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Framework for the Development and Governance of Strategies Promoting Sustainable Economic Growth

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Abstract: Despite the increasing emphasis on sustainable economic growth, current literature reveals significant fragmentation in approaches and frameworks, often addressing only individual aspects such as environmental, social, governance, economic, or digital factors without integrating them into a cohesive strategy. This lack of a unified framework contributes to the ambiguity and challenges in formulating and implementing effective sustainable economic growth strategies. To address this gap, this research proposes a comprehensive Sustainable Economic Growth frame of reference that integrates these diverse factors. By conducting a systematic review and comparative analysis of existing literature, this study identifies the common building blocks essential for sustainable economic growth. The suggested framework highlights the pivotal role of digital transformation in advancing sustainability and economic efficiency, while simultaneously integrating environmental, social, governance, and economic factors. This comprehensive approach seeks to offer a clear, flexible guide for policymakers, industry stakeholders, and scholars to effectively formulate and manage sustainable economic growth strategies.

Keywords: Sustainable Economic Growth, Framework, Digital Transformation, Governance, Environmental Sustainability, Social Equity

Introduction

Sustainable economic growth has become a central goal for policymakers, industry leaders, and scholars. The pursuit of development that harmonizes economic advancement with environmental preservation and social equity is increasingly recognized as vital for ensuring long-term prosperity. However, despite the growing body of research, the concept of Sustainable Economic Growth remains fragmented, with no universally agreed-upon definition or framework (Brad *et al*., 2016; Khan *et al*., 2020; Waheed *et al*., 2023). The existing literature, while extensive, often Previous studies have tended to focus on specific aspects of sustainability such as environmental, social, governance, economic, or digital factors without fully integrating these elements into a unified strategy (Korachi and Bounabat, 2020a-b).

Several contributions have significantly enhanced the understanding of sustainable economic growth. For example, (Guan *et al*., 2024) highlight the role of digital governance in promoting natural resource sustainability, while (Li and Zhou, 2024) explore the impact of digital finance on green economic growth. Ullah *et al*. (2024) investigate how digital transformation can enhance both environmental sustainability and economic efficiency. Despite these valuable insights, the literature exhibits notable weaknesses. Many studies tend to focus on specific aspects, such as environmental sustainability or digital transformation, without considering the broader context or the interplay between various sustainability factors (Guan *et al*., 2024; Nowak and Kokocińska, 2024).

Moreover, significant gaps remain in the literature. Specifically, there is a lack of comprehensive frameworks that holistically integrate the key dimensions of sustainable economic growth environmental, social, governance, economic, and digital factors into a unified strategy (Korachi and Bounabat, 2019b). This gap underscores the need for a more coordinated and integrative approach that can address the complexities of sustainable development in a rapidly changing global landscape (Škare *et al*., 2024; Hong and Xiao, 2024).

To address these gaps, this study aims to develop a standard sustainable economic growth framework that integrates these diverse factors. The central research question guiding this study is: What are the fundamental components of a reference framework for the formulation and execution of strategies aimed at achieving sustainable economic growth? By synthesizing insights from the existing literature and addressing the identified weaknesses, this research seeks to provide a comprehensive framework that can guide the development and governance of sustainable economic growth strategies.

Literature Review

A systematic review of the literature on sustainable economic growth approaches, frameworks, and strategies was conducted, resulting in a discussion of the definitions, key components, and foundational elements of sustainable economic growth strategies.

Sustainable Economic Growth Definition

Despite various discussions and research around the concept of "sustainable economic growth," there is no single, universally agreed-upon definition. However, the following key themes can be identified across the multiple definitions shown in Table (1):

1. Economic progress: Most definitions emphasize continuous economic growth and development. This includes fostering innovation, competitiveness, and efficiency to ensure long-term prosperity (Brad *et al*., 2016; Khan *et al*., 2020; Waheed *et al*., 2023)
2. Environmental sustainability: Considerable emphasis is placed on the sustainable utilization and management of environmental resources. This involves balancing economic activities with environmental protection to avoid adverse impacts on the environment and ensure the well-being of future generations (Brad *et al*., 2016; Xu *et al*., 2024; Armeanu *et al*., 2017)
3. Social well-being: The definitions also highlight the importance of social equity and inclusivity. Sustainable economic growth should aim to improve individual livelihoods and address social concerns, ensuring that the benefits of growth are shared widely across society (Khan *et al*., 2020; International Economic Development Council, 2017; Androniceanu *et al*., 2021)
4. Long-term perspective: Numerous definitions highlight the importance of fulfilling the needs of the current generation without undermining the capacity of future generations to meet their own needs. This long-term outlook is crucial for ensuring sustainability across economic, environmental, and social dimensions (Armeanu *et al*., 2017; Androniceanu *et al*., 2021; Stephen, 2024)

Based on the analysis of these definitions, "sustainable economic growth" can be summarized as follows:

1. Sustainable economic growth: Refers to the long-term development of an economy that simultaneously promotes economic prosperity, environmental sustainability, and social equity. This growth is achieved by fostering innovation, resource efficiency, and inclusivity, ensuring that present needs are met without impairing the capacity of future generations to satisfy their own needs (Korachi and Bouchaib, 2022a). This concept entails the equitable integration of economic development, environmental stewardship, and social welfare, aiming for long-term prosperity and resilience (Brad *et al*., 2016; Khan *et al*., 2020; Waheed *et al*., 2023; Armeanu *et al*., 2017; Xu *et al*., 2024; Stephen, 2024; International Economic Development Council, 2017; Androniceanu *et al*., 2021)

Sustainable Economic Growth Strategies and Frameworks Review

This section presents a review and analysis of sustainable economic growth approaches and frameworks. It discusses the relevant blocks, strengths, weaknesses, commonalities, and differences of these frameworks.

Guan *et al*. (2024) demonstrate how digital government significantly enhances the sustainability of natural resources by promoting transparency and accountability in governance, which in turn supports environmental protection and economic growth. The study finds that digital governance initiatives lead to improved management of natural resource rents in various global regions. However, it lacks a detailed analysis of the direct social impacts of these initiatives and does not address the implementation challenges in diverse political and economic contexts.

Yiming *et al*. (2024) explore the catalytic role of digital finance in enabling green economic growth, highlighting its effectiveness across different regions through a detailed spatial analysis. The study reveals that digital finance can significantly support sustainable business practices and investments in green sectors, enhancing both economic and environmental outcomes. Despite these contributions, the study does not thoroughly discuss the social implications of green growth or the potential risks related to the stability and security of digital financial systems.

