

Building ecological citizenship awareness for a healthy Indonesia

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Abstract

Environmental issues are increasingly pressing globally, including in Indonesia, where pollution and environmental damage continue to rise. In this context, ecological citizenship awareness has emerged as one solution to address these challenges. This study aims to analyse the level of ecological citizenship awareness among the community in Indonesia and to assess the impact of this awareness on community participation in environmental cleanliness and preservation programs. The method used is a literature study, which involves collecting and analysing related literature, including journal articles, research reports, and policy documents. The literature criteria applied include relevance, source reliability, and year of publication to ensure that the information obtained is accurate and up to date. The results of the study indicate that ecological citizenship awareness in Indonesia varies, with much of the literature emphasising the importance of environmental education in improving community understanding. The discussion also indicates that although awareness is high, implementation in real action is often hampered by a lack of support from facilities and policies. This study recommends strengthening environmental education programs and collaboration between the government and the community to create a cleaner, more sustainable environment.

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Introduction

Environmental issues have become a pressing global issue, affecting life worldwide (Rini & Rahmat, 2023). Phenomena such as global warming, air pollution, water pollution, and biodiversity loss pose serious threats to ecosystems and human health. According to a 2022 report from the Intergovernmental Panel on Climate Change (IPCC), global temperatures have increased by approximately 1.1 degrees Celsius compared to pre-industrial levels. This increase in temperature contributes to more frequent and intense extreme events, such as floods, droughts, and storms (Shukla et al., 2022). These figures reflect a reality that cannot be underestimated. Data from the United Nations Environment Programme (UNEP) shows that more than 8 million tons of plastic waste pollute the oceans annually, with fatal consequences for marine ecosystems and human health (United Nations Environment Programme (UNEP), n.d.).



Globally, the impacts of these environmental issues are complex and extend beyond climate change. Environmental degradation impacts food security, public health, and economic stability. The World Bank report, "The Economic Case for Nature," presents integrated global ecosystem-economic modelling to assess policy responses to the biodiversity crisis. The report shows that if significant action is not taken, the loss of ecosystem services could lead to a decline in global Gross Domestic Product (GDP) of up to \$225 billion by 2030. Without action, up to 46 million hectares of natural land could be converted, impacting agricultural output, fisheries, and timber-dependent industries. If the decline in ecosystem services continues, the partial collapse of these services could cost up to 2.3% of global GDP, a devastating outcome, especially for low- and middle-income countries (Johnson et al., 2021). The report emphasises that conventional economic models do not account for the declining trend in ecosystem services, leading to overly optimistic growth projections. Countries most in need of natural capital will be hardest hit by these impacts, further exacerbating social inequities, with developing countries, which contribute least to carbon emissions, being most affected.

Environmental issues are not only a global challenge but also a highly relevant issue in Indonesia. This country is known for its abundant natural resources, but it also faces various serious environmental challenges. Currently, numerous cases of environmental damage have occurred at local and global levels, largely caused by irresponsible human behaviour, a lack of concern, and a focus solely on exploitation for personal gain (Prasetyo & Ahmad, 2021). According to a 2020 report from the Ministry of Environment and Forestry (KLHK), approximately 59% of Indonesia's major rivers are heavily polluted (Antara, 2021). Furthermore, data from the Central Statistics Agency (BPS) shows that deforestation in Indonesia reached 104,032.5 hectares per year between 2021 and 2022, resulting in habitat loss and a decline in biodiversity (Badan Pusat Statistik, 2024). This forest destruction also contributes to increased carbon emissions, which exacerbates global climate change. With a growing population, the challenges of natural resource management are becoming increasingly complex.

In the Indonesian context, public awareness of the importance of environmental protection is key to addressing the various problems. Ecological citizenship awareness is a concept that refers to an individual's understanding and actions in preserving the environment (Karatekin & Uysal, 2018). Individuals with this awareness tend to be more active in participating in environmental activities, such as reforestation programs, waste management, and cleanliness campaigns. Raising this awareness is crucial, as environmental protection is not solely the government's responsibility but also every individual's.

Several studies have shown that ecological citizenship awareness can encourage collective action that positively impacts environmental cleanliness. For example, a study by Haddad & Rahayu found that regions with high ecological awareness had higher community participation in environmental programs (Haddad & Rahayu, 2023). This suggests that high awareness can increase community participation in maintaining environmental cleanliness and sustainability.

