



Strengthening Environmental Responsibility through Ecological Citizenship at the Local Community Level

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ABSTRACT: Environmental degradation at the local community level is still an ongoing problem, which shows that a technical approach alone is not enough without strengthening citizens' environmental responsibility. From a civic perspective, ecological citizenship offers a conceptual framework that places environmental concern as an integral part of everyday civic rights, obligations, and practices. This study aims to analyze the role of ecological citizenship in strengthening environmental responsibility at the local community level. The research uses a mixed-methods approach with a sequential explanatory design. Quantitative data was collected through a structured questionnaire of 80 adults in a rural community in West Java, while qualitative data was obtained through in-depth interviews with eight key informants consisting of village officials, community leaders, environmental activists, and residents with varying levels of ecological citizenship. Quantitative data analysis was carried out using descriptive statistics, correlation tests, and simple linear regression, while qualitative data was analyzed through thematic analysis and triangulation. The results of the study show that ecological citizenship has a positive and significant effect on environmental responsibility, especially in encouraging pro-environmental behaviors such as waste management, collective participation, and compliance with local environmental norms. Qualitative findings corroborate that social norms, local leadership, and community-based environmental programs play an important role in actualizing ecological awareness into concrete action. This study concludes that strengthening ecological citizenship at the local community level is a key strategy in building sustainable environmental responsibility and making a practical contribution to the development of citizenship-based environmental governance.

Keywords: Ecological Citizenship; Environmental Responsibility; Local Community; Community-Based Environmental Management; Sustainable Development.

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INTRODUCTION

Pressure on the global environment continues to increase along with the acceleration of human activities that have an impact on climate change, ecosystem degradation, and declining environmental quality. According to Steffen et al. (2021), the current ecological crisis is systemic because it involves complex interactions between social, economic, and environmental factors. This condition places the community as an important actor in efforts to maintain environmental sustainability. Therefore, environmental responsibility can no longer be understood solely as a technical issue, but as a social and civic issue.

In the development of contemporary environmental policies, a community participation-based approach is gaining more attention. Agrawal (2022) emphasized that effective environmental management requires citizen involvement in daily practices, not just compliance with formal regulations. At the local community level, environmental responsibility is reflected through collective actions such as waste management, community service, and the maintenance of shared living spaces. However, such participation is often temporary and not sustainable due to the lack of a strong citizenship framework.

The concept of ecological citizenship developed to answer the limitations of the individual behavioral approach in environmental studies. In this framework, citizenship is understood as an ethical relationship between humans and the environment, where citizens' rights and obligations go beyond the administrative boundaries of the state. Dobson (2021) views ecological citizenship as a normative foundation that encourages citizens to act responsibly towards the ecosystem in their daily lives. Thus, ecological citizenship places environmental responsibility as an integral part of citizens' social practices.

Although the concept has been extensively developed theoretically, empirical studies examining ecological citizenship in the context of local communities are still limited. Kenis and Mathijs (2022) show that most research still focuses on normative discourse without exploring how ecological citizenship is manifested in concrete social practices. As a result, the relationship between the conceptual framework of ecological citizenship and citizens' environmental responsibility behavior has not been comprehensively described. This limitation marks the existence of a research gap that needs to be bridged through an empirical approach.

This gap is increasingly visible in the context of developing countries, including Indonesia, which have diverse social and cultural characteristics. Resosudarmo et al. (2021) emphasize that environmental management at the local level is strongly influenced by community structures, social norms, and local cultural practices, which are closely related to community-based utilization of natural resources in supporting regional development independence (Pudjiastuti, 2020). However, environmental research in Indonesia still tends to focus on policy and technical aspects. Approaches that place citizens as subjects of ecological citizenship in environmental management have not been studied systematically.

On the other hand, quantitative research on pro-environmental behavior generally measures specific actions without attributing them to the civic

dimension. Li et al. (2023) revealed that such approaches risk ignoring the role of values, norms, and social responsibilities that underlie environmental behavior. As a result, empirical findings are often not strong enough to support community-based policy formulation. This shows the need for research that integrates behavioral analysis with the framework of ecological citizenship.

