

PERCEPTION OF GLOBAL PROBLEMS AMONG STUDENTS: AN 8-YEAR RETROSPECTIVE

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Abstract

Global social and environmental problems frame the development actions for sustainability. UN conferences and other sources display a long list of problems, which enhances the evaluation of the relative importance of the items. The paper presents the results of empirical data collection among higher education students about their preferences between 2016 and 2024. The results show that the perception of the most critical global problems is differently assessed in their local environment and worldwide. Some changes in the orders were found, especially before and after 2020, but there was no fundamental change in the opinions.

Introduction

Solving global social and environmental problems has been in focus for decades. However, it is not easy to even define the scope and the content of global problems. The international conferences organized by the United Nations (UN) [1] [2] emphasized and covered the progress.

The United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm [3], already showed that global problems mean a complex phenomenon. 26 principles and 109 recommendations are difficult to manage without making preference orders. Further conferences [2] tried to focus the efforts and change the approach from exploring to solving the problems more or less successfully. Local differences and competing interests made the prioritization confused. The ‘Limits to Growth’ report by the Club of Rome in 1972 [4] suggested zero growth, and moving towards a catastrophe was confirmed in more recent analyses of the authors [5]. Both the Club of Rome world models and the concept of sustainable development in the Brundtland Report [6] emphasized the economic aspects of the problems. Recently, the Millenium Goals [7] followed by the 17 Sustainable Development Goals [8] by the UN, offer a comprehensive but still complex briefing to the development of mankind. We are at the peak of ESG [9], which is about the evaluation of environmental, social, and governance issues of corporations.

Although the solutions for global problems are unequivocally based on the achievements of engineering sciences, material sciences, medical sciences, and others, social aspects have been appreciated. For example, a priority task of education can be highlighted through spreading knowledge and raising awareness. Learning the perception of global problems at the people level seems to be a soft approach, but understanding their preferences and sensitivity gives a relevant source of information at higher levels. Corporations can use the results for targeted marketing actions, and governments can adjust their strategies and communication for better acceptance and social support. Schools and higher education institutions can explore characteristic patterns of opinions and lead back the results to support engineering work. Due to the complexity of humans, a comprehensive survey is not feasible, but any contributions to the body of knowledge are essential.

The study aims to show the relative assessment of global problems based on a survey among Hungarian higher education students. A historical database between 2016 and 2024 that allows for the monitoring of changes was available.

Experimental

I developed a comprehensive online questionnaire for higher education students to support management education in sustainability. The questionnaire includes a list of global problems and asks the respondents two questions to mark a maximum of three items that they consider the most important problems in the closer environment and worldwide. The frequencies of markings show the relative importance of the items. The research sample in this study is based on the responses of Hungarian business, engineering, and public administration students, and the year of data collection was used as a grouping factor. The data collection covered 2016, 2018, 2020, 2022 and 2024. The results are presented in the percentage of the number of respondents in each subsample. Sample characteristics are summarized in Table 1.

Table 1. Sample characteristics

Year	Female	Female (%)	Male	Male (%)	Total
2016	886	64.5	488	35.5	1374
2018	277	65.5	146	34.5	423
2020	162	56.8	123	43.2	285
2022	138	52.9	123	47.1	261
2024	46	48.9	48	51.1	94

The research questions are as follows:

- Which social and environmental problems are considered the most important by the respondents?
- Do the samples by year show a change in preferences?

Results and discussion

The results confirm that the perception of the highlighted global problems differs in the closer environment and worldwide. The most argued topic is household waste in the local environment, and climate change worldwide. Table 2 summarizes the ratios of the markings for the total sample with a bold highlight of the highest values.