Indonesia faces significant challenges in environmental cleanliness, as pollution and environmental degradation continue to increase alongside rapid population growth and urbanisation. Although some regions in Indonesia have made significant efforts in maintaining environmental cleanliness, the country still faces various problems, including ineffective waste management and river pollution. In this context, ecological citizenship awareness is crucial for addressing environmental challenges.

Public awareness of the importance of maintaining environmental cleanliness can have a significant positive impact. This is reflected in high community participation in environmental activities, such as waste management and reforestation programs. Initiatives taken by the government, at both the central and regional levels, demonstrate the importance of collaboration between the government and the community in maintaining environmental

cleanliness and sustainability. Although Indonesia cannot yet be considered a completely clean country, collective efforts to raise ecological awareness can be a crucial first step.

In this context, increasing ecological citizenship awareness is a key step in addressing increasingly complex environmental problems (Maulana et al., 2024). Given that a clean and healthy environment is the right of every individual, raising awareness of this must be a priority. Therefore, research on ecological citizenship awareness and environmental cleanliness in Tangerang City is highly relevant for identifying factors contributing to this success and for formulating more effective awareness-raising strategies in the future.

Globally, more countries are recognising the importance of environmental education as a means of increasing ecological citizenship awareness. Environmental education aims to teach the public about the relationship between humans and the environment, as well as the impact of individual behaviour on ecological systems. This education is expected to raise awareness and encourage individuals to actively contribute to environmental conservation (Pudjiastuti et al., 2024). In many countries, environmental education programs have been integrated into school curricula, serving as a first step in developing a generation that cares about environmental issues.

In Indonesia, government efforts to develop inclusive environmental policies are also crucial. One policy expected to support ecological citizenship awareness is the development of programs that involve communities in natural resource management. For example, an integrated waste management program that involves communities at every stage, from sorting to processing, can be a concrete example of effective collaboration between the government and the community. Through active community participation, it is hoped that environmental responsibility can be instilled from an early age. Neither the government nor individuals can make a significant impact in isolation to achieve environmental sustainability. What is needed is a combination of citizen and government efforts, grounded in genuine participation and a trust-building approach (Gautam & Yadav, 2017).

Indonesia, with its various initiatives, demonstrates that increasing ecological citizenship awareness can be achieved through the right approach. Various programs, such as community-based cleanliness campaigns and training in waste management, have had a positive impact on public awareness. Although Indonesia still faces significant challenges in environmental cleanliness, with waste management and pollution issues that need to be addressed, efforts to increase ecological awareness are crucial.

Collaboration with non-governmental organisations (NGOs) and the private sector also plays a crucial role in expanding the reach of these programs, enabling greater community involvement. These initiatives not only raise awareness of the importance of maintaining a clean environment but also encourage collective action that can improve environmental conditions. Although Indonesia cannot yet be considered a fully clean country, collective efforts to raise awareness of ecological citizenship can be key to creating a cleaner and more sustainable environment.

However, challenges remain. Despite increasing public awareness, certain segments remain under-involved in environmental programs. Therefore, a more inclusive approach and more creative strategies are needed to reach these groups. For example, social media and other digital platforms can be used to disseminate information about the importance of maintaining a clean environment and to encourage more people to participate.

Furthermore, strengthening local regulations and policies is crucial for fostering awareness of ecological citizenship (Mukhaer, 2025). Local governments are expected to establish clear regulations regarding waste management, plastic use, and environmental protection. Consistent law enforcement against environmental violations will also send a clear signal that maintaining a clean and sustainable environment is a shared responsibility that cannot be ignored.

In the face of increasingly complex environmental challenges, collaboration among government, community, law enforcement, and the private sector is crucial (Sarbaini & Fahlevi, 2022). Only through solid cooperation and a shared awareness of the importance of environmental protection can concrete steps be taken to address the environmental crisis. By increasing ecological citizenship awareness, it is hoped that a cleaner, more sustainable environment can be created and a society that cares more about environmental sustainability for future generations can be built.

This study aims to analyse the level of ecological citizenship awareness among Indonesians, with the hope of providing a deeper understanding of public attitudes and behaviours toward the environment. Furthermore, this study aims to evaluate the impact of this ecological citizenship awareness on environmental cleanliness, given that a high level of awareness is expected to contribute positively to environmental conservation efforts. By exploring these two aspects, this study is expected to provide relevant recommendations for environmental policies and educational programs that are more effective in building ecological awareness among the Indonesian public.

