Factors affecting Undergraduate's Perception on Environmental Sustainability: Special Reference to the University of Sri Jayewardenepura

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ABSTRACT

This research investigates and analyses the factors affecting undergraduates' perspectives on environmental sustainability with a special reference to the University of Sri Jayewardenepura. Furthermore, the study evaluates the association between the identified factors and different dimensions of the perception of environmental sustainability. To gather primary data for the study, a five-point Likert scale-based questionnaire was created that considered all dimensions of undergraduates' perspectives of environmental sustainability namely awareness, personal attitude, personal commitment, personal involvement, and personal motive. A sample of 200 undergraduates from the University of Sri Jayewardenepura was chosen using a convenience sampling technique. Multiple linear regression analysis was conducted in order to test the research objective.

Based on the data analysis and interpretation, it was concluded that demographic and behavioural factors do have a significant influence on the undergraduates' perception of environmental sustainability. Further, it was identified that educational institutions mainly schools as well as universities have a major role in disseminating environmental information and creating a positive perception regarding environmental sustainability among youths.

Keywords: Environmental Sustainability, Youth Perception, Behavioural factors, Personal involvement, Personal motive

INTRODUCTION

Climate change and environmental degradation are worse than ever expected, affecting the lives of billions of people, animals, and ecosystems. Rapid urbanization, industrialization, and overuse of natural resources have resulted in significant and permanent environmental damage and a biosphere-wide imbalance that makes it unable to sustain the current lifestyle of humans (Mulvaney, 2022). The current global environmental situation requires immediate attention and action to be sustained for future generations. In fact, according to the climate knowledge portal of the World Bank, Sri Lanka is highly vulnerable to climate change due to its high temperatures, unique and complex hydrological regime, and exposure to extreme climate events (The World Bank, 2022). Institutions are becoming more and more aware of these conditions and continuously putting forward new practices to ensure environmental sustainability. Environmental sustainability refers to the responsible use of natural resources and the protection of ecosystems to meet the needs of present and future generations, ensuring long-term ecological balance. It involves practices that minimize environmental impact, conserve resources, and promote biodiversity (United Nations, 2023). However, the engagement of the people, especially the youth, is needed for these practices to be impactful in reaching sustainability in the long run. Without the support of the young community towards these sustainability practices, they will be short-lived and would not reach their potential in making some positive impact on the environment. Environmental sustainability can be achieved by changing people's ideas and

assisting them in adopting a pro-environment perspective. A shift in an individual's mentality and subsequent behaviours resulting from enhanced environmental literacy will ultimately lead to environmental sustainability. And as the future of the earth, youth perception towards environmental sustainability is very critical in conserving nature. And as a significant part of youth, understanding what university undergraduates know, how they feel, and what needs to be done to protect the environment is important. Furthermore, identifying the factors affecting individuals' perspectives towards environmental conservation can be highly useful in motivating young people to take action toward environmental sustainability. Global studies have been conducted to explore the youth's perspective towards environmental sustainability and the factors that impact their attitude towards it as well. Azhar et al. (2022) stated that the youth's attitudes which are moulded by their past experiences have a powerful impact on their perception of the concept of environmental sustainability. According to Ribeiro et al. (2021) a study conducted with four universities in Brazil, green campus initiatives play an insignificant role in university students' knowledge and proactiveness to act towards environmental sustainability. In contrast according to Dagili?t? et al. (2018), a study conducted with two universities in Lithuania revealed that university sustainability initiatives are in fact a major contributor to the perception of environmental sustainability among youths.

Research on environmental sustainability and factors affecting it in the local context is still in its early stages. Despite the fact that there have been numerous contributions to this topic, both in textbooks and in academic research publications, the majority of theories, concepts, and case studies are based on foreign developed nations. Most of the former studies conducted locally have been done with the purpose of quantifying the environmental literacy level of individuals. Kuruppuarachchi et al. (2022), revealed that the environmental literacy level of Sri Lankan youths is below 40%. However, studies are lacking in the identification and investigation of the factors that influence youth perspective on environmental sustainability in Sri Lanka.

From the former studies, it can be identified that many demographic and behavioural factors play a role in undergraduate's perceptions of environmental sustainability. Since there is a lack of research in this area done in the Sri Lankan context, this study intends on identifying those factors. This study evaluates the factors affecting the perceptions of undergraduates at the University of Sri Jayewardenepura, towards environmental sustainability and how they are motivated to take action towards environmental sustainability. The study can also be a contributor to understanding the factors related to why the environmental literacy level is low among Sri Lankan youths as well (Kuruppuarachchi, et al., 2020).

