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Article

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**SUSTAINABILITY BARRIERS AND MOTIVATIONS
IN HIGHER EDUCATION – A STUDENTS' PERSPECTIVE****Irina Maiorescu^{1*}, Gabriel Cristian Sabou², Mihaela Bucur³
and Răzvan Daniel Zota⁴**¹⁾²⁾³⁾⁴⁾ *The Bucharest University of Economic Studies, Romania***Please cite this article as:**

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Abstract

Today, more than ever, there is a need for sustainability and awareness of sustainable development importance in all sectors of activity. The Education for Sustainable Development (ESD) provided by higher education is vital for the sustainable transformation of society global strategy, because it moulds the social and professional behaviour of young people, with long-term beneficial effects on society and on environment. The current paper starts from an analysis of sustainable university and ESD challenges. Further on, it investigates, through the means of a quantitative research – online questionnaire based, the perception of students about ESD and other factors acting as barriers to sustainability, as well as their attitude and motivation for behaving sustainably within their university. The questionnaire was distributed between October-November 2019 to 292 students enrolled in the 2nd and 3rd year of Business and Tourism Faculty – Bucharest University of Economic Studies bachelor program, as well as to those students attending a master program within the same faculty. The results show that students see themselves – their lack of involvement, the main obstacle to the sustainable development of the university, rather than the absence of a university management strategy. The lack of a sustainability-oriented education within the university, both at the theoretical level, through the subjects of study, and at the practical level – through participation and example of the professors, is another barrier that can explain the low involvement of students in sustainable actions, in general. Information resulted from this research about students – important drivers of sustainability within university, may contribute to the successful planning of the transformation strategy and, on the long term, to a sustainable development of society.

Keywords: Sustainable university, sustainability barriers, students' motivation, Education for Sustainable Development (ESD)

JEL Classification: I23, Q56

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Introduction

In United Nation General Assembly resolution from 25 September 2015 it is affirmed that sustainable development of society can be attained only through an integrated and balanced approach of the three essential pillars: economy, society and environment. (UN, 2015). The 2030 Agenda, adopted within the same assembly, sets the global framework for sustainable development with its 17 global objectives to be reached by 2030, regarding economical, social and environmental development (Comisia Europeană, 2015). These global objectives, adopted by all Member States of the United Nations, are addressed to governments, local authorities, companies and citizens, their ultimate goal being to eradicate poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030 (U.N.D.P., 2019). Meeting these objectives requires a more profound approach of sustainability and they place education at the core of this global strategy of sustainable development. (Annan-Diab and Molinari, 2017).

It is expected a change in the paradigm of teaching, learning and understanding of sustainability, modifying educational programs leading to an increase in the quality of human capital, as well as to increasing the number of those who will take measures to live sustainable (Filho, et al., 2018a,b; Filho, et al., 2019). Thus, higher education institutions have an increasingly important role to play in meeting the new global goals, because education forms the true leaders and specialists' sustainability oriented in all sectors of activity. Universities must provide not only a theoretical education for sustainable development and open lifelong learning opportunities, but they need to educate through own example, becoming themselves sustainable communities. Some researchers (Shahbudin, et al., 2011; Nejati and Nejati, 2012) believe that universities around the world will gradually become sustainable as they change their educational mission, vision and practices in order to better respond to new social and environmental challenges. On the other hand, other researchers (Filho, 2011; Wright and Horst, 2013) are of the opinion that the transition of some universities to sustainability is more difficult, because the concept of sustainability is still not well understood, being perceived as something abstract.

The transition towards a sustainable society begins with education; hence it is essential to acknowledge the difficulties and the motivations of various parties involved in the process of sustainable development. There is extensive research in the scientific literature (Ávila, et al., 2017; Owen, 2017; Veiga, et al., 2019) about the problems of higher education sustainability, from an outside university, rather management oriented objective perspective. Nevertheless, it is as well important to understand the barriers and motivations of sustainable development from the university's internal environment perspective: professors, administrative staff and students. The problem is that, each institution has its own internal environment specific particularities, and most likely, students and staff acknowledged barriers will differ, in terms of importance, from one university to another.

Thus, the first part of this paper looks at the problem of the sustainability and ESD within universities, through an analysis of the scientific literature. Starting from these aspects, the second part presents the results of a quantitative research, which aims to identify the attitudes and motivations of students' involvement in sustainable actions within the Faculty of Business and Tourism of the Bucharest University of Economic Studies, as well as their perceived barriers to a sustainable transformation of this higher education institution.