Table 1: Sustainable economic growth definition

Definition	Authors, Year
Sustainable economic growth involves the moderate and responsible utilization of limited resources within economic activities. It emphasizes the alignment of economic growth with environmental sustainability, aiming to ensure long-term prosperity without adverse impacts on the environment. This concept entails promoting innovation, efficiency, and competitiveness while addressing social and environmental concerns to establish a balanced and sustainable economic model.	Brad *et al*. (2016)
Sustainable economic growth is described as the long-term development of an economy that balances economic progress with environmental protection and social well-being.	Waheed *et al*. (2023)
Sustainable economic growth refers to a balanced and inclusive development that addresses the needs of the present while ensuring that future generations can also fulfill their own needs. It involves fostering economic progress while ensuring environmental protection, social equity, and resource efficiency for long-term prosperity.	Khan *et al*. (2020)
The notion of sustainable economic growth pertains to an economy's capacity to expand and develop over time in a way that satisfies the needs of the current generation without diminishing the ability of future generations to meet their own needs. It involves achieving a balance between economic progress, environmental protection, and social well-being to ensure long-term prosperity and well-being for society.	Armeanu *et al*. (2017)
Sustainable economic growth pertains to an economy's capacity to achieve continuous growth while effectively managing environmental resources and maintaining a balance between economic advancement and environmental conservation.	Xu *et al*. (2024)
Sustainable economic growth is described as "a continual revelation of rise in gross domestic product imparting on improving individual livelihood both for present and future generations.	Stephen (2024)
Sustainable economic growth is characterized as a persistent increase in gross domestic product that enhances the quality of life for both current and future generations.	International Economic Development Council (2017)
Sustainable economic growth can be defined as the long-term development of an economy that seeks to address current needs while ensuring that future generations can also meet their own requirements and needs. It involves promoting economic activities that harmonize economic advancement with environmental preservation and social welfare, ensuring resilience, inclusivity, and innovation in the pursuit of prosperity for society.	Androniceanu *et al*. (2021)

Ullah *et al*. (2024) investigate the combined impacts of transformation and friendly economic efforts, focusing on how digital technologies like IoT and AI can revolutionize environmental sustainability and economic efficiency. The research confirms that digital transformation directly contributes to reducing energy consumption and enhancing resource management. However, the study provides limited insight into the social benefits of these technologies and lacks a comprehensive framework for implementing these digital solutions in traditional economic systems.

Guan *et al*. (2024) assess the combined impact of the digital economy and renewable energy on reducing energy intensity, using data from 33 countries to illustrate the global implications of this synergy. The study effectively shows that integrating digital technologies with renewable energy sources leads to significant improvements in energy efficiency and reductions in energy consumption, benefiting the environment and economy. Nonetheless, the research does not delve into governance strategies for managing this integration or the societal changes required to adapt to these technological advancements.

Nowak and Kokocińska (2024) utilize the Grey System Theory to assess the efficiency of economic growth in promoting sustainable development across Eurozone and non-Eurozone countries. Their findings indicate that non-eurozone countries are generally more efficient in converting economic growth into sustainable outcomes, suggesting limitations in the current economic strategies of Eurozone countries. The study highlights the challenges in balancing economic, environmental, and social goals within different governance frameworks. However, the analysis does not fully address the digital factors influencing these efficiencies or the specific social and governance implications of the disparities found.

Hong and Xiao (2024) Delve into how blockchain and AI contribute to boosting the sustainability of the economy. This is achieved by enhancing the efficiency of supply chains and minimizing effects. Their research demonstrates the potential of these technologies to separate economic growth from environmental degradation. Despite these advancements, the study points out significant governance challenges in making sure that these digital innovations are consistent with overarching sustainability goals. The study lacks a detailed discussion on the social impacts of these technologies or the specific governance strategies needed to manage their implementation across diverse economic contexts.

Chen *et al*. (2024) investigate the combined impact of the resource curse. The integration of finance, in the economic growth of South Korea, reveals that while digital finance promotes economic development, it also intensifies environmental challenges associated with resource dependence. The study underscores the

importance of governance in mitigating these challenges, yet it highlights the difficulty in balancing economic and environmental objectives within the framework of digital finance. The analysis does not deeply explore the social implications of this dynamic or the potential digital innovations that could address these environmental concerns.

Abhinandan *et al*. (2023) offer a thorough examination of the impact of ESG factors on economic performance, businesses that prioritize social responsibilities tend to see improved results according to research findings but the impact of these factors, on economic success can differ greatly depending on the industry and location. This variability adds complexity to defining sustainable economic growth and underscores the need for a standardized approach to integrating ESG considerations into economic strategies. The study does not, however, address the digital aspects that could influence ESG performance or the specific governance mechanisms required to ensure consistent application of ESG principles.

Işık *et al*. (2024) propose the integration of economic factors into the traditional ESG framework, creating a new composite model termed ECON-ESG. This approach aims to address the shortcomings of existing ESG frameworks, which often neglect the economic dimension crucial for sustainable development. The study highlights how ECON-ESG can enhance sustainability assessments by including macroeconomic indicators alongside environmental, social, and governance factors, thereby offering a more holistic view of a country's sustainability. However, the study acknowledges the challenge of ensuring the reliability and consistency of these new indicators, which may impact the accuracy of sustainability assessments, and calls for further research to refine these methodologies.

Mocănașu (2020) examines how ESG factors influence investors' decision-making processes through a controlled experimental study. The findings suggest that while ESG considerations are becoming increasingly important, they do not significantly alter investors' stock price assessments or allocation of funds when presented alongside traditional financial metrics. This study highlights the complexities involved in integrating ESG factors into investment strategies, particularly in how investors perceive the relevance and reliability of ESG information. The study also notes that there is still a lack of consensus on how ESG factors impact long-term financial performance, contributing to the ongoing ambiguity in defining sustainable investment practices.

Cek and Eyupoglu (2020) investigate the impact of Environmental, Social, and Governance (ESG) performance on economic outcomes, revealing a positive but complex relationship. Their findings suggest that while strong ESG practices can enhance financial performance, the benefits vary significantly depending on the industry and regional context. The study emphasizes the need for companies to adopt a holistic approach to ESG integration, as inconsistent practices can lead to uneven economic results. However, the study does not extensively explore the digital factors that may amplify or mitigate ESG impacts, nor does it fully address the governance challenges of implementing consistent ESG strategies across different economic environments. This underscores the ongoing ambiguity in defining the role of ESG in sustainable economic growth and highlights the need for more standardized and integrated approaches.

Alloh *et al*. (2024) conducted an analysis of the sustainability of the economy within the agricultural food industry, as well as the tourism and hospitality sectors. The study identifies key areas where the shared economy can enhance sustainability, such as food-sharing platforms that reduce waste and increase resource efficiency. However, the authors also highlight significant challenges, including the need for robust governance frameworks to manage the environmental and social impacts of these shared models. While the shared economy offers potential economic benefits, the study notes that the sustainability impacts remain ambiguous, particularly regarding long-term social and environmental outcomes. This underscores the need for more comprehensive research and policy development to fully realize the sustainability potential of shared economy practices.

