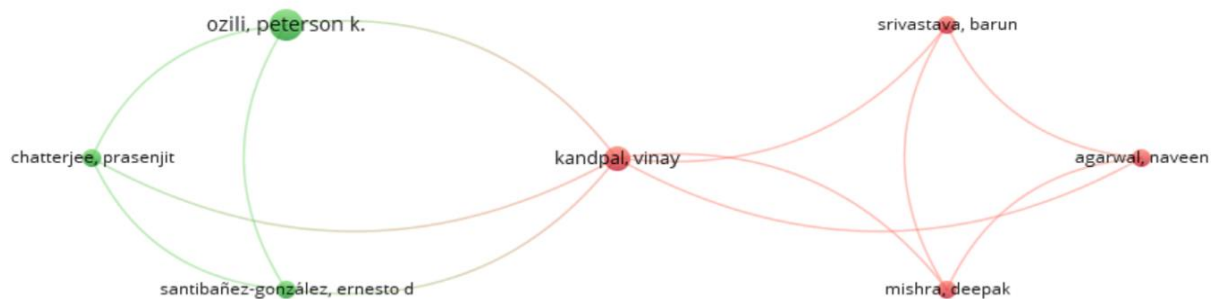

Figure 9.
Network of co-authors on AI, fintech, and financial stability (Scopus, 2018–2024)

Analysis of academic collaborations reveals fragmentation:
- A first cluster (green) revolves around Ozili, a pioneer in financial inclusion and regulation.
- A second cluster (red) forms around Kandpal and Mishra, focusing more on technological and managerial aspects.

The low density of links illustrates an emerging and fragmented field, where cooperation remains local and limited. The absence of a global research network suggests that the field has not yet reached academic maturity. This observation confirms the idea that innovation, as Minsky suggested, is accompanied by structural instability, visible here in the dispersion of scientific communities.

5.3. Citation Networks

To complement the bibliometric analysis, citations were examined from two complementary angles: on the one hand, identifying the most influential authors, whose work shapes the scientific visibility of the field; on the other hand, highlighting the academic sources and conferences that play a role in disseminating this research. This dual approach makes it possible to map both the central intellectual figures and the preferred publication channels, thus providing an integrated view of the scientific dynamics surrounding AI, fintech, and financial stability.

5.3.1. Author Citations

Citation analysis identifies the most influential authors in the field under study. Unlike keyword co-occurrence, which maps themes, the citation network highlights researchers who shape academic output through the resonance of their work.

Figure 10.
Author citation network (Scopus, 2018–2024).

The graph reveals a small core of dominant authors, each occupying an isolated position with no strong links between them. This means that, although some researchers have gained significant visibility, the field has not yet consolidated around a dense network of common references.

- Ozili, Peterson K. appears as one of the most influential authors, known for his work on fintech, financial inclusion, and banking stability.
- Mehrotra, Anupam and Khan, Shahnawaz also emerge as cited contributors, reflecting contributions in digital finance and risk analysis.
- Rabbani, Mustafa Raza and Kukreja, Gagan complete this landscape by positioning themselves as academic relays in recent literature.
- Finally, Tellez Gaytan, Jesus Cuauhtemo illustrates the geographical openness of the field, with a notable presence in Latin America.

The choice of a minimum threshold of three publications and five citations allows the analysis to focus on researchers with significant visibility, while avoiding overloading the graph with marginal authors. This approach is common in bibliometric studies published in Scopus-indexed journals, as it ensures a balance between comprehensiveness and readability.

5.3.2. Citation of sources

Analysis by citation of sources makes it possible to identify the academic journals and conference proceedings that structure the field under study. Unlike keyword co-occurrence or co-authorship, this type of analysis highlights the most influential scientific dissemination outlets, i.e., the journals that concentrate references and structure the field's international visibility.

Figure 11.
Network of sources cited in publications on AI, fintech, and financial stability (Scopus, 2018–2024).

The graph highlights a limited set of journals that play a pivotal role in disseminating work linking artificial intelligence, fintech, and financial stability.

- Finance Research Letters occupies a central place, confirming its attractiveness for recent research on financial innovation and the risks associated with emerging technologies.
- The Annals of Operations Research and Communications in Computer and Information Science reflect the methodological foundations of the field, which uses advanced quantitative and computational tools.
- More specialized journals such as the Journal of Risk and Financial Management and the Journal of Central Banking Theory and Practice demonstrate a growing interest among academics and regulators in issues of monetary stability and regulation.
- Finally, the presence of the Journal of Open Innovation and the Sustainable Development Goals series reveals an interdisciplinary openness, linking AI and fintech to the themes of governance and sustainable development.

The choice of a minimum threshold of two publications per source made it possible to filter out peripheral journals and retain only those that play a recognized scientific role. Although the network appears relatively fragmented (few dense links between sources), this dispersion is typical of an emerging field where contributions are expressed through various channels, without a dominant journal having yet been established.

