

ASSESSING SUSTAINABILITY BEHAVIOR AND PARTICIPATION AMONG STUDENTS IN INDONESIAN HIGHER EDUCATION

AVALIANDO O COMPORTAMENTO DE
SUSTENTABILIDADE E PARTICIPAÇÃO ENTRE
ESTUDANTES DO ENSINO SUPERIOR INDONÉSICO

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Recebido em: 8 de outubro de 2022

Aprovado em: 6 de dezembro de 2022

Sistema de Avaliação: Double Blind Review

RPR | a. 20 | n. 1 | p. 144-161 | jan./jun. 2023

DOI: <https://doi.org/10.25112/rpr.v1.3194>

ABSTRACT

While natural resources continue to be depleted, the human population continues to grow. It urgently calls for sustainability efforts particularly from youth and Higher Education Institutions (HEIs) for their dominance and potential. Hence, this study was aimed at assessing sustainability behavior and participation among college students in Indonesia. The study participants were undergraduates studying in Business School at a private university in Jakarta. An online survey on campus sustainability was employed for data collection. The gathered data were then quantitatively analysed by performing descriptive statistic, percentage, independent sample t test, and linear multiple regression. The findings in this study indicate that students tend to make sustainability efforts more often on things that are easy and inexpensive to do. Another finding is that there is no difference in sustainability behavior between groups of students based on their individual backgrounds. The last finding is the significant effect of student participation in sustainability activities on their sustainability behavior. These findings allow HEIs to navigate their resources and strategies in enhancing their impact on students' sustainability behavior.

Keywords: Sustainability. Behavior. College students. Indonesia.

RESUMO

Enquanto os recursos naturais continuam a se esgotar, a população humana continua a crescer. Apela urgentemente a esforços de sustentabilidade, particularmente dos jovens e das Instituições de Ensino Superior (IES), pelo seu domínio e potencial. Portanto, este estudo teve como objetivo avaliar o comportamento e a participação da sustentabilidade entre estudantes universitários na Indonésia. Os participantes do estudo eram estudantes de graduação da Escola de Negócios de uma universidade privada em Jakarta. Uma pesquisa on-line sobre sustentabilidade do câmpus foi empregada para a coleta de dados. Os dados coletados foram então analisados quantitativamente por meio de estatística descritiva, percentual, teste t de amostra independente e regressão linear múltipla. Os resultados deste estudo indicam que os alunos tendem a fazer esforços de sustentabilidade com mais frequência em coisas que são fáceis e baratas de fazer. Outra descoberta é que não há diferença no comportamento de sustentabilidade entre grupos de alunos com base em suas origens individuais. A última descoberta é o efeito significativo da participação dos alunos em atividades de sustentabilidade em seu comportamento de sustentabilidade. Essas descobertas permitem que as IES naveguem em seus recursos e estratégias para aumentar seu impacto no comportamento de sustentabilidade dos alunos.

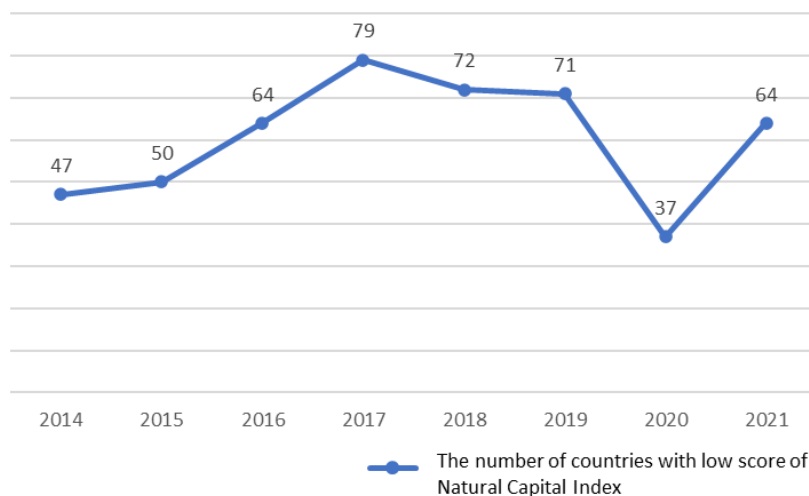
Palavras-chave: Sustentabilidade. Comportamento. Estudantes universitários. Indonésia.

