

# Green Management Practices and Strategies: Status of Sustainable Implementation

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*Abstract* — This study explores the demographic profiles of school heads and teachers and their implications for the implementation of green management strategies in educational institutions. The findings reveal that while school heads tend to be older and predominantly female, with a high level of educational attainment, their exposure to sustainability training is limited. Despite their leadership potential, their role in driving sustainability is hindered by insufficient professional development in green management. Similarly, teachers, who are mostly female and relatively well-educated, play a key role in integrating sustainability at the classroom level but are limited by their lack of leadership roles and inconsistent professional development opportunities. The study also examines the implementation levels of green practices across various domains, including resource efficiency, sustainable infrastructure, curriculum integration, and community engagement. While there is moderate success in some areas, challenges persist in fully integrating sustainability into school operations. The research highlights the importance of policy development, institutional support, and professional development as critical factors influencing the successful implementation of green management strategies. The findings suggest that demographic characteristics alone are insufficient predictors of green practices, pointing to the need for a more comprehensive approach that involves leadership, institutional commitment, and a culture of sustainability.

*Keywords* — *Green management, school heads, teachers, sustainability, professional development*

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## I. Introduction

This study addresses the urgent need for sustainability in education amidst escalating environmental challenges such as climate change, resource depletion, and waste management. It highlights the vital role of schools in promoting environmental responsibility through green management practices and sustainable leadership. International frameworks like UNESCO's Education for Sustainable Development (ESD) and the UN's Sustainable Development Goals (SDGs) emphasize integrating sustainability into education. In the Philippines, national initiatives (e.g., Brigada Eskwela, Gulayan sa Paaralan, and RA 9512) promote eco-friendly practices, though challenges persist in implementation due to limited resources and systemic gaps. Locally, schools in Talibon I District face environmental issues and infrastructure limitations, underscoring the need for structured and context-specific sustainability frameworks. The study aims to assess current green management practices and propose an enhancement plan to guide school leaders in fostering sustainable educational environments.

### *Statement of the Problem*

This study aims to investigate the level of implementation of green management practices and strategies of school heads with the end view of proposing an enhancement plan.

Specifically, it seeks answers to the following questions:

#### 1.1.School heads

What is the demographic profile of the school administrators in terms of:

- 1.1.1 age;
- 1.1.2 sex;
- 1.1.3. highest educational attainment;
- 1.1.4 designation/position;
- 1.1.5 years of administrative experience;
- 1.1.6 number of relevant trainings and seminars attended?

#### 1.2 teachers

- 1.2.1 age;
- 1.2.2 age;
- 1.2.3 highest educational attainment;
- 1.2.4 designation/position;
- 1.2.5 years of administrative experience; and
- 1.2.6 number of relevant trainings/seminars attended?

2. As perceived by the respondent groups, what is the level of implementation of green management practices in terms of:

- 2.1 resource efficiency;
- 2.2 sustainable infrastructure;
- 2.3 curriculum integration; and
- 2.4 community engagement?

3. As perceived by the school heads, what is the level of implementation of green management strategies in terms of:
  - 3.1 vision and policy development;
  - 3.2 professional development;
  - 3.3 stakeholder collaboration; and
  - 3.4 monitoring and evaluation?
4. Is there a significant relationship between the profile of the respondent groups and the level of implementation of green management practices?
5. Is there a significant relationship between the profile of the school heads and the level of implementation of green management strategies?
6. Based on the findings, what enhancement program can be proposed?

## II. Methodology

This study employed a descriptive-correlational research design to assess the level of adoption of green practices in school management and educational leadership in relation to sustainability. The descriptive aspect profiled school administrators and measured the extent of green practice integration, while the correlational component examined the relationship between school management and leadership in promoting sustainability. Data were collected using a structured survey questionnaire administered to school administrators. Quantitative methods were used, including descriptive statistics (mean, standard deviation, and frequency distribution) for demographic analysis, and Pearson correlation analysis to determine the significance of relationships between variables. The findings served as the basis for proposing an enhancement program to strengthen green practices in school management and leadership for long-term environmental sustainability.