Capelli *et al*. (2024) introduce a new methodology for incorporating Environmental, Social, and Governance (ESG) factors into conventional financial risk assessments by breaking down Value-at-Risk (VaR) into Component Value-at-Risk adjusted for ESG (CVaRESG). The study demonstrates that this approach provides a more accurate assessment of the risks associated with different asset classes within a multi-asset portfolio, particularly by highlighting the quantifiable long-term financial impacts of ESG factors. However, the authors acknowledge the challenges of applying this method across different asset types, especially given the variability in ESG scores and the lack of standardized data. The study suggests further refinement of the CVaRESG model to enhance its applicability and reliability in real-world portfolio management, particularly in terms of adjusting for the distinct characteristics of various financial instruments.

Nora and Yulia (2023) examine the effects of the COVID-19 pandemic on key economic variables across ASEAN countries employing a Panel Vector Autoregressive (PVAR) model. The study reveals that the pandemic caused significant shocks to GDP, inflation, money supply, and unemployment rates, with GDP exerting the greatest impact on the other economic variables. The authors emphasize the interconnectedness of these variables, highlighting how economic shocks in

one area can have ripple effects throughout the economy. However, the study points out that the response of each variable to these shocks varies across countries, reflecting differences in economic structure and policy responses. The research underscores the importance of developing resilient economic strategies that can mitigate the effects of such shocks, although it does not delve deeply into the role of digital technologies or governance frameworks in shaping these responses.

Sepehrdoust *et al*. (2023) an examination of how various macroeconomic factors, such as economic complexity in Iran, impact the environment reveals key insights through the use of the Autoregressive Distributed Lag (ARDL) model. The findings indicate that increased economic complexity reduces pollution over time, while growth in the housing sector and higher household energy consumption contribute to elevated pollution levels. The study emphasizes the balance between fostering economic growth and protecting the environment for sustainability, highlighting the need for policies that promote economic diversification while mitigating the environmental impacts of housing and energy use. However, the research does not thoroughly explore potential solutions or regulatory frameworks to further support these environmental goals, indicating an area for future investigation.

Veltri *et al*. (2023) investigate whether the inclusion of Environmental, Social, and Governance (ESG) factors improves the corporate efficiency of utility companies and whether these factors influence the risk perceptions of credit lending institutions. Employing a Data Envelopment Analysis (DEA) model, the study finds that incorporating ESG factors has only a minimal impact on improving corporate efficiency within the utilities sector. Additionally, the research shows that ESG scores do not significantly affect credit risk assessments, suggesting that ESG performance is not yet a decisive criterion in bank lending decisions. The study highlights the need for further refinement of ESG measurement methodologies and calls for more consistent regulatory frameworks to enhance the role of ESG in corporate performance evaluation.

Ioana-Stefania *et al*. (2021) provide a critical review of the existing methods and frameworks used to measure the sustainability of investment funds. The study evaluates various tools based on a seven-criteria matrix, identifying significant gaps in current approaches, particularly in their ability to capture real-world sustainability impacts. The authors argue that popular metrics, such as carbon footprints and ESG ratings, often fail to reflect the true environmental and social impacts of investments, thereby raising concerns about greenwashing. The study calls for the development of open-source, science-based methods that prioritize positive impact creation and conform to science-based targets for sustainable development. Despite offering a comprehensive evaluation, the study highlights the challenges of standardizing these measurement tools across diverse financial contexts.

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Krishnamoorthy (2021) explores the evolving importance of Environmental, Social, and Governance (ESG) factors as essential components of modern business strategy, especially in the aftermath of the COVID-19 pandemic. The study argues that the traditional focus on shareholder value is being replaced by a broader mandate to contribute positively to society, with ESG becoming a critical measure of organizational resilience and societal contribution. Through a case study of Unilever, the study illustrates how ESG initiatives can be integrated into corporate strategy to establish a competitive edge. However, the study also acknowledges the challenges in measuring ESG impact, noting that current metrics often fail to capture the full scope of social and environmental contributions. This analysis underscores the need for more robust and standardized methods to assess ESG performance, ensuring that businesses can effectively align profitability with societal good.

Zulfigarov and Neuenkirch (2020) investigate the effects of oil price fluctuations on key macroeconomic variables in Azerbaijan using a Vector Autoregressive (VAR) model. Their findings highlight that oil price increases lead to higher GDP growth, primarily driven by the oil and gas sector, but also cause inflationary pressures and currency appreciation. Conversely, oil price decreases result in lower GDP growth, especially in the non-oil sector, due to reduced government spending supported by oil revenues. The study underscores the vulnerabilities of Azerbaijan's economy to oil price shocks, particularly the risks associated with its heavy dependence on oil revenues. However, the analysis does not fully explore the potential role of governance or diversification strategies in mitigating these economic impacts, pointing to areas for further research.

Fernandes *et al*. (2021) examine the relationship between green growth and economic growth, specifically through the lens of sustainable technology transfer and innovation. The study finds that sustainable technology transfers and innovations positively impact green growth, which in turn promotes economic growth. However, the authors highlight a critical tension: While green growth can coexist with economic growth, achieving both simultaneously may involve complex trade-offs, particularly in balancing immediate economic benefits with long-term environmental sustainability. This research contributes to the ongoing debate over whether green growth can truly support economic expansion without compromising environmental objectives, emphasizing the need for carefully crafted policies to navigate this delicate balance.

Hunjra *et al*. (2024) an analysis of the relationship between economic development and environmental sustainability in 76 developing countries over three decades reveals important insights. The research supports the Environmental Kuznets Curve (EKC) hypothesis, which suggests that while economic progress may initially exacerbate environmental degradation, it eventually leads to the adoption of cleaner technologies and reduced carbon emissions as income levels rise. Furthermore, the study highlights a connection between Foreign Direct Investment (FDI) and carbon emissions, implying that, without stringent environmental regulations, increased FDI inflows may result in more severe environmental impacts. The study underscores the importance of context-specific policies tailored to the unique challenges of developing economies, emphasizing that a one-size-fits-all approach is insufficient for balancing economic growth and environmental sustainability.

Cynthia *et al*. (2024) offer an in-depth review of the approaches used by small and medium-sized enterprises (SMEs) across African economies to address challenges and attain sustainable growth. The study highlights the pivotal role of access to finance, examining both traditional banking channels and innovative fintech solutions that have emerged as critical enablers of SME development. Additionally, the study underscores the importance of government policies and interventions in fostering a supportive environment for small businesses, with an emphasis on regulatory frameworks and incentives. The review also examines the effects of technology adoption on SME growth, particularly how digital tools can improve efficiency and market reach. However, the study identifies notable challenges, including regulatory obstacles, limited digital literacy, and socio-cultural factors that impact the scalability and sustainability of these strategies. The study advocates for a comprehensive approach that combines financial inclusion, policy support, technological innovation, and capacity building to nurture a dynamic SME ecosystem in Africa.

