



## Charting the Course of Sustainable Development Goals Integration in Romblon State University: A Sustainability-Based Study on Students' Level of Awareness

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### ABSTRACT

The Sustainable Development Goals (SDGs), introduced by the United Nations in 2015, provide a global sustainability framework addressing social, economic, and environmental challenges. As higher education institutions play a vital role in advancing sustainability, this study examines the level of SDG awareness among students at Romblon State University and analyzes its relationship with year level. Using a descriptive-quantitative design and Structural Equation Modeling (SEM), data from 2,267 students revealed a high level of SDG awareness, particularly in SDG 3 (Good Health and Well-being) and SDG 4 (Quality Education), which were the most visible on campus. Results show that year level significantly predicts SDG awareness ( $R^2 = 0.224$ ,  $p < .001$ ), indicating that awareness improves as students' progress academically. However, gaps remain in deeper understanding, curriculum integration, and institutional support. The findings highlight the need to strengthen sustainability education through curriculum alignment, targeted awareness programs, and enhanced institutional initiatives. This study contributes to advancing sustainability practices in higher education by providing insights into improving SDG integration and student engagement.

## 1. Introduction

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, provide a comprehensive global framework for addressing pressing challenges such as poverty, inequality, environmental degradation, and climate change. These 17 interconnected goals serve as a roadmap toward achieving sustainable and inclusive development by 2030. Despite widespread global commitment, recent studies indicate that progress toward the SDGs remains uneven and insufficient due to structural, institutional, and policy-related challenges [9], [14], [4]. Global assessments further emphasize that many countries and institutions struggle with implementation, coordination, and monitoring, highlighting the urgent need for strengthened strategies and interventions [9].

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Higher education institutions (HEIs) are widely recognized as key drivers of sustainable development due to their capacity to generate knowledge, foster innovation, and shape future leaders. Universities play a critical role in advancing the SDGs through teaching, research, governance, and community engagement [2], [6], [12]. Studies suggest that effective integration of sustainability in higher education requires a holistic and systemic approach that incorporates curriculum development, institutional policies, and external partnerships [16], [21], [8]. Moreover, research highlights that universities serve as important platforms for developing sustainability competencies and influencing societal transformation [14], [6].

### *1.1 SDG Awareness Among Students*

Student awareness of the SDGs is a key indicator of the effectiveness of sustainability integration in higher education. Research shows that while students generally demonstrate awareness of the SDGs, their understanding often remains limited and varies across disciplines, institutional contexts, and exposure to sustainability education [19], [7], [1]. Students tend to be more familiar with commonly emphasized goals such as education and health, while other goals receive less attention [20], [11].

Furthermore, awareness does not necessarily translate into meaningful engagement or behavioral change. Studies reveal that although students may possess knowledge and positive attitudes toward sustainability, these do not consistently lead to sustainable behaviors [13]. Similarly, research indicates that students' understanding of sustainability concepts remains superficial despite their recognition of the importance of the SDGs [7], [10]. Additional studies show that students' perception of the SDGs extends beyond academic contexts to include their relevance in business, society, and future professional roles [20]. At the same time, empirical evidence highlights that students often demonstrate high awareness but low participation in SDG-related activities, indicating a gap between awareness and engagement [15]. Moreover, differences between perceived importance and actual performance of SDG implementation further illustrate the gap between expectations and real-world outcomes [11].

### *1.2 Integration of SDGs in Higher Education*

The integration of SDGs into higher education is essential for enhancing student awareness and engagement. Research indicates that embedding sustainability into teaching, research, and institutional operations significantly improves students' understanding and participation in sustainability initiatives [6], [16], [5]. Curriculum integration enables students to connect theoretical knowledge with real-world challenges, thereby strengthening their sustainability competencies and problem-solving skills [5].