1 INTRODUCTION

Humans are very dependent on nature to fulfil their life. Unfortunately, currently the availability of natural resources is decreasing. This is reflected, for example, from the results of the Natural Capital Index which measures the availability of natural resources owned by a country in five aspects: biodiversity, agriculture, water, resources, and climate. Figure 1 below shows that in the last eight years the number of countries with low Index scores (less than 45) has increased (SOIABILITY, 2021). A low score in this index means that the availability of natural resources in the country is not ideal or even less to meet the needs of the people there.

Figure 1 shows that from 2014 to 2017, the number of low-scoring countries consistently rose. This increase reached 68%. Then, from that year until 2020, the number kept decreasing. There was a drastic decline between 2019 and 2020. However, between 2020 and 2021, the number of low-scoring countries bounced back and even almost doubled.

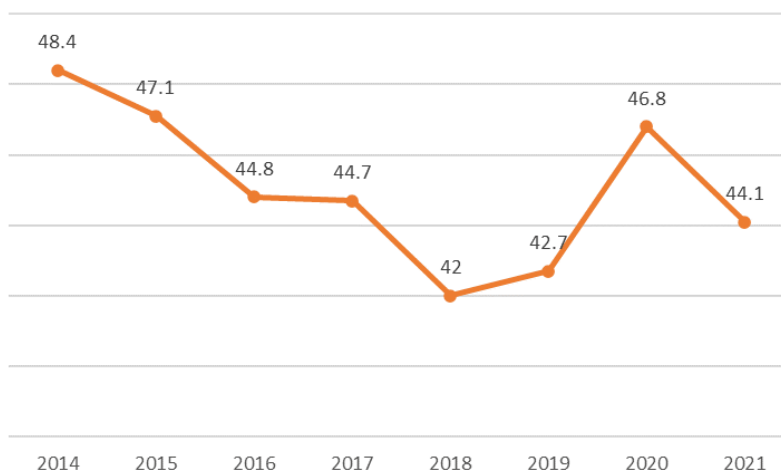
Figure 1. The Results of National Capital Index 2014-2021



Source: The authors

What about the availability of natural resources in Indonesia? According to the results of the Natural Capital Index, since 2014 until now, Indonesia is categorized into a country that does not yet have an ideal adequacy of natural resources to meet all the needs of its people (see Figure 2). The figure below shows that the availability of natural resources Indonesia possesses continues to decline from 2014 to 2018. Then it increases in 2019 and 2020. Unfortunately, in the following year, 2021, the decline reoccurred.

Figure 2. Indonesian’s Score of Natural Capital Index 2014-2021



Source: The authors

Food availability is also another challenge Indonesia has to face. Based on the results of the Global Food Security Index in 2022, Indonesia is a country that is quite vulnerable in terms of food availability. In this index, Indonesia is ranked 84th out of 113 countries in the index (ECONOMIST IMPACT, 2022). Meanwhile, neighboring countries have better achievements, such as Singapore (3rd), Vietnam (49th), Malaysia (56th), and the Philippines (70th).

As of the availability of natural resources decreases, the number of people globally continues to grow. In the last decade, the world’s human population increased by 12% from 7 to 7.8 billion in 2011 and 2021 respectively (STATISTA, 2022). In the same period, the total population in Indonesia increased by 10.8% from around 240 to more than 273 million. The Indonesian government has a vision of Golden Indonesia 2045 because from the current until that year Indonesia will receive a demographic bonus where the productive age population (15-64 years old) is dominant (MALIHAN, 2015). It is projected that in 2045, the population will reach more than 313 million or an increase of more than 14% from today and around 70% of the total population are those of productive age (MACROTRENDS, 2022). To sustain the life of the entire population, it is necessary to have sufficient natural resources and food.

1.1 SUSTAINABILITY EFFORT

The population continues to increase consistently, but the availability of natural resources continues to decline. If this condition is left unsolved, global disasters, such as famine, war, and energy crises cannot be avoided. To avoid these global disasters from happening, it is necessary to carry out a massive

sustainability effort at the global, state, and individual levels. At the global level, the United Nations (UN) launched the Sustainable Development Goals (SDGs) initiative in 2015 with the set goals expected to be achieved in 2030 (STAFFORD-SMITH *et al.*, 2017). Of the 17 goals, there are at least five goals related to efforts to maintain the sustainability of natural resources: clean water and sanitation, responsible consumption and production, climate action, life below water, and life on land. The SDGs initiative has been adopted by all UN members, including Indonesia.