Li *et al*. (2024) the study examines the factors and policy approaches necessary to promote ecotourism in China, with a focus on Guilin as a case study. By employing the Fuzzy Analytic Hierarchy Process (AHP) and the Fuzzy Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), the research seeks to identify key criteria and effective strategies for advancing sustainable tourism. The study highlights sustainability, developed infrastructure and services, and social and cultural influences as crucial components. Community-based tourism, tourism certification, and public-private partnerships are emphasized as the most impactful strategies. Nonetheless, the study notes challenges in implementing these strategies, such as the need for better stakeholder coordination and capacity building. While the research offers valuable insights into sustainable tourism, it calls for further studies to explore the practical social and cultural impacts of these initiatives in developing economies.

Škare *et al*. (2024) investigate the relationship between digitalization and carbon footprints across various sectors within the European Union, analyzing how digitalization contributes to sustainable economic growth. Their findings indicate that digitalization significantly impacts sustainability, primarily by reducing carbon footprints in sectors such as NGOs and households. However, the study also highlights that digitalization's effects on government and business sectors are more complex, with some cases showing an increase in carbon footprints due to increased energy consumption. The authors argue that to achieve the 2030 Sustainable Development Goals (SDGs), digitalization must be carefully managed to maximize its benefits while minimizing environmental harm. The study highlights the necessity for revised sustainability policies that incorporate digital transformation as a core component of economic and environmental strategies.

Xia *et al*. (2024) explore the dynamic relationships between mineral markets, the Belt and Road Initiative (BRI), the Paris Agreement, and green technologies, focusing on their combined impact on green economic growth. Using advanced econometric tools like QVAR and Wavelet Quantile Correlation, the study reveals that while minerals, BRI, and green technologies initially hinder green growth in the short term, they contribute positively in the long term. The Paris Agreement is found to have mixed impacts in the short and medium term but significantly promotes green growth in the long run. The research underscores the necessity of a long-term perspective to harness the full potential of these factors for sustainable development, advocating for comprehensive policy frameworks that integrate these elements to achieve the Sustainable Development Goals (SDGs). However, the study also notes the challenges of balancing short-term economic disruptions with long-term environmental benefits, highlighting the need for careful policy coordination.

Wang *et al*. (2024) explore the relationships between economic growth, nuclear energy, renewable energy, and environmental quality in BRICS countries, applying the Environmental Kuznets Curve (EKC) and Load Capacity Curve (LCC) hypotheses. The study finds that while economic growth initially increases environmental degradation, as indicated by higher CO_2 emissions, further economic expansion eventually leads to improvements in environmental quality due to technological advancements and increased environmental awareness. Additionally, the research highlights that nuclear energy contributes to reducing CO_2 emissions, while renewable energy positively impacts the load capacity factor, enhancing environmental sustainability. However, the study also reveals that financial development, although beneficial for economic growth, tends to increase environmental degradation, underscoring the complexity of achieving sustainable development. The authors call for policy measures that balance economic growth with environmental sustainability, particularly through the integration of renewable energy and improvements in energy efficiency.

The reviewed studies exhibit both commonalities and divergences in addressing the interplay between digital transformation, economic growth, and sustainability, while also revealing gaps that warrant further exploration. Common across these studies is the recognition that digital technologies, whether through digital governance (Guan *et al*., 2024), digital finance (Xiaoqian *et al*., 2024), or digital transformation in energy sectors (Ullah *et al*., 2024; Guan *et al*., 2024), play a pivotal role in enhancing sustainability and economic efficiency. These studies converge on the idea that digital innovations can drive environmental and economic benefits, such as reducing energy intensity and fostering green growth. However, they also highlight a significant gap in addressing the broader social impacts and governance challenges associated with these digital transformations.

Differences emerge in the scope and focus of these studies. For instance, while (Guan *et al*., 2024) emphasize the role of digital governance in natural resource management, they fall short of exploring the social implications and political challenges of implementing such initiatives across diverse contexts. Similarly, (Li *et al*., 2024; Ullah *et al*., 2024) focus on the economic and environmental outcomes of digital finance and transformation but lack a comprehensive framework for understanding the social ramifications or the stability risks inherent in these digital systems. On the other hand, (Guan *et al*., 2024) provide a global perspective on the synergy between digital economies and renewable energy but do not delve into the governance strategies necessary to manage this integration effectively.

The gaps identified in these studies highlight the need for a more integrated approach that combines digital, economic, social, and governance perspectives to achieve sustainable development.

To synthesize the aforementioned works and provide a comprehensive overview, the following sections present a comparative analysis of these studies. This analysis aims to clarify the limitations of the existing literature and propose solutions.

Materials and Methods

Software Tools

The systematic review and analysis were conducted using qualitative and quantitative software tools, including Python and Microsoft Excel; for organizing, categorizing, and synthesizing data from reviewed articles.

Data Sources

The research utilized:

- Peer-reviewed articles from databases such as Scopus, Web of Science, and Google Scholar
- Industry reports and policy documents from international organizations like the United Nations and World Bank

HardLaboratory of Economic Sciences and Public Policiesware

The analysis was performed on a workstation equipped with an Intel Core i9 processor, 32GB RAM, and SSD storage for efficient data processing.

To answer the research question and to fill the gap as discussed in the previous section, the following two hypotheses are proposed:

1. Hypothesis: Digital transformation is a critical driver for successful sustainable economic growth strategies
2. Hypothesis: A comprehensive Sustainable Economic Growth Strategy must holistically integrate environmental, social, governance, economic, and digital factors to be effective

To test these hypotheses a quantitative analysis was employed and detailed in the subsequent sections.

Results

To evaluate the above hypotheses, an analysis and comparison of the referenced Sustainable Economic Growth studies were conducted and presented in Table (2).

This section presents a comprehensive comparative analysis of various strategies, frameworks, and analytical studies on sustainable economic growth, along with their fundamental building blocks. Based on the literature review and analysis conducted earlier, it was determined that the fundamental building blocks of sustainable economic growth are Environment, Social, Governance, Economy, and Digital.

Figures (1-2) illustrate that the environment, social, governance, economy, and digital factors, along with their

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key elements, are crucial components of a sustainable economic growth strategy, as supported by numerous works in the literature. The literature review indicates that these five factors comprehensively encompass all relevant dimensions for achieving sustainable economic growth, with no additional factors identified as necessary for this framework.

The literature review indicates that, while significant progress has been made in exploring these factors individually, many studies tend to focus on specific aspects without considering the broader context. Table (2) highlights the absence of a comprehensive approach that covers all dimensions and concerns of sustainable economic growth.

Additionally, Fig. (1) shows that most research primarily addresses environmental elements (e.g., carbon emissions, energy efficiency, and resource management) and technological aspects (e.g., digital infrastructure, data analytics, and emerging technologies) in isolation. Often, sustainability is viewed solely through an environmental lens, neglecting the need for a balanced approach that integrates economic, governance, and social factors. To achieve truly sustainable economic growth, it is crucial to consider trade-offs and integrate these elements within a clear, explicit framework that provides well-defined processes for constructing and monitoring strategies.

