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An Analysis Of The Implementation Of Sustainable Among University Studens

Windianti¹, Hamsirah² and Feri Maulana³¹Faculty of Economics and Business, Palopo State Islamic Institute; windianti401@gmail.com²Faculty of Economics and Business, Palopo State Islamic Institute; hamsira04@gmail.com³Faculty of Economics and Business, Palopo State Islamic Institute; ferimaulana0426@gmail.com*Correspondence: windianti401@gmail.com

Abstract: This study examines the implentation of sustainble lifestyles among university students in Indonesia, focusing on the challenfes faced in achieving the Sustainable Development Goals (SDGs). The findings reveal that despite Indonesia's SDG index ranking dropping from 75th in 2023 to 78th 2024, students awareness of environmental issues has shown positive trajectory. A quantitative research method was employed, utilizing primary data conducted through questionnaires distributed to respondents, the study measured key indicators encompassing care, proactivity, productivity, and resource management intelligence. The results indicate that students with high levels environmental awareness are more likely to actively adopt environmentally frendly practices. The article highlights the importance of integrating environmental education into academic curricula and emphasizes the need for government support in providing infrastructure that facilitates sustainable living. By doing so, it is expected that university students will play an active role in fostering a more sustainable amd improved environment.

Keywords: Sustainable Lifestyles; University Students; SDGs; Environmental Awareness; environmental Education.

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1. Introduction

In 2024, Indonesia experienced a significant decline in its Sustainable Development Goals (SDG) Index ranking, falling ti the 78th position with a score of 69.55. This represents a drop from the previous year, when Indonesia ranked 75th with a score of 69.92. This decline highlights the substantial challenges the contry faces in achieving sustainabel development goals, particularly in environmental aspects. Notably,Indonesia was indentified as the second-largest contributor to global pollution (Firdaus & Wandira, 2022). Additionally, inadequate waste management remains a pressing environmental concern (Nanda et al., 2024). According to the report, Indonesia ranks highest among southeast Asian countries in terms of pollution levels, with daily PM2.5 concentrations reaching 30.4 $\mu\text{g}/\text{m}^3$ nationally and 36.3 $\mu\text{g}/\text{m}^3$ in Jakarta. Despite these alarming figures, there have been improvements in air quality compared to the previous year, with national levels showing an 11% improvement and Jakarta recording a 7% improvement (Neltje & Cherya, 2023).

Awareness of the importance of environmental preservation has led to the development of environmental diplomacy as a strategy to combat enviromental degradation. Prompted by the

Intergovernmental Panel on Climate Change (IPCC), the United Nations has declared that climate change, primarily caused by human activities, represents a critical issue that threatens the sustainability of human life. Given that climate change cannot be resolved by any single government or nation, the global community has increasingly engaged in discussions on prevention and mitigation strategies (Prastiwi et al., 2023). Despite the numerous database surrounding climate change, one certainty emerges: addressing climate change requires collective action, involving nations working together through agreements, cooperation, and collaboration. Environmental diplomacy serves as a vital mechanism in uniting diverse stakeholders to address and prevent transboundary environmental issues (Firdaus & Wandira, 2022).

To achieve the Sustainable Development Goals (SDGs), public awareness and active participation are essential in supporting the nation's aspiration. One effective approach is incorporating environmental aspects into Indonesia's education curriculum. Education plays a crucial role as it serves as a foundational tool for shaping habits and behaviors that promote environmental awareness. Integrating environmental issues into the curriculum has the potential to foster sustainable lifestyles within society (Safitri et al., 2022).

Previous research by Muliasari and Efendi (2024) demonstrated that a comprehensive approach involving education, practical actions, and research can produce significant positive impacts in efforts to preserve the environment and promote sustainable living. Seminars and workshops that provide platform for sharing knowledge and experiences have proven effective in raising awareness and improving understanding of environmental issues. This aligns with earlier findings, which emphasize that integrating environmental education with tangible action can lead to long-term behavioral change in society (Keberlanjutan & Kendahuluan, 2023).