To achieve the SDGs target in 2030, the Indonesian government has integrated these initiatives into the country's strategic plan, provided a budget, and implemented various activities aligned with the SDGs (MORITA; OKITASARI; MASUDA, 2020). All of these efforts were quite fruitful. Referring to the Sustainable Development Report regarding the achievement of SDGs, Indonesia gained a score of 69.16 (range 0-100) in 2022 (SACHS; KROLL; LAFORTUNE; FULLER; WOELM, 2022). Compared to neighboring countries, Indonesia's achievement is higher than the Philippines (66.64), but still lower than Malaysia (70.38), Singapore (71.72), and Thailand (74.13).

Although Indonesia is able to achieve the SDGs targets quite well, the five objectives related to efforts to maintain the sustainability of natural resources still remain problematic (SACHS *et al.*, 2022). In the Sustainable Development Report, Indonesia still has challenges in the goals of responsible consumption and production and climate change. But these challenges are not threatening. Indonesia still faces significant challenges in the goal of clean water and sanitation. The major challenges that Indonesia must address are related to the goals of life below water and life on land.

1.2 HIGHER EDUCATION CONTRIBUTION

The government alone is not enough to resolve all the challenges that Indonesia is currently facing in achieving the SDGs targets related to efforts to conserve natural resources. It requires support and involvement from various parties, including Higher Educations Institutions (HEIs). HEIs have potential and an important role in succeeding the sustainability effort (WASHINGTON-OTTOMBRE; WASHINGTON; NEWMAN, 2018). Indonesia currently hosts more than 4,500 colleges, around 308,000 lecturers, and nearly 9.5 million students spread throughout the country (INDONESIA MINISTRY OF EDUCATION, 2022). With this great potential, HEIs should be able to have a significant impact on the sustainability performance of Indonesia through its main activities which include teaching, research, and community service.

In teaching, HEIs can incorporate sustainability into the curriculum in the form of materials or courses that are relevant to fields in their respective study programs (HESS; MAKI, 2019). Outside the classroom, HEIs create a variety of programs that students, lecturers, and other relevant individuals can participate in

to promote and support sustainability on campus and beyond (DÍAZ-ISO; EIZAGUIRRE; GARCÍA-OLALLA, 2019). HEIs have an abundant number of researchers who can be led to conduct research in solving various problems and finding solutions related to sustainability issues (WALSH; BÖHME; WAMSLER, 2021). The results of the research can then be used by the community or even the campus itself through community service activities (PURCELL; HENRIKSEN; SPENGLER, 2019).

HEIs can also implement sustainability in their operations (WASHINGTON-OTTOMBRE; WASHINGTON; NEWMAN, 2018). For example, buildings and equipment are sought to use environmentally friendly materials. Then, the space and environment on campus are designed so that it does not require a lot of energy and makes people comfortable to walk. Provision of supporting facilities such as sorted waste bins and waste processing. In addition, using electric or other environmentally friendly energy vehicles must be placed. Actually, there are still many things that HEIs can do in their operations to support sustainability on campus.

Indonesia's population today and the next few decades is dominated by those with productive age, especially those aged 15-24 years or college age. This places them as an important component that determines sustainability practices and success in Indonesia today and in the future. On the other hand, HEIs have the potential and strategic role to educate and get them exposed towards various sustainability efforts so that they have the knowledge and skills for sustainability. It is hoped that students can implement sustainability in their daily and professional lives.

Unfortunately, research on sustainability that focuses on college students in the context of Indonesian higher education remains limited. Most of the literature focuses on institutional sustainability practices in higher education (SARI; JATI; RAHARJA; YUYETTA, 2021; YASBIE; BAROKAH, 2018). Therefore, this study aims to identify the sustainability behavior and participation of Indonesian college students. There are three questions that would guide this study to achieve this goal. First, how does the sustainability behavior of college students in Indonesia look like? Second, does the sustainability behavior of college students in Indonesia differ by their individual background? Last, does college students' participation in class or other activities on sustainability affect their sustainability behavior?

2 METHODOLOGY

2.1 PARTICIPANT

Entire students who participated in this study studied at a private university in Jakarta. They were enrolled in various undergraduate level study programs but under the same faculty, namely the Business

School. In recruiting participants, an email invitation for participation was sent to approximately 150 students. Consent was given to them before they decided to participate in this study. Of all the invitations sent, 110 students participated by responding to online surveys. However, there were two students who gave incomplete responses. Finally, the responses of 108 students were included and analyzed in this study.