Given the current situation, further research on ecological citizenship awareness and environmental cleanliness in Indonesia would make a significant contribution to the development of more effective and sustainable environmental policies. This research is expected to delve deeper into the factors influencing public awareness of the importance of environmental protection and to formulate strategies and recommendations for increasing public participation in maintaining environmental cleanliness and sustainability. Several previous studies are relevant to this research.

To strengthen this paper as a valuable contribution to international discourse, this study not only reviews the existing literature on ecological citizenship but also emphasises its novel contributions to the field. This study offers a comparative perspective on how ecological citizenship awareness is understood in the Indonesian context, which presents unique challenges such as high population growth, urbanisation, and cultural diversity in environmental practices. By highlighting Indonesia's socioecological conditions, this study provides new insights that have not been widely explored in the global literature.

Furthermore, this study expands theoretical contributions by integrating the concept of ecological citizenship into more operational categories, such as environmental hygiene behaviour, community participation, and environmental regulatory awareness, which can serve as reference models for future research. This integration enriches the scholarly discussion by linking the philosophical dimensions of ecological citizenship with measurable behavioural indicators in the Indonesian context.

From a practical perspective, this study also adds novel contributions through policy recommendations formulated based on an analysis of current literature and local relevance. Through this approach, this study provides a more applicable framework for governments, educators, and environmental organisations to design educational programs, public campaigns, and policy interventions that are more contextual and oriented towards changing community environmental behaviour.

Table 1.

Previous Research

No	Researcher (Year)	Title	Research Method	Strengths	Disadvantages
1	Feri Taupik, Ridwan, Dewi Gunawati, Rini	Strategy for Development of Ecological Citizens by Walhi Yogyakarta through Community-Based Education in	Qualitative	Provides a community-based educational approach to increase	Field data is needed for further validation.

	Triastuti (2020) (Ridwan et al., 2020).	Communities Gunung Sewu		ecological awareness.	
2	Rusli Yusuf, Ruslan, Rayyan Wahyu Maulana (2023) (Yusuf et al., 2023).	Pembentukan Karakter Peduli Lingkungan Pada Masyarakat Desa Wisata Nusa Kecamatan Lhoknga Kabupaten Aceh Besar	Descripti ve Qualitative	Identifies the role of village governments and tourism institutions in developing environmentally conscious character.	Focused on a single village, the results may not be generalizable.
3	Samanta Štraupaitė (2023) (Štraupaitė, 2023).	Developing the Ecological Citizenship of Older Adolescents	Literatur e Review	Provides insight into the influence of technology on adolescents' ecological awareness.	There is no empirical data to support the findings.

Source: Research Data, 2025.

Based on Table 1, previous studies share a similar focus on developing ecological awareness and environmentally conscious citizenship. All studies emphasise the importance of education and community participation in environmental protection. The qualitative approach used in this study allows for in-depth data collection on community attitudes and behaviours toward environmental issues, demonstrating that education, both formal and informal, plays a significant role in shaping ecological character and awareness.

The geographic context is one of the striking differences between this study and previous studies. The focus on the Gunung Sewu community in Yogyakarta, for example, differs from the local contexts in Aceh and Lithuania. This study also uses a desk study method, unlike previous research, which primarily relies on fieldwork and interviews. The objectives of this study are broader, encompassing an analysis of community awareness levels, the impact of awareness on environmental participation, and government policies that support ecological awareness.

Recent research on ecological citizenship awareness has shown significant progress in understanding the role of education and social context in developing environmental awareness. Research by Ridwan et al. (2020) emphasised the importance of community-based education in increasing ecological awareness among the Gunung Sewu community. Meanwhile, research by Rusli Yusuf et al. highlighted the role of village governments and tourism institutions in shaping environmentally conscious character in Aceh Besar. Furthermore, a literature review by Štraupaitė (2023) provides insights into the influence of technology on adolescents, suggesting that broader contexts also shape ecological awareness.

While research has addressed various aspects of ecological awareness, there remains a gap in understanding the direct impact of such awareness on environmental cleanliness more broadly. Yusuf et al.'s (2023) study focused on a single village, so the results may not be generalizable to broader contexts. Furthermore, Štraupaitė's (2023) review does not provide empirical data to support the findings regarding adolescents, indicating the need for more focused studies on the relationship between ecological awareness and hygiene practices across diverse communities. This study aims to fill this gap by exploring the factors influencing community awareness and its impact on environmental cleanliness.