Table 2. Marking of the items by sub-samples (%)

	2016		2018		2020		2022		2024	
	Local	World	Local	World	Local	World	Local	World	Local	World
Crime	22.3	35.7	15.4	27.2	15.1	20.7	10.7	9.6	13.8	16.0
Starvation	5.5	52.0	5.9	48.5	2.8	44.9	4.6	35.6	2.1	39.4
Healthy foods	14.6	7.4	13.5	5.2	10.2	8.1	20.7	9.6	16.0	12.8
Depletion of energy resources	4.1	23.4	4.5	16.8	3.2	22.5	9.2	26.4	7.4	21.3

Degradation of built environment	of	16.4	1.8	18.7	2.1	18.2	1.8	14.2	2.3	18.1	0.0
Extinction of species	of	1.0	17.0	1.9	18.7	1.8	23.2	0.4	22.6	1.1	18.1
Household waste		39.0	3.3	43.7	4.3	50.2	5.3	45.2	5.0	33.0	1.1
Industrial waste		10.0	11.9	10.2	13.0	13.7	12.6	14.6	15.7	14.9	11.7
Climate change		10.9	49.6	18.0	60.3	21.1	66.3	28.7	66.3	21.3	53.2
Public safety		34.4	11.9	29.3	9.0	29.5	5.6	24.9	2.7	23.4	5.3
Cultural changes		15.4	7.1	15.6	4.7	13.7	5.6	13.4	7.3	25.5	5.3
Air pollution		35.2	19.1	39.0	23.2	43.9	26.3	41.0	31.0	34.0	40.4
Soil degradation		10.6	6.0	14.2	6.4	10.2	6.7	13.0	8.8	19.1	10.6
Destruction of natural values	of	23.6	22.7	22.2	27.4	21.4	24.6	30.3	22.6	33.0	23.4
Emission to water		9.9	19.9	8.7	23.6	17.5	23.2	13.4	30.7	19.1	36.2

Figure 1 represents the changes in preferences in the closer environment, and Figure 2 shows them in the case of worldwide assessment. The main local concerns include household waste and air pollution, which had an increasing importance until 2020 (the COVID-19 lockdown) and a decrease after that. Depreciation of natural values shows an increasing value. Although climate change is not among the top issues, it is increasingly important.

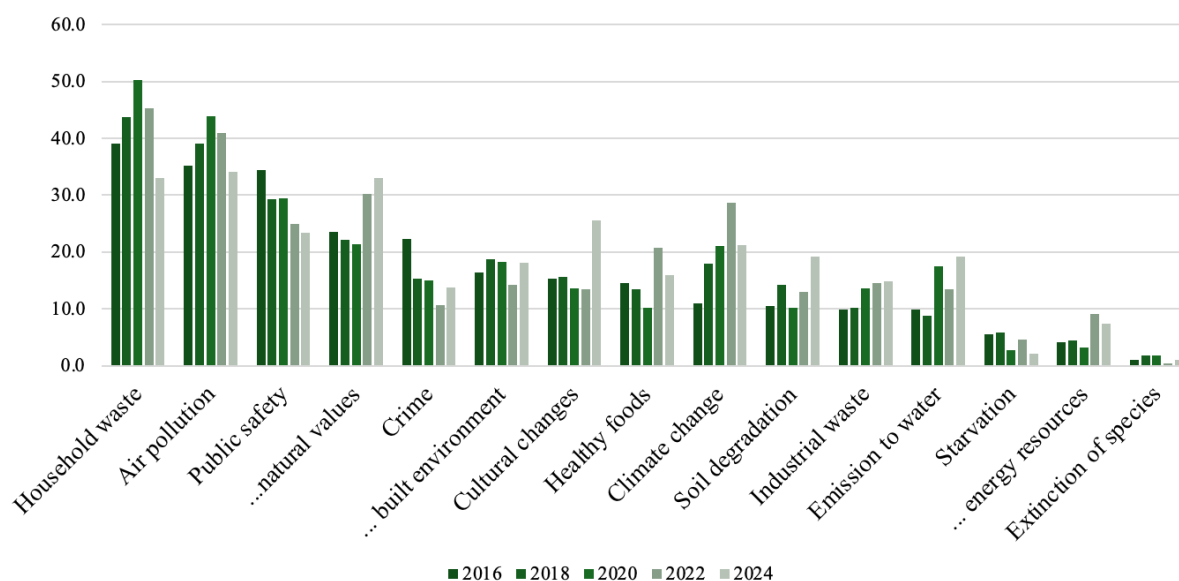


Figure 1. Frequencies of marking the problem items in the closer environment (%)

The worldwide assessment results emphasize starvation and climate change among the most important problems. Crime is an item that has a decreasing importance on both levels. Emissions to water and air pollution have been appreciated as a worldwide problem (Figure 2).

