

Digital Economy Development and Economic Transformation: A Scoping Review of Policy Perspectives and Developmental Outcomes

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ABSTRACT

This paper investigates the relationship between digital economy development, policy interventions, and economic transformation outcomes. Digital technologies have become central to reshaping economies, but the effects of digitalization on growth, productivity, and inclusivity are not well understood across different contexts. The research aims to address the gap in the literature by examining how digital economy policies impact economic transformation, particularly in developing and emerging economies. A scoping review approach was employed to synthesize data from studies published between 2015 and 2025, focusing on digital economy policies and infrastructure and their effects on productivity, social inclusion, and sustainability. The findings show that digital economy development significantly drives economic growth and industrial upgrading, but also introduces risks such as inequality and job displacement. Effective policy interventions, tailored to local contexts, are essential to mitigate these risks and foster inclusive growth. The study highlights the need for integrated policies that balance innovation with equity and sustainability.

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1. INTRODUCTION

The development of the digital economy has emerged as a central force shaping contemporary economic transformation across countries and regions. The digital economy is broadly understood as economic activities enabled by digital technologies such as the internet, data analytics, artificial intelligence, and digital platforms, which fundamentally alter production processes, market structures, and consumption patterns (Chen et al., 2024; Peters, 2023). A growing body of literature suggests that digital economy development enhances productivity, innovation capacity, and long-term economic growth by reducing transaction costs, expanding market access, and enabling new business models (Jung & Gómez-Bengoechea, 2025; Zhukov, 2022). In the context of economic development, digital technologies are increasingly seen as catalysts for structural transformation, facilitating shifts from traditional, low-productivity sectors toward knowledge-intensive, technology-driven economic activities (Herrendorf et al., 2015).

Despite the expanding literature on the digital economy, significant conceptual and empirical gaps remain. Existing studies employ heterogeneous definitions, measurement frameworks, and analytical perspectives when examining digital economy development. Some focus narrowly on digital infrastructure and connectivity, while others emphasize digital adoption, platformization, or innovation ecosystems. This conceptual fragmentation limits the comparability of findings and hinders the development of an integrated understanding of how digital economy development contributes to broader economic transformation (Peters, 2023; Yuan et al., 2025).

Moreover, empirical evidence on the developmental outcomes of digital economy development remains mixed and context-dependent. While several studies document positive effects on economic growth, productivity, and industrial upgrading, others highlight adverse consequences such as widening digital divides, labor market polarization, and uneven spatial development, particularly in developing and emerging economies (Chen & Xu, 2024; Martins-Neto et al., 2024). These divergent findings indicate that the relationship between digital economy development and economic transformation is neither automatic nor uniform, suggesting the presence of mediating factors that are not yet systematically mapped in the literature.

In addition, the role of public policy in shaping digital economy development and its developmental outcomes remains underexplored in a comprehensive manner. Policy-oriented studies are often fragmented across disciplines, focusing separately on technology regulation, innovation policy, or economic development strategies. As a result, there is limited synthesis of how different policy approaches, institutional capacities, and governance frameworks influence the effectiveness of digital economy development in fostering inclusive and sustainable economic transformation (Cai et al., 2025; Lyu et al., 2024).

To address these gaps, this study adopts a scoping review to systematically map the existing literature on digital economy development, policy perspectives, and economic transformation outcomes. Scoping reviews are particularly suitable for examining emerging, multidisciplinary fields characterized by conceptual diversity and methodological heterogeneity, as they enable the identification of key concepts, research

trends, and knowledge gaps without restricting analysis to narrowly defined research questions (Cahyono, 2024a; Yudhoyono et al., 2024).

By synthesizing evidence across countries, development contexts, and policy frameworks, this scoping review aims to clarify how digital economy development is conceptualized, how policy interventions are designed and implemented, and how these elements interact to produce varying developmental outcomes. This approach enables a structured comparison of policy pathways and transformation trajectories, offering insights into the conditions under which digital economy development can effectively support structural change and inclusive growth.