### *Procedure*

The research began with the development of a survey questionnaire, which was validated by experts and pilot-tested for reliability. The instrument consisted of three sections: demographic profile, level of implementation of green practices in school management, and level of implementation in educational leadership strategies, using a Likert scale from 1 (Not Implemented) to 5 (Fully Implemented). After validation, the questionnaire was administered both face-to-face and online, with participants providing informed consent voluntarily. Collected responses were checked for completeness, encoded into a data management system, and kept confidential. Descriptive statistics—frequency, percentage, mean, and standard deviation—were used to

analyze demographic data and implementation levels. Pearson's correlation coefficient and other inferential statistics determined significant relationships between variables. The findings were interpreted, presented in tables and figures, and served as the basis for proposing an enhancement program to improve sustainability practices in school management and leadership.

#### *Data Processing*

The collected data underwent systematic processing to ensure accuracy and reliability. Completed survey questionnaires were reviewed for completeness and consistency, with incomplete or inconsistent responses excluded to maintain data integrity. Verified responses were encoded into a statistical software program for organized storage and analysis. Descriptive statistics—including frequency, percentage, mean, and standard deviation—were used to summarize the demographic profile of school administrators and assess the adoption level of green practices in school management and leadership. Pearson's correlation coefficient and other inferential statistical tests were applied to evaluate the significance of relationships and differences among variables. The results were interpreted and presented through tables and figures, serving as the foundation for developing an enhancement program to improve sustainability integration in school management and leadership.

### **III. Results and Discussion**

This section presents the demographic profile of the school heads in terms age, sex, highest educational attainment, designation/position, years of administrative experience, and number of relevant trainings and seminars attended. The findings are shown below.

The demographic profile of school heads revealed that the majority were over 46 years old, indicating a highly experienced workforce, though potentially less adaptable to new sustainability practices without targeted training. Most respondents were female (73.3%), reflecting broader trends in educational leadership and offering potential strengths in community-oriented sustainability efforts. All were married, suggesting stable leadership, which may support long-term green initiatives. Educationally, the group was well-qualified, with a significant portion holding or working toward graduate degrees, though more advanced training in sustainability is needed. Most held the position of principal (66.7%), granting them the authority to lead green initiatives. The majority had 6–15 years of administrative experience, positioning them as experienced yet adaptable leaders. However, while over half had attended 4–6 relevant trainings, more extensive professional development in sustainability practices remains necessary to strengthen resource-efficient school management.

**Table 2 Frequency Distribution on the demographic profile of the school heads**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
46>	8	53.3
41-45	3	20.0
36-40	4	26.7
<b>Total</b>	<b>15</b>	<b>100.0</b>
<b>Sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	4	26.7
Female	11	73.3
<b>Total</b>	<b>15</b>	<b>100.0</b>
<b>Civil Status</b>	<b>Frequency</b>	<b>Percent</b>
Married	15	100.0
<b>Highest Educational Attainment</b>	<b>Frequency</b>	<b>Percent</b>
Doctorate Degree	3	20.0
Doctorate Degree-Units	2	13.3
Master's Degree	3	20.0
Master's Degree-Units	7	46.7
<b>Total</b>	<b>15</b>	<b>100.0</b>
<b>Designation/Position</b>	<b>Frequency</b>	<b>Percent</b>
Principal	10	66.7
School Head	5	33.3
<b>Total</b>	<b>15</b>	<b>100.0</b>
<b>Years of Administrative Experience</b>	<b>Frequency</b>	<b>Percent</b>
16>	2	13.3
11-15	5	33.3
6-10	6	40.0
1-5	2	13.3
<b>Total</b>	<b>15</b>	<b>100.0</b>
<b>Number of Relevant Trainings/Seminars Attended</b>	<b>Frequency</b>	<b>Percent</b>
10>	2	13.3
7-9	4	26.7
4-6	8	53.3
1-3	1	6.7
<b>Total</b>	<b>15</b>	<b>100.0</b>

This section presents the demographic profile of the teachers in terms of age, highest educational attainment, designation/position, years of administrative experience, and number of relevant trainings/seminars attended. The results are displayed below.

