



Received: 04-03-2024  
Accepted: 14-04-2024

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

### Green Economy Research (2014-2023)

Nguyen Hoai Anh

University of Labor and Social Affairs, Hanoi, Vietnam

Corresponding Author: Nguyen Hoai Anh

#### Abstract

Over the last ten years, the notion of a green economy has become increasingly attractive to policymakers. However, the green economy covers a lot of diverse concepts, and its links with sustainability are not always clear. The purpose of this study is to systematize previous research on the green economy and to count and evaluate, by authors, the most influential research articles in green economy research. The research data was collected and analyzed from OpenAlex data on VOSviewer software 1.6.19, with 185 articles for

the keyword "the concept of the green economy" filtered in the form of a journal. The results show that research on the green economy in enterprises over the past 10 years has always been a topic of interest and research. The study also points out the most influential authors in terms of the number of articles and the number of citations. The research results have contributed to synthesizing a system of research documents on the green economy.

**Keywords:** Green Economy, Sustainable Development, VOSviewer

#### 1. Introduction

Loiseau, E., Saikku, L., Antikainen, R., *et al.* (2016)<sup>[4]</sup> researched the green economy and related concepts: This article's main topics are the definitions of the "green economy" and related terms, as well as an assessment of these terms in light of the strong and weak sustainability criteria, are the main topics of this article. The article accomplishes three goals: First, we list and explain the many ideas, notions, methods, and instruments associated with a "green economy." Among these are ecological and environmental economic theories; waste hierarchy; bio-economy; industrial ecology; circular economy; nature-based solutions; dematerialization through product-servicing; and instruments such as cost-benefit analysis and life cycle assessment. Second, they provide a framework that demonstrates how ideas, methods, and instruments of the green economy may aid in the shift towards sustainability. One can use this framework as a guide to incorporate various ideas and methods into a green economy framework. Thirdly, they touch on certain green economy ideas and how they affect both strong and weak sustainability. The framework of the green economy permits different degrees of substitutability and trade-offs between environmental and economic gains, necessitating more or less structural adjustments to our ways of life. In order to operationalize the green economy, we want to contribute to the definitions and linkages of associated ideas, techniques, and instruments by addressing the idea of the "green economy."

Iavicoli, I., Leso, V., *et al.* (2014)<sup>[2]</sup> researched the opportunities and challenges of nanotechnology in the green economy. In this regard, the idea of the "green economy" has presented a chance to alter how society handles the interplay between the environmental and economic spheres. The related idea of "green nanotechnology" seeks to use nano-innovations in materials science and engineering to produce goods and procedures that are both ecologically and economically sustainable, as well as energy efficient, in order to help society create and maintain a green economy. We anticipate that these applications will impact numerous economic sectors, including energy generation and storage, clean technologies, building, and associated infrastructure businesses. By using unusual water sources or building materials with nanotechnology, these solutions may make it easier to get the raw materials needed for renewable energy, make power delivery systems more reliable, efficient, and safe, and improve the environment and people's ability to make a living in general. The advantages of using nanomaterials in environmentally friendly processes and products, however, may also present hazards to human health and safety, the environment, and social and ethical concerns, in addition to unknowns about customer and market acceptability. Consequently, their goal is to investigate the connections between the tenets of a green economy and the potential for introducing nano-applications in this area. They also aim to critically analyze the practical challenges that these applications may present, particularly with regard to the potential effects on the health and safety of workers engaged in this cutting-edge industry. The

hazardous characteristics of nanomaterials, which remain poorly understood, primarily cause these issues, along with the challenges of recognizing emergent dangers for the workforce and quantifying exposure. It's interesting to note that this review offers action plans for risk assessment, management, and communication that are intended to preventive measures, such as employee education and training, personal and group protective gear, and health monitoring programs to safeguard the wellbeing and security of nanoworkers. In the end, it emphasizes how crucial occupational health concerns will be to attaining a really sustainable advancement in nanotechnology.

Law, A., De Lacy, *et al.* (2016)<sup>[3]</sup> researched transitioning to a green economy: The case of tourism in Bali, Indonesia. A framework for the transformation of tourist locations into a green economy is presented in this study. A very small number of studies have looked at the green economy in the context of tourism, despite the literature offering several options for sustainable tourism. The recognition of climate change as an existential threat to society and the goal of avoiding policy, management, and governance fragmentation—which has been typical for environmental issues—are the primary factors that set the green economy apart from sustainable development. These factors are addressed holistically at the economic level, with a focus on social inclusivity, resource efficiency, and greenhouse gas emissions. This research offers a mechanism for converting the green economy idea into a tourist stakeholder engagement process and defines the idea from a tourism standpoint. We tested the concept in a case study of Bali, Indonesia, utilizing research approaches such as resident and tourist surveys, resource efficiency estimates, tourism economy and employment projections, and stakeholder visioning groups. We then conducted a study from the perspective of the green economy to create a Green Growth 2050 Roadmap for Bali tourism. The end result is a framework that could be particularly applicable to tourist locations that are changing quickly and are ill-equipped to adapt.