1. Review of the scientific literature

In the scientific literature there are different opinions about what a sustainable university is and how it should act, as well as proposals for sustainability models in universities, based on clear criteria. In the model proposed by the UI Green Metric, the following criteria are taken into account:

- setting and infrastructure;
- energy and climate change;
- waste;
- water;
- transport;
- education and research.

Each of these criteria has a certain weight in the overall sustainability assessment of the university and, in respect to education and research, which has a share of 18% of the overall sustainability evaluation, the measured indicators are: the ratio of sustainability courses to total courses, the relationship between sustainable research funding and total research funding, number of published academic papers on environment and sustainability, number of academic events related to environment and sustainability, number of student organizations related to the environment and sustainability, existence of a website on sustainability managed by the university, existence of a published sustainability report (UI GreenMetric, 2019)

Another sustainable university approach is proposed by the Green Office model. Thus, a sustainable university is an institution that educates its students for sustainable development, which provides them with relevant information on urgent social challenges and aims to reduce its negative impact on society and on environment as a result of its campus activities, and also, which empowers students and staff to act in the direction of sustainability and to make sustainability a central priority. Basically, a sustainable university can be explored considering five aspects:

- Education;
- Research;
- Campus activities;
- Community;
- Governance.

In terms of education, a number of important issues are evaluated, such as: how curricula address topics from a social, economic and environmental perspective, how students manage to have a real perspective on community needs through case studies or appropriate practice, or how students feel encouraged to learn about sustainability through a interdisciplinary curricula adapted to their own understanding needs (Green Office Model, 2019).

Alshuwaikhat et al. (2017) claim, as a result of their comparative analysis of the essential criteria used by various prestigious higher education institutions for monitoring university sustainability, that such an evaluation model should take into consideration the way:

- Teaching and curricula are adapted to approach the complex sustainability challenges;
- Academic research and awarded scholarships contribute to becoming sustainable;
- On campus activities affect the environment and promote sustainability;
- Management and institutional framework are adapted to transformation, while aiming also for financial sustainability;
- Collaboration with private and public sectors, as well as community activities involvement aim for sustainable development;
- Sustainability is assessed and reported.

As can be seen, regardless of the used model, education and academic research are essential parts of sustainable transformation and the introduction of ESD in universities should have at least the following objectives: (Læssøe, et al., 2009; Wals, 2009, Disterheft, et al., 2013)

- Rethinking the curriculum;
- Increasing the awareness of the population regarding the concept of sustainable development;
- Training of the teaching staff for a better understanding of sustainable education and how it can be integrated into the study programs.

These goals are essential because universities lack the capacity to integrate ESD into their curricula; most often, this education consists of including some sustainability concepts in a few courses, without providing an overall image. Efforts to transform society must first and foremost focus on educating teachers in understanding sustainability and translating it correctly into the subjects they teach. The purpose, of course, is to improve students' learning experiences so that they are prepared to engage in both their specific professional responsibilities and those of promoting the sustainable change in their personal and professional lives (Mulà, et al., 2017).

Overall, a university becomes sustainable if it manages to develop a community oriented towards sustainability with the help of students, extra-curricular activities and staff involvement (Green Office Model, 2019). However, research shows that the process of change is not straightforward and that there are important causes that impede the sustainable development of higher education institutions:

- The ambiguity of the sustainability concept, which is still regarded as an abstract and complex topic (Filho, 2011; Wright and Horst, 2013; Aleixo, et al., 2016);
- Lack of the desire to change or the perception of sustainability as a theoretical model without practical implementation (Aleixo, et al., 2016, Veiga, et al., 2019);
- The organizational rigidity of the structure that does not allow the implementation of long-term policies (Aleixo, et al., 2016);

- Lack of awareness and involvement of the staff of universities, students and decision-makers (Aleixo, et al., 2016; Novo-Corti, et al., 2018);
- Lack of training and specialization in the field of sustainability (Mulà, et al., 2017, Aleixo, et al., 2016);
- Lack of working groups or structures dedicated to sustainability (Ávila, et al., 2017; Veiga, et al., 2019);
- The necessity of fundamentally changing behaviours and culture (Ávila, et al., 2017);
- Lack of cooperation between public authorities, universities and business environment (Ávila, et al., 2017; Owen, 2017);
- Lack of assessment and reporting methodology (Ávila, et al., 2017).

