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Beyond Knowing to Doing: A Bibliometric Mapping and Evidence Synthesis of Digital Financial Literacy and Financial Behaviour

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ABSTRACT
Background. Digital financial services require competencies beyond conventional financial literacy, and digital financial literacy (DFL) is increasingly linked to saving, spending and planning behaviour. Existing reviews cover either the bibliographic structure of financial literacy research or the content of selected studies, rarely both.
Purpose. This paper combines a bibliometric analysis with an evidence synthesis to examine how research on financial literacy has developed, where DFL and digital trust sit within it, and what is known about the relationship between DFL and financial behaviour.
Methodology. Bibliometric outputs generated with Bibliometrix (Biblioshiny) were analysed for a dataset of 2,352 documents (2,208 articles and 144 reviews) from 722 sources published between 2001 and 2026, retrieved from the Scopus database using the search string ("digital financial literacy" OR "financial literacy") AND ("financial behaviour" OR "financial behavior" OR "digital trust" OR "fintech") on 24 October 2026. The evidence synthesis draws on 35 studies on DFL, digital trust and financial behaviour, supplemented by additional sources identified during preparation.
Bibliometric findings. The dataset grows at an annual rate of 20.08% with a mean document age of 3.39 years, and output rises steeply from the late 2010s. India leads in corresponding-author output (520 documents) and in total citations (7,648), but at 14.7 citations per article against 28.4 for the USA and 20.4 for China. The most frequent keyword is financial literacy (406 occurrences), and the thematic map places financial literacy, financial inclusion and financial well-being among basic themes. Trend topics for 2025 and 2026 include digital literacy, UTAUT, the technology acceptance model and artificial intelligence. Digital financial literacy (34 occurrences) and trust (39) are visible only as small keyword themes.
Synthesis findings. Most reviewed studies report positive associations between DFL and saving, spending, investment or planning behaviour, with mixed results for specific dimensions, cohorts and outcomes. Digital trust is examined mainly as a driver of technology adoption, and two recent studies find no significant link between DFL and trust in fintech.
Implications and originality. The integrated reading suggests that research in this area is geographically concentrated, methodologically homogeneous and weakly connected to trust. The paper contributes a research agenda grounded in both bibliometric and content evidence.
Keywords: digital financial literacy; financial behaviour; digital trust; bibliometric analysis; systematic review; financial inclusion; fintech

1. INTRODUCTION

Financial decisions are now routinely made through payment apps, digital banking and online investment platforms. Traditional financial literacy, built around numeracy, interest, inflation and risk, does not by itself describe what people need to use these services safely. Lyons and Kass-Hanna (2021) address this gap by bridging financial and digital literacy in a multidimensional framework of digital financial literacy (DFL) with five dimensions: basic knowledge and skills, awareness, practical know-how, decision making and self-protection. Using survey data from seven South Asian and Sub-Saharan African countries, Kass-Hanna et al. (2022) report that both financial and digital literacy are associated with resilience-building behaviours.

The link between DFL and financial behaviour is the most developed empirical question in this area. Studies of Indonesian millennials (Setiawan et al., 2022), Kuwaiti banking customers (Abdallah et al., 2024) and digital wallet users in Nepal (Ban et al., 2025) report positive

associations with saving and spending behaviour. Responsible saving, spending and planning matter because digital channels lower the friction of both prudent and imprudent decisions, and because the same literacy that supports use also supports protection against online fraud (Lyons & Kass-Hanna, 2021).

A combined bibliometric and systematic approach is warranted because the two methods answer different questions. Bibliometric analysis shows how a field is structured: when it grew, who produces and is cited, and which themes cluster. A content-based synthesis shows what the studies found, with what methods, and why they differ. Previous reviews have mostly used one approach. Goyal and Kumar (2021) combined a systematic review and bibliometric analysis of financial literacy. Ingale and Paluri (2021) mapped financial literacy and financial behaviour bibliometrically, Yadav and Banerji (2023) did so for DFL, and Yadav and Banerji (2024) and Firmansyah and Susetyo (2022) reviewed DFL and the roles of financial and digital literacy in financial behaviour. Jose and Ghosh (2024) reviewed DFL and financial behaviour and noted that variables intervening between them are little studied.

What remains insufficiently explored is threefold. First, the bibliometric structure of the broader financial literacy field has not been read against the content of DFL-behaviour studies. Second, digital trust, a theme closely related to digital financial decision making, is barely visible bibliometrically, and the reviewed content evidence on it is sparse. Third, the geographic and methodological pattern of the evidence base has not been examined alongside what the studies conclude. The present paper addresses these three points. Its contribution is a combined reading in which each method tests the interpretations of the other.

2. RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

Table 1. Research objectives and questions

RQ	Research question	Objective	Method and evidence	Data coverage
RQ1	How has research on financial literacy, and within it DFL, evolved over time?	Describe growth and citation patterns	Annual production, average citations per year, trend topics, keyword frequency over time	Dataset-wide; no DFL-specific series
RQ2	Which authors, journals, countries and institutions contribute most?	Identify productive and influential actors	Sources, Bradford zones, authors, affiliations, country indicators	Dataset-wide
RQ3	What are the intellectual, conceptual and social structures?	Map co-citation, thematic and collaboration structure	Co-citation network, thematic map, three-field plot, co-authorship network, collaboration map	Thematic evolution and bibliographic coupling not analysed
RQ4	What themes connect DFL and financial behaviour?	Locate DFL-behaviour themes in the field	Keyword table, treemap, word frequency, thematic map	Limited: DFL is a small keyword theme
RQ5	How has the literature examined the DFL-behaviour relationship?	Synthesise empirical findings	Evidence synthesis of 35 studies	Purposive set; no screening record
RQ6	What theoretical, methodological, contextual and measurement gaps exist?	Derive evidence-based gaps	Integration of both methods	Derived
RQ7	What emerging themes and directions follow?	Propose an agenda	Trend topics and synthesis gaps	Derived

RQ1 to RQ4 are answered for the financial literacy corpus unless stated otherwise, because the dataset is broader than DFL (Section 3.2).

3. RESEARCH METHODOLOGY

3.1 Research design

The study combines bibliometric analysis and a content-

based synthesis in a sequential design. Bibliometric analysis identifies publication patterns, intellectual structures, influential contributions, collaboration and emerging themes across a large body of records. The synthesis critically examines the content, methods, theories, findings and gaps of a purposive set of studies. The two are combined so that quantitative structure can be tested against qualitative content. For example, a keyword that appears prominent can be checked against whether the reviewed studies actually address it.

3.2 Data sources and search strategy

Table 2. Search strategy and database details

Item	Information
Database	Scopus (Elsevier)
Search string and Boolean operators	TITLE-ABS-KEY(("digital financial literacy" OR "financial literacy") AND ("financial behaviour" OR "financial behavior" OR "digital trust" OR "fintech"))
Search date	24 October 2026 (analysis outputs exported on 24 October 2026)
Publication period	2001 to 2026 (2026 incomplete)
Document types	Article (2,208); review (144)
Language restrictions	English only
Subject-area restrictions	Business, Management and Accounting; Economics, Econometrics and Finance; Social Sciences; Computer Science
Records	2,352 documents from 722 sources
Software	Bibliometrix (R package, v4.3.0) with the Biblioshiny web interface (R version 4.4.1)

Table 3. Dataset description

Item	Value
Timespan	2001 to 2026
Documents	2,352 (articles 2,208; reviews 144)
Sources	722
Annual growth rate	20.08%
Document average age	3.39 years
Average citations per document	20.71
References	165,609
Authors	5,670 (197 authors of single-authored documents)
Single-authored documents	207
Co-authors per document	3.05
International co-authorships	25.72%
Keywords Plus (ID)	1,619
Author's keywords (DE)	5,742

Source: Main Information table exported from Bibliometrix on 24 October 2026.

The leading keywords relate to investment, ESG and sustainability, which indicates that the search used broad

financial literacy terms. A DFL-specific search, for example one combining digital financial literacy, digital finance and financial behaviour terms, would produce a dataset more closely aligned with the research focus. Until such a search is run, claims about DFL rest mainly on the content synthesis.

3.3 Inclusion and exclusion criteria

Table 4. Inclusion and exclusion criteria for the evidence synthesis

Criterion	Include	Exclude
Topic	DFL or digital financial services literacy, and financial behaviour (saving, spending, planning, investing)	Financial literacy studies with no digital element and no behavioural outcome
Publication type	Peer-reviewed journal articles	Editorials, book reviews, non-peer-reviewed material
Language	English	Other languages (unless translated)
Full text	Full text accessible	Abstract only
Period	2014 to 2026, in line with the reviewed DFL syntheses	Earlier work except foundational sources
Relevance	Addresses the research questions	ESG, corporate and investment-only studies without a DFL or behaviour link

The authors confirm that the inclusion and exclusion criteria outlined in Table 4 were systematically applied during the screening of records for the evidence synthesis.

3.4 Screening and selection process

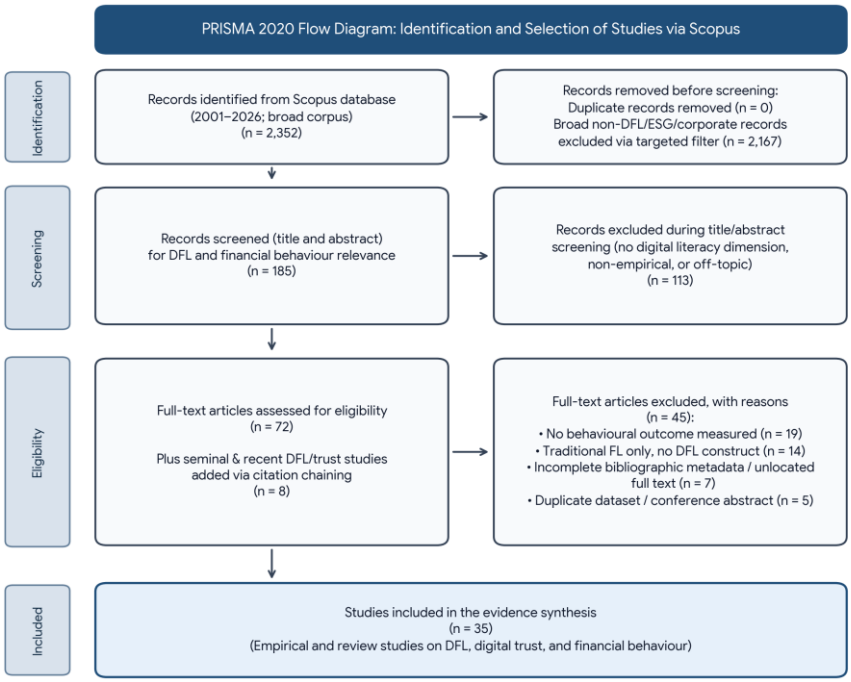
Study selection for the evidence synthesis followed a structured multi-stage screening protocol adapted from PRISMA 2020 guidelines (Table 5 and Figure 1). Starting from the 2,352 Scopus records retrieved in the broad corpus, 2,167 non-DFL, corporate finance, and ESG-focused records were filtered out prior to title-and-abstract screening. The remaining 185 targeted records were screened against the eligibility criteria in Table 4, resulting in 113 exclusions and 72 full-text candidates. Eight additional seminal and recent studies on DFL and digital trust identified through backward and forward citation chaining were added, yielding 80 full-text articles assessed for eligibility. After excluding 45 articles with documented reasons (Table 5), 35 studies were retained for qualitative evidence synthesis.

Table 5. PRISMA 2020 study selection

Stage	Records
Records identified from databases	2,352 (retrieved from Scopus broad financial literacy and digital finance search)
Duplicates removed	0 (single-database Scopus export; 2,167 broad non-DFL/ESG/corporate records filtered prior to DFL screening)
Records screened (title and abstract)	185 (targeted DFL and financial behaviour records screened)
Records excluded	113 (excluded for lacking a digital literacy dimension, behavioural outcome, or empirical focus)
Full-text articles assessed	72 (from database screening) + 8 (seminal and recent studies added via citation chaining) = 80

Stage	Records
Full-text articles excluded, with reasons	45 (no behavioural outcome measured = 19; traditional financial literacy only without DFL = 14; incomplete bibliographic metadata or unlocated full text = 7; duplicate dataset or conference abstract = 5)
Studies included in the synthesis	35 studies included in the evidence synthesis

Figure 1. PRISMA 2020 flow diagram of study identification, screening, eligibility, and inclusion. Source: authors' compilation.