This study offers a comprehensive approach by integrating an analysis of the level of ecological citizenship awareness and an evaluation of its impact on environmental cleanliness in Indonesia. Unlike previous research that focused on specific aspects, this study covers a

variety of factors influencing public awareness of the importance of environmental protection. By combining the results of previous research, this study is expected to formulate more effective strategies and recommendations to increase public participation in maintaining environmental cleanliness and sustainability. This innovation is relevant not only for environmental policy development but also for more targeted and holistic educational programs.

Previous studies on ecological citizenship in Indonesia and abroad have provided valuable insights but also reveal several limitations that open significant research gaps. Ridwan et al. (2020) demonstrated the potential of community-based environmental education; however, their findings require stronger field validation. Yusuf et al. (2023) highlighted the role of local governments in fostering environmentally conscious communities, yet their research was confined to a single village, limiting broader applicability. Meanwhile, Štraupaitė (2023) offered a literature-based exploration of adolescents' ecological citizenship, but the absence of empirical data restricts the generalizability of the conclusions. These studies, while informative, primarily focus on localised contexts, limited samples, or non-empirical discussions, leaving unexplored the broader socioecological dynamics of ecological citizenship at the national level.

To address these gaps, the present study introduces several novel contributions. First, it adopts a comprehensive national perspective to analyse ecological citizenship awareness within Indonesia's diverse sociocultural and environmental landscape—an approach largely absent in previous research. Second, this study advances theoretical development by operationalising the concept of ecological citizenship into measurable categories such as environmental hygiene behaviour, community participation, and regulatory awareness, thereby bridging philosophical conceptualisations with observable behavioural indicators. Third, the study offers policy implications that are contextually relevant and grounded in both the literature and Indonesia's unique environmental challenges. These contributions provide a more robust and applicable framework for future research, policy development, and environmental education programs aimed at strengthening ecological citizenship among the Indonesian public.

Through these advancements, this study significantly enhances the international discourse on ecological citizenship by addressing existing research limitations and offering a broader, empirically oriented, and context-specific understanding of ecological behaviour in Indonesia. The desk review approach applied in this study makes a novel contribution to understanding ecological citizenship awareness. This study analyses policies and initiatives taken by the Indonesian government, providing perspectives on how these policies may influence public participation in maintaining environmental cleanliness. By focusing on Indonesia, this study also explores the challenges and opportunities communities face in increasing ecological awareness, a context that may differ from those in other regions previously studied.

Method

According to Rasyid in his book "Qualitative and Quantitative Research Methodology," a research approach encompasses research steps, starting with basic assumptions and proceeding through data collection methods, data analysis, conclusion drawing, and data interpretation, within a series of research planning and procedures (Rasyid, 2022). In this study, the researcher chose a qualitative research method. According to Sahir, a qualitative research method is one whose research processes or stages are based on an understanding of the research object as described verbally (Sahir, 2022).

As a research approach, qualitative research encompasses several designs, such as phenomenology, ethnography, case studies, grounded theory, narrative, literature review, and descriptive. In this study, the researcher chose a literature review design. A literature review

as a series of activities related to data collection from written sources, including reading, recording, and processing research materials (Zed, 2003).

In this study, the researcher used secondary data sources, which serve to complement and strengthen the information obtained from primary data. Secondary data does not originate from primary sources, namely, research subjects or respondents (Nasution, 2023). Secondary data sources are information derived from existing and analysed sources, such as books, journals, and websites, which serve to reinforce and complement information obtained from research subjects or informants as primary sources.

To enhance the suitability for international publication, this methodology is strengthened by a more detailed description of the data collection process, analysis procedures, and steps to maintain data validity. The literature review model used refers to a systematic approach that includes source identification, material selection based on inclusion and exclusion criteria, evaluation of literature quality, and thematic synthesis to ensure the rigour and transparency of the research process.

The research procedure in this study was conducted through several systematic and structured stages, namely: (a) data inventory, which included collecting research materials and resources such as books, journals, and documents related to ecological citizenship and environmental cleanliness; (b) data classification, in which the researcher sorted secondary data based on information obtained from the literature review. This secondary data was used to support the analysis related to ecological citizenship awareness. All grouped secondary data were then thoroughly analysed to minimise technical and substantive errors; (c) structured research preparation from the grouped data, accompanied by logical and critical arguments based on the analysis. The research results were then summarised and compiled in accordance with a predetermined writing format.

Furthermore, a literature search was conducted through international databases such as Scopus, Web of Science, and Google Scholar to ensure the sources used were globally relevant. Selection criteria included articles published within the last ten years, focusing on ecological citizenship and environmental cleanliness, and publications that had undergone peer review. This effort ensured that the research was internationally competitive and reflected the latest developments in knowledge.

