

Implementation of Policies and Success Factors of Green Campus Programs at Universities

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Abstract

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Global environmental issues demand the active role of universities in creating sustainability policies and practices through the concept of green campuses. This research aims to analyze the implementation of green campus policies in universities using a literature study method, focusing on academic literature. The results of the study show that the success of implementation is influenced by several key factors, namely regulatory and formal policy support, integration of environmental issues in the curriculum, development of environmentally friendly infrastructure, active participation of the academic community, and the existence of a continuous evaluation mechanism. In addition, funding commitments, integrated strategic plans, and consistent socialization also strengthen program implementation. However, challenges in the form of limited resources, cultural resistance, and the need for strategic adaptation are still obstacles in the implementation of green campuses. This research confirms that green campus is not just a slogan, but a strategic framework that supports sustainable development in higher education. These findings are expected to be the basis for the development of more effective and environmentally oriented higher education policies.

1. Introduction

Global environmental issues are increasingly becoming a serious concern as the threat of climate change, global warming, and ecosystem degradation due to human activities increases. Increased energy consumption, waste production, and unsustainable use of resources drive the need to develop real solutions that can reduce environmental impact. Universities as science centers have a strategic responsibility in making a real contribution to sustainable development. Through intellectual capacity, research, and innovation, universities not only equip students with knowledge, but also instill environmentally friendly values and behaviors that can be applied in daily life (Anthony Jnr, 2021). Thus, the development of the green campus concept is very important in responding to these global challenges.

The regulatory and policy framework also supports the implementation of the green campus program in universities. The Government of Indonesia through various environmental policies, such as the Regulation of the Minister of Environment and Forestry (Permen LHK) No. P.28/MENLHK/SETJEN/SET.1/12/2020, emphasizes the importance of allocating special funds for environment-based activities. In addition, internationally, there are ranking instruments such as the UI GreenMetric World University Rankings which assess the commitment of universities in implementing sustainability principles. These regulations and instruments are a reference framework for universities in integrating sustainable policies into university governance (Fissi et al., 2021).

Conceptually, a green campus is defined as the effort of higher education institutions to create a campus environment that is oriented towards energy efficiency, wise management of natural resources, reduction of carbon emissions, and improvement of the quality of life of the academic community. This program includes the integration of a curriculum that contains environmental issues, the management of environmentally friendly campus infrastructure, and the active participation of students and lecturers in environmental care activities. In the literature, the implementation of green campuses is seen as a strategy to achieve sustainability in the higher education sector while strengthening the university's reputation at the global level (Ribeiro et al., 2021).

In its implementation, universities face diverse dynamics. For example, research shows that different approaches emerge in various universities, both in the form of formal policies through the rector's decree, the integration of environment-based courses, and the provision of physical facilities such as green areas and waste management facilities. However, obstacles remain, such as resistance to the smoking ban policy, limited funding, and gaps in the community's understanding of sustainability values (Syaputri et al., 2023). These challenges show that although the concept of green campus has been implemented, its effectiveness is greatly influenced by legal awareness, regulatory support, and mutual commitment.

The success factor of the implementation of green campuses in universities can be seen from several important aspects. First, there is a special allocation of funds to support sustainable activities, both in the academic and non-academic scopes. Second, the integration of the green campus program into the tridharma of

higher education through teaching, research, and community service. Third, sustainable socialization that is able to build an environmentally conscious culture among the academic community. Recent studies confirm that the integration of sustainable programs in the curriculum as well as the management of university resources contributes significantly to changes in student behavior towards environmental issues (Gholami et al., 2020). Thus, the success of the program is not only measured by the existence of the policy, but also by the level of participation and commitment of all parties in it.

The urgency of research on the implementation of green campuses in Indonesia is getting stronger, considering that there is still a gap between the policies launched and the practices that take place in the field. An in-depth study is needed to evaluate the extent to which universities are able to implement environmentally friendly policies effectively, what factors affect their success, and how the green campus model can be replicated in various higher education institutions. This research is expected to make a practical contribution to the development of sustainable education policy strategies, as well as strengthen the role of universities as agents of change towards a greener and more sustainable future.

2. Literature Review

Studies on the implementation of green campus programs in higher education have become the main focus in the discourse on higher education sustainability. This concept goes beyond just green initiatives; It is an integral part of the university's overall sustainability strategy. Various studies confirm that universities have a

strategic role in fostering environmental awareness through policies, education, and various community activities (Junior et al., 2020). This role reflects the responsibility of educational institutions in responding to increasingly pressing global environmental issues.

The implementation of green campus policies includes several crucial dimensions. First, the institutional policy dimension that involves the establishment of rules and regulations that support sustainability. Second, the dimension of resource management, such as efficient management of energy, water, and waste. Third, the most important dimension is the active involvement of the academic community. One of the most crucial aspects is how universities integrate sustainability values into the vision, mission, curriculum, and activities of the Tridarma (education, research, and community service). Recent studies show that universities that have clear management and policy support are more effective in implementing sustainability programs (Adenle et al., 2020). This shows that the commitment of the university leadership is the main foundation for the success of the program. In addition to institutional support, there are several other factors that are key elements of success.

