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Digital Governance and Private-Sector Innovation: Impacts on Business Growth and Consumer Behavior in the Artificial Intelligence Based Economy

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Abstract: This study examines how digital governance and public policy influence private-sector innovation, business growth, and consumer behavior in the AI-driven data economy. Using a bibliometric research design, the study analyzes 108 Scopus-indexed documents published between 2021 and 2025 and mapped through Biblioshiny. The analysis identifies publication trends, leading sources, influential authors, citation patterns, and keyword co-occurrence networks to trace the intellectual structure of this emerging field. The results show rapid growth in scholarly output, strong thematic concentration around digital transformation, innovation, sustainability, consumer behavior, and regulatory frameworks, and increasing interdisciplinary interest across policy, management, and technology studies. The findings indicate that digital governance operates as both an enabling and disciplining force: it can support enterprise transformation and market growth while also protecting privacy, transparency, and consumer trust. The study further reveals that existing literature remains fragmented, with many studies focusing separately on firm outcomes or consumer responses rather than connecting them within a unified governance model. The article concludes that balanced digital governance is essential for promoting innovation, ensuring consumer protection, and sustaining legitimate digital markets. These insights are useful for policymakers, firms, and researchers seeking to understand how regulation and digital infrastructure shape innovation and behavior in the contemporary data economy.

Keywords: Digital governance, private-sector innovation, consumer behavior, AI economy, bibliometric analysis, public policy

INTRODUCTION

Digital governance has become a defining feature of contemporary public policy because governments increasingly use data, algorithms, platforms, and digital infrastructure to shape economic activity and public value (Dawes & Helbig, 2015; Nitzberg & Zysman, 2021; Anam *et al.*, 2026). In the private sector, these policy environments matter because firms rely on regulatory stability, data access, digital infrastructure, and consumer trust to innovate and grow (Chen, 2020; Toderacu & Ștefan, 2025). Evidence from recent studies shows that digital government initiatives can promote enterprise transformation, green innovation, and private enterprise innovation by improving support mechanisms and reducing financing constraints (Hao *et al.*, 2024; Zhang & Zhang, 2025; Zhou, 2025). At the same time, AI-driven markets are changing consumer expectations through personalization, predictive analytics, and automated decision-making, which makes the role of public policy even more important for balancing innovation and protection (Abrardi *et al.*, 2021; Gupta, 2025).

This study is significant because digital governance has become a decisive institutional factor shaping innovation, competition, and consumer trust in the AI-driven data economy. Prior research shows that digital government can stimulate enterprise transformation, support private enterprise innovation, and encourage green and marketing innovation by improving government support and reducing financing constraints (Hao *et al.*, 2024; Ma *et al.*, 2024; Zhou, 2025). At the same time, evidence indicates that AI and data policies affect consumer behavior through privacy, trust, and ethical concerns, while also influencing business performance through market adaptation and product innovation (Abrardi *et al.*, 2021; Babina *et al.*, 2024; Cong *et al.*, 2021). However, the literature remains fragmented because many studies examine either firm outcomes or consumer responses in isolation rather than showing how public policy connects both domains within one governance framework (Comunale, 2024; Nitzberg & Zysman, 2021). For this reason, the present study is necessary to explain how public policies influence business growth and consumer behavior simultaneously, and to provide evidence that can guide

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balanced digital governance strategies that promote innovation while protecting public interests (Chen, 2020; Toderacu & Ștefan, 2025).

Problem Statement

Despite the rapid expansion of AI and the data economy, there is still no fully integrated account of how digital governance policies influence both business growth and consumer behavior (Bhuiyan, 2017). Existing literature often examines firm innovation, market performance, or consumer privacy separately, rather than showing how public policy connects these outcomes in one framework (Babina *et al.*, 2024; Cong *et al.*, 2021). This creates a practical and theoretical problem because governments may design policies that support innovation but unintentionally weaken consumer trust, or protect consumers while slowing business adaptation and growth (Comunale, 2024; Kulothungan *et al.*, 2025). As a result, a clearer explanation is needed of how policy instruments influence private-sector innovation and consumer behavior simultaneously in digitally mediated markets.

Research Gaps

The literature reveals several important gaps. First, much of the empirical evidence comes from China or other specific national settings, which limits the broader generalizability of findings to different governance and market systems (Hao *et al.*, 2024; Zhou, 2025). Second, studies frequently focus on one outcome only, such as AI adoption, green innovation, or consumer trust, without linking firm-level and consumer-level effects in the same analytical model (Ma *et al.*, 2024; Gupta, 2025). Third, reviews of AI regulation show that policy debates remain fragmented across privacy, competition, ethics, and growth, even though firms and consumers experience these issues as connected realities (Comunale, 2024; Jones, 2023). Fourth, although scholars acknowledge the importance of governance in the digital age, fewer studies explain how digital policy creates both enabling and disciplining effects on private-sector innovation and market behavior at the same time ((Bhuiyan, 2019; Nitzberg & Zysman, 2021; Toderacu & Ștefan, 2025). It examines how digital governance and public policies shape private-sector innovation and business growth in the AI and data economy. Second, it analyzes how those same policies influence consumer behavior, especially trust, privacy concerns, and engagement with digital products and services (Bhuiyan *et al.*, 2023). It identifies the mechanisms through which regulation, support, and digital infrastructure affect enterprise adaptation and market performance. It develops an integrated conceptual explanation of how public policy can promote innovation while maintaining consumer protection and market legitimacy (Chen, 2020; Cong *et al.*, 2021; Toderacu & Ștefan, 2025).

