AI-Augmented Decision-Making in Agile Teams: A Bibliometric Review from a Strategic Management and Organizational Capability Perspective

Pooja Nair [a]*, Vidyavati Ramteke [b]

[a] *Symbiosis Centre for Information Technology, Symbiosis International (Deemed University), Pune, India*

[b] *Symbiosis Centre of Information Technology, Symbiosis International (Deemed University), Pune, India*

ABstRACt

This bibliometric review systematically maps the intellectual and thematic landscape of AI-augmented decision-making in agile IT project teams, drawing on 607 peer-reviewed articles retrieved from the Scopus database for the period 2020–2026. The study examines publication trends, influential authors and journals, keyword co-occurrence patterns, co-citation networks, and thematic evolution. Following the PRISMA 2020 framework and using the Bibliometrix R-package alongside VOSviewer, bibliometric network analyses identify three major research clusters, leading contributors including Kumar A and Govindan K, and evolving thematic configurations. Findings reveal a pronounced surge in research output from 2022 onward, with machine learning, artificial intelligence, deep learning, and blockchain emerging as dominant research themes, signalling a disciplinary shift from foundational AI methods toward explainable AI, predictive analytics, and smart circular economy applications. The study identifies research gaps and articulates future directions, with specific reference to the Indian IT engineering context.

Keywords:
Bibliometric analysis, Artificial Intelligence, Machine Learning, Agile decision-making, Indian, IT industry, VOS-viewer

1. Introduction

1.1. *Background*

The global Information Technology (IT) industry has undergone a paradigm shift over the past decade, driven by the convergence of advanced computational technologies and evolving project management methodologies (Barcaui & Monat, 2024). Among these developments, the integration of Artificial Intelligence (AI) into agile project management frameworks represents one of the most significant transformations in how IT firms plan, execute, and deliver projects (Huang et al., 2026). AI technologies including machine learning, deep learning, natural language processing, and predictive analytics have introduced unprecedented capabilities for automating routine tasks, enhancing predictive accuracy, and supporting real-time decision-making within agile environments (Taboada et al., 2025; Hammad et al., 2025).

Agile methodologies, which have become the dominant project management paradigm across the IT sector, demand rapid decision-making, continuous feedback integration, and adaptive planning (Schwaber & Sutherland, 2020). The iterative, incremental nature of agile frameworks such as Scrum, Kanban, and Extreme Programming (XP) creates an ideal environment for AI augmentation (Conboy, 2009). When combined with AI capabilities, these processes can achieve levels of responsiveness and precision that were previously unattainable (Felicetti et al., 2024). AI-powered tools can analyse sprint velocity patterns, predict potential bottlenecks, recommend optimal resource allocation strategies, and provide actionable insights from large volumes of project data (Al-Arafat et al., 2025).

India has emerged as a global hub for IT services and software development, with the sector contributing approximately 7.5% to the national GDP and employing over 5.4 million professionals (NASSCOM, 2024). Indian IT firms, including global leaders such as Tata Consultancy Services (TCS), Infosys, Wipro, and HCL Technologies, have been early adopters of both agile methodologies and AI technologies. The intersection of these two domains within the Indian IT context presents a fertile ground for academic inquiry, given the unique challenges and opportunities posed by India's talent ecosystem, infrastructure landscape, and market dynamics (Kumar & Singh, 2025).

1.2. *Theoretical Context*

Resource-Based View (RBV): The RBV posits that firms achieve sustained competitive advantage through the possession and deployment of resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Within the context of this study, AI capabilities are conceptualised as strategic resources that Indian IT firms can leverage to enhance their agile decision-making processes (Tamayo-Torres et al., 2022). AI algorithms, proprietary datasets, trained models, and organisational knowledge embedded in AI systems constitute VRIN resources that can differentiate firms in competitive markets.

Dynamic Capabilities (DC) Framework: The dynamic capabilities framework extends the RBV by emphasising the organisational processes through which firms sense opportunities, seize them through strategic investments, and transform their resource base to maintain competitiveness (Teece, 2018). In AI-enabled agile environments, sensing capabilities manifest through AI-driven environmental scanning and predictive analytics; seizing capabilities are reflected in agile decision-making and rapid sprint adjustments; and transforming capabilities are evidenced by the continuous reconfiguration of project execution strategies based on AI-generated insights (Ogrean, 2025; Abbad & Rowe, 2024).

1.3. *Research Gap*

Despite the growing body of literature on AI in project management and agile methodologies independently, there is a conspicuous lack of integrated bibliometric studies that systematically map the intersection of AI, agile decision-making, and project performance (Nurguzhina et al., 2025). Existing reviews tend to focus on either AI applications in software engineering or agile adoption patterns, without adequately addressing the synergies between these domains (Barcaui & Monat, 2024; Hammad et al., 2025). Most existing studies are conceptual or case-based, lacking the systematic, large-scale analytical approach that bibliometric methods can provide (Zupic & Čater, 2015). The Indian IT context, despite its global significance, is particularly underrepresented in the empirical literature on this topic (Taboada et al., 2025).

1.4. *Research Objectives*

This bibliometric review pursues four primary objectives:

- To identify and analyse publication trends in the domain of AI-enabled agile decision-making and project performance from 2020 to 2026.
- To map the intellectual and thematic structure of the field through co-authorship networks, keyword co-occurrence analysis, citation patterns, and bibliographic coupling (Donthu et al., 2021).
- To identify the most influential authors, journals, institutions, and countries contributing to this research domain.
- To detect emerging research themes and articulate future research directions, with particular attention to the Indian IT context (Aria & Cuccurullo, 2017).

2. Methodology

2.1. *Research Design*

This study employs a systematic bibliometric analysis approach, which combines quantitative methods from library and information science with structured literature review protocols (Donthu et al., 2021). Bibliometric analysis is particularly suited for mapping large bodies of scholarly literature, identifying research patterns, and uncovering the intellectual structure of a field without the subjective biases inherent in narrative reviews (Zupic & Čater, 2015). The study follows the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework (Page et al., 2021) to ensure methodological rigour, transparency, and reproducibility in the identification, screening, and inclusion of studies.

