Green Economy and Quality of Life in the Future: Bibliometric Analysis Approach

by Sukanto Sukanto

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Azwardi[1*], Sukanto[1], Suhel[1], Kemas Muhammad Husni Thamrin[2]

[1] Department of Economic Development, Faculty of Economics, Universitas Sriwijaya, South Sumatra 30662, Indonesia
[2] Department of Management, Faculty of Economics, Universitas Sriwijaya, South Sumatra 30662, Indonesia

Corresponding Author Email: azwardi@fe.unsri.ac.id

ABSTRACT

In reviewing this research, the author will focus on the development of research on topics used in scientific works with the theme green economy and life expectancy spread across all parts of the world over a period of 33 years starting from 1990-2023 with the Scopus database using the Scopus approach. Bibliometric Analysis. This paper aims to contribute to existing literature by answering questions, namely in the Scopus database, what are the trends in scientific history products and the amount of green economic research; what are the critical intellectual aspects and how do they influence the green economics literature; what are the future directions of green economy research. The results of the bibliometric analysis show that there is a significant increasing trend in the number of publications showing the relationship between the green economy and life expectancy in the last thirty-three years. Overall, this bibliometric analysis confirms that the green economy has the potential to increase life expectancy through improving environmental quality.

1. INTRODUCTION

The development of the country in the past few decades has been faced with the problem of degradation of natural resources, energy resources, the environment and food resources. The use of non-renewable natural resources by over-exploiting them will worsen environmental resources because human behavior is not environmentally friendly. Meanwhile, the threat of climate change and global warming is increasingly reducing the earth's sustainability in meeting the needs and welfare of humanity in the world [1]. Recognizing the above problems, in the early 21st century the concept of sustainable development began to be developed, namely development that meets the needs of the current generation, but does not jeopardize opportunities for future generations to meet their needs [2]. So far, the development of economic development models has only driven economic development which tends to be extractive and short term. Without denying improvements in the quality of resources and the environment, in general it can be said that efforts to maintain environmental functions and sustainable use of natural resources are still far from expectations. Meanwhile, signals of economic growth indicators such as Gross Domestic Product/Gross Regional Domestic Product (GDP/GRDP), and the inflation rate are not accompanied by information about the decreasing value of natural resources (depletion) and environmental damage and pollution (degradation) [3]. Reflecting on the conditions above, the green economy approach is now starting to be developed. This green economy is a model of economic development approach that no longer relies on development based on excessive exploitation of

natural resources and the environment. The green economy is a big leap away from economic practices that prioritize short-term profits which have left behind various problems that are urgent to be addressed, including driving a low-carbon economy [4]. The concept of a green economy has become an important area in specific development policies throughout the world [5]. This was first proposed by British environmental activists in the book blueprint for a green economy. He believes that the green economy is a form of economic development compared to traditional efforts to achieve economic growth. It emphasizes the organic combination of social development and ecological environmental protection [6]. Then, the concept continued to develop. The United Nations Environment Program describes the green economy as a form of economy that promotes and enhances social justice and human well-being while reducing adverse risks that can affect the environment and deficiencies in ecological systems. Several significant challenges arise due to the incorporation and implementation of classical economic theory.

Insufficient availability of natural resources and a significant increase in environmental damage have received attention as major challenges facing the universe in the current era [7]. Because of these factors, conflict arises over population growth which continues to increase. Therefore, a green economy needs to be developed, which is a new way to encourage sustainable environmentally friendly investment. Researchers have found that the current boom era's impact on industrial structure is one of the determining factors for degradation [8]. When combined and implemented in international countries, green economic environmental

policies will provide guidance to industry in utilizing economically friendly practices and maintaining competitiveness. In reviewing this research, the author will focus on the development of research on topics used in scientific works with the theme green economy and life expectancy spread across all parts of the world over a period of 33 years starting from 1990-2023 with the Scopus database using the Scopus approach. Bibliometric Analysis. This paper aims to contribute to existing literature by answering questions, namely in the Scopus database, what are the trends in scientific history products and the amount of green economic research; what are the critical intellectual aspects and how do they influence the green economics literature; what are the future directions of green economy research.

