

Strategic Management of Adiwiyata Program to Enhance Students' Environmental Care Character.docx

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Abstract

Environmental degradation, particularly the increasing accumulation of plastic waste, has become a critical challenge in school environments, contributing to flooding, declining water quality, and sanitation-related health problems. This study aims to analyze students' environmental care character, examine the implementation of the Adiwiyata program, and evaluate the effectiveness of strategic management in strengthening students' environmental awareness. This study employed a descriptive qualitative approach guided by David's Strategic Management Theory, which emphasizes three interconnected stages: strategy formulation, strategy implementation, and strategy evaluation. The participants consisted of one school principal, one Adiwiyata program coordinator, four teachers, and twelve Grade VI students at MI An-Nur Cirebon (N = 18), who were selected through purposive sampling. Data were collected through observation, in-depth interviews, and documentation and analyzed using data reduction, data display, and conclusion drawing. Data trustworthiness was ensured through source, method, and time triangulation. The findings reveal that students demonstrated strong environmental care through consistent practices such as reducing plastic waste, maintaining school cleanliness, and participating in environmental conservation activities. The Adiwiyata program was implemented systematically through strategic planning, implementation, and continuous evaluation, supported by active stakeholder participation and the integration of environmental values into school policies, curriculum, and conservation programs. These findings demonstrate that strategic management effectively institutionalizes environmental education by embedding environmental values into school culture and students' daily behavior. Theoretically, this study contributes to the global literature on educational environmental management by providing empirical evidence that the integration of strategic management processes with participatory environmental education strengthens the sustainability of school-based environmental programs and offers a transferable framework for developing students' environmental responsibility in diverse educational settings.

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INTRODUCTION

Environmental issues, particularly those related to the accumulation of plastic waste, have become increasingly critical in recent years. The rise in consumption patterns, which is not balanced by proper waste management practices, has contributed to environmental degradation, including flooding, water scarcity, and the spread of diseases. In the educational context, schools play a strategic role as agents of change in fostering environmental awareness and sustainable behavior among students. Therefore, integrating environmental values into educational systems is essential in shaping students' character, especially environmental care attitudes (Sartibi et al., 2020).

Strategic management is a systematic process that enables organizations to formulate, implement, and evaluate decisions in order to achieve long-term goals effectively (Sinnaiah et al., 2023). In the context of education, strategic management is not only focused on administrative efficiency but also on how schools respond to environmental challenges and stakeholder needs. Schools, as formal educational institutions, have a significant influence on students' cognitive, affective, and behavioral development, including their awareness of environmental sustainability. A well-managed school environment can encourage students to adopt environmentally responsible behaviors through structured programs and consistent practice (Rakhmawati et al., 2025).

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One of the government's initiatives to promote environmental education in Indonesia is the Adiwiyata program, which is regulated under the Ministry of Environment Regulation No. 5 of 2013 (Simanjuntak et al., 2023). This program aims to create environmentally friendly schools by integrating environmental values into school policies, curriculum, participatory activities, and infrastructure management. The Adiwiyata program emphasizes the development of ecological awareness through habituation and role modeling, which are considered effective approaches in character education. Through this program, schools are expected to cultivate students who are not only academically competent but also environmentally responsible (Rushayati et al., 2023; Udin et al., 2024).

However, empirical conditions indicate that the implementation of environmental programs in schools is not always optimal. Based on national data from the Indonesian Waste Management Information System (SIPSN), the total waste generation reached more than 38 million tons in 2023, indicating that environmental awareness in society, including among students, remains relatively low (Lehtimäki et al., 2026). In the school context, challenges such as limited supervision, high student numbers, and the dual responsibilities of teachers often hinder the effective implementation of environmental programs. Preliminary observations at MI An-Nur Cirebon also revealed that students' compliance with environmental rules, such as bringing reusable food containers and reducing plastic use, is still inconsistent.

