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# SYSTEMATIC LITERATURE REVIEW ON SUSTAINABLE CITIES AND COMMUNITIES: THE ROLE OF ECO-TOURISM INDUSTRY, CREATIVITY AND INNOVATION, AND INFRASTRUCTURE INVESTMENT

By

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## ABSTRACT

The Sustainable Development Goals (SDGs) are a global agreement aimed at improving the well-being of society. This study uses a systematic literature review approach to analyze the aspects of Sustainable Cities and Communities, specifically focusing on the role of the ecotourism industry, creativity and innovation, and infrastructure investment. The research findings reveal four main topics identified based on the journals reviewed. Several factors that play a significant role in achieving the SDGs include innovation, infrastructure investment, environmental governance, education, and the development of ecotourism

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## 1. INTRODUCTION

In 2015, the United Nations (UN) established 17 development goals known as the Sustainable Development Goals (SDGs) to address various global challenges, such as environmental degradation, poverty, inequality, and climate change. Each goal within the SDGs has specific targets and indicators set to be achieved by 2030. In general, the SDGs aim to achieve sustainable development, which refers to development that meets the needs of the present generation without compromising the rights and interests of future generations.

The SDGs consist of 17 goals, 169 targets, and 232 indicators covering various aspects of development, including health, education, gender equality, energy, sanitation, access to clean water, environment, economy, and international cooperation (Chankseliani and McCowan, 2021). One of the SDGs that focuses on strengthening the industrial and infrastructure sectors is Goal 9, Industry, Innovation, and Infrastructure. This goal emphasizes the importance of building robust, sustainable, and integrated infrastructure while fostering innovation to support the growth of more advanced and sustainable industrial sectors. Additionally, efforts under the SDGs also include the development of energy systems, transportation, and improved access to information and communication technology (Zhang, Y., et al., 2021).

Meanwhile, Goal 11, Sustainable Cities and Communities, targets the development of inclusive, safe, resilient, and sustainable cities and settlements. The implementation of this goal involves developing more environmentally friendly transportation, constructing energy-efficient buildings, improving waste management, and enhancing disaster protection systems (UN General Assembly, September 2015). With proper and integrated governance planning, urban mobility can be improved, which positively impacts income and economic growth in cities. Achieving the SDGs requires collaboration between governments, the private sector, civil society, and international organizations. Governments play a role in setting policies and regulations that support the implementation of the SDGs, while the private sector contributes through investments and innovations. International organizations and civil society

also play a role in enhancing public participation in the achievement of these development goals. In the face of global challenges such as poverty, inequality, climate change, and environmental degradation, the presence of the SDGs has become increasingly crucial. The SDGs serve as a guide to achieving more sustainable development, reducing social and economic disparities, and creating a fairer, more peaceful, and sustainable world.

## **2. LITERATURE REVIEW**

### **2.1. Sustainable Development Goals (SDGs)**

The Sustainable Development Goals (SDGs) aim to address various global challenges such as poverty, inequality, climate change, environmental degradation, and social injustice, with the hope of creating a sustainable and inclusive future (Vyas – Doorgapersad, 2017). One of the United Nations (UN) main agendas is the SDGs 2030, also known as the 2030 Agenda for Sustainable Development. The SDGs are designed to address global issues related to the social, cultural, economic, and political fields. With 17 goals, the SDGs aim to provide a development path based on human rights, equality, economic stability, and environmental sustainability. The SDGs are grounded in universal principles aimed at accommodating every individual to ensure no one is left behind. The targets outlined in the SDGs continue to be emphasized to raise global awareness of the urgency of achieving sustainable development by 2030.

### **2.2. Sustainable Cities and Communities**

The concept of Sustainable Cities and Communities, or sustainable development, has various definitions. In general, sustainable development is a process that can drive economic progress, preserve the environment, and support social conditions that are just for both present and future generations (President's Council on Sustainable Development in the United States as USEPA, 2013). In 2002, the World Summit on Sustainable Development held in Johannesburg strengthened the global commitment to sustainable development. This conference reached a consensus that the principle of sustainability should be applied in all aspects of development. This approach combines three main pillars: economic development, social well-being, and environmental preservation, which must evolve in balance within an integrated development system. The concept of sustainable development is based on a systems-thinking approach, emphasizing the importance of the relationship between space and time on a global scale. Therefore, this systems-based approach is highly relevant for sustainable development. Its primary goal is to understand the interactions between the three pillars (environmental, social, and economic), thus leading to more effective actions in achieving better outcomes (USEPA, 2013 in Chang, 2015).