The image above shows the growth in the number of green economy and life expectancy research publications in the world indexed by Scopus in 1990-2023. In recent years, the first research related to the topic of green economy and life expectancy was carried out by Yazin, Z., Seong, L.T with the title "Assessment of Nutrition Education Needs Among a Sample of Elderly Chinese in an Urban Area" in 1987. In the early 90s, research topics had not been carried out much and even related articles still used old topics or only focused on brown-based economics with a conventional economic development paradigm that prioritized the industrial sector and exploitation of natural resources. In fact, it can be said that if exploitation in the primary sector is too prioritized, such as natural resources and agriculture, environmental problems will follow which in the long term will also cause environmental damage and social problems. Even though in the past few decades there has not been much research on this topic, based on the graph above, the development trend regarding the green economy topic is increasing almost every year. This indicates that the new paradigm regarding the shift from brown based-economic to green based-economic is quite popular in terms of discovering new views so as to produce diversity through scientific work and ultimately has an important role in development without forgetting ecological and social aspects.

The variety of subjects or research topics on this topic is also driven by the use of information and communication technology in the world of economics, this makes studies in the field of economics increasingly diverse and complex. The diversity of subjects or research topics on green economy and life expectancy increasingly shows that problems related to the field of green economy that are widespread and affect many aspects of life and this needs to be studied and researched more deeply, but based on research authors' search on developments There has not been much research on this topic through bibliometric analysis using the VOSviewers application, as shown in Figure 1. It is hoped that researchers who want to conduct research on the topic of green economy and life expectancy will also know what variables are still little researched, so that they can use this topic as a research reference in the future.

Based on the background and dynamics of the problem described above, the objectives of this study are; To determine the literature map (research trends) of international scientific publications on the topic of "Green Economy and Life Expectancy" from 1990 - 2023 on the Scopus website; To find out publications and citations on the topic of "Green Economy and Life Expectancy" that have occurred over 33 years; To explain the development of research theme clusters on the topic of "Green Economy and Life Expectancy" from article

keywords; And to see the potential for research on the topic of "Green Economy and Life Expectancy" which is popular and less popular on the Scopus website.
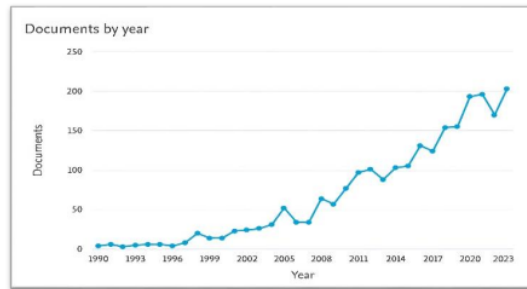

Figure 1. Number of publications on green economy and life expectancy by Scopus

2. LITERATURE REVIEW

Life expectancy has become relevant in the health and environmental sectors due to the current increase in carbon emissions [9]. Government policies must implement appropriate policy strategies to increase economic growth, human resources and renewable energy to increase life expectancy. The policies formulated must increase the use of natural resources and reduce carbon emissions to achieve a longer life. Life expectancy is the most important indicator of the health status of an economy [10]. However, Asian countries are under pressure to move towards a greener economic environment [11]. Development economists largely agree with the fact that a healthy population contributes to increased productivity, and they often use greater life expectancy at birth as a metric for measuring healthier lives and longer lives. Therefore, life expectancy also serves as an important summary indicator of the socio-economic development of an economy. In this context, this study investigates the impact of carbon dioxide (CO_2) emissions on life expectancy in developing countries [12].

The idea of a green economy (GE) has been realized as the main tool for achieving sustainable development (SD) in both developing and developed countries [13]. Green economy contributes to the creation of many new investments and sectors such as green technology, green transportation, and green cities that lead to the creation of green job opportunities, advance the economy and minimize environmental damage, adapt and mitigate the impact of climate warming and other challenges faced developing countries.

Although there is a lot of research on the social welfare of renewable energy, systematic studies on the impact of renewable energy on life expectancy are still relatively rare [14]. Life expectancy variable at birth as an indicator of health outcomes.

Previous study [15] analyzed a sample of 31 of the world's most polluted countries, finding that environmental degradation poses a threat to human longevity in the long term. The results show that the higher the carbon emissions, the lower the life expectancy in the world's most polluted countries. These studies show that developing countries with higher levels of environmental degradation appear to have higher levels of human health. For example, in countries with

the highest levels of pollution, people tend to increase their health spending to stay healthy. Greater health spending is associated with better health services, thereby increasing human life expectancy [16]. Countries with high levels of pollution often face pressure to increase spending on health to address the impacts of pollution, whether in the form of improving health services, investing in health infrastructure, and public health programs. One example is China, one of the countries with the highest levels of air pollution. China has increased its health spending significantly. According to a World Bank report, health spending in China increased from 3.6% of GDP (2000) to 6.4% of GDP (2020). Life expectancy has also increased from 72 years in 2000 to 77 years in 2020. And in India, even though the level of air pollution in the country is still high, the government has issued initiatives such as the National Clean Air Program (NCAP) and increased the health budget, especially to deal with diseases caused by air pollution.