Research Objectives

- To examine how digital governance and public policies shape private-sector innovation and business growth in the AI and data economy.
- To analyze how digital governance influences consumer behavior, especially trust, privacy concerns, and engagement with AI-driven digital products and services.
- To map the intellectual structure, publication trends, and thematic evolution of research on digital governance, private-sector innovation, and consumer behavior using bibliometric analysis.

Research Questions

- How do digital governance policies influence private-sector innovation and business growth in the AI and data economy?
- In what ways do digital governance frameworks affect consumer behavior, particularly trust, privacy, and digital engagement?
- What are the main publication trends, influential sources, and thematic clusters in the global literature on digital governance and private-sector innovation?

This article's main contribution is that it integrates digital governance, private-sector innovation, and consumer behavior into one analytical framework, showing that public policy shapes not only firm growth but also market trust and digital adoption. It also adds bibliometric evidence that the field is expanding rapidly, with research clustered around digital transformation, sustainability, innovation, and regulation, which supports the argument that governance is now a central issue in the AI and data economy.

LITERATURE REVIEW

Digital Governance

Digital governance has emerged as a major driver of innovation in both public and private sectors. Recent studies suggest that digital government policies can improve firm transformation, support enterprise innovation, and strengthen market performance by reducing financing barriers and increasing policy support (Hao *et al.*, 2024; Zhang & Zhang, 2025; Zhou, 2025). In the same direction, policy-oriented research argues that digital governance is not simply administrative modernization; it is increasingly a strategic framework that shapes how firms adopt AI, use data, and compete in digital markets (Toderacu & Ștefan, 2025). This growing body of work shows that public policy is now deeply intertwined with private-sector innovation outcomes.

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AI as a catalyst for business growth

A second stream of literature focuses on AI as a catalyst for business growth and operational change. Studies show that AI investments can raise sales growth, employment, and market valuation through product innovation, while also improving organizational decision-making and strategic adaptation (Babina *et al.*, 2024). Research on AI-enabled innovation in public and private systems further indicates that the value of AI depends on governance conditions, regulatory certainty, and institutional design (Kulothungan *et al.*, 2025; Nitzberg & Zysman, 2021). However, scholars also caution that AI adoption creates new challenges in accountability, ethics, and power concentration, especially when digital platform firms become the main controllers of data and algorithms (Nitzberg & Zysman, 2021; Khanom *et al.*, 2022). This suggests that innovation benefits are real but remain conditional on policy environments that balance flexibility with oversight.

AI influences consumer behavior

The consumer-behavior literature adds another layer to this debate. Recent reviews show that AI influences consumer behavior through personalization, recommender systems, chatbots, predictive analytics, and automated marketing, but trust, privacy, transparency, and perceived control remain central concerns (Abrardi *et al.*, 2021; Gupta, 2025; Bhuiyan *et al.*, 2026). Similarly, work on digital transformation and consumer behavior argues that consumers increasingly expect convenience and tailored experiences, yet they also demand responsible data use and ethical AI practices (Gupta, 2025; Bodhale, 2025). These findings imply that consumer behavior is not shaped by technology alone; it is shaped by whether policy and business practices create confidence in digital interactions. That makes governance a direct factor in market adoption and long-term brand loyalty (Chen, 2020).

Policy process and innovation governance

Another important theme is the role of policy in governing innovation itself. Studies on the policy process and innovation governance show that public institutions influence innovation through regulation, support programs, digital infrastructure, and the design of enforcement systems (Dawes & Helbig, 2015; Bhuiyan *et al.*, 2025). Research on national policy initiatives in digital and AI-driven innovation similarly highlights that policy coherence, cross-sector coordination, and targeted support determine whether digital technologies produce broad-based growth or uneven benefits (Ma *et al.*, 2024). The literature also points to a recurring tension: governments want to stimulate innovation, but they must simultaneously manage privacy, competition, and social risk (Comunale, 2024; Jones, 2023). This tension is especially visible in the data economy, where consumer-generated data fuels growth but also creates governance dilemmas around ownership, use, and consent (Cong *et al.*, 2021).

Recent publications also show a methodological gap in the literature. Many studies are either conceptual reviews or single-country empirical analyses, and fewer integrate firm growth, consumer behavior, and governance in one framework (Abrardi *et al.*, 2021; Comunale, 2024). For example, recent work on AI's transformation of digital consumer behavior synthesizes a large body of studies but still finds limited integration of ethical governance into consumer-behavior models (Gupta, 2025; Islam & Bhuiyan, 2022; Islam *et al.*, 2026). Likewise, work on AI governance in digital government emphasizes the need for stronger frameworks but still treats public administration and private-market outcomes separately (Toderacu & Ștefan, 2025). Therefore, the present topic is timely because it connects digital governance, private-sector innovation, and consumer behavior in the same analytical conversation, which remains underdeveloped in current situation.