Table 2: Summary and comparison of existing sustainable economic growth approaches and studies

Factors		Environmental							Social							Governance								Economic					Digital			
Number	source	Carbon emissions and energy efficiency	Water usage and management	Waste management	Sustainability practices and resource conservation	Pollution prevention and control	Climate change and biodiversity	Socio-economic and health impacts	Employee diversity	Labor practices	Community engagement	Customer Privacy	Socio-economic	Corporate responsibility	Innovation and research	Safety and Compliance	Board diversity	Executive compensation	Shareholder rights	Corporate governance practices	Governance quality	Anti-corruption	CSR and ESG	Gross Domestic Product (GDP)	Interest Rate	Consumer Price Inde (CPI)	Foreign exchange rate	Unemployment rate	Digital infrastructure	Data and analytics	Digital economy platforms	Emerging technologies
1	Guan *et al*. (2024)	✓	✓	✓	✓	✓	✓	✓							✓					✓	✓	✓	✓	✓					✓	✓	✓	✓
2	Pang *et al*. (2024)	✓			✓	✓	✓	✓							✓					✓			✓	✓					✓	✓	✓	✓
3	Lijuan and Chen (2024)	✓			✓	✓		✓					✓		✓									✓					✓	✓	✓	
4	Jiao *et al*. (2024)	✓			✓			✓					✓		✓						✓	✓		✓					✓	✓	✓	✓
5	Nowak and Kokocińska (2024)	✓	✓	✓	✓	✓	✓	✓					✓		✓									✓								
6	Hong and Xiao (2024)	✓	✓	✓	✓	✓	✓	✓							✓								✓						✓	✓	✓	✓
7	Chen *et al*. (2024)	✓			✓			✓							✓					✓	✓	✓		✓					✓			✓
8	Kulal *et al*. (2023)	✓	✓	✓	✓									✓	✓	✓	✓	✓	✓	✓		✓	✓									
9	Işık *et al*. (2024)	✓				✓	✓							✓								✓		✓								
10	Kulal *et al*. (2023)	✓			✓	✓	✓	✓	✓	✓			✓	✓									✓	✓	✓	✓	✓	✓				
11	Cek and Eyupoglu (2020)	✓	✓	✓	✓	✓	✓	✓																								
12	Alloh *et al*. (2024)	✓		✓																												
13	Capelli *et al*. (2024)																						✓									

14	Nora Ria and Yulia Maris (2023)																						✓		✓		✓				
15	Sepehrdoust *et al.* (2023)	✓																										✓			
16	Veltri *et al*. (2023)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓							✓	✓									
17	Ioana-Stefania *et al*. (2021)	✓	✓	✓	✓	✓	✓	✓																							
18	Krishnamoorthy (2021)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
19	Zulfigarov and Neuenkirch (2020)																						✓	✓	✓	✓					
20	Fernandes *et al*. (2021)	✓	✓	✓	✓	✓	✓	✓						✓									✓								
21	Hunjra *et al*. (2024)	✓				✓	✓	✓																							
22	Cynthia *et al*. (2024)				✓	✓	✓	✓	✓	✓	✓			✓	✓	✓				✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
23	Xiaoqian *et al*. (2024)	✓		✓	✓	✓		✓						✓	✓														✓			
24	Škare *et al*. (2024)	✓			✓	✓	✓	✓																					✓	✓	✓	✓
25	Xia *et al*. (2024)	✓	✓	✓	✓	✓	✓	✓						✓	✓					✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26	Wang *et al*. (2024)	✓			✓	✓	✓							✓	✓	✓																
27	Li *et al*. (2024)	✓			✓	✓	✓	✓					✓	✓	✓							✓	✓								✓
28	Alexander *et al*. (2024)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓										
29	Wu *et al*. (2024)				✓	✓		✓				✓		✓									✓								✓
30	Henry and Michael (2023)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓													✓			
31	Diartho (2023)	✓																					✓								
32	Jiang *et al*. (2024)	✓					✓							✓															✓	✓	✓	✓
33	Liu *et al*. (2024)	✓				✓		✓				✓		✓									✓						✓	✓	✓	✓
34	Chongyan *et al*. (2024)	✓			✓									✓									✓			✓			✓	✓	✓	✓
35	Elfaki and Ahmed (2024)	✓				✓								✓									✓						✓	✓		✓
36	Tian *et al*. (2024)	✓												✓									✓						✓	✓	✓	✓
37	Cao and Peng (2023)	✓			✓	✓		✓						✓															✓	✓	✓	✓
38	Utama *et al*. (2024)	✓	✓	✓	✓	✓	✓	✓						✓															✓	✓		✓

39	Oseremi *et al*. (2024)	✓			✓		✓			✓	✓	✓	✓	✓			✓		✓			✓	✓	✓
40	Li and Zhou (2024)	✓		✓	✓							✓		✓					✓			✓	✓	✓	✓
41	Böttcher *et al*. (2024)	✓			✓		✓						✓	✓					✓			✓	✓	✓	✓
42	Xiaoya *et al*. (2024)	✓			✓		✓	✓				✓	✓	✓					✓	✓		✓	✓	✓	✓
43	Ullah *et al*. (2024)	✓			✓	✓	✓	✓						✓								✓	✓		✓
44	Ashraf *et al*. (2024)	✓			✓	✓	✓							✓								✓			✓
45	Jiahui *et al*. (2024)	✓			✓		✓	✓				✓	✓	✓					✓	✓		✓	✓	✓	✓
46	Shang *et al*. (2024)	✓			✓	✓						✓		✓						✓		✓	✓	✓	✓
47	Su and Wu (2024)	✓			✓								✓	✓					✓			✓	✓	✓	✓
48	Capello *et al*. (2024)																					✓	✓	✓	✓
49	Stamopoulos *et al*. (2024)	✓		✓	✓			✓												✓					

These gaps underscore the need for a coordinated effort to synthesize insights from all these areas. Therefore, the objective of this research is to coordinate and integrate diverse findings from various authors to develop a comprehensive approach to sustainable economic growth. This approach aims to unify all relevant factors environmental, social, governance, economic, and digital into a holistic solution.

By creating a collaborative platform that synthesizes insights from each domain, we aim to formulate policies and strategies that are multi-dimensional and adaptable across various contexts. This integrative approach will serve as a blueprint for policymakers and industry leaders, guiding them toward achieving sustainable economic growth that is both inclusive and resilient.

Based on this analysis, it can be concluded that digital transformation is a critical driver for successful Sustainable Economic Growth Strategies, as it enhances management and governance, leading to greater efficiency and performance (Korachi and Bounabat, 2020a; Korachi and Bounabat, 2022b). Furthermore, the environment, social, governance, economy, and digital factors collectively constitute a comprehensive set of building blocks for Sustainable Economic Growth. This conclusion affirms the approval of hypotheses 1 and 2, as presented in Table (3). Accordingly, the following section will introduce a new integrated sustainable economic growth strategy framework based on these factors. This framework is considered as a sustainable economic growth frame of reference and it is presented in Figs. (3-8).