5.4. Co-citation

Co-citation analysis is an essential step in bibliometrics, as it identifies not only authors whose work is frequently cited together—revealing intellectual affinities and schools of thought—but also the scientific journals that form the common basis for the dissemination and legitimization of research. By combining these two levels of analysis, we can better understand how the field of AI applied to fintech and financial stability is structured, both in terms of its leading academic figures and its preferred editorial media.

5.4.1. Co-Citation of Authors

Co-citation analysis aims to identify researchers who are frequently cited together in the same articles, highlighting foundational references and shared intellectual currents. Unlike simple citation, which measures an author's individual visibility, co-citation reveals the conceptual proximity between several works in the scientific literature.

ozili

arner

al janabi

Figure 12.
Author co-citation network (Scopus, 2018–2024)

The resulting graph is relatively sparse, reflecting the youth and fragmentation of the field. Three clusters of authors emerge, but without a high density of links between them:

- Ozili, Peterson K. stands out as a central reference, widely cited for his work on fintech, financial inclusion, and banking stability. His isolated but dominant position confirms that he is an essential reference, often cited alone.
- Al Janabi appears as a second reference point, linked to more specialized contributions in quantitative finance and risk management, but still weakly connected to other authors.
- Arner completes the network with academic influence focused on financial regulation and digital innovation, but here again, his citations do not yet converge towards a shared theoretical core.

The threshold used (≥10 citations per author) allowed us to focus the analysis on the researchers who truly structure the literature, excluding peripheral authors. This approach is standard in bibliometric studies, as it improves the readability of the graph and avoids dispersion on anecdotal co-citations.

In summary, this co-citation map highlights that the field of AI, fintech, and financial stability has not yet consolidated a shared theoretical corpus around a few key authors. On the contrary, it remains dominated by isolated individual references, a sign that the field is still emerging.

5.4.2. Co-Citation of Sources

The co-citation analysis of journals identifies scientific periodicals that are often cited together in bibliographic references. This type of visualization shows not only which journals are influential individually, but also which pairs or groups of sources structure the common theoretical foundations of the field.

european business organization   borsa istanbul review   journal of financial regulatio

Figure 13.
Source co-citation network (Scopus, 2018–2024)

The graph reveals a relatively small network, confirming that the literature on AI, fintech, and financial stability is still in an emerging phase of structuring:

- The European Business Organization Law Review and the Borsa Istanbul Review appear to be frequently cited together, indicating a thematic proximity between legal and institutional work on regulation and emerging markets.
- The Journal of Financial Regulation occupies a complementary position, linked to the previous sources, confirming the role of specialized journals in banking and financial regulation in this field.
- Finally, the presence of weak but continuous connections suggests that the common conceptual foundation remains limited, with only a few journals acting as a bridge between economics, law, and applied finance.

The minimum threshold applied (≥10 citations per source) allowed us to retain only those journals that are truly influential, excluding those that appear only occasionally in bibliographies. This approach, which is common in bibliometric analyses, makes it possible to identify shared reference points and better understand the gradual consolidation of the field.

In short, this mapping shows that research on AI and fintech in relation to financial stability is based on a core of journals specializing in regulation and emerging markets, without a single dominant journal having yet imposed its scientific authority.

5.5. Bibliographic Coupling of Documents

Bibliographic coupling analysis identifies articles that share a common reference base, revealing intellectual similarities in the literature. Unlike simple citation, this approach highlights recent works that build on similar foundations and contribute to the structuring of an emerging field.

Figure 14.
Bibliographic coupling network of documents (Scopus, 2018–2024).

The graph reveals a small but significant network of documents linked by common references.

- Mhlanga [8] appears as a major anchor point, confirming his founding role in the study of artificial intelligence and fintech applied to financial inclusion and stability. His large node size reflects a high level of connections.
- [28] positions himself as an extension of this work, introducing additional reflections on the regulation and digital transformation of financial services.
- More recent works by Rafiuddin [36] continue this momentum, showing that the foundations laid by Mhlanga are being taken up and adapted in contemporary contexts, particularly in relation to digital finance and systemic risks.

This configuration illustrates that, although the field remains fragmented, certain seminal articles are beginning to structure research by serving as a common foundation for subsequent publications. The methodological choice of a minimum threshold of two citations makes it possible to filter out marginal contributions in order to highlight documents with a real unifying capacity within the corpus.

6. Discussion

A cross-examination of the descriptive results and bibliometric visualizations reveals a scientific field that is both rapidly expanding and still fragile in terms of structure. Since 2020, and even more so after 2023, academic output on AI applied to fintech and financial stability has grown exponentially. This dynamic reflects the scientific community's growing interest in the profound transformations of the global financial system: the widespread use of digital payments, the spread of crypto-assets, experiments with central bank digital currencies (CBDCs), and the rise of regulatory and supervisory technologies such as regtech and suptech.

These trends confirm that AI-fintech is a major driver of disruptive innovation [37] capable of automating complex processes, improving risk management, and enhancing the effectiveness of financial supervision. The rise of interdisciplinary collaborations between economists, computer scientists, and data scientists shows that the richness of the field lies in its ability to combine complementary approaches.

