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Sustainability and Innovation at Tirana Universities: Students perceptions on Sustainable Development in higher education in Albania

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Abstract: Objectives. Economic, social and environmental sustainability (ES) are today important variables to various fields of economy. Higher education institutions play an important role in addressing sustainable development goals. Governments have raised their attention and awareness related to better usage of natural resources, greener economy, recycling and circular usage of products. In line with the 17 sustainable development goals of the United Nations, Environmental Sustainability is a matter of high concern globally. The paper aims to analyze Sustainable Development Goals in action at universities in Albania. **Prior Work.** This is the second publication of the authors on the matter of ES and the role that universities in Tirana, capital of Albania, have played. The first study from the same authors analyzed inclusion of the ES concepts in university syllabuses and in scientific research, in current operations inside the universities and in human resources (HR) practices seen from the perspective of professors. **Implications/Values.** The actual study aims to bring the engagement of students in some universities in Tirana in activities related to SDG-s, climate change, recycling practices as well as their evaluation on the level of inclusion of ES (specifically and SDG-s) in curricula, teaching, and operations of universities in Tirana. **Approach.** The research uses quantitative, qualitative and exploratory analysis; 500 students from public universities were reached out. The sample was diversified from different study fields like business administration, finance, accounting, informatics, engineering, geology, agronomics, environment, social studies, medicine etc. **Results.** From the quantitative data, results show that 69% of university students have heard about sustainable development goals, but only 31% know what they exactly are. 34% of students never heard of this term but 62% of them would like to know more about SDG-s in courses or trainings offered by the university. 51% of them believe that universities should motivate students towards more sustainable actions concerning the environment. 52% of students are very concerned about climate change and 70% claim that are acting towards the protection of environment, however only 18% of them are actively engaged in social and environmental activities in Albania. Students have information about reusing, reducing and recycling practices and are involved in positive actions towards different aspects of these practices.

Keywords: Environmental sustainability (ES) in higher education; sustainable development goals; perception and action of students towards Sustainable Development Goals; higher education operations and programs towards sustainability; innovative approach to sustainability in Tirana

JEL Classification: Q01; Q5

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1. Introduction

Sustainability is now a principal factor for countries, governments and citizens. According to 'Our Common Future' report from the United Nations (UN), sustainability acts to "meet the needs of the present without compromising the ability of future generations to satisfy their own needs (United Nations E., Our Common Future, 1987). The Sustainable Development Goals (SDG), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity (United Nations, 1987).

There is a growing number of organizations who have been integrating environmental and social responsibilities into their business strategies alongside more traditional business imperatives, such as profit maximization, cost reduction, revenue growth, and quality improvement (Longoni, 2018). Holistic view of business ethics requires to embrace sustainability development in terms of triple bottom line, integrating social, environmental, and economic responsibilities (Elkington, 1994).

In order to provide awareness and information to people regarding the importance of sustainability it is important to include its concepts in education. Sustainability education among students is essential, as they can be ambassadors of sustainability in their future occupations, own startup-s, government representations.

Sustainable development goals must be addressed correctly by businesses, governments, and universities; they should function as change agents and push action for population to be more sustainable in different aspects of living. Academia has an important role in making this objective reachable.

This is the second study of the authors related to environmental sustainability. The first one addressed university curricula and everyday operations at some universities in Tirana, capital of Albania. The perception of professors was measured, and a thorough reading of curricula by the authors were the two paths followed to gather information. Some conclusions were drawn concerning inclusion of environmental sustainability concepts into curriculum and scientific research, as well as orientation that everyday operations and human resources (HR) practices of these universities have towards ES (Bici & Kasimati, 2023).

The purpose of the current study is to bring the perceptions and level of engagement that students at universities in Tirana have in actions related to Sustainable Development Goals (SDGs). As the previous research was concentrated on students in business administration, this study aimed broadening the understanding by including different faculties and different majors.

Other authors have studied students' perception related to SDGs in Europe (Dagiliute, Liobikiene & Minelgaite, 2018; Chuvieco, 2018; Aleixo, Leal & Azeiteiro, 2020; Puig & Casado, 2021; Nejati & Nejati, 2013; Farinha, Caeiro & Azeiteiro, 2018) however no prior research has examined the perceptions and attitudes to SDGs of Tirana higher education institutions (HEI) students as well as their behaviours related to sustainability.

The study uses a mixed methodology of a quantitative and exploratory research through a questionnaire.