Addressing the issues outlined above, the study seeks to conduct an in-depth analysis of the implementation of sustainable lifestyles among university students, who predominantly belong to Generation Z (born between 1997 and 2021). The selection of the sample for this research is based on demographic considerations, specifically the distribution of Indonesia's population by generation. Generation Z constitutes 24.97% of the population making them the largest generational group in the country. As the future leaders and decision-makers of Indonesia, the younger generation is expected to play a pivotal role in shaping the nation's trajectory. Their active engagement in understanding and addressing sustainability. By enhancing their awareness, knowledge, and critical thinking skills, young people can contribute to developing effective solutions and driving positive change (Mubarak, 2024).

2. Methodology

This study employs a quantitative research method, utilizing primary data collected through questionnaires distributed to 100 students. Quantitative research involves the process of generating knowledge by using numerical data as an analytical tool to understand the phenomena under investigation. The research was conducted in Palopo, specifically at the Faculty of Islamic Economics and Business, IAIN Palopo, over a one month period.

The population in this study comprises all subjects within the scope of the research, namely 107 students from Faculty of Islamic Economics and Business at IAIN Palopo. For sampling a non-probability sampling method was applied, using the convenience sampling technique. As a result, the total sample size for this study is 107 students. This approach is expected to effectively represent the characteristics of the population.

2.1 Data Collection Tools

2.1.1. Data Collection Instrument

The primary data collection instrument used in this study is a questionnaire. A questionnaire is a set of written questions designed to gather information from respondents, either as a the reports of their experiences or as an account of their knowledge. This study employs a linear scale ranging from 1 (strongly agree) to 4 (strongly disagree) to capture respondents' perspectives effectively.

1. Validity Test

Validity is derived from the term *validity*, which refers to the accuracy or correctness of a measurement tool. It represents the extent to which an instrument precisely and accurately performs its intended measurement function. Validity is defined as an index that indicates whether a measurement tool truly measures what it is intended to measure (Ono, 2020). In this study, the measurement tool refers to the questions included in the questionnaire. The validity test was conducted through item analysis, where the scores of each question item were correlated with the total score. An indicator in the questionnaire is considered valid if the calculated correlation coefficient (r -calculated) exceeds the critical value of r -table. Additionally, question items are

deemed valid if their validity value exceeds 0.4. This threshold indicates that the question effectively measure the intended constructs.

The results of the validity test for the questionnaire on the variable of sustainable lifestyle among students are as follows:

Tabel 1. Validity Test Results

Indicator	Question Item	Validity Value	Description
Care	1	0.542	Valid
	2	0.719	Valid
	3	0.588	Valid
	4	0.660	Valid
Proactive	5	0.578	Valid
	6	0.628	Valid
	7	0.639	Valid
	8	0.630	Valid
Productive	9	0.460	Valid
	10	0.634	Valid
	11	0.618	Valid
	12	0.722	Valid
Intelligence	13	0.732	Valid
	14	0.811	Valid
	15	0.805	Valid
	16	0.805	Valid

Based on the information presented in the table, all indicators or question items can be categorized as valid for measuring the intended variables: care, proactive behavior, productivity, and intelligence. This conclusion is supported by the following points: validity value (r-calculated) for each indicator, the correlation coefficient (r-calculated) exceeds the critical value of r-table. This indicates a significant relationship between each question item and the total score of its respective variable. Comparison with r-table: The fact that r-calculated values are greater than r-table values at a specific level of significance demonstrates that these indicators effectively measure the intended concepts. Internal consistency: Each question item shows a strong correlation with the construct it is intended to measure, supporting the content validity of the measurement tool. Validity criteria: According to widely accepted standards, validity values exceeding 0.3 or 0.4 are considered sufficient for inclusion in a measurement instrument. Thus, all indicators in the table are deemed valid and appropriate for measuring the variables of interest: care, proactivity, productivity, and intelligence.

2. Reliability Test

The reliability test is used to determine the consistency of a measurement instrument over time, as reliability represents the extent to which the instrument can be trusted. Reliability is indicators by an index that reflects the dependability of the measurement tool. A Cronbach's alpha value greater than 0.40-0.60 is considered to indicate that the instrument is sufficiently reliable or dependable (Widi, 2011).