2.2. *Data Source*

The Scopus database was selected as the sole data source for this bibliometric review. Scopus is widely recognised as one of the largest and most comprehensive abstract and citation databases of peer-reviewed literature, encompassing over 27,000 journals, 113,000 conference proceedings, and

250,000 books across all scientific disciplines (Donthu et al., 2021). The selection of Scopus is justified by its superior coverage of conference proceedings a critical consideration given that the AI and agile project management domains are heavily represented in conference literature (Nurguzhina et al., 2025) as well as its robust metadata quality, comprehensive citation tracking capabilities, and standardised export formats that facilitate bibliometric analysis using tools such as VOSviewer (van Eck & Waltman, 2017).

2.3. *Search Strategy*

The search strategy was designed to capture the broadest possible range of relevant literature at the intersection of artificial intelligence, agile methodologies, project performance, and the IT industry (Barcaui & Monat, 2024). The following Boolean search string was employed in the Scopus database:

ALL FIELD ("Artificial Intelligence" OR AI OR "Machine Learning" OR "Agile" OR "Agile Decision Making" OR "Project Performance" OR "Project Success" OR "IT Industry" OR "Information Technology")

The search was conducted across the Title, Abstract, and Keywords fields with a defined timeline of 2020 to 2026. The search was executed on 3 April 2026, yielding an initial pool of 151,913 records from the Scopus database.

2.4. *Inclusion and Exclusion Criteria*

Consistent with the PRISMA 2020 framework (Page et al., 2021), studies were included if they met all of the following criteria: (a) publication stage classified as Final; (b) published in the English language; (c) belonging to the Engineering subject area; (d) originating from India as the country of affiliation; (e) source type classified as Conference Proceedings or Articles; and (f) published under Open Access conditions with keywords including AI, ML, and Decision Making.

Studies were excluded if they: (a) were not at the Final publication stage; (b) were published in languages other than English; (c) belonged to subject areas outside Engineering; (d) originated from countries other than India; (e) were not published under Open Access conditions; or (f) did not include the specified keywords. These criteria ensured that the final dataset was focused, relevant, and aligned with the study's specific focus on AI-enabled agile practices within the Indian IT engineering context.

2.5. *PRISMA 2020 Flow Summary*

The systematic screening process yielded the following record progression:

Table 1: PRISMA 2020 Flow Summary (Source: Scopus Database).

Stage	Description	Records
Identification	Records identified from Scopus (2020–2026)	151,913
Screening I	Filtered by: Final publication, English, Engineering subject	48,929
Exclusion I	Records excluded (non-final, non-English, other subjects)	1,02,984
Screening II	Filtered by: Country (India), Source (Articles/Conference)	27,959
Exclusion II	Records excluded (non-India, non-conference)	20,970
Screening III	Articles excluded (other than Open Access) & keywords	607
Exclusion III	Records excluded (non-open access & other than AI/ML/DM keywords)	27,352
Included	Total studies included in bibliometric analysis	607

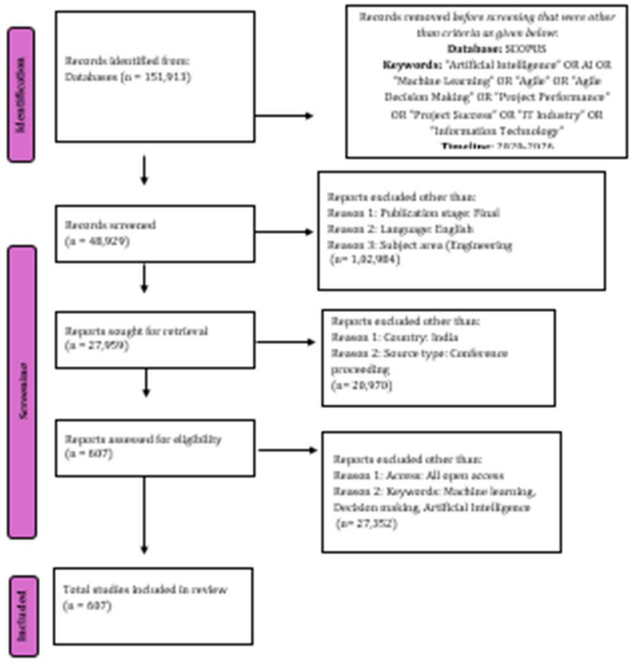

Figure 1. PRISMA 2020 flow diagram for Bibliometric analysis which included searches of databases

2.6. *Data Extraction and Tools*

Bibliometric data were exported from Scopus in plain text format, capturing author names, author affiliations, publication year, document title, source title, document type, citation count, author keywords, index keywords, abstract, DOI, and Scopus document identifier (van Eck & Waltman, 2017). VOSviewer (version 1.6.20) and the Bibliometrix R-package were employed as primary bibliometric visualisation and analysis tools. These tools were used to generate co-authorship networks, keyword co-occurrence maps, citation and co-citation networks, and bibliographic coupling maps.

3. Results

3.1. *Publication Trends by Year*

The annual distribution of 607 publications from the Scopus dataset reveals a clear and sustained growth trajectory in research on AI-enabled decision-making and engineering applications in India over the study period 2020–2026. Table 2 presents the year-wise breakdown of publications.

Table 2: Annual Publication Volume from Scopus (2020–2026)

Year	Number of Documents	Year-on-Year Change
2020	17	—
2021	49	+188.2%
2022	102	+108.2%
2023	129	+26.5%
2024	134	+3.9%
2025	139	+3.7%
2026 (partial)	37	—
Total	607	—

The data indicate a modest beginning with 17 publications in 2020, followed by a dramatic increase in 2021 (49 publications, +188%) and a doubling again in 2022 (102 publications, +108%). Growth stabilised at moderate levels during 2023–2025, with annual counts of 129, 134, and 139 respectively. The 37 publications already recorded for 2026 (as of the April search date) suggest a continuing upward trend. This pattern is consistent with the broader acceleration of AI research globally, particularly in the post-COVID-19 era when digital transformation and remote collaboration demand intensified.