Authors raised four research questions concerning sustainability in this research

Research Question 1. What is the level of environmental sustainability concepts included in current university syllabuses according to students perceptions?

Research Question 2. To what extent current internal operations take into consideration environmental sustainability in the universities studied according to students perceptions?

Research Question 3. To what extent sustainability issues are important to them and how much do they know related to SDGs?

Research Question 4. To what extent are university students' actions focused on sustainability improvement activities like recycling, re-using and reducing waste and their involvement in concrete environmental protection activities?

To obtain the required research objectives the paper is organized in six sections. In Section 2 authors explore the sustainability literature review and focus more on environmental sustainability and student' perceptions towards sustainability, section 3 explains the methodology used for this paper research, section 4 shows the results and analysis of this study, section 5 reviews the conclusions, limitations and future considerations for research in the field in Albania.

2. Literature Review

According to 'Our Common Future' report from the United Nations (UN), sustainability acts to "meet the needs of the present without compromising the ability of future generations to satisfy their own needs" (United Nations 1987). The Commission sees sustainable development – 'in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change, are made consistent with future as well as present needs, as an immediate imperative and continuing essential (United Nations 1987).

In line with the first considerations, the 2030 Agenda for Sustainable Development is a plan of action for people, planet, and prosperity that sets a united framework for the global development goals for all countries to follow. It contains 17 Sustainable Development Goals (SDGs) that include all three dimensions of sustainable development: the economic, social, and environment ones. The fourth sustainable development goal (SDG4), i.e. quality education, is created to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, and has been appointed as the universal education goal (United Nations E. , Education for sustainable development, 2021). According to all setbacks in different countries the current economic, social, cultural, and political backgrounds of such diverse countries can be a major obstacle for the implementation of SDGs plan in compliance to 2030 objective (UN January 2021).

HEI initiatives and activities of environmental sustainability are in different areas research, education, campus operations, community engagement/outreach, institutional framework, on-campus experiences, and assessment and reporting (Fischer, 2015). Therefore, the HEIs play a catalytic role in societies' engagement with sustainability (Lehmann & et al, 2009). For universities to comprehensively address sustainability, a 'learning for sustainability' approach needs to be embedded across every aspect of institutional operations in a synergistic way (Ralph & Stubbs, 2014). Education for sustainability and increase of awareness to students is particularly important, as they will be future implementors of SGGs.

Providing sustainability awareness to students requires educational institutes to adapt their vision, policy, teaching, and in particular their curriculum. However, the extent of curriculum 'greening' appears to be limited by internal, interdisciplinary barriers, requiring governmental assistance and student pressure to effect greater change (Haigh, 2005). Despite the adoption of sustainability recommendations there is still much to be done by European countries in different directions as well as includingdedicated subjects related to sustainability in education (Lozano, et al., 2015).Given their collective knowledge and research capacity, there is a moral responsibility for universities to educate future leaders and to advance knowledge that can lead to the creation of a sustainable environment

(Moore, 2005). (Dagiliute et al 2018) mentions that students have a vital role on sustainability development in the future, so it is mandatory that curricula should be designated in such a way that it can shape their knowledge in relation to sustainability goals to be achieved.

It is necessary to transform some of the academic programs in the higher education curriculum by integrating teaching content and methods that include long-term knowledge and holistic thinking, considering the importance of interdisciplinary integration (Terlevic, Starcic, & Kovac, 2015).

Other authors have studied students perception related to SDGs in Europe (Dagiliute, Liobikiene, & Minelgaite, 2018) (Chuvieco, 2018), (Aleixo, Leal, & Azeiteiro, 2020), (Puig & Casado, 2021), (Nejati & Nejati, 2013), (Farinha, Caeiro, & Azeiteiro, 2018), however no such study has been conducted in Albania related to students perception towards university commitment on sustainability matters, their information related to SDGs, their own commitment related to SDGs or their actions towards environmental or social protection or information and importance of climate change.

The main drivers that explained practices of university students towards environment concluded from other studies were age, gender, field of study, graduate level (Vicente-Molina et al, 2013) (Aleixo, Leal, & Azeiteiro 2021) ((Gifford & Nilsson, 2014) (Wiernik, Ones, & Dilchert, 2013) (Jimenez-Fontana, Garcia-Gonzales, & Goded, 2020). that is why in our study we have conducted a cluster statistical anylyses concerning Age and gender differences were used in this study to differentiate through cluster analysis on students' perceptions and behaviours towards SDGs.