3.5 Bibliometric techniques

Performance analysis and science mapping were conducted in Bibliometrix (Biblioshiny) across four analytical dimensions: (a) publication and citation dynamics (annual scientific production, average citations per year); (b) source, author, institutional, and national productivity and impact (most relevant sources, Bradford's law, source dynamics, local h-index, most productive and locally cited authors, institutional output, corresponding-author countries, and country collaboration maps); (c) intellectual and social structures (most locally and globally cited documents, most locally cited references, co-authorship network, and co-citation network); and (d) conceptual structure (most frequent keywords, word cloud, treemap, keyword growth over time, trend topics, three-field plot, and thematic map). Exact metrics were extracted from exported Bibliometrix summary tables, whereas values read directly from visual plots are marked as approximate (approx.).

Exact values in Section 4 are taken from the exported Bibliometrix tables (main information, most relevant sources, source impact, most relevant authors, most relevant affiliations, corresponding-author countries, most cited countries and most frequent words). Annual production, average citations per year, country production over time and the network, map and thematic figures were not exported as tables and are interpreted from the charts; values read from them are marked approx.

4. BIBLIOMETRIC ANALYSIS AND RESULTS

All figures in this section are the original Bibliometrix charts, cropped to the plotted area and otherwise unaltered. Values printed on a chart or taken from an exported table are exact; values read from charts without an exported table are marked approx. All findings describe the dataset analysed, which, as noted in Section 3.2, is a broad financial literacy and investment corpus.

4.1 Annual scientific production

The annual production chart shows almost no output between 2001 and the early 2010s (single digits to low teens per year, approx.), a slow rise to roughly 36 articles in 2015 and 55 in 2017 (approx.), and then an acceleration: about 120 in 2020, 145 in 2021, 200 in 2022,

285 in 2023, 420 in 2024 and a peak near 550 in 2025 (approx.). The 2026 value, about 290 (approx.), is a partial year and does not indicate a decline. The shape is that of a field that was marginal until the late 2010s and has expanded rapidly since. The chart cannot show why. The period coincides with the expansion of digital financial services, but attributing growth to that expansion would require DFL-specific records, which this dataset does not isolate. For the present research focus, the implication is that most of the literature is recent, so its evidence base, especially on digital topics, is still being formed and replication is thin. The main information table reports 2,352 documents between 2001 and 2026, an annual growth rate of 20.08% and a mean document age of 3.39 years, which confirms that the typical document is recent.

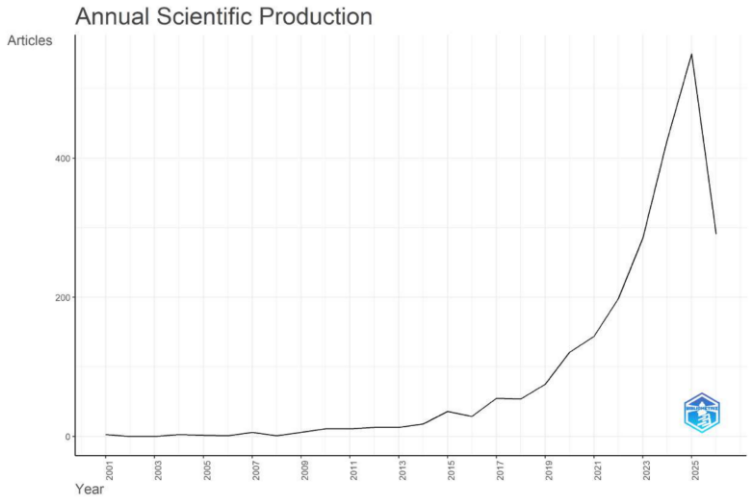


Figure 2. Annual scientific production. Source: authors' analysis using Bibliometrix.

4.2 Most relevant sources

The most productive sources are the International Journal of Bank Marketing (74 documents), Sustainability (Switzerland) (73), the Journal of Risk and Financial Management (51), the Journal of Financial Services Marketing (36), the Journal of Business Ethics (35), Investment Management and Financial Innovations (32), Qualitative Research in Financial Markets (31), the International Journal of Social Economics (27), Research in International Business and Finance (25) and the Review of Behavioral Finance (24). Bradford's law (Figure 4) divides 722 sources into a core of 31, a second zone of 133 and a third zone of 558. The fit is high (R^2 = 0.9849, multiplier k = 4.24), but the Kolmogorov-Smirnov p-value of 0.026 indicates that the observed distribution departs from the Bradford model at the conventional 5% level. The practical reading is that publication is spread over a long tail of outlets, with a small core carrying much of the field: the ten leading sources hold 408 of the 2,352 documents (17.3%), the 31 core sources 787 (33.5%), and 381 of the 722 sources (52.8%) contributed a single document.



Figure 3. Most relevant sources. Source: authors' analysis using Bibliometrix.

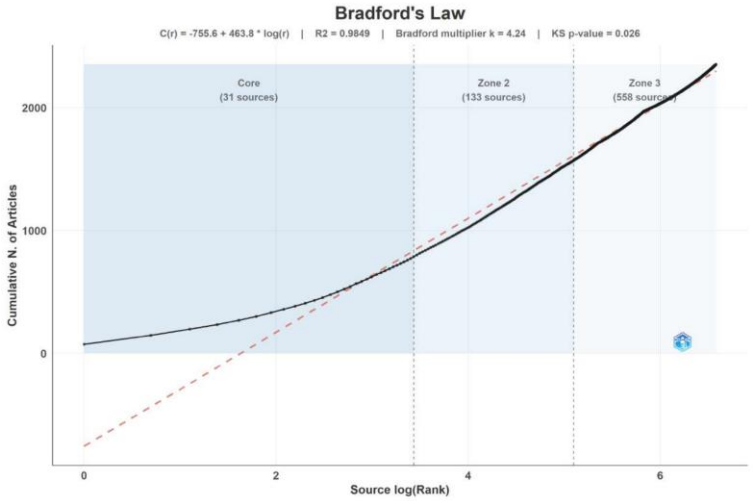


Figure 4. Bradford's law (core 31, zone 2 133 and zone 3 558 sources). Source: authors' analysis using Bibliometrix.

Sources' production over time (Figure 5) shows two growth patterns. The Journal of Business Ethics started earliest (first record 2007, per the source-impact table) and has grown steadily, whereas Sustainability, the International Journal of Bank Marketing, the Journal of Risk and Financial Management and the Journal of Financial Services Marketing rise sharply after about 2020. On local impact by h-index (Figure 6), the International Journal of Bank Marketing leads (26), followed by the Journal of Business Ethics (24), Sustainability (23), Business Strategy and the Environment and the Review of Behavioral Finance (14 each), the International Journal of Social Economics (13), the Journal of Financial Services Marketing and Qualitative Research in Financial Markets (12 each), and Corporate Social Responsibility and Environmental Management and the International Journal of Emerging Markets (11 each). SAGE Open (24 documents) ties with the Review of Behavioral Finance on volume.

The source-impact table adds g-index, m-index, total citations and first publication year. The International Journal of Bank Marketing has h = 26, g = 47, m = 2.17 and 2,252 citations from 74 documents, with a first record in 2015. The Journal of Business Ethics has h = 24, g = 35 and m = 1.20, and 3,264 citations from only 35 documents (first record 2007). Sustainability has h = 23, g = 38, m = 2.09 and 1,669 citations from 73 documents (2016). The Journal of Risk and Financial Management first appears in 2021 yet already has h = 11, g = 22 and m = 1.83 from 51 documents and 548 citations. The Journal of Cleaner Production (h = 11, 15 documents) belongs, with Business Strategy and the Environment, to the environmental strand. Citations per document therefore differ widely: about 93 for the Journal of Business Ethics, 30 for the International Journal of Bank Marketing, 23 for Sustainability and 11 for the Journal of Risk and Financial Management (derived from the table).

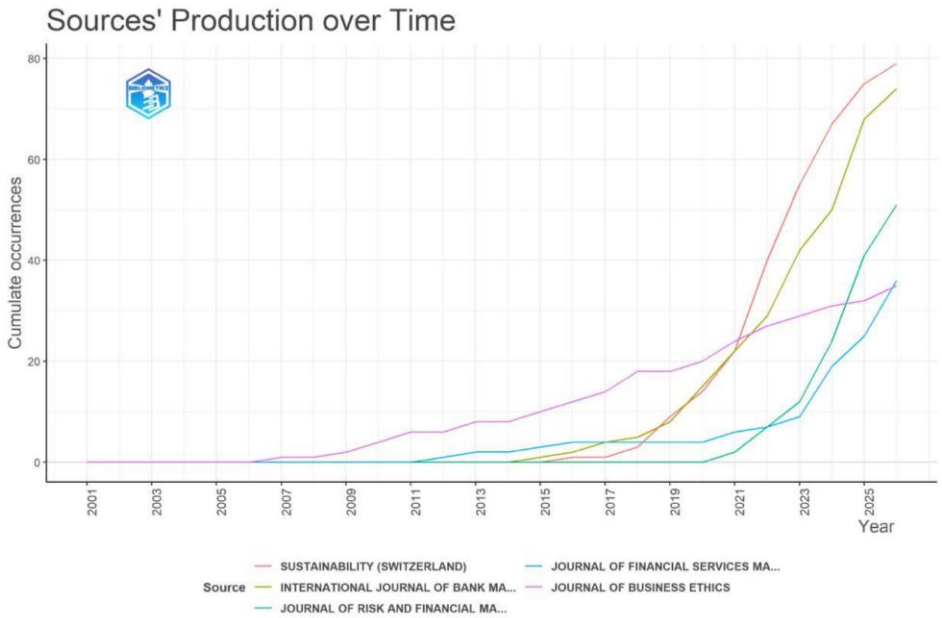


Figure 5. Sources' production over time (cumulative occurrences). Source: authors' analysis using Bibliometrix.



Figure 6. Sources' local impact by h-index. Source: authors' analysis using Bibliometrix.

Two observations matter for this paper. First, the International Journal of Bank Marketing is both the most productive and the highest-impact source, which suggests that bank and financial-services marketing outlets are a primary home for consumer-oriented work of the kind relevant to DFL and behaviour. Second, journals on ethics, the environment and corporate responsibility appear in the impact ranking but not in the volume ranking, which is the first sign of the ESG and sustainability strand that dominates the keyword data. A DFL-focused review should therefore not treat the whole source list as DFL outlets.

4.3 Most productive and influential authors

The most relevant authors by documents are Kumar S (27), Gupta S (19), Singh S (16), Singh A (11), and Baker HK, Gupta P, Jain J, Li Y, Sharma A and Singh M (10 each). By local h-index, Kumar S (13), Gupta S (12), Singh S (9) and Jain J (8) lead, with Baker HK, Khan S, Raut RK, Sharma A and Sood K at 7 and Ahmad Z at 6. By local citations, Kumar S (201) is followed by Raut RK (147), Smeets P (124), Baker HK (106), Das N (103), Singh S (92), Bansal R and Goyal N (90 each), Riedl A (83) and Gupta S (80). Authors' production over time shows several leading authors active mainly from 2021 to 2022 onward, with Kumar S and Singh S present from 2019.

Two interpretive points follow. The leading producers are identified only by surname and initial, and names such as Kumar S, Gupta S and Singh S are extremely common, so each label probably merges several individuals. The author-level counts should therefore be treated as indicative until authors are disambiguated (for example, by author identifiers). Second, Smeets P and Riedl A rank high on local citations but not on productivity, which marks them as influential sources of ideas outside the dominant producer group. The local-citation leaders are not the productivity leaders, which indicates that influence and volume are only loosely coupled in this field.

The author table adds exact context. The dataset has 5,670 authors, of whom 4,824 (85.1%) appear on a single document; 207 documents (8.8%) are single-authored; and there are 3.05 co-authors per document. Fractionalised counts show how much of the leading totals is shared: Kumar S has 27 documents but 8.73 fractionalised, Gupta S 19 and 5.76, and Singh S 16 and 5.70. Yadav M also has 10 documents (3.40 fractionalised) and Kumar R has 9, although the chart shows only ten authors.