2.2 INSTRUMENT

The instrument used for data collection in this study is an anonymous self-report survey on campus sustainability. This survey adopts the Ohio State University (OSU) Campus Sustainability Survey. There are two main reasons why this survey was adopted: it has been very well developed based on a rigorous literature review and has been administered to thousands of students in the US since 2013 (MICHEL, 2020; ZWICKLE; JONES, 2018). Of course, some adjustments were carried out to make the survey used in this study relevant to the context of higher education and students in Indonesia.

In the survey, the questions are divided into three categories. First, the questions related to the individual background of the students. Second, the question of student participation in sustainability activities inside and outside the classroom. Finally, the questions regarding sustainability behavior. Surveys are given to study participants online. Table 1 shows the items in the survey.

Table 1. Questions of the Survey

Information	Questions	Responses
Individual Background	Enrollment Year	2022, 2021, 2020, 2019, 2018 or before
	Age	(number)
	Gender	Female Male
	Current living place	Campus residence hall (housing, apartment, or room owned by campus) or rental room, house, or apartment Parents or family-owned house

Participation in Sustainability Activities	Have you taken or are you currently taking any class related to sustainability?	Yes No
	Have you participated or are you currently participating in any sustainability related activities organized by campus?	Yes No
Sustainability Behavior	Turn off the lights in an empty room where you live	Never Occasionally Sometimes Often Always
	Use reusable bags when shopping	
	Save water when showering, cleaning clothes, dishes, or other uses	
	Limit the energy used to heat or cool your living space	
	Carry a reusable water bottle	
	Turn your personal electronics off or into low-power mode when not in use	
	Limit your consumption of new items (e.g. electronics, clothes)	
	Eat organic food	
	Print on both sides of the paper	
	Walk, bicycle, or take public transportation instead of taking a car	
	Purchase second-hand items instead of purchasing new items	
	Sort out your recycling	

Source: The authors

2.3 DATA ANALYSIS

This study is quantitative for numerical data and generalizability purpose inclusion (CRESWELL; CRESWELL, 2017). Therefore, the gathered data from the study were analyzed quantitatively. In the study, there are three primary variables involved: individual background (enrolment year (1=2022 and 0=others), age (number), gender (0=male and 1=female), and current living place(0 = living on campus or in rental housing and 1= living with parents or family)), participation in sustainable activities (participation in class on sustainability (0=no and 1=yes) and participation in outside classroom activities on sustainability (0=no and 1=yes)), and sustainability behavior (0=never, 1=occasionally, 2=sometimes, 3=often, and

4=always). In data analysis, SPSS 26 was employed. Data analysis is divided into three phases, each of which is to answer each research question in this study.

The first phase was carried out to identify what the sustainability behavior of college students looks like. In this phase, descriptive statistics and percentages were used. In the results, the average value and percentage of each response for each item on sustainability behavior would be displayed. Phase two was intended to analyze differences in the sustainability behavior of college students based on individual background (enrolment year, gender, and current living place). In this phase, sustainability behavior was the total score of all items of sustainability behavior. To measure the difference in sustainability behavior between groups of students, an independent sample t-test was used because the sustainability behavior data used was well distributed and there were two groups being compared for each individual background item. The last phase was completed to examine the effect of student participation in classroom and out-of-class activities related to sustainability on their sustainability behavior after controlling for student background. To work on this phase, multiple linear regression was performed with 2 models. In the first model, all individual backgrounds (enrollment year, age, gender, and current living place) were included. This first model will measure the effect of individual background on students' sustainable behavior. After that, model 2 was carried out by including items of student participation in sustainability activities. Model 2 measured the net effect of student participation on sustainability activities inside or outside the classroom on their sustainability behavior.

3 RESULTS AND DISCUSSION

3.1 DEMOGRAPHIC OF STUDENT PARTICIPANTS

Table 2 shows the demographic information of the study participants. Based on gender, the number of females and males is even. Then, the number of second year students or beyond is higher than the first- year students. Nearly entire participants were 20 years old or younger. Most of them live with their parents or family. Many have taken or are currently taking courses on sustainability. However, less than half reported that they had or are currently participating in campus activities outside of class about sustainability.