Based on these conditions, this study aims to analyze the role of ecological citizenship in strengthening environmental responsibility at the local community level. The research focus is directed at the relationship between ecological citizenship and citizens' environmental responsibility practices, as well as the social factors that influence these relationships. Theoretically, this research contributes to the enrichment of ecological citizenship studies through empirical evidence based on local contexts. Practically, the research findings are expected to be a reference for the formulation of community empowerment policies and strategies in sustainable environmental management, as emphasized in the contemporary environmental justice framework (Schlosberg, 2025).

THEORITICAL REVIEW

Ecological Citizenship in Contemporary Environmental Studies

Ecological citizenship is increasingly understood as a key approach in bridging the relationship between citizenship, environmental ethics, and sustainability practices. In contemporary environmental studies, ecological citizenship emphasizes that responsibility for the environment is not only the state's obligation, but also inherent in the role of citizens in daily life. This approach highlights the moral, social, and political dimensions of environmental actions, where citizens are seen as active agents in maintaining the sustainability of ecosystems (Jagers et al., 2020; Pudjiastuti et al., 2024)). Thus, ecological citizenship expands the concept of citizenship from mere legal compliance to conscious participation in environmental protection.

Further research shows that ecological citizenship contributes to the formation of social norms and collective values that encourage pro-environmental behavior in a sustainable manner. Unlike an individualized behavioral approach that emphasizes personal choice, ecological citizenship places environmental action in the context of social relations and shared responsibility. This framework is considered relevant to explain the variation in environmental behavior at the local community level that is influenced by social interaction and community leadership (Bennett et al., 2021).

Hypothesis 1 (H1): Ecological citizenship has a positive effect on the level of environmental responsibility of citizens at the local community level.

Environmental Responsibility as a Collective Social Behavior

Environmental responsibility in the latest literature is no longer understood solely as individual behavior, but rather as a social practice shaped by norms, values, and community structures. Recent studies have shown that sustainable environmental behaviors are more likely to emerge in social contexts that support collective participation and a sense of belonging to the shared environment (Clayton et al., 2021). Therefore, environmental responsibility needs to be analyzed as a result of interactions between individuals and communities.

Empirical research also shows that citizen involvement in community-based environmental activities, such as waste management and collective activities, reinforces a sense of responsibility for the environment. Such behavior is influenced not only by environmental knowledge, but also by social legitimacy and community support. This confirms that environmental responsibility is a social construct influenced by the context of citizenship and social relations (Stern et al., 2022).

Hypothesis 2 (H2): Citizens' environmental responsibility is significantly influenced by social norms and collective practices in local communities.

The Relationship between Ecological Citizenship and Pro-Environmental Behavior

A number of international studies confirm that ecological citizenship has a strong relationship with pro-environmental behavior. Citizens who have a high level of ecological citizenship tend to show consistency in environmental actions, both in the private and public spheres. These relationships are not only mediated by individual attitudes, but also by a sense of responsibility towards the community and future generations (Jansson et al., 2021).

Furthermore, ecological citizenship functions as a mechanism for internalizing environmental values into civic identity. When ecological values become part of the social identity of citizens, environmental behavior is no longer reactive, but proactive and sustainable. This strengthens the argument that ecological citizenship is an important predictor of long-term environmental behavior (Bouman et al., 2020).

Hypothesis 3 (H3): Ecological citizenship has a positive and significant influence on the pro-environmental behavior of citizens.

The Role of Local Community Context in Strengthening Ecological Citizenship

The context of the local community plays an important role in shaping and strengthening ecological citizenship. Social structures, local leadership, and cultural practices influence the way citizens interpret and carry out environmental responsibilities. Community-based studies show that a cohesive social environment tends to result in higher levels of environmental participation (Pretty et al., 2021). Thus, ecological citizenship cannot be separated from local social dynamics.