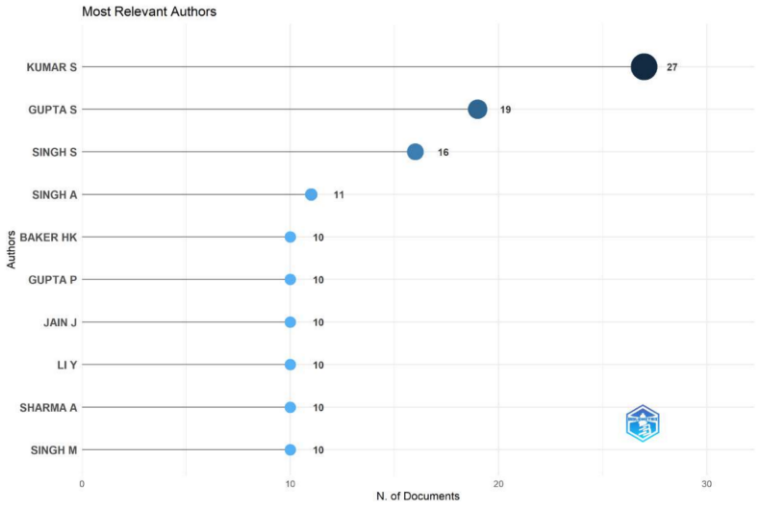


Figure 7. Most relevant authors (documents). Source: authors' analysis using Bibliometrix.

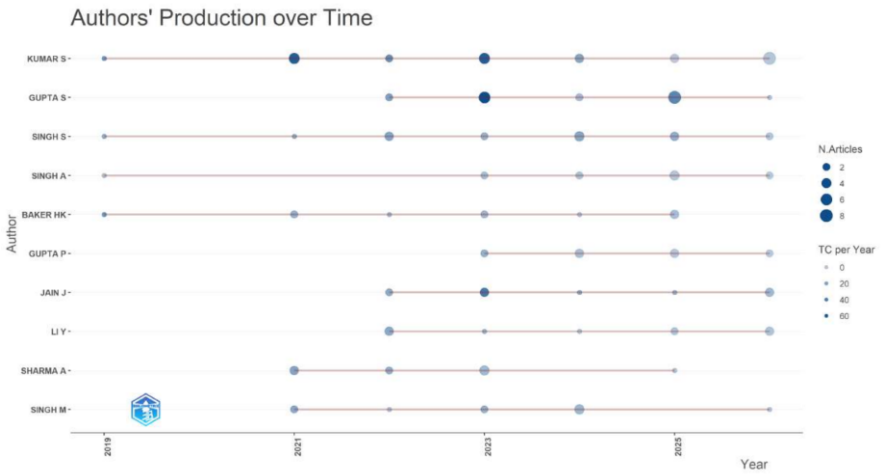


Figure 8. Authors' production over time. Source: authors' analysis using Bibliometrix.

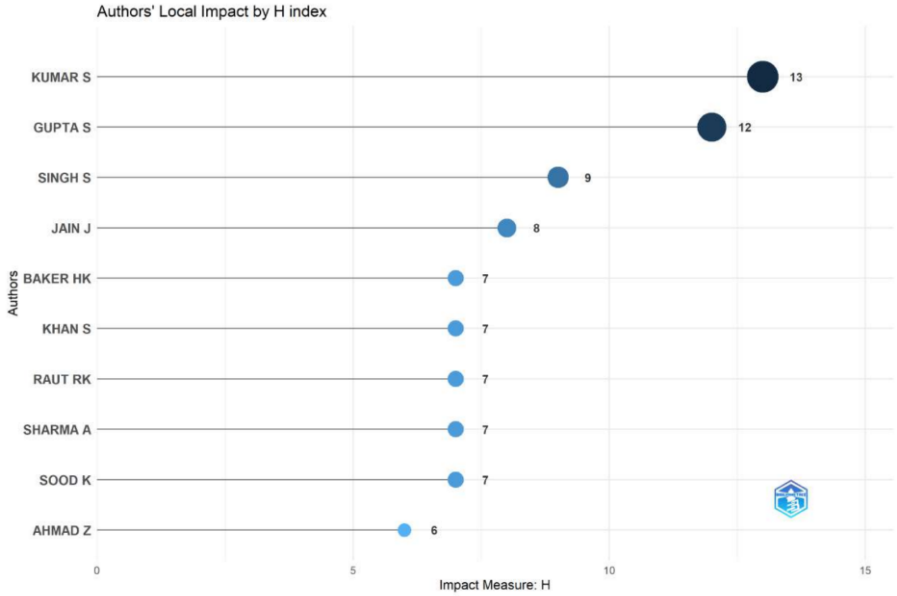


Figure 9. Authors' local impact by h-index. Source: authors' analysis using Bibliometrix.

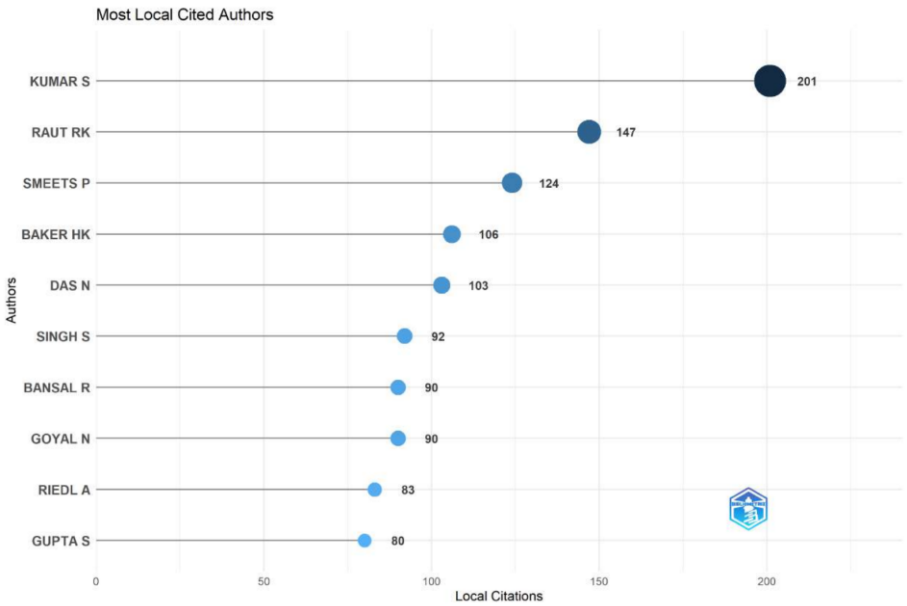


Figure 10. Most local cited authors. Source: authors' analysis using Bibliometrix.

4.4 Most influential articles

The most locally cited documents are Riedl 2017 in the Journal of Finance (83), Raut 2020 in the International Journal of Emerging Markets (75), Sivaramakrishnan 2017 in the International Journal of Bank Marketing (74), Baker HK 2019 in Managerial Finance (71), Zahera 2018 in Qualitative Research in Financial Markets (58), Stolper 2017 in the Journal of Business Economics (55), Rai 2019 in the FIIB Business Review (53), Grohmann 2018 in World Development (51), Agarwalla 2015 in World Development (43) and Akhtar 2019 in the International Journal of Bank Marketing (42). The most globally cited documents are Flammer 2021 in the Journal of Financial Economics (1,600), Hirshleifer 2001 in the Journal of Finance (1,297), Hilary 2009 in the Journal of Financial Economics (1,108), Baker M 2004 in the Journal of Finance (771), Riedl 2017 (751), Benlemlih 2018 in the Journal of Business Ethics (594), Malik 2015 in the Journal of Business Ethics (543), Grohmann 2018 (459), Stolper 2017 (339) and Widyawati 2020 in Business Strategy and the Environment (333).

Only Riedl 2017, Grohmann 2018 and Stolper 2017 appear in both lists. The charts print author, year and journal but not titles, so the topic of each document is inferred from its journal. On that basis, the global list is dominated by corporate finance, investor psychology and corporate responsibility work, whereas the local list includes consumer and emerging-market finance outlets. The gap between global and local influence suggests that the field's most visible papers are not the ones that its own authors cite most, and that the core of DFL and behaviour research has not yet produced highly cited anchor papers in this dataset.

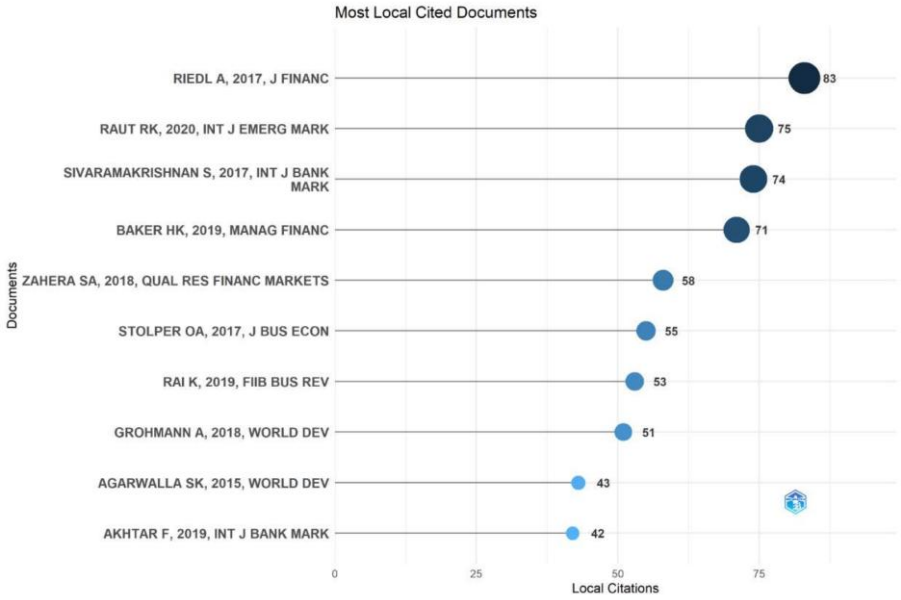


Figure 11. Most local cited documents. Source: authors' analysis using Bibliometrix. Titles are not printed on the chart.

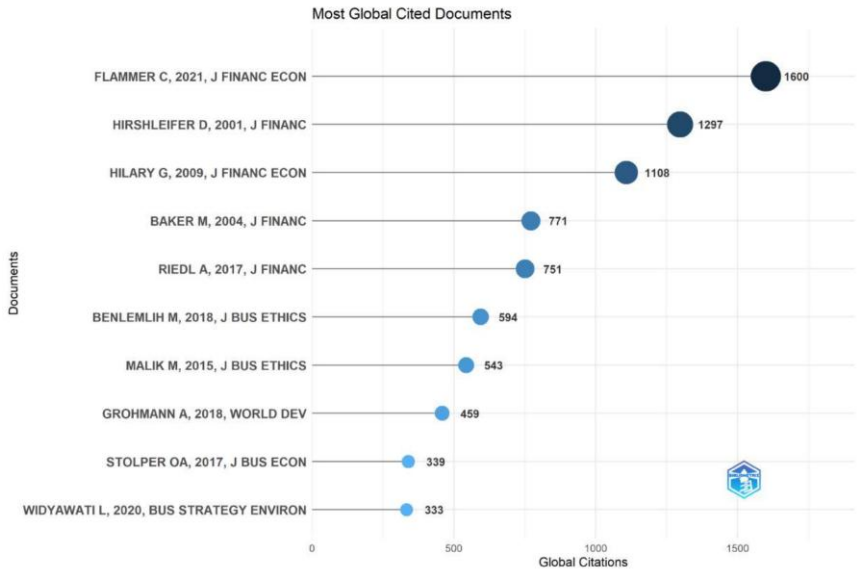


Figure 12. Most global cited documents. Source: authors' analysis using Bibliometrix.

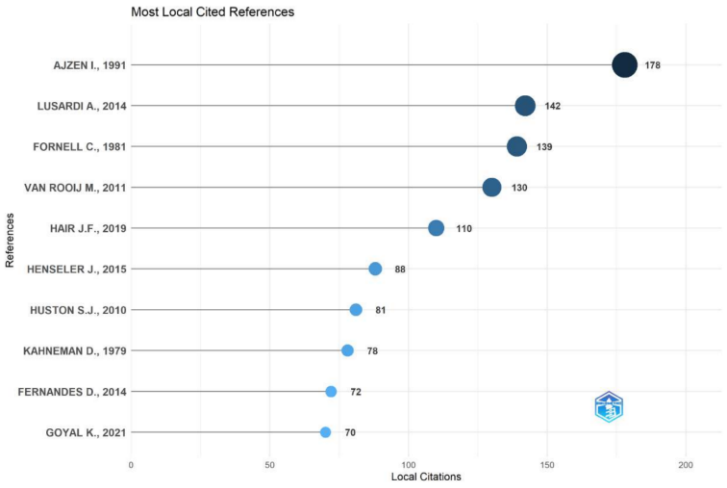


Figure 13. Most local cited references. Source: authors' analysis using Bibliometrix.