With increasing efforts and focus on sustainable development and climate change, much of the literature is paying more attention to the green economy [3]. However, researchers have not been able to fully reach a consensus regarding the definition of this phenomenon. This study provides an overview of existing progress in green economy research over the period 1990 to 2020. Using a bibliometric analysis approach, this paper summarizes development trends and the status quo of the green economy. The aim is to provide readers with guidance and a strong conceptual framework for future research. Previous study [17] conducted a bibliometric analysis to explore the academic growth and evolution of the concept of green financing in the context of the green economy. An in-depth bibliometric analysis was carried out to examine the variables identified from the selected literature in relation to the field of study, the authors detailing relevant sources and thematic analysis. In this research a bibliometric analysis has been carried out on relevant sources to provide additional insight into the evolution of the concept of green financing.

The aim of this bibliometric analysis is to comprehensively examine the scientific field regarding the incorporation of a circular economy [18]. The current study uses bibliometric analysis to assess the effectiveness of the literature and intellectual and social structures regarding sustainable cities and the circular economy. Used bibliometric methods to make a comprehensive analysis with visualization of literature on the experiences and methods accumulated in China's economic development which are of great importance for the development of the green economy [19].

3. METHODS

This research uses quantitative and qualitative descriptive methods and the data is analyzed bibliometrically using a scientific article analysis unit. Secondary data was taken from the Scopus website from 1990 - 2023 or over a period of 33 years, The use of long-term data in bibliometric analysis has several main reasons that support the relevance and accuracy of the study, such as providing a richer context, data stability and generalization, assessing the impact and consistency of research, detecting changes in publication dynamics, and the ability to understand long-term trends [20]. This is especially important for research involving scientific evolution, public policy, or technology adoption. In this research, the data analysis used was data extraction. Thus, all data that meets the

inclusion requirements can be analyzed using quantitative, qualitative techniques, or both. First, researchers use Scopus to process data with the help of the "Analyze" menu, which offers external data sources such as statistical data or static processed results. Second, data processing with Microsoft Excel and VOSviewer software. Third, Scopus and VOSviewer output analysis was carried out in a descriptive manner.

Scientific articles on the topic "Green Economy and Life Expectancy" are taken from the Scopus database. The choice is made selectively because of its quality and reputation which is recognized by research institutions and universities throughout the world. This research applies several analytical methods for bibliometrics to explore the green economy and life expectancy. After extracting complete information from the Scopus database, this research uses publication type, author, article title, title source, research keywords, keywords, abstract and affiliation. Also, references, number of cited references, time cited, WoS core time cited, publisher, journal abbreviation, and publication year data bibliometric data are used to explore the green economy and life expectancy.

The research determines search criteria by focusing on green economy and life expectancy literature published in journals in the economics, econometrics, and financial domains. This research does not look for expanded keywords, this research only focuses on the keyword "Green Economy and Life Expectancy" which is published in related journals and economic domains. After searching by title, this research found 88,417 articles from Scopus. After limiting the research field to Economics, Econometrics and Finance (EEF) and Business in the Scopus database there are 2,334 scientific articles.

4. RESULTS AND DISCUSSION

4.1 Literature map (research trends) of international scientific publications on the topic "Green Economy and Life Expectancy" from 1990-2023 on the Scopus web

The keyword search above uses the inclusion criteria in the Scopus database, namely using the search keyword "Green Economy and Life Expectancy", a search in English with the final journal article document type with full text from 1990 to 2023. Based on Figure 2, the search results have produced 2,332 research articles either from searching articles based on "title, abstract and keywords" via the Scopus database.

Figure 2. Search for the keyword "Green Economy and Life Expectancy" in Scopus

Table 1 shows the number of research in the field of "Green Economy and Life Expectancy" with the Subject Area: Economics, Econometrics and Finance in the Scopus database as much as 49.9%. The year with the most research journal publications was 2023, with 203 publications, research on "Green Economy and Life Expectancy" began to increase in 2012 and from 2013 to 2023 publications on "Green Economy and Life Expectancy" always increased.