A study of Veiga et al. (2019), analysing 283 universities across the world, has identified also as main barriers to university sustainability the lack of planning and concern and the lack of sustainable measures applicability and continuity. Indeed, the inadequate management and the lack of coherent policies for sustainable development within university explain the failure of progress in this direction, but the lack of funds to support sustainable transformation can be an equally important barrier (Aleixo, et al., 2016; Ávila, et al., 2017). Owens (2017) states that sustainable university practices depend on the financial support from governments, but also on businesses cooperation and that, most often, universities adopt sustainable practices when they are allowed, not when they want or when they need it. These barriers are addressing, however, mainly the perspective of university management, the opinions of other actors involved (teachers, non-teaching staff and students) not being mentioned as taken into account in most of these research studies.

Regarding students and teaching staff, a study reveals that their main obstacle in building a sustainable university is their mentality and attitude. (Novo-Corti, et al., 2018). Similarly, a research conducted by Blewit (2010), emphasizes the need for greater attention on changing students' attitudes towards sustainability and practicing teaching methods that allow them to recognize sustainable opportunities. Of course, the general opinion of students regarding society's need for sustainability and their need to be educated in this area is favourable (Boarin, et al., 2020). There is a positive attitude among them and a declared willingness to engage in sustainable projects (Wee, et al., 2017), but most often, this awareness does not bring with it a sustainable approach to students' daily activities (Sammalisto, et al., 2016).

Thus, our research, whose results are presented below, investigates how the barriers identified in the scientific literature are perceived by the students, as well as their attitude and motivations for involvement in sustainable actions, thus contributing to documented information in this less researched area of sustainable development.

2. Research objectives and methodology

The general aim of the research is to analyse students' perception about ESD and other factors acting as barriers to sustainability, as well as their attitude and motivations for involving in sustainable actions, as premises for the sustainable transforming university. Thus, the main *objectives* we aimed to reach within our research were:

O1 – to assess students' perception in respect to the ESD offered by their university;

O2 – to analyze the perception of students about the relevance of various barriers against transforming into a sustainable university;

O3 – to evaluate students' motivations and preferences to involve in various sustainable actions within university.

Through these objectives we seek to obtain useful information about the current status and challenges of sustainability within our studied university; thus we are given the basis for recommending possible efficient solutions of university sustainable development.

For meeting the set objectives, in October – November 2019, a survey, questionnaire based, was distributed online, using Google Forms, to students belonging to Business and Tourism Faculty of Bucharest University of Economic Studies. We considered that the most relevant answers, related to the purposes of our research, could be obtained from those students who are enrolled in the 2nd and the 3rd year of Bachelor program, as well as from those attending a Master program, since they already have at least one year of student experience in terms of learning and understanding the specific managerial and academic processes from their university. Students enrolled in the 1st year of bachelor program were not taken into consideration because we considered that they don't have yet enough information to objectively answer to the questionnaire. Thus, students from the above mentioned years of study were selected through simple random sampling. There were randomly selected 360 students from various study groups, who were contacted and asked to anonymously answer to the questionnaire posted on Google Forms. We had 292 valid responses, the calculated margin of error of this sample being of +/- 5.73%, using a 95% confidence level. The distribution according to the gender is: 207 feminine respondents (70,9%) and 85 masculine respondents (29,1%), a normal representation of students' population, taking into consideration the margin of error. All respondents have ages between 19-25 years.

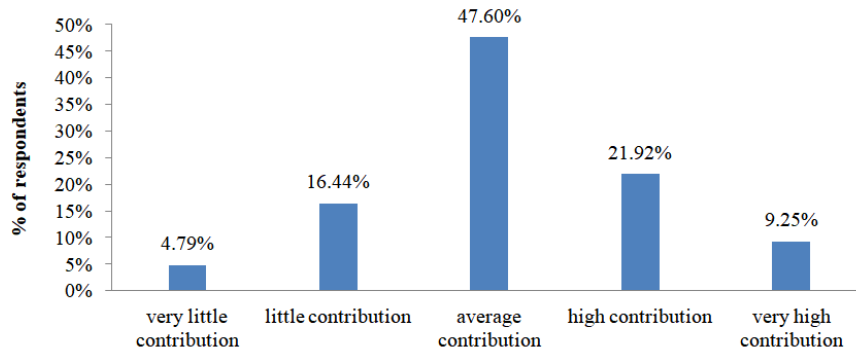
The results presented in this paper are part of a more extensive research and they answer to the general aim of the study and, accordingly, to the set research objectives, as previously mentioned.

Collected data were exported from Google Forms, processed in Microsoft Excel, and also statistically analyzed with Minitab software.