Based on previous studies, the Adiwiyata program has been widely recognized for improving students' environmental literacy, attitudes, and pro-environmental behaviour (Nurwidodo et al., 2020). Likewise, research on environmental education has demonstrated the importance of ecological literacy and environmental character development in schools (Syah et al., 2021). Nevertheless, these studies predominantly emphasize program implementation and educational outcomes while paying limited attention to the strategic governance processes that ensure program sustainability. In particular, little attention has been given to how strategy formulation, implementation, and evaluation are integrated to institutionalize environmental values within school organizations. This limitation indicates an important theoretical gap because contemporary strategic management perspectives, particularly the Dynamic Capabilities framework (Teece, 2018) and the Resource-Based View (Barney, 1991), suggest that sustainable organizational performance depends on an institution's capability to mobilize strategic resources and continuously adapt organizational processes (Zulkipli et al., 2024). These perspectives have rarely been employed to explain the strategic governance of the Adiwiyata program. Therefore, this study addresses this theoretical gap by proposing an integrated strategic governance perspective in which strategic management processes are reinforced by local religious values to strengthen environmental character education in primary schools.

Accordingly, this study aims not only to analyze students' environmental care character, examine the implementation of the Adiwiyata program, and evaluate the contribution of strategic management to strengthening environmental awareness, but also to develop a strategic governance model for environmental education grounded in local religious values. By integrating the Dynamic Capabilities perspective and the Resource-Based View into the analysis of the Adiwiyata program, this study extends the theoretical discussion on strategic management in educational settings beyond program implementation toward sustainable governance. Furthermore, the findings are expected

to contribute to the development of a transferable framework for value-based environmental education that can be adapted by primary schools operating in different socio-cultural contexts while preserving their local institutional characteristics.

16 RESEARCH METHOD

This study³⁶ employed a descriptive qualitative approach to explore the implementation of the Adiwiyata program³⁵ and its contribution to strengthening students' environmental care character. A qualitative approach was considered appropriate because it enables researchers to understand social phenomena from participants' perspectives within their natural setting and to generate an in-depth interpretation of educational practices (Sar & Pujiastuti, 2023). This study was also informed by the interpretive paradigm, which emphasizes participants' experiences, interactions, and meanings in understanding organizational processes related to environmental education.

The research was conducted at Madrasah Ibtidaiyah (MI) An-Nur, Cirebon City, Indonesia. This school was purposively selected as a critical case because it has consistently implemented the Adiwiyata program while integrating environmental education with Islamic values, school policies, and participatory environmental practices. Such characteristics provide a unique context for examining how strategic management contributes to the institutionalization¹⁷ of environmental character education.

The participants were selected through purposive sampling based on their direct involvement in planning, implementing, and evaluating the Adiwiyata program. Informant selection continued until information redundancy was achieved, indicating that the collected data had reached sufficient depth to address the research objectives.

Table 1. Profile of Research Informants

Pseudonym	Participant Category	Number	Selection Rationale
P-01	School Principal	1	Responsible for strategic decision-making and school policy
P-02	Adiwiyata Coordinator	1	Responsible for planning and coordinating the Adiwiyata program
T-01 – T-04	Teachers	4	Directly involved in implementing environmental education activities
S-01 – S-12	Grade VI Students	12	Active participants representing Classes VI-A and VI-B
Total		18	

The qualitative data were collected using observation, semi-structured interviews, and document analysis.¹² The observation guideline consisted of 15 observation indicators covering students' environmental behaviour, classroom environmental practices, school environmental management, stakeholder participation, and implementation of the Adiwiyata program. The interview protocol contained 20 semi-structured questions, distributed across themes of strategic planning, program

implementation, evaluation, stakeholder participation, environmental character development, and implementation challenges. Documentary evidence included school policy documents, annual Adiwiyata reports, photographs, meeting minutes, and supporting administrative records.

Before field implementation, the observation and interview protocols were evaluated through expert judgment involving two experts in educational management and qualitative research methodology. Their feedback focused on the clarity, relevance, and comprehensiveness of each indicator and interview question. Revisions were subsequently made to improve the consistency between the research objectives, interview protocol, and observation indicators before data collection commenced.

The collected data were analysed using the interactive analysis model proposed by Miles, Huberman, and Saldaña, consisting of data condensation, data display, and conclusion drawing/verification. Throughout the analytical process, emerging categories were continuously compared across data sources to identify recurring patterns and relationships related to strategic management and students' environmental care character (Notrilauvia et al., 2025).