### **2.3. Ecotourism Industry**

According to Government Regulation No. 36 of 2010 on the Management of Nature Tourism in areas such as Wildlife Reserves, National Parks, Grand Forest Parks, and Nature Tourism Parks, the main objective of nature tourism management is to optimize the utilization of the uniqueness, beauty, and biodiversity found in these areas. Nature-based tourism includes various forms of activities, such as adventure tourism to enjoy environmental beauty, tourism focused on specific aspects like wildlife or underwater beauty, and conservation-based tourism aimed at protecting natural resources (Hall and Boyd, 2005). The Rio Declaration, or the Rio Declaration on Environment and Development, is a document released by the United Nations (UN) during the UN Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992. This document was a continuation and reaffirmation of the 1972 Stockholm Declaration, which addressed similar issues. The Rio Declaration includes 27 principles of sustainable development.

### **2.4. Creativity and Innovation**

According to Antonius Tanan in Suryana (2014), creativity is an innovative way of thinking to create a unique, useful business product that is accepted by the market. Suryana (2014) defines innovation as the ability to utilize resources in new ways to create added value. Innovation is associated with the development of new ideas, concepts, theories, and new approaches in the management of organizations or businesses.

### **2.5 Infrastructure Investment**

Based on the Presidential Regulation of the Republic of Indonesia No. 38 of 2015, infrastructure includes technical facilities, systems, as well as hardware and software that play a role in providing services to the community and supporting economic and social growth. Infrastructure encompasses various physical systems such as transportation, irrigation, drainage, buildings, and other public facilities that serve to meet the social and economic needs of society. Infrastructure also includes various means, structures, and basic equipment used to support daily social and economic activities. Henry Simamora (2000) explains that investment is an asset utilized by companies to increase their economic value, either through investment income such as interest, royalties, dividends, or other profits such as asset appreciation and profitable commercial relationships for the investing company.

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### 3. RESEARCH METHODOLOGY

A Systematic Literature Review (SLR) is the research method used to search, evaluate, and interpret all relevant studies related to Sustainable Cities and Communities, particularly in the context of the role of the ecotourism industry, creativity and innovation, and infrastructure investment. SLR is a process aimed at identifying, assessing, and analyzing available research evidence to answer specific research questions (Calderon and Ruiz, 2015). The SLR approach is carried out through three main stages: planning, review, and reporting. This research is based on secondary data, which is obtained through the collection of various academic journals discussing Sustainable Cities and Communities, with a focus on the role of the ecotourism industry, creativity and innovation, and infrastructure investment.

### 4. RESULTS AND DISCUSSION

The research conducted by Christian Kroll (2019) titled *Sustainable Development Goals (SDGs): Are we successful in turning trade-offs into synergies?* analyzed the development of interactions within and between the SDGs from 2010 to 2018. This study explored changes in synergies, trade-offs, and relationships between various SDG pairs during this period. Meanwhile, research by Evelize Culpi Mann et al. (2024) titled *Less is more? Communicating SDG orientation and enterprises' economic performance* revealed key findings regarding the relationship between SDG orientation and its impact on company economic performance. The key findings are summarized as follows:

1. Companies oriented towards SDGs tend to experience improved economic performance, both for social enterprises and traditional commercial companies.
2. Clear and targeted communication about SDG goals can strengthen the perceived value among stakeholders.
3. This study emphasizes the importance of aligning company objectives with the primary interests of stakeholders.

The research by Edward B. Barbier (2021) titled *Institutional Quality, Governance, and Progress towards the SDGs* highlighted important aspects related to institutional quality, country risk, and progress in achieving the 17 SDGs. Key findings of this study are:

1. There is a strong relationship between improved institutional quality and progress in achieving SDGs, which also contributes to enhanced welfare.
2. The progress in achieving SDGs correlates with a decrease in country risk.
3. This study concludes that good institutional quality and effective country risk management play a crucial role in supporting the successful achievement of SDGs.

The research by Idiano D'Adamo et al. (2024) titled *Lighting the Future of Sustainable Cities with Energy Communities: An Economic Analysis for Incentive Policy* uncovered that renewable energy communities (RECs) have great potential in driving rural areas towards more sustainable cities. The study conducted by Adedokun M. O. et al. (2020) titled *The Role of Adult Education in Sustaining Cities and Communities in Nigeria: Impact of the Fourth Industrial Revolution* highlighted the importance of adult education in supporting urban sustainability and community resilience in Nigeria, particularly in addressing challenges arising from the Fourth Industrial Revolution. Meanwhile, research by Ming-An Chung et al. (2023) titled *Advancing ESG and SDGs Goal 11: Enhanced YOLOv7-Based UAV Detection for Sustainable Transportation in Cities and Communities* found that enhancing the YOLOv7 model for object detection in drone (UAV) applications can significantly improve accuracy in monitoring traffic and sustainable transportation. This research contributes to achieving SDG 11 by optimizing detection algorithms to create safer and more sustainable urban environments.