In addition to curriculum-based approaches, institutional practices such as sustainability programs, research initiatives, and community partnerships provide opportunities for experiential learning [18], [17]. Universities that actively implement sustainability initiatives create environments that encourage engagement and reinforce sustainability values. However, studies reveal that SDG

integration remains uneven across institutions, with some universities focusing more on specific goals while neglecting others [4], [21], [8]. This inconsistency can limit students' ability to develop a comprehensive understanding of sustainability and reduce the effectiveness of sustainability education.

### *1.3 Barriers to SDG Awareness and Implementation*

Despite increasing awareness of the SDGs, several barriers continue to hinder their effective integration in higher education. One major challenge is the limited depth of students' understanding, which affects their ability to apply sustainability concepts in practical contexts [19], [7]. While students may recognize the importance of sustainability, gaps remain in translating knowledge into action.

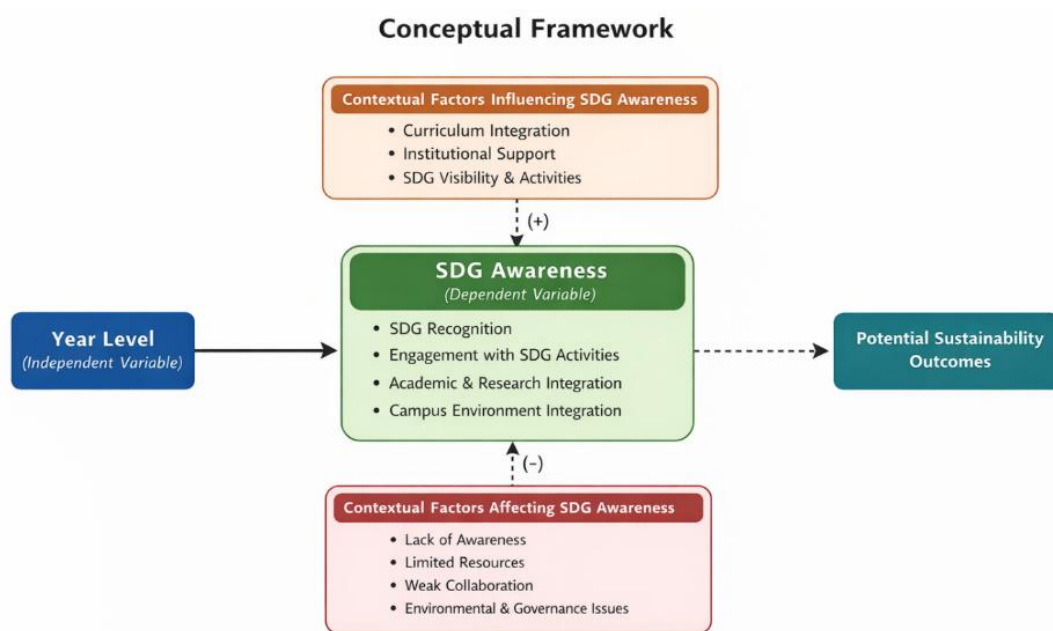
Institutional challenges also play a critical role. Limited resources, lack of interdisciplinary collaboration, and insufficient institutional support can restrict the implementation of sustainability initiatives [17], [6]. Additionally, broader systemic issues such as governance limitations, policy constraints, and regional disparities influence the effectiveness of SDG integration [9], [14]. Studies further indicate that the absence of standardized frameworks and measurement tools contributes to inconsistencies in implementation across institutions [2], [17]. Moreover, even among university academics, positive perceptions of the SDGs do not always translate into confidence in achieving them, highlighting the need for stronger institutional commitment [3].

### *1.4 Framework of the Study*

This study is grounded in the premise that students' academic progression influences their awareness of the SDGs. As students advance through different year levels, they are exposed to increasing levels of sustainability-related knowledge, experiences, and institutional initiatives. In this framework, year level is considered the independent variable representing cumulative academic exposure.

SDG awareness is conceptualized as a multidimensional construct that includes recognition, engagement, academic integration, and campus-based experiences. These dimensions reflect the cognitive, behavioral, and experiential aspects of sustainability awareness. Previous studies support the idea that awareness develops progressively through curriculum exposure, institutional engagement, and experiential learning [2], [5], [13].

