Trend Point 11 SDG: The Potential of the Giri Kedaton Site in Discussing Eco-Spiritualism Philosophy

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Sections Info	ABSTRACT
	Objective: Identifying global aspects of eco-spiritualism and analyzing its potential at the Giri Kedaton site to achieve SDG 11, which aims to create inclusive and sustainable settlements. **Method:** *The research was conducted using a mixed-methods research model. This research approach combines qualitative methods (Bibliometric Analysis) and quantitative methods (Observation) in one study to gain a more comprehensive understanding of a phenomenon.* **Results:** *There is a global research trend in philosophy supporting the SDGs. The number of documents and citations increased from 2020 to 2025, resulting in 48 Scopus documents, with the highest number of citations in 2024 at 185. Bibliometric analysis findings identified three main aspects of eco-spiritualism: philosophical foundations, environmental ethics, and integration practices. The Giri Kedaton site, as a cultural heritage site, has the potential to uphold the values of eco-spiritualism and SDG 11 for global recognition.* **Novelty:** *The environmentally friendly principles of sustainable settlement management, in accordance with SDG 11, are reflected in the Giri Kedaton site. The potential for comfortable living and inclusive settlements is a key aspect of SDG 11. Analysis of the findings opens up new insights into the realm of eco-spirituality related to the beliefs and philosophy of the Giri Kedaton site.*

INTRODUCTION

More than half of the world's population currently lives in urban areas, and that number continues to increase with the development of globalization and urbanization. Rapid urban growth brings significant challenges such as congestion, pollution, social inequality, limited green space, and environmental degradation (Auwalu & Bello, 2023). SDG 11 is a goal to design cities and communities that are inclusive, safe, resilient, and sustainable through spatial planning, environmentally friendly transportation, resource management, and cultural and environmental preservation (Monaco, 2024; Nkengla-Asi et al., 2024). Awareness of the importance of SDG 11 will encourage the active participation of all parties to create cities that are not only livable but also able to support the quality of life of current and future generations.

The formation of an inclusive community order can be realized through an eco-spiritual approach with philosophical theories embodied in the culture and characteristics of the surrounding environment (Bhandari, 2021; Sinha, 2025). The integration of eco-spiritualism with SDG 11 (Sustainable Cities and Communities) is feasible, as both focus on achieving a balance between human and environmental needs (Taufiq et al., 2021). Eco-spiritualism can strengthen the values of sustainability in urban planning, resource management, and community lifestyles by instilling spiritual

awareness of the importance of environmental conservation. Thus, the development of sustainable cities and communities is not only based on technological aspects and policies, but also on building an ecological culture rooted in spiritual values, thereby encouraging community participation in creating greener, healthier, and more harmonious cities (Yigitcanlar et al., 2021). One symbol and tangible evidence of an ancient civilization with strong eco-spiritual values is the Giri Kedaton site (Koderi et al., 2022).

The Giri Kedaton site is one of the authentic pieces of evidence of the history of the Islamic kingdom located in Gresik, East Java, and holds philosophical and scientific values. The Giri Kedaton site is a historical product, a building left behind by the first Islamic kingdom on the island of Java (Koderi et al., 2022; Christianna & Saidi, 2023). In reality, few people appreciate this historical evidence, and even fewer people only see its visual form without considering its scientific values. In fact, the Giri Kedaton site holds a building philosophy that can be utilized in sustainable settlement planning in accordance with SDG 11 (Tucunan, 2025).

Thinking philosophically, exploring the deeper meaning of values, and reformulating and maintaining the consistency of cultural identity and local wisdom further advance knowledge. The Giri Kedaton site, as a cultural heritage site, possesses its own unique local wisdom within the realm of philosophy, specifically about culture and society, inheriting knowledge derived from experience, stories, and traditions (Triyatno et al., 2024). Based on this philosophy, the Giri Kedaton site has the potential to become a study of eco-spirituality that can influence the surrounding community.

