Jurnal Digismantech *Vol. 5(No. 2): no. 1 - no 28. Th. 2025*
Versi Online: http://journal.ubm.ac.id/index.php/digismantech *p-ISSN: 2798-1819*
DOI: dx.doi.org/10.30813/digismantech.v5i2.9168 *e-ISSN: 2798-0819*

Memetakan Lanskap Bisnis Digital: Tinjauan Literatur Sistematis tentang Transformasi, Tata Kelola, dan Dinamika Ekosistem (2020–2025)

Mapping the Digital Business Landscape: A Systematic Literature Review of Transformation, Governance, and Ecosystem Dynamics (2020–2025)

Umi Suryani[1)], Jovannia Grisella Eka Putri[2)], Irsyad Parama Dwiputra[3)]

[1, 2)]Program Studi Bisnis Digital, Universitas Bunda Mulia
[3)]Program Studi Statistika & Data Science, IPB Univeristy

Diajukan 3 November 2025 / 30 Desember 2025

Abstrak

Transformasi digital dalam ekosistem bisnis global telah mengubah secara cepat cara organisasi menciptakan nilai, mengelola data, dan bersaing dalam ekonomi yang saling terhubung. Konvergensi antara platformisasi, kecerdasan buatan (AI), inovasi fintech, dan tuntutan keberlanjutan menghasilkan interaksi lintas industri yang kompleks, sehingga diperlukan sintesis komprehensif terhadap penelitian terkini. Meskipun jumlah studi meningkat pesat, literatur yang ada masih terfragmentasi dalam dimensi teknologi, manajerial, dan regulasi. Oleh karena itu, penelitian ini bertujuan untuk meninjau secara sistematis dan mengintegrasikan pengetahuan yang ada mengenai bisnis digital pada periode 2020–2025, dengan mengidentifikasi tema dominan, tren metodologis, serta kesenjangan penelitian yang membentuk arah masa depan transformasi dan tata kelola digital. Metode yang digunakan adalah Systematic Literature Review (SLR) berdasarkan pedoman PRISMA 2020 untuk menjamin transparansi dan replikasi metodologis. Pencarian dilakukan melalui Scopus, Web of Science, ScienceDirect, dan Google Scholar menggunakan kombinasi kata kunci Boolean seperti "digital business," "digital transformation," "AI," "platform," dan "data governance." Dari 1.132 publikasi awal, 874 studi unik diseleksi, 148 ditinjau penuh, dan 18 memenuhi kriteria inklusi. Evaluasi kualitas menggunakan alat CASP/JBI (Critical Appraisal Skills Programme/Joanna Briggs Institute), diikuti analisis tematik melalui proses open, axial, dan selective coding. Delapan klaster utama ditemukan: platformization & ecosystems, transformasi digital UKM (Usaha Kecil dan Menengah) , pengalaman omnichannel, tata kelola & privasi data, AI & otomatisasi, fintech & pembayaran, keberlanjutan & dampak sosial, serta rantai nilai global lintas batas. Hasil menunjukkan bahwa riset bisnis digital berkembang menuju model berbasis ekosistem yang menekankan kolaborasi berbasis data, interoperabilitas API (Application Programming Interface) , dan pengambilan keputusan berbasis AI. Keberhasilan masa depan bisnis digital bergantung pada integrasi strategis antara teknologi, tata kelola, dan keberlanjutan. Penelitian selanjutnya perlu mengukur nilai ekonomi data, mengembangkan standar tata kelola ekosistem, serta mendorong transformasi digital inklusif di negara berkembang.
Kata Kunci: Bisnis digital, Ekosistem platform, Tata kelola data, Kecerdasan buatan, Fintech, Keberlanjutan

Abstract

The digital transformation of global business ecosystems has rapidly reshaped how organizations create value, manage data, and compete in an interconnected economy. The convergence of platformization, artificial intelligence (AI), fintech innovation, and sustainability imperatives has generated complex cross-industry interactions, necessitating a comprehensive synthesis of recent research. Despite the proliferation of studies, existing literature remains fragmented across technological, managerial, and regulatory dimensions. Therefore, this study systematically reviews and integrates current knowledge on digital business between 2020 and 2025, identifying dominant themes, methodological trends, and research gaps shaping the future of digital transformation and governance. A Systematic Literature Review (SLR) was conducted following PRISMA 2020 guidelines to ensure methodological transparency and replicability. Searches were performed across Scopus,

Jurnal Digismantech *Vol. 5(No. 2): no. 1 - no 28. Th. 2025*
Versi Online: http://journal.ubm.ac.id/index.php/digismantech *p-ISSN: 2798-1819*
DOI: dx.doi.org/10.30813/digismantech.v5i2.9168 *e-ISSN: 2798-0819*

Web of Science, ScienceDirect, and Google Scholar using Boolean combinations of keywords such as "digital business," "digital transformation," "AI," "platform," and "data governance." From 1,132 initial records, 874 unique studies were screened, 148 were fully reviewed, and 18 met all inclusion criteria. Each study was assessed using CASP/JBI quality appraisal tools and analyzed via thematic synthesis through open, axial, and selective coding. Eight core clusters emerged: platformization & ecosystems, digital transformation of SMEs, omnichannel experience, data governance & privacy, AI & automation, fintech & payments, sustainability & social impact, and cross-border global value chains. The synthesis revealed that digital business research has evolved toward ecosystem-based models emphasizing data-driven collaboration, API interoperability, and AI-enabled decision-making. Future success in digital business depends on strategically integrating technology, governance, and sustainability. Further research should focus on quantifying data's economic value, developing standardized ecosystem governance, and fostering inclusive digital transformation in developing economies.

Keywords: *digital business, platform ecosystem, data governance, artificial intelligence, fintech, sustainability*

*Korespondensi Penulis:
E-mail: l2149@lecturer.ubm.ac.id

Introduction

The rapid acceleration of digitalization has fundamentally reshaped the structure, behavior, and competitiveness of global businesses across all sectors. Over the past decade, the emergence of digital platforms and ecosystems has disrupted conventional firm boundaries, transforming industries such as retail, finance, logistics, and manufacturing into interconnected digital value networks (Gawer, 2022; Tan, 2025). These ecosystems are driven by data flows, automation, and platform orchestration mechanisms that enable scalability through modular architectures and API-driven integration. The evolution from linear supply chains to digital ecosystems reflects a broader paradigm shift toward platform capitalism, where value creation increasingly depends on data-based interactions and algorithmic governance rather than tangible assets or traditional production factors.

The COVID-19 pandemic accelerated this digital transformation, forcing firms especially small and medium-sized enterprises (SMEs) to adopt digital channels for survival and competitiveness (Romero & Mammadov, 2024). The sudden shift toward remote work, online commerce, and contactless transactions heightened the importance of cloud computing, artificial intelligence (AI), blockchain, and big data in reshaping operational agility and decision-making (Shakil, Ali, Illahi, & Ahmed, 2025; Lăzăroiu et al., 2023). This convergence of technologies also propelled the rise of FinTech 5.0, characterized by intelligent, inclusive, and sustainability-oriented financial systems that blend automation with ethical governance (Ahmad, 2025; J. Nair, Manohar, & Mittal, 2025). However, this rapid transition exposed structural weaknesses, including limited digital readiness, cybersecurity vulnerabilities, and disparities in digital skills (Huang & Lau, 2024). Large corporations leveraged economies of scale and advanced data infrastructures to optimize financial and operational performance, while SMEs particularly in emerging economies struggled with resource constraints, compliance burdens, and technological adaptation gaps (Temouri et al., 2025; Rahardja, Miftah, Rakhmansyah, & Zanubiya, 2025). The resulting digital divide underscored the importance of sustainable digital transformation and responsible FinTech governance frameworks that promote equity and resilience within global financial ecosystems (Urikova et al., 2024; Arner, Buckley, Charamba, Sergeev, & Zetzsche, 2022).

Data governance and privacy have emerged as critical concerns in the digital business landscape (Santoso, 2024). Regulations such as the General Data Protection Regulation (GDPR) and the global rise of open data policies have compelled firms to adopt transparent and ethical data practices (Bernardo et al., 2024; Babina et al., 2025). The integration of advanced analytics, AI-driven personalization, and automation has raised questions about algorithmic fairness, accountability, and compliance. Furthermore, the increasing adoption of FinTech 4.0 and 5.0 ecosystems, driven by AI, big data, and blockchain, has intensified the need for clear governance mechanisms that balance innovation with regulation (Arner et al., 2022; Lu, 2024). Research increasingly highlights that

competitive advantage now depends not merely on data possession but on the ability to manage, share, and govern data responsibly across platforms and jurisdictions (Cowls et al., 2023; Cao, Yang, & Yu, 2021). Consequently, organizations must balance innovation and privacy leveraging data for strategic decision-making while maintaining trust, transparency, and regulatory adherence, especially within digital banking and financial ecosystems that rely heavily on AI-based analytics and smart contracts (Elias et al., 2024; Gupta, 2025).

The integration of AI, analytics, and automation has redefined operational efficiency and business intelligence across multiple sectors. Empirical evidence shows that firms deploying AI capabilities in production, logistics, and customer engagement experience superior performance outcomes, largely due to predictive analytics, cloud computing, and real-time process optimization (Chen et al., 2022; Zhou, 2025). Recent studies reveal that AI-based innovation ecosystems, when embedded within FinTech platforms, can accelerate open innovation and sustainable growth through intelligent data orchestration (Barile, Secundo, & Del Vecchio, 2025). However, the increasing reliance on automation and machine learning introduces new challenges, including bias detection, explainability, and the displacement of human labor (Darwish, 2023). As generative and green AI become integral to marketing, finance, and governance, the next frontier of competitive advantage lies in the responsible governance and monetization of AI ecosystems where data ethics, transparency, and sustainability converge (Alam, 2025; Billi & Bernardo, 2025).

Parallel to technological advancements, FinTech and digital payment innovations have transformed the global financial landscape, expanding inclusion through mobile banking, digital wallets, and embedded finance solutions. Emerging studies underscore that FinTech now acts as a critical enabler of sustainable financial inclusion, bridging gaps between technology adoption and the United Nations Sustainable Development Goals (SDGs) (Arner, Buckley, Zetzsche, & Veidt, 2020; Quintiliani, 2025). Innovations such as Buy Now, Pay Later (BNPL), open banking, and blockchain-based transactions not only improve liquidity and customer convenience but also raise regulatory concerns about over-indebtedness, privacy, and cybersecurity (Kumar et al., 2024; Tong et al., 2025; Manta, Vasile, & Rusu, 2025). In this context, AI- and IoT-enabled FinTech systems have been proposed as a means to promote green finance and sustainable economic transformation through predictive modeling and ethical automation (Elias et al., 2024; Gupta, 2025). Yet, the absence of standardized frameworks for cross-border payment systems and taxation continues to limit global financial interoperability (Babina et al., 2025; Khan, Katoch, & Mahendru, 2025).