To ensure research trustworthiness, this study applied the criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln and Guba. Credibility was established through systematic triangulation of sources, techniques, and time. Source triangulation compared information obtained from the principal, Adiwiyata coordinator, teachers, and students. Technique triangulation compared findings derived from interviews, observations, and documentary evidence. Time triangulation was conducted by repeating observations and selected interviews at different periods during the implementation of the Adiwiyata program to ensure data consistency (Mutia et al., 2025). Dependability and confirmability were strengthened through an audit trail, in which interview transcripts, field notes, coding procedures, and analytical memos were periodically reviewed by the research supervisors and an external qualitative research expert to ensure analytical consistency and minimize researcher bias. Transferability was supported by providing detailed contextual descriptions of the research setting, participants, and implementation process, enabling readers to assess the applicability of the findings in similar educational contexts.

FINDINGS AND DISCUSSION

Students' Environmental Care Character at MI An-Nur Cirebon

The findings indicate that students' environmental care character was reflected in three dominant dimensions identified during field observations and interviews, namely environmental awareness, personal commitment, and environmental responsibility. The triangulation of observations, interviews, and school documents consistently showed that these behaviours had become part of students' daily routines, although different levels of consistency were observed between lower-grade and upper-grade students.

Table 2. Thematic Analysis Matrix of Students' Environmental Care Character

First-Order Code	Second-Order Theme	Representative Verbatim Quote	Observation Findings	Triangulation Source
Throwing waste in designated bins	Environmental Awareness	"Students are already accustomed to picking up litter"	Most students immediately disposed of waste in	Interview, Observation

		without being instructed because they understand that keeping the school clean is everyone's responsibility." (P-02, Adiwiyata Coordinator)	separate organic and inorganic bins after classroom activities.	
Saving electricity	Environmental Awareness	"Before leaving the classroom, students usually remind each other to switch off the lights and fans." (T-03, Teacher)	Electrical equipment was consistently turned off after lessons.	Interview, Observation
Bringing reusable food containers	Personal Commitment	"Since joining the Adiwiyata activities, I always bring my own lunch box because plastic packaging is discouraged at school." (S-07, Student)	Most Grade VI students used reusable food containers during break time.	Interview, Observation, Documentation
Encouraging peers	Personal Commitment	"Older students often remind younger students not to litter and to clean the classroom together." (T-01, Teacher)	Peer reminders frequently occurred during classroom cleaning activities.	Interview, Observation
Obedying environmental regulations	Environmental Responsibility	"Students understand that violating environmental rules will receive educational sanctions, so they try to follow the regulations." (P-	Students complied with waste management procedures and classroom cleaning schedules.	Interview, Documentation

Behaviour differences by grade level	Behavioural Consistency	01, Principal) "Grade V and VI students usually act independently, while Grade I and II students still need frequent reminders from teachers." (T-04, Teacher)	Upper-grade students independently completed environmental routines, whereas lower-grade students required continuous supervision.	Interview, Observation
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Field observations showed that environmental awareness was demonstrated through students' spontaneous behaviour in maintaining classroom cleanliness, separating waste according to its category, and switching off electrical equipment after classroom activities. Interview data from teachers and the Adiwiyata coordinator confirmed that these behaviours had gradually become daily routines supported by classroom regulations and regular supervision. Documentary evidence, including classroom cleaning schedules and environmental campaign posters, further corroborated these observations.

Personal commitment was identified through students' willingness to consistently apply environmentally friendly practices, particularly by bringing reusable food containers, participating in waste reduction activities, and reminding classmates to maintain school cleanliness. Interview data revealed that peer influence played an important role in encouraging behavioural consistency, especially among upper-grade students, who frequently acted as role models during environmental activities.

Environmental responsibility was reflected in students' compliance with school regulations regarding waste management, classroom cleanliness, and participation in environmental conservation activities. According to interviews with the principal and teachers, educational sanctions were applied when students neglected their environmental responsibilities. Observation data demonstrated that compliance with environmental rules was generally high, although several students still required direct supervision during routine environmental activities.

The triangulation process also identified differences in behavioural consistency across grade levels. Students in Grades V and VI generally demonstrated greater independence in performing environmental practices, including waste sorting, classroom cleaning, and energy conservation. In contrast, students in Grades I and II tended to rely more heavily on teacher guidance and repeated reminders before completing similar activities. These differences were consistently identified through interviews, classroom observations, and documentary evidence, indicating variation in environmental behaviour according to students' developmental stages.

4 Implementation of the Adiwiyata Program at MI An-Nur Cirebon

The findings indicate that the implementation of the Adiwiyata program at MI An-Nur Cirebon was carried out through three interconnected stages, namely strategic planning, program implementation, and evaluation. In addition, the field data identified

several supporting and inhibiting factors that influenced the continuity of the program. These findings were derived from interviews, direct observations, school documents, and internal administrative records.