4.5 Country-wise distribution, citations and collaboration

For corresponding authors, India leads by a wide margin (520 of the 1,943 documents with a corresponding-author country, 22.1%; 467 single-country and 53 multiple-country publications), followed by China (187), the USA (158), Indonesia (109) and Malaysia (106), then the United Kingdom (63), Germany (61), Australia (55), Italy (53) and Spain (53). Multiple-country shares are 10.2% for India, 37.4% for China, 26.6% for the USA, 22.0% for Indonesia, 40.6% for Malaysia and 49.2% for the United Kingdom, against 27.4% across all 1,943 documents (the main information table gives 25.72% international co-authorship). Some smaller producers are almost wholly collaborative, for example Oman (17 documents, all multiple-country) and the United Arab Emirates (13 documents, 76.9%). Country production over time shows India overtaking the USA around 2022 (approx.) and reaching about 1,330 cumulative articles by 2026, against roughly 495 for the USA, 440 for China, 300 for Malaysia and 285 for Indonesia (approx.).

On citations, India (7,648) leads the USA (4,492), China (3,813), Germany (2,441), Australia (1,796), Hong Kong (1,789), Malaysia (1,653), France (1,652), the United Kingdom (1,462) and Spain (1,277). Average citations per article change the ranking sharply: Hong Kong has 99.4, Finland 59.6, France 47.2, Norway 41.5, Germany 40.0, Switzerland 37.2, the Netherlands 35.5 and Australia 32.7, whereas the USA has 28.4, Spain 24.1, the United Kingdom 23.2, China 20.4, Malaysia 15.6, India 14.7 and Indonesia 10.2. The production map shades India darkest, then the USA and China, and leaves most of Africa and parts of Central Asia and the Middle East grey or pale.

India's lead in volume and citations is a clear geographic concentration. The exported table shows that India's lead in total citations reflects volume: its 14.7 citations per article is below the dataset mean of 20.71 and well below the USA (28.4). The strong Indonesian and Malaysian presence, and the near absence of Sub-Saharan African output on the map, matter for the research focus: the contextual evidence on DFL is concentrated in South and Southeast Asia, so findings cannot be assumed to travel. The low multiple-country share for India (10.2%) also suggests that Indian research is largely domestically authored. In the corresponding-author table the African countries are small: South Africa 16, Ghana 12, Egypt 9, Nigeria 8, Uganda 6 and Ethiopia 2 documents, against 520 for India

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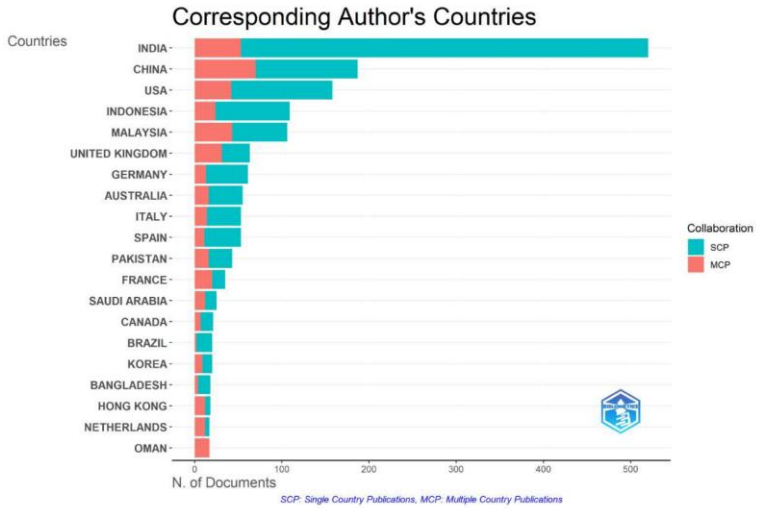

Figure 14. Corresponding author's countries (SCP: single country publications; MCP: multiple country publications). Source: authors' analysis using Bibliometrix.

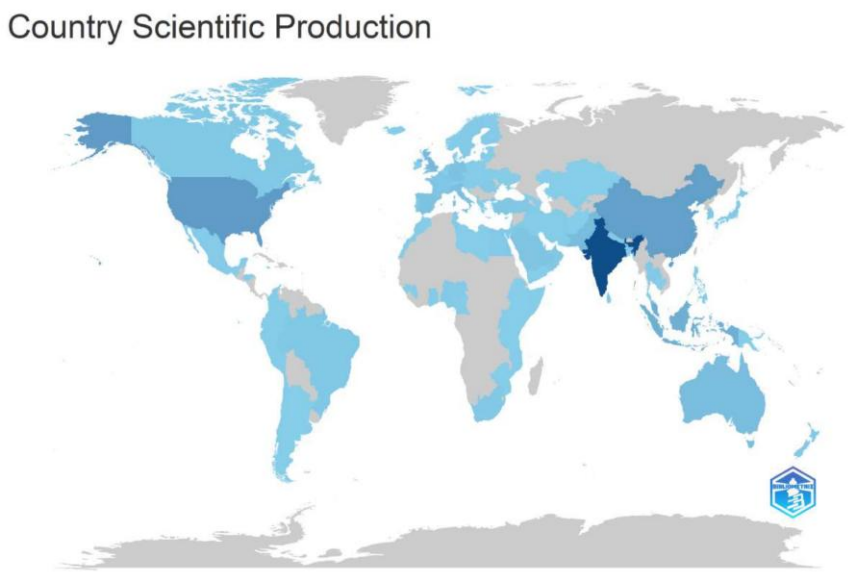

Figure 15. Country scientific production. Source: authors' analysis using Bibliometrix.

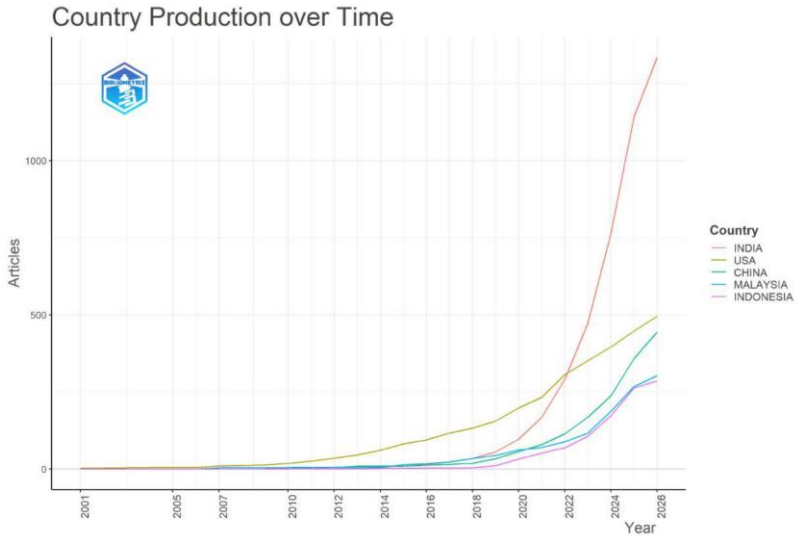

Figure 16. Country production over time. Source: authors' analysis using Bibliometrix.

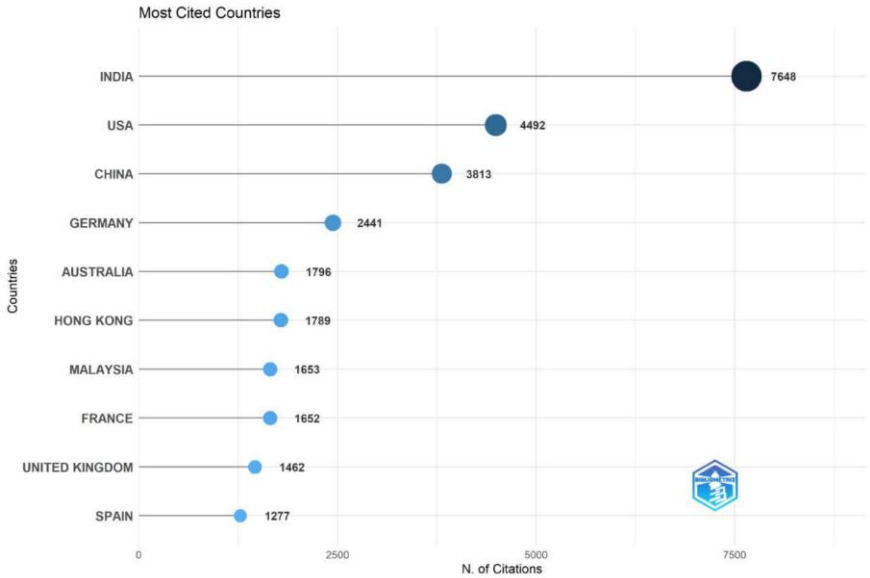

Figure 17. Most cited countries. Source: authors' analysis using Bibliometrix.

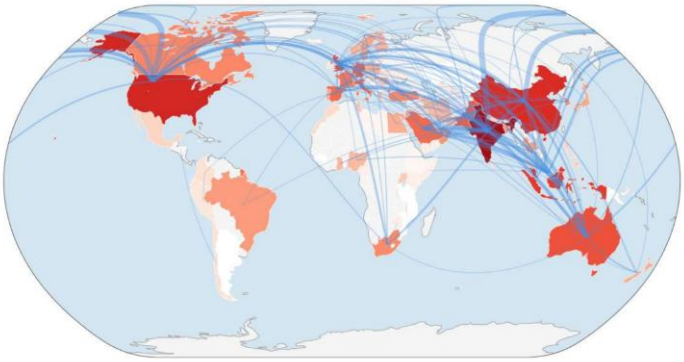

Figure 18. Country collaboration map. Source: authors' analysis using Bibliometrix.

4.6 Institutional contributions

The most relevant affiliations are Amity University (41 articles), Jaipuria Institute of Management (22), Symbiosis International (21), Universiti Teknologi MARA (21), the University of Delhi (21), Swinburne University of Technology (20), Universiti Kebangsaan Malaysia (20), Universiti Putra Malaysia (20), the Indian Institute of Management (19) and Universiti Malaya (18). The production-over-time chart shows all of the plotted institutions starting after about 2017, with Amity rising to about 41 and the others to roughly 21 or 22 by 2026 (approx.). Output is therefore dispersed: even the leading institution holds only a small share of the field, and the leaders are Indian and Malaysian institutions. The institutional pattern mirrors the country pattern and shows that the field is young at the institutional level as well. The affiliation table lists 2,714 distinct affiliations. Amity University's 41 articles equal 1.7% of the 2,352 documents, and the ten leading affiliations account for 223 affiliation-article counts (9.5% of the documents if none were double-counted, which overstates their share because a document can carry several affiliations). The Sri Aurobindo College of Commerce and Management and the University School of Applied Management follow with 16 each.

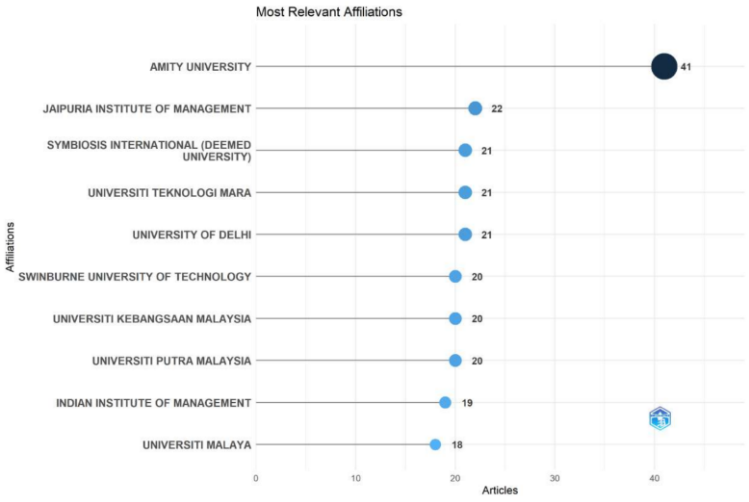

Figure 19. Most relevant affiliations. Source: authors' analysis using Bibliometrix.

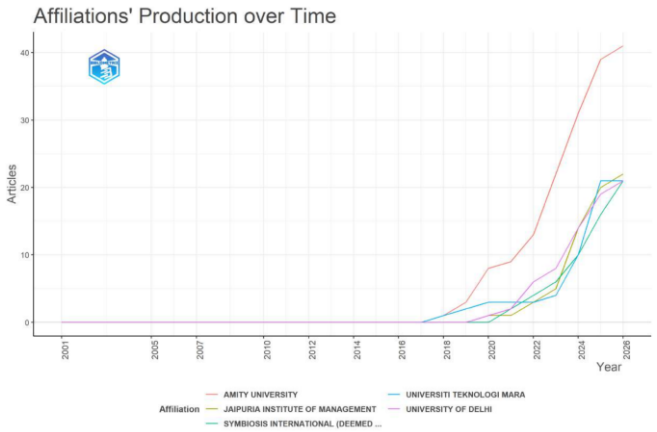

Figure 20. Affiliations' production over time. Source: authors' analysis using Bibliometrix.