In addition, contextual factors such as institutional support and existing barriers are recognized as influencing SDG awareness. While these factors are not directly included in the structural model, they provide a broader understanding of the institutional environment in which students develop their awareness and engagement with sustainability [17], [6].



**Fig. 1.** Conceptual Framework of the study.

### 1.5 Research Gap and Significance

Although previous studies have examined SDG awareness in higher education, there is limited research exploring how academic progression (year level) influences students' awareness, particularly within the Philippine university context. In addition, only a few studies have employed structural modeling approaches, such as Structural Equation Modeling (SEM), to analyze this relationship.

This study addresses these gaps by providing empirical evidence on SDG awareness among students at Romblon State University and examining the predictive role of year level. The findings contribute to the growing body of literature on sustainability education and offer practical insights for strengthening SDG integration in higher education institutions. By identifying gaps in awareness and engagement, the study supports the development of targeted strategies to enhance sustainability education and institutional practices

### 1.6 Objectives of the Study

This study aims to:

1. Assess the level of SDG awareness among students in terms of:
  - SDG recognition
  - Engagement with SDG-related activities
  - Academic and research integration
  - Campus environment integration
2. Identify the most visible SDGs within the university

3. Examine the barriers affecting SDG awareness
4. Determine whether year level significantly predicts SDG awareness

## **2. Methodology**

### *2.1 Research Design*

This study employed a descriptive-quantitative research design to examine the level of awareness of the Sustainable Development Goals (SDGs) among students and to determine the relationship between academic progression (year level) and SDG awareness. The descriptive approach was used to assess the current level of awareness, while the quantitative design enabled statistical analysis of relationships among variables. This design is appropriate for studies that aim to describe trends and test relationships using measurable data.

### *2.2 Participants and Sampling*

The participants of the study consisted of 2,267 students from Romblon State University across different year levels and academic programs. A convenience sampling technique was employed due to accessibility and availability of respondents during the data collection period. The sample included students from various colleges, ensuring representation across different academic disciplines and levels.

### *2.3 Research Instrument*

Data were collected using a structured survey questionnaire designed to measure students' awareness of the Sustainable Development Goals (SDGs). The instrument was organized into sections corresponding to the key dimensions of SDG awareness, namely SDG recognition, engagement with SDG-related activities, academic and research integration, and campus environment integration. Each item was measured using a Likert scale, allowing respondents to indicate their level of agreement or awareness. The questionnaire was developed based on existing literature on sustainability education and SDG awareness and was reviewed to ensure clarity, relevance, and alignment with the objectives of the study.

### *2.4 Data Collection Procedure*

The data collection process was conducted through an online survey distributed to students via institutional communication channels. Participation was voluntary, and respondents were informed about the purpose of the study. No personal identifiers were collected, and all responses were treated with confidentiality and used solely for research purposes.

### *2.5 Data Collection Procedure*

Descriptive statistics, including mean and frequency distribution, were used to assess the level of SDG awareness among students. To examine the relationship between year level and SDG awareness, Structural Equation Modeling (SEM) was employed using SMART PLS 4.0.

The structural model was used to test the predictive relationship between the independent variable (year level) and the dependent variable (SDG awareness). The coefficient of determination ( $R^2$ ) and path coefficients ( $\beta$ ) were analyzed to evaluate the strength and significance of the relationship.

Institutional support and barriers were considered as contextual factors in the conceptual framework; however, these variables were not included in the SEM analysis and were used only for interpretative purposes.

### *2.5 Ethical Consideration*

This study adhered to ethical research standards. Participation was voluntary, and respondents provided informed consent prior to answering the survey. No personal identifiers were collected, and all data were securely stored and used exclusively for research purposes. The study ensured confidentiality, anonymity, and responsible data handling throughout the research process.