Therefore, this study helps readers grasp the development of the green economy through the frequency of keyword usage, the number of citations, and the number of research articles on this topic. At the same time, it helps future researchers to know the trend of this topic over time.

## 2. Green Economy

There are many different definitions of the green economy in the world. The European Union (EU) argues that “the green economy is an economy that is intelligent, sustainable, and has fair growth.” The Green Economy Coalition defines the green economy as “an economy that creates a better quality of life for all within the ecological limits of the Earth.” The International Chamber of Commerce considers the green economy from a business perspective and argues that “the green economy is an economy in which economic growth and environmental responsibility go hand in hand and support each other while supporting the process of social development.”

The United Nations Environment Program (UNEP) has put forward the concept of a green economy: “an economy that brings human well-being and social justice while significantly reducing environmental risks and ecological decline.” This is considered the most accurate and complete definition of the green economy. Accordingly, the green

economy is simply an economy with low emissions, efficient use, and the saving of natural resources, ensuring social equity. In a green economy, income and employment growth through public and private investment in the economy reduce carbon emissions, minimize environmental pollution, use energy and resources efficiently, and prevent the decline of biodiversity and ecosystem services.

The World Bank (WB, 2012b) defines the green economy as “economic development that ensures the efficient use of natural resources, thereby minimizing pollution and environmental impacts, increasing resilience to natural variability, and promoting the role of environmental and natural resource governance in preventing natural disasters.” In September 2015, the United Nations released the 2030 Agenda, which includes 17 sustainable development goals to eradicate poverty, reduce inequality, and protect the planet.

The United Nations defines the green economy as “a low-carbon, resource-efficient, and socially inclusive economy. In a green economy, growth in employment and income is driven by public and private investment in economic activities, infrastructure, and assets that allow for the reduction of carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.” The green economy is an economic framework that integrates environmental and sustainability issues into economic growth. It aims to create economic development and jobs while ensuring that humans do not deplete the planet’s natural resources, which are essential for our survival. This approach focuses on mitigating environmental risks and ecological scarcity. Unlike traditional economic models that often prioritize short-term economic growth without regard for the environment, the green economy emphasizes the sustainable use of resources. Traditional models tend to disregard the long-term consequences of resource depletion and environmental degradation. In contrast, the green economy seeks a balance between economic development and ecological sustainability, recognizing the finite nature of our planet’s resources.

The content of the green economy includes low carbon emissions, efficient use of resources, and ensuring social equity. In terms of sectors, the green economy is driven by increased investment in sectors that help protect and develop the Earth's natural capital and reduce ecological decline and environmental risks, including renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, advanced waste management systems, advanced clean water supply systems, and sustainable agriculture, forestry, and fisheries (UNEP, 2010). In particular, this investment needs to be supported by domestic policy reforms, international policies, and efforts to build market infrastructure.

Currently, the green economy is understood as the combination of three factors: The economy (poverty reduction, improving the quality of public health care, developing clean energy, meeting people's employment needs, and promoting growth), the environment (ensuring sustainable production and consumption, conserving marine resources, protecting, regenerating, and encouraging sustainable use of terrestrial ecosystems), and society (improving the quality of education, narrowing the gender gap, and reducing social inequality). The green economy is sustainable, meaning that the activities in the economy

create profits or values that are beneficial, aimed at developing the lives of the human social community; at the same time, these activities are environmentally friendly. These three factors are balanced to satisfy sustainability. The green economy is a necessary economy because it creates jobs, ensures sustainable economic growth, and prevents environmental pollution, global warming, resource depletion, and environmental degradation. In a green economy, environmental resources are an important factor that determines economic development, improves the value chain, and brings long-term stability and prosperity. Protecting the environment, managing and sustainably using natural resources, and responding to climate change are all considered key issues in the green economy. The state and the private sector focus on prioritizing investment in economic activities, infrastructure, and works that have the effect of ensuring the goal of minimizing pollution and carbon emissions, improving the efficiency of resource and energy use, and preventing the loss of biodiversity and ecosystem services.