Table 1. Number of green economy and life expectancy publications

Years	Publication
2019	155
2020	193
2021	196
2022	170
2023	203

Source: Scopus (Accessed 27 February 2024)

4.2 Publications and citations on the topic

This graph along with the times for details of the subject area, see the below.
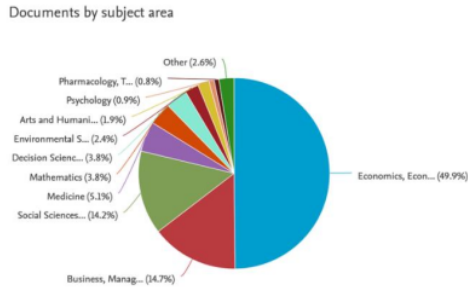

Figure 3. Documents by subjects' articles with the topic "Green Economy and Life Expectancy"

Figure 3 above presents documents by subjects for articles on the topic "Green Economy and Life Expectancy" in Scopus. Subject Economics has 49.9% articles, this is the most subjects in the topic "Green Economy and Life Expectancy". In second position, there are social sciences subjects at 14.2%, medicine subjects at 5.1%, then at 5.8% there are mathematics and decision science subjects. Environmental science at 2.4%, Arts and Humanities at 1.9%, Psychology at 0.9%, Pharmacology at 0.8% and other at 2.6%. Details of articles per year based on the following sources.
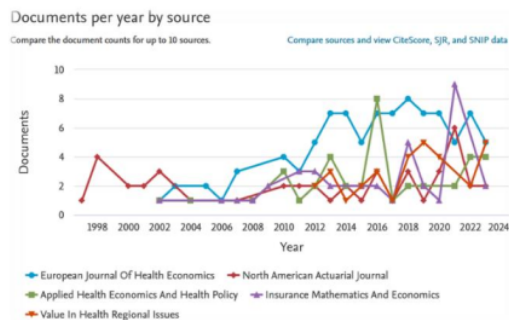

Figure 4. Documents year by source with the topic "Green Economy and Life Expectancy"

Figure 4 above shows documents year by source from 1990 to 2023 and produces the top five journals based on source title in the development of the publication "Green Economy and Life Expectancy". The journals that publish the most are the European Journal of Health Economics with 93 publications,

the North American Actuarial Journal with 45 publications, Applied Health Economics and Health Policy with 40 publications, Insurance Mathematics and Economics with 38 publications and Value in Health Regional Issues with 32 publications.
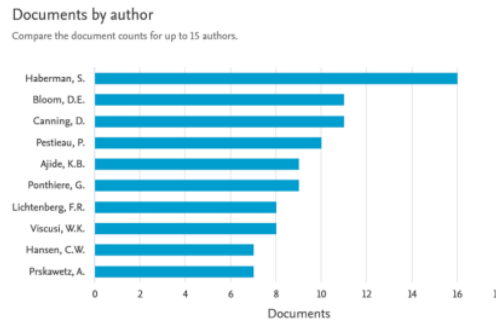

Figure 5. Authors with the most contribution to scientific publications using keyword

The results of Figure 5 above shows the ten authors with the most contributions to scientific publications by searching for the keyword "Green Economy and Life Expectancy" from 1990 to 2023, namely Haberman, S. wrote 18 scientific publications, Bloom, D.E. and Canning, D. with 11 publications, Pestieau, P. with 10 publications. There are 9 publications written by two authors, namely Ajide, K.B., and Ponthiere, G. There are 8 publications written by Lichtenburg, F.R and Viscsi, W, K. Finally, with 7 publications written by authors named Hansen, C.W. and Prskawetz, A.
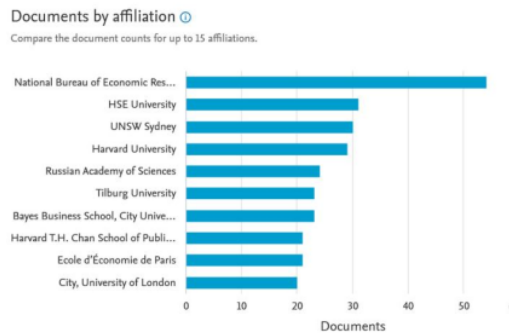

Figure 6. Affiliations of authors with the most contribution to scientific publications using keyword

Figure 6 above presents the ten affiliations of authors of the most scientific publications with the keyword "Green Economy and Life Expectancy" with the most affiliations from the National Bureau of Economic Research (America) with 54 publications, HSE University (Russia) with 31 publications, UNSW Sydney (Australia) with 30 publications, Harvard University (America) with 29 publications, Russian Academy of Sciences (Russia) with 24 publications, Tilburg University (Netherlands) and Bayes Business School, City University of London (England) with 23 publications, Harvard T.H. Chan School of Public Health (America) and Ecole d'Économie de Paris (Paris) with 21 publications, City, University of London