## **3. Results**

### *3.1 Level of SDG Awareness*

Assessing the level of Sustainable Development Goals (SDGs) awareness is essential in evaluating how effectively the university contributes to sustainability education and student engagement. The findings reveal that students of Romblon State University demonstrate a high level of SDG awareness, with an overall mean score of 4.45 (SD = 0.81). This indicates that students are generally knowledgeable about the SDGs and recognize their relevance within the academic and institutional context.

As presented in Table 1, students exhibit a very high level of awareness in terms of recognizing the importance of the SDGs (M = 4.73, SD = 0.48), suggesting a strong appreciation of sustainability issues and their global significance. Similarly, familiarity with the SDGs obtained a very high rating (M = 4.53, SD = 1.29), reflecting that students are well-exposed to the existence and general framework of the SDGs. However, the lowest score within this dimension was observed in consciousness and deeper understanding of the SDGs (M = 4.08, SD = 0.67). Although still interpreted as high, this result indicates that students' awareness may be more surface-level, with room for improvement in terms of critical understanding and application of sustainability concepts.

In terms of engagement with SDG-related activities, students reported a high level of involvement (M = 4.41, SD = 1.41). The highest engagement was observed in student-led SDG initiatives (M = 4.53, SD = 1.28), highlighting the active role of students in promoting sustainability within the university. This suggests that student-driven efforts are effective in fostering awareness and participation. On the other hand, participation in university-provided SDG activities received a relatively lower score (M = 4.29, SD = 1.53), indicating that institutional initiatives may not be fully optimized or consistently experienced by all students.

For SDG integration in academic and research activities, the overall mean score was 4.26 (SD = 0.65), indicating that sustainability concepts are generally embedded within university operations. The highest score was observed in the incorporation of SDGs into institutional operations (M = 4.45, SD = 0.56), reflecting strong administrative alignment with sustainability goals. However, the

inclusion of SDG topics in courses received the lowest rating ( $M = 4.08$ ,  $SD = 0.79$ ), suggesting that curriculum-level integration may still be inconsistent across programs. This highlights the need to further embed sustainability into teaching and learning processes.

Similarly, the campus environment dimension yielded a high overall mean of 4.23 ( $SD = 0.81$ ). The university's encouragement of student participation in SDG-related activities received the highest rating ( $M = 4.29$ ,  $SD = 0.62$ ), indicating strong institutional support for student engagement. Conversely, the presence of SDG-focused student organizations received the lowest score ( $M = 3.94$ ,  $SD = 0.89$ ), suggesting that while participation is encouraged, the structural support for sustainability-focused student groups may be limited. Overall, these findings indicate that while SDG awareness is high, opportunities exist to strengthen deeper engagement and institutional integration.

**Table 1**

The Level of Sustainable Development Goals' Awareness of Romblon State University Students

<b>Sustainable Development Goals (SDGs) recognition</b>	<b>Mean</b>	<b>SD</b>	<b>DI</b>
1. Familiarity with the Sustainable Development Goals (SDGs).	4.53	1.29	VH
2. Consciousness and understanding of the SDGs.	4.08	0.67	H
3. Recognition on the importance of SDG.	4.73	0.48	VH
<b>Total</b>	<b>4.45</b>	<b>0.81</b>	<b>H</b>
<b>Engagement with SDG Related Activities</b>	<b>Mean</b>	<b>SD</b>	<b>DI</b>
1. The students lead SDG-related activities or initiatives at the university	4.53	1.28	VH
2. The university provides SDG-related activities or initiatives at the university	4.29	1.53	H
<b>Total</b>	<b>4.41</b>	<b>1.41</b>	<b>H</b>
<b>SDG Integration in Academic and Research</b>			
1. The university incorporates SDGs into its operations such as academic, research and administration.	4.45	0.56	H
2. The university courses includes topics related to the SDGs.	4.08	0.79	H
4. There is an integration of SDG topics into the courses.	4.19	0.65	H
5. SDGs are integrated into the college/institute academic offerings.	4.35	0.58	H
6. The college/institute conducts SDG related research or projects.	4.22	0.68	H
<b>Total</b>	<b>4.26</b>	<b>0.65</b>	<b>H</b>
<b>SDG Campus Environment</b>			
1. Visibility of information and dissemination materials about the SDGs in the campus	4.10	0.71	H
2. There is a presence of student organizations focused on SDGs in the college/institute.	3.94	0.89	H
3. The university faculty members discuss SDGs in the department.	4.10	0.73	H
4. The college/institute organizes events or activities related to the SDGs.	4.26	0.64	H
5. The college/institute encourages the students to participate in SDG-related activities.	4.29	0.62	H
<b>Total</b>	<b>4.23</b>	<b>0.81</b>	<b>H</b>

