

THE IMPACT OF SUSTAINABILITY KNOWLEDGE

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ABSTRACT

Education is the catalyst for change with long-term repercussions. The first step towards change is awareness of existing problems. In this paper, the problems that need to be resolved are the Sustainable Development Goals (SDG). In this regard, quantitative research has been conducted to determine to what extent students are familiar with the concepts related to these goals. The research shows the lack of addressing topics related to sustainable communities, responsible consumption and production or gender equality. However, there is openness and interest to study in-depth sustainable development. This is also evidenced by the choices that students are willing to make in future jobs. The main conclusions of this paper are related to the need to implement models of sustainable development within higher education institutions (HEI). This will lead to acquaint of sustainability knowledge for future employees.

KEYWORDS: *sustainable development goals, sustainable education, higher education institution*

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1. INTRODUCTION

Sustainability is the word that resonates with both the present and the future. Many of the scientific papers have tried to explain it and place it as close as possible to the present context. The initial definition, however, is the one to which we should refer, without influences caused by partisan interests (Lorek & Spangenberg, 2014). The importance of this so titled word has its roots in the emergence of the Brundtland report and is anchoring in three pillars: economic, social and environmental. The path of sustainability continued with the launch of the Sustainable Development Goals (SDG) by the United Nations in 2015 (Transforming our world: The 2030 agenda for 2030, 2015). Unfortunately, these objectives derived from meeting present needs without compromising the limited resources needed for future generations have not been achieved. Poverty has not been eliminated, nor have the limits of the planet been respected. The three most important limits: the destruction of biodiversity, the levels of nitrogen and phosphorus that threaten ecosystems, and greenhouse emissions have been far exceeded and the cost is not late in occurring (Rockström et al., 2009). This are just a part of the problems that are gathered under the umbrella of sustainability. The seventeen goals of sustainable development reach a wide range of matters, from resources use, to justice, health, and gender equality. In a nutshell, these SDGs are related to well-being of the citizens but considering economic growth and environmental protection.

To respond to the uncertainties caused by resource consumption with long-term environmental consequences, a first step is to understand the current situation, then raise awareness of the impact of the addiction to increasing economies and individuals at any cost. Achieving sustainable consumption can be done if we look at individual choices in line with economic policies. Moreover,

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consumer education is essential in shaping a future geared towards circularity, not economic linearity. Recent years have seen changes in innovation-oriented initiatives, but the potential of sustainable change is not yet fully exploited. To achieve this, in addition to individual education, significant changes are needed at the legislative level to harmonize individual decisions with global well-being. Increasing the level of knowledge in the field of sustainable development is not enough. Implementing individual knowledge related to sustainable development is context dependent. But the goals set for 2030 will be achieved only if at the individual level will exist the necessary knowledge to understand and choose the optimal consumption options. Moreover, the knowledge gained in the educational system represents the prerequisites for creating and implementing innovative solutions at organizational level. Both consumption and production must respect the basic principles of sustainable development to ensure the achievement of the objectives.

The current trend presents sustainability within educational institutions reporting as a form of competitive advantage. There are analyses of successful models of voluntary sustainability reporting in universities (Brusca et al., 2018), but also proposals for framework documents in which sustainable development measures are quantified (Secunodo et al., 2017). However, we still cannot speak of unified reporting at the organizational level (Sanchita, et al., 2019). Higher education institutions rankings are the first step in analysing sustainability in an competitive way. Disclosing good practices and gaps that can be filled with measures and procedures is needed to attaing the sustainability goals.

The pressure shown by stakeholders to implement sustainable practices is obvious (Aron & Molina, 2020; Tariq et al., 2017), but if we look beyond the need imposed by the achievement of the sustainable development goals, we can refer to the resulting co-benefits. Sustainable practices create value and improve the brand image whether it is educational institutions or private sector organizations.

But integrating sustainability into the education system brings multiple challenges. Educational institutions should promote sustainability education in a science-oriented way in order to transform the local context and awareness of the global challenges brought about by sustainability in the twenty-first century (Bascope et al., 2019). At the same time, strategic partnerships between education systems and stakeholders are needed to highlight the obvious problems in practice (Hermann & Bossle, 2020). The importance of this approach is also highlighted in the development of the literature on this subject. Integrating sustainability at the strategic level is one of the main topics addressed by organizations today (Meisam et al. 2021). This is also due to the pressure imposed by the transition to a green economy (Hannon & Bolton, 2021). All these challenges and evidence substantiate the need to refocus teaching, learning and research (Wals, 2014) to create new mental models and competences that can contribute to innovative transformations towards sustainable development.