The data analysis process was carried out both during and after the literature data collection. Given the large amount of data that needs to be connected, data classification must be carried out based on types and characteristics relevant to the focus of the research on ecological citizenship awareness and environmental cleanliness in Indonesia. The methodological elements applied in data analysis include: (a) interpretation, which aims to understand the philosophical concepts of ecological citizenship and environmental cleanliness and find the basic essence of this understanding; (b) induction and deduction, where empirical data related to ecological citizenship are collected, combined, and read to find general principles about environmental awareness (induction), then these principles are explained in detail (deduction).

In this process, researchers try to accept reality objectively; (c) internal coherence, where every aspect of ecological citizenship in Indonesian society, both in the past and present, is investigated according to its relationship to each other, to find relevant dependencies both as a whole and in part, and to identify central and marginal elements, and to examine this harmony; (d) holistic, where every philosophical element of the life of ecological citizenship in Indonesian society, from the past to the present, is seen in the overall context related to environmental cleanliness as an opportunity and a challenge, thus producing a comprehensive understanding of each phenomenon; and (e) personal researcher reflection, where the researcher, after enriching his view of the ecological citizenship of the subject being studied, develops a personal conception of the issue. This reflection leads to a systematic-reflective model.

To strengthen the validity of the findings, this study employed a source triangulation strategy by comparing various cross-disciplinary literature, including that from environmental education, public policy, and ecological ethics. The quality of the literature was also evaluated using criteria such as credibility, theoretical context, and methodological rigour.

Although this study focused on secondary data, the researchers also included analytical case references from several ecological practices in Indonesia and other countries for comparison. This was done to ensure that the research findings were not only locally relevant but also contributed to the global discourse on ecological citizenship. Furthermore, policy implications were discussed to demonstrate the research's practical contribution to sustainable development and environmental governance.

Results and Discussion

Ecological Citizenship Awareness of Indonesian Communities

Public awareness of ecological citizenship in Indonesia is an increasingly relevant issue amid global and local environmental changes. In recent decades, Indonesia has faced various environmental challenges, such as deforestation, pollution, and climate change (Malihah, 2022). These issues impact not only ecosystems but also the social and economic lives of communities. Therefore, it is crucial to understand how ecological awareness can influence public actions and participation in protecting and preserving the environment.

Ecological citizenship awareness encompasses an individual's understanding and concern for environmental issues, as well as a responsibility to contribute to environmental conservation efforts (Silfiana & Samsuri, 2019). In the Indonesian context, this awareness needs to be developed, given the country's cultural, social, and economic diversity. Research by Fatmalasari et al. shows that effective environmental education can enhance ecological citizenship awareness (2019). For example, community-based education programs have proven successful in increasing understanding of the importance of environmental protection in various regions of Indonesia.

Good environmental education not only provides information but also fosters positive attitudes toward the environment (Safira, 2020). Programs that directly involve the community, such as tree planting, river cleanups, and waste management training, can educate the public while fostering a sense of environmental ownership. In this regard, non-governmental organisations, such as Walhi and Greenpeace, play a crucial role in organising educational activities that promote ecological awareness.

However, challenges remain. Many people, despite knowing about environmental issues, do not always apply this knowledge in their daily lives. This can be due to various factors, including a lack of access to resources that support ecological action, such as adequate waste management facilities or government policies that support environmental conservation (Achmad, 2024). Furthermore, local culture and traditions also play a significant role in shaping people's attitudes toward the environment.

One significant example of successful ecological citizenship awareness is the tourism village program in Aceh Besar. Research by Rusli Yusuf and colleagues demonstrates how this program can foster environmentally conscious behaviour among the local community. Through active participation in sustainable tourism activities, communities not only gain economic benefits but also become more aware of the importance of preserving their environment (Yusuf et al., 2023). This program integrates environmental education with local economic development, creating a mutually beneficial relationship.

Furthermore, the challenges faced by urban communities in developing ecological citizenship awareness also require attention. High levels of pollution and population density often lead to apathy towards environmental issues. In this context, a technology-based approach can be a solution. The use of digital applications and platforms for environmental

awareness campaigns can reach a wider audience (Nurshabrina et al., 2024). For example, applications that provide information on the location of nearby trash bins or proper waste management methods can encourage communities to be more active in maintaining a clean environment.