### 3. Research methods

The authors synthesize previously published overview documents related to the green economy from the OpenAlex data source. The goal of overview studies is to explain the urgency of the research and identify gaps in it. The authors utilize the VOSviewer software 1.6.19 to filter data using the keyword "green economy concept" from the abstract of the OpenALex database, which they accessed on March 25, 2024. The results include 185 related articles. I analyze and answer the following research questions using the collected data:

**Q1:** Number of studies on the green economy from 2014 to March 2024

**Q2:** The most influential authors by number of articles and number of citations in publications on sustainable accounting.

**Q3:** Which keywords are grouped into which topics?

### 4. Results

#### Green Economy Publication Statistics

From 2014 to March 2024, the authors discovered 185 articles and journals on the concept of the green economy from the OpenAlex data source. The authors excluded books and citations. Researchers published an average of 18.5 articles annually. This shows that the green economy remains a concern for researchers today.

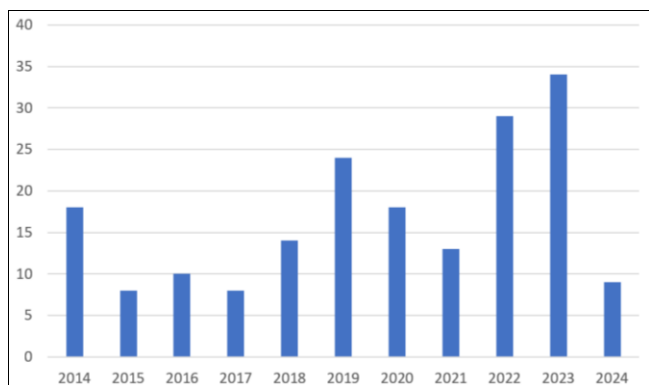


Fig 1: A graph of the number of studies over the years

#### Highest citation by documents

Table 1 shows the number of citations in the article by Eleonore Loiseau, Laura Saikku *et al.* (2016) [4], "Green economy and related concepts: An overview," which has the highest number of citations (461), followed by Ivo Ivicoli, Veruscka Leso, *et al.* (2014) [2], "Opportunities and challenges of nanotechnology in the green economy," with 113 citations. Alexandra Law, Terry De Lacy *et al.* (2016) [3], "Transitioning to a Green Economy: The Case of Tourism in Bali, Indonesia," has 76 citations. The remaining articles have received more than 10 citations.

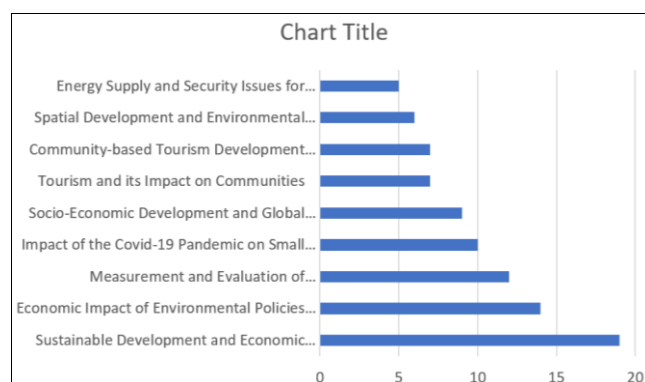
Table 1: Displays the frequency of the highest citation by document

Documents	Cited
Green economy and related concepts: An overview (2016)	461
Opportunities and challenges of nanotechnology in the green economy (2014)	113
Transitioning to a green economy: the case of tourism in Bali, Indonesia (2016)	76
Green growth rhetoric versus reality: Insights from Indonesia (2016)	65
Unpacking the Green Economy concept: A quantitative analysis of 140 definitions (2020)	64
Making sense of the green economy (2014)	48
Improvement of Russian energy efficiency strategy within the framework of "green economy" concept (based on the analysis of experience of foreign countries) (2019)	47
Integration of green economy concepts for sustainable biosurfactant production - A review (2022)	29
Green Economy - Innovation-based Development of Kazakhstan (2014)	23
Interpreting the green economy: Emerging discourses and their considerations for the Global South (2014)	21
Managing the resilience space of the German energy system - A vector analysis (2018)	18
How Could Companies Engage in Sustainable Landscape Management? An Exploratory Perspective (2018)	16
Translating green economy concepts into practice: ideas pitches as learning tools for sustainability education (2020)	14
Strategic Transformational Transition of Green Economy, Green Growth and Sustainable Development (2020)	14
Employment effects of renewable energy deployment - a review (2016)	13
Philosophical Foundations of the Concept of Green Economy (2018)	12
The Green Economy: Pragmatism or Revolution? Perceptions of Young Researchers on Social Ecological Transformation (2017)	11

Source: Authors compiled from VOSviewer software

#### Statistics on green economy-related topics

In the 10 years from 2014 to March 2024, there were many green economy-related topics studied by scientists, including topics on sustainable development and economic management with 19 articles, topics on the economic impact of environmental policy and resources with 14 articles, and topics on measuring and assessing sustainable development with 12 articles. The remaining topics are socio-economic development and global economic challenges, tourism and the impact of tourism on communities, community-based sustainable tourism development, etc. The above topics were studied by scientists with five articles or more.