However, the results also highlight a marked academic dispersion: the absence of a dominant journal, sparsely dense co-author networks, and prolific but isolated researchers. This fragmentation illustrates [29] hypothesis of financial instability: without solid institutions or a shared theoretical corpus, any wave of innovation can generate as many imbalances as it brings solutions.

These findings are consistent with other bibliometric studies. Nasir and Nguyen [33] already highlighted the interdisciplinarity and fragmentation of publications on blockchain, while Mhlanga [8] noted the absence of consolidated networks in research on AI and financial inclusion. More recently, Ozili [7] highlighted the difficulty of building consensus around the regulation of crypto-assets and CBDCs. Our study adds value by offering an integrated view of the AI-fintech-financial stability triptych, linking descriptive trends not only to empirical results but also to foundational theoretical frameworks.

The results of this study highlight major implications for policymakers and practitioners. For central banks and regulatory authorities, the urgency is clear: it is becoming essential to put in place appropriate frameworks to support the transformation of financial systems. This involves, in particular, conducting supervised experiments with central bank digital currencies (CBDCs), integrating suptech tools into supervisory mechanisms, and proactively regulating crypto-assets and fintech platforms in order to anticipate risks while promoting innovation.

For banks and fintechs, the results reveal numerous strategic opportunities. The use of generative artificial intelligence opens up new prospects in terms of customer relations and service personalization. At the same time, strengthening scoring and risk assessment models appears to be an essential lever for promoting greater financial inclusion. Finally, the systematic integration of ESG criteria into fintech innovations is a key condition for meeting societal expectations and strengthening user and investor confidence.

However, this research is not without certain limitations. It is based on a corpus limited to publications indexed in Scopus and written in English, which may restrict the representativeness of the results. In addition, the analysis is highly dependent on the keywords selected and the thresholds applied in the VOSviewer tool, which introduces methodological sensitivity. Finally, the absence of comparative quantitative measures prevents a systematic evaluation of the relative performance of the various academic networks observed.

These limitations nevertheless open up several avenues for further research. It would be particularly relevant to explore the use of generative AI in financial supervision and to analyze in greater depth the links between sustainable fintech, ESG criteria, and financial stability. Another avenue would be to examine the conditions for inclusive integration of CBDCs, so

as to reconcile monetary innovation with social inclusion objectives. Furthermore, comparisons between different geographical areas would highlight the institutional and cultural specificities that influence academic and regulatory dynamics. Finally, strengthening interdisciplinary collaboration appears essential to consolidate a unified theoretical framework capable of guiding both scientific research and the actions of financial actors.

7. Conclusion

The bibliometric analysis conducted over the period 2018–2024 shows that research on artificial intelligence applied to fintech revolves around four major dimensions: financial stability, risk management, financial inclusion, and regulation. However, this rapidly expanding field remains marked by theoretical and institutional fragmentation, reflecting its status as an emerging domain.

In terms of financial stability, the results indicate growing interest in the use of AI in systemic risk monitoring and banking supervision, particularly in light of the challenges posed by crypto-assets and central bank digital currencies. However, the lack of a consolidated conceptual framework still limits the scope of contributions. Risk management, meanwhile, makes extensive use of machine learning and deep learning for credit scoring, fraud detection, and cybersecurity, but these approaches remain scattered and poorly linked to traditional models of instability. Financial inclusion is developing mainly in emerging countries, where mobile banking and microfinance solutions make AI a powerful tool for economic integration. Finally, financial regulation is experiencing significant growth with regtech and suptech, but it remains fragmented between disciplines and suffers from a lack of regulatory integration.

These findings call for several practical recommendations. For central banks and regulatory authorities, this means developing supervisory frameworks capable of integrating AI without stifling its innovative potential, while strengthening resilience to new systemic risks. For fintech players, the challenge is to leverage AI to broaden access to financial services, while ensuring the transparency and fairness of algorithms. For researchers, it is important to build a common conceptual foundation linking disruptive innovation, inclusion, and stability in order to avoid the current fragmentation and enhance the comparability of results.

Research prospects are taking shape around several concrete areas. The first area concerns generative AI in finance, whose emerging applications (automated advice, risk simulation, intelligent supervision) pose unprecedented challenges in terms of reliability and governance. A second area focuses on the relationship between CBDCs and financial inclusion, particularly in developing countries, where digital currencies could reduce financial exclusion but also create new vulnerabilities. A third area relates to sustainability and green fintech, where AI can play a key role in the allocation of green credit, the measurement of climate risks, and the ethical regulation of digital finance. Finally, a fourth methodological focus calls for combining bibliometric analyses with empirical studies and econometric models in order to measure the concrete impact of AI on monetary and financial stability.

Ultimately, this research highlights a field that is both promising and vulnerable: promising because it opens up unprecedented opportunities to transform finance and promote inclusion; vulnerable because it remains exposed to theoretical fragmentation, risks of instability, and regulatory uncertainties. The scientific community now has a responsibility to help consolidate this field in order to provide public decision-makers, financial institutions, and technology players with solid benchmarks for framing and supporting the AI-fintech revolution.

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