Table 2. Reliability Test
Reliability test results for students' sustainable lifestyles

Variable	Cronbach's alpha	Interpretation
Students' sustainable lifestyle	0.959	Very high

Source: spss 27,2024

This value reflects the instrument's internal reliability. The reliability test yielded a cronbach's alpha 0.959, significantly exceeding the threshold of 0.6. Consequently, the questionnaire is considered reliable and appropriate for use as a data collection tool, as it consistently measures the same construct.

The data collection method used to assess students' behavior regarding sustainable lifestyles involved distributing questionnaires directly to the respondents. Prior to distribution, the researchers provided the respondents with relevant information about the study and the purpose of the questionnaire. Then, the operational definitions referenced in this study are outlined in the table below:

Table 3. Operational Definitions

Dimension	Definition	Indicators
Care	Refers to a heightened awareness of the environment and the impact of human activities on it. This includes attention to the use of natural resources, waste disposal, and pollution.	1. Attention to natural resources 2. Usage of natural resources 3. waste disposal practices 4. Awareness of pollution impact
Proactivity	Involves actively taking steps to mitigate negative environmental impacts, such as adopting renewable energy sources, reducing plastic waste, and implementing actions to lower carbon footprints.	1. Use of renewable energy sources 2. Reduction of plastic waste 3. Actions to reduce carbon footprint 4. Participation in carbon emission reduction programs
Productivity	Refers to efforts aimed at fostering economic sustainable business practices, organic farming, or developing environmentally friendly product and services.	1. Planting greenery around homes or residences 2. Encouraging others to protect the environment 3. Managing natural resources to meet personal needs 4. Participation in environmental conservation communities
Intelligence	Involves making informed, knowledge-based decisions in our lifestyle choices. This encompasses understanding the products we use, minimizing carbon footprints, and adopting green technologies.	1. Ability to differentiate between environmentally friendly and non-friendly products 2. Use of eco-friendly products 3. Understanding differences between eco-friendly products 4. Adoption of technologies to reduce waste

Source: Researcher (2024)

2.2. Research Results and Discussion

3. Results

Based on the data analysis conducted, information was obtained regarding the values associated with each indicator used to assess sustainable lifestyles among university students. These results provide a more detailed understanding of how each indicator contributes to the overall measurement, thereby facilitating a deeper evaluating and comprehension of sustainable behavioral patterns.

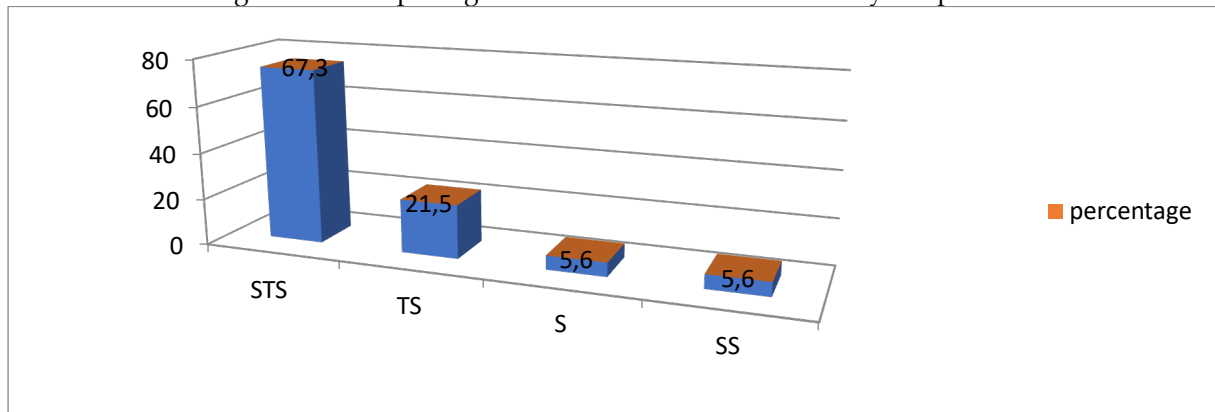
Table 4: Results of the indicator scores for sustainable lifestyle behaviors among university students.