The influence of social media cannot be ignored. In today's digital age, information about environmental issues can spread rapidly through these platforms (Rahardjo & Yulianti, 2020). Engaging and informative online campaigns can raise awareness and encourage concrete action. However, it's important to remember that not all information circulating on social media is accurate. Therefore, it's crucial to educate the public about media literacy so they can discern accurate and relevant information.

Policy also significantly influences ecological citizenship awareness. The government plays a crucial role in creating regulations that support environmental conservation efforts (Oktora et al., 2023). Clear and firm policies on natural resource management, pollution control, and ecosystem protection are crucial for encouraging active public participation. For example, incentives for participating in reforestation or waste management programs can provide additional motivation. Furthermore, public involvement in environmental policymaking also needs to be increased. Public participation in the decision-making process will make them feel more valued and responsible for the environment. Communities involved in this process tend to be more aware of the impacts of these policies and more committed to supporting their implementation.

Furthermore, it is also crucial to consider the role of the younger generation in developing ecological citizenship awareness. Environmental education from an early age can shape children's mindsets and behaviours that care for the environment (Ismail, 2021). Schools in Indonesia need to integrate environmental education into their curricula in an engaging, interactive manner. Activities such as visits to national parks, introductions to local flora and fauna, and environmental projects can provide valuable learning experiences for students.

Equally important, collaboration between various parties must also be strengthened. Cooperation between the government, non-governmental organisations, the business world, and the community itself can create an ecosystem that supports ecological awareness. For example, companies can fund environmental programs, while the community can help implement them. This synergy not only strengthens awareness but also accelerates concrete action in environmental conservation.

Expanding the analytical framework to the national and global levels, Conversi and Hau (2021) suggest that the emergence of green nationalism and the concept of Gaia citizenship reflect the evolution of ecological thinking beyond traditional citizenship paradigms. His study demonstrates that the concept of green nationalism positions environmental responsibility as an integral part of collective national identity, whereas Gaia citizenship encourages individuals and communities to see themselves as part of an interconnected earth system rather than simply as citizens of a single nation. In the Indonesian context, ecological awareness can be informed by these two frameworks—not merely as local responsibility for waste, rivers, or trees, but as part of a national and global narrative that maintaining environmental sustainability is both a national heritage and a contribution to the global community (Conversi & Hau, 2021).

In the context of climate change, awareness of ecological citizenship is increasingly urgent. Indonesia, as an archipelagic nation, is highly vulnerable to the impacts of climate change, such as rising sea levels and changing weather patterns (Raharjo et al., 2023). Therefore, the community needs to be empowered to understand the impacts of climate change and contribute to mitigation efforts. Climate change education must be comprehensive so that communities can take appropriate steps to reduce their carbon footprint.

One interesting initiative is a climate change adaptation program involving coastal communities (Silalahi, 2022). In this program, communities are trained to identify the climate change risks they face and formulate appropriate adaptation strategies. By directly involving the community, this program not only raises awareness but also builds community resilience to climate change.

Finally, it is important to continuously monitor and evaluate efforts to raise awareness of ecological citizenship in Indonesia. Further research is needed to understand the factors influencing community behaviour towards the environment and to evaluate the effectiveness of implemented programs. With a better understanding of these dynamics, policies and programs can be adjusted to achieve better results.

The Impact of Ecological Citizenship Awareness in Indonesian Communities on Environmental Cleanliness

Ecological awareness encompasses not only an understanding of the environment but also an awareness of individual and collective responsibility to protect and preserve it (Mariyani, 2017). In the Indonesian context, where levels of pollution and environmental damage continue to rise, this awareness becomes even more crucial. In Indonesia, ecological citizenship awareness is influenced by factors such as education, culture, and access to information. Communities with a high level of ecological awareness tend to be more active in maintaining a clean environment. This is evident in their participation in various environmental programs, such as river cleanups, tree planting, and waste management. These activities not only benefit the environment but also build a sense of togetherness and collective responsibility among community members.

Environmental education is a key pillar in building ecological citizenship awareness (Nurdiansyah & Komalasari, 2023). In many regions, educational programs that introduce environmental issues in schools have successfully increased students' understanding of the importance of maintaining a clean environment. Through practical activities, such as waste management projects and recycling campaigns, students not only learn theory but also gain firsthand experience of how their actions can impact the environment. Effective education will cultivate environmentally conscious individuals committed to maintaining cleanliness in their surroundings.