3. Methodology

3.1. Survey Procedures and Structure

The survey questionnaire was adapted and put in Albanian context using four sources.

1. Sustainability Assessment Questionnaire (SAQ) for Colleges and Universities from Sustainable School Organization (Calder, 2012). The same questionnaire was used by the authors in previous study when professors and university directors were the champion. Keeping the same questionnaire was done for comparative purposes.

2. Student perceptions of sustainability in higher education: an international survey (National Union of Students, 2018).

3. (Chuvieco et al., 2018) Factors affecting environmental sustainability habits of university students questionnaire.

4. (Dagiliute et al., 2018) Sustainability at universities: Students' perceptions from Green and Non-Green universities questionnaire.

This study's questionnaire measured the perceptions and actions of students in HEIs in Tirana in relation to SDG-s, climate change, re-using, reducing and recycling practices as well as their evaluation on the level of inclusion of ES (specifically) and SDG-s (broader understanding) in curricula, teaching, and operations of HEIs in Tirana. The questionnaire was pre-tested by 20 students and their feedback was incorporated in the final instrument that measured the total sample.

The *first section* of the questionnaire collected demographic data like gender, age, study level (undergraduate or graduate), job experience and study area (major in (business administration, finance, accounting, economics, tourism, informatics, engineering, geology, agronomics, environment, social studies, medicine).

The *second section* and *third section* aimed to measure students' perception of environmental sustainablity inclusion in curricula, teaching, and operations of HEIs in Tirana.

The aim of the *fourth section* was to measure whether students believe their university is concerned about the environment and society.

In the *fifth section* students were asked to indicate which subjects at their studies had information and helped them have a proactive behaviour towards environmental and social sustainability.

The *sixth section* of the questionnaire gathers students' insights and evaluations whether universities should do a better job in providing trainings about SDGs.

The *seventh section* aims to measure level of students' awareness about SDGs.

The *eighth, ninth and tenth sections* measure students' actions and engagements related to sustainable development activities as well as their perceptions regarding university engagement towards sustainable development activities, their concern about climate changes, their actions towards reuse-reduce-recycle practices in their daily life.

3.2. Sample and Data Collection

The questionnaire was conducted onsite in all four Tirana public universities; University of Tirana (Faculty of Economics, Faculty of Social Sciences) Polytechnic University of Tirana (Faculty of Civil Engineering, Faculty of Geology, Faculty of Environment) Agricultural University of Tirana and Medicine University of Tirana using an online questionnaire in Google Forms. The authors preferred to use an online tool to gather the data as an easier way to collect and analyse the responses, however they were onside when the students filled the online questionnaire if there was any question from them.

Students participated voluntarily in the survey and a previous approval was obtained from the university's professors and administrative directors. The collection of data was obtained from March up to May 2023.

The sample targeted was 500 students. A response rate of 89% was obtained. Table 1 below shows demographical data of the sample.

3.3. Statistical Analyses

The questionnaire contained forty-four questions, from which seven were questions about demographics, four out of seven were binary questions. Three questions were related to students' perception about future employment to sustainable responsible companies, which also were binary questions. Because of this, Cronbach's Alpha was not performed for this kind of questions. The remaining thirty-four questions contained Likert Scale type alternatives ranging from 1-5, where; level one means zero commitment towards SDGs-totally disagree; level two means little commitment – little agreement; level three means moderate commitment-moderate agreement; level four means good commitment-good agreement; level five means total commitment – total agreement.

Descriptive analysis of this data was conducted using SPSS software.

Table 1. Demographic data of the sample

Demographics		Number
Gender	Female	394 (79%)
	Male	106 (21%)
Age	18-22 years	336 (66.8%)
	22-25 years	144 (28%)
	26-35 years	17 (3%)
	36-45 years	2 (2%)
	Above 45 years	1 (0.2%)
Study Level	Undergraduate	263 (53%)
	Graduate	237 (47%)
Field of study	Informatics	82 (16%)
	Business Administration	96 (19%)
	Economics	88 (18%)
	Finance	103 (21%)
	Engineering	37 (7%)
	Medicine	24 (5%)
	Social Sciences	24 (5%)
	Accounting	13 (2.6%)
	Environment	15 (3%)
	Tourism	10 (2%)
	Geology	6 (1%)
	Agronomics	2 (0.4%)
Employeed	Yes	237 (47%)
	No	263 (53%)

The age and gender of respondents was used to evaluate if there are significant differences between age groups and gender subgroups in terms of commitment towards SD.