Finally, the intersection of digital transformation and sustainability defines a new era of corporate responsibility and competitiveness in the digital economy. The transition toward greener and more ethical digital infrastructures ranging from carbon-neutral data centers to AI-enabled ESG monitoring reflects how technology and environmental stewardship are becoming inseparable (González-Romero et al., 2025; Huang & Lau, 2024; Alam, 2025). FinTech-driven sustainability initiatives now emphasize the importance of green finance, carbon tracking, and resource-efficient payments to foster resilience and inclusion (Gupta, 2025; Arner et al., 2022). Moreover, the integration of blockchain and AI has supported transparent financial flows and enhanced accountability in digital sustainability reporting (Darwish, 2023). Firms are expected not only to optimize for efficiency but also to reduce their digital carbon footprint, strengthen inclusive access, and align profitability with social value creation ushering in a new paradigm of responsible digital capitalism that integrates ESG principles within digital innovation ecosystems (Zhou, 2025; Dallocchio et al., 2024).

The purpose of this study is to conduct a Systematic Literature Review (SLR) of digital business research published between 2020 and 2025, synthesizing thematic developments, methodological trends, and emerging knowledge gaps. Specifically, this study aims to map the evolution of digital business themes across sectors and regions, identify the interplay between platformization, AI, data governance, and sustainability, and propose an integrated research agenda

that bridges theory and practice for future digital transformation, governance, and ecosystem development.

Research Method

Research Design

This study adopts a Systematic Literature Review (SLR) following the PRISMA 2020 guidelines to synthesize peer-reviewed evidence on digital business (2020–2025). The review integrates findings across eight thematic clusters (1) platformization & ecosystems, (2) SME digital transformation, (3) omnichannel & customer experience, (4) data governance & privacy, (5) AI/analytics/automation, (6) fintech & payments, (7) sustainability & social impact, and (8) cross-border & global value chains (GVCs). The protocol (search strings, inclusion/exclusion rules, screening log, and quality appraisal rubric) was pre-specified and archived internally to ensure transparency and reproducibility. The SLR proceeded through four sequential stages identification, screening, eligibility, and inclusion with dual independent reviewers and adjudication for disagreements.

Data Sources, Search Strategy, and Eligibility Criteria

Databases from Scopus, Web of Science Core Collection, ScienceDirect, and Google Scholar (as a supplementary source for early-view items). Timespan. January 1, 2020–October 23, 2025. Languages. English and Indonesian. Search strategy. Boolean queries were adapted per database fields (Title/Abstract/Keywords), for example: (“digital business” OR “digital transformation” OR platform* OR “e-commerce” OR “omnichannel” OR omnichannel OR fintech OR “open banking” OR “mobile payments” OR “cross-border e-commerce”)AND (ecosystem OR governance OR strategy OR data OR privacy OR AI OR analytics OR automation OR “customer experience” OR sustainability OR ESG OR “global value chain*”)AND (firm OR enterprise OR SMEs OR retailer OR bank OR manufacturing) Supplementary techniques included backward/forward snowballing from key papers and author/profile checks for in-press updates.

Inclusion criteria

a) Peer-reviewed journal articles (including in-press/early view with DOI);
b) Focus on digital business phenomena with managerial/organizational or market implications;
c) Empirical or conceptual works mapping to at least one of the eight themes;
d) Publication year 2020–2025;
e) Sufficient methodological detail for appraisal.

Exclusion criteria.

a) Non-peer-reviewed items (magazine pieces, blog posts, white papers);
b) Purely technical studies without business implications;
c) Editorials, viewpoints without analytic contribution;
d) Non-English/Indonesian or unavailable full text after reasonable effort;
e) Duplicates/versions of record superseded by later journal publications.

Study management. Records were exported to a reference manager (Zotero/Mendeley), deduplicated, and screened in two stages (title/abstract, then full text). A coding codebook mapped each article to themes, context, method, sector, variables, and outcomes.

Vol. 5(No. 2): no. 1 - no 28. Th. 2025
p-ISSN: 2798-1819
e-ISSN: 2798-0819

PRISMA Flow

a) Identification and Screening Phase: A total of 1,132 records were identified from Scopus (n = 412), Web of Science (n = 298), ScienceDirect (n = 256), and Google Scholar (n = 166) for the publication period 2020–2025. After removing 258 duplicates, 874 unique records proceeded to screening. Of these, 726 studies were excluded for reasons including irrelevance to digital business (n = 394), non–peer-reviewed or non-English content (n = 128), purely technical focus (n = 112), and incomplete abstracts (n = 92).

b) Eligibility Assessment: During the full-text eligibility stage, 148 articles were reviewed, and 130 were excluded due to insufficient business or managerial relevance (n = 49), weak methodological rigor or incomplete data (n = 36), unclear context or sampling (n = 28), duplicate datasets (n = 10), and unverifiable sources (n = 7).

c) Final Inclusion: As a result, 18 high-quality studies meeting all inclusion criteria were selected for synthesis, representing the most comprehensive and methodologically sound works in digital business research between 2020 and 2025.

d) Thematic Synthesis: These 18 studies were analyzed qualitatively through thematic mapping into eight principal clusters: (1) platformization & Ecosystem Logic, (2) Digital Transformation of SMEs, (3) omnichannel & Customer Experience, (4) Data Governance & Privacy, (5) Artificial Intelligence & Automation, (6) Fintech & Payments, (7) Sustainability & Social Impact, and (8) Cross-Border Global Value Chains providing both descriptive patterns and integrative insights into the evolving landscape of global digital business research.

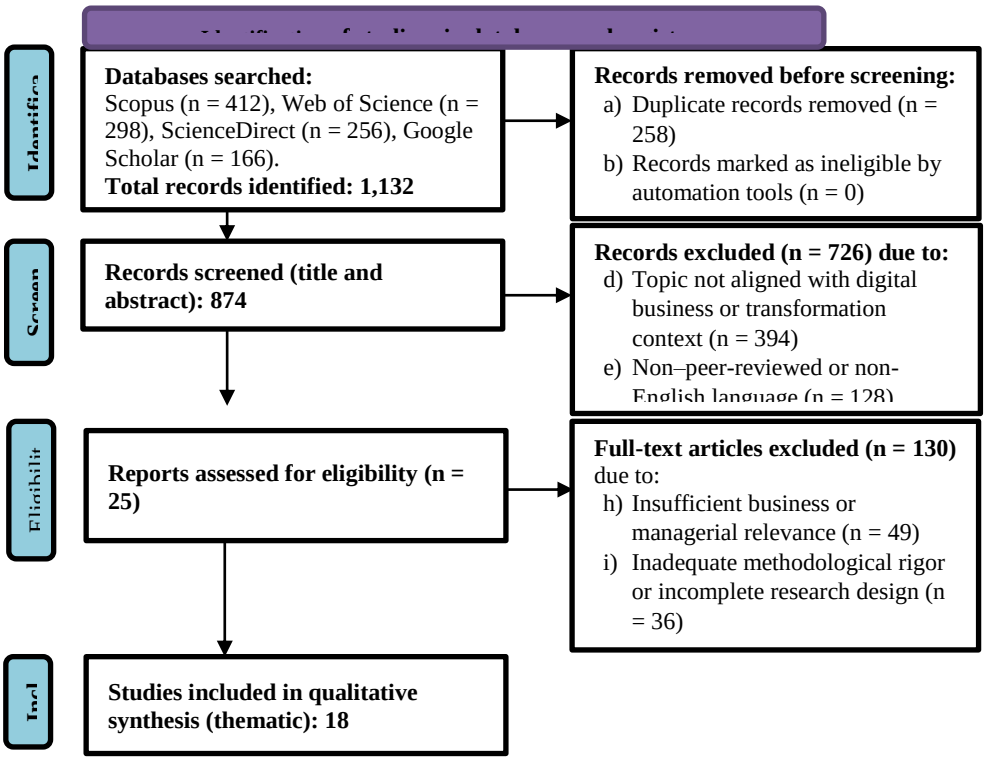

Figure 1. Prisma 2020 Flow

Thematic Analysis

This study employed a thematic analysis approach to synthesize and interpret conceptual and empirical findings from the 18 selected studies through eight main clusters: (1) platformization &

Ecosystem Logic, (2) Digital Transformation of SMEs, (3) omnichannel & Customer Experience, (4) Data Governance & Privacy, (5) Artificial Intelligence, Analytics & Automation, (6) Fintech & Digital Payments, (7) Sustainability & Social Impact, and (8) Cross-Border & Global Value Chains. The analysis followed a three-stage inductive process open, axial, and selective coding to identify recurring patterns, relationships, and theoretical connections among the studies. During open coding, key constructs were extracted from the abstracts, results, and discussions; axial coding grouped similar mechanisms across studies such as governance coordination, transparency, or innovation capability; and selective coding integrated these into overarching thematic narratives. The process allowed articles to be categorized under multiple themes when overlapping phenomena occurred, particularly between AI, data governance, and sustainability. The final coding matrix was refined through iterative reviewer discussion to ensure reliability and conceptual coherence.

Result and Discussion

Overview of Included Studies

Eighteen peer-reviewed studies (2020–2025) met the criteria, spanning conceptual works (e.g., platform/ecosystem logic; app-store governance), quantitative surveys (SME digital transformation; AI in e-commerce), econometric/quasi-experimental designs (GDPR effects; BNPL; open banking; mobile payments), and qualitative/multi-case evidence (digital ecosystems; low-carbon last-mile). The corpus covers multi-industry, retail/e-commerce, financial services, and logistics across global, European (Italy/Spain/EU), Asian (China), and Latin American (Brazil/Singapore) contexts. Collectively, the studies map strongly to platformization, SME transformation, data governance/privacy, AI/analytics, and fintech, with additional but thinner coverage of sustainability and cross-border/global value chains; full article-level details appear in the selection table.

Distribution by Year of Publication

The temporal distribution of the 18 selected studies reflects the rapid evolution of digital business scholarship over the past five years. Early research (2021–2022) focused on conceptual and theoretical development surrounding platforms, ecosystems, and digital retail transformation. The mid-period (2023–2024) marks a methodological shift toward empirical evidence covering AI adoption, SME transformation, data governance, and fintech regulation. The latest surge in 2025 publications captures the intersection of sustainability, cross-border ecosystems, and emerging fintech applications, signaling a growing maturity of digital business as an integrated global research domain.