The demographic profile of teachers showed that most were aged 36 to 45, indicating a mid-career workforce likely open to innovation and sustainability efforts. The teaching force was predominantly female (95.4%), suggesting the importance of gender-responsive sustainability initiatives. A majority (92%) were married, reflecting a stable and potentially committed group capable of supporting long-term infrastructure goals. In terms of education, many held or were pursuing master's degrees, indicating strong capacity for engaging with sustainability concepts. Most teachers held the Teacher III rank, showing significant experience but limited formal authority, though still influential in classroom-level practices. Experience levels were solid, with many having 6 to 15 years of service, positioning them well to support sustained implementation.

Training exposure was moderate, with nearly half attending 4–6 relevant sessions, highlighting the need for expanded capacity-building programs to fully leverage teachers’ roles in sustainable school infrastructure.

**Table 3 Frequency Distribution on the demographic profile of the Teachers**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
46>	39	22.3
41-45	43	24.6
36-40	57	32.6
31-35	18	10.3
25-30	18	10.3
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	8	4.6
Female	167	95.4
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Civil Status</b>		
Single	14	8.0
Married	161	92.0
Total	175	100.0
Highest Educational Attainment	Frequency	Percent
Doctorate Degree	1	.6
Doctorate Degree-Units	20	11.4
Master's Degree	36	20.6
Master's Degree units	82	46.9
Bachelor's Degree	36	20.6
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Designation/Position</b>	<b>Frequency</b>	<b>Percent</b>
Master Teacher II	1	.6
Master Teacher I	6	3.4
Teacher III	132	75.4
Teacher II	8	4.6
Teacher I	28	16.0
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Years of Teaching Experience</b>	<b>Frequency</b>	<b>Percent</b>
16>	46	26.3
11-15	57	32.6
6-10	57	32.6
1-5	15	8.6
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Number of Relevant Trainings/Seminars Attended</b>	<b>Frequency</b>	<b>Percent</b>
10>	28	16.0
7-9	14	8.0
4-6	79	45.1
1-3	54	30.9
Total	175	100.0

Table 8 showed a moderate overall implementation of green management practices, with a grand mean of 3.21 (SD = 0.94). Curriculum Integration (mean = 3.68) and Sustainable Infrastructure (mean = 3.48) were highly implemented, while Resource Efficiency (mean = 2.85) and Community Engagement (mean = 2.83) were only moderately implemented. These results

supported Smith et al.'s (2022) findings that curriculum integration is often the most accessible entry point for sustainability in schools. However, the overall moderate level of implementation aligned with Anderson and Wilson's (2021) observation that limited leadership commitment and weak policy support can hinder broader sustainability efforts. The findings highlighted the need for stronger, more holistic institutional support across all domains to fully embed green management practices in schools.

**Table 8 Summary Results on school heads' perceived Level of Implementation of Green Management Practices**

Indicators	N	Mean	Std. Deviation	Interpretation
Curriculum Integration	15	3.68	0.73	Highly Implemented
Sustainable Infrastructure	15	3.48	0.98	Highly Implemented
Resource Efficiency	15	2.85	1.13	Moderately Implemented
Community Engagement	15	2.83	0.92	Moderately Implemented
<b>Grand Mean</b>	<b>15</b>	<b>3.21</b>	<b>0.94</b>	<b>Moderately Implemented</b>

Legend	Range	Description
	4.21-5.00	Fully Implemented
	3.41-4.20	Highly Implemented
	2.61-3.40	Moderately Implemented
	1.81-2.60	Partially Implemented
	1.00-1.80	Not Implemented

Table 13 indicated a moderate overall implementation of green management practices from teachers' perspectives, with a grand mean of 3.27 (SD = 0.96). Resource Efficiency received the highest rating (mean = 3.51), while Community Engagement was rated lowest (mean = 2.95). Teachers reported greater success in areas within their direct control, such as resource use and curriculum, while external collaboration and infrastructure changes were less effectively implemented. These findings supported concerns from Lee and Martinez (2023) and Gupta et al. (2024) about limited stakeholder involvement and resource constraints. The results underscored the need for improved monitoring, targeted training, and stronger partnerships to enhance sustainability efforts in schools.