3. Results and discussions

The analysis of the results follows the order of the set objectives. When analyzing how students assess their sustainability knowledge offered by university, our *1st objective*, we asked the respondents to evaluate to what extent they consider that the studied subjects contribute to the formation of a mentality oriented towards sustainable development.

In figure no.1, it can be seen that there is a normal distribution of answers, the highest proportion of students (47.60%) considering that the studied courses contribute moderately to their formation as sustainability promoters.



Contribution of the studied subjects to a sustainability oriented thinking

Figure no. 1: Respondents' opinions about the extent to which the studied subjects contribute to the formation of a sustainability-oriented thinking

We wanted to know whether having more experience as student can influence the opinions about subject contribution to the formation of sustainability oriented thinking. Applying Pearson Chi-Square test, there was found no association between the year of study (bachelor 2nd or 3rd year, or master student) and subjects’ perceived contribution to the formation of a sustainability oriented thinking, the p-value = 0.085, higher than our set cut-off 0.05.

We focused also on identifying which areas of sustainability need improvement in terms of education offered to students. In figure no.2 there can be noticed that the field of Economic knowledge received within university is positively evaluated, the distribution of answers being skewed to the right. The scale of answers was quantified from 1-5 (1- very poor and 5 – very good) and 1-Sample Sign test of median applied. The verification of hypotheses = 3.000 versus > 3.000 sets the median of “Economic development” knowledge at 4 (good perception), for a p-value<0.001.

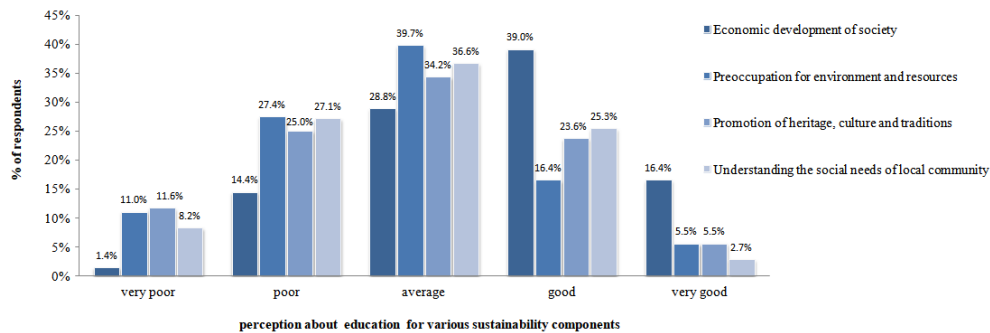


Figure no. 2: Students' opinion on the university education for the different components of sustainability

The 1-Sample Sign test of median = 3.000 versus < 3.000 for “environment and resources preoccupation” rather indicates a higher concentration to the left of the answers, the p-value being: 0.0002.

Both 1-Sample Sign tests of median = 3.000 versus $\neq 3.000$ for “heritage, culture and traditions promotion” and “understanding social needs of community” fail to reject the difference of median, the p-values being 0.1296, respectively 0.1414.

Finding out the opinion of students about their perceived barriers that act against transforming their university into a sustainable higher education institution was our 2nd objective. For this purpose, they were asked to indicate all the relevant barriers they acknowledge. As it can be seen in figure no. 3 the highest difficulties for a sustainable university come from the lack of students' involvement in sustainable activities (60.96%), but also from the fact that the studied subjects don't have a sustainability oriented approach (56.51%).

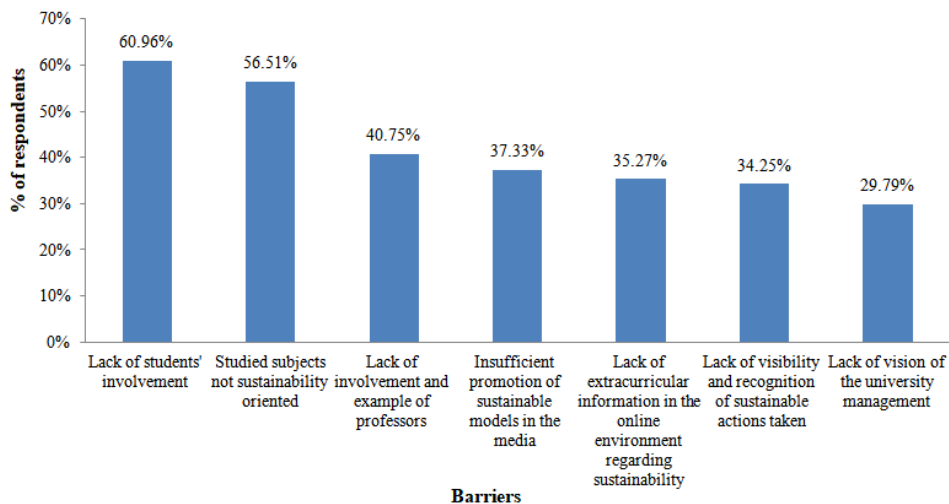


Figure no. 3: Barriers against sustainable transformation as perceived by students