No	Indicator	Average score	Description
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1	Attention to natural resources	1.588.785	Very poor
2	Utilization of natural resources	1.943.925	poor
3	Waste disposal	164.486	Very poor
4	Impact of pollution	1.654.206	Very poor
Total		1.707.944	Very poor

Source: Processed primary data

The following bar chart depicting the concern for sustainable lifestyle is presented in table 4.



Source: Processed primary data

In the care dimension, table 4 illustrates that the majority of respondents expressed disagreement with sustainable lifestyle behaviors, with 72 individuals (67.3%) falling into the strongly disagreed (STS) category. Meanwhile, 23 respondents (21.5%) were classified as disagree (TS) 6 respondents (5.6%) as agreed (S), and another 6 respondents (5.6%) as strongly agreed (SS).

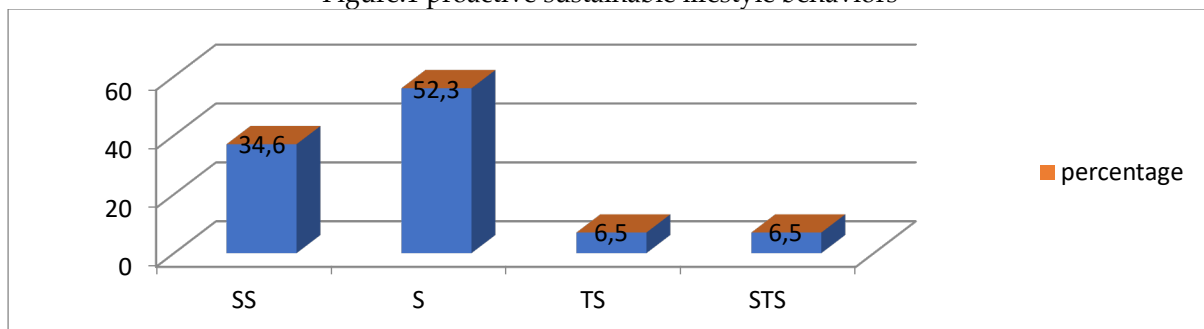
Table 5: Results of the indicator scores for proactive sustainable lifestyle behaviors among university students.

No	indicator	Average score	Description
1	Renewable energy	2.82243	Good
2	Plastic waste reduction	2.990654	Good
3	Carbon usage reduction	2.775701	Good
4	Support for carbon emission programs	2.943925	Good
Total		2.883178	Good

Source: Processed primary data

The following bar chart depicting proactive sustainable lifestyle behaviors is presented in table 5.

Figure.1 proactive sustainable lifestyle behaviors



Source: Processed primary data

Table 5 shows that a significant portion of respondents exhibited a proactive approach to sustainable lifestyles, with 37 individuals (34.6%) categorized as strongly agreed, while 56 individuals

(52.3%) were classified as agreed. Additionally, 7 respondents (6.5%) fell into the disagreed category, and another 7 respondents (6.5%) were classified as strongly disagreed.

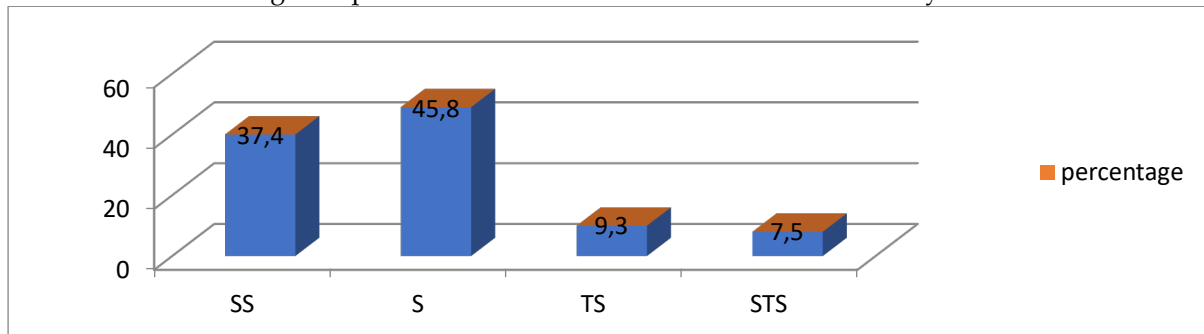
Table 6: indicator scores for productive sustainable lifestyle behaviors among university students