Table 3. Thematic Analysis Matrix of Adiwiyata Program Implementation

First-Order Code	Second-Order Theme	Representative Verbatim Quote	Observation Findings	Triangulation Source
Integration of Islamic values	Strategic Planning	"Environmental education is integrated into our school vision because cleanliness is part of faith and should become students' daily habit." (P-01, Principal)	Environmental values were explicitly incorporated into the school's vision, mission, annual programs, and internal regulations.	Interview, Documentation
Environmental program planning	Strategic Planning	"Every academic year we review the environmental work plan together with teachers and the Adiwiyata team." (P-02, Adiwiyata Coordinator)	Annual planning meetings and environmental activity schedules were documented.	Interview, Documentation
Water conservation activities	Program Implementation	"Students are encouraged to use water wisely and monitor classroom water usage every day." (T-02, Teacher)	Water-saving campaigns and monitoring activities were routinely conducted.	Interview, Observation
Waste management	Program Implementation	"Students separate organic and inorganic waste before disposing of it." (S-05, Student)	Waste sorting bins were available in every classroom and actively used by students.	Interview, Observation
Energy conservation	Program Implementation	"Before leaving the classroom, students check lights and fans"	Students consistently switched off electrical	Interview, Observation

		together." (T-03, Teacher)	equipment after classroom activities.	
Eco-enzyme and ecobrick activities	Participatory Environmental Practices	"Students participate in making ecobricks and eco-enzyme as part of environmental projects." (P-02, Coordinator)	Environmental projects were implemented regularly as part of Adiwiyata activities.	Interview, Documentation
Internal evaluation	Monitoring and Evaluation	"Every semester we evaluate the implementation of environmental activities with all teachers." (P-01, Principal)	Evaluation meetings were conducted periodically and documented in meeting minutes.	Interview, Documentation
External evaluation	Monitoring and Evaluation	"The Environmental Agency also evaluates our program to assess its implementation." (P-02, Coordinator)	External assessment reports from the Environmental Agency (DLH) were available.	Interview, Documentation
Parents' participation	Supporting Factors	"Parents support the program by preparing reusable food containers for their children." (T-01, Teacher)	Students consistently brought reusable food containers from home.	Interview, Observation
Alumni involvement	Supporting Factors	"Our alumni community frequently assists environmental campaigns and school activities." (P-01, Principal)	Alumni participated in environmental campaigns and school improvement programs.	Interview, Documentation
Teacher	Inhibiting	"Administrative	Teachers	Interview

workload	Factors	responsibilities sometimes reduce the time available for supervising environmental activities." (T-04, Teacher)	simultaneously handled teaching, administration, and Adiwiyata responsibilities	
Infrastructure limitations	Inhibiting Factors	"Limited land and financial resources make it difficult to expand environmental facilities." (P-01, Principal)	Limited green space and supporting infrastructure were observed during field visits.	Interview, Observation

The strategic planning stage began with the integration of environmental values into the school's vision, mission, annual work plans, and institutional regulations. Interview data with the principal and the Adiwiyata coordinator indicated that environmental education was positioned as an integral component of school management rather than as an additional program. Documentary evidence, including annual planning documents and school regulations, confirmed that environmental objectives had been incorporated into institutional planning.

Program implementation involved routine environmental activities carried out by teachers and students throughout the academic year. Field observations documented the implementation of waste sorting, water conservation, energy-saving practices, classroom cleaning schedules, eco-enzyme production, ecobrick projects, and environmental campaigns. Interview data showed that these activities were implemented collaboratively and supported by environmental facilities provided within the school.

Monitoring and evaluation were conducted through both internal and external mechanisms. Internal monitoring consisted of routine teacher meetings, semester evaluations, and program reviews coordinated by the Adiwiyata team. External monitoring was undertaken by the Regional Environmental Agency (DLH) through periodic assessments of program implementation. Documentary evidence confirmed that evaluation reports were used as references for improving subsequent environmental activities.

The triangulation process also identified several supporting and inhibiting factors affecting program implementation. Supporting factors included active participation from parents, alumni associations, and external institutional partners, all of whom contributed resources and support for environmental activities. Conversely, interviews and observations consistently identified several challenges, including differences in students' behavioural readiness, teachers' administrative workload, limited financial resources, and restricted school land available for environmental infrastructure development. These findings were consistently confirmed through interviews with school leaders, teachers, direct observations, and institutional documentation.