It can be noticed an interesting situation regarding the results of this particular question, as students see the barriers to sustainability in themselves; it is their lack of involvement that fails to lead to sustainable transformation, rather than the lack of university management strategic vision in this direction. Their answers indicate also the importance they place on a sustainable education within university both in theory (through the studied subjects) and in practice (lack of involvement and example coming from their professors).

In Table no. 1 are shown the types of activities respondents were involved in, as part of their sustainable behaviour in general. As it can be remarked, the activities most chosen to be involved in are those related to supporting poor / orphans / old people / calamity victims / refugees etc and also to protecting the environment (cleaning forests, water, planting trees, protecting wildlife / reservations, etc.).

Table no. 1: Participation to various activities that contribute to sustainability, in general

Types of actions	% of respondents
Supporting projects and events, giving money or objects or time for poor / orphans / old people / calamity victims / refugees etc	43.84%
Supporting projects and events aimed at protecting the environment (cleaning forests, water, planting trees, protecting wildlife / reservations, etc.)	40.07%
Supporting projects and events, donating money / blood to treat sick people or for building hospitals or for equipping them with high-quality medical devices	19.86%
Supporting projects and events for animal protection	12.67%
Supporting social projects of excellence in education / school repairs / access to education	9.93%
Supporting projects and events for the preservation and promotion of heritage	2.74%
Supporting projects and events for the social inclusion of disadvantaged people	1.71%

Knowing those areas where students are more willing to involve is important when defining a sustainable development strategy within university. Making students aware of the fact that, their university contributes to the well-fare of people or of environment, can increase students’ contribution to sustainability. This point is of particular interest because, when analyzing the frequency of participation in sustainability related activities, we remarked the fact that 50% of the respondents state they haven’t been contributing to any such activity since becoming students, while 24.65% declare that they have never been supporting at all.

Related to this particular objective, we also investigated whether there could be any differences related to gender, in terms of participation to sustainable related activities behaviour and, consequently, we tested the association between these two variables, the results being presented in Table no. 2.

Table no. 2: Pearson Chi Square association test between “gender” and “participation to sustainable actions” variables

Frequency of participation to sustainable actions	Cell contents	Gender		Total counts
		F	M	
Yes, but only before enrolling to university	Counts	111	35	146
	Expected counts	103.5	42.5	
On average, 1-2 activities/ year since I am student	Counts	36	8	44
	Expected counts	31.19	12.81	
More than 3 activities/ year since I am student	Counts	22	8	30
	Expected counts	21.27	8.73	
No, I’ve never participated to such activities	Counts	38	34	72
	Expected counts	51.04	20.96	
Total counts		207	85	292
Pearson Chi-Square = 15.946, DF = 3, P-Value = 0.001				

The test for association Pearson Chi Square indicates a link between gender and frequency of participation to various sustainable actions variables, as the p-value is < 0.05 , our set cut-off value, for 3 degrees of freedom. The results point to the fact that feminine respondents are more likely to participate to various actions that contribute to the overall sustainability, than masculine respondents.

Acknowledging students motivations, part of our 3rd objective, comes thus as a very important information for enhancing the sustainability of the university. In Figure no 4 there is shown on a scale from 1 to 5 (where 1 is least important and 5 is most important) the importance of various motivations for participation in university sustainable actions.