Source: Authors compiled from VOSviewer software

Fig 2: Statistics on topics related to sustainability accounting

#### Co-authorship analysis

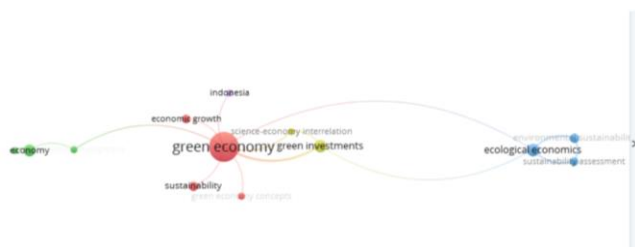
The authors with the most co-authored articles on the green economy are Meyer and Ina with 5 articles, Sommer and Mark with 5 co-authored studies, and Droste and Nils with 3 co-authored studies.

**Table 2:** Number of co-authored articles

Selected	Author	Documents
<input checked="" type="checkbox"/>	meyer, ina	5
<input checked="" type="checkbox"/>	sommer, mark	5
<input checked="" type="checkbox"/>	droste, nils	3

▪ **Keyword analysis results**

In the keyword analysis section, the study selected 13 keywords that appeared three times or more. The software evaluates the keywords based on the number of occurrences and the total link strength. You can export the keyword analysis results as an image file. The image representing the results of the keyword analysis looks like this:



**Fig 3:** Co-occurrence networks

Related keywords are grouped into groups; each group has a separate color. Looking at the image, it can be seen that the keywords are divided into five groups. Group 1 is represented by red links, combined with 4 keywords including economic growth, green economy, green economy concepts, and sustainability, with the central keyword being “green economy” with 8 links and a total link strength of 19. This keyword appears 48 times. Group 2 is represented by green links, combined with 3 keywords: Economy, green, sustainability development, in which the central keyword is “economy” with 2 links and the total link strength is 3 and appears 8 times. Group 3 is represented by blue links, including 3 keywords: Ecological economics, environmental sustainability, and sustainability assessment, with the central keyword being ecological economics with 4 links and the total link strength being 10, appearing 9 times. Group 4 is represented by yellow links, including 2 keywords: Green investments and science-economy interrela, with the central keyword being green investments with 3 links and the total link strength being 11, appearing 9 times. Group 5 is represented by a purple link with the keyword Indonesia, which appears three times. The results, which include five research directions and 13 popular keywords, provide an overview of the issue of green economy concepts. Future research can rely on this information to identify research directions that can address gaps or provide further analysis.

**5. Conclusion**

Sustainable development is an urgent need for the overall development of society today. Sustainable development must ensure social balance and environmental protection. Ideas about the green economy—an economy that both satisfies the need for economic growth and solves environmental challenges—have been mentioned by many researchers quite early. Most studies agree that the green economic development trend will focus on three main pillars: Industry, agriculture, and services. Researchers also affirm that the concept of “green economy” does not replace the concept of sustainability, but it is increasingly

recognized as a suitable model, forming the basis for sustainable development. Sustainability is an important long-term goal, but greening the economy is a means for each country to reach the goal of sustainable development. In this study, we conducted a systematic review of green economy research indexed in the OpenAlex database. The studies were published in the recent 10 years from 2014 to 2024 to provide insights into the number of publications, authors' citation frequency, citations of studies, keyword networks, etc. The research results have contributed to the general theoretical basis for green economy reference research. The data collected from more abundant literature resources, such as Scopus, also provide suggestions for future in-depth research.

**6. References**

1. Report of the United Nations Department of Economic and Social Affairs (UNDESA), 2012.
2. Iavicoli I, Leso V, Ricciardi W, Hodson LL, Hoover MD. Opportunities and challenges of nanotechnology in the green economy. *Environmental Health*. 2014; 13:1-11.
3. Law A, De Lacy T, Lipman G, Jiang M. Transitioning to a green economy: The case of tourism in Bali, Indonesia. *Journal of Cleaner Production*. 2016; 111:295-305.
4. Loiseau E, Saikku L, Antikainen R, Droste N, Hansjürgens B, Pitkänen K, *et al*. Green economy and related concepts: An overview. *Journal of Cleaner Production*. 2016; 139:361-371.