5 The Impact of the Adiwiyata Program Strategy on Students' Environmental Care Character

2 The findings indicate that the strategic implementation of the Adiwiyata program contributed to observable changes in students' environmental care character. Triangulation of interview data, classroom observations, and school documents identified four major strategic components that consistently influenced students' environmental behaviour, namely environmentally oriented policies, an environment-based curriculum, participatory environmental activities, and eco-friendly school infrastructure.

Table 4. Thematic Analysis Matrix of the Strategic Impact of the Adiwiyata Program

First-Order Code	Second-Order Theme	Representative Verbatim Quote	Observation Findings	Triangulation Source
Environmentally oriented school policy	Environmentally Oriented Policy	"Environmental values are embedded in our school regulations, so every student understands that environmental responsibility is part of school discipline." (P-01, Principal)	Environmental rules, including the compulsory use of reusable food containers and implementation of the 7K principles, were consistently applied.	Interview, Documentation
Integration into classroom learning	Environment-Based Curriculum	"Environmental themes are integrated into classroom lessons as well as extracurricular activities." (T-02, Teacher)	Environmental topics appeared in lesson plans, classroom activities, and student projects.	Interview, Documentation
Student participation	Participatory Environmental Activities	"Students are directly involved in waste sorting, recycling, eco-enzyme production, and routine environmental campaigns." (P-02, Adiwiyata Coordinator)	Students actively participated in environmental conservation activities during school programs.	Interview, Observation

Environmental facilities	Eco-Friendly Infrastructure	"The availability of waste sorting bins and clean water facilities makes environmental practices easier for students." (S-09, Student)	Waste sorting facilities, handwashing stations, and green spaces were regularly utilized during school activities.	Interview, Observation
Behavioural change	Environmental Character Development	"Students no longer wait for teachers' instructions to clean the classroom because they already understand their responsibilities." (T-03, Teacher)	Students independently carried out classroom cleaning and environmental routines.	Interview, Observation
Sustainable environmental habits	Internalisation of Environmental Values	"Environmental care has gradually become part of students' daily habits both inside and outside the classroom." (P-01, Principal)	Routine observations indicated consistent environmental behaviour throughout daily school activities.	Interview, Observation, Documentation

Field observations demonstrated that environmentally oriented school policies were consistently implemented through daily routines and institutional regulations. Students complied with environmental rules by bringing reusable food containers, participating in classroom cleaning schedules, sorting waste according to designated categories, and following the school's environmental regulations. Documentary evidence confirmed that these policies were incorporated into school regulations and annual environmental programs.

The integration of environmental education into classroom learning was observed across both curricular and extracurricular activities. Lesson plans contained environmental themes relevant to the Adiwiyata program, while extracurricular activities such as scouting, arts, and environmental campaigns provided opportunities for students to apply environmental practices in authentic situations. Interviews with teachers confirmed that environmental values were introduced across different learning activities rather than through a single subject.

Students' active participation emerged consistently across all data sources. Observations recorded students' involvement in water conservation, energy-saving practices, waste sorting, recycling activities, eco-enzyme production, ecobrick projects, and routine environmental campaigns. Interviews with students further indicated that participation gradually became a shared responsibility among classmates⁴³ with older students frequently encouraging younger students to participate in environmental activities.

The availability of eco-friendly infrastructure supported the implementation of daily environmental practices. Field observations identified the presence of separate waste bins, clean water facilities, environmental information boards, classroom cleaning equipment, and school green spaces. Both teachers and students acknowledged that these facilities facilitated the implementation of environmental activities and encouraged greater student participation.

The triangulation of interview, observation, and documentary data further demonstrated that the combined implementation of school policies, curriculum integration, participatory activities, and environmental infrastructure contributed to observable behavioural changes among students. Environmental care was reflected in students' increasing independence in maintaining school cleanliness, conserving natural resources, complying with environmental regulations, and participating voluntarily in school environmental programs. These behavioural patterns were consistently identified across multiple data sources throughout the fieldwork period.