The lack of literature and limited focus on managing the values and aspects of eco-spiritualism globally poses a challenge to developing this approach in the communities surrounding the Giri Kedaton site. Therefore, an in-depth analysis of international eco-spiritualism studies through global literature is necessary (Adow et al., 2024; Durachman et al., 2021). The purpose of this study is to identify aspects of eco-spiritualism globally and analyze the potential of eco-spiritualism at the Giri Kedaton site to realize SDG 11, namely, creating inclusive and sustainable settlements.

RESEARCH METHOD

The research was conducted using a mixed-methods research model. This research approach combines qualitative and quantitative methods in one study to gain a more comprehensive understanding of a phenomenon (Dawadi et al., 2021). The use of mixed methods, combining quantitative and qualitative analysis, provides a comprehensive picture of the focus of eco-spirituality. Quantitatively, the analysis was conducted through a bibliometric study using data from the Scopus database to map trends and focuses of eco-spirituality research in international literature (Lintangesukmanjaya et al., 2025). Meanwhile, qualitatively, the study was conducted through a literature review and field observations at the Giri Kedaton site (Durachman et al., 2021), with data obtained from local manuscripts, historical records, and site documentation, to explore eco-spirituality values based on local wisdom.

The combination of these two methods allows the research to connect global and local perspectives, thereby providing a more complete understanding of the potential for eco-spirituality integration in cultural preservation and the development of sustainable education.
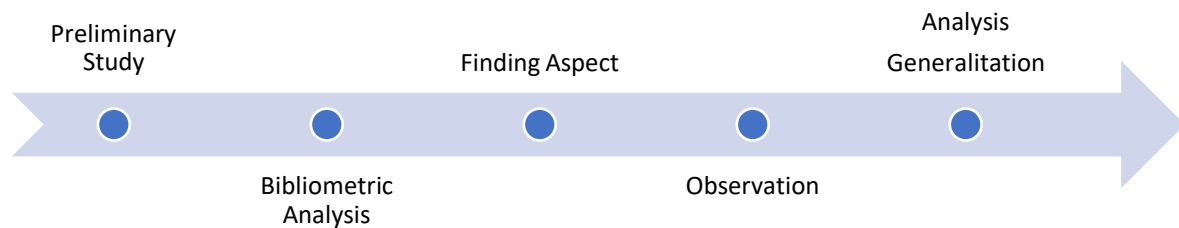

Figure 1. Research flowchart

The data analysis techniques in this study combine quantitative and qualitative analysis to gain a comprehensive understanding of eco-spirituality (Pregoner, 2024). In the quantitative phase, bibliometric analysis was conducted using data from the Scopus database with the aid of VOSviewer software to map keyword networks, publication trends, citations, and author collaborations, thus revealing the direction of development and focus of international research related to eco-spirituality (Lintangesukmanjaya et al., 2025).

Meanwhile, the qualitative phase was conducted through a literature review and field observations at the Giri Kedaton site, analyzing local manuscripts, historical records, and direct observations using content analysis and thematic analysis methods to identify key themes of eco-spiritual values and local wisdom related to environmental conservation. Research instruments included observation sheets and documentation tools, all of which were used to collect and organize data systematically (Sukmawati, 2023) . This approach enabled the integration of the global perspective of the bibliometric analysis with the local context of the field findings, resulting in a deeper understanding of the potential of eco-spiritual practices in supporting cultural preservation and sustainable development.