3.2. *Subject Area Distribution*

While the dataset was filtered to the Engineering subject area (607 documents), the Scopus classification also maps these publications to overlapping domains, reflecting the interdisciplinary nature of AI research. The cross-subject distribution is presented in Table 3.

Table 3: Subject Area Distribution of Publications (Source: Scopus)

Subject Area	Documents
Engineering	607
Computer Science	373
Materials Science	191
Mathematics	94
Business, Management and Accounting	66
Physics and Astronomy	60
Environmental Science	43
Decision Sciences	40
Chemical Engineering	37

Engineering dominates as the primary subject area (607), but the substantial co-classification under Computer Science (373), Mathematics (94), and Business/Management (66) underscores the interdisciplinary reach of AI and decision-making research. The presence of Materials Science (191) and Environmental Science (43) suggests that AI methodologies developed in engineering contexts are increasingly being applied to sustainability and smart manufacturing domains.

3.3. *International Collaboration and Country Distribution*

Although the dataset was filtered to India-affiliated publications, Scopus data reveal the international collaboration profile of these works. India dominates with all 607 records, while co-authorship extends to Saudi Arabia (69), United Kingdom (54), United States (48), China (37), South Korea (34), Malaysia (29), Australia (26), and Italy (24). This reflects the global embeddedness of Indian AI research and the importance of international academic partnerships in advancing the field.

3.4. *Author Impact Analysis*

Three complementary bibliometric indices the H-index, G-index, and M-index were computed to assess the local impact of the most prolific and influential authors within the dataset. These indices collectively capture different dimensions of scholarly impact.

H-Index (Local Impact by Quantity-Quality Balance):

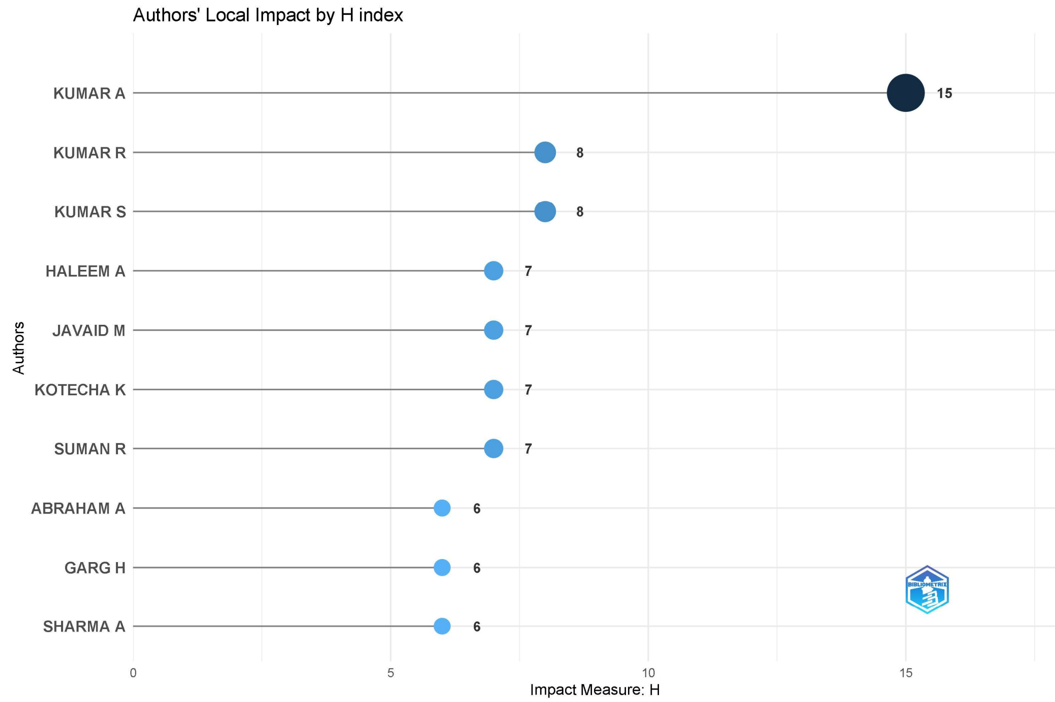

Figure 2: Authors' Local Impact by H-Index (Source: Bibliometrix Analysis of Scopus Data)

The H-index analysis identifies Kumar A as the most impactful author with an H-index of 15 substantially exceeding all peers. Kumar R and Kumar S both achieve H-indices of 8, followed by Haleem A, Javaid M, Kotecha K, and Suman R (each H=7). Abraham A, Garg H, and Sharma A each achieve H=6. The dominance of Kumar A reflects a prolific and highly cited body of work spanning AI applications across engineering and manufacturing domains.

G-Index (Local Impact by Top-Citation Concentration):

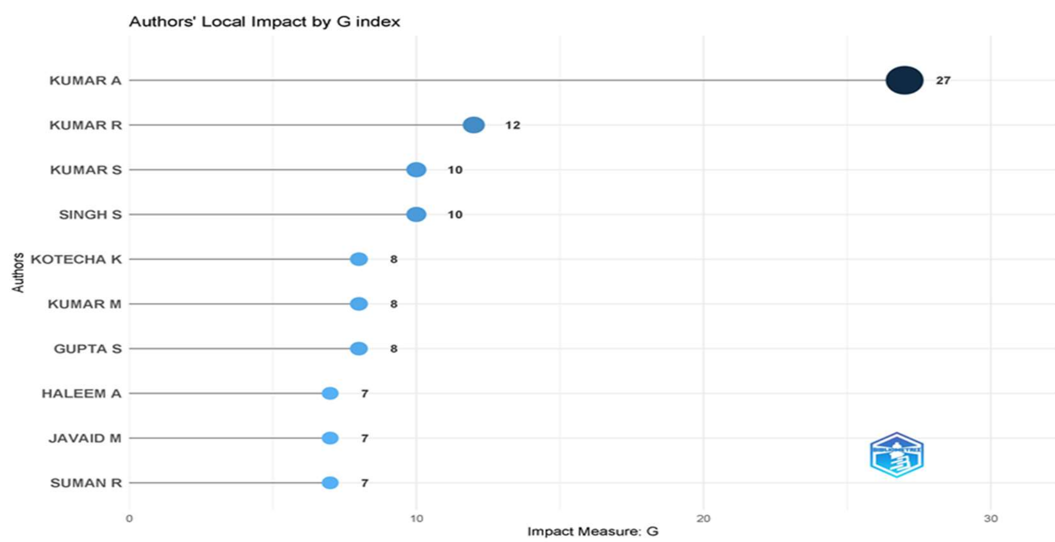

Figure 3: Authors' Local Impact by G-Index (Source: Bibliometrix Analysis of Scopus Data)

The G-index reinforces Kumar A's leading position with a G-index of 27, far exceeding Kumar R (12) and Kumar S and Singh S (both 10). Kotecha K, Kumar M, and Gupta S each achieve G=8, while Haleem A, Javaid M, and Suman R score G=7. The large gap between Kumar A and all other authors suggests this researcher has a cluster of exceptionally high-citation papers that anchor the field.