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(England) with 20 publications. So it can be concluded that research related to green economy and life expectancy is mostly conducted in institutions or universities located in high-income countries or developed countries. Developed countries have the ability to invest in green technology and environmentally friendly infrastructure. Studies show that the adoption of green energy and innovative technologies significantly increases the Human Development Index (HDI) in developed countries such as OECD members. This technology not only reduces carbon emissions but also contributes to public health through reduced air pollution and efficient resource management [21, 22].
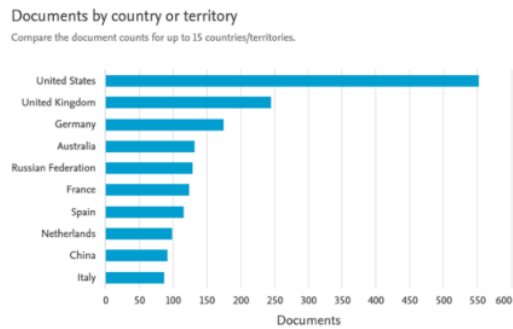

Figure 7. Ten countries with the highest number of articles related to topic

From the results of Figure 7 above presents the ten countries with the highest number of articles related to scientific publications with the keyword "Green Economy and Life Expectancy". The most countries come from the United States with 550 scientific publications, followed by the United Kingdom with 244 scientific publications, and Germany with 174 scientific publications. Australia with 131 publications, Russia with 128 publications, France with 123 publications, Spain with 115 publications, Netherlands with 98 publications, China with 91 publications and Italy with 86 scientific publications.
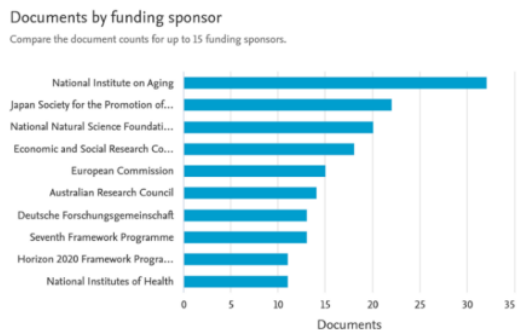

Figure 8. Research funding with the keywords "Green Economy and Life Expectancy"

Figure 8 above shows the ten research funding with the keyword "Green Economy and Life Expectancy" which dominates the most, namely the National Institute on Aging (Canada) with 32 publications, the Japan Society for the Promotion of Science (Japan) with 22 publications, the

National Natural Science Foundation of China (China) with 20 publications, Economic and Social Research Council (United Kingdom) with 18 publications, European Commission (Europe) with 15 publications, Australian Research Council (Australia) with 14 publications, Deutsche Forschungsgemeinschaft (Netherland) and Seventh Framework Program (Europe) with 13 publications, Horizon 2020 Framework Program and the National Institutes of Health from America with 11 publications.
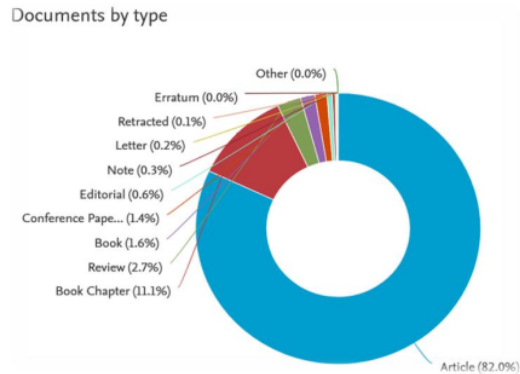

Figure 9. Scientific research publications based on document type

Figure 9 above presents the results of scientific research publications based on document type with the keyword "Green Economy and Life Expectancy". The results show that there are 82.0% in the form of articles, namely 1912 publications, 258 book chapters (11.1%), 63 reviews. publications (2.7%), books were 38 publications (1.6%), conference papers were 32 publications (1.4%) and editorial, note, letter, retracted type documents were below 1%.

4.3 Co-occurrence bibliometric keywords

This analysis will display the development of scientific publication clusters by searching for the keyword "Green Economy and Life Expectancy" from 1990 to 2023, indicated by the Scopus database which visualizes bibliometric results based on keywords.