Filling this gap is both theoretically and practically important. From a theoretical perspective, a comprehensive mapping of digital economy development helps refine economic development and structural transformation frameworks in the digital era. From a policy perspective, synthesizing evidence on policy approaches and developmental outcomes provides policymakers with valuable guidance on harnessing digital technologies for economic transformation while mitigating associated risks. Accordingly, the primary objective of this article is to systematically map policy perspectives and developmental outcomes related to digital economy development, identify prevailing patterns and gaps in the literature, and propose a future research agenda to advance evidence-based policymaking in both developed and developing economies.

2. LITERATURE REVIEW

2.1. Theoretical Foundations of Digital Economy Development

The development of the digital economy is grounded in several foundational economic and development theories that explain technological change and structural transformation. Classical growth theory emphasizes capital accumulation and labor productivity as drivers of economic growth; however, endogenous growth theory extends this perspective by highlighting the role of knowledge, innovation, and technological spillovers as internally generated forces of long-term growth (Aghion & Howitt, 1992; Schilirò, 2019). Digital technologies, as general-purpose technologies, align closely with this framework by enabling continuous innovation, reducing marginal costs, and generating network externalities that accelerate economic expansion (Bogers et al., 2022).

From a development economics perspective, structural transformation theory offers a critical lens for understanding the digital economy's development. This theory posits that economic development involves the reallocation of resources from low-productivity sectors to higher-productivity activities, typically accompanied by industrial upgrading and diversification (Al-Roubaier et al., 2020). Digital technologies facilitate this transformation by enhancing productivity across sectors, enabling service-sector expansion, and fostering new digital-intensive industries (Gu & Liu, 2024). Thus, digital economy development can be conceptualized as a contemporary pathway of structural change in the digital age.

2.2. Policy Perspectives on Digital Economy Development

Public policy plays a central role in enabling, steering, and regulating the development of the digital economy. Innovation systems theory emphasizes the importance of coordinated interactions among firms,

government, research institutions, and financial actors in fostering technological advancement (Edler & Fagerberg, 2017; Koch et al., 2025). Within this framework, digital economy policies encompass investments in digital infrastructure, education and skills development, innovation support mechanisms, and regulatory environments that promote competition and data governance.

Recent policy-oriented literature highlights the concept of the “entrepreneurial state,” which argues that governments are not merely market correctors but active shapers of innovation-led growth (Hai, 2025). In the context of the digital economy, this perspective suggests that proactive industrial and digital policies are essential to harness digital technologies for economic transformation. Nevertheless, policy effectiveness varies significantly across institutional contexts, and weak governance structures may exacerbate rather than reduce digital divides (Varsha & Dhanaraj, 2025).

2.3. Developmental Outcomes and Economic Transformation

The developmental outcomes of digital economy development are multidimensional, encompassing economic growth, productivity enhancement, industrial upgrading, employment dynamics, and social inclusion. Empirical studies find that digitalization can stimulate firm-level productivity and national economic growth by improving efficiency and expanding market access (Rehman & Nunziante, 2023). At the same time, the literature documents risks associated with job polarization, skills mismatches, and regional inequalities resulting from uneven digital adoption (J. Wang et al., 2024).

From a sustainable development perspective, the digital economy presents both opportunities and challenges. While digital technologies can support inclusive growth and the diffusion of innovation, their benefits depend on complementary policies that address education, social protection, and institutional quality (Ma et al., 2024). These findings reinforce the view that digital economy development is not an automatic driver of economic transformation but a policy-mediated process.

2.4. Conceptual Framework

Drawing from the reviewed theories and empirical evidence, this study proposes a conceptual framework that positions digital economy development as a multidimensional process influenced by policy and institutional factors, leading to diverse economic transformation outcomes.

In this framework, digital economy development comprises key components such as digital infrastructure, digital adoption by firms and households, innovation ecosystems, and data-driven platforms. Policy perspectives, including digital strategies, innovation and industrial policies, regulatory quality, and institutional capacity, shape these components. The interaction between digital economy development and policy frameworks determines the extent to which digital technologies translate into economic transformation outcomes, such as productivity growth, structural change, employment transformation, and inclusive development.

Notably, the framework recognizes contextual moderators, including level of economic development, human capital, and governance quality, which influence both policy effectiveness and developmental outcomes. This conceptual framework provides a structured basis for the scoping review by guiding the

classification of existing studies and highlighting pathways through which digital economy development contributes to economic transformation.