The paper is structured as follows: Section 2 prepares a literature review, and Section 3 incorporates methodology. On data interpretation and analytical observations, Section 4 elaborates. In the end, the discussions and concluding remarks are given.

LITERATURE REVIEW

Environmental sustainability is defined as meeting current and future generations resource and service needs without jeopardizing the health of the ecosystems that produce them (Morelli, 2011). It is the development of a balance between our needs as humans and what the environment can offer us by not exceeding the capacity of the ecosystem's regeneration ability and ensuring our actions do not harm the ecosystem. Environmental Sustainability is at risk now more than ever. Currently over three billion people are affected by degraded and polluted ecosystems. Around nine million people die prematurely each year as a result of pollution, and over one million plant and animal species are in danger of going extinct, within a few decades (United Nations, 2022). Environmental Sustainability is significantly at risk in Sri Lanka with its developing economic background and rapidly increasing urbanization. It is estimated that by 2050, 34% of the population will be settling in the cities compared to only 17% in 1990 (Arachchige, et al., 2019). Almost 19 million people, which accounts to more than 90% of Sri Lanka's population, reside in areas that could become moderate or severe hotspots by 2050. It is further estimated that the living standard of people will

drop by 7% and the economy will see a 7.7% decline in GDP which adds up to a loss of 50 billion dollars (Mani, et al., 2022). One of the demographic factors that are investigated through the study is Gender, and its impact on youth's perception of environmental sustainability. Studies have shown controversial findings on this factor and its impact on youth's perception of environmental sustainability. According to Ribeiro et al. (2021), male individuals have less environmental knowledge thus is less prone to participate in sustainable development practices. However, according to Azhar et al. (2022), gender had no bearing on the attitudes or perceptions of the youth toward environmental sustainability. Liarakou et al. (2011) study revealed that educational area or academic background is an influential factor in youths' attitude toward environmental issues, and that it also affects their willingness to participate in volunteering activities to conserve the environment. The age of individuals also is considered one of the factors that impact the youth's perception of environmental sustainability. Ribeiro et al. (2021), mention in their study that age is in fact an influential factor when considering the youth's perception towards environmental sustainability. Further, Kuruppuarachchi et al. (2021), a local study revealed that knowledge levels on environmental issues and sustainability varied significantly with their course discipline, thus it can be considered as a factor that impacts youth's perspective on environmental sustainability. According to Dagili?t? et al. (2017), universities that are more sustainable in their operations, popularly known as 'Green Universities' give more information on environmental issues and also give more opportunities to be sustainable for youth. Thus this is a direct factor that impacts the perception of youth on environmental sustainability. The other strong contributing factor to youth's perception of environmental sustainability is environmental information. Kuruppuarachchi et al. (2021), study identifies that the main source of environmental information for young individuals is through school. Environmental information is not majorly disseminated through the university curriculum. Further, global studies revealed that the perception of the environmental sustainability of youth differs from country to country affected mainly by culture, environmental infrastructures, services in each country, and level of knowledge.

METHODOLOGY

Population and Sample

The population of the study would be considered as all students currently studying at the University of Sri Jayewardenepura. The University of Sri Jayewardenepura has over 12,000 undergraduates spanning multiple fields of study from 11 faculties. A sample of 200 students was selected from the population. The data was collected using a questionnaire.

In order to determine whether there is a relationship between the independent variables and the dependent variable, the Multiple Regression was conducted. The categorical independent variables were dummy coded in order to run a linear regression.

Conceptual framework

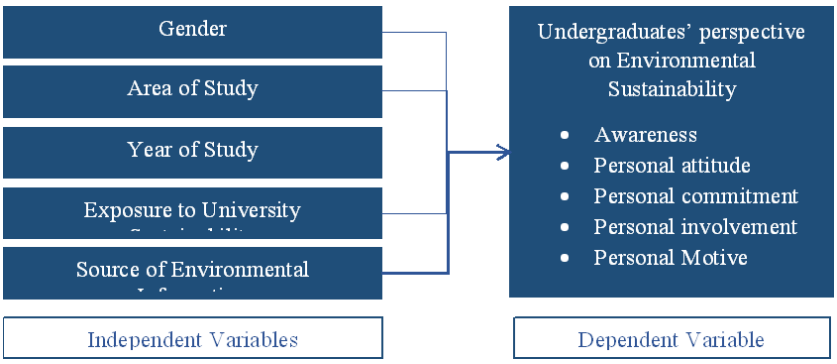

Figure 1: Conceptual Framework

Hypothesis

The following research hypotheses were drafted in order to identify the impact of the independent variables on the dependent variables of the study.