RESULTS AND DISCUSSION
Preliminary Study of Eco-Spiritualism
Preliminary research was conducted using bibliometric analysis targeting documents from the Scopus database over the past five years (Wang et al., 2022). The analysis used the keywords "Philosophy AND SDGs AND Social." The results indicate a research trend in eco-spiritualism related to the philosophical field. The study found the highest number of citations in 2024, with a total of 185 citations and 15 documents.
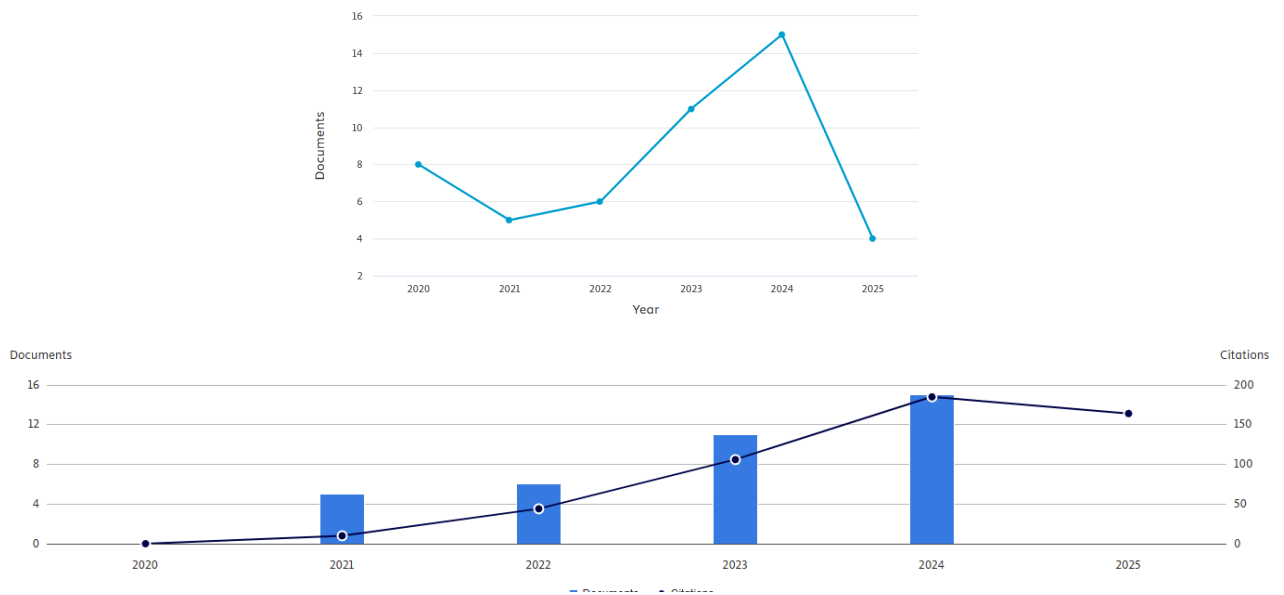
Figure 2. Increase in citations and documents per year (2020-2025)

Eco-spiritual studies were found most frequently in several international literature sources, primarily articles, with a total of 26 documents. Eco-spiritualism refers to the study of ecology, SDGs, and spirit. The relevance of the keywords in this research has the potential to enhance eco-spiritual research, particularly in its philosophical context. The following is an overview of the mapping of all keywords in research discussing the philosophy of eco-spiritualism.
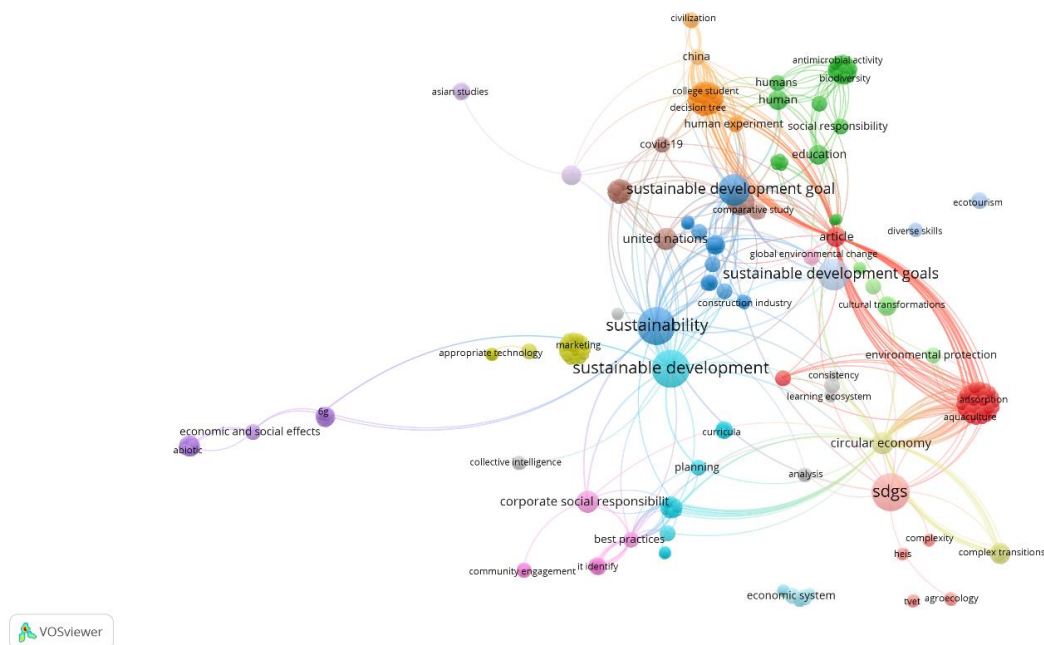
Figure 3. Keywords overview