2. METHODOLOGY

For realizing this paper, it was used quantitative research. The data collection was carried out using a survey. The survey items were developed based on an extensive analysis of the international literature, including reports and public documents, on the subject of education for sustainability.

The final version of the survey comprised three sections. The first part was dedicated to demographic information, the second part included questions related to familiarity with the field of sustainability and section three included questions related to future options of respondents. Section number one counted seven questions, section two contained five questions and the last section contained four items.

Before completing the questionnaire for data collection, an information validation exercise was carried out to determine the adequacy of the items developed. Experts in the field of sustainability, sociology and communication provided constructive feedback for the questionnaire's questions and

answers. Some of the most important points of the validation exercise concerned the adjustment of the number of sections and variants of response and the adequacy of some of the elements with the objectives of the research. Since the survey was conducted to identify students' point of view about the necessity and implications of education for sustainability a few questions have been changed. The purpose of the changes was to better understand the ways in which sustainable education can be reflected in students' choices and actions. Following a unanimous recommendation, questions about subsequent hiring decisions were reduced given the low probability of military students choosing organizations that are not in this field.

Following the operation of the changes suggested by the experts, a pilot study was conducted to ensure the validation process. This pre-test was attended by 7 respondents. The conclusions from the application of the pilot study showed that the investigative tool is an appropriate one.

Both stages (expert validation and pre-testing) ensured the validity and reliability of the data collection tool. The next step was to translate the questionnaire into a Google form. Using an intentional sampling approach, combined with techniques such as snowball and chain references, led to the spread of the online questionnaire to all students. The data collection was carried out between November 2021 and December 2021. In accordance with research ethics protocols, respondents were informed that their participation in the study was voluntary. Participants were informed that the provided answers will be treated with the strictest confidence, and the protection of their personal data will be maintained.

3. RESULTS AND DISCUSSIONS

The research involved 179 respondents. The participants came from all regions of Romania but with a better representativeness in the counties of Suceava, Arges, Sibiu, Prahova, Alba, Neamț, Cluj, Dolj, Buzău, Iași. Most respondents (62.4%) were male, 31.7% were female and 0.6% preferred not to reveal their gender.

Regarding the age distribution of respondents, those aged 20-21 formed the group with the highest representativeness (49%). They were followed by the 22–23-year-old group (29%). Respondents aged 18-19 years were the third largest group (13%) and the least representative were those over the age of 24 (9%).

The specializations of the respondents varied. Most of them attend courses in the field of management (62.86%), followed by students specialized in technical sciences (15.71%) and those who are specialized in economics and administrative sciences (21.43%). Out of the total number of respondents, 22.14% are represented by students in master's studies.

Most respondents, respectively 57.9% live in urban areas. Of these, 64.2% live in apartments and detached houses (19.9%) and 15.9% live in and semi-detached houses.

From the point of view of the topics with direct connection to the Sustainable Development Goals, the respondents were informed about ecosystems and ecological principles in a measure of 53.9% and 50% were informed about waste, water, and energy. Although these topics are related to the biological sciences studied in compulsory education, it is important to note that only half of the respondents have become aware of the connection with the study of these phenomena in the past. This indicates on the one hand that the passage of time erodes knowledge and on the other hand that they have not been studied enough to remain imbued in long-term memory.

On the other hand, as can be seen in figure 1 the least studied by respondents were the topics related to sustainable development goals 16 (peace, justice, and effective institutions), 5 (gender equality), 12 (responsible consumption and production) and 11 (sustainable cities and communities).

Being aware of the aspects treated within the SDGs is the starting point of one process that can lead to great changes. What is learned in school can be transformed into decision factors that can influence how some organizations are ruled. In some cases, every small decision counts and can change the path for the generations that come after. Knowledge achieved in school is transformed

later in research for innovations. Innovations are useful if can be transferred to the business environment and for this to happen the client's needs must be revealed and satisfied. A broaden view of the problems faced by the society attract more solutions and connections. Fundamental notions of general problems faced in XXI century must be acquired by every student despite the specialization. Even if they are in the process of acquiring complex specialized notions, specialization cannot bear fruit in excellence if it is not supported by a solid ground of general culture. Solutions for sustainable development problems cannot rise only from one specialization. Empathy is amplified being aware of the problems and this can be done only if knowledge is well settled.