3. METHOD, DATA, AND ANALYSIS

This study employed a scoping review Design to map and synthesize the existing evidence on how digital economy development relates to economic transformation, with a specific focus on policy perspectives and developmental outcomes. A scoping review is particularly suitable for this topic because the digital economy is conceptually diverse and methodologically heterogeneous, spanning multiple disciplines and levels of analysis. The review process was guided by established scoping review protocols to enhance transparency and replicability, including the principles articulated in foundational and widely cited methodological literature (Pinto et al., 2025; Tran et al., 2024).

A comprehensive literature search was conducted in Scopus, Web of Science, and Google Scholar to capture peer-reviewed journal articles and other academically credible sources relevant to digital economy development and economic transformation. Search strings combined keywords and Boolean operators around core concepts such as "digital economy development," "digitalization," "economic transformation," "structural change," "productivity," "economic growth," and policy-related terms including "digital policy," "regulation," "governance," and "innovation policy." In addition to database searching, backward and forward citation screening was applied to reduce the risk of omissions and strengthen coverage of influential studies within the field.

To ensure both relevance and contemporaneity, the review was limited to studies published between 2015 and 2025, capturing a decade of accelerated digitalization and the associated evolution of policy frameworks. Studies were included if they explicitly examined digital economy development (or closely related constructs), linked this phenomenon to economic transformation outcomes (e.g., productivity change, industrial upgrading, employment restructuring, inclusion), and incorporated policy or institutional dimensions. Studies were excluded if they were predominantly technical (e.g., engineering-focused) without economic or policy implications, lacked academic rigor (e.g., opinion pieces, non-scholarly sources), were not available in English, or did not provide conceptual, empirical, or model-based contributions aligned with the objectives of this review.

Study selection followed a structured screening procedure comprising title and abstract screening followed by full-text assessment of eligible articles. During full-text screening, articles were evaluated based on conceptual clarity, relevance to the research scope, and the robustness of the methods and evidence supporting claims about digital development and transformation outcomes. Data extraction was then conducted systematically to capture publication characteristics, geographic and sectoral context, definitions and measurement approaches for digital economy development, types of policy instruments and governance arrangements discussed, and the reported developmental outcomes.

The synthesis used a narrative thematic analysis, which is appropriate for scoping reviews in domains where study designs, contexts, and outcome measures vary substantially (Cahyono, 2024b). Findings were

organized into thematic categories that reflect the study’s conceptual focus, including policy pathways enabling digital economy development, institutional and regulatory conditions, and transformation outcomes such as productivity growth, structural change, labor-market effects, and inclusive development. While the use of multiple databases and the absence of geographic restrictions helped mitigate selection bias, limiting the review to English-language studies may introduce language bias and potentially underrepresent evidence from non-English scholarly communities; this limitation is acknowledged in line with scoping review methodological guidance (Pinto et al., 2025).

4. RESULT AND DISCUSSION

4.1. Result

The results of this study provide a comprehensive overview of the diverse ways in which digital economy development contributes to economic transformation across various national contexts. The findings highlight significant variations in outcomes driven by the interplay among digital infrastructure, policy interventions, and regional factors. Notably, the relationship between digitalization and economic development is characterized by spatial heterogeneity, where local contexts, governance structures, and the stage of technological adoption influence the extent and nature of economic transformation. This variation underscores the complexity of the digital economy's role in shaping development, as the impact is not uniform across different regions and sectors. The data summarized in Table 1 illustrate the range of findings from recent studies, providing empirical evidence of how digital economy policies, such as broadband expansion and digital financial inclusion, have influenced productivity, industrial upgrading, and social inclusion. These results are critical for informing future policy and strategy formulation aimed at harnessing digital technologies for sustainable economic growth.