In addition, community-based environmental programs act as social learning spaces that strengthen ecological citizenship values. Through hands-on interaction and collective experiences, residents build a shared understanding of the importance of protecting the environment. This context makes local communities a strategic arena in strengthening citizenship-based environmental responsibility (West et al., 2022).

Hypothesis 4 (H4): The social and institutional context of local communities strengthens the relationship between ecological citizenship and environmental responsibility.

METHODOLOGY

Types and Approaches to Research

This study uses a mixed methods approach with a sequential explanatory design, namely the collection and analysis of quantitative data at the initial stage which is then followed by qualitative data to deepen and explain quantitative findings. This approach was chosen because it is able to integrate the power of numerical data and social narratives in explaining the phenomenon of ecological citizenship and environmental responsibility at the local community level. Sequential explanatory design is considered effective for testing the relationship between variables statistically as well as understanding the social context behind residents' environmental behavior (Creswell & Plano Clark, 2021). Thus, this approach is in line with the research objectives that not only measure the influence of ecological citizenship, but also explain the social mechanisms that shape it.

Location, Population, and Sampling Techniques

The research was carried out in a rural community in West Java Province that has the characteristics of citizen-based environmental activities, such as household waste management programs and routine community service activities. The quantitative research population was all adults aged ≥ 18 years who were permanently domiciled in the community. The sampling technique used is non-probability sampling with a purposive sampling approach, because the research requires respondents who have direct experience in community environmental activities. The number of quantitative respondents was set at 80 people, which was considered adequate for simple regression analysis in local-scale community social research (Hair et al., 2021).

At the qualitative stage, participants were selected purposively based on their role and involvement in environmental activities. The qualitative informants totaled eight people, consisting of two village officials, two community leaders, two community environmental movers, and two ordinary citizens with different levels of environmental participation. This composition is designed to gain diverse perspectives and allow optimal triangulation of data sources (Guest et al., 2023).

Data Collection Techniques and Instruments

Quantitative data were collected using a structured questionnaire with a five-level Likert scale that measured two main constructs, namely ecological citizenship and environmental responsibility. The ecological citizenship item is arranged based on the ecological citizenship dimension which includes ecological awareness, moral responsibility, and public participation, which is conceptually adapted from the contemporary environmental citizenship framework (Saward, 2020). The environmental responsibility instrument measures citizens' pro-environmental behaviors, such as waste management, compliance with environmental rules, and involvement in collective activities, with local context adjustments.

The validity test of the instrument was carried out through the validity of the content by involving two experts in the fields of civic education and

environmental studies, as well as the validity of the construct using item-total correlation. The reliability of the instrument was tested using Cronbach's alpha coefficient, with a value of ≥ 0.70 as an indicator of acceptable internal consistency in social research (Taber, 2021).

Qualitative data was collected through semi-structured in-depth interviews that focused on citizens' experiences, perceptions, and practices related to environmental responsibility and ecological citizenship. The interview guide is designed to explore the role of social norms, local leadership, and community-based environmental programs. All interviews were recorded with the consent of the informant and transcribed verbatim for analysis purposes.

Research Implementation Procedure

The research began with a preparatory stage which included location licensing, instrument preparation, and limited questionnaire trials. The next stage is the collection of quantitative data through the distribution of questionnaires directly to respondents with the assistance of researchers to ensure clarity of filling. After the initial analysis of the quantitative data is completed, the researcher proceeds to the qualitative stage by selecting informants based on quantitative results and consideration of social roles. Interviews were conducted face-to-face in a community environment with a duration of 45–60 minutes per informant. The entire research process was carried out by paying attention to the ethical principles of social research, including participant consent and data confidentiality (Israel & Hay, 2021).

Data Analysis Techniques

Quantitative data analysis was carried out using descriptive statistics to describe respondent characteristics and variable tendencies, followed by Pearson correlation test and simple linear regression to test the influence of ecological citizenship on environmental responsibility. This analysis was carried out with the help of IBM SPSS software version 26, which is commonly used in quantitative social research (Field, 2022).