The study conducted by A. Vitriana (2022) titled *Implementation of SDGs Target 11.1 in Metropolitan Areas of West Java, Indonesia* identified variations in the achievement of housing adequacy indicators in the metropolitan areas of West Java, particularly in the Bodebekjur and Greater Bandung regions. The main findings indicate that Bekasi Regency recorded the best achievements in all aspects of housing adequacy, with indicators surpassing the national target for SDG 11.1. However, the cities of Bogor and Cianjur are still facing challenges, particularly in meeting the targets for access to clean water and sanitation.

Research by Akshat Jain et al. (2023) titled *Research Trends, Themes, and Insights on Artificial Neural Networks for Smart Cities towards SDG-11* examines various aspects of implementing Artificial Neural Networks (ANN) in the development of smart cities to support the achievement of SDG 11. This study identifies the impact of ANN on the environment, transportation systems, and urbanization, providing insights into opportunities and challenges in applying this technology to enhance sustainability and quality of life in urban areas.

Finally, the research conducted by Walter Leal Filho et al. (2023) titled *The Role of Artificial Intelligence in the Implementation of the UN Sustainable Development Goal 11: Fostering Sustainable Cities and Communities* highlights the role of Artificial Intelligence (AI) in supporting the achievement of SDG 11, focusing on the

development of sustainable cities and communities. This study identifies various important findings related to the application of AI in creating more efficient, safe, and sustainable urban environments.

Research by Camila Garcia (2023) titled *Assessing Water Urban Systems to the Compliance of SDGs through Sustainability Indicators: Implementation in the Valencian Community* emphasizes the importance of developing sustainability indicators in urban water systems. The study shows that applying sustainability indicators provides valuable insights for assessing and improving sustainability in urban water resource management.

Meanwhile, research by Yunfeng Shang et al. (2023) titled *Eco-Tourism, Climate Change, and Environmental Policies: Empirical Evidence from Developing Economies* finds a significant relationship between environmental governance (green governance) and eco-tourism development in developing countries. The results of this study indicate that effective environmental policies can play a key role in driving sustainable eco-tourism growth.

The study conducted by Abdulrahman Altassan (2023) titled *Sustainability of Heritage Villages through Eco-Tourism Investment: Case Study of Al-Khabra Village, Saudi Arabia* identifies various challenges in eco-tourism investment in heritage villages. This study found that infrastructure limitations and lack of supporting services are the main barriers to attracting sustainable eco-tourism investments in Al-Khabra Village, Saudi Arabia.

The research conducted by Intan Mawar Tiani et al. (2018) titled *Penerapan Prinsip Ekowisata di Kawasan Ekowisata Gunung Api Purba Nglanggeran* reveals that this area offers a variety of tourist attractions, including natural, artificial, and cultural attractions. Some of the main findings from this study include:

1. The Gunung Api Purba Nglanggeran Ecotourism Area offers various attractions, such as the Ancient Volcano, Kedung Kandang Waterfall, embung (water reservoir), and fruit orchards. Additionally, cultural attractions like Rasulan, Jathilan, Wayang, and Karawitan are featured. Adequate supporting facilities and good accessibility enhance the appeal of this area.
2. The ecotourism principles established by The International Ecotourism Society (TIES) have been effectively implemented in this area, especially in raising awareness and appreciation for the environment. The local community and tourism managers have contributed to environmental conservation and mutual cooperation activities.

Meanwhile, a study by Zambrano, M., Broadbent, E. N., & Durham, W. H. (2010) titled *Social and Environmental Effects of Ecotourism in the Osa Peninsula, Costa Rica: The Lapa Rios Case* shows that ecotourism has a significant economic impact on local communities by creating jobs and supporting micro-businesses based on tourism. However, environmental challenges remain, particularly due to the increasing number of visitors. This study also found that ecotourism at Lapa Rios has increased local community understanding of conservation and biodiversity.