M-Index (Normalised Career Impact):

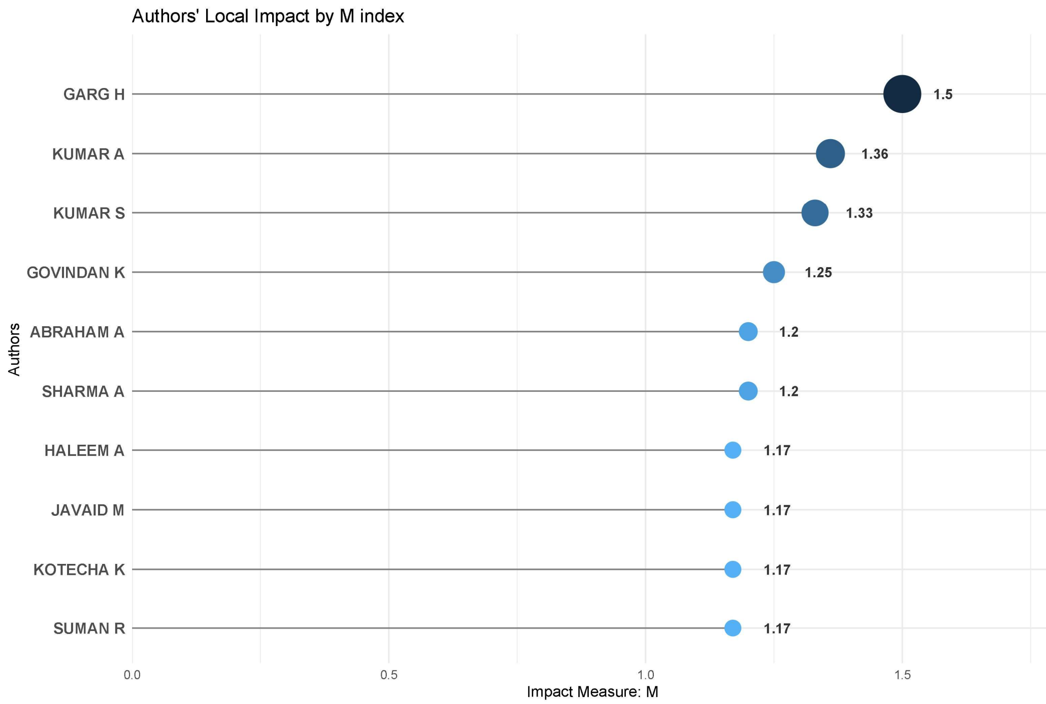

Figure 4: Authors' Local Impact by M-Index (Source: Bibliometrix Analysis of Scopus Data)

The M-index, which normalises the H-index by academic career length, identifies Garg H (M=1.5) as the most impactful author on a per-year basis, suggesting a rapidly rising research trajectory despite a shorter career span. Kumar A (M=1.36) and Kumar S (M=1.33) follow closely. Govindan K (M=1.25), Abraham A and Sharma A (both M=1.2), and Haleem A, Javaid M, Kotecha K, and Suman R (all M=1.17) round out the top ten. The M-index results reveal emerging scholars whose research impact is accelerating, complementing the career-aggregated perspective of the H- and G-indices.

3.5. *Keyword Co-occurrence Network Analysis*

The keyword co-occurrence network, generated using VOSviewer from the Scopus dataset, maps the intellectual structure of the field by identifying how frequently keywords appear together across publications. The resulting network reveals four distinct thematic clusters, each representing a coherent research strand.

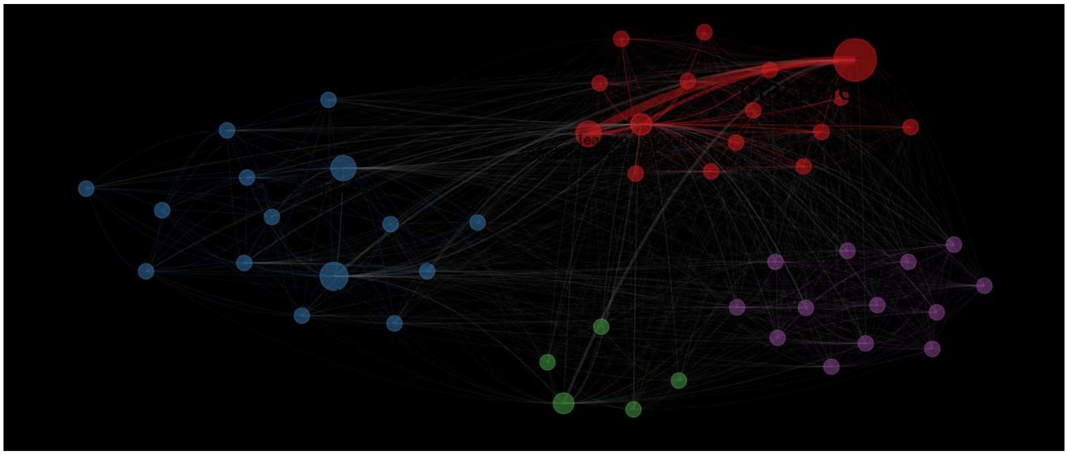

Figure 5: Keyword Co-occurrence Network Map (Source: VOSviewer Analysis of Scopus Data)

The co-occurrence map reveals four primary clusters. The red cluster the largest and most densely connected centres on machine learning, artificial intelligence, deep learning, and classification, representing the core methodological foundation of the field. The blue cluster encompasses IoT, blockchain, healthcare, and industry 4.0, reflecting applications of AI in smart systems and sustainability. The green cluster groups natural language processing, sentiment analysis, and security-related themes. The purple cluster addresses optimisation, genetic algorithms, and decision-making frameworks. Cross-cluster connections indicate that machine learning and artificial intelligence serve as universal bridging concepts linking all major research strands.