Adequate funding support is needed for the initial investment and operation of the green campus program. Furthermore, student participation plays a vital role because they are agents of change and innovators in the future. Finally, the integration of cross-field programs ensures that the concept of sustainability is not only the domain of one faculty, but rather the collective understanding of all disciplines. However, the implementation of green campuses also faces challenges.

Research in Southeast Asia shows that although awareness of the importance of green campuses is increasing, there are still significant obstacles, especially in the aspect of funding and changing the behavior of the academic community (Pitaloka et al., 2024). Changing old habits that are not environmentally friendly requires time and sustained socialization efforts. Therefore, the literature shows the need for a more holistic approach. This approach must involve binding policy aspects, transformative education, the use of technology for efficiency, and a campus culture that supports sustainability to realize the implementation of a truly sustainable green campus.

3. Methods

This study adopts the library research method as the main approach. This choice is based on the consideration that the topic of green campus is closely related to policy frameworks, sustainability theories, and empirical practices that have been applied in various educational institutions. This method allows researchers to systematically identify, review, and synthesize important findings from a wide range of academic literature. The sources analyzed include relevant journal articles and current research reports. The first step in this literature study is the collection of literature. The researcher collected relevant sources from leading academic databases, most notably Google Scholar or Elsevier. The selection of a specific year range is carried out to ensure that the data and findings analyzed reflect the latest developments in the implementation of the green campus program. To narrow the scope and ensure the relevance of the literature, the researchers used specific

keywords, such as “green campus”, “higher education sustainability”, “policy implementation”, and “Indonesia”. This combination of keywords helps focus on the national context, while staying connected to the global discourse.

After the literature is collected, the next step is content analysis. All relevant literature is grouped by major themes. These themes include: institutional policies that support the program, factors supporting the success of implementation, challenges often faced, and best practices that can be used as references. This content analysis has a dual function: first, to identify common patterns that emerge from various studies; Second, to recognize existing research gaps, which can be opportunities for the development of further studies on the Green Campus program.

The last step is the synthesis of the findings. At this stage, the researcher not only summarizes the content of each literature, but also conducts a critical evaluation to find the suitability and difference between the findings of one study and another. This approach makes research not only descriptive, but also analytical and evaluative. Thus, even though it does not use direct field data, this literature study method provides a broad and comprehensive perspective. Its main advantage is the ability to build a solid conceptual framework, which is a strong foundation for understanding the complexity of green campus implementation in universities. However, it should be recognized that its main limitation is that it does not include primary data from the field.

4. Results and Discussion

4.1. Implementation of Green Campus Policy in Universities

The implementation of green campus policies in universities is one of the strategic steps in responding to global environmental issues while supporting sustainable development. Universities have a unique position, because apart from being an educational institution, they also play a role as a center for research and community service. Therefore, environmentally oriented policies are crucial so that universities can be a real example in the application of sustainability principles. Based on the literature, green campus policies are generally translated in the form of decision letters, rector regulations, and internal policies that are binding on the entire academic community. This is in line with the findings of Leal Filho et al. (2020) who emphasize that the success of environmental policies in higher education is determined by the commitment of leaders and the existence of formal regulations that can be used as guidelines in their implementation.

Clear regulations provide implementation directions, including in the aspects of infrastructure management, environment-based curriculum development, and student activities that support green programs. In practice, the implementation of green campus policies involves several important dimensions. First, curriculum and learning. Many universities are starting to integrate courses that address environmental issues, both specifically and across disciplines. This integration aims to ensure that students not only gain theoretical knowledge, but also have practical awareness in protecting the environment. A study by Acosta Castellanos and Queiruga-Dios (2022) shows that integrating sustainability issues in college curricula

increases student awareness of green practices, while encouraging active participation in green programs on campus.

Second, the management of the physical environment of the campus. The implementation of the green campus policy is realized through the provision of environmentally friendly infrastructure facilities, such as sorted garbage cans, green open spaces, efficient energy and water management, and the construction of buildings that are oriented towards energy efficiency. Gadjah Mada University, for example, developed a green campus model through the construction of energy-efficient buildings and the use of environmentally friendly transportation in the campus area. Pitaloka et al. (2024) stated that the aspect of environmentally friendly infrastructure is an important indicator in assessing the extent to which green campus policies can be implemented effectively.

Third, the participation of the academic community. Policy implementation does not only stop at the structural level, but is also greatly influenced by the involvement of students, lecturers, and education personnel. Programs such as waste banks, greening movements, and single-use plastic reduction campaigns are widely run by the student community (Rodríguez-Guerreiro et al., 2024). However, in some cases, resistance arises especially in the early stages of policy implementation, for example the smoking ban on campus areas. To overcome this, some universities provide smoking rooms as a form of compromise, while still maintaining the main area of the campus as a smoke-free zone. This suggests that policy implementation requires an adaptive strategy that takes into account the social and cultural needs of campus users.