Table 1. Distribution of Included Studies by Year of Publication

No	Year	Number of Studies	Percentage (%)	Article Codes	Remarks
1	2020	–	–	–	No eligible articles meeting inclusion criteria
2	2021	1	5.6	A4	Conceptual reflection on omnichannel retailing
3	2022	2	11.1	A1, A6	Foundational works on platform logic and AI in e-commerce firms
4	2023	1	5.6	A12	Governance and regulatory focus in app-store policy
5	2024	7	38.9	A2, A5, A9, A13, A14, A15, A7	Empirical expansion into SMEs, AI, fintech, and sustainability domains
6	2025	7	38.9	A3, A8, A10, A11, A16, A17, A18	Emerging evidence on global ecosystems, cross-border digitalisation, and fintech innovation
Total	**–**	**18**	**100**	**A1–A18**	

Vol. 5(No. 2): no. 1 - no 28. Th. 2025
p-ISSN: 2798-1819
e-ISSN: 2798-0819

The distribution pattern reveals a pronounced acceleration of digital business research after 2022, mirroring post-pandemic digital adoption across industries. The clustering of publications in 2024–2025 reflects both heightened academic responsiveness to emerging technologies (AI, open banking, sustainability analytics) and the diversification of research methods, from econometric designs to cross-country comparative analyses. Conceptual studies have evolved into empirically grounded investigations exploring how ecosystems, data governance, and fintech jointly redefine firm performance and value creation in global digital markets. This temporal trajectory underscores a paradigm shift from understanding digital transformation as a technological trend to positioning it as a multidimensional economic, social, and governance phenomenon.

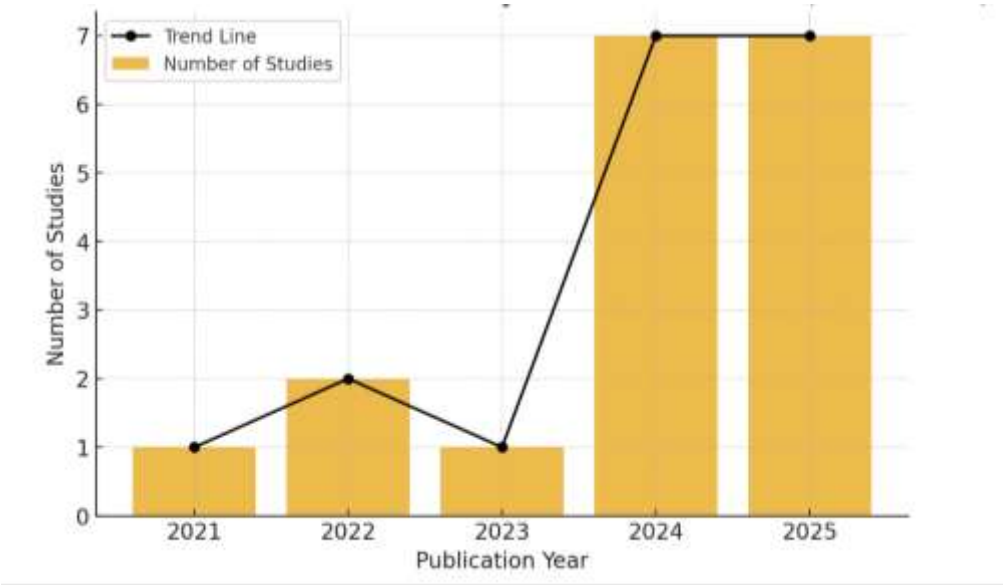

Figure 2. Distribution Studies By Publication Year

Distribution by Country or Research Context

The geographical distribution of the 18 selected studies demonstrates the global character of digital business research, covering both developed and emerging markets. Europe and Asia dominate the dataset, reflecting their advanced digital infrastructures and active policy experimentation in data governance, AI, and fintech. Meanwhile, global and cross-regional studies show growing collaboration across academic and industry contexts. This diversity indicates that digital transformation is no longer concentrated in advanced economies but increasingly extends to developing regions and cross-border ecosystems.

Table 2. Distribution of Included Studies by Country or Context

No	Country / Context	Number of Studies	Percentage (%)	Article Codes	Remarks
1	Global / Cross-industry	6	33.3	A1, A3, A9, A14, A17, A18	Cross-sectoral analyses on platformization, DT, fintech, and sustainability
2	Europe (Multi-country / EU)	3	16.7	A2, A5, A8	Strong focus on GDPR, SMEs, and logistics sustainability
3	China	2	11.1	A6, A15	Studies on AI-driven performance and green innovation
4	United Kingdom / European Union	1	5.6	A10	Open banking and fintech regulation under EU framework
5	Italy	1	5.6	A13	Cross-border e-commerce performance of SMEs

No	Country / Context	Number of Studies	Percentage (%)	Article Codes	Remarks
6	Spain	1	5.6	A2	SME digital transformation and innovation determinants
7	Brazil / Singapore	1	5.6	A18	Mobile payments and fintech ecosystem impacts
8	Multi-country (Retail/Finance)	2	11.1	A4, A7	Studies on omnichannel retailing and BNPL adoption
9	United States / European Union	1	5.6	A12	App store governance and digital platform regulation
Total	–	18	100	A1–A18	

The geographical distribution highlights Europe's leadership in regulatory and governance research, particularly around GDPR compliance, open banking, and platform regulation, indicating mature institutional frameworks for digital innovation. Asia, especially China, contributes strongly to empirical studies linking digital transformation with firm performance and sustainability outcomes, emphasizing innovation-driven growth. Meanwhile, emerging regions such as Brazil and Singapore reflect the expansion of fintech ecosystems in developing economies. Global studies dominate in quantity, underscoring the convergence of digital business themes AI, ecosystems, and sustainability into universal research questions that transcend national boundaries. This pattern signifies a global diffusion of digital transformation knowledge, where policy harmonization, interoperability standards, and sustainable digital ecosystems increasingly require transnational collaboration and comparative perspectives.

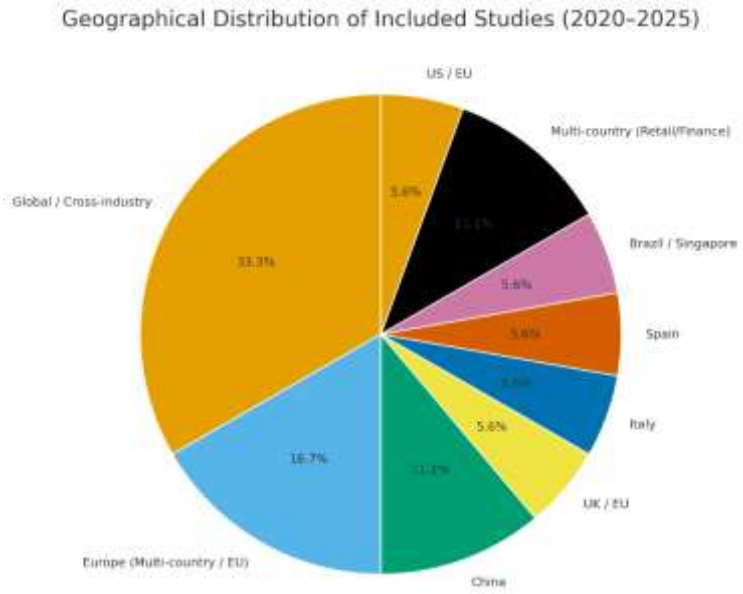

Figure 3. Geographical Distribution of Included Studies

Distribution by Research Method

The methodological distribution of the 18 selected studies reflects the multidimensional nature of digital business research, combining conceptual, quantitative, qualitative, and mixed approaches. This diversity indicates the field's maturity moving from theoretical exploration to robust empirical validation. Quantitative studies dominate, particularly those employing regression, PLS-SEM, and econometric designs to test causal relationships between digital transformation, AI, fintech, and firm

performance. Meanwhile, conceptual and qualitative works contribute to theory-building and contextual understanding, enriching interpretive insights into governance, ecosystems, and sustainability.

Table 3. Distribution of Included Studies by Research Method

No	Method Type	Number of Studies	Percentage (%)	Article Codes	Remarks
1	Conceptual / Theoretical	3	16.7	A1, A4, A12	Foundational frameworks on platforms, omnichannel retailing, and digital governance
2	Quantitative (Survey / Regression / Panel / SEM)	9	50.0	A2, A5, A6, A7, A10, A13, A14, A15, A17	Empirical validation across SMEs, AI, fintech, sustainability, and ESG domains
3	Econometric / Quasi-Experimental	3	16.7	A5, A10, A18	Evidence from open banking, GDPR impact, and mobile payment innovation
4	Qualitative / Case Study	2	11.1	A3, A8	Multi-case explorations of digital ecosystems and sustainable logistics
5	Mixed or Multi-Method	1	5.5	A9	Combined SLR and thematic synthesis on data governance frameworks
Total	–	18	100	A1–A18	

The methodological landscape is predominantly empirical, with half of the studies adopting quantitative or econometric models, signaling a strong shift toward measurement-based inquiry and evidence-driven conclusions. Conceptual papers continue to serve as theoretical anchors, particularly in understanding platform governance and data ecosystems, providing frameworks that empirical studies subsequently operationalize. Qualitative and mixed methods remain valuable for exploring emerging contexts such as sustainability and cross-border logistics where variables are not yet standardized. Overall, the balance between conceptual and empirical research underscores a healthy and evolving discipline where theory and data mutually reinforce one another, advancing the understanding of digital transformation as both a technological and socio-economic phenomenon.

Distribution by Industry Sector

The industrial distribution of the 18 selected studies shows how digital business research spans multiple economic domains, reflecting its interdisciplinary scope. Studies predominantly focus on multi-industry ecosystems, retail and e-commerce, financial services, and manufacturing. This indicates that digital transformation is both pervasive and context-dependent its implementation and outcomes vary according to sectoral structures, customer dynamics, and regulatory intensity.

Table 4. Distribution of Included Studies by Industry Sector

No	Sector	Number of Studies	Percentage (%)	Article Codes	Remarks
1	Multi-Industry / Cross-Sector	6	33.3	A1, A3, A9, A14, A17, A5	Comprehensive focus on platformization, AI, and governance frameworks
2	Retail / E-Commerce	4	22.2	A4, A6, A7, A8	Emphasizes omnichannel integration, AI-driven CX, and sustainable logistics
3	Financial Services / Fintech	4	22.2	A10, A16, A18, A7	Focus on open banking, mobile payments, BNPL, and digital finance innovation

No	Sector	Number of Studies	Percentage (%)	Article Codes	Remarks
4	Micro and Small Sector (Cross-Industry)	2	11.1	A2, A13	Explores SME digital transformation, e-commerce performance, and competitiveness
5	Manufacturing / Industry 4.0	1	5.6	A15	Examines digital transformation effects on green innovation in manufacturing
6	Mobile App Economy / ICT	1	5.6	A12	Addresses governance, app-store policy, and ecosystem fairness
Total	–	18	100	A1–A18	

The sectoral composition underscores that digital transformation research has moved beyond technology-centric perspectives to embrace a system-wide view of industrial modernization. Multi-industry analyses dominate, signifying a growing interest in frameworks that can generalize digital readiness, governance, and performance measurement across sectors. Retail and financial services remain fertile grounds for empirical inquiry due to their heavy reliance on customer data, analytics, and AI-driven personalization. The inclusion of Micro-focused and manufacturing studies highlights how digitalization drives both competitiveness and sustainability outcomes across scales. Collectively, this pattern suggests that digital business has evolved into a universal paradigm, integrating technology, governance, and sustainability as core pillars of industry-wide transformation.