Research by Nina Tura et al. (2022) titled *Sustainability-Oriented Innovations in Smart Cities: A Systematic Review and Emerging Themes* identifies several key perspectives in the development of smart cities, including technology, organization and management, social innovation, and citizen engagement. The study also discusses systemic changes in the context of sustainability-oriented innovation (SOI) ecosystems. The findings of this research make a significant theoretical contribution to understanding the various aspects of smart city development and the role of sustainable innovation in the process.

Research by Luca Rossi et al. (2024) titled *Innovation, Researcher and Creativity: A Complex Indicator for Territorial Evaluation Capacity* finds a significant relationship between investment in research and development (R&D), innovation, and creativity with social welfare and economic development in Italy.

Meanwhile, a study by Mafalda Vieira (2023) titled *Impact of Open Innovation in Smart Cities: The Case Study of Köln (Germany)* identifies several key findings related to the impact of open innovation on the development of smart cities in Köln, Germany. This study highlights how the application of open innovation can drive efficiency in city governance and improve citizens' well-being.

Research by Sharmin Nahar (2024) titled *Modeling the Effects of Artificial Intelligence (AI)-Based Innovation on Sustainable Development Goals (SDGs): Applying a System Dynamics Perspective in a Cross-Country Setting* uncovers important findings about the interaction between Artificial Intelligence (AI)-based innovation and the achievement of Sustainable Development Goals (SDGs). This study uses a system dynamics approach to analyze the impact of AI on various aspects of sustainable development across countries.

The research conducted by Bunga Putri Nauli (2021) titled *Sustainable Development Goals (SDGs) 9: Industry, Innovation, and Infrastructure During the COVID-19 Pandemic in Indonesia* shows that increasing investment, developing innovation, and creating jobs for the community are key strategies for achieving sustainable development, particularly amid the challenges posed by the COVID-19 pandemic.

Furthermore, research by Shridhar Kulkarni et al. (2022) titled *Investment Needs to Achieve SDGs: An Overview* emphasizes that achieving the SDGs by 2030 requires significant investment across various sectors. The study stresses the importance of global financial commitment to support the sustainable development agenda.

Research by Tracey L. et al. (2017) titled *Achieving the National Development Agenda and the Sustainable Development Goals (SDGs) Through Investment in Ecological Infrastructure: A Case Study of South Africa* finds that investment in ecological infrastructure (EI) plays a crucial role in supporting sustainable development in South Africa. Some of the main findings from this study include that EI can function as a nature-based alternative to built infrastructure by providing essential ecosystem services such as water supply, flood control, and biodiversity enhancement

## 5. CONCLUSION

This review successfully presents a comprehensive overview of the concept of *Sustainable Cities and Communities*, highlighting the role of the ecotourism industry, creativity and innovation, as well as infrastructure investment. Overall, the findings indicate that these three factors contribute significantly to accelerating the achievement of sustainable city and community development goals. The study proves that the development of the ecotourism industry, the enhancement of creativity and innovation, and investment in infrastructure can create inclusive, safe, resilient, and sustainable cities and settlements. Factors such as innovation, investment in infrastructure, good environmental governance, education, and the development of ecotourism play crucial roles in supporting the achievement of Sustainable Development Goals (SDGs). However, several challenges still need to be addressed, such as trade-offs between SDG goals, disparities in achievements across regions, and the environmental impacts of development. To overcome these challenges, a stronger synergy between various sectors is needed to accelerate sustainable development. Success in achieving sustainable development can be driven through cross-sector collaboration, the application of modern technologies, and raising public awareness about the importance of sustainability principles.

## 6. RECOMMENDATIONS

Given the significant role of the ecotourism industry, creativity and innovation, as well as infrastructure investment, it is hoped that inclusive, safe, resilient, and sustainable cities and settlements can be realized through close collaboration between governments, the private sector, civil society, and international organizations. It is essential to formulate policies that support the development of the ecotourism industry, as well as regulations that encourage creativity and innovation in urban development, such as the implementation of eco-friendly technologies and sustainability-oriented infrastructure investment. For example, the development of environmentally friendly public transport and infrastructure based on renewable energy. Furthermore, it is necessary to develop educational programs aimed at raising awareness about the importance of ecotourism, creativity and innovation, and sustainable infrastructure investment in creating better cities. These programs should also involve increasing public participation in environmental management, conservation, and sustainable urban development. Therefore, enhancing the participation of the community, government, private sector, and academia is crucial in formulating sustainable ecotourism strategies. Collaboration between the arts and technology industries should also be promoted to produce innovative solutions in managing more inclusive and resilient cities. Ultimately, this will attract investment in infrastructure that supports the development of environmentally friendly areas and smart cities.

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