Fourth, evaluation and sanction mechanisms. Periodic evaluations are an important part of ensuring successful implementation. Universities usually form a special team or unit that is responsible for supervising the implementation of green campus policies (Leal Filho et al., 2021). Sanctions given to violators, such as reprimands or facility restrictions, even if simple, have proven to be effective if they are accompanied by legal awareness from the academic community. This awareness is an indicator that the policy has been accepted not because of coercion, but because of an understanding of the importance of protecting the environment.

From this description, it can be concluded that the implementation of green campus policies in higher education is a multidimensional process that includes aspects of regulation, curriculum, infrastructure, participation, and evaluation. The key factors for the successful implementation are the commitment of university leaders, active participation of the academic community, and a consistent evaluation mechanism. Thus, the green campus policy is not only a formal symbol, but is actually manifested in the practice of daily life in the campus environment.

4.2. Success Factors of the Green Campus Program

The success of the green campus program is not only determined by the existence of policies, but also by the supporting factors that allow the policy to be implemented consistently. From the results of observations and literature, there are three main factors that often appear as determinants of success, namely funding support, program integration, and sustainable socialization. First, funding support. The implementation of the green campus program requires a lot of investment, especially in the provision of environmentally friendly infrastructure and digital-

based academic information systems. For example, the attendance system, distribution of teaching materials, and academic evaluation based on information technology that can reduce the use of paper. According to Liu and Gao (2021), the availability of funds is an indicator of the institution's commitment to sustainability. Universities that allocate special budgets for environmental activities show seriousness in supporting the achievement of green campus goals.

Second, the integration of the program into all aspects of higher education. This integration is not only limited to academic activities, but also includes student activities, research, and community service. Sanches et al. (2023) emphasized that the integration of environmental policies into the university's long-term planning is essential so that the green campus program is not partial, but sustainable. Thus, successful implementation can be achieved if the entire academic community understands that green programs are an integral part of daily campus activities. Third, socialization and participation. Green campus programs can only succeed if the academic community has the collective awareness to be involved. Socialization that is carried out in a sustainable manner, both through seminars, social media, and student communities, helps build an environmentally friendly culture. This is in line with Al-Dmour's (2023) research which states that socialization and continuous education play an important role in creating behavioral changes that support the success of green campus programs.

In addition to the three main factors above, monitoring and evaluation mechanisms are also important to ensure that policies run as planned. Monitoring is carried out through periodic reports or surveys of the satisfaction of the academic

community, while evaluation helps universities in identifying obstacles that arise and formulating improvement strategies. Another factor that supports success is external collaboration, both with the government, the private sector, and other universities (Tseng et al., 2020). This collaboration not only opens up access to additional resources, but also allows for the exchange of best practices that can improve the effectiveness of green campus programs.

However, there are also challenges faced in the implementation of the green campus program, such as cultural resistance, limited funds, and limited human resources. Therefore, adaptive strategies need to be developed so that programs do not only stop at the policy level, but are actually implemented in campus life. The success factor of the green campus program depends on the synergy between funding support, policy integration, consistent socialization, and active participation of the entire academic community. If these factors can be managed properly, then the green campus program has the potential to become a model of sustainable development that can be replicated by other universities in Indonesia and at the global level.

5. Conclusion

This research emphasizes that green campus policies and implementation in universities are important strategies in supporting sustainable development and responding to global environmental issues. Universities, with their tridharma functions, have a strategic role not only in producing environmentally friendly graduates, but also in creating a welcoming and sustainable campus environment.

From the results of the literature study, it can be concluded that the implementation of green campus policies is influenced by various dimensions. The regulatory dimension acts as a foundation, where formal policies become guidelines for the implementation of sustainable programs. The curriculum dimension encourages the integration of environmental issues in learning so as to create ecological awareness among students. Meanwhile, the green infrastructure dimension ensures that real sustainability practices are realized in the physical form of the campus. The active participation of the academic community and the continuous evaluation mechanism are also factors that greatly determine the success of the policy.

In addition, the success of the green campus program is highly determined by the existence of adequate funding support, policy integration in the university's strategic planning, and consistent socialization to build a green culture. Collaboration with external parties also strengthens the program through the provision of additional resources and the exchange of best practices. However, challenges in the form of limited resources, cultural resistance, and the need for adaptive strategies still need to be overcome so that policy implementation can run optimally. This research shows that green campus is not just a slogan or formal symbol, but a real framework that must be implemented comprehensively and sustainably. The urgency of implementing green campuses is even greater considering the increasingly urgent global environmental crisis. Therefore, this research provides a conceptual contribution that can be used as a basis for universities to strengthen green policies, while encouraging more in-depth follow-up research on effective implementation strategies in various local contexts.

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