MATERIALS AND METHODS

Research Design

This study adopts a bibliometric research design to systematically map the intellectual landscape surrounding digital governance, private sector innovation, and AI-driven data economy policies. Bibliometric analysis provides a structured, quantitative framework for examining large bodies of scholarly literature, enabling identification of publication trends, citation patterns, influential contributors, and emerging thematic clusters (Islam *et al.*, 2024). Given the interdisciplinary nature of this research spanning public policy, technology governance, business strategy, and consumer behavior, bibliometric methodology offers an objective and reproducible approach for capturing the full breadth of academic discourse across multiple disciplines.

Data Source and Retrieval

All bibliometric data were retrieved from the Scopus database, selected for its extensive multidisciplinary coverage, standardized metadata, and compatibility with Biblioshiny analytical tools (Uddin Talukdar *et al.*, 2026). Scopus encompasses a wide range of peer-reviewed journals, conference proceedings, and book series relevant to information systems, economics, and governance studies, making it the most appropriate repository for the present investigation.

Search Strategy

Data retrieval was conducted using the following Boolean search string applied across title, abstract, and keyword fields:

TITLE-ABS (Digital Governance OR Private Sector Innovation OR Business Growth OR Consumer Behavior OR Data Economy OR E-Governance) AND (LIMIT-TO (LANGUAGE, "English")) AND PUBYEAR > 2019 AND PUBYEAR < 2025

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The temporal boundary of 2021 to 2025 was established to capture the period of most substantial scholarly growth in AI governance and digital policy discourse. Boolean operators were strategically combined to ensure comprehensive yet thematically focused retrieval, while restricting results to English-language publications maintained linguistic consistency throughout the dataset.