³ DISCUSSION

The findings of this study demonstrate that the strategic management of the Adiwiyata program³¹ extends beyond the implementation of environmental activities and functions as an integrated governance mechanism for developing students' environmental care character (Zulfa et al., 2025). The empirical evidence indicates that environmental values are institutionalized through the intersection⁵ of four strategic components, namely environmentally oriented policies, an environment-based curriculum, participatory environmental activities, and eco-friendly infrastructure. Rather than operating independently, these components form an interconnected management system that continuously reinforces students' environmental awareness, commitment, and responsibility. This finding expands previous studies, which primarily reported the educational outcomes of the Adiwiyata program without comprehensively explaining the strategic mechanisms underlying its sustainability (Ananda et al., 2025; Chotia et al., 2025).

The findings further demonstrate that environmentally oriented policies constitute the primary institutional driver of environmental character development. At MI An-Nur Cirebon, environmental values were formally embedded within the school's vision, mission, strategic objectives, annual work plans, and operational regulations. This institutional commitment ensured that environmental education became an integral component of school governance rather than an additional extracurricular activity. Such findings support previous studies reporting that environmentally oriented school policies strengthen organizational commitment toward sustainability (Utomo et al., 2023; El Rizaq et al., 2025). However, unlike previous studies that primarily describe policy implementation, the present study demonstrates that policy formulation initiates a continuous strategic process through which environmental values become organizational

norms that regulate everyday behaviour. This finding reflects the strategic management perspective proposed by David, in which strategy formulation establishes organizational direction before implementation and evaluation are undertaken systematically.

The integration of environmental education into curricular and extracurricular learning further illustrates how strategic planning is translated into pedagogical practice. The incorporation of environmental themes into classroom learning, scouting activities, arts education, and project-based learning enabled students to experience environmental values in authentic educational contexts. Previous studies have similarly reported positive relationships between curriculum integration and environmental literacy (Ikhsan et al., 2025; Iwan et al., 2023). Nevertheless, the present findings extend this literature by demonstrating that curriculum integration functions not merely as a learning strategy but as a strategic governance mechanism through which organizational goals are consistently communicated across different educational activities. Consequently, environmental values become embedded throughout the educational process rather than remaining isolated within environmental campaigns.

Participatory environmental activities also emerged as a central mechanism for strengthening students' environmental character. Routine activities such as waste segregation, ecobrick production, eco-enzyme projects, classroom cleaning, water conservation, and energy-saving campaigns provided repeated opportunities for students to translate environmental knowledge into daily behaviour. These findings corroborate previous research indicating that experiential environmental activities enhance students' environmental awareness and responsible behaviour (Jaber et al., 2026; Khamid et al., 2025). However, this study further demonstrates that repeated participation gradually transforms environmental practices into institutional routines shared collectively by teachers and students. Such institutional routines indicate that strategic management facilitates not only behavioural participation but also the long-term internalization of environmental values within school culture.

The role of eco-friendly infrastructure also deserves particular attention. The availability of waste sorting facilities, clean water systems, environmental information boards, and green open spaces provided tangible support for implementing environmentally responsible behaviour. Previous studies have acknowledged the importance of educational facilities in promoting sustainable practices (Nurhidayati et al., 2022; Unayah et al., 2025). Nevertheless, the present findings indicate that infrastructure should not be viewed solely as physical facilities but as strategic organizational resources that reinforce behavioural consistency. Simultaneously, limited financial resources and restricted school land demonstrate that infrastructure development remains one of the principal challenges affecting the sustainability of environmental education programs (Wibowo et al., 2023).

The supporting and inhibiting factors identified in this study can be interpreted through the Resource-Based View (RBV), which argues that sustainable organizational performance depends upon the effective utilization of valuable organizational resources (Giddens, 2004). Parents, alumni associations (FOKUS), committed teachers, school leadership, and institutional partnerships represent valuable internal and relational resources that enable the successful implementation of the Adiwiyata program despite financial and infrastructural limitations. Conversely, teacher workload, limited funding, and spatial constraints illustrate organizational resource limitations that require continuous strategic optimization (David, F. R., & David, 2019). Accordingly, the findings

³ suggest that the effectiveness of environmental education is determined not solely by resource availability but by the institution's capability to coordinate and mobilize available resources strategically. This interpretation extends previous Adiwiyata studies, which have generally emphasized stakeholder participation without explicitly analysing stakeholders as strategic organizational resources (Lubis, 2022).