H1: There is an impact of the student's gender on their perspective on environmental sustainability.

H2: There is an impact of the student's area of study on their perspective on environmental sustainability.

H3: There is an impact of the student's year of study on their perspective on environmental sustainability.

H4: There is an impact of the student's exposure to university sustainability on their perspective on environmental sustainability.

H5: There is an impact of the student's source of environmental information on their perspective on environmental sustainability.

DATA PRESENTATION AND ANALYSIS

Data presentation and analysis are lined up as follows.

Descriptive Analysis

The analysis is based on several demographic variables of the respondents, including gender, faculty or area of study, year of study, source of information on environmental sustainability, and exposure to environmental sustainability through the university.

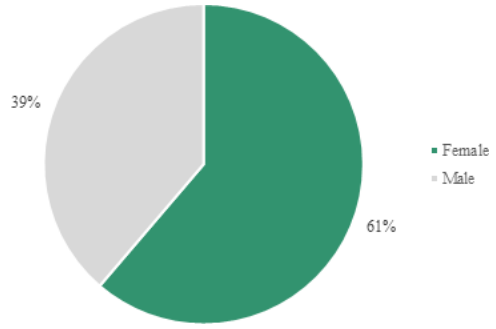

Figure 2: Gender distribution

The respondents' gender distribution reveals that 61% are female and 39% are male. This indicates a slightly higher participation of female students in the research study.

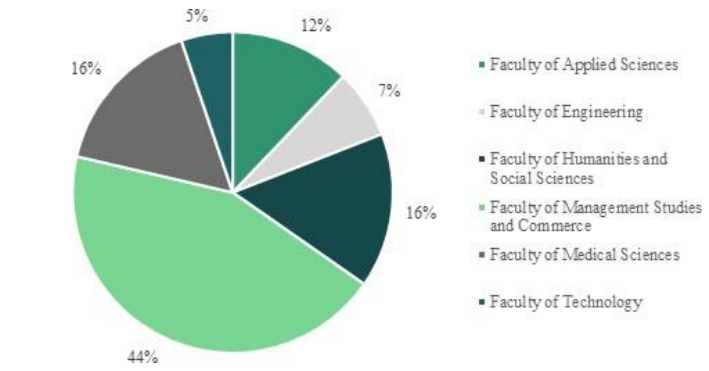

Figure 3: Area of study distribution

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The distribution of respondents across various faculties or areas of study shows the above percentages. These findings suggest that students from a diverse range of disciplines are included in the study, allowing for a comprehensive understanding of the factors influencing their perception of environmental sustainability.

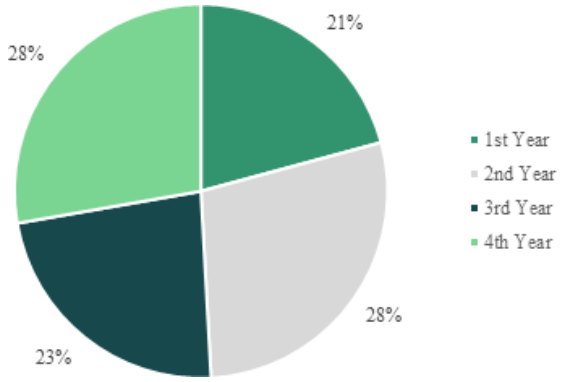

Figure 4: Year of study distribution

The respondents' year of study distribution demonstrates the representation of undergraduate students at different stages of their academic journey. It is essential to consider the impact of educational experiences and exposure to environmental sustainability throughout different stages of study.

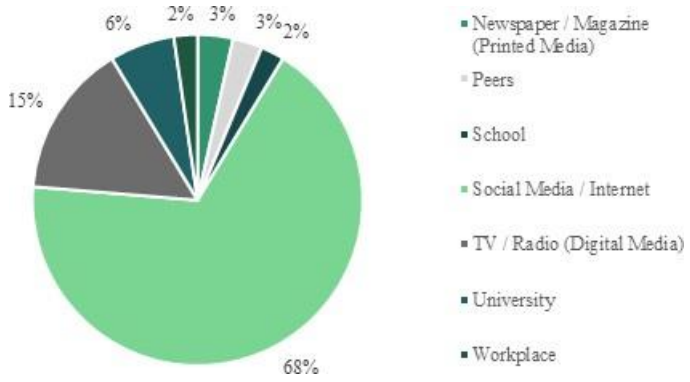

Figure 5: Source of information distribution

Regarding the source of information on environmental sustainability, the respondents' responses show the dominance of social media/internet as the primary source of information indicates the growing influence of digital platforms in shaping students' awareness of environmental sustainability.