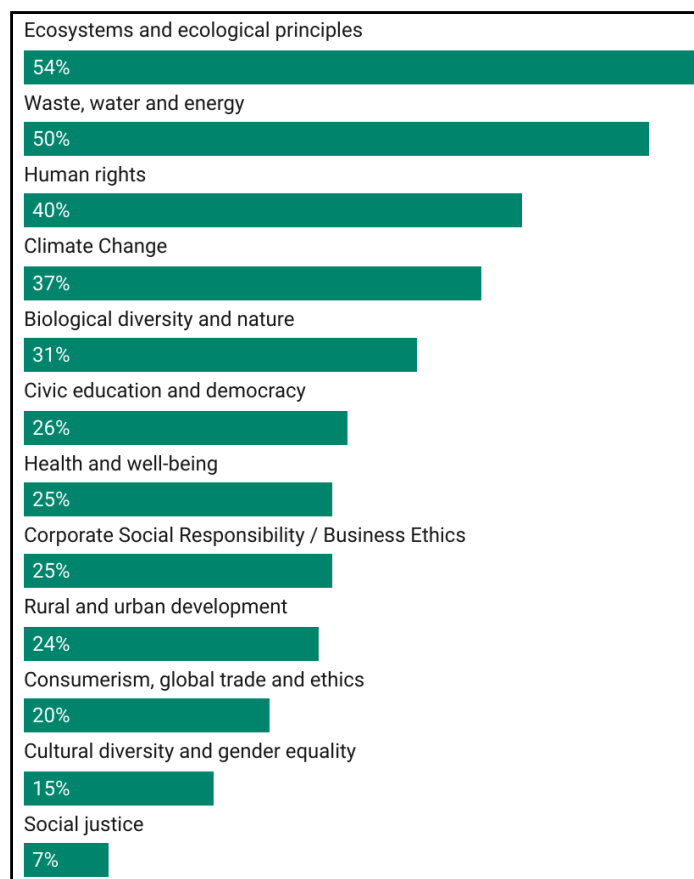


Figure 1. Topics covered in the courses

As can be seen in figure 2, from the point of view of the need to attend sustainable development in the studies followed, it is gratifying to see expressed the agreement in a proportion of 61%. But, at the same time, the uncertainty expressed in a proportion of 27% of the respondents reflects the indolence of those who are not aware of the importance of individual choices. On the other hand, although in much smaller numbers, there were also respondents who do not consider it necessary to study the phenomenon of sustainable development within the education system. This result may signify unconsciousness on the one hand or consideration of the fact that information related to the subject can be extracted from other media.

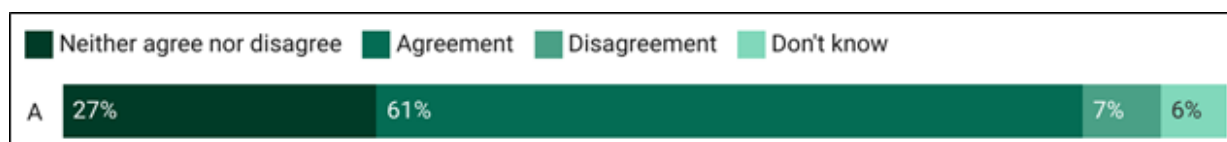


Figure 2. The need for sustainable development within the education system

From the point of view of the actions taken to contribute to sustainable development, can be note the recycling of paper and cardboard (56%), the recycling of glass objects (43%), the use of eco-labelled products (38%). At the opposite pole are the choice of products wrapped in plastic (22%) and the recycling of electrical appliances (15%). The answers seen in figure 3 highlight the need for constant education to become aware of the importance of individual decisions.

Activities such as recycling paper, cardboard or glass are learned from an early age in Nordic cultures and are seen as normal in most developed countries.

The way in which recycling is required in public institutions in Romania should be a model for private entities, but the legislative implementation is not carried out well unfortunately. The main cause of the sustainability implementation gaps is the lack of understanding of the phenomenon of sustainable development and the inability to empathize. Counteracting this impasse can only be achieved through the obligation to study the phenomenon of sustainable development in compulsory education and in higher education.



Figure 3. Individual initiatives

The need to study the phenomenon of sustainable development is also highlighted by the amount of municipal waste resulted at country level compared to the EU average (*Municipal waste statistics*).