To evaluate reliability of questions between constructs authors used Cronbach Alpha. All constructs except one showed good reliability (above 0.8). According to (Nunnally, 1978) the appropriate level of reliability is above 0.7 Nevertheless, the construct "Students' perceptions and behaviors related to recycle practices" low score (0.65) (has only two questions/dimensions) can be related to the fact that students throw garbage to the specified place, but they don't divide them according to their type. The latter response can be related to the fact that in Tirana there are very few places for differentiated gathering of garbage and this practice is not required by law (compared to other countries that do so).

Constructs 'Students' perception related to university inclusion of ES topics in teaching curricula' and 'Students knowledge about SDGs contain only one question, therefore it is not necessary to calculate Cronbach Alpha.

Table 2. Reliability analysis

Constructs	Number of items	Range	Cronbach Alpha
University Actions towards SD			
Students' perception related to university inclusion of environmental sustainability topics in teaching curricula	1	1-5	N/A (one question)
Students' perception related to university operations accordingly to environmental sustainability principles	6	1-5	0.81
Students' perceptions of HEI actions in support of Sustainable Development (teaching and promotion through students)	4	1-5	0.79
Students perception about HEI action for Sustainable Development (measures taken and activities)	4	1-5	0.87
Students knowledge about Sustainable Development Goals	1	1-3	N/A (one question)
Students' perceptions and behaviours about SD			
Students' perceptions about climate change	4	1-5	0.87
Students' perceptions and behaviors related with reuse and reduce practices	6	1-5	0.87
Students' perceptions and behaviors related with recycle practices	2	1-5	0.65
Students' perceptions and behaviors related to contributing to environmental protection	4	1-5	0.86
Perceptions and behaviors related to activities organized by the HEI in the SD area	3	1-5	0.94

4. Results and Analysis

Results from the questionnaire are organised in six subsections explained below. The sixth sub question (Students' perceptions about climate change and their behaviours in the SD area) contains five elements which are analysed more in detail using statistical tools. As seen in table 3, descriptive data show that the overall perception of students about the inclusion of environment sustainability into the university curricula is rather low (the mean is just above 2.5 out of a maximum of 5, at 2.55 little to average agreement). Their perception on how the SDGs are incorporated into the University operations is below the mean (at 2.43). Higher results (3.61-almost to *agree* level) can be related to students' perception related to HEI promotion and incorporation of SD. This result has scored higher compared to other variables measured because it is related to the desire of the students to learn more about SDGs and their opinion that HEIs should do a better job to promote and incorporate SD to their future curricula and trainings. This means that students want to learn more about SDGs and think that SD is something that universities should promote and incorporate in their current and future plans. Students' opinion about to HEI current actions for sustainable development are also low (2.68 between little to average agreement), which means that the HEIs should increase their impact and engagement on environmental sustainability. The results about students' knowledge about SDGs are falling mostly on the second alternative, students have heard about SDGs, but they don't know what they are in details (this was an alternative question where they needed to select only one option).

Table 3. Students' Perceptions About All Areas Measured Related to Sustainable Development

Areas	Mean	Std. Deviation
University inclusion of environmental sustainability topics in teaching curricula	2.55	1.23
University operations applied accordingly to ES principles	2.43	0.73
HEI promotion and incorporation of SD to students	3.61	0.88
HEI action for Sustainable Development	2.68	0.94
Students' knowledge about Sustainable Development Goals	2	0.78

4.1. University Inclusion of Environmental Sustainability Topics in Teaching Curricula

Results of all respondents regarding inclusion of environmental sustainability in current syllabuses are shown in Table 4.

Table 4. Students' Perceptions University Inclusion of Environmental Sustainability Topics in Teaching Curricula

Area	1		2		3		4		5	
	n	%	n	%	n	%	n	%	n	%
University inclusion of environmental sustainability topics in teaching curricula	112	22.40%	143	28.60%	130	26%	71	14.20%	44	8.80%

Legend 1-not at all, 2-little inclusion, 3-avarage inclusion, 4-good inclusion, 5-very good inclusion of environmental sustainability concepts in syllabuses

For 28.6% of the students (n=143) universities have little inclusion of environmental sustainability topics in their curricula. 26% of them (n=130) say that their university has an average inclusion of these concepts in curricula and 22.4% (n=112) claim that universities have low coverage of these concepts in curricula. Only 23% of students (n=115) say that their universities have a good/very good coverage of this concepts in their curricula. The age/gender cluster analyses revealed no significant differences between students of different genders and different age groups for this variable.