Thematic Analysis

platformization and Ecosystem Logic

This theme explores how firms transition from linear, product-centric operations toward interconnected digital ecosystems characterized by modularity, openness, and co-creation. Across the 18 included studies, eight explicitly address platformization and ecosystem logic, reflecting its centrality in digital transformation discourse. The focus extends from platform governance and API-based integration to SME participation, open banking, and cross-border marketplace dynamics. These studies emphasize that competitive advantage in the digital economy stems not only from technological assets but from the ability to orchestrate value among multiple stakeholders through data sharing, trust mechanisms, and standardized interoperability.

Table 5. Distribution of Studies under the Theme: platformization & Ecosystem Logic

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Platform Governance & Architecture	2	A1, A12	Platforms operate as modular systems with governance rules (APIs, access rights, fairness), shaping innovation and competition.
2	SME Integration into Ecosystems	2	A2, A11	SMEs leverage B2B and e-commerce platforms to access broader markets, build digital capabilities, and foster innovation readiness.
3	Cross-Industry Ecosystem Evolution	1	A3	Traditional industrial networks are restructured into data-driven ecosystems, supported by interoperability and automation tools.
4	omnichannel Platform Models	1	A4	Retail ecosystems converge online and offline experiences through seamless customer journeys and integrated data flows.
5	Open Banking & API Economy	1	A10	Data portability and API openness enable competition and fintech innovation in multi-sided financial ecosystems.
6	Cross-Border Marketplace	1	A13	Marketplaces like Amazon and Alibaba act as catalysts for SME internationalisation and

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
	Ecosystems			digital trade integration.
Total	–	8 Studies	A1, A2, A3, A4, A10, A11, A12, A13	platformization emerges as the strategic core of digital transformation, redefining coordination, governance, and innovation.

The findings indicate that platformization represents the institutional backbone of the digital economy transforming how organizations structure, scale, and sustain value creation. The convergence of themes such as open APIs, SME participation, and cross-border digital trade reveals a maturing ecosystem logic where innovation and data governance intersect. Studies converge on the understanding that digital platforms function as economic infrastructures simultaneously enabling efficiency, inclusiveness, and strategic agility. This evolution signals a paradigm shift: competition now occurs between interconnected ecosystems rather than isolated firms, where governance transparency, data interoperability, and ethical design determine ecosystem health and resilience in the global digital landscape.

Digital Transformation (SMEs)

The theme of *Digital Transformation in Small and Medium Enterprises (SMEs)* examines how digitalization reshapes organizational structures, resource allocation, and strategic positioning for competitiveness and sustainability. Across the corpus, ten studies emphasize how SMEs leverage digital technologies to enhance efficiency, foster innovation, and adapt to platform-based ecosystems. This theme reflects a dual focus: (1) technological readiness and leadership as enablers of transformation, and (2) sustainability, innovation, and performance outcomes as measurable impacts of digital maturity. The analysis reveals that digital transformation among SMEs is not linear but contingent upon cultural readiness, regulatory context, and access to data-driven infrastructures

Table 6. Distribution of Studies under the Theme: Digital Transformation (SMEs)

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Determinants of SME Digital Transformation	2	A2, A3	Leadership, innovation culture, and technology readiness are primary enablers of successful transformation; SMEs' integration into B2B ecosystems drives productivity.
2	IT Innovation and Business Model Evolution	1	A14	Digital transformation fosters IT innovation, analytics capacity, and organizational agility, leading to improved firm performance and sustainability.
3	Green Innovation and Sustainability Outcomes	1	A15	Digital transformation promotes sustainable production and green innovation, demonstrating alignment with ESG goals and circular economy initiatives.
4	Cross-Border and E-Commerce Enablement	2	A11, A13	SMEs use digital platforms and marketplaces to expand international trade and enhance data-driven marketing and logistics.
5	Regulatory and Data Governance Challenges	1	A7	GDPR and data compliance impose constraints on SMEs' digital scaling, underscoring the need for data protection and governance maturity.
6	Innovation Capability and ESG Integration	1	A17	Digital transformation enhances innovation capacity, mediating its impact on environmental, social, and governance (ESG) performance.
7	Automation and AI Adoption in SMEs	1	A8	AI and analytics tools enable process optimization, predictive decision-making, and

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
				customer engagement improvements among SMEs.
Total	–	8 Studies	A2, A3, A7, A8, A11, A13, A14, A15, A17	Digital transformation strengthens SME competitiveness through innovation, ecosystem participation, and sustainable practices.

The synthesis shows that digital transformation serves as a strategic bridge connecting technological advancement, sustainability, and competitiveness for SMEs. Empirical evidence confirms that leadership, innovation culture, and IT infrastructure determine transformation success. However, the journey is uneven while digital tools foster agility and cross-border expansion, smaller firms often struggle with regulatory compliance, cybersecurity, and data governance. Studies like Romero & Mammadov (2024) and Billi & Bernardo (2025) highlight how digital transformation catalyzes new business models and fosters inclusive innovation ecosystems. Furthermore, sustainability-oriented transformations exemplified in Huang & Lau (2024) and Zhou (2025) demonstrate that SMEs are increasingly aligning digital initiatives with ESG frameworks. Collectively, this body of work underscores that digital transformation in SMEs is both a technological and socio-organizational evolution, demanding continuous adaptation, capability building, and ecosystem collaboration for enduring digital resilience.

Omnichannel and Customer Experience

The omnichannel and Customer Experience theme focuses on how digital transformation reshapes the interaction between firms and consumers across physical and digital touchpoints. This theme bridges marketing, technology, and analytics showing how firms integrate online platforms, mobile applications, and physical outlets into a seamless experience. The selected studies reveal that omnichannel excellence requires both technological integration (e.g., unified data and AI-driven personalization) and organizational adaptation (e.g., culture of customer centricity, agile service design). Firms that successfully manage omnichannel ecosystems achieve greater customer engagement, loyalty, and performance outcomes.

Table 7. Distribution of Studies under the Theme: omnichannel and Customer Experience

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Omnichannel Retail Integration	2	A4, A8	Retail and logistics firms employ integrated systems (online, in-store, and delivery) to reduce friction, improve convenience, and minimize failed deliveries.
2	Customer Journey and Experience Design	1	A6	AI-driven decision-making enhances personalization, service quality, and real-time response to consumer preferences.
3	Checkout Experience and Fintech Integration	1	A7	Fintech tools such as “Buy Now, Pay Later” improve conversion and spending by enhancing payment convenience and customer trust.
4	Sustainable omnichannel Logistics	1	A8	Low-carbon delivery and fulfillment innovation (e.g., lockers, microhubs) strengthen brand responsibility and customer satisfaction.
5	Platform-Based Service Personalization	1	A3	Multi-actor digital ecosystems create new service interfaces, data sharing, and personalized offerings in both manufacturing and service industries.
Total	–	5 Studies	A3, A4, A6, A7, A8	Demonstrates the convergence of technology, data analytics, and sustainability in shaping the omnichannel customer experience.

The synthesis underscores that *omnichannel transformation* is a central driver of customer engagement in the digital era. The studies collectively demonstrate that firms moving toward omnichannel integration achieve competitive differentiation through consistent brand experience, personalization, and service innovation (Roshni, 2024, Sutrisno, 2024). AI technologies (as shown by Chen et al., 2022) and fintech solutions (as in Kumar et al., 2024) extend the scope of customer interaction by embedding predictive analytics and seamless payment systems into the user journey. Meanwhile, Verhoef (2021) and González-Romero et al. (2025) highlight that omnichannel ecosystems also require responsible governance balancing data privacy, operational sustainability, and service accessibility. Together, these findings reveal a multidimensional paradigm: omnichannel success is no longer limited to marketing integration but represents an organizational capability that combines digital infrastructure, ethical data use, and customer-centered innovation to sustain loyalty and profitability in platform-driven markets.

Data Governance and Privacy

The *Data Governance and Privacy* theme explores how organizations develop structured frameworks to manage data ownership, access, quality, and compliance in the digital era. Within the selected studies, this theme is addressed across different contexts from the implications of privacy regulations such as GDPR and Open Banking, to the design of trust-based data ecosystems. Data governance emerges not only as a compliance requirement but also as a *strategic enabler* of innovation, interoperability, and ecosystem resilience. The discussion across studies emphasizes that transparent governance, ethical data usage, and interoperability standards are fundamental to maintaining trust among digital stakeholders.

Table 8. Distribution of Studies under the Theme: Data Governance & Privacy

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Privacy Regulation and Compliance	2	A5, A10	GDPR and Open Banking frameworks transform how firms handle data access, consent, and API sharing, balancing innovation with consumer protection.
2	Data Governance Frameworks and Quality Management	1	A9	Proposes integrated governance models focusing on data ownership, stewardship, and quality as innovation drivers across industries.
3	Ethics, Transparency, and Trust	1	A12	Examines governance challenges in digital platforms and app stores, emphasizing transparency, accountability, and fairness in data policies.
4	SME Readiness and Data Maturity	1	A2	Highlights limited governance capabilities among SMEs, suggesting pragmatic roadmaps for improving compliance and data-driven innovation.
Total	–	5 Studies	A2, A5, A9, A10, A12	Data governance and privacy evolve from compliance mechanisms into strategic frameworks that underpin innovation, trust, and cross-sector collaboration.

The synthesis reveals that *data governance and privacy* constitute the backbone of trustworthy digital transformation. Regulatory frameworks such as GDPR and Open Banking (A5, A10) redefine how organizations exchange and secure information, shifting the focus from mere compliance to data empowerment through standardized interfaces and auditable access control. Conceptual and empirical contributions from Bernardo et al. (2024) and Cowls et al. (2023) reinforce the necessity for transparent, ethical data management to sustain innovation ecosystems while mitigating risks of bias, misuse, and concentration of platform power. SMEs, as noted by Romero & Mammadov (2024), face structural limitations in governance capacity, making collaborative or shared governance models

increasingly vital. Collectively, the findings affirm that in the digital economy, *data governance is both an economic and ethical imperative* balancing privacy, innovation, and societal trust to ensure equitable participation in interconnected digital ecosystems.