No	Indicator	Average score	Description
1	Plant care	3.056075	Good
2	Encouraging planting	2.635514	Good
3	Avoiding natural resource wastage	2.990654	Good
4	Environmental community activities	2.700935	Good
Total		2.845794	Good

Source: Processed primary data

The following bar chart illustrates productive behaviors related to sustainable lifestyles, as presented in table 6.

Figure.2 productive behaviors related to sustainable lifestyles



Source: Processed primary data

Table 6 illustrates productive sustainable lifestyle behaviors, with 40 respondents (37.4%) categorizing as strongly agreed, while 49 respondents (37.4%) fall under the agreed category. Additionally, 10 respondents (9.3%) were classified as disagreed, and 8 respondents (7.5%) were categorized as strongly disagreed.

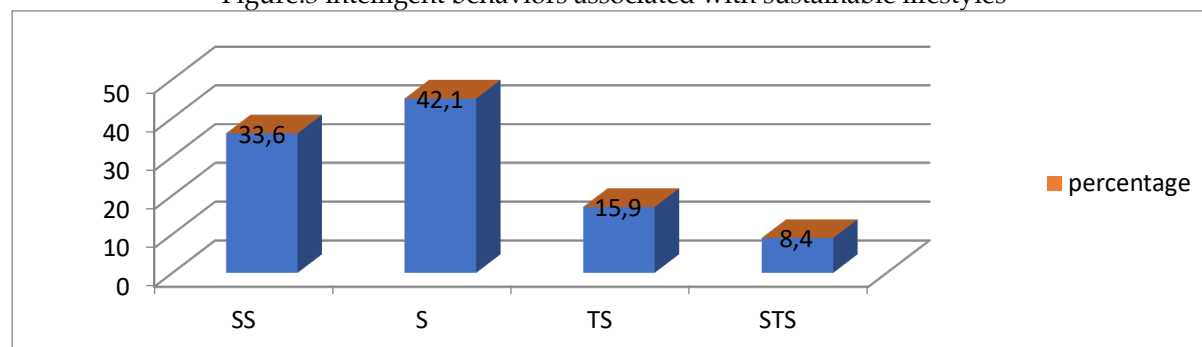
Table 7: indicator scores for intelligent sustainable lifestyle behaviors among university students

No	Indicator	Average score	Description
1	Differentiating eco-frindly products	2.897196	Good
2	Using eco-frindly products	2.915888	Good
3	Eco-frindly alternatives	2.859813	Good
4	Waste management technology	2.915888	Good
Total		2.897196	Good

Source: Processed primary data

The following bar chart illustrates intelligent behaviors associated with sustainable lifestyles.

Figure.3 intelligent behaviors associated with sustainable lifestyles



Source: Precessed primary data

Table 7 above illustrates intelligent sustainable lifestyle behaviors, with 36 respondents (33.6%) categorized as strongly agreed, while 45 respondents (42.1%) fall under the agree category. Additionally 17 respondents (15.9%) were classified as disagreed, and 9 respondents (8.4%) were categorized as strongly disagreed.

2.3. Discussion

According to Sumarsono and Giyatno (2019), environmental concern is a general tendency exhibited by individuals, which is developed as they respond to environmental conditions, whether positive or negative. Based on diagram 1, related to the results indicate that students fall into the "very poor" category in terms of environmental awareness. This finding is supported by the students' low level of awareness regarding the indicators of attention to natural resources, the impact of pollution, and waste disposal. Many students rely on campus cleaning staff and have not yet internalized the habit of properly disposing of waste, resulting in a lack of effort to use available trash bins. These results are consistent with previous research conducted by Yunita et al (2023).