4.2. University Operations Applied Accordingly to Environmental Sustainability Principles

Results of all students regarding inclusion of environmental sustainability practices in current HEIs;

Table 5. University Operations Applied Accordingly to Environmental Sustainability Principles

Area	1		2		3		4		5		6		Total	Average
	n	%	n	%	n	%	n	%	n	%	n	%	n %	
Building construction and renovation are based on green design principles	50	10%	163	33%	174	35%	45	9%	6	1%	62	12%	500 (100%)	2.22
Energy conservation practices are used (including lighting, heating, cooling, ventilation, windows, etc.)	60	12%	139	28%	163	33%	84	17%	19	4%	35	7%	500 (100%)	2.52
Waste reduction practices are used (such as e-communications, double-sided copying, "waste free lunch" program, etc.)	78	16%	156	31%	149	30%	67	13%	26	5%	24	5%	500 (100%)	2.47
Recycling of solid waste is done in the righ category(including paper, plastic, metal, e-waste, etc.)	168	34%	154	31%	97	19%	37	7%	10	2%	34	7%	500 (100%)	1.93
Water conservation practices are used (including efficient toilets, minimal irrigation, harvested rainwater, etc.)	70	14%	140	28%	144	29%	75	15%	36	7%	35	7%	500 (100%)	2.52
Sustainable transportation and parking program is offered from the university(including bicycle/pedestrian friendly systems, car pools, bus pass programs, biodiesel projects, etc.)	146	29%	109	22%	102	20%	77	15%	42	8.40%	24	4.80%	500 (100%)	2.38

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree, 6-I don't know

4.3. HEI Promotion and Incorporation of Sustainable Development to Students

Students' perceptions of HEI promotion and incorporation of Sustainable Development were measured in four directions, namely in terms of whether the HEIs should do more to promote and incorporate SD at their courses, if current courses and subject should have more incorporated concepts related to SD, students' interest in learning more about SD and what the students learnt until now in their courses.

As can be seen in Table 6, 70% of students (n: 351; sum of answers 4 – agree and 5 – totally agree) believe that SD should be more actively incorporated and developed by their university, 68% (n = 340) say all courses should actively incorporate and promote SD, 61% (n = 306) want to learn more about SD. Also, in the fourth question related to the extent to which SD was covered in their course students have compatibility of the results of 4.1 point measured (University inclusion of environmental sustainability topics in teaching curricula) in both cases most of the students (around 200 in both cases) claim that SD is only sporadically covered in the course or not at all covered.

Table 6. HEI Promotion and Incorporation of Sustainable Development to Students

Area	1		2		3		4		5		6		Total	Average
	n	%	n	%	n	%	n	%	n	%	n	%	n %	
SD is something which all universities should actively incorporate and promote	18	4%	32	6%	95	19%	145	29%	206	41%	4	1%	500 (100%)	3.95
SD is something which all courses should actively incorporate and promote	15	3%	40	8%	92	18%	156	31%	184	37%	13	3%	500 (100%)	3.83
SD is something which I would like to learn more about	22	4%	42	8%	118	24%	155	31%	151	30%	12	2%	500 (100%)	3.67
SD has been covered enaugh in my course	81	16%	125	25%	133	27%	86	17%	62	12%	13	3%	500 (100%)	2.77

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree, 6-I don't know

4.4. HEI action for Sustainable Development

For 48% (n = 243) of students, the HEI takes little to no action to limit the negative impact that has been caused on the environment and society, whereas 49% (n = 246) of students say the HEI provides little to no opportunity to get involved in actions to limit the negative impact on the environment and society

Asked about how their studies influence their behaviour to SD, 40% (n = 200) students say that they learn very little on how to make changes in their lifestyle to help the environment, however 313 students say that their studies are helping them to learn how to have a positive impact on the world around them(3,4,5 level calculated). The age/gender cluster analyses revealed no significant differences between students of different genders and different age groups for this variable. Results can be found in Table 7:

Table 6. HEI Action for Sustainable Development

Area	1		2		3		4		5		6		Total	Average
	n	%	n	%	n	%	n	%	n	%	n	%	n %	
My university takes action to limit the negative impacts that are caused on the environment and society.	66	13%	177	35%	135	27%	55	11%	24	5%	43	9%	500 (100%)	2.33
My university provides opportunities for students to get involved in actions to limit the negative impact that is caused on the environment and society	94	19%	152	30%	124	25%	64	13%	32	6%	34	7%	500 (100%)	2.37
My studies allow me to learn how to make changes in my lifestyle to help the environment	74	15%	125	25%	131	26%	99	20%	50	10%	21	4%	500 (100%)	2.73
My studies are helping me learn how to have a positive impact on the world around me	42	8%	123	25%	143	29%	97	19%	73	15%	22	4%	500 (100%)	2.94

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree, 6-I don't know

4.5. Students' Knowledge about Sustainable Development Goals

When asked to answer what they know about the SDGs (Table 8), 31% say they have not only heard about them but also know what they are (n: 153; 31%);35.0% of students (n: 176) have heard about the SDG but do not know them; and 34% (n = 171) have never heard about SDGs.

Table 8. Students' Knowledge about Sustainable Development Goal

Area	1	
	n	%
I've heard about SDG and I know what they are	153	31%
I've heard about SDG but I don't know what they are	176	35%
I've never heard about SDG	171	34%

4.6. Students' Perceptions about Climate Change and Their Behaviours in the SD Area

This construct was studied using five factors that are important to climate change: perceptions for climate change (factor 1), reuse and reduce practices (factor 2), recycle practices (factor 3), contribution to environment protection (factor 4), and activities organized by HEIs in the SD area.

As seen in Table 9 the first three factors have a higher result, this means that students are concerned about climate change and agree that governments all over the world should do everything in their power to address climate changes as needed. On the other side we have good practices of students related to reuse, reduce and recycle practices (mean 3.53 and 3.47 respectively), however when asked about their active engagement in environmental protection activities the score is relatively low (mean 2.59).

Table 10. Students' Perceptions about Climate Change and their Behaviours in the SD area

Elements	Mean	Std. Deviation
Climate Change	3.67	0.94
Reuse Reduce Practices	3.53	0.88
Recycle Practices	3.47	1.05
Environmental Protection	2.59	0.97
HEI SD_Area	2.41	1.06

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree

The result is even lower (mean 2.41) when they are asked about their engagement in environmental activities organized from their HEI; this can be related to low number of activities organized in Albania in this area.

Interesting facts are related to a comparison done between male and female students, the results show that female students score higher in concerns and activities related to climate change. As can be seen in tables 10 and 11 there are statistically differences for gender, as females are being more sensitive to climate change matters and to the governments' responsibility to address these issues.

Table 10. Female Students' Perceptions about Climate Change and Their Behaviours in the SD are

Elements (Female Population) N=394	Mean	Std. Deviation
Climate Change	3.77	0.91
Reuse Reduce Practices	3.65	0.85
Recycle Practices	3.55	1.02
Environmental Protection	2.6	0.96
HEI SD_Area	2.36	1.06

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree.

Table 11. Male Students' Perceptions about Climate Change and their Behaviours in the SD area

Elements (Male Population) N=106	Mean	Std. Deviation
Climate Change	3.31	0.97
Reuse Reduce Practices	3.11	0.88
Recycle Practices	3.18	1.1
Environmental Protection	2.58	1.01
HEI SD_Area	2.57	1.05

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree.

Table 12. Age Group Differences for Students' Perceptions about Climate Change and their Behaviours in the SD area

Age groups	Elements	Mean	Std. Deviation
18-22 years (n=336)	Climate Change	3.64	1.01
	Reuse Reduce Practices	3.5	0.93
	Recycle Practices	3.4	1.07
	Environmental Protection	2.63	0.99
	HEI SD_Area	2.45	1.08
22-25 years (n=144)	Climate Change	3.73	0.75
	Reuse Reduce Practices	3.54	0.75
	Recycle Practices	3.6	1.03
	Environmental Protection	2.48	0.89
	HEI SD_Area	2.29	0.95
26-35 years (n=17)	Climate Change	3.8	1.05
	Reuse Reduce Practices	3.97	0.91
	Recycle Practices	3.28	0.72
	Environmental Protection	2.82	1.14
	HEI SD_Area	2.57	1.25
36-45 years (n=2)	Climate Change	3.16	0.23
	Reuse Reduce Practices	3.16	0.7
	Recycle Practices	3.75	1.06
	Environmental Protection	1.62	0.88
	HEI SD_Area	1.66	0.94
45 and above (n=1)	Climate Change	2.33	
	Reuse Reduce Practices	3.33	
	Recycle Practices	5	
	Environmental Protection	3.5	
	HEI SD_Area	4	