Artificial Intelligence, Analytics, and Automation

The *Artificial Intelligence (AI), Analytics, and Automation* theme represents one of the most dominant threads across the 18 selected studies, capturing how firms harness intelligent technologies to enhance performance, efficiency, and innovation. This theme connects strategic management with data science revealing how predictive models, machine learning, and robotic automation create measurable business value. The included studies emphasize that AI adoption is not purely technological but also organizational and ethical, requiring robust governance, data quality, and continuous human oversight. Together, these findings show that the integration of AI and automation reshapes business logic across retail, manufacturing, finance, and logistics sectors, transforming them into adaptive, data-driven ecosystems

Table 9. Distribution of Studies under the Theme: Artificial Intelligence, Analytics, and Automation

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	AI-Driven Firm Performance and Innovation	2	A6, A14	AI and analytics enhance firm performance through improved decision-making, innovation culture, and real-time responsiveness.
2	Automation and Operational Efficiency	2	A3, A8	Automation technologies streamline logistics and production processes, integrating ecosystem actors and reducing coordination costs.
3	Predictive Analytics and Customer Modelling	1	A7	Predictive and risk-based analytics in BNPL and retail improve customer targeting, spending behavior, and fraud management.
4	Analytics as a Mediator of ESG and Sustainability	1	A17	Analytical capability bridges digital transformation with sustainability outcomes, linking data intelligence to ESG performance.
5	AI-Enabled Data Ecosystems and Governance	2	A9, A10	Open Banking APIs and data quality frameworks underpin AI trustworthiness and interoperability across digital ecosystems.
6	AI for Green and Responsible Innovation	1	A15	Digital and AI transformation enhance green innovation quality and sustainable production efficiency in manufacturing sectors.
7	Cross-Sector Adoption of Intelligent Systems	1	A16	Financial institutions employ automation and AI to boost profitability, optimize operations, and manage digital risks.
Total	–	9 Studies	A3, A6, A7, A8, A9, A10, A14, A15, A16, A17	AI, analytics, and automation constitute the technological core of digital business driving innovation, intelligence, and efficiency across global ecosystems.

The thematic synthesis demonstrates that *AI, analytics, and automation* collectively form the technological nucleus of digital transformation, shaping competitiveness across industries. The research corpus illustrates a progression from early conceptual work to sophisticated, data-driven empirical models that measure AI's impact on firm performance and sustainability. For instance, Chen et al. (2022) highlight AI's influence on creativity and productivity, while Billi & Bernardo (2025) link digital transformation and IT innovation to firm performance. Kumar et al. (2024) and Tong (2025) showcase automation's tangible impact on consumer finance and operational

profitability. Additionally, Zhou (2025) and Huang & Lau (2024) demonstrate that analytics foster ESG alignment and sustainable innovation, marking a shift toward responsible AI. Collectively, these studies suggest that successful AI integration depends on data governance maturity, ethical oversight, and cross-sector interoperability, reinforcing that automation and analytics are no longer support tools but strategic levers for agility, inclusiveness, and sustainable competitive advantage in the digital economy.

Fintech and Digital Payments

The *Fintech and Digital Payments* theme highlights the profound transformation in financial systems and business models driven by technological innovation, particularly through open banking, mobile payments, and embedded financial services. Among the 18 selected studies, this theme recurs frequently, linking financial inclusion, firm performance, and technological innovation. The literature emphasizes how fintech-enabled solutions reshape value creation by improving accessibility, transparency, and efficiency in transactions, while simultaneously introducing challenges related to regulation, interoperability, and consumer protection. The focus extends from the micro-level (firm profitability and consumer behavior) to the macro-level (ecosystem innovation and policy frameworks), underscoring fintech's central role in the evolution of digital economies.

Table 10. Distribution of Studies under the Theme: Fintech and Digital Payments

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Open Banking and API Innovation	1	A10	Open Banking enables multi-sided market competition, improves SME credit access, and drives fintech entry by expanding data-sharing ecosystems.
2	BNPL and Consumer Behavior	1	A7	"Buy Now, Pay Later" solutions increase customer spending and conversion, highlighting how fintech reshapes retail experience and risk management.
3	Mobile Payments and Firm Creation	1	A18	Mobile payment innovation (in Singapore & Brazil) stimulates firm creation and local entrepreneurship, showing fintech's macroeconomic spillover effects.
4	Fintech and Bank Profitability	1	A16	Fintech integration enhances operational efficiency and profitability in banking, yet introduces competition and disruption across traditional financial systems.
5	Embedded Finance and Ecosystem Integration	1	A2	SMEs collaborate with fintech providers for payment integration, enhancing digital readiness and enabling participation in platform ecosystems.
6	Payment Infrastructure and Interoperability	1	A3	API-based payment systems strengthen cross-industry connectivity and support seamless digital trade.
Total	–	6 Studies	A2, A3, A7, A10, A16, A18	Fintech and digital payments function as both technological enablers and economic equalizers, fostering inclusion, innovation, and ecosystem resilience.

The analysis demonstrates that *Fintech and Digital Payments* are at the core of contemporary digital transformation, acting as catalysts for financial inclusion and industrial modernization. Studies such as Babina et al. (2025) and Tong et al. (2025) empirically validate the transformative impact of fintech innovations from enabling SME financing through Open Banking to fostering entrepreneurial activity via mobile payments. Similarly, Kumar et al. (2024) illustrates how BNPL solutions reshape consumer spending behavior while presenting regulatory and ethical concerns about credit risk. The

works of Romero & Mammadov (2024) and Tan (2025) reveal that payment interoperability and embedded financial systems enhance SMEs' integration into digital ecosystems, bridging economic and technological divides. Collectively, these studies suggest that fintech is no longer a standalone financial innovation but a structural component of digital ecosystems, blending payments, data analytics, and trust mechanisms to enable inclusive and sustainable growth. The intersection between regulation, data governance, and financial innovation will thus define the next frontier of digital transformation where efficiency, accessibility, and fairness must coexist within an increasingly automated and data-driven economy.

Sustainability and Social Impact

The *Sustainability and Social Impact* theme reflects the growing recognition that digital transformation must align not only with economic goals but also with environmental stewardship and social equity. Within the 18 included studies, sustainability emerges as a multidimensional construct integrating digital efficiency, environmental performance, and ethical governance. This theme captures how digital tools such as AI, data analytics, and green innovation systems contribute to carbon reduction, circular economy practices, and inclusive participation in digital ecosystems. The literature underscores that sustainability has evolved from a peripheral concern into a strategic imperative embedded within digital transformation frameworks.

Table 11. Distribution of Studies under the Theme: Sustainability and Social Impact

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Green Innovation and Environmental Performance	2	A15, A17	Digital transformation fosters green innovation quality and ESG performance, linking technological capability with sustainable competitiveness.
2	Low-Carbon Logistics and Circular Operations	1	A8	Platform-based coordination in e-commerce logistics reduces carbon emissions through last-mile optimization and resource efficiency.
3	Sustainability-Oriented Digital Transformation	1	A14	Firms integrating sustainability strategies into digital transformation achieve superior performance and stakeholder trust.
4	Ethical and Inclusive Digital Ecosystems	1	A1	Open ecosystem models encourage social inclusion, transparency, and equitable access to digital opportunities.
5	Data Governance and Societal Trust	1	A9	Data governance contributes to responsible innovation by ensuring ethical use, transparency, and accountability in data-driven systems.
6	Financial Inclusion and Social Empowerment through Fintech	1	A18	Mobile payment innovations promote entrepreneurship and social participation in developing economies.
Total	–	6 Studies	A1, A8, A9, A14, A15, A17, A18	Sustainability is increasingly integrated into digital business strategies, merging ecological efficiency with ethical, inclusive innovation.

The synthesis highlights that *sustainability and social impact* have become integral dimensions of digital transformation research, emphasizing the convergence of technology, governance, and ethics. Studies such as Huang & Lau (2024) and Zhou (2025) demonstrate empirically that digital transformation directly enhances green innovation and ESG outcomes, affirming the synergy between environmental responsibility and economic performance. Meanwhile, González-Romero et al. (2025) provide evidence of sustainable logistics practices enabled by data analytics, while Billi & Bernardo (2025) show that firms embedding sustainability principles into their digital strategies experience

long-term resilience and stakeholder legitimacy. Conceptual contributions like Gawer (2022) and Bernardo et al. (2024) extend this logic to ecosystem governance, emphasizing fairness, inclusion, and ethical data use. Collectively, these studies converge on a crucial insight: sustainability in the digital economy is *not an external goal* but *a systemic outcome* of responsible innovation, transparent governance, and inclusive design. Thus, digital business models that balance technological advancement with societal well-being will define the next stage of competitive advantage and global digital equity.

Cross-Border and Global Value Chains (GVCs)

The *Cross-Border and Global Value Chains (GVCs)* theme underscores the transformative impact of digitalization, platformization, and data governance on the internationalization of firms particularly SMEs within interconnected global markets. Across the selected 18 studies, several highlight how digital technologies, e-commerce platforms, and open data infrastructures reduce trade barriers and enhance the participation of smaller firms in global trade networks. The research emphasizes that cross-border operations increasingly rely on interoperability standards, regulatory harmonization, and digital infrastructure alignment, suggesting that competitiveness in global value chains now depends as much on digital readiness as on traditional trade capabilities.

Table 12. Distribution of Studies under the Theme: Cross-Border and Global Value Chains

No	Sub-Theme	Number of Studies	Article Codes	Key Insights
1	Digital Platforms and International Ecosystems	2	A1, A3	Digital ecosystems enable cross-border interoperability, supporting SMEs' integration into multi-jurisdiction trade environments.
2	SME Internationalisation through E-Commerce	2	A11, A13	E-commerce platforms serve as export gateways, helping SMEs overcome resource and institutional constraints in international trade.
3	Cross-Border Data Flows and Regulation	2	A5, A10	Data governance and privacy regulations (GDPR, Open Banking) affect firms' ability to share data globally, influencing competitiveness and compliance costs.
4	Digital Logistics and Supply Chain Integration	1	A8	Cross-border logistics digitalization reduces inefficiencies, yet faces challenges due to customs and interoperability differences.
5	Global Sustainability Standards and ESG Alignment	1	A17	ESG-driven performance metrics are increasingly harmonized across markets, linking digital innovation to sustainable trade practices.
Total	–	8 Studies	A1, A3, A5, A8, A10, A11, A13, A17	Digital trade integration reshapes global value chains, driven by platforms, data interoperability, and sustainability-oriented innovation.

The thematic synthesis reveals that *cross-border integration and global value chain (GVC)* participation are central to digital economy evolution. Studies such as Annabelle Gawer (2022) and Benjamin Tan (2025) highlight how digital platforms function as global connectors, enabling SMEs to participate in multi-sided ecosystems that transcend national boundaries. Temouri et al. (2025) and Dallocchio et al. (2024) empirically demonstrate that e-commerce platforms like Amazon and Alibaba facilitate international SME expansion by offering standardized digital interfaces and logistics integration, effectively democratizing global trade. On the regulatory front, Economic Inquiry (2024) and Babina et al. (2025) show that GDPR and Open Banking reshape cross-border data flow dynamics, balancing privacy protection with market competition. González-Romero et al. (2025)

emphasize the logistical implications of cross-border e-commerce, identifying technological and environmental constraints in international delivery systems. Finally, Zhou (2025) connects digital transformation with ESG performance, signaling an emerging alignment between sustainability and global competitiveness. Together, these studies illustrate a paradigm shift: global trade no longer depends solely on physical supply chains but increasingly on *digital connectivity, data governance, and sustainability alignment*. As a result, firms that can synchronize technological, regulatory, and ethical dimensions of globalization will lead the next generation of integrated digital value chains.