The bibliometric analysis shows that each keyword is interrelated. This is particularly evident in the relationship between ecology and spiritualism, as shown in Figure 4. Ecological studies can be viewed from the perspective of spiritual values within specific groups. The integration of ecology and spiritualism to form eco-spiritualism can be

understood as an approach that views nature not merely as an object of exploitation but also as part of human spiritual reality (Regmi, 2024).

Figure 4. Philosophical mapping

Furthermore, in Figure 4, eco-spiritualism has a close relationship with philosophy because both seek the deeper meaning of human existence and the universe. From an environmental philosophy perspective, eco-spiritualism views nature not merely as a material object, but as having intrinsic value that demands ethical respect, in line with the ideas of ecocentric ethics and deep ecology. In the spiritual dimension, it adds a transcendental awareness that nature is part of a sacred or divine reality. This integration produces a holistic view that caring for the environment is not only a moral obligation but also a spiritual journey, so that humans are placed as an integral part of the cosmos, not its sole ruler.

Figure 5. Eco-spiritualism and SDGs

Eco-spiritualism is closely linked to SDG 11 (Sustainable Cities and Communities) as both focus on creating a sustainable, harmonious, and livable environment for all (Adow

et al., 2024). Within the framework of SDG 11, sustainable urban development emphasizes not only physical aspects such as environmentally friendly infrastructure or green spaces, but also social and spiritual values that foster a sense of ownership, responsibility, and ecological awareness in communities. Eco-spiritualism reinforces this vision by instilling the view that cities and communities are sacred spaces that must be cared for, so that the management of resources, transportation, housing, and public policy can be based on moral and spiritual awareness. This integration helps create cities that are not only technologically intelligent but also culturally and spiritually sustainable, forming communities that live in harmony with nature and are rooted in deep human values (Nur, 2025).

Based on the findings of the bibliometric study, we can obtain a basis for studying eco-spiritualism in the realm of philosophy as a benchmark for analysis in the principles of sustainable development, as follows (Sinha, 2025; Taufiq et al., 2021).

Table 1. Aspects of Eco-spiritualism in philosophy

No	Aspect	Information
1	Philosophical Basis	Ecology focuses on the interconnectedness of living things and the environment, while spiritualism emphasizes the relationship between humans and the transcendental dimension.
2	Environmental Ethics Values	Eco-spiritualism calls for developing ecological ethics based on spiritual awareness.
3	Integration Practices	Moral goals and useful life values through rituals, traditions, culture and local wisdom that are highly respected.

Eco-Spiritualism Profile Analysis of the Giri Kedaton Site

The Giri Kedaton site, located in Gresik, East Java, Indonesia, is a cultural heritage site that has survived since 1478 AD (Rofiq, 2024; Wayan et al., 2022). It was the center of Islamic government founded by R. Paku, with the title Prabu Satmata, also known as Sunan Giri, during the Majapahit Kingdom. Situated on a hilltop, this site is a cultural heritage site with eco-spiritual values that have the potential to be developed into the modern era (Triyatno et al., 2024).