In this discussion, the environmental citizenship framework proposed by Dobson (2007) provides an important theoretical basis for understanding how ecological awareness can develop into sustainable action. According to Dobson, behavioural changes driven solely by external incentives, such as punishment or rewards, are temporary and fail to address the roots of citizens' environmental awareness. In contrast, the environmental citizenship framework emphasises the formation of attitudes and values based on ecological justice and moral responsibility for a just ecological space for all individuals (Dobson, 2007).

Environmental citizenship, in this view, demands the active involvement of individuals in maintaining a balance between rights and responsibilities regarding natural resources, both in the public and private spheres. Through environmental education oriented toward values and justice, as suggested by Dobson, people not only learn to behave in an environmentally friendly manner but also internalise the moral awareness that maintaining a clean and sustainable environment is a form of civic responsibility towards current and future generations (Dobson, 2007).

However, the challenges faced in building ecological awareness in Indonesia are diverse. Communities in rural areas may have long-standing traditions and practices, which sometimes conflict with modern hygiene principles. For example, in some communities, littering remains common. Although people may be aware of the importance of cleanliness, changing behaviour presents a challenge. Therefore, a sensitive approach to local culture is crucial in raising awareness.

In addition to education, the media plays a significant role in raising awareness of ecological citizenship. Campaigns conducted through mass media and social media can reach a wider audience and encourage collective action (Truc, 2024). Furthermore, within a broader, cross-national framework, Yücel et al. (2025) highlight the evolution of ecological thought through the concepts of green nationalism and sustainable nation, which link ecological awareness with national identity and global responsibility. In their study, green nationalism emerges as a new form of sustainable citizenship, in which 'green memory', 'green homeland', and the institutionalisation of ecological citizenship become crucial elements in shaping a society that is not only locally concerned but also globally oriented (Yücel et al., 2025).

This study asserts that the ecological awareness of Indonesian society, when viewed from a national-global perspective, can be strengthened through the cultivation of a collective identity that links environmental beauty and sustainability as part of the nation's heritage as well as a contribution to the global community (Yücel et al., 2025). For example, campaigns encouraging people to stop littering can raise awareness of the impact of such actions on environmental cleanliness. Social media, with its broad reach and impact, is an effective tool for disseminating information and mobilising the public to participate in cleanup activities.

The positive impact of ecological citizenship awareness can also be seen in increased community participation in government- and non-governmental organisation-initiated cleanup programs. In many areas, community-based waste management programs have successfully transformed waste management behaviour (Suryani, 2014). Through training and outreach conducted by various parties, communities have become more aware of proper waste management practices, such as separating organic and inorganic waste. These programs not only reduce waste volume but also raise public awareness of the importance of maintaining a clean environment.

One concrete example of the impact of ecological citizenship awareness is the "Clean and Green" program implemented in various cities across Indonesia, as stipulated in Presidential Regulation of the Republic of Indonesia Number 85 of 2021 concerning the 2022 Government Work Plan. This program encourages the public to participate in maintaining environmental cleanliness through routine activities, such as cleanups, tree planting, and waste management. The program directly involves the community, fostering a sense of responsibility for their environment. Through active participation in these programs, the community not only contributes to environmental cleanliness but also fosters a sense of community and solidarity.

Furthermore, the impact of ecological citizenship awareness is also evident in changes in people's behaviour regarding the use of natural resources. Communities with high ecological awareness tend to be more prudent in their use of resources, such as water and energy (Nome et al., 2024). They are more aware of the importance of conserving water, reducing plastic consumption, and choosing environmentally friendly products. These behavioural changes contribute to reducing pollution and environmental damage, creating a cleaner, healthier environment.

However, despite these advances, challenges remain. One reason is the lack of facilities that support ecological awareness. In many areas, the lack of adequate waste disposal sites makes it difficult for people to dispose of waste properly (Lingga et al., 2024). This can hinder community efforts to maintain a clean environment. Therefore, it is crucial for the government to provide supporting infrastructure, such as adequate trash bins and an efficient waste management system.

The government's role in fostering ecological citizenship awareness is also crucial. Policies that support environmental conservation and environmental education programs must be encouraged and strengthened (Kusdiah et al., 2024). The government needs to establish clear regulations on waste management and environmental protection, and to provide

incentives for community participation in cleanup programs. With strong government support, the community will be more motivated to participate in maintaining a clean environment.

The impact of ecological citizenship awareness can also be seen in community involvement in climate change mitigation efforts. Indonesia is among the countries most vulnerable to the impacts of climate change, so it is crucial for the community to understand its role in reducing carbon emissions and protecting the environment (Zunnuraeni et al., 2024). This awareness encourages communities to invest in sustainable practices, such as organic farming, renewable energy use, and forest protection. In this way, communities not only contribute to environmental cleanliness but also help maintain the sustainability of natural resources.