This article explains how bibliometric analysis using VOSviewer is applied in research on Sustainable Development Goals (SDGs), including the use of thresholds for keywords in the analysis of relevant literature [23]. We will analyze articles on renewable energy and choose threshold = 1, then all keywords in one article, even if they only appear once, will be included in the analysis. This can include keywords that are very specific or irrelevant to the main topic. A threshold of 1, you will include all keywords that appear once in the data set. This can result in a very long list with many keywords that are rarely used. This can lead to less filtering, meaning that many irrelevant or frequently occurring keywords will still end up in the analysis. This can make the results less focused on the truly dominant themes or topics. If the threshold is applied to authors or journals, all authors or journals that appear in at least 1 article will be included. This allows you to see all contributions by an author or journal, including those that rarely contribute. However, this can create a very dense network and is less useful if the goal is to focus on more

frequently cited or more relevant research. Increase the inclusiveness of the data, by ensuring that all elements in the dataset are included in the analysis. This can be useful if the goal is to get a comprehensive and complete overview of all keywords, authors, or journals present, without filtering out elements that may appear less frequently.

Figure 10. Find articles "Green Economy and Life Expectancy" in Scopus

Figure 10 shows the results of data processing via the VOSviewer application that a search prepared by the author of a journal article and appearing at least once in the Scopus core database registered in the final analysis detected 415 keywords that met the threshold.
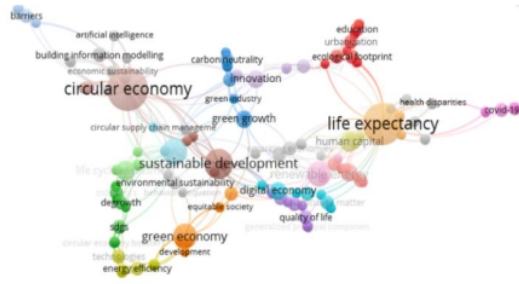

Figure 11. Keyword visualization results using VOSviewer

Keyword visualization results (co-occurrence) using

VOSviewer data, the results of which detected 34 clusters, 319 keywords, links of 989 and total link strength of 1001 which can be seen in Figure 11. Searches for the publication "Green Economy and Life Expectancy" most frequently appear with the keyword which have a strong connection, namely *"circular economy", "life expectancy", "sustainable development", "green economy", "digital economy"*.

4.4 Co-authorship bibliometric analysis

This analysis visualizes the bibliometric results of Co-Authorship from authors and the results of cooperation or collaboration based on the name of the author.
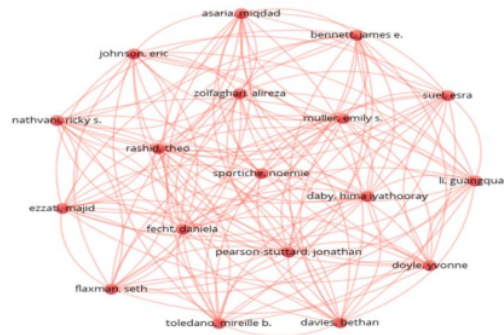

Figure 12. Co-authorship visualization results using VOSviewer

In Figure 12 above, it shows the results of bibliometric visualization of co-authorship after data processing from VOSviewer. The results are 406 authors and only 18 authors were detected by VOSviewer as having a network or collaboration between authors in one red cluster, the rest do not have a network between authors.

Table 2 provides a detailed list with the most citations in Scopus.

Table 2. Green economy and life expectancy scientific publications with the most citations in Scopus

Rank	Title	Source	Years	Citation
1.	Analysing the Efficiency of Health Systems: A Systematic Review of the Literature	Applied Health Economics and Health Policy	2023	20
2.	Exploring the dynamic impacts of natural resources and environmental pollution on longevity in resource-dependent African countries: Does income level matter?	Resources Policy	2022	19
3.	Determinants of life expectancy at birth: a longitudinal study on OECD countries	International Journal of Health Economics and Management	2023	18
4.	The long-term impact of the COVID-19 unemployment shock on life expectancy and mortality rates	Journal of Economic Dynamics and Control	2023	14
5.	Honing action competence in sustainable development: what happens in classrooms matters	Environment, Development and Sustainability	2023	12
6.	Patent, Education, Human Capital, and Economic Growth in Scandinavian Countries: A Dynamic Panel CS-ARDL Analysis	Journal of the Knowledge Economy	2023	11
7.	The Generalized Risk-Adjusted Cost-Effectiveness (GRACE) Model for Measuring the Value of Gains in Health: An Exact Formulation	Journal of Benefit-Cost Analysis	2023	10
8.	Human development and decentralization: The importance of public health expenditure	Annals of Public and Cooperative Economics	2023	10
9.	Determinants intention usage of Islamic E-Wallet Among Millennials	Global Business and Finance Review	2023	10
10.	Health, income, and the preston curve: A long view	Economics and Human Biology	2023	9