Tabel 2. Demographic of Study Participants

Gender	frequency	Percent
Female	54	50%
Male	54	50%
Enrollment Year	frequency	Percent
second-year or above	58	53.70%
first-year	50	46.30%
Age	frequency	Percent
17	6	5.60%
18	32	29.60%
19	26	24.10%
20	36	33.30%
21	6	5.60%
22	2	1.90%
Current Living Place	frequency	Percent
on campus or rental room/ house	28	25.90%
Parents or family-owned house	80	74.10%
Sustainability Participation at Campus	frequency	Percent
Class	78	72.20%
Campus Activity	48	44.40%

Source: The authors

3.2 SUSTAINABILITY BEHAVIOR AND PARTICIPATION OF COLLEGE STUDENTS

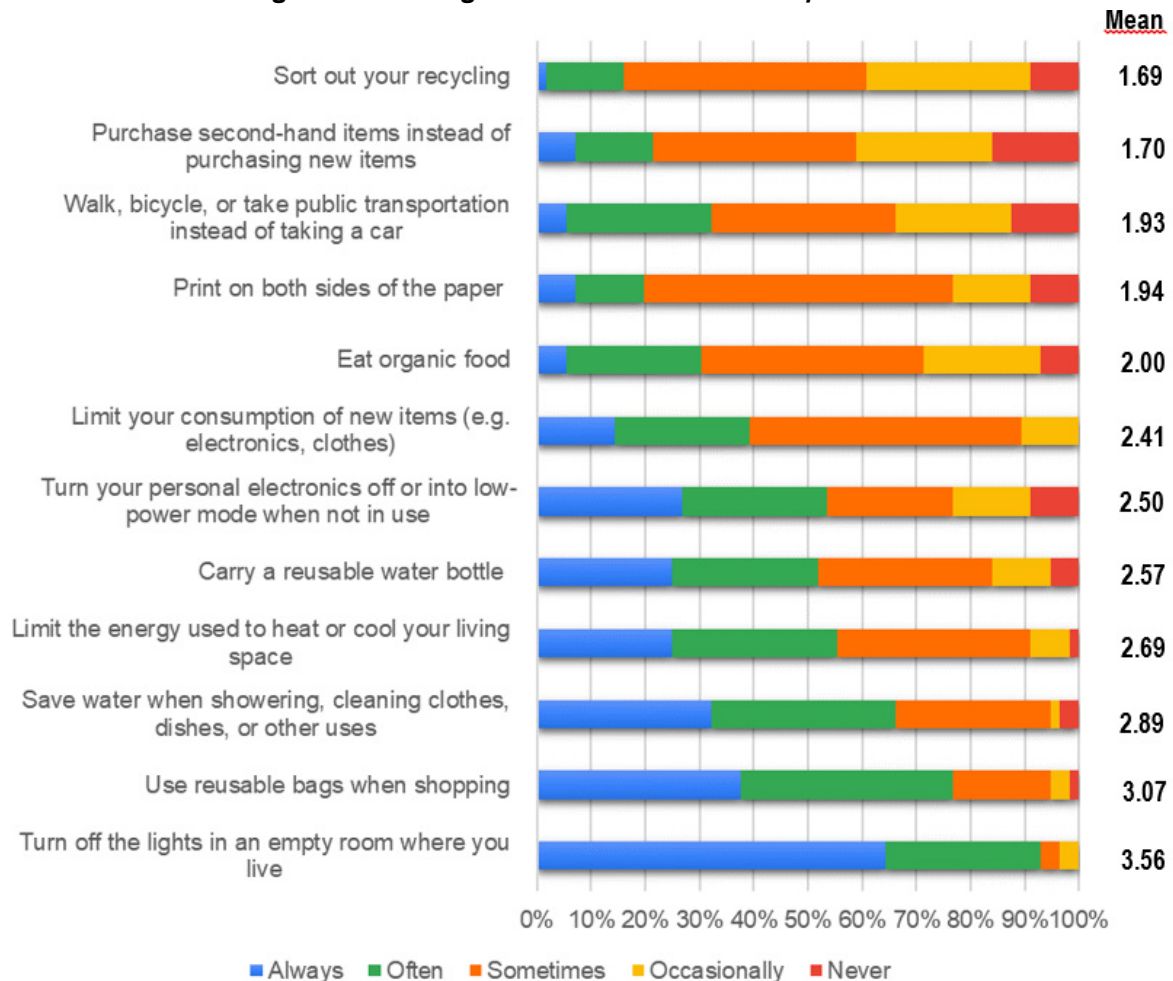
The analysis in the first phase was carried out to identify the sustainability behavior of college students. There are 12 actions of sustainability behaviors. Figure 3 shows the mean and percentage for each response to each action. The three actions that were reported most frequently are turning off lights

when the room was not in use, using reusable bags when shopping, and conserving water. On the other hand, the three actions that participants took the least amount of time were sorting out your recycling, buying used goods instead of new, and walking, cycling, or using public transportation.