Qualitative data are analyzed using thematic analysis, which involves the process of open coding, thematic grouping, and interpretation of meaning. The analysis was performed iteratively to identify the key patterns that explain the quantitative findings. The integration of quantitative and qualitative data is carried out at the final interpretation stage through triangulation of methods, resulting in a comprehensive understanding of the role of ecological citizenship in strengthening environmental responsibility at the local community level (Fetters et al., 2020).

RESULTS

The Influence of Ecological Citizenship on the Level of Environmental Responsibility of Citizens

The results of a simple linear regression analysis show that *ecological citizenship* have **positive and significant influence** environmental responsibility.

Table 1. Linear Regression Results of Ecological Citizenship on Environmental Responsibility

Independent Variable	B	Std. Error	Beta	t	Sig.
Ecological Citizenship	0.582	0.071	0.671	8.197	0.000
Constant	1.214	0.436	—	2.785	0.007

The value of the regression coefficient indicates that each increment is one unit *ecological citizenship* followed by an increase in environmental responsibility by 0.582 units. A relatively high standardized beta value (0.671) indicates that *ecological citizenship* is a strong predictor of the variation in environmental responsibility behavior of citizens. Very strong statistical significance ($p < 0.001$) suggests that this relationship is stable and consistent at the level of the community studied.

Quantitatively, these findings indicate that the ecological citizenship dimension – which includes awareness of environmental rights and obligations, concern for ecological impacts, and commitment to sustainability – plays a significant role in shaping citizens' environmental behavior in their daily lives.

Qualitative deepening provides the social context and meaning behind these statistical relationships. Interviews show that citizens no longer interpret environmental responsibility as an obligation that comes from outside, but as part of their inherent civic identity.

This change in perspective is reflected in the informant's statement emphasizing a shift from passive obedience to active awareness: "*Now residents are no longer waiting to be told. They feel that protecting the environment is part of their obligation as villagers.*" (A-1, interview November 5, 2025). This statement shows that environmental responsibility has been internalized as a personal and social value. The internalization process is also associated with the collective experience of the community that takes place gradually, as expressed by another informant: "*In the past, environmental activities were just programs. Now it has become an awareness, because I feel that this is a shared responsibility.*" (B-1, interview November 7, 2025). In the perspective of key community actors, these changes do not occur spontaneously, but rather through a sustainable process of framing civic values: "*We always emphasize that caring for the environment is not only about cleanliness, but about responsibility as citizens.*" (C-1, interview November 10, 2025). Interestingly, the internalization of these values also results in a mechanism of self-control at the individual level, as expressed by the following informants: "*Personally, I am now embarrassed to throw garbage carelessly, because I feel that it tarnishes the name of the residents.*" (D-1, interview November 12, 2025).

Overall, the qualitative findings show that *ecological citizenship* work through the formation of moral and social identity. Residents judge environmental behavior not only from the aspect of right or wrong, but from its social meaning as a representation of the quality of citizenship. It is this mechanism that explains the strength of the relationship between *ecological citizenship* and environmental responsibility as identified in quantitative analysis.

Ecological Citizenship and Household Waste Management Behavior

Household waste management behavior is analyzed as a concrete indicator of citizens' environmental responsibility. The results of the descriptive analysis showed that respondents with a *ecological citizenship* high tends to indicate consistent waste management practices.

Table 2. Descriptive Statistics of Household Waste Management Behavior

Waste Management Indicator	Red	Hours of deviation
Household waste separation	4.21	0.63
Participation in waste bank	3.98	0.71
Reduction of plastic usage	4.05	0.66

The average value in the high category shows that waste management has become part of the residents' routine. This finding reinforces the results of previous regressions, that *ecological citizenship* Not only does it affect general attitudes, but it is also reflected in environmental practices that are technical and repetitive.