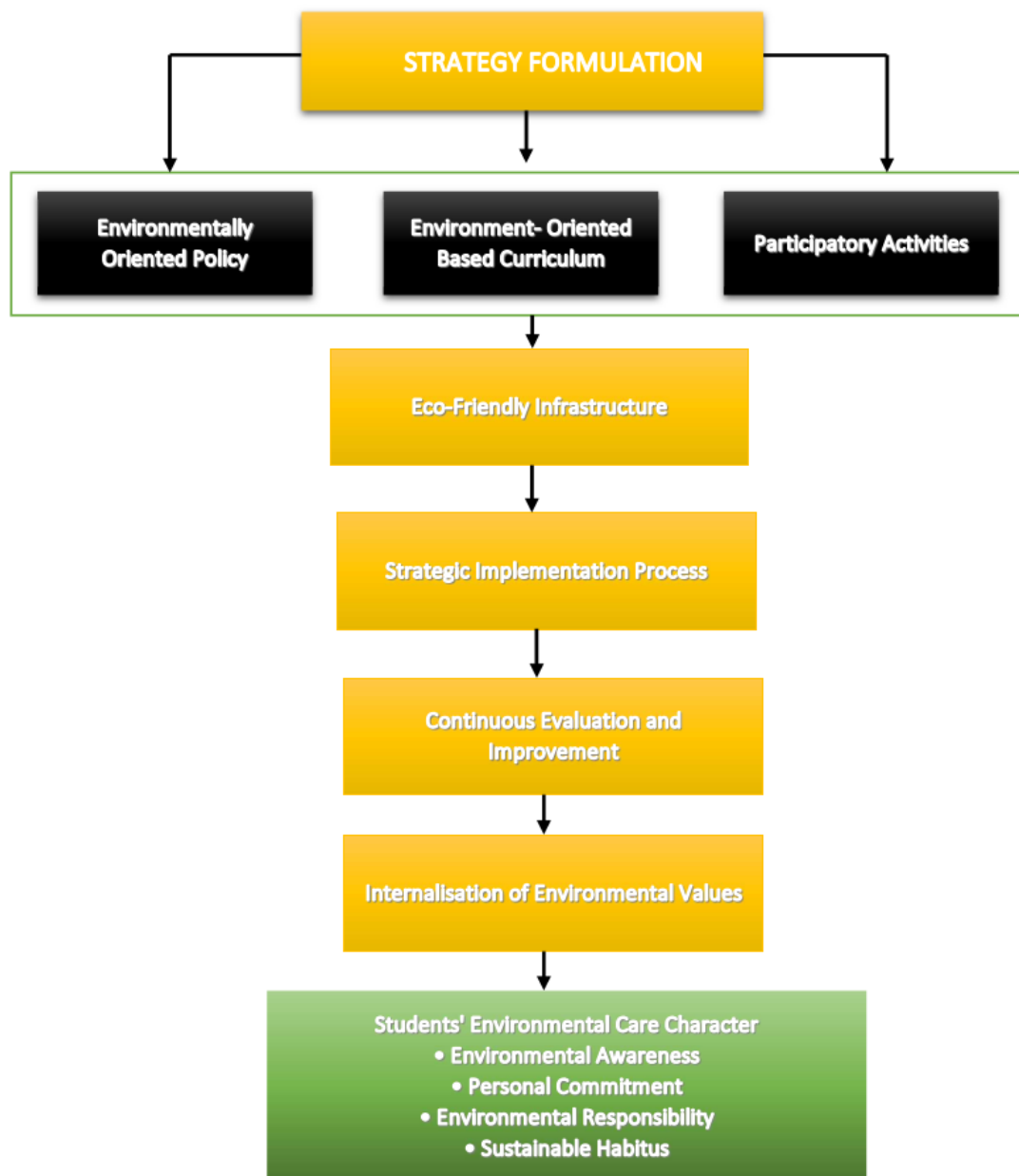
The findings³⁹ may also be interpreted using the Dynamic Capabilities perspective, which emphasizes an organization's ability to integrate, reconfigure, and continuously renew its internal capabilities in response to environmental change (Palm, 1986). MI An-Nur Cirebon demonstrates this capability through the continuous refinement of environmental programs, periodic evaluations, stakeholder collaboration, and adaptive modifications of environmental activities according to institutional needs. Rather than maintaining static environmental programs, the school continuously adjusts its strategic practices through evaluation and organizational learning (Bourdieu, 2020). Consequently, the Adiwiyata program functions not merely as an environmental initiative but as a dynamic governance system capable of sustaining organizational adaptation over time.