Legend: 4.5-5.0= Very High (VH),  
 3.5-4.49= High (H)  
 2.5- 3.49=Moderate (M)  
 1.5-2.49=Low (L)  
 0-1.49=Very Low (VL)

### 3.2 Visibility of SDGs in the University

The visibility of SDGs within the university environment, as perceived by students, varies across the 17 goals, as shown in Table 2. The most visible SDGs are SDG 4 (Quality Education) (62.37%), followed by SDG 3 (Good Health and Well-being) (58.54%) and SDG 5 (Gender Equality) (53.11%). These findings reflect the university’s strong emphasis on academic development, student welfare, and inclusive practices.

In contrast, the least visible SDGs include SDG 14 (Life Below Water) (19.85%), SDG 15 (Life on Land) (22.32%), and SDG 10 (Reduced Inequalities) (24.13%). These results suggest that environmental and inequality-related goals are less emphasized within the university context, which may limit students’ exposure to these critical aspects of sustainable development.

The variation in visibility indicates an imbalance in institutional focus, where certain SDGs are more prominently integrated into university programs and initiatives. This uneven exposure may affect students’ ability to develop a comprehensive understanding of sustainability, highlighting the need for a more balanced and inclusive approach to SDG integration across all goals.

**Table 2**  
 Visibility of Sustainable Development Goals (SDGs) in the RSU Community

Sustainable Development Goals (SDGs)	Frequency (f)	Percentage (%)
SDG 1: No Poverty	1082	47.73
SDG 2: Zero Hunger	774	34.14
SDG 3: Good Health and Well-being	1327	58.54
SDG 4: Quality Education	1414	62.37
SDG 5: Gender Equality	1204	53.11
SDG 6: Clean Water and Sanitation	994	43.85
SDG 7: Affordable and Clean Energy	698	30.79
SDG 8: Decent Work and Economic Growth	658	29.03
SDG 9: Industry, Innovation, and Infrastructure	618	27.26
SDG 10: Reduced Inequalities	547	24.13
SDG 11: Sustainable Cities and Communities	617	27.22
SDG 12: Responsible Consumption and Production	578	25.50
SDG 13: Climate Action	774	34.14
SDG 14: Life Below Water	450	19.85
SDG 15: Life on Land	506	22.32
SDG 16: Peace and Justice Strong Institutions	694	30.61
SDG 17: Partnerships for the Goals	660	29.11
<b>Total</b>	<b>2267</b>	<b>100</b>

### 3.3 Barriers to SDG Awareness

The barriers encountered by students in addressing SDG awareness are presented in Table 3. The most significant barrier identified is the lack of awareness and understanding about the SDGs, reported by 78.78% of respondents. This finding highlights a critical gap in deeper comprehension, despite the overall high level of awareness observed among students.

Other major barriers include lack of collaboration and cooperation (51.48%) and insufficient funding and resources (41.42%), both of which limit the effectiveness and sustainability of SDG-related initiatives. These findings suggest that institutional and organizational factors play a significant role in shaping students' engagement with sustainability.

Additionally, systemic issues such as environmental degradation and climate change (40.45%) and corruption and unethical practices (39.66%) were identified as important challenges. Although less frequently reported, political conflicts and instability (26.69%) and inequality and injustice (26.64%) remain relevant concerns that may influence sustainability efforts. Overall, these results indicate that both individual-level and systemic barriers affect the development of SDG awareness among students.