Qualitative Findings

Interviews show that the success of waste management cannot be separated from the social dynamics of the community. Residents describe the existence of a culture of reminding each other that develops naturally: "*When it comes to waste, residents are now reminding each other. Not because of the rules, but because it has become a common habit.*" (A-2, interview November 6, 2025). The culture reinforces a sense of collective commitment, where waste management is understood as a shared responsibility, rather than a mere individual task: "*Waste management is successful because residents feel that this is part of their commitment as a community.*" (B-2, interview November 8, 2025). The approach used by the community emphasizes awareness rather than coercion, as explained by the following informants: "*We are not forced, but we are fostering awareness that waste is our own responsibility.*" (C-2, interview November 11, 2025). In everyday practice, these social norms create positive pressures that encourage behavioral consistency: "*Now if you don't sort the garbage, it doesn't taste good on its own, because everything else is normal.*" (D-2, interview November 13, 2025).

Thematically, these findings suggest that *ecological citizenship* Strengthening the effectiveness of waste management programs through social norm mechanisms and collective control. Environmental behavior becomes stable because it is supported by citizenship values that live in the social interaction of citizens.

Collective Participation as a Manifestation of Ecological Citizenship

Collective participation is analyzed as a form of actualization *ecological citizenship* in the social space of the community. Quantitative data show a high level of participation in various environmental activities.

Table 3. Community Participation in Environmental Activities

Type of Participation	Red	Hours of deviation
Community clean-up activities	4.34	0.58
Routine environmental programs	4.12	0.61
Environmental deliberation	3.87	0.74

The highest average score in community service activities shows that collective activities are still the main means of learning and practicing ecological citizenship at the local level.

Qualitative data show that collective participation is interpreted as more than just physical presence. Residents see it as an expression of ownership of the common environment: "*If it is community service, residents come not because they are absent, but because they feel they have a responsibility.*" (A-1, interview November 5, 2025). This sense of responsibility grows as social bonds grow in the community: "*Participation grows because there is a sense of togetherness and care.*" (B-1, interview November 7, 2025). In addition, collective activities also serve as social learning spaces: "*Environmental activities become a shared learning space about responsibility.*" (C-1, interview November 10, 2025). For citizens, participation even becomes a source of social identity and pride: "*Participating in community service is not a burden, but pride as a citizen.*" (D-1, interview November 12, 2025). These findings suggest that collective participation is a key mechanism in reproducing value ecological citizenship sustainably at the community level.

Adherence to Local Environmental Norms and Community Leadership Roles

Adherence to environmental norms is analyzed as a supporting factor that strengthens the relationship between *ecological citizenship* and environmental responsibility.

Table 4. Compliance with Local Environmental Norms

Compliance Indicator	Red	Hours of deviation
Compliance with cleanliness rules	4.28	0.55
Compliance with community schedule	4.16	0.60
Compliance with social sanctions	3.94	0.69

A high average score indicates that environmental norms function effectively as regulators of citizens' collective behavior.

Interviews show that this compliance is inseparable from social legitimacy and local leadership. The informant emphasized the importance of a participatory process in the formulation of rules: "*If environmental rules are made together, residents are more compliant.*" (A-2, interview November 6, 2025). In addition, the example of community leaders is considered as a key factor: "*Community leaders play a big role in setting an example.*" (B-2, interview November 8, 2025). A persuasive leadership approach is considered more effective than formal sanctions: "*We emphasize example more than sanctions.*" (C-2, interview November 11, 2025). This is reflected in citizens' perceptions of community leaders: "*If the leader cares, the residents will also care.*" (D-2, interview November 13, 2025).

DISCUSSION

The main findings of this study show that ecological citizenship has a positive and significant effect on the level of environmental responsibility of citizens in local communities. These results confirm that pro-environmental behavior is not solely determined by ecological knowledge, but also by the internalization of civic values that place the environment as part of the moral and social responsibility of citizens. These findings are in line with the view that ecological citizenship is a form of expansion of modern citizenship concepts that go beyond political and social rights towards cross-spatial and generational responsibility (Dobson & Bell, 2023). Thus, this study strengthens the position of ecological citizenship as an operational and relevant theoretical construct in the empirical context of local communities.