Legend 1-Don't agree, 2-Agree a little, 3-average agreement, 4-I agree, 5-I totally agree

Interesting differences are shown in table 12, where it appears that in most areas, older generations show higher level of climate concern than younger generations. With the age increasing, we have more representatives from graduate degree students (n=144+17) compared to undergraduate degree students

(n=336). Subjects related to SDGs and environmental issues are studied more at graduate level students, leading to more knowledge about environmental responsibility.

5. Conclusions, Limitations, and Future Considerations

This study used an exploratory research and used quantitative and qualitative data to study the perceptions and actions of students' on how Tirana public universities are addressing SDGs and environmental sustainability on particular in various fields, like inclusion of the concepts in curricula, HEI operations towards sustainability, HEIs actions towards environmental sustainability and students' actual behaviours towards climate change and environmental topics.

Relating previous research of the authors (Bici & Kasimati 2022) with findings for this sample, it can be said that at both perspectives, that of professors' and that of students' of HEIs in Tirana, a more holistic approach is needed related to the topics. Comparison of data between the two groups and two studies concludes in similar results related to inclusion of sustainability in curricula, HEIs operations towards sustainability and HEIs actions towards sustainability.

The conclusions of the current study show us that there is room for improvement from both students' and actors of HEIs side. The role of universities as important actors to establish a general culture and diffuse these concepts to their students is of imperative value, since students will become future actors in organizations and businesses. More information, skills, knowledge on ES is given today, better sustainable business practices we will have in the future (Bici & Kasimati 2022).

In a sample of 500 university students 69% of them have heard about sustainable development goals, but only 31% know what they exactly are. 34% of Tirana students never heard of SDGs but 62% of them would like to know more about SDG-s in courses or trainings offered by the university. 51% of students believe that universities should motivate them towards more sustainable actions concerning the environment. 52% of students are very concerned about climate change and 70% claim that they are acting for the protection of environment. Only 18% of them are actively engaged in social and environmental activities in Albania. Students have information about reusing, reducing and recycling practices and have started showing positive actions towards different aspects of these practices.

Perception of students about the inclusion of environment sustainability into the university curricula is rather low (the mean is just above the 2.5 out of a maximum of 5, at 2.55 little to average agreement). To their perception the SDGs are incorporated into the university operations in a level of 2.43 out of 5. Students' opinion about their university current actions for sustainable development are also low (2.68 between little to average agreement), which means that the HEIs should increase their impact and engagement on environmental sustainability.

The results show that female students score higher than male students in relation to their concerns and activities related to climate change. Older generations show higher level of climate concern than younger generations. The latter can be related to the fact that older generations broaden their knowledge in advanced studies, and they are more conscious on the effects of climate changes on nature and future of humanity.

It is required a sustainable solution to enrich our current syllabuses with environmental sustainability thematic concepts and creation of specific subjects related to sustainability and SDGs. From the analyses, 62% of the students conclude that the university should offer more trainings/workshops on environmental sustainability and SDGs; 51% of students think that universities should be a catalyser for the students, so they can act in a more sustainable way. 46% of the students that participated in the study

think that universities should increase students' engagement in social and environmental activities, by incentivising them and even engaging them in the planning process of the HEI towards increase of sustainability awareness. Only 20% of students believe that a dedicated course related to sustainability should be created. Consequently, there is still much work to be done in Tirana HEIs related to SDG matters.

Although the analysis followed different perspectives and measured a lot of variables related to SDGs and environmental sustainability, it has some limitations. Sources limitation-due to limitations of time and respondents the study was performed only on universities operating in Tirana. As there are also universities in other cities of Albania offering education in different disciplines, the conclusions of the study are valid only for Tirana universities. New research can be conducted to study the variables in different universities of Albania.

However, the validity of instruments and approach, guarantees that it can be followed and replicated by broadening the number and variety of respondents and universities. This paper contributes to the Albanian literature by offering some insights on HEI students' perception of sustainable development and actions towards this important cause for humanity.

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