Research Gaps and Future Research Agenda

The synthesis of 18 selected studies reveals significant progress in the understanding of digital business transformation, yet several conceptual and empirical gaps remain. Current research often emphasizes descriptive mapping of digital adoption, but lacks longitudinal, cross-sectoral, and cross-border validation of economic and sustainability outcomes. Moreover, the intersection between *data value, AI-generated productivity, ecosystem governance, and regulatory harmonization* remains underexplored. To advance scholarly and managerial insight, the following research agendas are proposed:

Table 13. Identified Research Gaps and Future Research Directions

No	Emerging Research Theme	Description of Research Gap	Future Research Agenda
1	Economic Value of Data and ROI of Generative AI	Most studies measure digital transformation performance qualitatively, neglecting data monetization and ROI models for generative AI.	Develop quantitative valuation frameworks to assess the economic contribution of data assets and generative AI within digital business models, integrating accounting, productivity, and innovation metrics.
2	Ecosystem Governance Standardization (API and Data Rights)	Variability in API openness and data-sharing policies across platforms creates interoperability and fairness issues.	Design comparative governance models for API ecosystems, emphasizing transparency, equitable data rights, and cross-platform accountability mechanisms.
3	SME Readiness in Developing Economies under Cross-Border Privacy Regulations	Limited evidence exists on how SMEs in developing regions adapt to international privacy and data localization laws.	Conduct mixed-method studies to assess digital maturity, regulatory compliance, and adaptive strategies of SMEs under evolving privacy frameworks such as GDPR, CPRA, and PDPA.
4	Quantifying Digital Sustainability Impact	Sustainability outcomes of digital business remain largely normative, with few standardized indicators.	Establish quantitative sustainability metrics (e.g., CO_2e per digital transaction, Digital Inclusion Index, Energy Intensity of Data Use) to measure the environmental and social footprint of digital ecosystems.
5	Cross-Border Payment Systems and Digital Taxation in Global Value Chains	Fragmented payment infrastructures and inconsistent digital tax regimes hinder trade efficiency.	Explore policy and system-level integration of cross-border payment networks and harmonized digital taxation frameworks to strengthen global digital trade participation.

These research gaps highlight the evolving frontier of digital business scholarship shifting from technological adoption to governance, measurement, and ethical alignment. Future inquiry must integrate *economics, data science, and sustainability* into unified frameworks capable of quantifying the tangible and intangible value of digital ecosystems. There is a pressing need for multi-country, multi-sector empirical designs to capture the systemic nature of digital transformation, particularly in developing economies where institutional readiness and policy harmonization lag behind technological diffusion. Addressing these agendas will not only refine theoretical models of digital

business performance but also guide policymakers and industry leaders toward responsible, measurable, and inclusive digital transformation that advances both economic and societal well-being.

Discussion

The evolution of digital business from 2020 to 2025 demonstrates a clear shift from isolated technological adoption to *integrated ecosystem orchestration*. This transformation, reflected across multiple sectors and regions, underscores how platforms, data, and algorithms now serve as the fundamental building blocks of competitive advantage. As argued by Gawer (2022), digital platforms represent modular governance architectures where openness, interoperability, and coordination replace traditional hierarchical control. These findings are reinforced by Tan (2025), who observed that ecosystem orchestration in manufacturing and service industries increasingly depends on platform-based interoperability and shared data infrastructures. Similarly, Romero and Mammadov (2024) highlight that SMEs embedded within platform ecosystems demonstrate enhanced innovation capacity and cross-market agility, proving that digital transformation is both a technological and relational process. The conceptual synthesis between these works establishes that the new digital economy is organized less around firm boundaries and more around collaborative, data-driven networks that thrive on trust and scalability.

The second dominant discourse concerns the *digital transformation of SMEs* and their adaptation to the global platform economy. Evidence from Romero and Mammadov (2024), Temouri et al. (2025), and Dallocchio et al. (2024) collectively illustrates how SMEs leverage e-commerce, marketplaces, and B2B platforms to overcome traditional market entry barriers. However, this transformation is contingent upon the development of digital leadership, data management capabilities, and organizational agility, as also discussed by Billi and Bernardo (2025). Their findings indicate that SMEs capable of aligning IT innovation with strategic objectives achieve higher financial and sustainability outcomes. Likewise, Huang and Lau (2024) demonstrate that digital transformation enhances *green innovation quality* and environmental performance, bridging the gap between digitalization and sustainability. Nevertheless, challenges persist, particularly for SMEs in developing economies facing high regulatory and infrastructural barriers. These insights underline the necessity for differentiated policy frameworks that support SME digital maturity, data protection readiness, and ecosystem participation in diverse regulatory contexts.

A third cluster of research anchored by Verhoef (2021), Chen et al. (2022), Kumar et al. (2024), and González-Romero et al. (2025) centers on *omnichannel integration and customer experience*. These studies collectively reveal that customer engagement now depends on seamless interaction across online, mobile, and physical channels supported by real-time analytics. Chen et al. (2022) found that AI-driven decision-making enhances personalization and predictive accuracy, while Kumar et al. (2024) established that fintech-enabled payment methods such as *Buy Now, Pay Later (BNPL)* significantly boost conversion and retention rates. Meanwhile, González-Romero et al. (2025) contribute an environmental dimension by linking omnichannel logistics optimization to carbon reduction, thereby connecting customer experience design to sustainability goals. Such findings converge on a key insight: the digital customer experience is no longer limited to interaction quality but also involves ethical considerations privacy, environmental responsibility, and data transparency that shape consumer trust and brand legitimacy in digital ecosystems.

Another prominent area of synthesis involves *data governance and privacy*, which serve as both enablers and constraints of digital transformation. The works of Bernardo et al. (2024), Cowls et al. (2023), and Babina et al. (2025) underscore that the capacity to generate value from data is inseparable from the ability to govern it responsibly. Bernardo et al. (2024) propose a structured framework for data stewardship and quality assurance, while Cowls et al. (2023) analyze the regulatory complexities of app-store governance, exposing power asymmetries and the need for transparency. In turn, Babina et al. (2025) provide econometric evidence showing how Open Banking enhances financial inclusion by enabling data portability across firms. Similarly, Economic Inquiry (2024) empirically estimates the economic cost of GDPR compliance, revealing that data regulation while essential for consumer trust can hinder profitability, especially among smaller firms. Collectively, these studies affirm that ethical and standardized data governance frameworks are the

cornerstone of sustainable digital business growth, particularly as firms operate across multiple regulatory jurisdictions.

Artificial intelligence (AI), analytics, and automation constitute the technological engine that propels modern digital ecosystems. Studies by Chen et al. (2022), Tan (2025), Kumar et al. (2024), Zhou (2025), and Tong (2025) demonstrate how AI technologies reshape organizational decision-making and value creation processes. Zhou (2025) shows that analytics capabilities mediate the relationship between digital transformation and *ESG performance*, reinforcing the link between innovation and sustainability. Similarly, Tong (2025) provides evidence that fintech-driven automation enhances bank profitability, while Billi and Bernardo (2025) confirm that IT innovation acts as a mediator between digital transformation and firm performance. These works collectively reveal that AI and automation are no longer peripheral tools but *strategic capabilities* embedded into every stage of digital value chains. However, as noted by Bernardo et al. (2024), effective governance of these intelligent systems depends on data integrity, algorithmic fairness, and transparency conditions that are not yet consistently met in global digital practice. This underscores a new frontier of research and managerial challenge: ensuring *responsible AI* that balances efficiency with accountability.

Finally, sustainability and global connectivity emerge as defining pillars of the digital era. Studies such as Huang and Lau (2024), González-Romero et al. (2025), and Zhou (2025) connect sustainability metrics such as emission reduction and ESG alignment with digital transformation outcomes. Gawer (2022) and Tan (2025) expand this discussion by conceptualizing how platform ecosystems foster cross-border trade integration and inclusive participation in *Global Value Chains (GVCs)*. Meanwhile, Temouri et al. (2025) and Dallocchio et al. (2024) empirically show that e-commerce and marketplaces function as internationalization accelerators for SMEs, democratizing access to global trade. Collectively, these insights reveal that digital transformation has entered a phase of *geo-economic interdependence* where technological innovation, data governance, and sustainability converge to redefine competitiveness. Yet, as highlighted in the research gaps (Section 3.3), unresolved issues remain regarding the quantification of data value, generative AI's return on investment, and cross-border regulatory harmonization. Addressing these challenges through interdisciplinary and policy-integrated research will be vital to shaping an equitable and sustainable global digital economy.

In line with the study's objective, these findings collectively demonstrate that digital business transformation is no longer driven by standalone technologies but by the orchestration of platforms, data, and intelligent systems across organizational and national boundaries. The eight thematic clusters identified in this review provide an integrated explanation of how firms, particularly SMEs, navigate digital ecosystems to achieve competitiveness, sustainability, and global connectivity. By explicitly linking digital transformation to ecosystem governance, responsible data use, and AI-enabled value creation, this study offers a coherent framework that helps scholars, managers, and policymakers understand the strategic direction of digital business in the post-2020 era.

Conclusion

This study systematically reviewed and synthesized 18 peer-reviewed publications on digital business research from 2020 to 2025, encompassing diverse themes such as platformization and ecosystem logic, digital transformation of SMEs, omnichannel experience, data governance, artificial intelligence, fintech, sustainability, and cross-border digital integration. The findings reveal that digital transformation has evolved beyond mere technology adoption into a multidimensional process involving strategic alignment, data ethics, and ecosystem collaboration. Platform-based business models and API-driven integration emerge as dominant mechanisms enabling scalability and value co-creation, while data governance and AI analytics function as key enablers of intelligent decision-making and operational efficiency. However, disparities in digital readiness, regulatory harmonization, and sustainable practices remain significant barriers, particularly for SMEs and

developing economies. The review also highlights the need for unified measurement frameworks linking digital innovation, environmental sustainability, and governance performance to better understand the economic and societal impacts of digital transformation in the post-pandemic era.

Recommendations

Future research should prioritize interdisciplinary approaches that integrate technological innovation with organizational behavior, regulatory policy, and sustainability perspectives. Scholars are encouraged to develop robust models for quantifying the economic value of data and the return on investment (ROI) of AI-driven systems within digital business ecosystems. Moreover, there is a growing need to establish standardized governance frameworks for data sharing and ecosystem interoperability, particularly under evolving privacy regulations and cross-border trade conditions. For policymakers, fostering SME readiness through digital upskilling, financial incentives, and open-data infrastructure is critical to bridging the global digital divide. Practitioners, meanwhile, should focus on embedding responsible AI, green IT, and inclusive business models that ensure both economic viability and social impact creating a digitally empowered, sustainable, and equitable global business environment.

Reference

Agarwal, S., Ghosh, P., Hsieh, C.-T., & Tong, A. (2025). The real impact of FinTech: Evidence from mobile payment innovation in Singapore and Brazil. Management Science, 71(2), 689–713. https://doi.org/10.1287/mnsc.2023.03947

Ahmad, H. H. (2025). Fintech as an Innovative Strategy: Sustainable Solutions in the Modern Business Ecosystem. Journal of Advanced Research in Business and Management Studies, 39(1), 228-242.