4.7 Citation analysis

Average citations per year (Figure 21) starts near 19 in 2001 and 17 in 2004, drops to about 2 in 2005, peaks near 14 in 2006, falls to near zero in 2008 and recovers to about 12 in 2009 (approx.). From 2011 to 2021 it stays between roughly 3 and 7, with a local peak near 7 in 2021, and then declines to about 1 to 2 in 2025. The early volatility reflects very small numbers of documents per year, in which one highly cited paper moves the average, and the recent decline reflects citation lag for recent papers. The chart therefore supports no claim about changing quality, and it shows that the recent mass of publications has not yet accumulated citations.

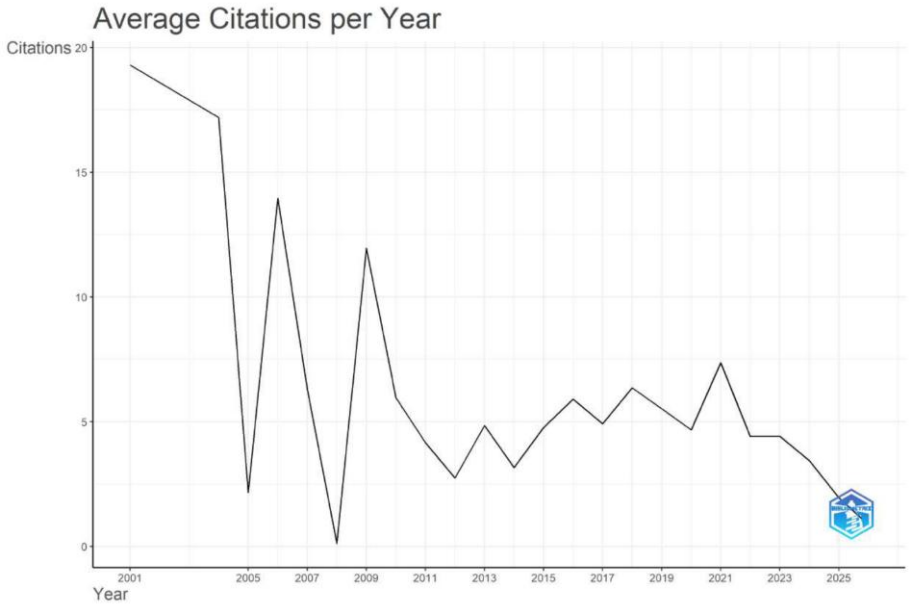

Figure 21. Average citations per year. Source: authors' analysis using Bibliometrix.

4.8 Co-authorship and collaboration networks

The co-authorship network is fragmented. One red cluster centres on Kumar S, linked to Goyal K, Baker HK, Xiao JJ, Gupta P, Aggarwal M, Singh A and Parayitam S. A blue cluster links Singh S, Gupta S, Jain J, Sood K, Kaur and Bhatia S. Other groups are small: a brown group (Raut RK, Das N and Kumar R), a grey triangle (Hasnat MA, Hasan KK and Khandakar H), and isolated pairs, for example Khan S with Singh R, Liu Y with Chen Y, and Parvin SMR with Panakaje N. Few links connect clusters. The structure suggests small, stable teams with limited cross-team collaboration, which together with the large share of single-country publications is consistent with a field in which many groups work in parallel on similar questions. Author-name ambiguity again limits the reading. The main information table adds that documents have 3.05 co-authors on average, that 207 documents (8.8%) are single-authored and that 25.72% of co-authorships are international, so small, mostly domestic teams are the norm.

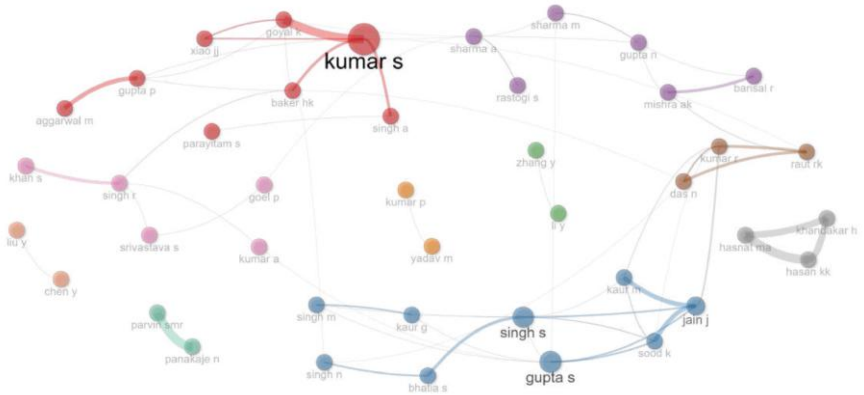

Figure 22. Co-authorship network. Source: authors' analysis using Bibliometrix.

4.9 Keyword analysis

The most frequent keywords are financial literacy (406), investment (129), financial inclusion (108), financial well-being (105), sustainability (102), India (93), investment decisions (88), corporate social responsibility (87), decision making (86) and financial knowledge (84). The treemap adds behavioral finance (76), financial behavior (71), investments (71), ESG (69), sustainable development (67), investment decision (65), finance (60), bibliometric analysis (57), financial education (55), systematic literature review (52), behavioural finance, financial behaviour, financial services and fintech (50

each), literacy (48), gender (46), COVID-19 and stock market (45 each), artificial intelligence and retail investors (42 each), overconfidence (40), trust and financial attitude (39 each) and the theory of planned behavior (29). The keyword table resolves the smaller terms: digital financial literacy occurs 34 times (8.4% of the 406 occurrences of financial literacy), digital literacy 14, digital finance 10, digital financial inclusion 9 and digital financial services 7 (Table 6). Words' frequency over time shows cumulative occurrences of financial literacy reaching about 405 by 2026, with all other plotted terms staying below about 130 (approx.) and growing mainly after 2019
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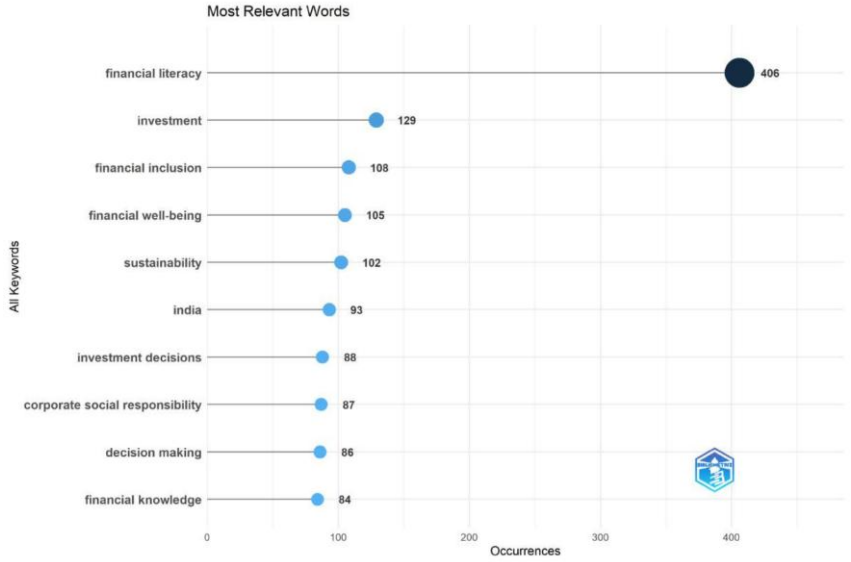

Figure 23. Most relevant words. Source: authors' analysis using Bibliometrix.



Figure 24. Word cloud. Source: authors' analysis using Bibliometrix.



Figure 25. Keyword treemap. Source: authors' analysis using Bibliometrix.

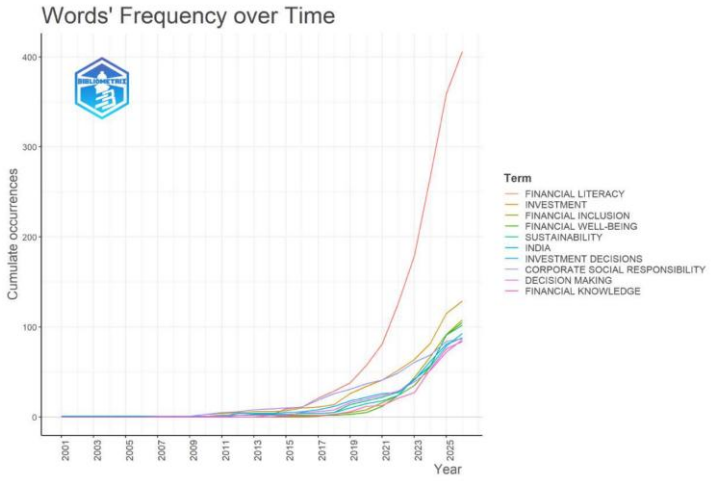

Figure 26. Words' frequency over time (cumulative occurrences). Source: authors' analysis using Bibliometrix.

Three interpretations follow. First, the corpus is organised around financial literacy, with investment and sustainability as the next largest strands. Second, spelling variants appear as separate terms (behavioral and behavioural finance, financial behavior and financial behaviour, investment and investments, investment decision and decisions), so true frequencies are understated. The keyword table lists these variants as separate rows, so they are not merged in the dataset. Adding them gives financial behaviour 121 (71 + 50), above financial inclusion (108); behavioural finance 126 (76 + 50); investment decisions 153 (88 + 65); and investment 200 (129 + 71). The theory of planned behaviour appears under ten spellings totalling 62 occurrences. These sums are arithmetic on rows of the table and should be redone after a thesaurus merge. Third, financial behaviour is far more visible than DFL or trust, and trust (39) and fintech (50) are small: the themes closest to the present focus, beyond the core pair, are visible but peripheral.

Table 6. Keywords linked to DFL, trust, behaviour and related themes (rows of the keyword table)

Theme	Keyword rows and occurrences
Financial literacy (reference)	financial literacy 406; literacy 48
Digital financial literacy and digital finance	digital financial literacy 34; digital literacy 14; digital transformation 11; digital finance 10; digital financial inclusion 9; digital financial services 7
Fintech and technology	fintech 50; artificial intelligence 42; fintech adoption 10; mobile banking 7; digital payment 4
Trust	trust 39; initial trust 3; investor trust 3; trust in fintech 2; institutional trust 1; digital trust theory (dtt) 1
Privacy, security and fraud	privacy concerns 3; cybersecurity 2; fraud 3; investment fraud 3; digital financial fraud 1; online fraud 1
Financial behaviour	financial behavior 71; financial behaviour 50 (combined 121); saving behavior 11; savings behavior 4; savings behaviour 2; each spending term (seven rows) 1
Behavioural theory and mechanisms	theory of planned behaviour or behavior (ten spellings) 62 combined; financial self-efficacy 35
Population	young adult 18; young adults 10; millennials 16; gen z 6

Source: most frequent words table exported from Bibliometrix (6,720 distinct keywords; 15,441 occurrences). Rows are as exported, without merging of spelling variants. Keyword matches were selected by searching the table for the terms shown, so other relevant rows may exist.

The three-field plot links cited references, authors and merged keywords. Its references include Ajzen (1991), Lusardi and Mitchell (2014), van Rooij et al. (2011), Huston (2010) and Fernandes et al. (2014), alongside methodological sources (Hair et al., 2019; Henseler et al., 2015; Fornell & Larcker, 1981) and behavioural finance sources (Kahneman & Tversky, 1979; Barber & Odean, 2001). The flows between the three fields are too dense

and the labels overlap too much to read individual links, so the figure supports only the general observation that the same set of foundational references feeds the financial literacy, India, financial well-being and financial inclusion keywords.