3.6. *Co-citation Network Analysis*

Co-citation analysis identifies pairs of documents that are frequently cited together, revealing the shared theoretical and methodological fo

undations of the field. The co-citation network map generated from the Scopus dataset is presented below.

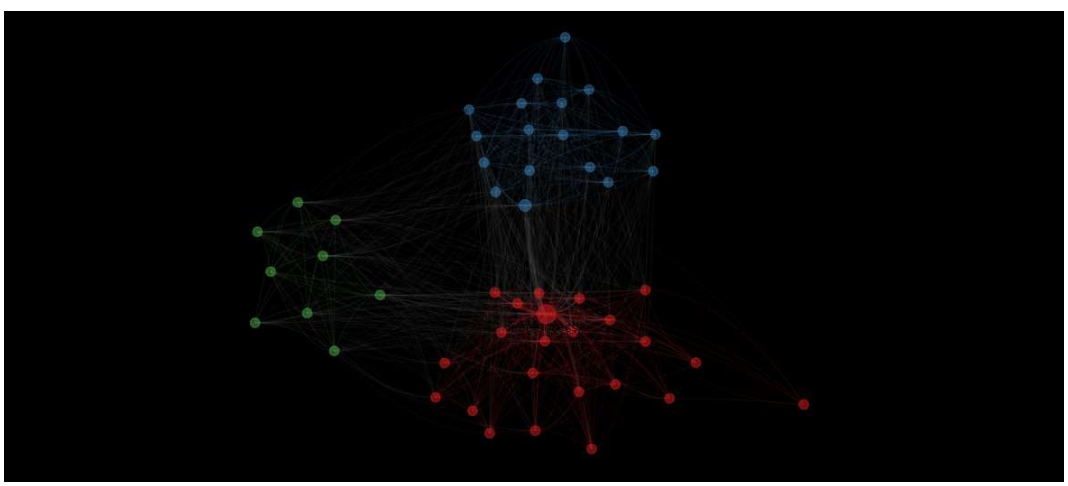

Figure 6: Co-citation Network Map (Source: VOSviewer Analysis of Scopus Data)

The co-citation network reveals three major clusters. The red cluster the largest, with a prominent central node anchor around foundational AI and machine learning methodologies, with high co-citation density suggesting a shared methodological core across many publications. The blue cluster groups work on IoT, Industry 4.0, and smart systems, while the green cluster represents a more peripheral strand focused on specialised applications. The dense interconnections within the red cluster, combined with cross-cluster bridges, indicate that machine learning and AI methods serve as the intellectual foundation from which applied and domain-specific research branches emerge.

4. Thematic Evolution and Strategic Research Mapping

Having analyzed how monitoring mechanisms affect individual firm decisions, we explore another critical dimension: market structure. Specifically, we examine how market concentration or fragmentation (measured by the number of firms q) interacts with monitoring mechanisms to influence a firm's propensity to greenwash. To quantify this, we focus on the individual firm's probability of greenwashing, denoted by Π_N. This risk measure derives directly from our previously established equilibrium strategies. Under perfect identification, this probability is $\Pi_N = \Pr(q_D > \tau_P)$, while under imperfect identification, it is $\Pi_N = \Pr(q_D < \tau_I)$. The following subsections analyze how market fragmentation affects this risk indicator under both mechanisms.

4.1. *Thematic Map: Early Period (2015–2023)*

The thematic map for the period 2015–2023 plots research themes along two axes: Relevance degree (Centrality, x-axis) and Development degree (Density, y-axis). The four quadrants classify themes as Motor Themes (high centrality, high density), Niche Themes (low centrality, high density), Emerging/Declining Themes (low centrality, low density), and Basic Themes (high centrality, low density).