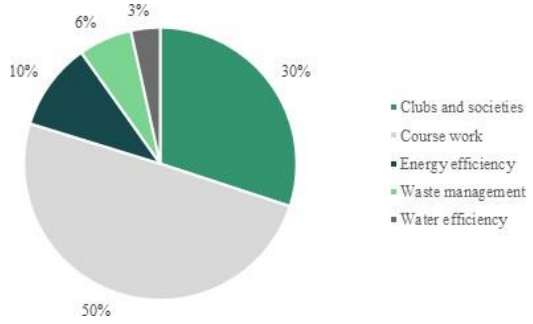

Figure 6: Exposure to university sustainability distribution

The respondents' exposure to environmental sustainability through the university is represented by the above graph. The involvement of students in clubs and societies related to environmental sustainability highlights the significance of extracurricular activities in fostering a sense of responsibility towards the environment. The significant representation of coursework suggests that the formal education system plays a crucial role in shaping students' knowledge and understanding of environmental sustainability.

Regression Analysis

The categorical independent variables were dummy coded in order to run linear regression. The categorical independent variables were tested against each dimension of the undergraduate's perspective on environmental sustainability and analyzed accordingly. If at least one dummy variable is statistically significant, the respective independent variable is considered statistically significant when testing hypotheses. The following fields were used as the comparison group in each category when creating dummies, thus the analysis is done relative to these groups.

Category	Comparison Group
Gender	Female
Faculty of study at the university	Faculty of Engineering
Current academic year at the University	4th Year
Main source of information regarding environmental issues	Peers
Aspects university is most sustainable	Waste Management

Analysis against Perspective on Environmental Sustainability

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.045	1.918		3.674	.000
GenderD	.221	.075	.158	2.927	.004
FacDFMSC	-.003	.148	-.002	-.020	.984
FacDFHS	-.773	.171	-.410	-4.515	.000
FacDFAS	.424	.162	.203	2.616	.010
FacDFMS	.348	.178	.187	1.950	.053
FacDFT	-.334	.246	-.108	-1.359	.176
YearD1	-.728	.255	-.433	-2.853	.005
YearD2	-.564	.216	-.372	-2.613	.010
YearD3	-.152	.152	-.094	-1.001	.318
InfoDSchool	1.623	.278	.357	5.840	.000
InfoDUni	1.000	.249	.357	4.010	.000
InfoDWork	1.039	.381	.229	2.727	.007
InfoDDigital	.458	.224	.239	2.046	.042
InfoDPrinted	.248	.304	.066	.816	.416
InfoDInternet	.729	.214	.499	3.409	.001

UniSusDCourse	.088	.146	.064	.604	.547
UniSusDClubs	-.016	.157	-.011	-.100	.920
UniSusDEnergy	-.388	.208	-.173	-1.860	.065
UniSusDWater	.481	.275	.129	1.752	.082
Age	-.159	.075	-.330	-2.129	.035

	Hypothesis	Decision
H1a	There is an impact of the student's gender on their perspective on environmental sustainability	Supported
H2a	There is an impact of the student's area of study on their perspective on environmental sustainability	Supported
H3a	There is an impact of the student's year of study on their perspective on environmental sustainability	Supported
H4a	There is an impact of the student's awareness of environmental information on their perspective on environmental sustainability	Supported
H5a	There is an impact of the student's exposure to university sustainability on their perspective on environmental sustainability	Unsupported

- According to the results of the regression, except for university sustainability, all other independent variables are statistically significant at 5% level of significance. Thus, it can be inferred that university sustainability does not have a significant impact on undergraduates' perspectives of environmental sustainability. However, gender, area of study, year of study, and environmental information do have a significant impact on the undergraduates' perspective of environmental sustainability.
- In terms of gender, female students have a more positive perspective towards environmental sustainability than male undergraduates with a positive coefficient of 0.221.
- Considering the area of study variable, the Faculty of Management Studies and Commerce, Faculty of Humanities and Social Sciences, and Faculty of Technology have negative coefficients of -0.003, -0.773, and -0.334 respectively. It can be inferred that compared to the Faculty of Engineering the undergraduates of the earlier-mentioned faculties have a weaker perspective on environmental sustainability. The Faculty of Applied Sciences and Faculty of Medical Sciences have positive coefficients of 0.424 and 0.348 respectively deeming that the undergraduates of these faculties have a stronger perspective on environmental sustainability compared to those in the Faculty of Engineering.
- Under the year of study variable, 1st-year, 2nd year, and 3rd-year groups have negative coefficients of -0.728, -0.564, and -0.152 respectively. This can be inferred to mean that those undergraduates below the 4th year have a less positive perspective on environmental sustainability compared to 4th-year undergraduates.
- In terms of environmental information, all groups have positive coefficients. Thus, it can be inferred that those who were informed of environmental sustainability through school, university, workplace, digital media, printed media, and the internet have a positive perception on environmental sustainability than those who were informed through their peers.