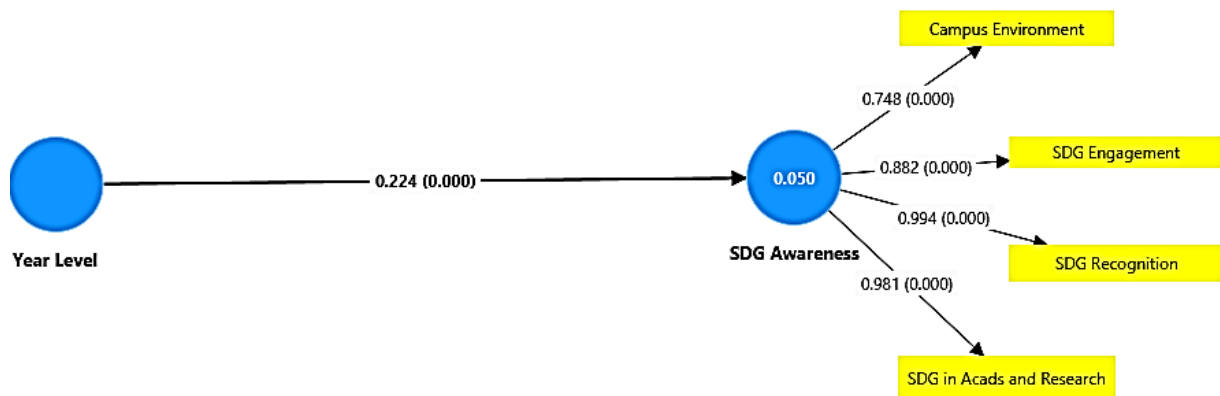
**Table 3**  
Barriers Encountered by Students in Addressing SDG Awareness

Barriers encountered	Frequency (f)	Percentage (%)
1. Lack of awareness and understanding about the SDGs	1786	78.78
2. Insufficient funding and resources	939	41.42
3. Political conflicts and instability	605	26.69
4. Inequality and injustice	604	26.64
5. Lack of collaboration and cooperation	1167	51.48
6. Environmental degradation and climate change	917	40.45
7. Corruption and unethical practices	899	39.66
<b>Total</b>	<b>2267</b>	<b>100</b>

### 3.4 Structure Model Results

The structural model analysis reveals a statistically significant positive relationship between students' year level and SDG awareness, with a path coefficient of  $\beta = 0.224$  ( $p < .001$ ). This indicates that students' awareness of sustainability increases as they progress through their academic levels. The coefficient of determination ( $R^2 = 0.224$ ) shows that approximately 22.4% of the variance in SDG awareness is explained by year level. This reflects a moderate level of predictive power, suggesting that academic progression contributes meaningfully to SDG awareness but is not the sole influencing factor.

These findings imply that as students advance in their studies, they are exposed to more sustainability-related content, experiences, and institutional initiatives, which enhance their awareness. However, the moderate strength of the relationship also suggests that other factors, such as institutional support, curriculum integration, and student engagement, may also play important roles in shaping SDG awareness.



**Fig. 2.** The Structural Relationship Between Students' Year Level and SDG Awareness.

#### 4. Discussion

The findings of this study indicate that students demonstrate a high level of awareness of the SDGs, particularly in terms of recognition and engagement. This result is consistent with existing literature highlighting the important role of higher education institutions in promoting sustainability awareness through curriculum integration and institutional initiatives [12], [6]. However, despite this high level of awareness, the results reveal a gap between recognition and deeper understanding. This finding aligns with previous studies showing that students often possess general awareness but lack the critical understanding needed to apply sustainability concepts effectively [7], [19].

The study also shows that students are actively engaged in SDG-related activities, particularly through student-led initiatives. This reflects the growing importance of student participation in sustainability efforts and the role of higher education in fostering such engagement [18]. However, the comparatively lower engagement in institutional initiatives suggests that universities may need to strengthen the accessibility and effectiveness of their sustainability programs. This supports existing research emphasizing the importance of structured institutional support and well-designed sustainability initiatives [16], [17].