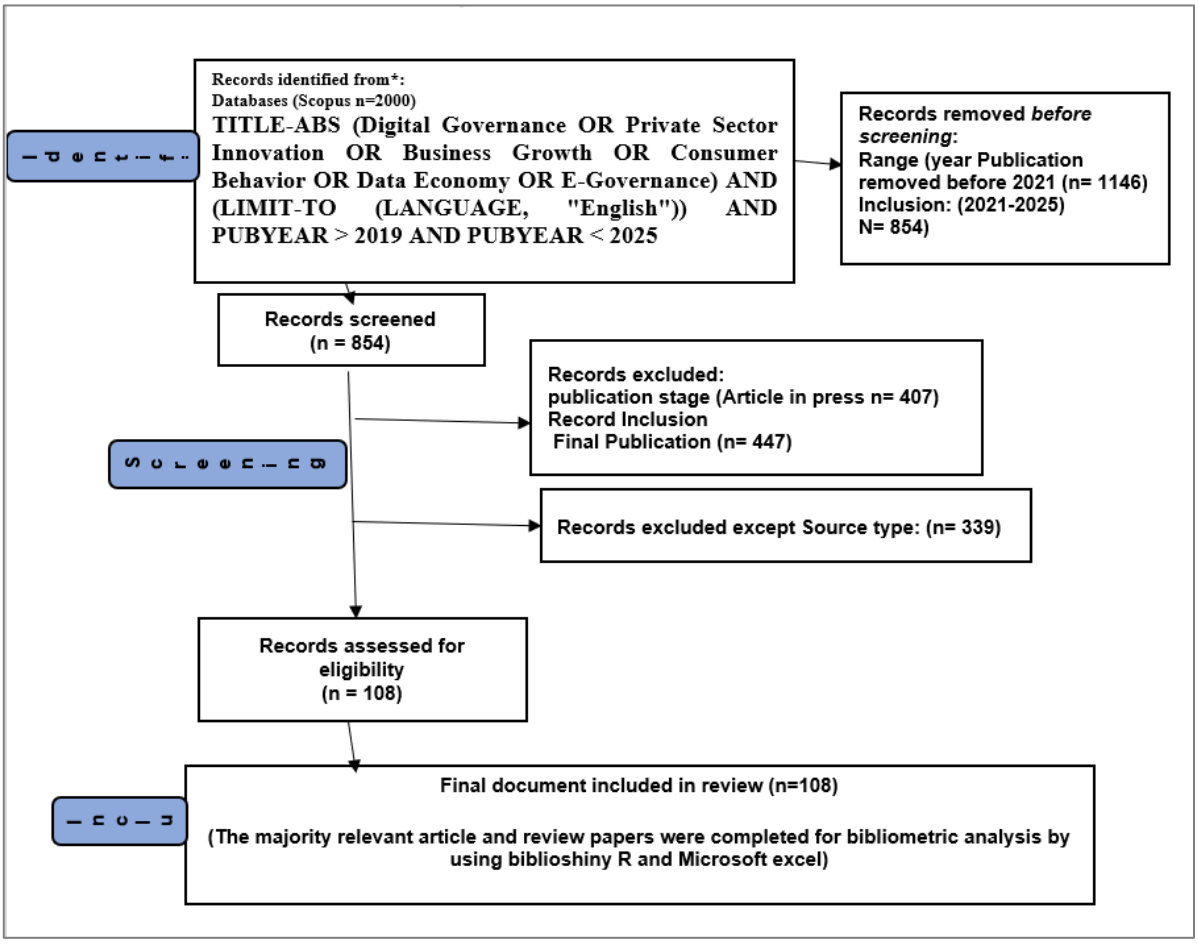

Figure 1: PRISMA Diagram
Source: Author's Contribution

Screening and Inclusion Criteria

A structured screening process was applied to ensure thematic relevance and methodological rigor. Documents were included if they appeared in peer-reviewed journals or conference proceedings, were written in English, fell within the defined timeframe, and directly addressed themes of digital governance, policy-driven innovation, or data economy dynamics (Khatun *et al.*, 2025). Editorials, letters, errata, and articles in press were systematically excluded. Following this process, a final dataset of 108 documents from 98 sources was retained, forming a focused and high-quality corpus aligned with the study's intellectual scope.

Analytical Tools

The analysis was conducted using Biblioshiny, an interactive interface built on the Bibliometrix R package. This tool facilitated annual publication trend mapping, source and author productivity assessments, citation analysis, and keyword co-occurrence network visualization (Uddin Talukdar *et al.*, 2026). The combination of quantitative indicators and network-based outputs enabled a comprehensive understanding of how scholarly knowledge on digital governance and private sector innovation has evolved and clustered over the study period.

RESULTS

Data Retrieve Process/Summary

Table 1 presents the main bibliometric characteristics of the dataset retrieved for this study, spanning the period from 2021 to 2025. The collection encompasses 108 documents published across 98 sources, including journals, books, and other outlets, reflecting a broad and diverse scholarly base. The annual growth rate of 68.64% indicates a rapidly expanding body of literature, signaling growing academic interest in digital governance, AI policy, and the data economy. The document average age of 1.65 years further confirms the recency and contemporary relevance of the retrieved publications.

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Table 1: Overall information about the bibliometric collection of articles published in Information Systems Strategy and Business Analytics

DESCRIPTION	RESULTS
MAIN INFORMATION ABOUT DATA	
Timespan	2021:2025
Sources (Journals, Books, etc)	98
Documents	108
Annual Growth Rate %	68.64
Document Average Age	1.65
Average citations per doc	3.213
References	5790
DOCUMENT CONTENTS	
Keywords Plus (ID)	421
Author's Keywords (DE)	453
AUTHORS	
Authors	332
Authors of single-authored docs	21
AUTHORS COLLABORATION	
Single-authored docs	24
Co-Authors per Doc	3.16
International co-authorships %	23.15
DOCUMENT TYPES	
Article	58
Book	8
Book Chapter	17
Conference Paper	13
Review	6

On average, each document received 3.213 citations, supported by a total of 5,790 references, suggesting moderate scholarly engagement and inter-textual connectivity within the field. The dataset contains 421 Keywords Plus (ID) and 453 author-defined keywords (DE), indicating rich thematic diversity. A total of 332 authors contributed to these documents, with 21 operating as sole authors. The average of 3.16 co-authors per document and an international co-authorship rate of 23.15% reflect meaningful collaborative patterns across global research communities. Among document types, journal articles dominate (n=58), followed by book chapters (n=17), conference papers (n=13), books (n=8), and reviews (n=6).

Descriptive analysis

Publication trend and growth of articles

Figure 2 presents the annual scientific production trend related to the study's topic between 2020 and 2026. The publication output started at a notably low level, with only a single article recorded in 2020, which likely reflects the nascent stage of scholarly discourse surrounding digital governance and data-driven policy frameworks at that time. A moderate increase to 7 articles was observed in 2021, followed by an unexpected decline to 3 in 2022, possibly attributed to shifting research priorities or publication delays during the post-pandemic period.