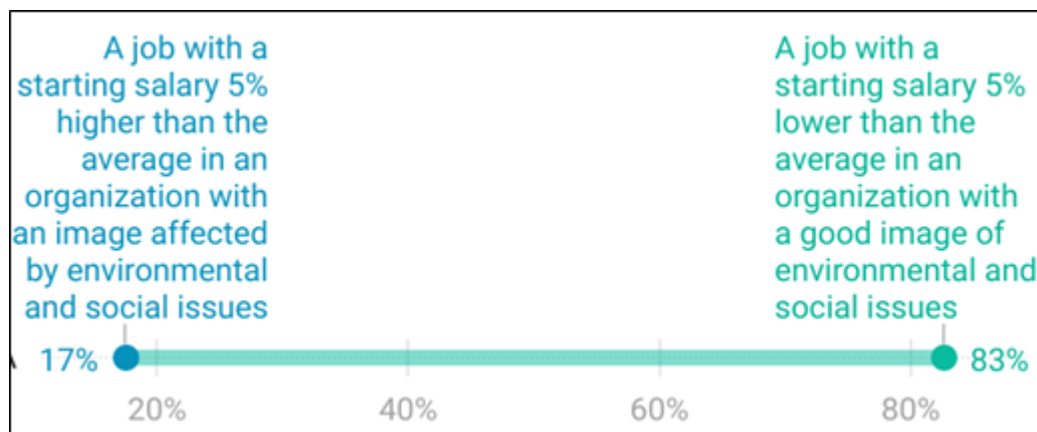


Figure 4. The influence of the study of sustainable development on professional choices

From the point of view of how future choices are influenced by the intersection with what sustainable development means, the positive influence of awareness is evident. In a significant percentage of respondents (83%) said they prefer a job with a lower-than-average salary as long as the organization has a good image of environmental and social issues.

The result highlighted in figure 4 confirms the idea that educational organizations act as a role model for individuals. It is preferable for sustainable development models to be implemented in educational institutions. This can create the premises for increasing the level of education in the field of sustainable development.

Considering the presence of sustainable development indicators in international rankings should be the main motivating factor in the establishment of procedures and regulations to facilitate sustainable development within higher education institutions.

4. CONCLUSIONS

The Sustainable Development Goals involve progressive change and the cooperation of all entities that could influence the way in which one will live on Earth. It is the habits and choices of individual consumption that determine the achievement of these goals. Every penny spent is a vote of confidence for future implications, and the most important thing to adjust is how we relate individually to what we can change.

To be able to achieve the Sustainable Development Goals at national level, awareness-raising measures must be implemented. The implications of the choices made from an early age must be very well emphasized. Fortunately, these steps have been started for early ages education. However, the step of complete importance for the near future is represented by the model presented in higher education institutions. Within these institutions are best represented the activities with sustainability implications. Beyond the theoretical part, an important place is the way in which the measures that lead to the achievement of the sustainable development goals are implemented. Depending on the organizational culture and openness to change, procedures can be implemented to encourage sustainability practices.

As it emerged from the analysis carried out, the awareness of the problems related to sustainable development can determine the making of decisions that can lead to the modification of the organizational environment. In the long run, employee choices can change institutional dynamics. Employees with very good results, with potential can migrate to those organizations where beyond the financial aspects are highlighted aspects related to sustainable development. Although in the first instance it may seem that the attraction of labor is carried out with a focus on the financial side, in essence the current generations are oriented towards issues related to gender equality, involvement and social responsibility.

Individual citizens' initiatives are based on information acquired within the education system. How they are included in school curricula is other discussion. It is important to be aware of the necessity of this approach and of the implications that follow.

Developed countries are much oriented towards what research, innovation and technology mean, but at the same time they value their resources and nature. Encouraging innovation can only be achieved through partnerships between higher education institutions and organizations. That is why it is important that future employees are oriented towards sustainable development and making changes that ensure a better life.

The change for the better, which all organizations are targeting, can only be achieved if the human resource represented by former students is aware of the implications of the choices for sustainable development. Unfortunately, there is still a consensus for what it means to quantify each sustainable development goal, but with the right education, long-term changes can take place to facilitate a sustainable integrated system.

The changes to be implemented must ensure that we move towards sustainable economic growth while meeting the needs and improving citizens' living standards.

Citizens, organizations, educational and research institutions must align their strategies to be able to create an environment suitable for development. The transition to sustainable development can be achieved if the partnership between these entities is based on empathy with obvious sustainable competitive advantages in return.

Learning about the problems of the present and researching for solving solutions is the only feasible way of attaining the SDGs. Despite the wide range of matters treated by these objectives if universities will lead by example a great step to a better future will be made.

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