Figure 6. Giri Kedaton Site

a. Philosophical Basis of the Giri Kedaton Site

Giri Kedaton is a local wisdom that continues to be practiced with Islamic culture, allowing the remains of the Giri Kedaton site to be seen by today's generations (Triyatno et al., 2024). Giri Kedaton incorporates many philosophies into its construction and geographical layout. A general description of the Giri Kedaton site is that the building, which was once a palace or royal residence, is divided into seven main areas, known as "tunda 7." However, currently, only five levels can be seen, as reconstruction has not yet taken place on two levels, which are still used as local residential areas. Built using ornaments from Hindu-Buddhist building construction, this site has its own characteristics. Although Giri Kedaton serves as both an Islamic boarding school and an Islamic government system, the majority of the population at that time adhered to Hinduism and Buddhism, so the site was built with Hinduism and Buddhism in mind. The emergence of Hindu-Islamic cultural acculturation often appeared during the collapse of large Hindu kingdoms with the spread of Islam in the 14th-15th centuries AD, due to the developing religious and political system.

Figure 7. Distribution of Tundo Pitu land and Giri Kedaton drainage system

There is an interesting fact at the Giri Kedaton site: the division of land into 7, known as tundo pitu, has a philosophical meaning related to the dharma school in Javanese Hinduism (Rupawan et al., 2022). Tundo pitu or the term "Seven Levels" means "sapta loka" which is the seven levels of nature, from the lowest realm, namely the world realm (mayapada), the subtle realm (bwahloka), the realm of pleasure (swargaloka), the realm of the soul (mahaloka), the inner realm (janaloka), the subconscious (tapaloka), the realm of God (Satyaloka). All of this can be achieved by controlling lust, and the implementation in the Giri Kedaton site is that the higher the place reached, the greater the sacrifice that can be made.

b. Environmental Ethics

In environmental ethics, the principle of eco-friendliness refers to human attitudes and actions oriented toward the preservation and sustainability of ecosystems, recognizing that nature has intrinsic value, not merely a tool to meet human needs. This is evident in the principle of tundo pitu, where the Giri Kedaton site is not only a place but also embodies natural preservation and the spirit of philosophy within it. Furthermore, the principle of eco-friendliness stems from the use of competent irrigation (drainage)

systems and the division of sanitation zones within settlements located in highland areas.

The existence of zoning, such as tundo pitu, and the proper irrigation flow process benefit residents by channeling water systems according to regional needs. Naturally, the upper regions require smooth irrigation because water sources in the highlands are generally more difficult to find. Many facilities do not require pumps, only anticipating rainwater catchment, such as water filtration at the Girikedaton site, which can be implemented in settlements with extensive land. From Figure 7, this is a form of ethics, namely humanism's self-concern for ecology. A well-maintained environment creates a broader perspective in observing culture, local wisdom, and historical buildings, which becomes a unique attraction, fostering a greater awareness among the younger generation about their national identity.

c. Integration Practices

The principles of disaster mitigation at the Giri Kedaton site are embedded in its building systems and geographic location. Environmentally friendly principles and forms of disaster mitigation stem from the use of competent irrigation (drainage) systems and proper sanitation within the settlement's layout, which is geographically located on highlands. Safe and sustainable settlements always prioritize disaster mitigation (Dodman, 2023). By slowing the flow of water using horizontal terraces, the kinetic energy of the flowing water decreases. This prevents soil erosion caused by powerful water flow, thus maintaining stability and fertility. The stable and sturdy structure of the building, through an interlocking system, makes the building resistant to earthquakes and landslides. Therefore, public awareness of disaster adaptation and mitigation can be fostered through cultural and science-based education.

The Potential of SDGs 11 in the Giri Kedaton Site

Environmentally friendly principles in settlement management are reflected in the implementation of competent irrigation or drainage systems and well-planned sanitation zoning, thereby maintaining environmental quality and public health. Settlements located in highlands have great potential to support sustainability because their geographic location facilitates water flow, reduces flood risks, and supports natural resource conservation if managed wisely. This integration of environmental governance is in line with SDG goal 11 (Sustainable Cities and Communities), which emphasizes the importance of inclusive, safe, resilient, and sustainable cities and settlements (Hoyo et al., 2021). With adequate drainage and sanitation planning, settlements not only become physically livable but also reflect ecological awareness that promotes harmony between humans and nature, and strengthens the environmental carrying capacity for future generations.