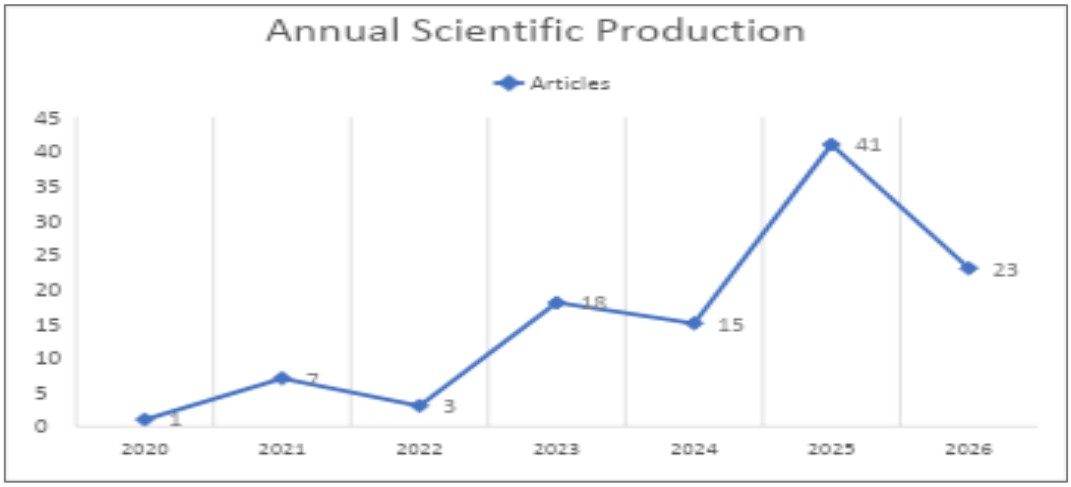

Figure 2: Annual Scientific Production

From 2023, however, the field witnessed a clear and sustained recovery, producing 18 articles that year. Although a marginal decline to 15 occurred in 2024, the subsequent year registered a remarkable surge, reaching a peak of 41 publications in 2025. This sharp acceleration indicates growing academic and policy-oriented interest in AI regulation, data economy governance, and private sector innovation dynamics. The 23 articles already documented in 2026, representing only a partial year, further suggest that scholarly engagement with these themes remains strong and shows no sign of slowing down in the near future.

Figure 3 displays the most relevant sources contributing to the bibliometric collection on digital governance, AI policy, and data economy. Among all outlets, Discover Sustainability, Lecture Notes in Networks and Systems, and Proceedings of the International Astronautical Congress emerged as the leading sources, each contributing 3 documents. Four journals — Economic Annals-XXI, Journal of Digital Economy, Smart Innovation, Systems and Technologies, and Sustainability (Switzerland) — each contributed 2 publications, reflecting multidisciplinary engagement with the topic.

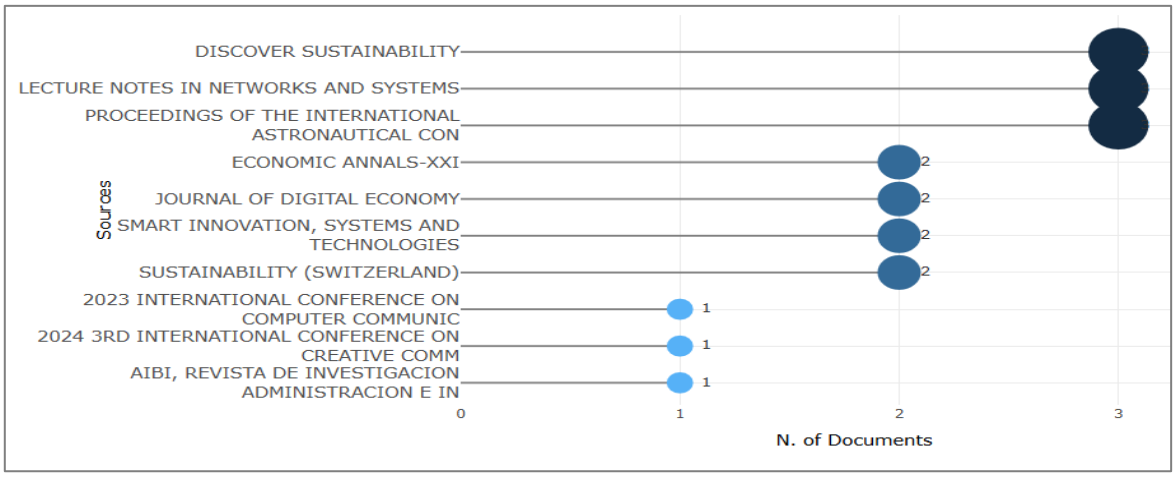

Figure 3: Most Relevant Sources

The remaining sources, including two international conference proceedings and AIBI Revista, each contributed a single document. The diversity of publishing outlets underscores that scholarly conversations around digital governance and private sector innovation are not confined to a single discipline but span technology, economics, sustainability, and management domains.

Influential authors, most productive authors and their collaboration networks

Most Influential Document

Table 2 identifies the ten most productive and influential authors within the collected literature on digital governance, AI policy, and the data economy. David Dharish, Gopalan Sasidaran, and Ramachandran Suma stand out as the leading contributors, each publishing 2 papers with identical h-index and g-index scores of 2, and accumulating 24 total citations respectively, reflecting consistent scholarly output on technology-driven governance frameworks.

Table 2: Top10 most productive and influential authors with the number of published papers and total citations

Author	h_index	g_index	TC	NP
DAVID DHARISH	2	2	24	2
GOPALAN SASIDARAN	2	2	24	2
RAMACHANDRAN SUMA	2	2	24	2
AAKASH M.	1	1	11	1
ABDEL-AZIZ MOHAMMED SALAH-ELDIN	1	1	13	1
ADUBA JOSEPH JR.	1	1	51	1
AHMED ELSADIG MUSA	1	1	13	1
ASGARI BEHROOZ	1	1	51	1
CORCHADO JUAN M.	1	1	19	1
IZAWA HIROSHI	1	1	51	1

Notably, Aduba Joseph Jr., Asgari Behrooz, and Izawa Hiroshi each recorded the highest total citation count of 51 despite publishing only a single document, suggesting that their individual works carried considerable academic influence within the field. Corchado Juan M. follows with 19 citations, while Abdel-Aziz Mohammed Salah-Eldin and Ahmed Elsadig Musa each garnered 13 citations. Collectively, these scholars represent a geographically and institutionally diverse research community actively shaping discourse

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around private sector innovation and public policy in the digital age.