**Table 13 Summary Results on Teachers the Level of Implementation of Green Management Practices**

Indicators	N	Mean	Std. Deviation	Interpretation
Resource Efficiency	175	3.51	0.71	Highly Implemented
Sustainable Infrastructure	175	3.32	0.86	Moderately Implemented
Curriculum Integration	175	3.28	1.04	Moderately Implemented
Community Engagement	175	2.95	1.22	Moderately Implemented
<b>Grand Mean</b>	175	<b>3.27</b>	<b>0.96</b>	Moderately Implemented

Table 18 showed that the implementation of green strategies was perceived as moderate, with a grand mean of 2.77 (SD = 0.94). Vision and Policy Development scored the highest (mean = 3.04), while Stakeholders Collaboration received the lowest rating (mean = 2.60), classified as partially implemented. These results indicated that although schools had begun introducing foundational strategies, consistent and comprehensive implementation remained limited. Leadership was more effective in setting vision and policy than in capacity-building, stakeholder engagement, or monitoring. The variability in responses suggested uneven progress across schools. These findings aligned with Fullan's (2019) and Sterling's (2020) call for stronger, action-oriented leadership and systemic integration to advance sustainability efforts in education.

**Table 18 Summary Results on school heads' perceived Level of Implementation of Green Management Strategies**

Indicators	N	Mean	Std. Deviation	Interpretation
Vision And Policy Development	15	3.04	1.24	Moderately Implemented
Monitoring And Evaluation	15	2.73	0.66	Moderately Implemented
Professional Development	15	2.72	1.03	Moderately Implemented
Stakeholders Collaboration	15	2.60	0.81	Moderately Implemented
<b>Grand Mean</b>	15	<b>2.77</b>	<b>0.94</b>	Moderately Implemented

Legend	Range	Description
	4.21-5.00	Fully Implemented
	3.41-4.20	Highly Implemented
	2.61-3.40	Moderately Implemented
	1.81-2.60	Partially Implemented
	1.00-1.80	Not Implemented

Table 21 showed that teachers perceived the implementation of green strategies as moderate, with a grand mean of 3.30 (SD = 0.82). Vision and Policy Development received the highest rating (mean = 3.33), while Professional Development scored the lowest (mean = 3.27), though all domains were closely rated, indicating balanced but modest implementation. The

consistency in scores suggested a shared view among teachers that sustainability efforts were present but not fully institutionalized. These findings aligned with Bronfenbrenner’s theory and UNESCO’s ESD framework, highlighting the need for a more cohesive and integrated approach to embed sustainability across all school functions.

**Table 21 Summary Results on teachers’ perceived Level of Implementation Of Green Management Strategies**

Indicators	N	Mean	Std. Deviation	Interpretation
Vision And Policy Development	15	3.33	0.76	Moderately Implemented
Professional Development	15	3.27	0.89	Moderately Implemented
Stakeholders Collaboration	15	3.30	0.73	Moderately Implemented
Monitoring And Evaluation	15	3.28	0.90	Moderately Implemented
<b>Grand Mean</b>	15	<b>3.30</b>	<b>0.82</b>	Moderately Implemented

Legend	Range	Description
	4.21-5.00	Fully Implemented
	3.41-4.20	Highly Implemented
	2.61-3.40	Moderately Implemented
	1.81-2.60	Partially Implemented
	1.00-1.80	Not Implemented

This section presents the test of the relationship between the school heads’ profile and the level of implementation of green management practices. The results are shown below.