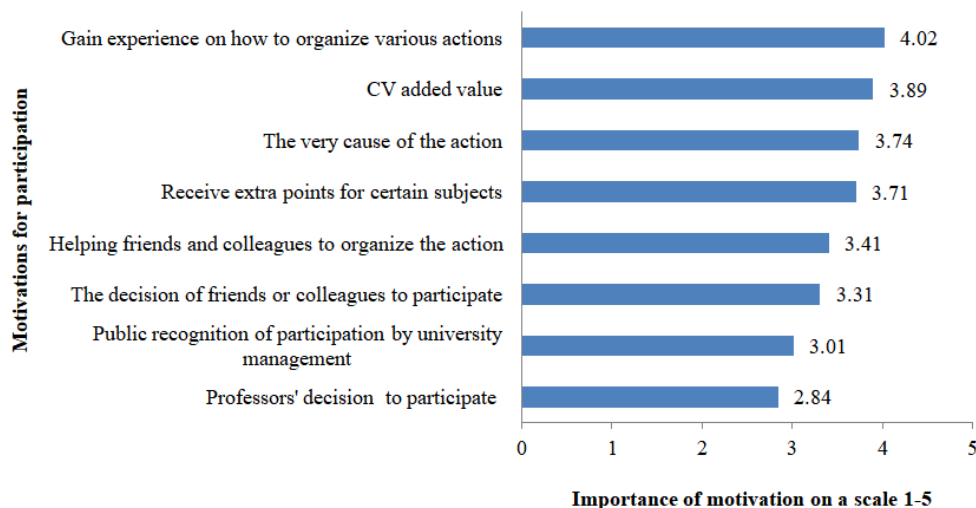


Figure no. 4: The importance of various motivations for participating in actions supporting the community / environment within the university

Gaining experience from being involved in organizing various sustainable actions, as well as adding value to their CVs are the most powerful motivations for involvement in sustainability actions, while public recognition and professors decision to participate seem to be least motivating.

An interesting remark is the fact that while quite a large number of students see the lack of involvement and example on behalf of the professors as a barrier against sustainability, respondents themselves don't feel motivated by academic staff participation.

Conclusions

Education plays an essential role in promoting a sustainable attitude of citizens, hence educational institutions – and universities in particular, must become themselves examples of sustainable communities. Of course, these transformations are not immediate and easy. It is necessary to understand correctly the concept of a sustainable university, to raise awareness about the difficulties to be met and to know the motivations of those parties involved in building sustainability. There are many problems regarding the sustainable development of universities and these generally refer to the lack of strategy and

management planning, the lack of funds for research and transformation of education for sustainable development, the lack of cooperation with public authorities and the private environment, the lack of teacher training, the lack of proper ESD, as well as a variety of sustainability assessment models that make difficult the objective evaluation and comparison of higher education institutions the progress.

On the other hand, the transformation must start from within, from students, staff, management. University is the place where young people – future influencers and powerful decision makers, can be modelled and trained to think and act sustainably, through their own example. Thus, understanding students' perceptions of barriers to sustainability and, also, their motivations for involving in sustainable actions, becomes a necessity in the process of building a sustainable university.

In this respect, the research conducted provides important information for a potential university transformation. Thus, analyzing the way ESD is perceived by students – along all its components, it results that the economic component is evaluated positively – a not surprising finding, considering that the profile of the university studied is Business oriented; however, the education offered for the protection of the environment and resources and the education for the well-being society needs improvement.

Students perceive themselves as a very important obstacle in the process of sustainable development, because of their lack of involvement. This low participation can be the direct consequence of the subjects insufficiently oriented towards sustainability, but also of the lack of involvement and example of professors in what regards real applying sustainability principles – other barriers perceived by the students.

The strongest motivations of students for getting involved in sustainable actions and projects in the university are related to gaining effective experience and adding value to the CV.

The areas of sustainability where students chose to be involved are those of supporting poor people / orphans / elderly / victims of calamities / refugees, etc., as well as those supporting environmental actions.

The obtained results generally confirm the other research studies from the scientific literature. Thus, poor education for sustainable development (ESD) is one of the main perceived difficulties of sustainable transformation within university. On the other hand, the lack of strategy and managerial vision – a problem frequently mentioned by researchers, appears to be the least important in the perception of students.

However, these results must be viewed in the light of *this research limitation*, because they are specific to the particularities of the selected sample, within the mentioned margin of error. Moreover, they represent only the perspective of the students of a faculty, and not of the entire university. A similar investigation is needed also of the other faculties to provide a complete picture of the whole, accompanied by the analysis of the perceptions and attitudes of teaching and administrative staff about sustainability. This is a future research direction, which is necessary for building the sustainable development strategy of the university.

Assessing the effects of education for sustainable development in time, starting from the current perception and attitude and analyzing the change – is another important research direction.

Knowing these barriers, as well as the motivational particularities of the students is an important part in planning the sustainable transformation of the faculty. The information obtained is useful not only for improving the content of the subjects in the study programs, but also for initiating those sustainable actions that have real chances of support and involvement from the students.

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