Alam, M. N. (2025). Can Green AI Get-up-and-go Sustainable Transformation in the Fintech Division?. Journal of Excellence in Management Sciences, 4(2), 1-19.

Arner, D. W., Buckley, R. P., Charamba, K., Sergeev, A., & Zetzsche, D. A. (2022). Bigtech and platform finance: Governing fintech 4.0 for sustainable development. Fordham Journal of Corporate and Financial Law.

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. European Business Organization Law Review, 21(1), 7-35.

Arner, D., Buckley, R., Charamba, K., Sergeev, A., & Zetzsche, D. (2022). Governing FinTech 4.0: BigTech, platform finance, and sustainable development. Fordham J. Corp. & Fin. L., 27, 1.

Babina, T., Bahaj, S., Buchak, G., De Marco, F., Foulis, A., Gornall, W., & Yu, T. (2025). Customer data access and fintech entry: Early evidence from Open Banking. Journal of Financial Economics, in press. https://doi.org/10.1016/j.jfineco.2024.103950

Barile, D., Secundo, G., & Del Vecchio, P. (2025). An artificial intelligence-based innovation ecosystem enabling open innovation and sustainable growth: evidence from a case study. Innovation, 1-23.

Bernardo, B. M. V., São Mamede, H., Barroso, J. M. P., & Santos, V. (2024). Data governance & quality management: Innovation and breakthroughs across different fields. Journal of Innovation & Knowledge, 9(4), Article 100598. https://doi.org/10.1016/j.jik.2024.100598

Billi, A., & Bernardo, A. (2025). The effects of digital transformation, IT innovation, and sustainability strategies on firms' performances: An empirical study. Sustainability, 17(3), 823. https://doi.org/10.3390/su17030823

Cao, L., Yang, Q., & Yu, P. S. (2021). Data science and AI in FinTech: An overview. International Journal of Data Science and Analytics, 12(2), 81-99.

Chen, D., Esperança, J. P., & Wang, S. (2022). The impact of artificial intelligence on firm performance: An application of the resource-based view to e-commerce firms. Frontiers in Psychology, 13, Article 884830. https://doi.org/10.3389/fpsyg.2022.884830

Cowls, J., Morley, J., Taddeo, M., & Floridi, L. (2023). App store governance: Implications, limitations and policy options. Telecommunications Policy, 47(1), Article 102760. https://doi.org/10.1016/j.telpol.2022.102760

Dallocchio, M., Fazio, A., Ghezzi, A., & Renga, F. M. (2024). The role of digitalization in cross-border e-commerce performance of Italian SMEs. Sustainability, 16(2), 508. https://doi.org/10.3390/su16020508

Darwish, D. (2023). Blockchain and artificial intelligence for business transformation toward sustainability. In Blockchain and its Applications in Industry 4.0 (pp. 211-255). Singapore: Springer Nature Singapore.

Elias, O., Awotunde, O. J., Oladepo, O. I., Azuikpe, P. F., Samson, O. A., Oladele, O. R., & Ogunruku, O. O. (2024). The evolution of green fintech: Leveraging AI and IoT for sustainable financial services and smart contract implementation. World Journal of Advanced Research and Reviews, 23(1), 2710-2723.

Frey, C. B., & Presidente, G. (2024). Privacy regulation and firm performance: Estimating the GDPR effect globally. Economic Inquiry, 62(3), 1074-1089. https://doi.org/10.1111/ecin.13213

Gawer, A. (2022). Digital platforms and ecosystems: Remarks on the dominant logic. Innovation: Organization & Management, 24(2), 133-149. https://doi.org/10.1080/14479338.2021.1965888

González-Romero, I., et al. (2025). Decarbonizing the last mile: Innovations from an online retailer perspective. Transportation Research Part D: Transport & Environment, 108, 103503. https://doi.org/10.1016/j.trd.2025.103503

Gupta, D. S. (2025). Sustainable Digital Banking: Exploring The Role of Fintech in Promoting Green Finance and Sustainable Development Goals. Journal of Information Systems Engineering and Management, 10(3).

Huang, Y., & Lau, C.-W. (2024). Can digital transformation promote the green innovation quality of enterprises? Empirical evidence from China. PLOS ONE, 19(3), e0296058. https://doi.org/10.1371/journal.pone.0296058

J. Nair, A., Manohar, S., & Mittal, A. (2025). AI-enabled FinTech for innovative sustainability: promoting organizational sustainability practices in digital accounting and finance. International Journal of Accounting & Information Management, 33(2), 287-312.

Khan, S., Katoch, R., & Mahendru, D. (2025). Blockchain and FinTech Synergies: Driving Sustainability in the Blue Economy. In FinTech for Sustainable Finance and a Well-Blue Economy (pp. 171-195). Cham: Springer Nature Switzerland.

Kumar, A., et al. (2024). The effects of buy now, pay later (BNPL) on customers' spending. Journal of Retailing, 100(2), 123-145. https://doi.org/10.1016/j.jretai.2024.02.014

Lăzăroiu, G., Bogdan, M., Geamănu, M., Hurloiu, L., Luminița, L., & Ștefănescu, R. (2023). Artificial intelligence algorithms and cloud computing technologies in blockchain-based fintech management. Oeconomia Copernicana, 14(3), 707-730.

Lu, L. (2024). The Law of Fintech: How Artificial Intelligence and Innovative Technologies Contribute to a Sustainable Financial Industry and Its Effective Regulation. In Artificial Intelligence, Finance, and Sustainability: Economic, Ecological, and Ethical Implications (pp. 243-263). Cham: Springer Nature Switzerland.

Manta, O., Vasile, V., & Rusu, E. (2025). Banking Transformation Through FinTech and the Integration of Artificial Intelligence in Payments. FinTech, 4(2), 13.

Quintiliani, A. (2025). Small and medium-sized enterprises and sustainable transition: Role of FinTech in a country's banking ecosystem. Research in International Business and Finance, 73, 102625.

Rahardja, U., Miftah, M., Rakhmansyah, M., & Zanubiya, J. (2025). Revolutionizing financial services with big data and fintech: A scalable approach to innovation. ADI Journal on Recent Innovation, 6(2), 118-129.

Romero, I., & Mammadov, H. (2024). Digital transformation of small and medium-sized enterprises as an innovation process: A holistic study of its determinants. Journal of the Knowledge Economy, 16, 8496–8523. https://doi.org/10.1007/s13132-024-02217-z

Roshni, R., & Nattassha, R. (2024). Pengaruh Media Sosial Instagram terhadap Brand Awareness Blu by BCA Digital di Kalangan Mahasiswa Universitas Bunda Mulia. Digismantech (Jurnal Program Studi Bisnis Digital), 4(1).

Shakil, M., Ali, M., Illahi, T., & Ahmed, F. (2025). FinTech 5.0 and the Future of Global Finance: Harnessing Artificial Intelligence, Blockchain, and Big Data to Build Inclusive, Sustainable, and Resilient Financial Ecosystems. Inverge Journal of Social Sciences, 4(4), 56-66.

Santoso, I. C., Kembau, A. S., & Sutrisno, J. (2024). Mengapa Pengguna Memilih Dompet Digital GoPay? Studi Tentang Pengaruh Persepsi Terhadap Kemudahan, Keamanan, Dan Manfaatnya. *Digismantech (Jurnal Program Studi Bisnis Digital)*, *4*(1).

Sutrisno, J., Vanessa, V., Tjandra, N., & Juliana, V. (2024). Perancangan Manajemen Proyek Digital Sistem Rekomendasi F&B MealNow. *Digismantech (Jurnal Program Studi Bisnis Digital)*, *4*(2).

Tan, B. (2025). The dynamics, organisation and evolution of digital business ecosystems: Preparing for platformization. Information Systems Journal, 35(4), 765-789. https://doi.org/10.1111/isj.12548

Temouri, Y., Della Piana, B., Troise, C., & Sestino, A. (2025). Cross-country evidence of e-commerce SME internationalisation and performance. International Business Review, in press. https://doi.org/10.1016/j.ibusrev.2025.102501

Tong, X. (2025). Empirical analysis of the impact of financial technology on bank profitability. International Review of Financial Analysis, 93, 100928. https://doi.org/10.1016/j.irfa.2024.100928

Urikova, O., Mysko, Y., Bondarchuk, M., Karyy, O., & Masiuk, V. (2024, February). Fintech Revolution: How Digital Technologies Are Transforming the Global Financial Ecosystem and Promoting Sustainable Development. In IEEE lnternational Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (pp. 426-449). Cham: Springer Nature Switzerland.

Verhoef, P. C. (2021). omnichannel retailing: Some reflections. Journal of Strategic Marketing, 29(7), 608-616. https://doi.org/10.1080/0965254X.2021.1892163

Zhou, Z., Li, P., & Zhang, H. (2025). Digital transformation, innovation capability, and ESG performance. Journal of Cleaner Production, 464, 136409. https://doi.org/10.1016/j.jclepro.2025.136409

Jurnal Digismantech *Vol. 5(No. 2): no. 1 - no 28. Th. 2025*
Versi Online: http://journal.ubm.ac.id/index.php/digismantech *p-ISSN: 2798-1819*
DOI: dx.doi.org/10.30813/digismantech.v5i2.9168 *e-ISSN: 2798-0819*

APPENDIX

Table 1. Summary of Prior Studies on Digital Business (2020–2025)

No	Author(S) & Year	Country / Context	Full Title	Method	Sample	Sector	Platformization & Ecosystems	Digital Transformation (Smes)	Omnichannel & Customer Experience	Data Governance & Privacy	AI / Analytics / Automation	Fintech & Payments	Sustainability & Social Impact	Cross-Border & Global Value Chains
1	**Annabelle Gawer (2022)**	Global / Conceptual	*Digital platforms and ecosystems: remarks on the dominant logic*	Conceptual paper	–	Multi-industry	Analyzes platform governance, complementor coordination, and modular architecture as drivers of ecosystem scalability.	Discusses SMEs as potential ecosystem participants via open innovation.	Notes platform integration enabling consistent customer touchpoints.	Mentions need for fair data-sharing and governance between ecosystem actors.	Identifies automation & data analytics as reinforcing network effects.	Describes digital payment integration in platform models.	Highlights social inclusiveness of open ecosystems.	Considers cross-border interoperability standards in multi-jurisdiction ecosystems.
2	**Isidoro Romero & Huseyn Mammadov (2024)**	Spain / Global	*Digital Transformation of Small and Medium-Sized Enterprises as an Innovation Process: A Holistic Study of its Determinants*	Empirical quantitative (survey)	312 SMEs (Europe)	SME sector (cross-industry)	Shows SMEs integrating into digital ecosystems via B2B platforms.	Empirically examines leadership, technology readiness, and innovation culture as DT determinants.	Notes SMEs' adoption of digital channels for customer engagement.	Highlights limited data-protection maturity and compliance constraints in SMEs.	Reports increasing use of automation tools to enhance productivity.	Observes SME collaboration with fintech providers for payments.	Connects DT adoption with social innovation and sustainability orientation.	Indicates limited global reach; encourages participation in international value chains.
3	**Benjamin Tan (2025)**	Multi-country (case-based)	*The dynamics, organisation and evolution of digital business ecosystems: Preparing for platformization*	Multiple case study	8 platform ecosystems	Manufacturing & services	Explores transformation of traditional networks into platform ecosystems.	Shows SME suppliers digitalizing to align with ecosystem standards.	Discusses unified customer interfaces and data-driven personalization.	Examines governance tensions around data ownership and interoperability.	Demonstrates automation tools supporting integration of actors.	Describes payment integration and API-based transactions.	Considers environmental and ethical aspects of ecosystem growth.	Addresses cross-border coordination and resilience of digital value chains.
4	Verhoef (2021)	Global	omnichannel retailing: some reflections	Conceptual reflection	–	Retail & services	Positions platforms as coordination layers for retailers and marketplaces.	Notes SME retailer capability gaps to integrate marketplace + store data.	Proposes research areas on channel integration quality, journey consistency, and CX metrics.	Flags rising privacy expectations and consent as constraints on omnichannel attribution.	Points to analytics for cross-channel personalization and inventory.	Mentions embedded payments within platform retailing.	Suggests social inclusion via seamless access; calls for responsible CX design.	Notes need for standards to support cross-market omnichannel expansion.