Most Global Cited Documents

Table 4 presents the ten most cited documents within the bibliometric collection, offering critical insight into the foundational scholarly works shaping research on digital governance, public policy, and private sector innovation in the AI and data economy era. Aduba *et al.* (2023) leads with 51 total citations and a normalized TC of 7.06, reflecting strong academic influence in financial technology governance. Zhang *et al.* (2024), with 46 citations and a notably high per-year citation rate of 15.3, directly examines how regulatory frameworks govern big technology firms, closely mirroring the core concerns of this study regarding how public policies shape business behavior and market dynamics.

Table 3: Most cited documents

Paper	DOI	Total Citations	TC per Year	Normalized TC
Aduba Jj, 2023, Borsa Istanb Rev	10.1016/j.bir.2023.06.001	51	12.8	7.06
Zhang Ah, 2024, High Wire: How China Regul Big Tech and Governs Its Econ	10.1093/oso/9780197682258.001.0001	46	15.3	7.04
Su Z, 2024, Resour Policy	10.1016/j.resourpol.2024.104958	24	8	3.67
Alahmari N, 2023, Sustainability	10.3390/su152216003	19	4.8	2.63
Zhang K, 2024, Discov Sustain	10.1007/s43621-024-00577-9	15	5	2.30
Goswami R, 2023, Crop Pasture Sci	10.1071/CP21624	14	3.5	1.94
Ahmed Em, 2025, Fudan J Humanities Soc Sci	10.1007/s40647-025-00443-6	13	6.5	10.45
David D, 2021, Invest in Startups and Small Bus Financ	10.1142/9789811235825_0007	13	2.2	1.86
Nagaraj P, 2023, Int Conf Comput Commun Informatics, Iccci	10.1109/ICCCI56745.2023.10128498	11	2.8	1.52
David D, 2021, World Sci Ser Financ	10.1142/9789811235825_0007	11	1.8	1.57

Su *et al.* (2024) and Alahmari (2023) contribute perspectives on resource policy and sustainability governance, while Zhang *et al.* (2024) in Discover Sustainability further reinforces the intersection of environmental policy and digital innovation. Ahmed *et al.* (2025) stands out with the highest normalized TC of 10.45, indicating exceptional recent impact within humanities and social science dimensions of AI governance. David *et al.* (2021) appears twice, underscoring sustained scholarly relevance around startup financing and small business growth under evolving digital policy landscapes. Collectively, these highly cited works confirm that regulatory environments, technology governance mechanisms, and data-driven economic policies remain central intellectual pillars driving contemporary research aligned with this study's overarching theme.

Keyword analysis

Word Cloud

Figure 4 presents a keyword cloud derived from the author-defined keywords across the collected literature, visually representing the dominant thematic clusters within the field. The most prominent terms — sustainable development, digital transformation, and digital economy — appear in the largest font sizes, indicating their central role in contemporary scholarly discourse. Artificial intelligence, sustainability, and innovation further reinforce the technological and policy-oriented nature of the research landscape.

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Figure 4: Word Cloud
Source: Author's Collaboration

In this terms such as regulatory frameworks, consumer behavior, data privacy, public policy, and corporate governance directly echo the core concerns of this study, confirming that academic attention is firmly directed toward understanding how governance structures and digital policies shape business conduct and market participation. Additional keywords including blockchain, fintech, Industry 4.0, and cybersecurity reflect the broader technological ecosystem within which these governance challenges unfold, while economic growth, investments, and competition highlight the macroeconomic dimensions that connect digital regulation to private sector performance.

Co-occurrence network

Figure 5 illustrates the keyword co-occurrence network derived from the bibliometric dataset, revealing the intellectual structure and thematic interconnections within the literature on digital governance and the data economy. At the center of the network, sustainable development emerges as the most dominant node, maintaining strong co-occurrence linkages with digital economy, digital transformation, artificial intelligence, and innovation, confirming these concepts as the primary intellectual pillars of the field.