Figure (3) offers a comprehensive framework for a Sustainable Economic Growth Strategy by integrating key dimensions across five critical areas: Environment, Social, Governance, Economy, and Digital. This holistic approach is reflective of the contributions found in the reviewed literature, which emphasize the need for a multifaceted strategy to achieve sustainability. For instance, (Guan *et al*., 2024) highlight the importance of environmental governance and its impact on sustainable natural resource management, underscoring the necessity of environmental considerations in any sustainability framework.

The environmental dimension, highlighted in several studies, emphasizes the importance of addressing carbon emissions, energy efficiency, water management, and waste management factors that are crucial in mitigating the effects of climate change and promoting resource conservation. Škare *et al*. (2024) particularly stress the role of digitalization in reducing carbon footprints and enhancing resource efficiency, which aligns with the environmental focus seen in Fig. (3). The emphasis on pollution prevention, climate change, and biodiversity further underscores the need for strategies that protect and sustain the natural environment, aligning with findings from (Jiao *et al*., 2024) on the integration of renewable energy and digital technologies to improve environmental outcomes.

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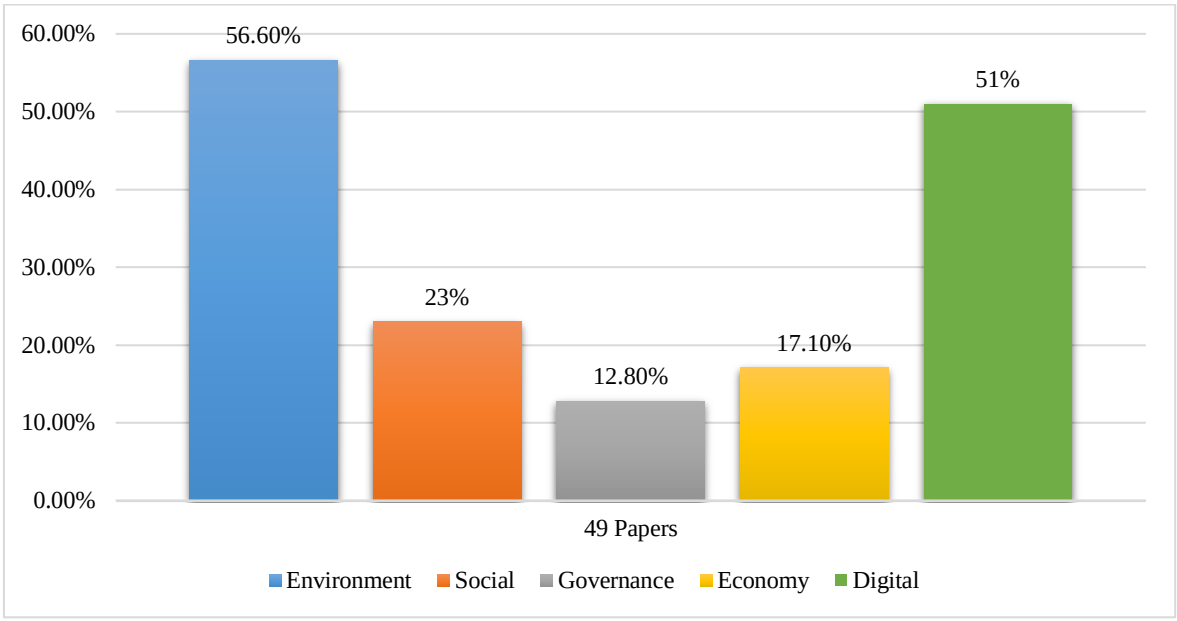

Fig. 1: Sustainable economic growth strategy building blocks

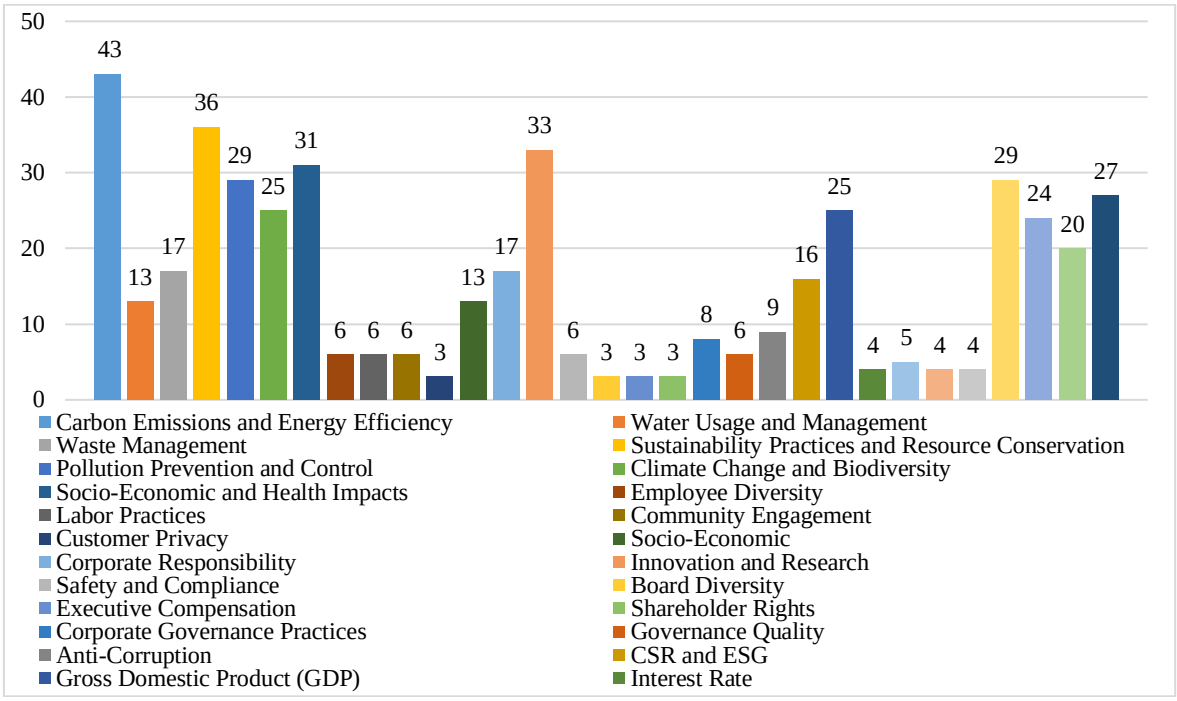

Fig. 2: Sustainable economic growth strategy key factors

Table 3: Hypothesis testing result

Hypothesis	Rejected/Approved
Hypothesis 1: Digital transformation is a critical driver for successful sustainable economic growth Strategies	Approved
Hypothesis 2: A comprehensive sustainable economic growth Strategy must holistically integrate environmental, social, governance, economic, and digital factors to be effective	Approved