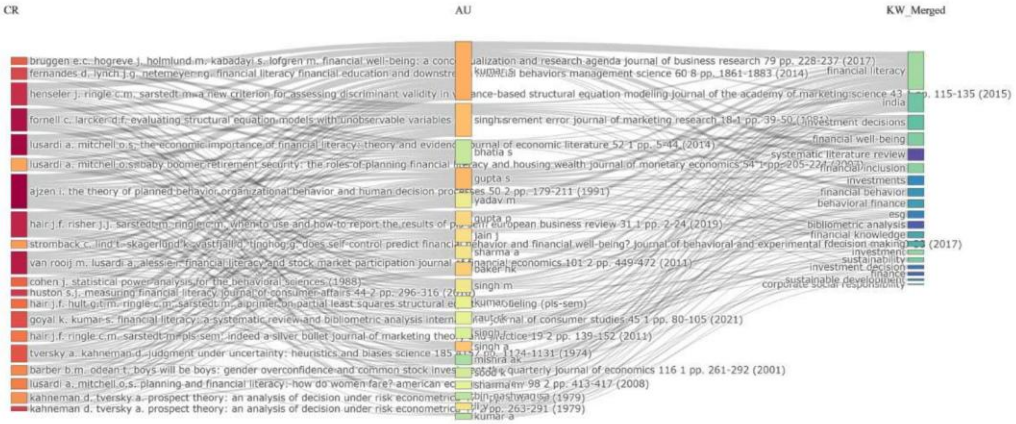

Figure 27. Three-field plot: cited references (left), authors (middle) and merged keywords (right). Source: authors' analysis using Bibliometrix.

4.10 Co-citation and bibliographic coupling

The co-citation network has three clusters. A red cluster centred on Ajzen (1991) and Fornell and Larcker (1981), with Hair et al. (2019), combines planned-behaviour theory with structural equation modelling methods. A blue cluster centred on Lusardi and Mitchell (2014), van Rooij et al. (2011) and Huston (2010) is the financial literacy measurement and effects core. A green cluster built around Tversky and Kahneman (1974), Kahneman and Tversky (1979) and Barber and Odean (2001) represents behavioural finance. The top locally cited references (Ajzen, 178; Lusardi, 142; Fornell, 139; van Rooij, 130; Hair, 110; Henseler, 88; Huston, 81; Kahneman, 78; Fernandes, 72; Goyal, 70) confirm this structure. None of them is a digital finance, fintech or trust reference. In the intellectual base visible in this dataset, DFL has therefore not yet established its own foundational references, which implies that DFL work currently draws on the financial literacy, planned-behaviour and PLS-SEM traditions. Bibliographic coupling was not analysed.

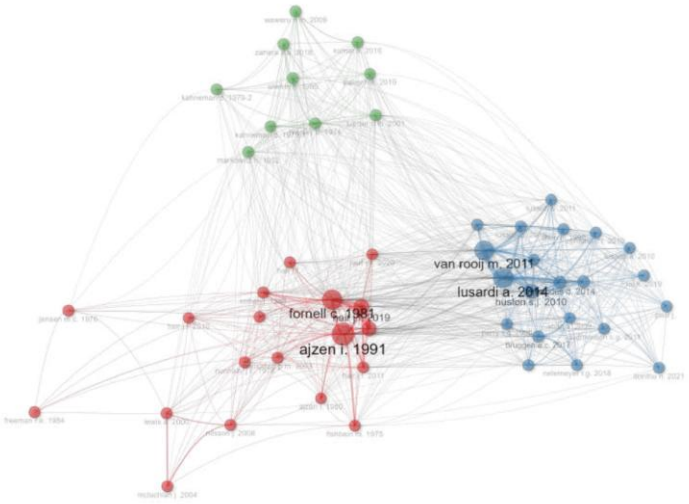

Figure 28. Co-citation network of cited references. Source: authors' analysis using Bibliometrix.

4.11 Thematic mapping

The thematic map places investment, sustainability and corporate social responsibility in the motor-theme quadrant (high centrality and density), and financial literacy, financial inclusion and financial well-being in the basic-theme quadrant (high centrality, lower density). Decision making, investments and human appear as a niche theme at the top of the chart, investment decisions and behavioural finance sit near the boundary between quadrants, and bibliometric analysis, systematic literature review and fintech fall in the emerging or declining quadrant. The basic-theme placement indicates that financial literacy is the field's central, widely connected but less internally developed theme, while ESG-type topics are more internally developed. Fintech appearing in the low-density, low-centrality quadrant is consistent with an emerging theme, as the trend topics suggest, although the map alone cannot distinguish emerging from declining. The chart as exported is truncated on its right edge (the label for corporate social responsibility is cut). Cluster labels do not display digital financial literacy or trust.

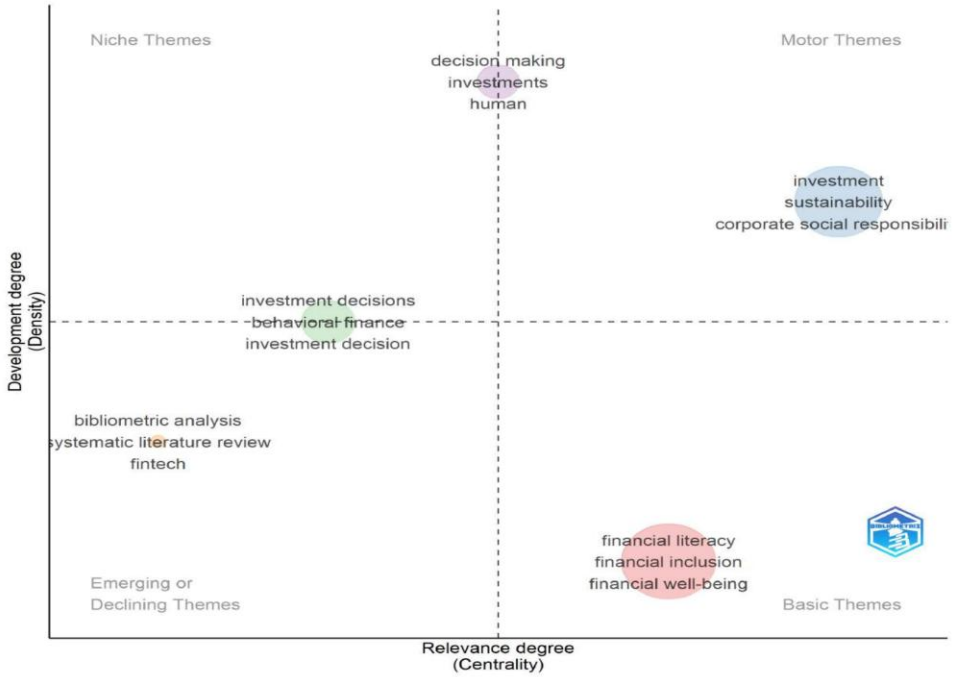

Figure 29. Thematic map (relevance degree and development degree). Source: authors' analysis using Bibliometrix.

4.12 Thematic evolution and trend topics

Thematic evolution was not analysed. The trend topics chart (median year with interquartile range per term) shows the newest terms, with medians at about 2025 to 2026, as digital literacy, UTAUT and the technology acceptance model, followed by systematic literature review, artificial intelligence and human (about 2025). Financial literacy, investment and financial inclusion centre on about 2024, investments, financial education and behavioural finance on about 2023, and corporate social responsibility, socially responsible investment and mutual funds on about 2022. Older terms include pension funds, religion, retirement, surveys and environmental disclosure, with medians between about 2015 and 2018. The sequence indicates a movement from investment and ESG topics toward financial education, inclusion and, most recently, digital and technology-acceptance framing. That frontier matches the focus of this paper, since digital literacy and technology acceptance are the vocabulary closest to DFL. It is not yet DFL as such: the term itself and trust do not appear among the trend topics at the frequency threshold used.

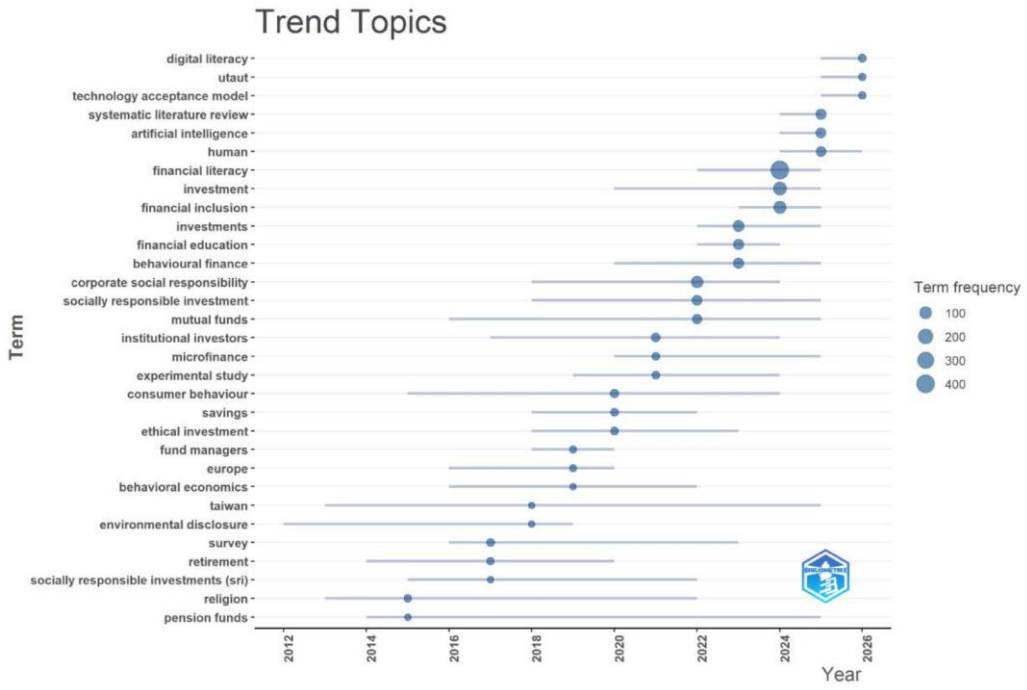

Figure 30. Trend topics (term median year with interquartile range; bubble size shows term frequency). Source: authors' analysis using Bibliometrix.

Table 7. Bibliometric performance summary

Indicator	Leading items
Sources (documents)	International Journal of Bank Marketing 74; Sustainability 73; Journal of Risk and Financial Management 51
Sources (local h-index)	International Journal of Bank Marketing 26; Journal of Business Ethics 24; Sustainability 23
Authors (documents)	Kumar S 27; Gupta S 19; Singh S 16
Authors (local citations)	Kumar S 201; Raut RK 147; Smeets P 124
Countries (citations)	India 7,648; USA 4,492; China 3,813
Affiliations (articles)	Amity University 41; Jaipuria Institute of Management 22; three institutions at 21
Keywords	financial literacy 406; investment 129; financial inclusion 108
Local references	Ajzen (1991) 178; Lusardi (2014) 142; Fornell (1981) 139
Bradford zones	Core 31 sources; zone 2 133; zone 3 558 ($R^2 = 0.9849$; k = 4.24; KS p = 0.026)

Table 8. Major themes identified in the bibliometric analysis

Theme	Evidence	Interpretation	Relevance to DFL and behaviour
Financial literacy as the core	Keyword 406; basic theme; blue co-citation cluster	Central but less internally developed	Parent field for DFL
Investment, ESG and sustainability	Motor theme; keywords 129, 102, 87, 69; high-impact ethics and environment journals	Largest developed strand	Largely outside the DFL-behaviour focus
Financial inclusion and well-being	Keywords 108 and 105; basic theme	Outcome-oriented strands	Outcome links for DFL
Behavioural finance and decision making	Keywords 76, 50, 86; green co-citation cluster; niche theme	Theoretical base for behaviour	Supports the behaviour dimension
Planned behaviour and PLS-SEM	Ajzen 178; Fornell 139; Hair 110; red cluster	Dominant theoretical and methodological template	Shapes how DFL is studied
Digital and technology acceptance	Trend topics 2025 to 2026: digital literacy, UTAUT, TAM, AI; fintech 50	Emerging frontier	Closest to DFL vocabulary
Trust	Keyword 39	Peripheral	Underexplored on this evidence

5. EVIDENCE SYNTHESIS

The qualitative synthesis examines the 35 studies retained through the screening workflow (Section 3.4; Table 9), integrating empirical papers on DFL, digital trust, and financial behaviour alongside foundational conceptual and review works. Four records with incomplete bibliographic metadata (Ridwan et al., 2025; Ashwini et al., 2025; Gupta & Shukla, 2024; Myeong & Kanzamanova, 2026) and one unretrievable full text (Yadav et al., 2026) were excluded during full-text eligibility assessment (Table 5).