Theoretically, the results of this study support a normative-critical citizenship framework that views citizens as active agents in socio-ecological transformation. This study shows that when ecological citizenship values are internalized, individuals no longer act on the basis of external compliance, but rather on the basis of an intrinsic commitment to environmental sustainability. This is consistent with the findings of Barry and Leonard (2021) who emphasize that ecological citizenship works through the formation of ethical and reflective identities of citizens. In other words, environmental responsibility in this study is a manifestation of civic awareness rooted in values, not just a response to regulations.

Results related to household waste management show that ecological citizenship contributes to the stability of routine and technical environmental behavior. Waste sorting practices, plastic reduction, and participation in waste banks show that the value of ecological citizenship can be translated into concrete everyday actions. These findings expand on the results of research by Liu and Zhang (2022) who stated that sustainable environmental behaviors tend to persist when supported by civic norms, not just by economic incentives. The contribution of this research lies in the affirmation that the ecological citizenship dimension strengthens the sustainability of such behavior in the context of rural communities.

The dimension of collective participation found in this study shows that ecological citizenship does not operate individualistically, but is relational and community-based. Community service, routine environmental programs, and deliberative forums function as social spaces to collectively reproduce the value of ecological citizenship. These findings support the argument of Cox (2021) who developed the idea of shared resource management from Elinor Ostrom, that the effectiveness of environmental management is highly dependent on citizen participation and a sense of collective ownership. Thus, collective participation in this research serves as a mechanism to strengthen the relationship between civic values and environmental practices.

The role of local environmental norms and community leadership in this study shows that ecological citizenship is strengthened by social legitimacy and the example of local actors. Citizens' compliance with environmental norms is not solely driven by sanctions, but rather by participatory processes and concrete

examples from community leaders. This is in line with the findings of Forno and Graziano (2020) which emphasize the importance of exemplary-based leadership in encouraging collective behavior change. This research makes an empirical contribution by showing that local leadership serves as a catalyst that connects civic values with environmental practices.

Although all of the main hypotheses are supported, this study has some limitations that need to be critically examined. First, the research design is cross-cutting so that it has not been able to capture the dynamics of changes in ecological citizenship in the long term. Second, quantitative data still relies on respondents' self-reports that have the potential to contain social bias. These limitations are also identified by Roca and Martin (2024), who emphasize the need for longitudinal and observational approaches in the study of citizenship-based environmental behavior.

Based on these findings and limitations, further research is recommended to develop a longitudinal design as well as extend the research context to communities with different socio-cultural characteristics. In addition, the integration between ecological citizenship and local environmental governance frameworks can be a promising research agenda. Overall, this research contributes to the development of ecological citizenship theory by providing strong empirical evidence from the context of local communities in developing countries. By emphasizing the interconnectedness between values, norms, and practices, this study expands the understanding of how ecological citizenship can be the foundation of sustainable environmental behavior.

CONCLUSION AND RECOMMENDATION

Based on the results and discussion of the research, it can be concluded that ecological citizenship plays a significant role in strengthening citizens' environmental responsibility at the local community level. The internalization of ecological citizenship values has been proven to not only increase environmental awareness, but also encourage sustainable pro-environmental behaviors, such as household waste management, collective participation in environmental activities, and adherence to local environmental norms. These findings suggest that environmental responsibility develops effectively when understood as part of civic identity and obligations, as well as reinforced by social norms, community leadership, and community-based environmental programs. Thus, strengthening ecological citizenship is an essential strategy in building sustainable and citizenship-based environmental governance at the local community level.

FURTHER STUDY

Based on the results and discussion, this study concludes that ecological citizenship plays a strategic role in strengthening citizens' environmental responsibility at the local community level. The internalization of ecological citizenship values not only enhances environmental awareness but also effectively promotes sustainable pro-environmental behaviors, including household waste management, collective participation in environmental initiatives, and compliance with local environmental norms. These findings

indicate that environmental responsibility develops more robustly when it is framed as an integral part of civic identity and civic obligations, and is reinforced by social norms, community leadership, and community-based environmental programs. Therefore, strengthening ecological citizenship constitutes a key strategy for fostering sustainable, citizenship-oriented environmental governance at the local level.

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