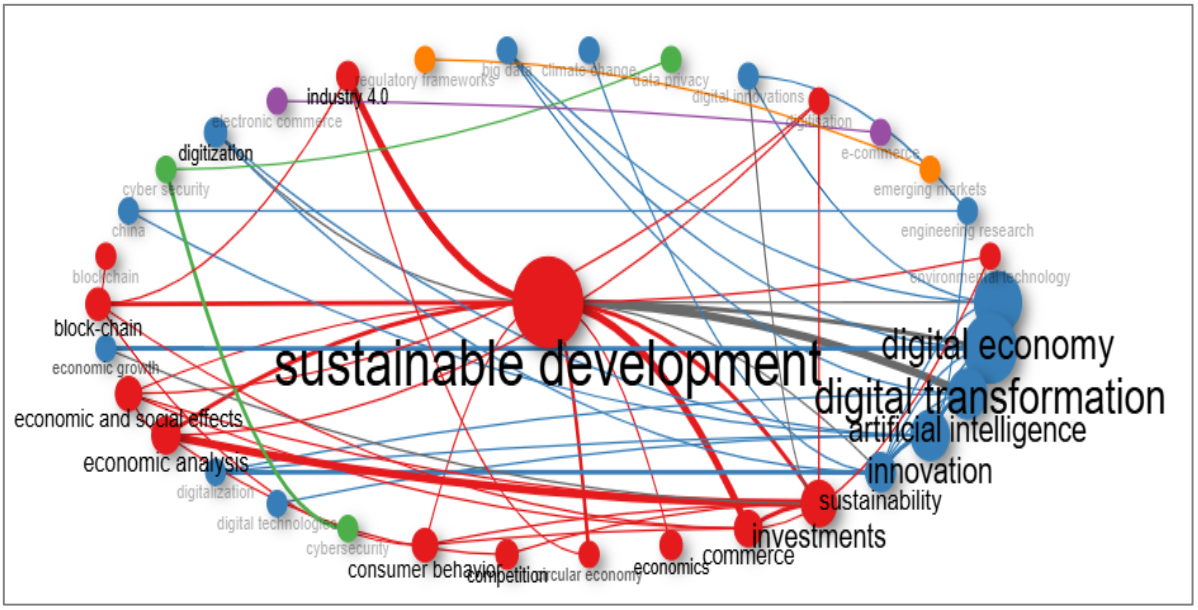

Figure 5: Author's Keywords Co-occurrence Network

The red cluster, which is the largest, captures governance-oriented themes including regulatory frameworks, consumer behavior, cybersecurity, economics, and investments, directly resonating with this

study's focus on how public policies shape private sector conduct. The blue cluster groups digital economy, digital transformation, and e-commerce, reflecting market-side dynamics driven by technological advancement. Peripheral nodes such as blockchain, Industry 4.0, data privacy, and emerging markets further highlight the expanding boundaries of scholarly inquiry, underscoring the multidimensional nature of AI-driven governance challenges facing businesses and consumers today.

DISCUSSION

Digital governance appears to influence innovation by creating the conditions under which firms can adopt AI, access data, and operate with greater policy certainty (Santos *et al.*, 2026; Panda *et al.*, 2025). The literature summarized in the paper suggests that public support, digital infrastructure, and coherent regulation can reduce financing constraints and encourage enterprise transformation, green innovation, and marketing innovation (Loukis *et al.*, 2020). At the same time, the article shows that governance is not purely enabling; it also disciplines private actors by imposing boundaries around privacy, accountability, and competition. This dual role is important because it explains why policy can simultaneously stimulate growth and constrain harmful digital practices (Tilly *et al.*, 2025).

The article also highlights consumer behavior as a central outcome of digital governance, not just a side effect. AI-based services such as personalization, recommender systems, chatbots, and predictive analytics may improve convenience and engagement, but they also raise trust and privacy concerns that shape adoption decisions (Kuziemski & Misuraca, 2020). In this sense, consumer response depends not only on technology quality but also on whether governance frameworks create confidence in digital markets. The paper therefore positions consumer trust, transparency, and perceived control as important mediators between policy and market performance (Bokhari & Myeong, 2022).

From a research standpoint, the bibliometric evidence shows that scholarship is concentrated but still fragmented across policy, business, sustainability, and technology domains (Alsafran *et al.*, 2023). The strong rise in publications in recent years suggests that researchers are increasingly recognizing digital governance as a cross-cutting issue rather than a narrow public-administration topic. However, the article also indicates that many studies still focus on one outcome at a time, such as firm growth or consumer privacy, instead of integrating both into a single framework (Reier Forradellas & Garay Gallastegui, 2021). That gap supports the article's broader argument that a unified governance perspective is needed to understand how public policy shapes both enterprise behavior and consumer markets.

Overall, the discussion implies that the relationship between digital governance and private-sector innovation is conditional, not automatic (Alhosani & Alhashmi, 2024). Policies that are too weak may fail to protect users and market legitimacy, while policies that are too restrictive may slow innovation and adaptation. The article therefore argues for balanced governance that promotes innovation, protects consumers, and supports sustainable economic development (Cho & Yi, 2022). This makes the study relevant to governments, businesses, and scholars trying to design digital systems that are both competitive and socially responsible.

Implications

Conceptual implication

The study advances theory by presenting digital governance as a multidimensional construct that simultaneously shapes private-sector innovation, business growth, and consumer behavior. Rather than treating regulation, firm performance, and market legitimacy as separate domains, the article shows that governance operates through both enabling and disciplining mechanisms. This strengthens innovation-governance theory by incorporating consumer trust, accountability, and ethical AI considerations into a single framework, consistent with recent scholarship on AI governance and public-sector digital transformation (Nitzberg & Zysman, 2021; Toderacu & Ștefan, 2025; Walter, 2024). The conceptual justification is that digital markets are not driven by technology alone, but by institutional arrangements that determine how firms innovate and how consumers respond to digital services.

Practical implication

For policymakers, the findings suggest that effective digital governance should balance innovation support with safeguards for privacy, transparency, and accountability. Such a balance is necessary because overly permissive policies may weaken consumer trust, while overly restrictive policies may slow enterprise transformation and digital adoption (Reier Forradellas & Garay Gallastegui, 2021; Alhosani & Alhashmi, 2024). For firms, responsible AI adoption and compliance are not merely legal requirements; they are strategic resources that can strengthen reputation, consumer confidence, and long-term competitiveness (Shah *et al.*, 2024; Bokhari & Myeong, 2022). The practical justification is that organizations operating in AI-driven markets must align innovation strategies with governance expectations to remain legitimate and sustainable.