DISCUSSION

Addressing the main objective of the research, it was identified that demographic and behavioural factors do have an impact on the undergraduates' perception of environmental sustainability.

The study conducted by Ribeiro et al. (2021) sheds light on the gender differences in environmental knowledge and participation in sustainable development practices. The findings of the study suggest that male individuals have lower levels of environmental knowledge and are less likely to participate in sustainable development practices. Backed by the literature, in this study female undergraduates showed a higher commitment and a more positive motive towards environmental sustainability. The study provides evidence that gender plays a significant role in shaping individual attitudes and behaviors towards environmental sustainability. The findings suggest that gender-sensitive approaches should be adopted to increase participation in environmental sustainability initiatives, particularly among male individuals.

The study by Liarakou et al. (2011) highlights the influence of educational background on the attitudes and behaviors of young individuals towards environmental sustainability. Further findings of the study suggest that educational background is a significant factor in determining the willingness of young people to participate in volunteering activities for the conservation of the environment. Through this research it was identified that specifically, undergraduates from the science fields exhibit higher levels of environmental awareness and commitment to sustainability, compared to those from management fields. The study suggests that educational programs should be designed to target students from different academic backgrounds to increase their awareness and commitment to environmental sustainability.

The study by Ribeiro et al. (2021) provides insights into the role of age in shaping the perceptions of young individuals towards environmental sustainability. The findings of this current study suggest that age is an influential factor in determining the level of awareness, commitment, and involvement of undergraduate students in environmental sustainability. Specifically, the study shows that fourth-year undergraduates exhibit a more positive perception towards environmental sustainability, which is backed by higher levels of awareness, commitment, and involvement. The study suggests that age-sensitive interventions should be developed to target students at different stages of their academic careers.

The study by Dagili?t? et al. (2017) sheds light on the role of universities in promoting environmental sustainability among young people. The findings of the study suggest that universities that are more sustainable in their operations, also known as ‘Green Universities’, provide more information on environmental issues and give more opportunities for students to engage in sustainable practices. In this research study, it was identified that undergraduates who are exposed to environmental sustainability through coursework exhibit higher levels of awareness and have a more positive perception of environmental sustainability.

The study by Kuruppuarachchi et al. (2021) highlights the importance of schools as a primary source of environmental information for young individuals. The findings of the study suggest that schools play a crucial role in shaping the perceptions and attitudes of young people towards environmental sustainability. This specific current study shows that school is the main source of environmental information for undergraduates, while the university curriculum is also another major source of such information. Moreover, the study reveals that undergraduates who receive their environmental information from schools exhibit a more positive perception regarding environmental sustainability. The study suggests that schools should adopt a more proactive approach to environmental sustainability education and incorporate such education into the curriculum from an early age. By doing so, schools can create a more supportive learning environment that facilitates the development of environmental awareness, attitudes, and behaviors among young people.

CONCLUSION

The studies discussed in this research highlight the importance of demographic and behavioural factors in shaping the perceptions of young undergraduates toward environmental sustainability. Gender, educational

background, age, exposure to university sustainability, and sources of environmental information are among the significant factors identified in these studies. The findings suggest that targeted interventions and approaches should be developed to increase the participation of individuals in sustainable practices, particularly among male individuals and students from management and business academic backgrounds. Moreover, the role of schools and universities in promoting environmental sustainability should be enhanced through proactive approaches and curricula that incorporate environmental sustainability education from an early age.

The study findings indicate that both schools and universities can play a significant role in promoting environmental sustainability among young people. Schools can start educating children about environmental sustainability from an early age to instill environmentally conscious behavior and attitudes. Incorporating sustainability education into the curriculum can make a significant impact on the future generation, who will go on to become responsible global citizens.

In conclusion, the findings of this study provide important insights into the demographic and behavioural factors that influence the youth's perspective on environmental sustainability. The results suggest that targeted interventions and programs are needed to promote sustainable behaviour and attitudes among all demographic groups. By integrating environmental education into school curricula and university programs, we can develop a more environmentally conscious future generation. Further research can explore other factors that influence youth perspectives on environmental sustainability and examine the effectiveness of different interventions and programs aimed at promoting sustainable behaviour and attitudes among young people.

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