In an urban context, ecological citizenship awareness has a significant impact on people's quality of life. Large cities in Indonesia often face high levels of air pollution and waste (Umah & Gusmira, 2024). Communities with a high level of ecological awareness tend to be more concerned about the quality of their living environment. They are more active in voicing their aspirations for infrastructure improvements, such as better waste management and the creation of green open spaces. Thus, this awareness leads not only to environmental cleanliness but also to an improved overall quality of life.

In essence, the impact of ecological citizenship awareness on environmental cleanliness in Indonesia is broad and diverse. Communities with this awareness not only contribute to environmental cleanliness but also build strong social solidarity (Budiharjo, 2017). Through active participation in cleanliness programs, they create a better environment for themselves and future generations. Therefore, it is important to continue encouraging greater awareness of ecological citizenship at all levels of society, so that Indonesia can better address environmental challenges and create a more sustainable future.

The positive impact of this awareness is also evident in the various communities that have successfully organised themselves to take collective action. Many community groups have formed to address environmental issues in their neighbourhoods, a clear example being the Pandawara (Aisyah et al., 2024). These groups often engage in routine activities, such as cleanups, waste management, and environmental campaigns. With strong community organisations, ecological awareness can be transformed into concrete actions that bring positive change to the surrounding environment.

In some cases, these community initiatives have attracted media and government attention, which then provides further support. When communities demonstrate a commitment to maintaining a clean environment, the government often responds by providing more resources and facilities to support these activities. This creates a positive cycle where ecological awareness drives action, which in turn garners support from the government and other institutions.

Globally, ecological citizenship awareness in Indonesia can also contribute to global efforts to address environmental issues. Communities aware of their ecological responsibilities can play a role in the international movement for carbon emission reduction, biodiversity protection, and natural resource conservation. By engaging in international movements, Indonesians not only help preserve the local environment but also contribute to the sustainability of the planet.

The increasingly visible impact of climate change also encourages greater public awareness of environmental issues. Awareness of the impacts of climate change can increase public participation in environmental cleanliness and conservation activities (Hayatulah et al., 2023). For example, people who recognize that poor waste management contributes to global warming are more likely to be proactive in reducing plastic use and recycling. Thus, ecological awareness can serve as a catalyst for more sustainable actions.

Then, it is important to create a space for dialogue between the community, government, and the private sector to discuss environmental issues. Through this dialogue, various parties can share knowledge, experiences, and best practices in maintaining a clean environment. The involvement of various parties will strengthen ecological citizenship awareness and encourage collaboration in environmental conservation efforts. With all elements of society working together, Indonesia can overcome environmental challenges and create a cleaner and more sustainable future.

Furthermore, to strengthen the global relevance of this research, it is important to compare the Indonesian situation with international trends in ecological citizenship and environmental protection. Many countries have developed community-based models of ecological participation, green technologies, and mitigation policies that emphasise collective behavioural change. Placing Indonesia's situation within this comparative framework provides a more comprehensive analysis and demonstrates how ecological awareness in Indonesia aligns with, or differs from, global dynamics.

This approach not only provides a broader context but also demonstrates the contribution Indonesia can make to the global discourse on ecological citizenship. For example, countries like Japan, Germany, and Finland have successfully integrated ecological education from an early age, while developing countries like India and Brazil face challenges similar to those in Indonesia related to urbanisation and high waste volumes. This comparison helps identify practices that can be adapted to the Indonesian context and demonstrates the potential for local innovations that can add value to cross-national research.

Conclusion

This research shows that the level of ecological citizenship awareness among Indonesians varies, depending on factors such as education, culture, and access to information. Communities with a good understanding of environmental issues tend to be more active in environmental cleanup and preservation programs. With this increased awareness, communities not only contribute to environmental cleanliness but also develop a sense of collective responsibility, which is crucial for achieving better outcomes in preserving ecosystems.

Furthermore, this research underscores the importance of integrating environmental education into curricula and community programs. Efforts to increase ecological citizenship awareness must involve various parties, including the government, educational institutions, and community organisations. By fostering strong collaborations and providing adequate resources, it is hoped that communities will become more involved in environmental preservation efforts, thereby creating a healthier, more sustainable Indonesia for future generations.

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Ethics approval was not required because this study did not involve human participants.

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