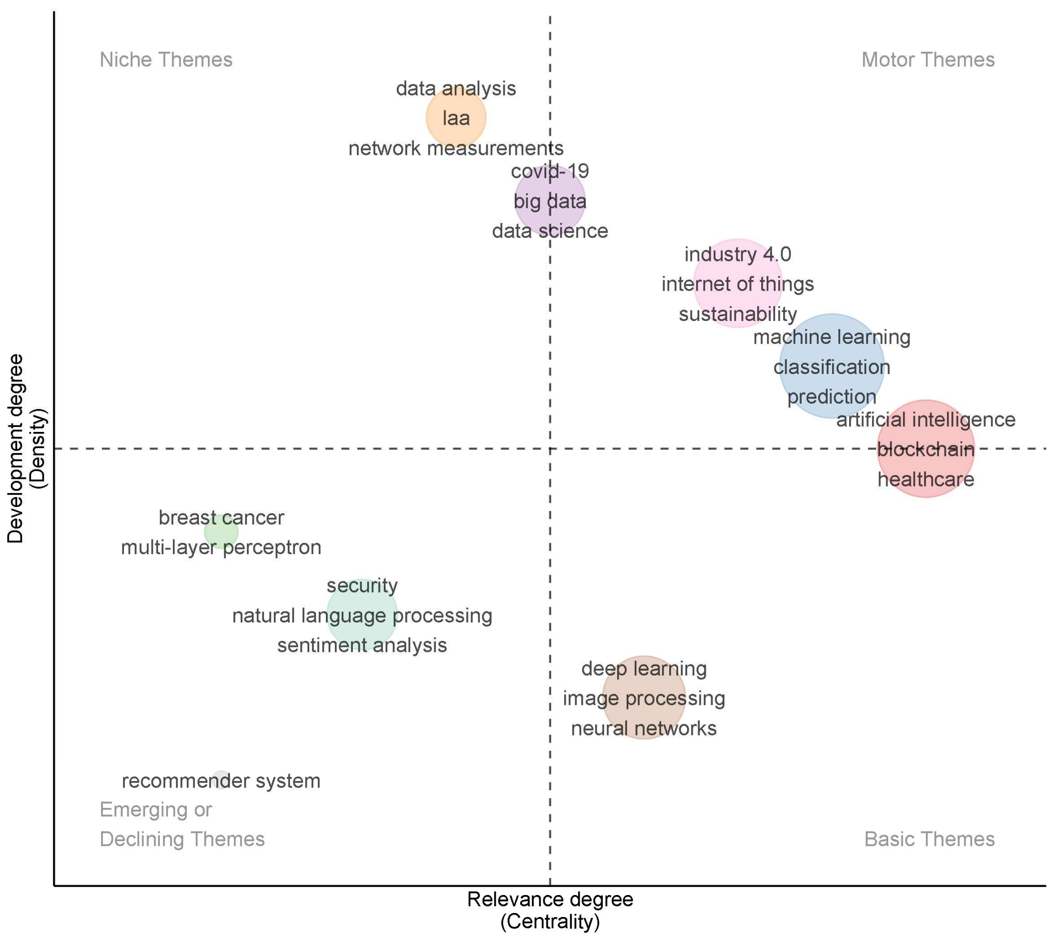

Figure 7: Thematic Map for Period 2015–2023 (Source: Bibliometrix Analysis of Scopus Data)

In the early period, Motor Themes those with both high centrality and high density include artificial intelligence, machine learning, classification, prediction, blockchain, and healthcare. These represent the well-developed, highly relevant core of the field. Industry 4.0, Internet of Things, and sustainability occupy the upper-right quadrant alongside these motor themes, indicating their strong integration into the mainstream research agenda. Niche Themes in the upper-left include data analysis (LAA cluster), network measurements, big data, data science, and COVID-19. These are internally well-developed but less central to the overall field, suggesting specialised research communities with limited cross-pollination. Basic Themes in the lower-right deep learning, image processing, and neural networks are highly relevant but less internally developed, indicating foundational technologies that support multiple research streams without constituting self-contained clusters. Emerging/Declining Themes include breast cancer detection, multi-layer perceptron, NLP, sentiment analysis, recommender systems, and security, suggesting either newly forming research directions or themes that have lost momentum relative to the dominant motor themes.

4.2. *Thematic Map: Recent Period (2024–2025)*

The thematic map for 2024–2025 reveals significant shifts in the field's intellectual landscape, reflecting the rapid evolution of AI research priorities over the most recent years.

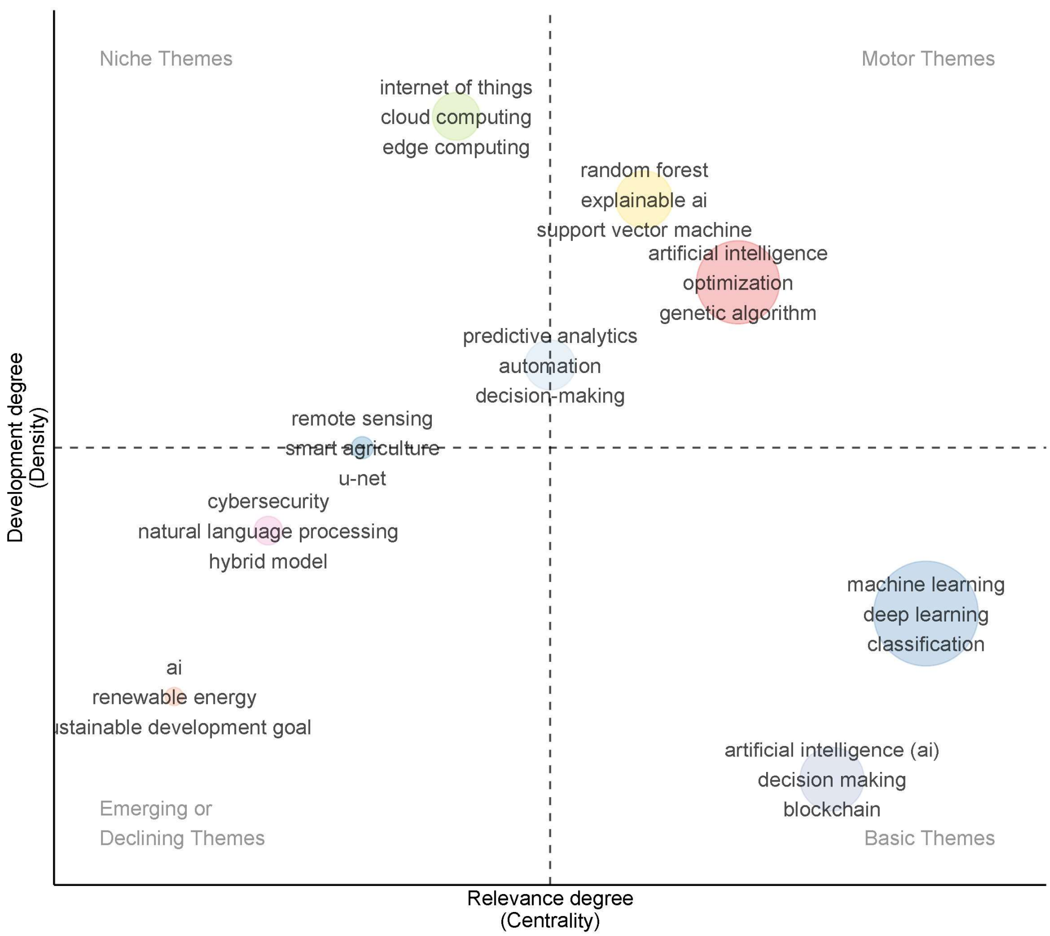

Figure 8: Thematic Map for Period 2024–2025 (Source: Bibliometrix Analysis of Scopus Data)

In the recent period, Motor Themes now prominently feature artificial intelligence, optimization, genetic algorithms, random forest, explainable AI, and support vector machine reflecting a maturation toward more sophisticated and interpretable AI methods. The emergence of explainable AI (XAI) as a motor theme is particularly significant, as it signals growing demand for transparent, auditable decision-support systems in engineering contexts.