Table 22 showed that the regression analysis revealed a moderate correlation ( $R = 0.638$ ) between school heads’ profile variables and the implementation of green management practices. However, the  $R^2$  value of 0.408 indicated that only 40.8% of the variance in implementation levels could be explained by these profiles. The negative Adjusted  $R^2$  (-0.037) suggested a weak model fit, likely due to the small sample size and limited predictive strength of the variables. The Standard Error of the Estimate (0.563) supported this modest model performance. Overall, the results implied that school heads’ demographic and professional profiles had limited explanatory power, and other factors such as institutional policy, school culture, or external support might have played a more significant role.

**Table 22 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638	.408	-.037	.563

Table 23 presented the ANOVA results, showing that the regression model was not statistically significant, with an F-value of 0.917 and a p-value of 0.529, which exceeded the 0.05 threshold. This indicated that school heads' profiles did not significantly predict the level of green management practices implementation. The regression Sum of Squares (1.747) was smaller than the residual (2.539), confirming that more variance remained unexplained by the model. Given the small sample size ( $n = 15$ ), the model lacked statistical power. These results suggested that demographic variables alone were insufficient to explain implementation levels and highlighted the potential importance of qualitative and contextual factors, such as leadership style, policy enforcement, and community engagement, in future studies.

**Table 23 ANOVA Analysis**

Model		Sum of Squares	df	Mean Square	F	p-value	Decision
1	Regression	1.747	6	.291	.917	.529	Not Significant
	Residual	2.539	8	.317			
	Total	4.286	14				

Table 33 presented a multiple regression analysis examining how various teacher profile variables related to their perceived implementation of green management strategies. Several variables showed negative beta coefficients—Highest Educational Attainment, Designation/Position, Years of Teaching Experience, and Number of Relevant Trainings/Seminars Attended—indicating inverse relationships with green management implementation. However, all these relationships were statistically non-significant, as their p-values exceeded 0.05.

Despite the lack of significance, these inverse trends suggested that higher qualifications or more experience did not necessarily lead to greater engagement in green practices. For example, more experienced teachers might have been less inclined to adopt sustainability initiatives due to ingrained habits or limited exposure to current environmental approaches. Similarly, advanced degrees alone did not guarantee sustainability practice without relevant and updated training.

These findings aligned with Bronfenbrenner's Ecological Systems Theory, which emphasized that broader systemic and contextual factors—rather than individual attributes—played a more pivotal role in shaping behavior. This explained why well-qualified or experienced teachers might not adopt green strategies unless supported by a conducive institutional environment.

UNESCO's Education for Sustainable Development (2021) framework supported this view by advocating for whole-school, systemic approaches to sustainability. It highlighted the importance of leadership, policy, collaboration, and school culture. Thus, the results underscored

the need to strengthen institutional support and systemic enablers rather than relying solely on personal teacher qualifications or experience.

**Table 33 Multiple Regression Analysis on test of relationship between the teachers’ profile and the level of implementation of green management strategies**

Variables	Beata	p-value	Decision
Age	.168	.555	Not Significant
Gender	.051	.675	Not Significant
Civil Status	.018	.897	Not Significant
Highest Educational Attainment	-.068	.770	Not Significant
Designation/ Position	-.010	.946	Not Significant
Years of teaching Experience	-.165	.444	Not Significant
Number of Relevant Trainings/Seminars Attended	-.018	.930	Not Significant

### *Discussion*

#### Demographic profile of the Respondents

The demographic profiles of school heads and teachers provided valuable insights into the potential for implementing green management strategies in schools. Most school heads were over 46 years old, bringing substantial experience that was advantageous for leadership and decision-making. However, this age group faced challenges in adopting new technologies or innovative sustainability practices without targeted training. A majority were female (73.3%) and married, which suggested stability and a community-oriented mindset, both beneficial for sustaining green initiatives.

In terms of education, many school heads held or were pursuing graduate degrees—20% had completed doctorates, and 46.7% had earned units toward a master’s degree. While this indicated a solid academic foundation, the relatively low number of completed doctorates pointed to a gap in advanced research skills for developing or assessing sustainability programs. Their administrative experience varied, with 40% having served 6–10 years. This diversity highlighted the need for tailored professional development. Participation in relevant trainings was moderate; 53.3% had attended 4–6 events, underscoring the need for expanded training access in green practices and environmental education.