According to Soyer and Dittrich (2021), there are at least three important elements that determine whether someone will perform sustainability efforts or not, namely: motivation (internal and external), ability, and trigger. Among the three, motivation and ability have the most influence. Furthermore, they explained that often someone already has the motivation but puts down their sustainability efforts. This is because the effort is quite complicated and costly to be carried out. In other words, they are constrained by ability. Therefore, someone will tend to carry out sustainability actions that are easy and cheap to do. Thus, it's no wonder, turning off lights when the room is not in use, using reusable bags when shopping, and saving water are the most frequent sustainability actions college students in this study. These three actions are simple and low-cost.

Phase two analysis is intended to measure differences in the sustainability behavior of college students based on their individual background (gender, enrollment year, and current living place). Participants who were female ($M=29.61$, $SD= 4.58$), second year or older ($M=29.24$, $SD= 5.26$), and lived on campus or rented a house ($M=29.86$, $SD= 5.36$) were more likely to take sustainability actions than other students who were male ($M=28.30$, $SD=6.03$), first year ($M=28.60$, $SD=5.45$), and living with parents or family ($M=28.62$, $SD= 5.32$). However, these differences by gender ($t(106)=-1.26$, $p=.14$), enrollment year ($t(106)=.621$, $p=.54$), and current living place ($t(106)=-1.05$, $p=.29$) were not significant. This finding differs from previous studies which showed significant differences in sustainability behavior based on the three types of individual backgrounds (BLOODHART; SWIM, 2020; WHITLEY; TAKAHASHI; ZWICKLE; BESLEY; LERTPRATCHYA, 2018; ZIESEMER; HÜTTEL; BALDERJAHN, 2021). This finding shows that anyone regardless of their background has the same opportunity to implement sustainability and receive benefits from it.

Figure 3. Percentage and Means of Sustainability Behavior



Source: The authors

The analysis in the last phase aims to measure the effect of student participation on activities in the classroom and outside the classroom related to sustainability on the sustainability of their behavior after controlling for individual backgrounds. Regression is carried out with the first model to measure the effect of individual background on sustainability behavior. This model is responsible for 8.2% of the variance in sustainability behavior, $F(4, 101) = 2.26, p = .068$. This is in line with the findings in the second phase of the analysis that there is no difference in sustainability behavior based on their individual backgrounds. After controlling for individual student backgrounds, participation in sustainability activities inside and outside the classroom significantly increased the value on sustainability behavior and was responsible for 6.3% of

the variance on sustainability, $F(6.99) = 2.81$, $p = .015$. These results also show that student participation in sustainability activities outside the classroom has the greatest impact on their sustainability behavior.

Swaim, Maloni, and Napshin (2014) found that the inclusion of sustainability into the curriculum in HEIs is able to have a considerable impact on the sustainability awareness and behavior of students. However, that alone is not enough. Sustainability material must be delivered by a lecturer who has sufficient knowledge of the topic and uses a relevant and creative pedagogic approach. Furthermore, Kanashiro, Rands, and Starik (2020) emphasized that the key to the success of sustainability classes on campus lies with lecturers. In addition to knowledge and pedagogic approaches, lecturers must also be able to relate sustainability material to cases or phenomena that occur around them. Students will be more motivated to carry out sustainability actions when lecturers provide examples of implementing sustainability in their daily lives. So, students immediately found living examples of sustainability.

Table 3

Summary of hierarchical regression analysis for participation in sustainability activities predicting sustainability behavior

Variable	B	t	sr ²	R	R ²	Δ R ²
Model 1				.287	.082	.082
age	1.455	2.539	.0600			
gender	1.670	1.520	.0225			
enrollment year	1.955	1.432	.0918			
current living place	-1.267	-1.079	.0114			
Model 2				.381	.145*	.063*
age	1.275	2.263*	.0492			
gender	1.649	1.535	.0231			
enrollment year	1.691	1.082	.0116			
current living place	-2.124	-1.788	.0313			

participation in sustainability class	.422	.285	.0008
participation in sustainability activities	2.724	2.404*	.0552

Note. $N = 201$; * $p < .05$, ** $p < .01$, *** $p < .001$

Dependent variable: sustainability behavior

Source: The authors

The findings from the two studies above can be an explanation for the finding in this study that student participation in sustainability classes posits lower effect on their sustainability behavior. This does not mean that the class does not bring benefits, but its delivery remains problematic. Lecturers assigned to teach sustainability courses probably do not have sufficient knowledge, pedagogic techniques, and contextual teaching. In addition, students may find that what the lecturers deliver in class is not implemented in their daily lives. This condition makes students less motivated and exposed to sustainability practices.