In addition to the dimension of environmental concern, there is also the dimension of proactivity. According to Law No. 32 of 2009, proactivity refers to the approach taken by individuals or organizations to actively protect and improve the environment. In the case of university students, the results indicate that their proactive behaviors are categorized as "good". This is supported by the high level of student awareness, particularly in terms of proactive action toward the environment, as reflected in indicators such as renewable energy use, plastic waste reduction, minimizing plastic consumption, and supporting carbon emission programs. Students living at home receive support from their families and have better access to opportunities for activities like planting or gardening. Meanwhile, students living in dormitories tend to be more conscious of the importance of environmental preservation, and managing waste, as they share living spaces with others. These findings align with previous research conducted by Muliasari & Efendi (2024).

Furthermore, the dimension of productivity refers to the ability of individuals to create a positive impact on the environment through various sustainable and eco-friendly activities (Asriati, 2020). In the context of university students, the results indicate that their productive behaviors are categorized as "good." This is supported by the high level of students' awareness regarding environmental issues, as reflected in indicators such as plant care, encouraging others to plant, avoiding natural resource waste, and participation in environmental community activities. Productive students are often involved in various activities, both on campus and within the surrounding community, which may include student organizations or social initiative. These findings are consistent with previous research conducted by Fitriana & Kurniasih (2021).

On the other hand, the dimension of intelligence refers to the behaviors of individuals, or students, in adapting themselves to their environment (Sihombing, 2020). The result of this study indicates that students' intelligent behaviors are categorized as "good." This is supported by the high level of student awareness regarding environmental issues, as reflected in indicators such as differentiating eco-friendly alternatives, and adopting waste management technologies. Students exhibiting intelligent behaviors typically have a higher level of environmental awareness and are more open to technological innovations. Educated students, who understand the importance of sustainability, are more likely to implement environmentally friendly practices in their daily lives. These findings align with previous research conducted by Fubani et al. (2024).

4. Conclusions

The findings of this study indicate that the proactive, productive, and intelligent dimensions are categorized as “good,” with behaviors supported by a high level of awareness in adopting sustainable lifestyles. In the proactive dimension, for instance, students demonstrate active involvement in maintaining environmental cleanliness, supporting efforts to reduce air pollution, and seeking ways to conserve natural resources. In the productive dimension, student awareness is reflected in actions such as reducing plastic use, opting for renewable energy sources, and taking steps to lower their carbon footprint, such as using public transportation. In the intelligent dimension, students exhibit the ability to differentiate eco-friendly products, seek relevant information, and utilize technology to manage waste more efficiently.

However, in the dimension of environmental concern, which encompasses efforts to build collective awareness and emotional engagement, the level of student awareness is categorized as “very poor.” This is evident from the limited participation in activities such as reforestation or environmental cleanup, as well as the lack of efforts to encourage others to care about environmental issues. While students may engage in actions like plant care or avoiding resource waste, more collaborative approaches such as mobilizing communities and fostering emotional connections to sustainability issues have not yet developed. This discrepancy suggests that environmental concern requires more than just understanding and skills; it necessitates empathy and genuine involvement in collective action to strengthen this dimension.

5. Recommendations

As the younger generation, students need to enhance their awareness and commitment to sustainable lifestyles by educating themselves on the importance of environmental conservation through self-directed learning, seminars, workshops, and by joining communities focused on environmental issues. Such involvement can help broaden their perspectives and foster collaboration on eco-friendly initiatives. The government and policymakers also play a crucial role in supporting these efforts by providing infrastructure such as bike lanes, recycling facilities, and subsidies for renewable energy, as well as reinforcing policies that limit the use of single-use plastics and offering incentives for producers of eco-friendly products. Additionally, further research is needed to analyze the factors contributing to the low levels of environmental concern among students, evaluate the effectiveness of community-based or technology-driven educational approaches, and develop strategies to encourage broader environmental awareness and action within society. These steps are expected to contribute to the creation of an environment that supports the adoption of sustainable lifestyles among students, universities, and the wider community.

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