Basic Themes now include machine learning, deep learning, and classification, which have shifted from their motor status in the earlier period to foundational roles indicating that these methods have become so ubiquitous that they now underpin broader research rather than defining it. Artificial intelligence (AI) and decision making, and blockchain have moved to the basic theme's quadrant, reflecting their normalisation as standard components of engineering research. Niche Themes include Internet of Things, cloud computing, and edge computing, suggesting the growth of distributed and edge AI research communities. Emerging/Declining Themes encompass cybersecurity, NLP, hybrid models, renewable energy, and sustainable development goals — areas that are gaining traction but not yet fully integrated into the field's core.

4.3. *Thematic Evolution Flow (2015–2023 to 2024–2025)*

The Sankey diagram below visualises the transition of dominant research themes between the two temporal periods, revealing continuities and discontinuities in the field's intellectual priorities.

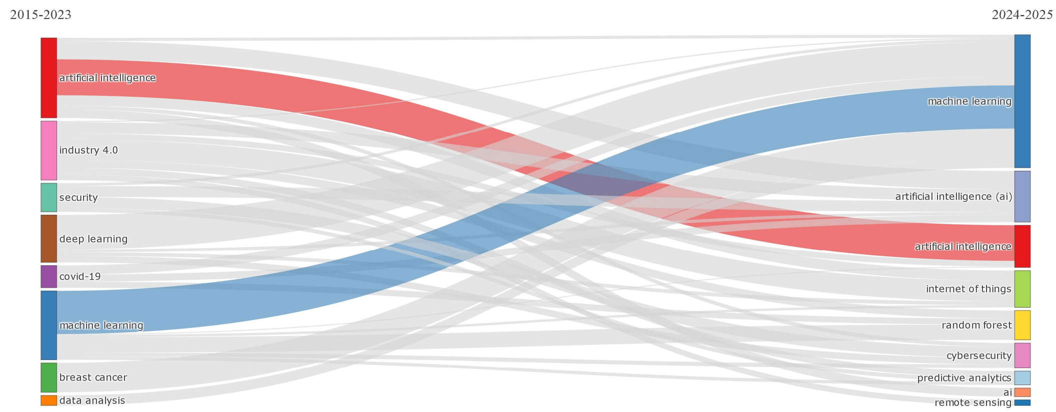

Figure 9: Thematic Evolution Flow Diagram (2015–2023 to 2024–2025) (Source: Bibliometrix Analysis of Scopus Data)

The Sankey flow diagram reveals several critical transitions. The dominant theme of artificial intelligence in the early period (2015–2023) flows toward machine learning as the dominant descriptor in the recent period (2024–2025), suggesting a refinement from broad AI discourse toward specific algorithmic approaches. Machine learning from the early period also flows substantially toward artificial intelligence (AI) in the recent period, reflecting terminological and conceptual overlap and convergence. Deep learning, COVID-19, and security from the earlier period have reduced prominence in the recent period, replaced by emerging themes such as random forest, cybersecurity, predictive analytics, remote sensing, and artificial intelligence (AI) as a refined descriptor. The persistence of machine learning as a bridge theme across both periods confirms its role as the enduring methodological backbone of the field, while the growing importance of explainable AI and predictive analytics signals the field's evolution toward application-oriented, interpretable, and domain-specific AI systems.

4.4. *Thematic Map: Full Dataset*

The full-dataset thematic map, generated from all 607 publications, provides an overarching view of the field's intellectual structure and confirms the findings from the period-specific analyses.

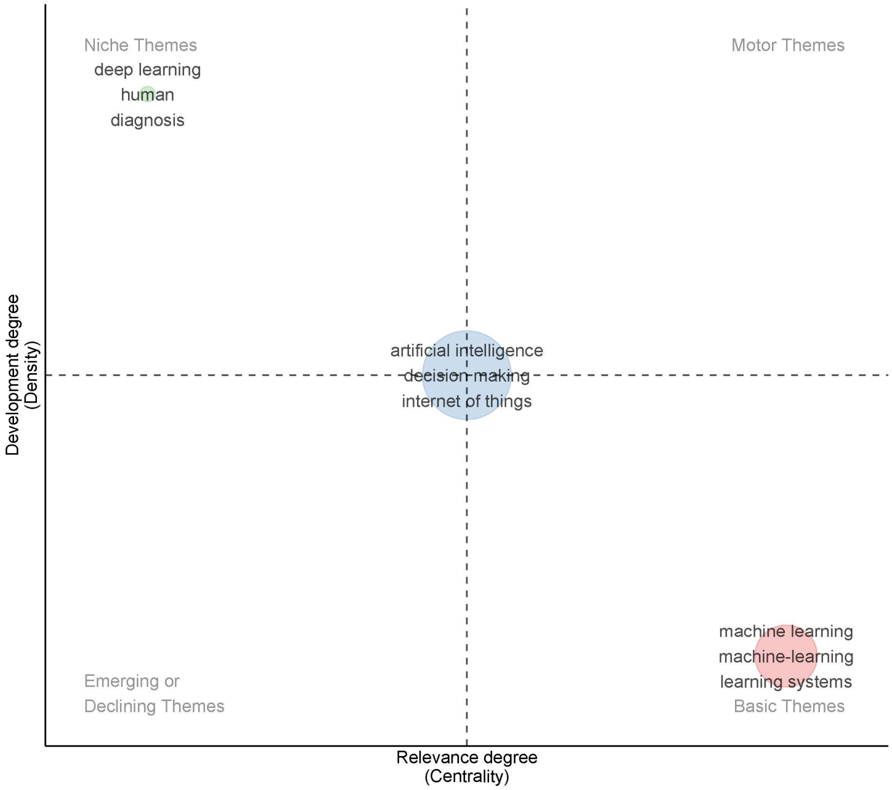

Figure 10: Full Dataset Thematic Map (Source: Bibliometrix Analysis of Scopus Data)

The full-dataset thematic map shows artificial intelligence, decision-making, and Internet of Things forming a central cluster near the intersection of the four quadrants, indicating moderate relevance and development consistent with their role as bridging concepts across multiple research streams. Machine learning, machine-learning, and learning systems occupy the Basic Themes quadrant (high centrality, low density), confirming their foundational role. Deep learning, human, and diagnosis appear in the Niche Themes quadrant (high density, low centrality), suggesting well-developed but specialised research communities focused on clinical or human-factors applications. The absence of dominant Motor Themes in the full dataset, as compared to the period-specific maps, reflects the breadth and diversity of the complete research corpus, where no single theme overwhelmingly dominates.