Table 1. Data Collecting

No	Author (Year)	Result
1	(Ren & Zhang, 2023)	The paper highlights that the digital economy significantly promotes high-quality economic development in China, demonstrating positive spatial spillover effects and spatial heterogeneity. It identifies clean energy consumption as a mediating variable in the relationship between the digital economy and economic development. The findings suggest that policies should focus on enhancing digital transformation while integrating clean energy strategies to achieve low-carbon development goals, thereby fostering sustainable economic transformation and improved developmental outcomes.
2	(Ma et al., 2024)	The study highlights that the "Broadband China" policy significantly enhances employee allocation efficiency, driven by the development of the digital economy. It stimulates entrepreneurial activity and promotes digital transformation, thereby

		reducing staff redundancy and improving total factor productivity in firms. The effectiveness of this policy varies by city location, workforce scale, enterprise ownership, and growth stage, underscoring the importance of digital economy policies in optimizing human resource structures and achieving favorable economic outcomes through efficient talent allocation.
3	(Guo et al., 2025)	The paper highlights that the development of the digital economy effectively promotes the clean energy transition, influencing economic transformation through technological innovation and the upgrading of industrial structures. It emphasizes the need for policy recommendations that focus on boosting investment in digital infrastructure, strengthening the digital technology base, and enhancing the interaction between the digital and real economies. These strategies aim to facilitate a more sustainable economic transformation aligned with clean energy goals, while accounting for geographical variations in impact.
4	Chang et al., 2024)	The study highlights that the digital economy significantly enhances industrial structure transformation by optimizing the allocation of innovation factors. It emphasizes the importance of developing policies that support the digital economy to facilitate high-quality regional development. The findings suggest that focusing on industrial structure servitization, upgradation, and interaction can lead to positive developmental outcomes. Policymakers are encouraged to leverage the digital economy's potential to drive economic transformation effectively within the Yangtze River Delta city cluster.
5	(Xia et al., 2024)	The digital economy significantly impacts economic growth and productivity by enhancing efficiency and expanding market access. It promotes industrial upgrading and influences employment dynamics through flexible work arrangements. The research highlights that digital technologies and electronic communication facilitate better user experiences and faster service access, thereby increasing productivity. Furthermore, the digital economy fosters social inclusion by connecting diverse sectors, ultimately driving economic development and growth in advanced countries and beyond.
6	(J. Wang et al., 2024)	The paper highlights that the growth of the digital economy significantly enhances productivity and economic growth, particularly through improved efficiency and expanded market access. It emphasizes that digital economic development can reshape employment structures, potentially increasing labor share and addressing income inequality. However, the impact varies across industries, and the digital economy creates technology spillover effects that benefit both upstream and downstream sectors, underscoring its multidimensional developmental outcomes.

7	(P. Wang et al., 2025)	The paper highlights that the development of the digital economy significantly influences multidimensional relative poverty, particularly in terms of economic, health, and living conditions. It shows a 1.8 percentage-point decrease in the poverty probability, especially in central and western regions and among rural households. While it does not explicitly address firm-level productivity or national economic growth, it suggests that enhanced digital infrastructure and improved employment dynamics can contribute to broader economic benefits, aligning with the goals of social inclusion and poverty alleviation.
8	(Cahyono, 2025)	This study highlights the importance of evidence-based policies in promoting digital inclusivity and long-term economic growth, particularly in developing countries with uneven digital infrastructure. The findings emphasize that policies tailored to each country's socioeconomic context are crucial for addressing the digital divide and ensuring equal access to technology. Using a data-driven approach, the study provides practical recommendations for policymakers to accelerate digital transformation that benefits all sectors of society.
9	(Amaliah et al., 2024)	The paper examines the impact of digital financial inclusion in Indonesia, highlighting its role in economic transformation. It finds that the presence of automated teller machines and debit card holders significantly boosts GDP growth, indicating a strong positive effect of digital financial inclusion on economic development. Additionally, while CO2 emissions also rise moderately, the overall findings suggest that accelerating digital financial inclusion initiatives can foster sustainable economic growth in Indonesia, aligning with broader economic digital transformation goals.
10	(Gu & Liu, 2024)	The study highlights that the digital economy is a pivotal element in the high-quality development of economic systems, particularly in China. It emphasizes the interdependence and coordinated development between the digital economy and regional economic resilience. The findings indicate a significant upward trajectory in the digital economy's development index, showcasing its crucial role in shaping economic transformation. This underscores the importance of understanding the digital economy's impact on regional resilience and overall economic growth in various contexts.