Jurnal Digismantech *Vol. 5(No. 2): no. 1 - no 28. Th. 2025*
Versi Online: http://journal.ubm.ac.id/index.php/digismantech *p-ISSN: 2798-1819*
DOI: dx.doi.org/10.30813/digismantech.v5i2.9168 *e-ISSN: 2798-0819*

No	Author(S) & Year	Country / Context	Full Title	Method	Sample	Sector	Platformization & Ecosystems	Digital Transformation (Smes)	Omnichannel & Customer Experience	Data Governance & Privacy	AI / Analytics / Automation	Fintech & Payments	Sustainability & Social Impact	Cross-Border & Global Value Chains
5	Economic Inquiry (2024)	Multi-country (EU exposure)	Privacy regulation and firm performance: Estimating the GDPR effect globally	Econometric (quasi-natural experiment)	Multi-country firm-level panel	Cross-industry	Shows platform participants re-optimise data access under GDPR (cost channel).	SMEs with EU exposure face disproportionate compliance frictions vs large firms.	Implies reduced precision in cross-channel attribution post-GDPR.	Core: identifies profitability drag from GDPR compliance across contexts.	Pushes firms toward privacy-preserving analytics; stresses governance maturity.	Points to KYC/AML alignment when data sharing is restricted.	Notes compliance costs may crowd out ESG/digital inclusion spend in smaller firms.	Highlights cross-border data-flow frictions shaping participation in GVCs.
6	Chen et al. (2022)	China	The Impact of Artificial Intelligence on Firm Performance: An Application of RBV to e-Commerce Firms	Survey (PLS-SEM)	n=394 e-commerce firms	Retail/ e-commerce	Describes how platform data access strengthens AI capability in marketplaces.	Suggests SMEs can build AI capability via basic, skills, and proclivity resources.	Links AI-driven decisioning to real-time CX (recommendations, service bots).	Urges governance of model lifecycle; notes data quality dependencies.	Core empirical: AI capability → performance via creativity, AI management, AI-driven decisions.	Indicates payment data can enhance risk scoring in AI models.	Mentions organizational impacts (skills, culture) relevant to social outcomes.	Applicable to cross-border e-retail where AI scales across markets.
7	Kumar et al. (2024)	Multi-country retailer data	The effects of Buy Now, Pay Later (BNPL) on customers' spending	Quasi-experimental (adopter vs non-adopter)	Retail customer-level transactions	Retail/ fintech	Retail platforms integrate BNPL as ecosystem complement.	Empowers SME merchants via plug-in checkout financing.	Checkout UX: BNPL raises conversion; adopters spend +6.42% on average.	Introduces consent/KYC and dispute flows; privacy in credit checks.	Uses risk/propensity models for approval & fraud; automation at checkout.	Core: quantifies BNPL impact on spend; links to open-banking rails.	Raises inclusion vs over-indebtedness debate; consumer protection. Investopedia	BNPL scaling across markets depends on local rules and data-sharing standards. Bank for International Settlements
8	González-Romero et al. (2025)	Europe (online retailer)	Decarbonizing the last mile: Innovations from an online retailer perspective	Qualitative (triangulation)	Case + expert interviews	E-commerce logistics	Platforms coordinate 3PL/parcel ecosystems for greener delivery.	Offers playbooks SMEs can adopt via platform logistics.	omnichannel fulfilment options (BOPIS, lockers) reduce failed deliveries.	Highlights data-sharing agreements for routing & emissions reporting.	Stresses analytics for route optimisation and demand clustering.	Touches interoperable payments for last-mile partners.	Core: maps low-carbon last-mile levers (microhubs, e-vans, lockers) & barriers.	Notes cross-border e-commerce complicates logistics standards & customs. Reuters
9	Bernardo et al.	Global	Data governance &	Systematic review	–	Multi-industr	Maps ecosystem	Notes SME maturity gaps &	–	Core: synthesizes	Identifies analytics	–	Touches societal trust	Discusses cross-

No	Author(S) & Year	Country / Context	Full Title	Method	Sample	Sector	Platformization & Ecosystems	Digital Transformation (Smes)	Omnichannel & Customer Experience	Data Governance & Privacy	AI / Analytics / Automation	Fintech & Payments	Sustainability & Social Impact	Cross-Border & Global Value Chains
	(2024)		quality management—Innovation and knowledge	of DG literature		y	data roles (owner/steward/consumer) as coordination mechanism.	pragmatic roadmaps.		DG frameworks, maturity models, policies; links to compliance-by-design.	readiness dependencies on data quality/lineage.		& ethics in data use.	jurisdiction policy alignments & standards.
10	Babina et al. (2025)	UK/EU exposure (global panel)	Customer data access and fintech entry: Early evidence from Open Banking	Econometric quasi-natural experiment	Firm/market-level panels	Financial services	Describes platform API access as enabler of multi-sided market competition.	SME credit access channel via data portability.	–	Core: quantifies privacy/data-access regulation (OB) effects on market outcomes.	Uses model-driven analytics to measure effect sizes.	Core: shows fintech entry & lending changes post-OB.	Notes financial inclusion vs. risk trade-offs for small firms.	Highlights cross-border data-flow frictions in OB adoption.
11	Temouri et al. (2025)	Global (SME survey)	Cross-country evidence of e-commerce SME internationalisation & performance	Cross-country empirical	SME cross-nation dataset	Cross-industry SMEs	Platforms as export gateways for SMEs.	Links capabilities → adoption → performance.	–	Notes compliance & tax frictions as adoption barriers.	–	Mentions embedded checkout tools aiding sales.	–	Core: measures online export performance; policy implications for GVC participation.
12	Cowls et al. (2023)	EU/US	App store governance: implications, limitations & policy options	Conceptual + policy analysis	–	Mobile app economy	Platform power: gatekeeping, fee structures, self-preferencing.	–	–	Core: app-store data & policy constraints; audits, transparency, sideloading debates.	–	Payment rule changes & in-app billing constraints analysed.	Public-interest lens (safety, fairness).	Touches extraterritorial effects of EU/US rulings on global devs.
13	Dallocchio et al. (2024)	Italy / EU	The Role of Digitalization in Cross-Border E-Commerce Performance of Italian SMEs	Regression (firm-level)	Italian SMEs	Retail/SME	Marketplaces (Amazon/Alibaba) as ecosystem vehicles for exports.	Core: identifies e-marketing & data tracking → higher online export performance.	Journey elements via channel presence; marketplace vs proprietary site.	Notes data-tracking/consent practices relevant to exports.	–	–	–	Core: CBEC performance & policy guidance for SME internationalisation.
14	Billi, A. & Bernardo, A. (2025)	Global firms	The Effects of Digital Transformati	Quantitative regression	n = 1,510 global firms	Multi-industry	Describes how digital transformation	Shows DT → IT innovation → business model	–	–	Analytics/innovation capacity	–	Core: sustainability strategies	–

No	Author(S) & Year	Country / Context	Full Title	Method	Sample	Sector	Platformization & Ecosystems	Digital Transformation (Smes)	Omnichannel & Customer Experience	Data Governance & Privacy	AI / Analytics / Automation	Fintech & Payments	Sustainability & Social Impact	Cross-Border & Global Value Chains
			on, IT Innovation, and Sustainability Strategies on Firms' Performances : An Empirical Study.	panel	(2013-2023)		enables platform-ecosystem readiness via IT innovation.	evolution.			mediate performance.		moderate DT → performance.	
15	Huang, Y. & Lau, C.-w. (2024)	China listed firms	Can digital transformation promote the green innovation quality of enterprises? Empirical evidence from China.	Empirical panel	Chinese listed firms (2011-2020)	Manufacturing / multi-industry	–	Shows DT significantly increases green innovation quality.	–	–	–	–	Core: links DT to sustainability & social impact (green innovation).	–
16	Tong, X. (2025)	Global banks listed	Empirical analysis of the impact of financial technology on bank profitability (2025).	Quantitative econometric	Listed banks	Financial services	–	–	–	–	–	Core: fintech impact on core banking business, payments/disruption.	–	–
17	Zhou, Z. (2025)	Global firms	Digital transformation, innovation capability, and ESG performance. (2025)	Quantitative	Firm-level data	Multi-industry	–	–	–	–	Core: analytics/innovation capability mediates DT → ESG performance.	–	Core: sustainability/social impact via ESG.	–
18	Tong, A., Agarwal, S. et al. (2025)	Brazil municipalities	The Real Impact of FinTech: Evidence from Mobile Payment Innovation in	Empirical difference-in-differences	Municipal-level data (Brazil)	Payments/Fintech ecosystem	Core: platform payment innovation enables ecosystem actors.	–	–	–	–	Core: instant mobile payments effect on firm creation	–	–

Jurnal Digismantech *Vol. 5(No. 2): no. 1 - no 28. Th. 2025*
Versi Online: http://journal.ubm.ac.id/index.php/digismantech *p-ISSN: 2798-1819*
DOI: dx.doi.org/10.30813/digismantech.v5i2.9168 *e-ISSN: 2798-0819*

No	Author(S) & Year	Country / Context	Full Title	Method	Sample	Sector	Platformization & Ecosystems	Digital Transformation (Smes)	Omnichannel & Customer Experience	Data Governance & Privacy	AI / Analytics / Automation	Fintech & Payments	Sustainability & Social Impact	Cross-Border & Global Value Chains
			Singapore & Brazil.									(fintech/payments).		