Source: Scopus (2024)

4.5 Research opportunities on the topic "Green Economy and Life Expectancy" which is popular and less popular on the Scopus website

Table 3 shows keywords related to the scientific publication "Green Economy and Life Expectancy" belonging to two categories, namely scientific publications >100 and scientific publications <100 in Scopus. Keywords with <100 publications can be used as reference material for further keywords for researchers to write research on "Green Economy and Life Expectancy". Green economy is a concept that focuses on achieving sustainable economic growth by minimizing environmental impacts and improving social welfare [24]. A green economy includes practices that reduce greenhouse gas emissions, increase energy efficiency, and promote sustainable management of natural resources. Early literature on the green economy often discussed the relationship between green policies and economic growth, but in the last decade, the focus has also begun to shift to the impact of these policies on aspects of public health, including life expectancy [25, 26]. The results of the bibliometric analysis show a significant growth trend in the number of publications examining the relationship between the green economy and life expectancy since the early 2000s. This increase reflects growing academic interest in the impact of green economic policies on public health. This increase in publications is likely related to growing global awareness of the importance of sustainability and environmental quality as determinants of human health.

Table 3. Keyword most frequently used by researchers throughout the world based on scientific publications on the keyword "Green Economy and Life Expectancy" on Scopus

Total Publication	Keyword
>100	Life Expectancy, Human, Mortality, Female, Male, Economic Growth, Adult, Health Care Cost, Longevity
<100	Health, Human Capital, Aged, Quality Of Life, Cost Effectiveness Analysis, Middle Aged, Health Status, Controlled Study, Education, Major Clinical Study, Quality Adjusted Life Year, Income, Economic Development, United States, Retirement, Cost Benefit Analysis, Fertility, Public Health, Social Security, Health Expenditures, Gross Domestic Product, Inequality, Poverty Growth, Pension System, Socioeconomic Factors, Young Adult, Infant Mortality, Human Development Index, Cost-effectiveness, Aging Population, Employment, Developing World, Sustainable Development, Unemployment, Innovation, Morbidity, Risk Factor, Cost Of Illness, Economic Evaluation, Smoking, Mortality Rate, Welfare, Retirement Age, Migration, Cost Control, Obesity, Overlapping Generations, Probability, Cardiovascular Disease, Decision Making, Educational Status, Globalization, Health Economics, Insurance, Investment, Life Expectancy At Birth Acquired Immune Deficiency Syndrome, Chronic Disease, Life Cycle.

Source: Scopus, (2024)

Many studies show that green economic policies can reduce environmental pollution and improve air and water quality, which has a direct impact on human health. Previous research [27] shows that investments in renewable energy and emission reductions can significantly reduce air pollution levels, contributing to improved public health. This is supported by findings from researcher [28] who underline that effective green policies can reduce the risk of respiratory diseases and improve the quality of life. Research shows that improving environmental quality can increase life expectancy. Previous study [29] found that the reduction in air pollution is proportional to the increase in life expectancy, especially in urban areas with high levels of pollution. Other research [30] shows that countries that successfully implement green economic policies also experience improvements in overall public health. This is in line with findings by previous study [31] which stated that policies that reduce carbon emissions and improve environmental quality contribute to reducing premature death rates and increasing life expectancy.

4.6 Discussion

The results of the bibliometric analysis show that there is a significant increasing trend in the number of publications discussing the relationship between the green economy and life expectancy in the last thirty-three. Citation analysis revealed that key articles in this field are frequently cited and recognized as important contributions to understanding the impact of the green economy on public health. These findings reflect growing academic interest in the interactions between green economic policies and health outcomes such as life expectancy.

The research results also show differences in the impact of green economic policies based on regional context. Developed countries, as shown in the study [31], tends to have a greater positive impact on life expectancy due to more advanced infrastructure and technology in implementing green policies. One example of a country with the highest life expectancy in the world, with an average of 84 years is Japan [32]. The key factor that causes this is the health infrastructure, where the country has a very efficient and affordable universal health care system. Medical technology is the next factor that is the key to a very high life expectancy, where the country uses advanced technology such as robots for elderly care, advanced diagnostic tools, and innovative medicines [33]. And finally, a lifestyle with healthy habits. The result is a low infant mortality rate (1.8 per 1000 births in 2023), the prevalence of chronic diseases is relatively controlled.