Global research implication

The bibliometric evidence suggests that current knowledge remains geographically uneven, with a strong concentration of empirical work in China and other limited contexts. This creates a need for comparative cross-country studies that examine how different governance models influence innovation, consumer

behavior, and digital market outcomes across institutional settings (Zhang & Zhang, 2025; Zhou, 2025; Djatmiko *et al.*, 2025). Future global research should integrate public policy, firm outcomes, and consumer responses in the same model, especially in emerging economies where digital transformation is progressing rapidly. The justification is that digital governance is context-sensitive, so findings from one national setting cannot be assumed to apply universally (Mani, 2019; Masum *et al.*, 2024; Mia *et al.*, 2024).

Policy and future research implication

The study indicates that future research should move beyond single-variable designs and examine how regulation, digital infrastructure, and institutional support jointly shape innovation and market legitimacy. This is important because AI governance is increasingly connected to economic performance, social inclusion, and public value creation (Kuziemski & Misuraca, 2020; Santos *et al.*, 2026; Walter, 2024). Sector-specific analyses in fintech, e-commerce, health technology, education, and public services would also be valuable because governance effects differ across industries (Molla *et al.*, 2023; Rahman *et al.*, 2025). The justification is that a more granular research design can identify where governance is most effective and where trade-offs between innovation and protection are most severe.

Limitations and Future Directions

This study has several limitations. First, it relies only on Scopus-indexed publications, so relevant studies indexed elsewhere or published in non-indexed outlets may have been excluded. Second, the dataset is restricted to English-language documents and the 2021–2025 period, which limits linguistic and temporal coverage. Third, bibliometric analysis is useful for mapping intellectual structure, but it cannot test causal relationships between digital governance, firm innovation, and consumer behavior. Fourth, the evidence base is concentrated in a few national contexts, especially China, which reduces the generalizability of the findings to other institutional environments (Zhang & Zhang, 2025; Zhou, 2025). The justification for acknowledging these limitations is that bibliometric patterns should be interpreted as structural evidence rather than direct proof of policy effectiveness.

Another limitation is that bibliometric methods highlight publication frequency, citations, and thematic clusters, but they do not assess the substantive quality, implementation feasibility, or policy impact of the underlying studies. They also tend to privilege recent and highly cited work, which may underrepresent emerging but important research streams. In addition, the study treats digital governance broadly, even though it includes distinct instruments such as regulation, infrastructure, support programs, privacy controls, and enforcement systems (Kuziemski & Misuraca, 2020; Tilly *et al.*, 2025). The justification here is that broad categorization supports field mapping, but it may obscure differences among governance mechanisms.

Future research should address these limitations by using multi-database and multilingual searches to build a more globally representative evidence base. Comparative research across developed and emerging economies would be especially useful because the effects of digital governance depend on institutional quality, market maturity, and regulatory capacity (Ha & Chuah, 2023; Djatmiko *et al.*, 2025). Scholars should also move beyond bibliometric mapping and test the proposed conceptual relationships using surveys, panel data, case studies, and mixed-method designs (Bortoló *et al.*, 2023; Panda *et al.*, 2025). The justification is that empirical testing will allow stronger inferences about how governance translates into innovation and consumer outcomes.

In addition, future studies should examine the interaction between digital governance and emerging technologies such as generative AI, blockchain, fintech, and platform ecosystems. Sector-based work in health, finance, retail, education, and public services would clarify where governance is most effective and where trade-offs are most pronounced (Santos *et al.*, 2026; Alhosani & Alhashmi, 2024). Researchers should also investigate long-term outcomes such as sustainable innovation, ethical AI adoption, social inclusion, and digital inequality rather than focusing only on short-term performance. The justification is that the digital economy is shaped by both technological acceleration and social consequences, so future research should reflect that complexity.

CONCLUSION

This study shows that digital governance is a central force shaping private-sector innovation, business growth, and consumer behavior in the AI and data economy. The bibliometric evidence indicates rapid growth in the field, strong thematic clustering around digital transformation, innovation, sustainability, and consumer behavior, and increasing scholarly attention to regulation and market adaptation (Ha & Chuah, 2023; Alsafran *et al.*, 2023; Saha *et al.*, 2026). The article also demonstrates that policy does not simply promote innovation; it also disciplines firms by setting boundaries around privacy, transparency, accountability, and competition. At the same time, consumer trust and perceived control remain essential for market acceptance of digital products and services (Bortoló *et al.*, 2023). Overall, the paper argues for a balanced governance approach that encourages innovation while protecting public interests and market legitimacy. Its main contribution is conceptual integration: it links public policy, private-sector innovation, and consumer behavior within one framework rather than treating them as separate issues (Loukis *et al.*, 2020; Sakib *et al.*, 2025). This makes the study useful for policymakers, businesses, and researchers seeking to design digital

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systems that are competitive, trustworthy, and socially responsible.

CONFLICT OF INTEREST

Authors have no financial conflict of interest.

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