In terms of SDG visibility, the findings indicate that certain goals, particularly those related to education and health, are more prominent than others. This uneven visibility is consistent with previous studies indicating that institutions often prioritize specific SDGs, which may result in an imbalanced understanding of sustainability among students [20], [4]. Addressing this imbalance is essential to ensure a more comprehensive and holistic approach to sustainability education.

The barriers identified in this study, including limited depth of awareness and institutional constraints, are also consistent with existing literature on SDG implementation challenges [17], [9]. These findings highlight the complexity of integrating sustainability into higher education and emphasize the need for coordinated strategies that address both individual and institutional factors.

Furthermore, the results confirm that year level has a significant influence on SDG awareness, indicating that students' awareness increases as they progress academically. This supports previous research suggesting that sustainability awareness develops over time through continuous exposure to academic content, institutional initiatives, and experiential learning opportunities [5], [13], [2]. Higher-level students are more likely to engage with sustainability concepts through coursework, research, and practical experiences, thereby enhancing their understanding.

Additionally, the findings align with studies emphasizing that knowledge and attitudes alone are not sufficient to drive sustainable behavior, highlighting the importance of experiential learning and practical engagement [13], [15]. This reinforces the need for higher education institutions to adopt more transformative approaches to sustainability education that bridge the gap between awareness and action.

The findings reinforce the critical role of higher education institutions in shaping sustainability awareness among students. The presence of gaps in understanding, uneven SDG visibility, and institutional barriers indicates the need for more integrated and strategic approaches. Strengthening curriculum alignment, enhancing institutional support, and promoting balanced SDG representation can contribute to more effective sustainability education and better prepare students to address global sustainability challenges.

## **5. Conclusions**

The assessment of Sustainable Development Goals (SDGs) awareness among students of Romblon State University (RSU) indicates a generally high level of awareness, particularly in recognizing the importance of the SDGs. Students demonstrate strong familiarity with the goals and acknowledge their relevance to sustainable development. However, despite this high level of recognition, a gap exists between awareness and deeper understanding. While students are able to identify the importance of the SDGs, their comprehension of the interconnectedness and practical application of the goals remains limited, suggesting that awareness is primarily surface-level.

In terms of engagement and integration, students exhibit strong participation in SDG-related activities, particularly those initiated by students themselves, reflecting active involvement in sustainability efforts. However, engagement in university-provided initiatives is relatively lower, indicating the need for stronger institutional support. Similarly, while SDGs are integrated into certain academic and institutional practices, their inclusion across curricula remains inconsistent. The visibility of SDGs also varies, with goals related to education, health, and gender equality being more prominent, while environmental and inequality-related goals receive less attention, highlighting an imbalance in institutional focus.

The study also identifies key barriers affecting SDG awareness, including lack of understanding, limited collaboration, and insufficient resources, which hinder effective implementation. Furthermore, the findings reveal that year level has a significant positive influence on SDG awareness, indicating that students' awareness increases as they progress academically. However, the moderate strength of this relationship suggests that factors such as curriculum design, institutional support, and student engagement also play important roles in shaping students' sustainability awareness.

## Author Contributions

Conceptualization, D.D.L., G.E.M.L., and J.R.C.M.; methodology, D.D.L. and J.R.C.M.; software, G.V.V.B.; validation, D.D.L., G.E.M.L., and G.V.V.B.; formal analysis, D.D.L., J.R.C.M., and G.V.V.B.; investigation, D.D.L. and J.R.C.M.; resources, G.V.V.B.; data curation, D.D.L., J.R.C.M., and G.V.V.B.; writing—original draft preparation, D.D.L., J.R.C.M., and G.V.V.B.; writing—review and editing, D.D.L., G.E.M.L., and G.V.V.B.; visualization, D.D.L., J.R.C.M., and G.V.V.B.; supervision, G.E.M.L.; project administration, D.D.L. All authors have read and agreed to the published version of the manuscript.

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## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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