Interestingly, student participation in sustainability activities outside the classroom greatly influences their sustainability behavior. Indeed, the characteristics of activities outside the classroom are generally more contextual and practical than activities in the classroom (MSENGI *et al.*, 2019). This character is more suitable for educating students about sustainability (ARIZA *et al.*, 2021). This activity provides broad opportunities as well as encourages students to be actively involved in sustainability activities. Within their involvement, they learn about sustainability.

4 CONCLUSION

In the midst of that natural resources continue to be depleted, but the human population continues to grow, sustainability efforts are urgently needed. To do so requires involvement from various parties, including HEIs. They have great potential to have an impact on efforts to keep natural resources sustainable, especially in educating the younger generation about sustainability. Moreover, the younger generation, of college age, dominates Indonesia's current population for decades to come. They will determine Indonesia's sustainability performance in the future. Therefore, they must be equipped with knowledge and skills on sustainability. This is where HEIs can play a role.

This study aims to identify the sustainability behavior of college students in Indonesia. The findings in this study indicate that students tend to make sustainability efforts more often on things that are easy and inexpensive to do. Another finding is that there is no difference in sustainability behavior between

groups of students based on their individual backgrounds. The last finding is the significant effect of student participation in sustainability activities on their sustainability behavior.

From the findings of this study, there are several recommendations so that HEIs can better facilitate students to gain knowledge and be able to implement sustainability efforts. First, HEIs must ensure that supporting facilitation to implement sustainability around campus is available. For example, students are reluctant to bring their own water bottles to campus and sort waste because there are no fountains or facilities to refill them and adequate bins. Second, sustainability classes are ensured to be taught by lecturers who have solid knowledge of sustainability and teaching skills. Lecturers should also be encouraged to relate the material in class to the reality that is occurring around them and provide examples of sustainability implementation for students. Lecturers also need to receive trainings to improve their knowledge as well as teaching skills. Finally, HEIs should manage an integration between sustainability activities carried out inside and outside the classroom. This integration is needed so that there is continuity between what students learn in class and what they do outside the classroom.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to Dr Reggie for his valuable comments and inputs during the writing process of this paper.

REFERENCES

ARIZA, M. R.; BOEVE-DE PAUW, J.; OLSSON, D.; VAN PETEGEM, P.; PARRA, G.; GERICKE, N.

Promoting Environmental Citizenship in Education: The Potential of the Sustainability Consciousness Questionnaire to Measure Impact of Interventions. **Sustainability**, v. 13, n. 20, pp. 11420, 2021.

BLOODHART, B.; SWIM, J. K. Sustainability and consumption: what's gender got to do with it? **Journal of Social Issues**, v. 76, n. 1, pp. 101-113, 2020.

Creswell, J. W.; Creswell, J. D. **Research design: Qualitative, quantitative, and mixed methods approaches**. Sage publications, 2017.

DÍAZ-ISO, A.; EIZAGUIRRE, A.; GARCÍA-OLALLA, A. Extracurricular activities in higher education and the promotion of reflective learning for sustainability. **Sustainability**, v. 11, n. 17, 4521, 2019.

ECONOMIST IMPACT. **Global food security index 2022**. Available in: <https://impact.economist.com/sustainability/project/food-security-index#global-overview>. Accessed on: August, 2022.

HESS, D. J., & MAKI, A. Climate change belief, sustainability education, and political values: Assessing the need for higher-education curriculum reform. **Journal of Cleaner Production**, v. 228, pp. 1157-1166, 2019.

INDONESIA MINISTRY OF EDUCATION. (2022). **PDDIKTI**. Available in: <https://pddikti.kemdikbud.go.id/>. Accessed on: August, 2022.

KANASHIRO, P., RANDS, G., & STARIK, M. Walking the sustainability talk: if not us, who? If not now, when? **Journal of Management Education**, v. 44, n. 6, pp. 822-851, 2020.

MACROTRENDS. **Indonesia population 1950-2022**. Available in: <https://www.macrotrends.net/countries/IDN/indonesia/population>. Accessed on: August, 2022.