Table 9. Summary of selected empirical studies on DFL and financial behaviour

Study	Context and sample	Design
Setiawan et al. (2022)	Millennials aged 25 to 40, urban Java	SEM
Rahayu et al. (2022)	741 millennials aged 25 to 40, Indonesia	PLS-SEM
Respati et al. (2023)	353 university students, Indonesia	SEM-PLS
Dewmini et al. (2023)	370 management undergraduates, Sri Lanka	Regression
Abdallah et al. (2024)	Banked customers, Kuwait	Cross-sectional, PLS-SEM
Ban et al. (2025)	255 digital wallet users, Nepal	Cross-sectional, purposive
Sheela and Mahalakshmi (2024)	401 working professionals, Tamil Nadu	Descriptive survey
Prasad et al. (2018)	268 households, Udaipur	ANOVA, t-tests
Kumar et al. (2023)	512 earners, Delhi/NCR	PLS-SEM
Mahdzan et al. (2026)	1,121 respondents (629 Millennials, 492 Gen X), Malaysia	PLS-SEM multi-group
Jhonson et al. (2023)	399 digital platform users, Indonesia	SEM
Aulia et al. (2023)	215 millennials, West Sumatra	SEM
Lieanto and Kohardinata (2025)	Gen Z, Surabaya	PLS-SEM
Widjaja et al. (2024)	900 households, Indonesia	WarpPLS, TPB-based
Kass-Hanna et al. (2022)	Seven South Asian and Sub-Saharan African countries	Probit and IV models

5.1 Conceptual development of digital financial literacy

The concept develops from a recognition that financial literacy measured by knowledge tests does not explain digital service use. Lyons and Kass-Hanna (2021) frame DFL as the intersection of financial and digital literacy and argue that digital literacy is an indispensable part of financial capability in digital settings. In the working-paper version of their later study, digital literacy has marginal effects on saving and borrowing at least comparable to, and in places larger than, financial literacy (Kass-Hanna et al., 2022). The review literature shows how unsettled the construct is. Yadav and Banerji (2024) screened 100 papers from 2014 to 2024 drawn from Web of Science, Scopus, ScienceDirect, Wiley and ResearchGate and conclude that no universally accepted definition or annually tracked index exists. Firmansyah and Susetyo (2022) argue, using a Keele-style review, that the intersection of financial knowledge and digital proficiency governs rational decision making, and call for quantitative testing. Hanson and Ott (2026) show that the overlap is empirical as well as conceptual: DFL correlated with financial literacy at r = .54 and with technological literacy at r = .34 in a sample of 117 students.

Theoretical development is thin relative to measurement development. The most common frames in the synthesis are the theory of planned behaviour (Mahdzan et al., 2026; Widjaja et al., 2024), technology acceptance models (Keshavammaiah et al., 2026; Ntakirutimana et al., 2026) and capability-based accounts (Kumar et al., 2023). Each borrows a framework from an adjacent field and none yet explains how digital and financial competencies combine. This matches the co-citation finding that DFL work draws on planned-behaviour and PLS-SEM traditions (Section 4.10).

5.2 Dimensions of digital financial literacy

Dimension sets differ across studies. Lyons and Kass-Hanna (2021) propose five. Abdallah et al. (2024) use six: financial knowledge, digital knowledge, practical know-how, awareness, decision making and self-protection, which closely matches the dimensions adopted in the present research focus. Setiawan et al. (2022) use knowledge, experience, risk awareness and risk control; Dewmini et al. (2023) use awareness, skills and knowledge, attitude and usage; and Jhonson et al. (2023) use understanding of services, risks, risk control and consumer rights.

Financial knowledge carries mixed weight. Abdallah et al. (2024) find financial knowledge, awareness and decision making the most impactful dimensions for behaviour, yet financial knowledge did not directly predict some planning behaviours. Digital knowledge is weakly related to action in Sheela and Mahalakshmi (2024), where the correlation between digital knowledge and usage was close to zero. Practical know-how appears strongest: usage and skills predicted behaviour in Dewmini et al. (2023) while attitude did not. Decision making is the dimension through which Kumar et al. (2023) find DFL operating: DFL directly predicted financial decision making but not perceived well-being, with capability and autonomy as the main mediators. Self-protection shows the weakest path in Abdallah et al. (2024), although Mahdzan et al. (2026) find that security risks significantly shaped digital financial behaviour in both cohorts. Taken together, the evidence suggests that doing and deciding matter more than knowing, while protective competence is theoretically central and empirically under-measured.

5.3 Conceptual development of financial behaviour

Financial behaviour is treated as money-management conduct and is almost always framed through the theory of planned behaviour (Ajzen, 1991). Zulaihati et al. (2020) distinguish saving, shopping, short-term planning and long-term planning, and Abdallah et al. (2024) apply the same four dimensions in a DFL study, so these dimensions have direct precedent. Henager and Cude (2016) show with US survey data that literacy constructs predict short-term and long-term behaviour differently across age groups, which indicates that behaviour is life-cycle dependent. Mahdzan et al. (2026) extend the construct to digital financial behaviour, meaning the use of digital services to manage money.

5.4 Dimensions of financial behaviour

Saving and spending are the best documented. Setiawan et al. (2022) find that DFL is positively related to current saving and spending behaviour and that these relate to future foresight. Rahayu et al. (2022) report positive paths from DFL to spending, saving and investment in a sample of 741 millennials. Ban et al. (2025) report positive correlations between DFL and digital saving and spending behaviour among 255 wallet users. Short-term and long-term planning are measured as separate dimensions by Zulaihati et al. (2020) and Abdallah et al. (2024), but the DFL link to planning is less consistent than the link to saving, because financial knowledge showed no direct effect on some planning dimensions in Abdallah et al. (2024). Responsible decision making is addressed most directly by Kumar et al. (2023) and by studies of investment behaviour. Lieanto and Kohardinata (2025), for example, report that DFL mediates the effect of financial literacy on Gen Z investment behaviour. In sum, saving and spending are consistently associated with DFL, whereas planning and responsible decision making are more conditional and depend on mediators.

Table 10. DFL and financial behaviour literature matrix

Study	DFL measure	Behaviour measure	Reported result	Direction
Setiawan et al. (2022)	Knowledge, experience, risk awareness, risk control	Current saving and spending; foresight	DFL positively related to current behaviour	Positive
Rahayu et al. (2022)	DFL construct	Spending, saving, investment	Positive paths to all three	Positive
Abdallah et al. (2024)	Six dimensions	Saving, shopping, short- and long-term planning	Path .542, R^2 .581; knowledge, awareness and decision making most impactful	Positive, dimension-specific
Dewmini et al. (2023)	Awareness, skills, attitude, usage	Financial behaviour	Usage, skills, awareness significant; attitude not	Mixed
Respati et al. (2023)	DFL	Financial behaviour, then well-being	DFL positive for behaviour	Positive
Ban et al. (2025)	DFL	Digital saving and spending	Positive correlations	Positive (correlational)
Sheela and Mahalakshmi (2024)	Six dimensions	Saving and investing	DFL positive; knowledge-usage association near zero	Mixed

Study	DFL measure	Behaviour measure	Reported result	Direction
Kumar et al. (2023)	DFL among skills, capability, autonomy	Decision making; well-being	DFL predicts decision making; no direct path to well-being	Conditional
Mahdzan et al. (2026)	DFL as moderator	Digital financial behaviour	DFL strengthens behaviour to well-being link for Millennials only	Conditional
Jhonson et al. (2023)	DFL	Saving, spending, investing	Behaviours mediate DFL to well-being	Positive, indirect
Lieanto and Kohardinata (2025)	DFL and FL	Investment behaviour	DFL fully mediates FL to investment	Positive, indirect
Widjaja et al. (2024)	DFL with TPB	Saving intention and behaviour	DFL and perceived control drive saving	Positive

5.5 Digital financial literacy and financial behaviour

The central finding is a predominantly positive but conditional association. Most studies report that higher DFL goes with more saving, more controlled spending and greater investment activity (Setiawan et al., 2022; Rahayu et al., 2022; Abdallah et al., 2024; Ban et al., 2025; Widjaja et al., 2024), and a systematic review concludes that the relationship is positive and significant (Jose & Ghosh, 2024). Kass-Hanna et al. (2022) extend this to resilience behaviours across seven developing countries.

The qualifications are as important as the main result. The association is dimension-specific (practical use and skills over attitude and knowledge in Dewmini et al., 2023, and Abdallah et al., 2024), cohort-specific (DFL moderates the behaviour-well-being link for Millennials but not Generation X in Mahdzan et al., 2026), outcome-specific (DFL predicts decision making but not perceived well-being directly in Kumar et al., 2023) and often indirect (Jhonson et al., 2023; Lieanto & Kohardinata, 2025). Insignificant or near-zero links appear for attitude (Dewmini et al., 2023), for knowledge and usage (Sheela & Mahalakshmi, 2024) and for financial knowledge and some planning behaviours (Abdallah et al., 2024).

Why do findings differ? Four explanations are supported by the evidence. First, constructs are measured differently: the same label covers four-, five- and six-dimension scales. Second, samples differ: students (Respati et al., 2023; Dewmini et al., 2023), working professionals (Sheela & Mahalakshmi, 2024; Kumar et al., 2023), households (Widjaja et al., 2024) and customers (Abdallah et al., 2024) have different exposure to digital finance, which may explain why the same dimension is significant in one sample and not another. Third, the outcome differs: behaviours, intentions and well-being are not interchangeable, and DFL's link weakens as the outcome becomes more distal. Fourth, studies are overwhelmingly cross-sectional and self-reported, so association is likely inflated by common-method variance and cannot separate learning-by-doing from literacy effects, a limitation noted by Lyons and Kass-Hanna (2021). Contextually, the evidence is concentrated in Indonesia, Malaysia and India, with single studies from Kuwait, Nepal, Sri Lanka and Rwanda (Ntakirutimana et al., 2026). On young adults, Indonesian millennial and Gen Z samples dominate (Setiawan et al., 2022; Rahayu et al., 2022; Aulia et al., 2023; Lieanto & Kohardinata, 2025), whereas the Indian studies sample working adults or households. Digital financial risk awareness is the least tested element.

Table 11. Comparison of major research findings

Theme	Supportive evidence	Null, mixed or conditional evidence	Likely explanation
DFL and saving or spending	Setiawan et al. (2022); Rahayu et al. (2022); Ban et al. (2025)	None found in the set	Consistent but cross-sectional
DFL and planning	Abdallah et al. (2024) in part	Knowledge not directly related to some planning dimensions	Planning is more distal than saving
DFL and investing	Rahayu et al. (2022); Lieanto and Kohardinata (2025)	FL effect indirect only (Lieanto & Kohardinata, 2025)	DFL may carry the effect of FL

Theme	Supportive evidence	Null, mixed or conditional evidence	Likely explanation
DFL and well-being	Jhonson et al. (2023); Aulia et al. (2023)	No direct path in Kumar et al. (2023); cohort moderation in Mahdzan et al. (2026)	Mediators and cohort matter
Dimensions	Usage, skills, decision making	Attitude, digital knowledge, self-protection	Doing matters more than knowing
DFL and trust	None in the set	Hanson and Ott (2026); Kartika and Leon (2026)	Trust may not follow literacy

5.6 The role of digital trust in the existing literature

Digital trust enters the reviewed literature through three routes. As a concept, it is described as multidimensional: Reiners (2022) reviews trust, distrust and power in platform ecosystems and finds distrust and power under-studied, and Kittl and Petrovic (2003) argue that objective security does not by itself create trust. As a driver of technology adoption, it is associated with institutional safeguards. Gefen et al. (2003) show institution-based beliefs shaping online trust, Chandra et al. (2010) find structural assurance the strongest antecedent of trust in mobile payment, Jafri et al. (2024) review trust and security as common predictors of fintech adoption, and Khan and Abideen (2023) find that trust buffers the effect of perceived risk on wallet use. Aldboush and Ferdous (2023) link privacy practices and responsible data use to trust. These map onto the dimensions of cybersecurity and privacy perception, transparency and ethical data practices, and institutional credibility. Technological reliability and user empowerment are less directly covered in the reviewed studies.

As a related outcome of literacy, trust has been tested in two recent studies, and neither finds that DFL raises it. Hanson and Ott (2026) report that trust in AI was the only significant predictor of trust in consumer fintech and that DFL was not significant. Kartika and Leon (2026) report no substantial effect of DFL and a negative effect of financial literacy on trust in fintech.

No reviewed study establishes digital trust as a mediator between DFL and financial behaviour, so that role cannot be claimed here. Digital trust is, on this evidence, an underexplored direction: it is peripheral in the bibliometric data (39 occurrences against 406 for financial literacy), tested in the content synthesis mainly as an adoption driver, and unsupported as a consequence of DFL. The accurate statement is that its relationship to DFL and to prudent behaviour is open, not that it is established.