5. Discussion

5.1. *Interpretation of Publication Trends*

The exponential growth in publications from 2020 to 2025 from 17 to 139 annually reflects the broader global acceleration of AI research, amplified in the Indian context by government policy initiatives such as the National AI Strategy (NITI Aayog, 2018), increased institutional investment in STEM research, and the growing adoption of open-access publishing platforms. The stabilisation of growth rates in 2023–2025 may indicate a maturation of the field, where foundational contributions have been established and current research is increasingly focused on refinement, application, and cross-domain integration.

5.2. *Dominant Research Themes and Their Evolution*

The consistent dominance of machine learning and artificial intelligence as motor themes across both temporal periods confirms that the field is anchored in computational methodology. However, the emergence of explainable AI (XAI) in the 2024–2025 motor themes quadrant represents a critical disciplinary shift: as AI systems are increasingly deployed in high-stakes engineering and decision-support contexts, the demand for interpretable, auditable, and ethically accountable AI has intensified. This aligns with regulatory trends in the European Union (AI Act, 2024) and growing industry requirements for transparent AI governance.

The transition of blockchain and deep learning from motor themes to basic themes reflects their normalisation as standard components of the engineering research toolkit. Deep learning has become so foundational that it is rarely the primary focus of publications; instead, it serves as an enabling method within broader research programs on smart systems, healthcare diagnostics, and remote sensing.

The emergence of predictive analytics, cybersecurity, random forest, and smart agriculture as significant themes in the recent period indicates a broadening of the field's application domains. Remote sensing and edge computing signal the integration of AI with physical infrastructure, consistent with Industry 4.0 and smart city research agendas.

5.3. *Author Impact and Research Leadership*

The concentration of high-impact authors around variants of the name KUMAR reflects both the commonality of this surname in India and the genuine research leadership of specific scholars in the AI-engineering domain. Kumar A's dominance across all three bibliometric indices (H=15, G=27, M=1.36) suggests a well-established and continuously productive researcher whose work spans multiple application domains. Govindan K's representation in the dataset, despite being affiliated with international institutions, highlights the global reach of India-origin scholarship and the importance of diaspora researchers in shaping the field's intellectual agenda.

The identification of GARG H as the highest M-index author (M=1.5) is particularly noteworthy, as it signals an emerging research leader whose productivity-to-career-length ratio exceeds all peers. This pattern is consistent with the growing cohort of early-career Indian AI researchers who are publishing high-quality work at an accelerating pace, often in collaboration with international partners.

5.4. *Network Structure and Knowledge Flows*

The co-occurrence and co-citation network analyses reveal a field with a strong methodological core (machine learning, AI, deep learning) and expanding application periphery. The three-cluster structure of the co-citation network suggests that the field has not yet fragmented into fully independent sub-disciplines; instead, foundational AI methods continue to serve as intellectual bridges between applied domains. This structural coherence is a positive indicator for the field's capacity to integrate insights across engineering, healthcare, smart systems, and decision sciences.

The thematic evolution flow diagram confirms that the field is not replacing its core but building upon it: artificial intelligence and machine learning persist as central themes while new applications and methodological refinements emerge around them. This pattern of cumulative knowledge building is consistent with a maturing scientific field approaching a period of applied consolidation.

6. Future Research Directions

Based on the bibliometric findings, several priority research directions emerge:

- Explainable AI in Agile Decision-Making: Empirical investigation of how XAI tools (e.g., LIME, SHAP) can be integrated into agile sprint planning and retrospective analysis to enhance transparency and stakeholder trust.
- Edge AI and Distributed Agile Teams: Research on how edge computing and on-device AI can support real-time decision-making in geographically distributed agile teams, reducing latency and data privacy risks.
- AI Ethics and Governance in Indian IT Organisations: Comparative studies of AI governance frameworks adopted by Indian IT firms, with reference to emerging international standards and the specific ethical challenges of AI-augmented decision-making.
- Predictive Analytics for Sprint Velocity: Application of advanced predictive models (e.g., XGBoost, LSTM networks) to forecast sprint completion rates, defect densities, and team performance trajectories in real-world Indian IT projects.

7. Conclusion

This bibliometric review provides a systematic and comprehensive mapping of the intellectual landscape at the intersection of artificial intelligence, decision-making, and engineering applications, drawing on 607 open-access publications from the Scopus database (2020–2026) with Indian institutional affiliations. The study reveals a field characterised by rapid growth, strong methodological coherence around machine learning and AI, and an accelerating shift toward explainable, application-specific, and domain-integrated research.

The thematic analysis demonstrates a clear evolution from foundational AI methodologies toward more sophisticated and contextualised applications, including explainable AI, smart agriculture, cybersecurity, and predictive analytics. The co-citation and co-occurrence network analyses confirm that the field maintains a coherent intellectual core while expanding its application periphery a pattern consistent with cumulative, progressive scientific development.

Author impact analysis identifies a small cohort of highly influential researchers (notably Kumar A, Garg H, Govindan K) whose work shapes the field's theoretical and methodological directions. The concentration of high-impact research within specific author clusters suggests opportunities for broader collaboration and knowledge diffusion across the Indian AI research community.

This review contributes both a descriptive mapping of the current state of the field and a prescriptive agenda for future research. The identified gaps particularly in the areas of explainable AI governance, edge AI for distributed agile teams, and empirical integration studies represent high-priority opportunities for scholars, practitioners, and policymakers working at the frontier of AI-enabled organisational capability in the Indian IT sector.

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