In contrast, developing countries may experience greater economic benefits from green policies although the impacts on health may be slower to show. These differences suggest that the implementation of green economy policies needs to be adapted to local contexts to maximize health benefits. The huge gap can be seen from access to technology and infrastructure, where developed countries have better infrastructure to support the implementation of green policies such as renewable energy (e.g., solar panels, wind turbines), and environmentally friendly technology, while developing countries' environmentally friendly energy infrastructure is still limited, relying on fossil fuels that cause air and water pollution so that these limitations cause green policies to run slowly and have minimal impact on increasing life expectancy. According to the World Health Organization (WHO) report, developed countries such as Sweden and Japan have shown a positive relationship between reducing carbon emissions and increasing life expectancy.

The second gap can be based on funding and economic priorities, where developed countries have a larger budget to invest in green policies without sacrificing other important economic sectors. While limited budgets require developing countries to prioritize basic needs such as food, education, and poverty alleviation over green policies. As a result, adverse environmental impacts such as pollution and climate change affect public health for longer. Previous study [34] shows that in developing countries, 40% of the population still relies on environmentally unfriendly energy sources such as coal and firewood, which reduces health quality.

Some studies [12, 35] found that environmental policies often differ across countries according to their need to gain comparative advantage in the international market. These policies have a direct impact on the life expectancy of a country's population through various environmental indicators. It is generally said that developed countries with stringent environmental policies enjoy good health standards, but the opposite is true in developing countries with weaker environmental standards. However, due to global warming and other international and national aspects, even developing countries have started implementing strong environmental policies.

The difference in the impact of green policies on life expectancy between developed and developing countries is influenced by access to technology, funding priorities, public health conditions, and the scale of environmental pollution. Data shows that developed countries feel the benefits of green policies faster due to infrastructure readiness, economic resources, and public awareness, while developing countries face economic and infrastructure challenges that slow down the realization of their positive impacts. To reduce this gap, global support is needed, such as funding for green technology, environmental education, and international cooperation in realizing sustainable development.

The findings from this bibliometric analysis have important implications for policy makers. First, to maximize the health benefits of green economic policies, there needs to be an emphasis on policies that not only reduce environmental pollution but also support public health and welfare infrastructure. Second, it is important to consider the local context in designing and implementing green economic policies in order to address the specific challenges faced by different countries or regions.

The results of the bibliometric analysis are in line with existing literature which shows that green economic policies can contribute to improving the quality of life through reducing pollution and environmental pollution. For example, a study [36] shows that reducing carbon emissions resulting from green economic policies is directly related to increasing life expectancy through improving air quality. However, our analysis also identified several gaps in the existing literature, such as the lack of longitudinal studies evaluating the long-term impacts of green economic policies and overall life expectancy. This is consistent with findings [37] who underscore the need for more long-term research in this area.

When compared with existing literature, the results of our analysis show consistency with previous findings which state that green economic policies have the potential to increase life expectancy. For example, previous research [38] shows that green initiatives in developed countries have led to significant improvements in public health and increased life expectancy. However, our bibliometric analysis also identified that research on developing countries is less widely discussed,

even though the context and effects of green economic policies in these countries may be different.

The findings of this bibliometric analysis have significant implications for policy makers and researchers. First, these results emphasize the importance of integrating green economic policies with public health strategies to maximize benefits on life expectancy. Policies targeting pollution reduction, investment in green infrastructure, and promotion of healthy lifestyles can make a major contribution to improving public health. Additionally, these findings demonstrate the need for multidisciplinary collaboration between economists, environmental scientists, and health experts to design holistic and effective policies.

5. CONCLUSIONS

This bibliometric analysis reveals significant trends in the literature linking the green economy to life expectancy. The researchers' findings show that there has been an increase in the number of publications assessing the impact of green economic policies on public health, especially life expectancy, in the last two decades. The articles highlighted in this analysis show that green economic policies, such as reducing carbon emissions and investing in green infrastructure, have the potential to contribute to increasing life expectancy through improving environmental quality. References Overall, this bibliometric analysis confirms that the green economy has the potential to increase life expectancy through improving environmental quality. Although research trends show positive progress, there is still much room for further exploration and better understanding of the long-term impacts of green economic policies on public health. Existing literature shows that there is a positive relationship between the green economy and life expectancy through improving environmental quality. Bibliometric analysis helps identify key trends, leading authors, and areas that require further research. Although there is evidence to support the benefits of a green economy on public health, more in-depth and long-term research is needed to understand these impacts fully and in a broader context.

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