6. INTEGRATED DISCUSSION: BIBLIOMETRIC FINDINGS AND SYNTHESIS EVIDENCE

The two methods are most informative when read against each other. One methodological caveat applies throughout: because the 35 studies in the evidence synthesis include records supplemented via citation chaining and were not algorithmically cross-indexed against the 2,352 Scopus records, full record-level overlap between the two sets is not assumed.

Geographic concentration. The bibliometric analysis places India first in corresponding-author output and citations, with Indonesia and Malaysia among the top five producers, and Indian, Malaysian and Australian institutions leading the affiliation ranking. The synthesis shows the same pattern in content: Indonesian studies dominate the DFL-behaviour evidence (Setiawan et al., 2022; Rahayu et al., 2022; Respati et al., 2023; Jhonson et al., 2023; Aulia et al., 2023; Lieanto & Kohardinata, 2025; Widjaja et al., 2024; Kartika & Leon, 2026), Malaysia is represented by Mahdzan et al. (2026), and Indian studies (Kumar et al., 2023; Sheela & Mahalakshmi, 2024; Prasad et al., 2018) sample working adults or households. The convergence implies that the DFL-behaviour evidence reflects South and Southeast Asian digital finance ecosystems and cannot be assumed to hold in Sub-Saharan Africa, where the map shows little output, apart from the multi-country evidence of Kass-Hanna et al. (2022). The exported tables add that India's lead in output (520 corresponding-author documents, 10.2% multiple-country) and total citations (7,648) is not matched by per-article impact (14.7 citations per article, against 28.4 for the USA and 20.71 for the dataset), and that Indonesia, the other main source of DFL-behaviour evidence in the synthesis, has the lowest per-article rate among the five leading producing countries (10.2, against 14.7 for India, 15.6 for Malaysia, 20.4 for China and 28.4 for the USA). The evidence on DFL is therefore concentrated where output is high but citation uptake per article is modest.

A shared theoretical and methodological template. The co-citation network is organised around planned-behaviour theory and PLS-SEM references, and the synthesis shows that most DFL-behaviour studies use PLS-SEM or SEM on cross-sectional surveys, often with TPB framing. The bibliometric and content evidence together describe a field that is methodologically homogeneous. This homogeneity explains why associations are consistently positive but also why causal and mechanism questions remain open.

An emerging frontier ahead of its evidence. Trend topics for 2025 and 2026 are digital literacy, UTAUT, the technology acceptance model and artificial intelligence. The synthesis includes studies in exactly this vocabulary: UTAUT (Keshavammaiah et al., 2026), technology acceptance and chatbots (Ntakirutimana et al., 2026) and trust in AI (Hanson & Ott, 2026; Kartika & Leon, 2026). These are few, recent and small-sample, and on the DFL-trust question they contradict the assumption that literacy builds trust. The bibliometric signal of emergence is therefore ahead of the empirical base, and trend-topic

status should not be read as evidence of consolidated findings.

Trust. Trust is a peripheral keyword (39 occurrences against 406 for financial literacy, and 34 for digital financial literacy), and compound terms such as trust in fintech (2) and digital trust theory (1) are almost absent. The content synthesis shows trust studied mainly as an adoption driver and as a null outcome of DFL. The two methods agree that trust is underexplored in relation to DFL. Neither shows it to be a mediator.

Financial behaviour. The keyword data show financial behaviour as moderately visible, and more so once spelling variants are merged. The synthesis shows that the behaviours studied are mostly saving, spending and investing, with planning and responsible decision making less consistently linked to DFL. Both methods thus place financial behaviour as a recognised but narrowly operationalised outcome. The keyword table supports this: saving terms recur (saving behavior 11, savings behavior 4, savings behaviour 2), whereas each of the seven spending-related terms occurs once.

The ESG and investment strand. The bibliometric data are dominated by investment, ESG and sustainability topics that barely appear in the DFL synthesis. This divergence is the clearest sign that the dataset and the research focus are not fully aligned. It also explains why the local reference list contains no digital finance source, although Lyons and Kass-Hanna (2021) are central in the synthesis. Either the dataset boundary excludes much DFL work or DFL has not yet built a citation base. A DFL-specific search would resolve which.

Outlets and recency. Two of the synthesised sources were published in the Journal of Risk and Financial Management (Hanson & Ott, 2026; Amnas et al., 2024), the third most productive source in the dataset, which links the recent digital-trust and inclusion evidence to a fast-growing outlet. Most synthesis evidence dates from 2022 to 2026, a period in which, per the citation chart, papers have had little time to accumulate citations. Recent findings should therefore be treated as provisional.

7. RESEARCH GAPS

7.1 Conceptual gap. Reviews agree that DFL lacks a universal definition and index (Yadav & Banerji, 2024; Lyons & Kass-Hanna, 2021), and DFL overlaps empirically with financial literacy (r = .54) and technological literacy (r = .34) in one sample (Hanson & Ott, 2026). What is insufficiently investigated is whether DFL is distinguishable from its parent literacies in predictive terms. This matters because a construct that does not add explanatory power would not justify separate programmes. Studies should test incremental validity against financial and digital literacy.

7.2 Variable gap. The DFL-behaviour link is studied with mediators such as capability and autonomy (Kumar et al., 2023) and with behaviours as mediators of well-being (Jhonson et al., 2023), and a review notes that interplaying variables are few (Jose & Ghosh, 2024). Digital trust and risk perception are rarely modelled with DFL and behaviour. Including them would show whether competence reaches behaviour through confidence in providers.

7.3 Relationship gap. DFL and saving or spending is well established, but DFL and trust is null in two studies (Hanson & Ott, 2026; Kartika & Leon, 2026), trust and prudent (not adoptive) behaviour is untested, and DFL and planning is inconsistent (Abdallah et al., 2024). Resolving these requires designs that separate trust level from trust calibration, which is a suggestion of this paper and not a finding of the reviewed studies.

7.4 Contextual and geographical gap. Evidence concentrates in Indonesia, Malaysia and India (Section 6), with single studies from Kuwait, Nepal, Sri Lanka and Rwanda (Abdallah et al., 2024; Ban et al., 2025; Dewmini et al., 2023; Ntakirutimana et al., 2026). Cross-country work beyond Kass-Hanna et al. (2022) is limited, and African contexts are nearly absent in the bibliometric data. Comparative samples would test whether findings depend on market structure.

7.5 Population gap. Young-adult evidence relies on Indonesian millennial, student and Gen Z samples, and Mahdzan et al. (2026) show that cohort changes the DFL effect. Indian studies in the synthesis sample working adults. Samples of young adult digital consumers in India and other emerging economies, with age-cohort comparison, would address this.

7.6 Measurement and dimensional gap. Dimension sets range from four to six (Section 5.2), self-protection is under-measured, and the one recent trust study used purpose-built scales (Hanson & Ott, 2026). A common, validated DFL instrument with invariance testing would allow comparison across the studies reviewed.

7.7 Methodological gap. Studies are cross-sectional and self-reported, with PLS-SEM predominant, and learning-by-doing endogeneity is acknowledged but rarely addressed (Lyons & Kass-Hanna, 2021; Kass-Hanna et al. (2022) use instruments). Longitudinal, experimental and mixed-method designs are needed. For the bibliometric component, a DFL-specific search, author disambiguation and keyword thesaurus cleaning are needed.

7.8 Theoretical gap. The synthesis borrows planned behaviour, technology acceptance and capability frameworks, and none explains how digital and financial competencies combine. Trust-in-automation and calibration perspectives could be tested as an explanation of the DFL-trust-behaviour puzzle (a suggestion of this paper, not a reviewed finding).

Table 12. Research gap matrix

Gap	Evidence	Evidence type	Why it matters
Conceptual	No universal definition; overlap with FL and tech literacy	Synthesis	Construct validity

Gap	Evidence	Evidence type	Why it matters
Variable	Trust absent from interplaying variables; ESG-dominated keywords	Both	Mechanism
Relationship	DFL to trust null; trust to prudent behaviour untested	Synthesis; keyword 39	Theory
Contextual	India, Indonesia, Malaysia dominate; Africa sparse	Both	Generalisability
Population	Millennial and student samples; cohort moderation	Synthesis	Targeting
Measurement	Four to six dimensions; purpose-built scales	Synthesis	Comparability
Methodological	Cross-sectional PLS-SEM template	Both	Causal inference
Theoretical	Borrowed frameworks; no DFL-specific theory	Both	Theory building

8. FUTURE RESEARCH AGENDA

Table 13. Future research agenda

Direction	Basis	Type
DFL among young adults, with cohort comparison	Mahdzan et al. (2026); sample concentration	Supported by the review
DFL and responsible financial behaviour, including risky outcomes	Positive outcomes dominate	Supported by the review
Digital financial knowledge and decision making	Kumar et al. (2023); Abdallah et al. (2024)	Supported by the review
Self-protection and digital financial risk	Weak path for self-protection; Mahdzan et al. (2026) on security risk	Supported by the review
Saving and spending in digital environments	Ban et al. (2025); Setiawan et al. (2022)	Supported by the review
Role of digital trust (level versus calibration)	Null DFL-trust findings; keyword 39	Partly supported; calibration is a new suggestion
Comparative cross-country studies	Concentration in three countries	Supported by the review
Longitudinal, experimental and mixed-method designs	Cross-sectional template	Supported by the review
Common validated DFL scale	Dimension variation	Supported by the review
DFL-specific bibliometric search with thesaurus and author disambiguation	Dataset mismatch	New suggestion

9. THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical implications. For DFL research, the combined evidence shows a construct that is consistently linked to saving and spending but whose dimensions, cohorts and outcomes matter, and whose link to trust is unresolved. For the financial behaviour literature, it shows that DFL adds to a planned-behaviour and PLS-SEM tradition without yet changing its theory. An integrated understanding of digital financial decision making would

need to specify how competence, confidence in providers and behaviour relate, which the reviewed studies do not yet do.

Practical implications. Financial education programmes could emphasise practical use and decision making, where the evidence is strongest, and complement knowledge content with protective skills, where measurement is weakest. Initiatives for young adults need cohort-sensitive design, given the cohort differences in Mahdzan et al. (2026). Financial institutions and payment providers could treat transparency about security and data practice as part of literacy support, consistent with the link between privacy practice and trust (Aldboush & Ferdous, 2023). Policymakers and educational institutions could fund evaluation studies, since the evidence is largely correlational. These implications are conditional on testing and are not policy claims.

10. LIMITATIONS

Four limitations qualify the findings of this study. First, because the Scopus search query captured the broader financial literacy and digital finance corpus (n = 2,352) rather than a narrowly bounded DFL-only string, the bibliometric indicators reflect the wider parent field in which DFL appears as an emerging sub-theme. Second, while the 35 studies in the evidence synthesis were screened using explicit eligibility criteria and citation chaining, complete overlap with the bibliometric corpus was not algorithmically cross-indexed, and absence claims apply strictly to the reviewed evidence set. Third, author names in Scopus/Bibliometrix exports appear as surnames with initials and keyword spelling variants (e.g., financial behavior vs. financial behaviour) were retained unmerged to preserve raw export transparency; thus, author and keyword counts should be interpreted as indicative. Fourth, values read visually from Bibliometrix plots are marked as approximate, 2026 represents a partial publication year (through 24 October 2026), and the underlying empirical studies are predominantly cross-sectional and geographically concentrated in South and Southeast Asia.

11. CONCLUSION

The bibliometric analysis describes a financial literacy field that grew rapidly after the late 2010s, is concentrated in India and in South and Southeast Asia, relies on planned-behaviour and PLS-SEM foundations, and has a thematic structure dominated by financial literacy, investment and sustainability, with fintech and technology-acceptance themes emerging and digital financial literacy and trust only peripherally visible. The evidence synthesis shows a predominantly positive but conditional association between DFL and saving, spending and investment behaviour, mixed results across dimensions and cohorts, and no established role for digital trust. Read together, the two methods indicate a geographically concentrated, methodologically uniform field whose newest themes outrun their evidence. The gaps are conceptual, relational, contextual, measurement-related and methodological, and the research agenda follows from them.

12. DECLARATIONS

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Data availability. The bibliometric dataset and Biblioshiny export files supporting the findings of this study were retrieved from Scopus and are available from the corresponding author upon reasonable request.

Use of generative AI. During the preparation of this manuscript, the authors used generative AI tools solely for language refinement, structural editing, and formatting assistance. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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