Teachers’ profiles further supported the potential for green management. A large proportion were aged 36–45, indicating a mid-career group likely to be energetic and open to innovation. Most teachers were female (95.4%), suggesting sustainability efforts could benefit from aligning with the values and leadership approaches often associated with women educators. In terms of education, while only 0.6% held a doctorate, 46.9% had completed or were pursuing master’s units, and 20.6% held full master’s degrees. This demonstrated a workforce capable of engaging with sustainability concepts, particularly if institutionally supported.

Most teachers were designated as Teacher III, reflecting a strong base of experience but limited formal authority. Still, this group could influence classroom-level practices and sustainability culture. Their exposure to relevant training was also moderate—45.1% had attended 4–6 trainings, while 30.9% had attended only 1–3—indicating room for improvement. Overall, both school heads and teachers demonstrated readiness for green management implementation, but required further training and institutional support to effectively sustain and expand eco-friendly practices.

#### Level of implementation of green management practices

Tables 4 through 12 provided a comprehensive overview of the perceived implementation of green management practices by school heads and teachers, focusing on resource efficiency, sustainable infrastructure, curriculum integration, and community engagement.

In Table 4, resource efficiency was moderately implemented, with a sub-mean of 2.85. While practices like sustainable procurement and energy conservation were somewhat adopted, lower ratings in water conservation and waste segregation indicated that these essential areas were less integrated into daily operations. These findings reflected previous research (Anderson & Wilson, 2021), which pointed to institutional barriers such as limited funding and administrative support as key challenges.

Table 5 showed that school heads perceived sustainable infrastructure as highly implemented (sub-mean = 3.48). Successful integration was most apparent in procurement and renewable energy use, while eco-friendly building design lagged due to financial and technical constraints. The relatively low standard deviation (0.98) suggested consistent progress across schools, indicating structured efforts to improve environmental infrastructure.

Curriculum integration, presented in Tables 6 and 11, emerged as a key strength. School heads reported a sub-mean of 3.68 and teachers 3.51, both falling into the "highly implemented" category. Environmental topics were reportedly well embedded in the curriculum, and student participation in sustainability initiatives was robust. However, teacher training (mean = 3.39) was identified as an area needing improvement. These results supported findings by Smith et al. (2022), who highlighted curriculum-based approaches as essential for cultivating environmental awareness.

Community engagement, covered in Tables 7 and 12, was moderately implemented. School heads reported a sub-mean of 2.83, while teachers rated it slightly higher at 3.28. Though schools engaged with local communities in environmental programs, parental involvement and consistency in community partnerships remained weak points. Higher variability in responses suggested uneven implementation. As noted by Lee and Martinez (2023), enhancing external collaborations and stakeholder engagement was critical to ensuring long-term success in green initiatives.

Overall, the data illustrated that while environmental education and infrastructure improvements were gaining traction, resource efficiency and community engagement required more focused attention, supported by institutional commitment, training, and external partnerships.

#### Tests of Relationships of the Variables

The analysis revealed a moderate correlation between school heads' profiles and the implementation of green management practices, as indicated by an R value of 0.638. However, the explanatory power of the model was limited, with an  $R^2$  of only 0.408, suggesting that less than half of the variation in green practices could be attributed to these profiles. The negative Adjusted  $R^2$  (-0.037) further indicated that the inclusion of predictor variables did not improve the model's fit and may have reduced its generalizability. This implied that factors beyond demographic or professional characteristics, such as school culture or external partnerships, likely played a greater role in shaping sustainability efforts.

The ANOVA results supported these findings, with a high p-value of 0.529 and a low F-value of 0.917, confirming that the regression model lacked statistical significance. The variance in green management practices was largely unexplained by the school heads' profiles, reinforcing the notion that leadership traits alone did not account for effective sustainability implementation. Moreover, individual predictors like age, sex, educational attainment, and administrative experience failed to show statistical significance. Interestingly, some variables even exhibited negative beta coefficients, suggesting that higher educational attainment or seniority did not necessarily correlate with stronger green practices.