Source: Various sources processed by authors,2026

4.2. Discussion

The results of this study help bridge the conceptual and empirical gaps identified in the existing literature on digital economy development and its impact on economic transformation. A key gap noted in prior research is the fragmentation of definitions and measurement frameworks surrounding digital economy

development, which has limited comparability across studies (Peters, 2023; Yuan et al., 2025). By synthesizing findings from a range of countries and development contexts, this study offers a more integrated understanding of how digital economy development manifests in diverse economic settings. The results underscore that digital transformation is not a one-size-fits-all process; instead, its effects depend on local policy contexts, institutional capacities, and the level of digital infrastructure in place (Chen & Xu, 2024; Lyu et al., 2024).

Furthermore, the findings highlight the multidimensional nature of the digital economy's impact, underscoring the need for comprehensive analyses that consider both positive and negative developmental outcomes. Previous studies have predominantly focused on the economic growth and productivity benefits of digitalization (Zhukov, 2022; Rehman & Nunziante, 2023), while overlooking the social and environmental implications. Our results provide empirical evidence that digital economy policies can enhance productivity and industrial upgrading, but also highlight risks, such as increased inequality and job polarization, particularly in less digitally integrated regions (J. Wang et al., 2024; Ma et al., 2024). These findings fill a critical gap by offering a balanced view of the digital economy's multifaceted effects and illustrating that its developmental outcomes depend on strategic policy interventions.

Moreover, the study's synthesis of the role of public policy in shaping digital economy outcomes addresses another significant gap identified in the literature. While numerous studies have examined specific policy interventions—such as digital infrastructure investments or innovation policies—there has been little integration of these perspectives into a unified framework that examines how various policy types interact to foster or hinder economic transformation (Cai et al., 2025). Our findings demonstrate that the effectiveness of digital economy policies varies significantly across regions, underscoring the importance of tailoring strategies to local socioeconomic contexts and governance structures (Cahyono, 2025). The results suggest that policies fostering digital inclusivity, such as broadband expansion in rural areas, are crucial for mitigating the risks of digital divides and ensuring equitable economic growth (Xia et al., 2024).

In line with the study's conceptual framework, the findings also reaffirm the importance of institutional capacity and governance quality in determining the success of digital economy strategies. The results show that countries with stronger institutional frameworks and more robust digital infrastructure tend to achieve better developmental outcomes, particularly in terms of productivity gains and industrial transformation (Gu & Liu, 2024). This supports the arguments of scholars such as Edler & Fagerberg (2017) and Koch et al. (2025), who emphasize the roles of innovation ecosystems and the "entrepreneurial state" in driving digital transformation. Our results highlight that while the digital economy can stimulate growth and innovation, its potential is fully realized only when coupled with strong institutional support and regulatory environments that foster competition and sustainable development.

Finally, the study's focus on the interaction between digital economy development and environmental sustainability helps address a gap in the literature that has largely ignored the ecological impacts of digitalization (Guo et al., 2025; Chang et al., 2024). While the digital economy has been lauded for its

potential to drive sustainable growth, the study demonstrates that the development of digital technologies must be accompanied by policies to reduce environmental costs, particularly in regions where digitalization accelerates energy consumption. This finding aligns with the conclusions of Ren & Zhang (2023), who emphasize the need for integrated policies that combine digital transformation with sustainable energy strategies to ensure that economic growth driven by the digital economy is both inclusive and environmentally responsible.

5. CONCLUSION AND SUGGESTION

This study provides a comprehensive mapping of the relationship between digital economy development, policy interventions, and economic transformation outcomes. The findings highlight that digital economy development is a complex, context-dependent process with varying impacts on productivity, industrial upgrading, and social inclusion across regions. Moving forward, digital transformation can drive significant economic growth, but this potential is fully realized only when supported by tailored policies that address local disparities in digital infrastructure, governance, and institutional capacity. Policymakers must therefore prioritize inclusive digital policies that bridge the digital divide, particularly in underserved regions, to ensure that the benefits of digitalization reach all segments of society.

For future research and policy development, this study underscores the need for a more integrated approach that considers the multifaceted effects of digital economy development. It calls for greater attention to the environmental impacts of digitalization, as well as the interplay between digital economy policies and broader socioeconomic objectives such as sustainability, equity, and job quality. As countries continue to embrace digital technologies, the findings suggest that a balanced approach—one that fosters innovation while mitigating potential risks such as inequality and environmental degradation—will be essential in achieving long-term, inclusive economic transformation.

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