DOI: 10.3844/jcssp.2024.1778.1795

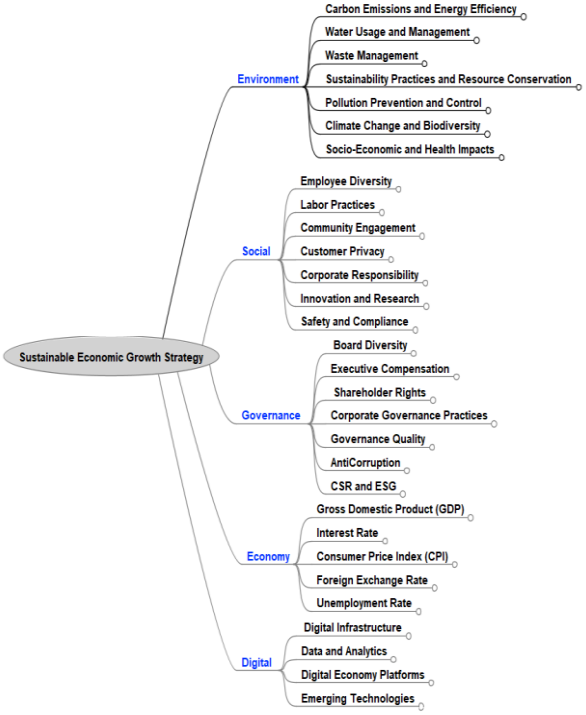

Fig. 3: Sustainable economic growth framework

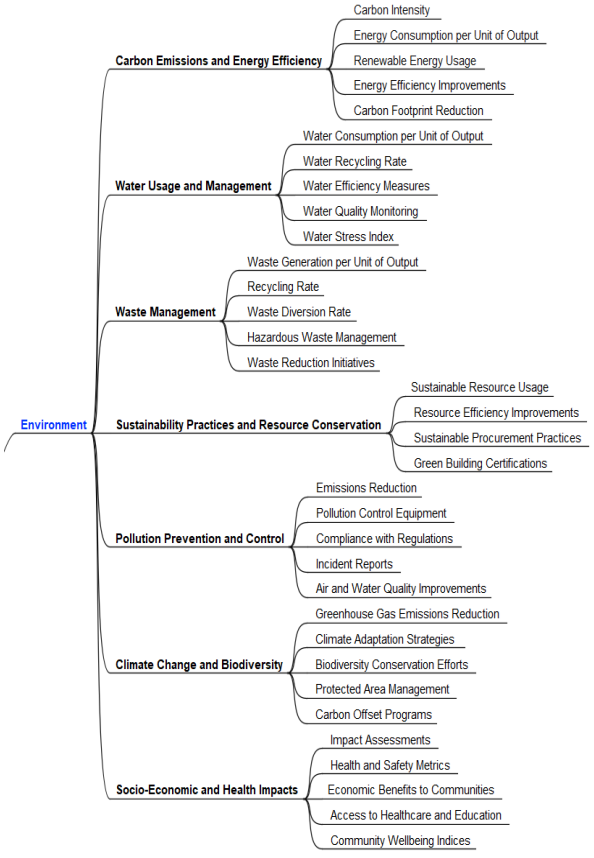

Fig. 4: Environment key factors and their indicators

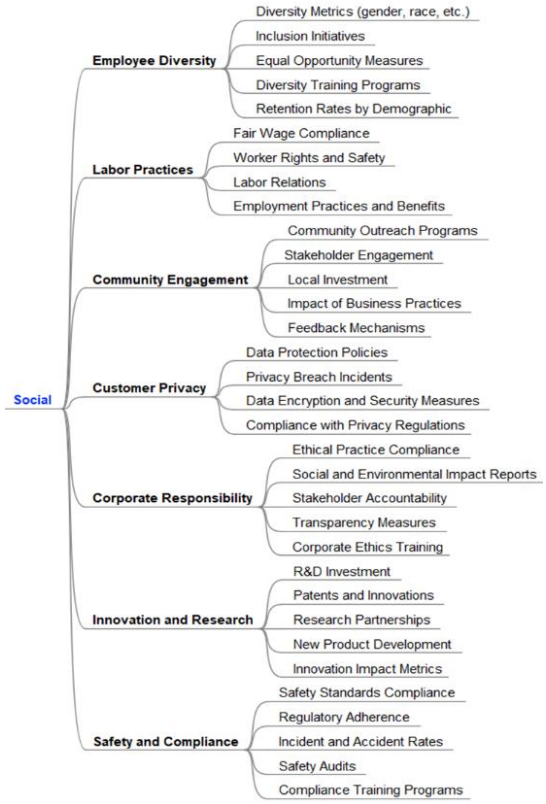

Fig. 5: Social key factors and their indicators

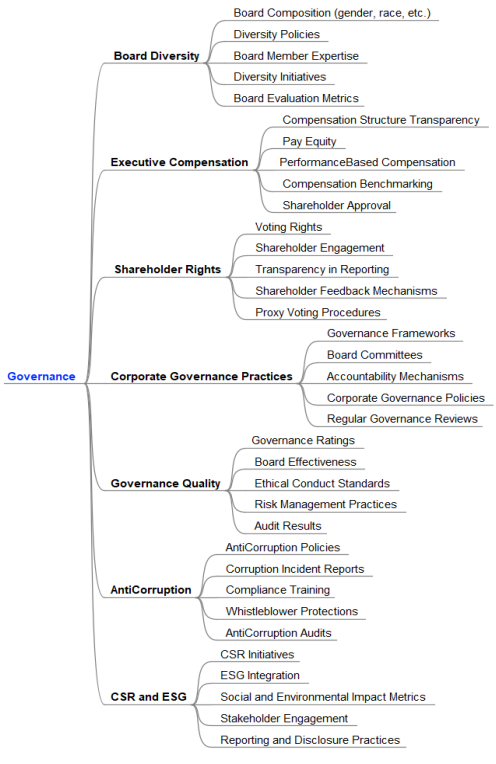

Fig. 6: Governance key factors and their indicators

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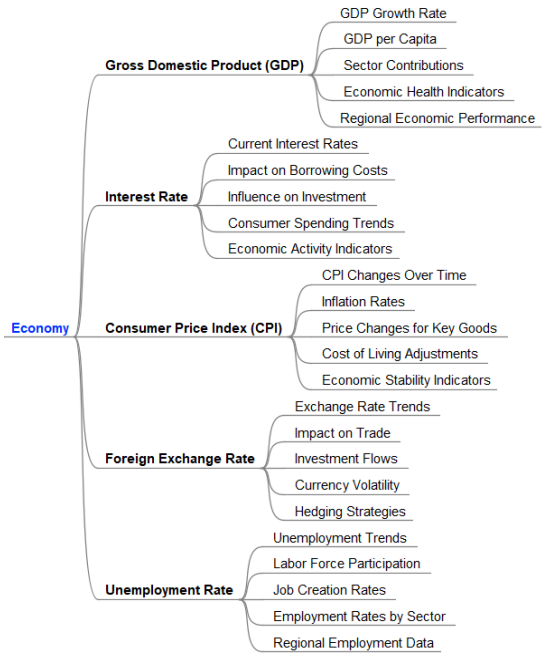