A subsequent regression analysis presented a seemingly stronger R value of 0.805 and an  $R^2$  of 0.648. However, the Adjusted  $R^2$  dropped to 0.384, and the ANOVA remained statistically non-significant ( $p = 0.119$ ), again suggesting overfitting. Among all variables tested, only age emerged as a significant predictor ( $p = 0.050$ ), with older school heads more likely to implement green strategies—possibly due to greater experience and long-term perspective. Nonetheless, the limited impact of all other profile variables pointed to the conclusion that demographic traits alone were insufficient to predict green management outcomes.

Similarly, analysis of teacher profiles yielded no significant results. Demographic characteristics such as age, gender, educational level, and years of experience did not significantly correlate with the level of implementation of green practices. These results further emphasized the need to shift focus from individual attributes to systemic and institutional drivers.

Overall, the findings aligned with Bronfenbrenner's Ecological Systems Theory, which emphasized the influence of broader environmental and organizational systems over individual characteristics. They also echoed UNESCO's Education for Sustainable Development (ESD) framework, which advocates for a whole-school approach to sustainability. The study concluded that building strong institutional structures, leadership commitment, and integrated policies was more effective for promoting sustainability than relying on the personal traits of school staff.

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Training, capacity-building, and collaborative governance were identified as key strategies to embed sustainability into school culture and operations.

#### IV. Conclusion

The demographic profiles of school heads and teachers offered valuable insights into the potential for implementing green management practices in schools, but they also revealed notable challenges in achieving widespread adoption. School heads—primarily older, female, and highly educated—possessed the experience to lead sustainability efforts; however, their moderate exposure to relevant training and the absence of a unified sustainability vision within schools hindered effective implementation. Similarly, teachers, who were largely female and well-educated, played an essential role in classroom-level integration of sustainability, yet their limited leadership roles and access to professional development restricted their broader impact. The analysis showed that demographic characteristics alone did not significantly predict green management outcomes. Instead, institutional and policy-related elements—such as clear sustainability objectives, sufficient resources, and active community involvement—emerged as more influential. To improve the effectiveness of green strategies, schools needed to adopt a holistic, systems-oriented approach that prioritized leadership development, expanded training opportunities, and fostered a culture of sustainability throughout the institution.

#### V. Recommendations

Based on the findings, several recommendations can be made to enhance the implementation of green management practices in schools:

- **Establish a clear sustainability vision:** School heads should lead with a unified sustainability strategy integrated into school policies and operations.
- **Enhance professional development:** Provide targeted training for school heads and teachers on green infrastructure, resource efficiency, and environmental education.
- **Empower teachers as leaders:** Offer leadership roles in sustainability projects to increase teacher involvement and grassroots impact.
- **Institutionalize sustainability policies:** Embed green practices into school operations and allocate resources for sustainable infrastructure and programs.
- **Strengthen community partnerships:** Engage parents, local communities, and external organizations in sustainability efforts.
- **Implement monitoring and evaluation:** Use audits and progress reports to track and improve green initiatives.

- **Foster a culture of sustainability:** Integrate eco-friendly values into school culture, curriculum, operations, and student activities.

#### REFERENCES

- [1] Based on the findings, several recommendations can be made to enhance the implementation of green management practices in schools:
- [2] Establish a clear sustainability vision: School heads should lead with a unified sustainability strategy integrated into school policies and operations.
- [3] Enhance professional development: Provide targeted training for school heads and teachers on green infrastructure, resource efficiency, and environmental education.
- [4] Empower teachers as leaders: Offer leadership roles in sustainability projects to increase teacher involvement and grassroots impact.
- [5] Institutionalize sustainability policies: Embed green practices into school operations and allocate resources for sustainable infrastructure and programs.
- [6] Strengthen community partnerships: Engage parents, local communities, and external organizations in sustainability efforts.
- [7] Implement monitoring and evaluation: Use audits and progress reports to track and improve green initiatives.
- [8] Foster a culture of sustainability: Integrate eco-friendly values into school culture, curriculum, operations, and student activities.