Furthermore, the internalization of environmental character identified in this study can be understood through Bourdieu's concept of habitus. Students' repeated participation in classroom cleaning, waste management, conservation practices, and environmental campaigns gradually transformed environmental responsibility into habitual behaviour performed without external enforcement. Rather than relying exclusively on formal instruction, environmental values became embodied through repeated social practice within the institutional environment. Simultaneously, this process also reflects Giddens' Structuration Theory, in which institutional rules (structure) and students' repeated actions (agency) continuously reproduce environmental culture. Environmental behaviour therefore emerges not simply because rules exist but because those rules are repeatedly enacted, negotiated, and reinforced through everyday school practices (Ward, 2018).

Compared with international studies conducted in East Asia and Europe, this study reveals a distinctive contribution. Environmental management programs implemented in countries such as Japan, South Korea, Finland, and Sweden generally emphasize ecological literacy, green infrastructure, institutional sustainability, and environmental governance within secular educational systems. By contrast, the Adiwiyata program implemented at MI An-Nur Cirebon integrates strategic management with Islamic educational values, thereby positioning religious principles as strategic organizational resources for strengthening environmental responsibility. This integration demonstrates that environmental governance in schools may be effectively strengthened through locally embedded cultural and religious values while maintaining internationally recognized principles of sustainable education. Consequently, this study contributes a contextual perspective that has received limited attention within the global literature on environmental educational management (Eisenhardt & Martin, 2000).

²⁶ Based on these findings, this study proposes a conceptual framework referred to as the Strategic Adiwiyata Integration Model (SAIM). The model conceptualizes environmental character development as the⁸ outcome of continuous interactions among four strategic management components: (1) environmentally oriented policies, (2) environment-based curriculum, (3) participatory environmental activities, and (4) eco-friendly infrastructure. These four components interact dynamically through the strategic management cycle consisting of strategy formulation, implementation, and evaluation,

supported by internal organizational resources, stakeholder collaboration, and local religious values. The interaction subsequently produces continuous habituation, behavioural reinforcement, and institutional learning that ultimately strengthen students' environmental awareness, commitment, responsibility, and sustainable environmental behaviour.



2 **Gambar 1. Strategic Adiwiyata Integration Model (SAIM)**

Overall, the findings confirm that the strategic management of the Adiwiyata program contributes not only to improving students' environmental behaviour but also to establishing an adaptive governance model capable of sustaining environmental education within primary schools. The proposed Strategic Adiwiyata Integration Model provides a theoretical contribution by integrating strategic management theory,

Resource-Based View, Dynamic Capabilities, and social practice perspectives into a unified framework for environmental educational management. Beyond the Indonesian context, the model offers a transferable conceptual framework that may be adapted by schools operating within different cultural, institutional, and educational settings while preserving their own local values and organizational identities.

4 CONCLUSION

This study concludes that the strategic management of the Adiwiyata program at MI An-Nur Cirebon has effectively strengthened students' environmental care character through the systematic integration of strategy formulation, implementation, and evaluation within school governance. The findings demonstrate that environmentally oriented policies, an environment-based curriculum, participatory environmental activities, and eco-friendly infrastructure interact synergistically to cultivate students' environmental awareness, personal commitment, and responsibility, thereby transforming environmental values into sustainable daily practices. These findings directly address the research objectives and extend the theoretical discourse on educational strategic management by proposing the Strategic Adiwiyata Integration Model (SAIM), which integrates strategic management principles with local Islamic values to explain how environmental character can be institutionalized through school governance. Practically, the model provides an evidence-based framework that may assist the Indonesian Ministry of Religious Affairs (Kementerian Agama), school leaders, and policymakers in strengthening and replicating sustainable environmental education programs across Islamic primary schools and other educational institutions with comparable socio-cultural contexts. Nevertheless, this study is subject to methodological limitations because it employed a single qualitative case study at one madrasah, making the findings context-specific and limiting broader statistical generalization. In addition, the interpretive nature of qualitative inquiry may introduce researcher subjectivity despite the application of triangulation, expert validation, and audit trail procedures to enhance research trustworthiness. Therefore, future studies are encouraged to examine the applicability of the proposed model across different educational settings through comparative multi-site qualitative research or mixed-methods approaches, while further investigating the long-term sustainability of strategic environmental governance and its influence on students' environmental character development across diverse cultural and institutional contexts.

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