Fig. 7: Economy key factors and their indicators

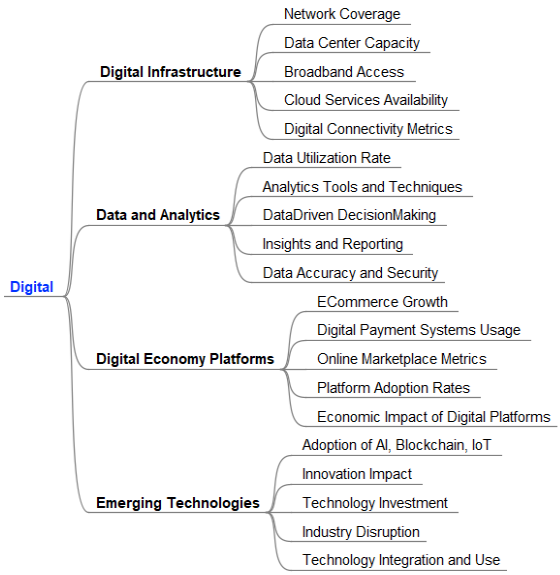

Fig. 8: Digital key factors and their indicators

The social dimension of the framework brings in factors such as employee diversity, labor practices, community engagement, and customer privacy, which are pivotal in fostering corporate responsibility and social equity. Işık *et al*. (2024) argue that incorporating social factors, particularly through ESG integration, enhances sustainability assessments and supports broader social goals. Studies like Cynthia *et al*. (2024) also highlight the importance of community engagement and labor practices in sustaining small businesses in African economies, further supporting the inclusion of these factors in the framework. Innovation and research, along with safety and compliance, are highlighted as key components in driving sustainable growth from a social perspective, as emphasized by Li and Zhou (2024) in their analysis of sustainable tourism strategies.

Governance, as depicted in Fig. (3), integrates corporate governance practices, board diversity, executive compensation, and governance quality, which align with the governance challenges identified in the literature. Nowak and Kokocińska (2024) emphasize the need for effective governance frameworks that balance economic, social, and environmental goals, which are critical for achieving sustainable development. Additionally, (Kulal *et al*., 2023) explore the impact of governance practices on economic performance, highlighting the role of CSR and ESG in driving corporate efficiency and sustainability. Anti-corruption measures and governance quality are also critical in creating a robust governance framework that supports sustainable economic growth, as discussed by Cek and Eyupoglu (2020).

The economic dimension includes traditional economic indicators such as Gross Domestic Product (GDP), interest rates, consumer price index, foreign exchange rates, and unemployment rates. These indicators are essential for understanding the broader economic environment within which sustainability strategies operate. Fernandes *et al*. (2021), for example, examine the trade-offs between green growth and economic growth, showing that economic policies must be balanced with environmental sustainability to achieve long-term success. The reviewed literature often emphasizes the need to balance these economic factors with environmental and social goals, ensuring that economic growth is not achieved at the expense of sustainability, as highlighted by Hunjra *et al*. (2024).

Finally, the digital dimension incorporates digital infrastructure, data and analytics, digital economy platforms, and emerging technologies, reflecting the growing recognition of digital transformation as a key driver of sustainable economic growth. Xiaoya *et al*., (2024) discuss the significant role of the digital economy in enhancing sustainable development, particularly through industrial agglomeration and digital infrastructure. Studies such as Lijuan and Chen (2024) highlight the transformative potential of digital technologies in improving energy efficiency and promoting green growth, while (Böttcher *et al*., 2024) emphasize the integration of digital sustainability into business models as a crucial element of modern economic strategies.

In summary, Fig. (3) captures the interrelated components of sustainable economic growth as discussed in the literature. It highlights the integrated approach that considers environmental, social, governance, economic, and digital factors to achieve a cohesive strategy. This approach not only supports the achievement of sustainability goals but also ensures that economic growth is resilient, inclusive, and aligned with the broader objectives of sustainable development.

Discussion

The analysis of existing literature on Sustainable Economic Growth highlights the fragmented nature of current approaches, which often focus on individual aspects such as environmental sustainability, digital transformation, or governance without fully integrating these dimensions into a comprehensive strategy. This research has sought to address this gap by developing a holistic framework that integrates the key building blocks of sustainable economic growth: Environmental, social, governance, economic, and digital factors.

One of the key findings is the critical role of digital transformation in driving sustainable economic growth. The reviewed studies demonstrate that digital technologies, whether through digital governance, digital finance, or digital economy platforms, significantly contribute to enhancing sustainability and economic efficiency. However, these studies also reveal that digital transformation alone is not sufficient. It must be complemented by strong governance, economic stability, and social inclusivity to create a balanced and sustainable growth strategy.

Another important insight is the necessity of integrating environmental and social considerations into economic and governance frameworks. Many studies emphasize the need for sustainable practices in resource management, pollution control, and social equity, yet they often treat these factors in isolation. This research argues for a more integrated approach that recognizes the interdependence of these dimensions and the need for coordinated efforts across all areas to achieve truly sustainable economic growth.

The framework proposed in this study aims to provide a comprehensive guide for policymakers, industry leaders, and academics in formulating and implementing sustainable economic growth strategies. By synthesizing insights from diverse sources and addressing the gaps identified in the literature, this framework offers a more cohesive and adaptable approach to sustainable development.

Conclusion

This study proposes a sustainable economic growth framework comprising the following key components: environmental factors, social factors, governance factors, economic factors, and digital factors. This framework is founded on an integrative approach that seeks to guide and frame the development of comprehensive and sustainable economic strategies. It seeks to reduce the ambiguity surrounding Sustainable Economic Growth and provides a clear structure for integrating diverse factors into a cohesive strategy.

To demonstrate the validity of the proposed framework, this research adopted a comparative analysis of existing studies, revealing the strengths and weaknesses of current approaches and highlighting the need for a more coordinated and holistic strategy. The framework developed in this study serves as a blueprint for achieving long-term prosperity that is inclusive, resilient, and aligned with broader sustainability goals.

The current study is limited by the scope of analyzed works. Future research can expand on this framework by investigating additional models and frameworks, providing a richer and more well-confirmed sustainable economic growth frame of reference. Further studies can also delve deeper into the processes and mechanisms that underpin the integration of environmental, social, governance, economic, and digital factors, offering more detailed guidance for the implementation and monitoring of sustainable economic growth strategies.

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Author's Contributions

Mhamed Serdaoui: He proposed the approach. He designed the research plan, organized the study and wrote the manuscript.

Mounia Cherkaoui: She organized the study. She coordinated and validated the research.

Ethics

The authors confirm that this manuscript has no ethical issues involved

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