MALIHAN, E. An ideal Indonesian in an increasingly competitive world: Personal character and values required to realise a projected 2045 'Golden Indonesia'. **Citizenship, Social and Economics Education**, v. 14, n. 2, pp. 148-156, 2015.

MICHEL, J. O. Toward conceptualizing education for sustainability in higher education. **New Directions for Teaching and Learning**, v. 20, n. 161, pp. 23-33, 2020.

MORITA, K.; OKITASARI, M.; MASUDA, H. Analysis of national and local governance systems to achieve the sustainable development goals: case studies of Japan and Indonesia. **Sustainability Science**, v. 15, n. 1, pp. 179-202, 2020.

MSENGI, I.; DOE, R.; WILSON, T.; FOWLER, D.; WIGGINTON, C.; OLORUNYOMI, S.; BANKS, I.; MOREL, R. Assessment of knowledge and awareness of "sustainability" initiatives among college students. **Renewable Energy and Environmental Sustainability**, v. 4, n. 6, pp. 1-11, 2019.

PURCELL, W. M.; HENRIKSEN, H.; SPENGLER, J. D. Universities as the engine of transformational sustainability toward delivering the Sustainable Development Goals: "Living Labs" for Sustainability. **International Journal of Sustainability in Higher Education**, v. 20, n. 8, pp. 1343-1357, 2019.

SACHS, J.; KROLL, C.; LAFORTUNE, G.; FULLER, G.; WOELM, F. **Sustainable development report 2022**. Cambridge University Press, 2022.

SARI, M. P.; JATI, K. W.; RAHARJA, S.; YUYETTA, E. N. A. Campus sustainability assessment: Case studies from Universitas Negeri Semarang and Universitas Diponegoro, Indonesia. **Annals of the Romanian Society for Cell Biology**, v. 21, n. 65, pp. 5414-5422, 2021.

SOLABILITY. **The Global sustainable competitiveness report 10th edition**. Switzerland: SolAbility, 2021.

SOYER, M.; DITTRICH, K. Sustainable consumer behavior in purchasing, using and disposing of clothes. **Sustainability**, v. 13, n. 15, pp. 8333, 2021.

STAFFORD-SMITH, M.; GRIGGS, D.; GAFFNEY, O.; ULLAH, F.; REYERS, B.; KANIE, N.; STIGSON, B.; SHRIVASTAVA, P.; LEACH, M.; O'CONNELL, D. Integration: the key to implementing the Sustainable Development Goals. **Sustainability Science**, v. 12, n. 6, pp. 911-919, 2017.

STATISTA. **World total population from 2011 to 2021**. Available in: <https://www.statista.com/statistics/805044/total-population-worldwide/>. Accessed on: July, 2022.

SWAIM, J. A.; MALONI, M. J.; NAPSHIN, S. A.; HENLEY, A. B. Influences on student intention and behavior toward environmental sustainability. **Journal of Business Ethics**, v. 124, n. 3, pp. 465-484, 2014.

WALSH, Z.; BÖHME, J.; WAMSLER, C. Towards a relational paradigm in sustainability research, practice, and education. **Ambio**, v. 50, n. 1, pp. 74-84, 2021.

WASHINGTON-OTTOMBRE, C.; WASHINGTON, G. L.; NEWMAN, J. Campus sustainability in the US: Environmental management and social change since 1970. **Journal of Cleaner Production**, v. 196, n. 21, pp. 564-575, 2018.

WHITLEY, C. T.; TAKAHASHI, B.; ZWICKLE, A.; BESLEY, J. C.; LERTPRATCHYA, A. P. Sustainability behaviors among college students: An application of the VBN theory. **Environmental Education Research**, v. 24, n. 2, pp. 245-262, 2018.

YASBIE, B.; BAROKAH, Z. Sustainability reporting by universities In Indonesia abstract. **The Indonesian Journal of Accounting Research**, v. 21, n. 3, pp. 363-394, 2018.

ZIESEMER, F.; HÜTTEL, A.; BALDERJAHN, I. Young people as drivers or inhibitors of the sustainability movement: The case of anti-consumption. **Journal of Consumer Policy**, v. 44, n. 3, pp.427-453, 2021.

ZWICKLE, A.; JONES, K. Sustainability knowledge and attitudes – Assessing latent constructs. **Handbook of sustainability and social science research**, pp. 435-451, Springer, Cham, 2018.