Safe and sustainable settlements always prioritize disaster mitigation by implementing environmentally friendly spatial designs, one of which is through the construction of horizontal terraces to slow the flow of water. This effort reduces the kinetic energy of water flow, thereby preventing soil erosion, maintaining slope stability,

and maintaining soil fertility, which is essential for the sustainability of settlement ecosystems. This environmental management strategy is in line with SDG 11 (Sustainable Cities and Communities), which emphasizes the importance of disaster-resilient, safe, and sustainable cities and communities (Smart et al., 2021). By strengthening resilience to natural risks while utilizing local wisdom in regional governance, settlements are not only more physically livable but also more adaptive to climate change, supporting community well-being and ensuring the sustainability of resources for future generations.

Based on factors of security, comfort, and sustainability, the community's desire to settle in their hometown will reduce migration mobility. Most residents always consider living in the highlands to have security-related weaknesses (Distler, 2022). However, this site is different, which at one time was the most populous geographical location in Gresik Regency. The potential for comfortable living and inclusive housing is a key point in SDG 11. Therefore, in general, the Giri Kedaton site as a cultural heritage has the potential to uphold the values of eco-spirituality and SDG 11 for global recognition. These values have supported previous global research findings and are in line with the real situation in their contribution to society. Being an authentic symbol of the region and the history and philosophy contained within it are additional points for the Giri Kedaton site to become world-renowned.

CONCLUSION
Fundamental Finding: There is a global research trend in philosophy supporting the SDGs. The number of documents and citations increased from 2020 to 2025, resulting in 48 Scopus documents, with the highest number of citations in 2024 at 185. Bibliometric analysis findings identified three main aspects of eco-spiritualism: philosophical foundations, environmental ethics, and integration practices. The Giri Kedaton site, as a cultural heritage site, has the potential to uphold the values of eco-spiritualism and SDG 11 for global recognition. **Implication:** The environmentally friendly principles of sustainable settlement management, in accordance with SDG 11, are reflected in the Giri Kedaton site. The potential for comfortable living and inclusive settlements is a key aspect of SDG 11. Analysis of the findings opens up new insights into the realm of eco-spirituality related to the beliefs and philosophy of the Giri Kedaton site. **Limitation:** Bibliographic analysis revealed that relevant literature on eco-spiritualism is minimal. Eco-spiritualism remains unfamiliar in global research and requires in-depth study to determine more logical and relevant aspects. **Future Research:** An analysis of the philosophy of construction or the philosophy of knowledge can be developed to support ethnoscience learning at the Giri Kedaton site.

AUTHOR CONTRIBUTIONS
Rahmatta Thoriq Lintangesukmanjaya contributed to the conceptual framework, research design, and validation process; **Ilmiawan Hakim** was involved in methodology development; **Nabila Nur Almaida Nasution** was involved data analysis; **Binar Kurnia Prahani** was sourcing references, and drafting the manuscript; **Dwikoranto** handled data

management; **Khoirun Nisa'** was involved in methodology development. All listed authors have reviewed and approved the final version of this submission.

CONFLICT OF INTEREST STATEMENT
No conflict interest.

ETHICAL COMPLIANCE STATEMENT
This manuscript complies with research and publication ethics. The authors affirm that the work is original, conducted with academic integrity, and free from any unethical practices, including plagiarism.

STATEMENT ON THE USE OF AI OR DIGITAL TOOLS IN WRITING
The authors acknowledge the use of digital tools, including AI-based technology, as support during the research and writing stages of this article. Specifically, Grammerly and Mendeley are writing aids that offer various advantages, particularly in improving the quality and clarity of English writing and facilitating the citation process. All output produced with digital assistance was critically evaluated and revised to ensure compliance with academic and ethical standards. Final responsibility for the manuscript rests solely with the authors.

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