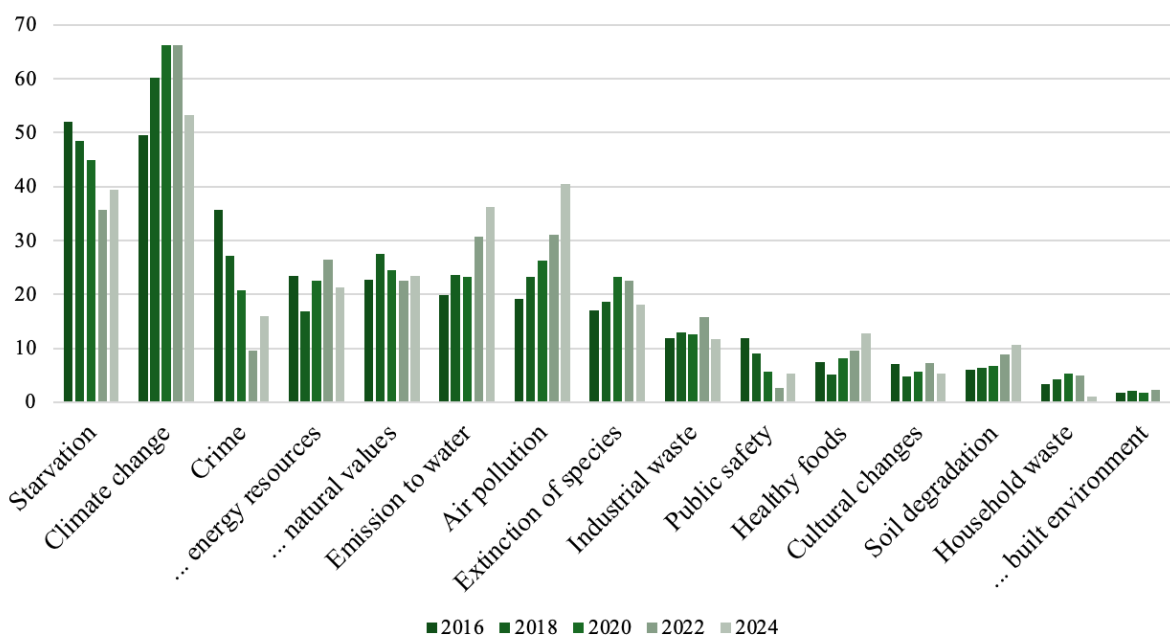


Figure 2. Frequencies of marking the problem items worldwide (%)

The rankings presented in Table 2 were tested by non-parametric correlation (Spearman Rho) analysis. The test shows non-significant low correlations between the ranking orders between the assessment of local and worldwide assessments in each year (Spearman’s Rho values are -0.346 in 2016, -0.239 in 2018, -0.150 in 2020, -0.132 in 2022, and -0.084 in 2024), while each value is high and significant between the years (Table 3). That suggests that the perception of global social and environmental problems has not essentially changed during the research period.

Table 3. Correlation analysis results by years, total sample (Spearman’s Rho)

Local:	2016	2018	2020	2022	2024
2016	1	.957**	.866**	.788**	.789**
2018	.957**	1	.918**	.849**	.866**
2020	.866**	.918**	1	.876**	.845**
2022	.788**	.849**	.876**	1	.844**
2024	.789**	.866**	.845**	.844**	1
Worldwide:	2016	2018	2020	2022	2024
2016	1	.943**	.873**	.832**	.858**
2018	.943**	1	.928**	.844**	.895**
2020	.873**	.928**	1	.963**	.981**
2022	.832**	.844**	.963**	1	.972**
2024	.858**	.895**	.981**	.972**	1

** : significant at 0.001 level

Conclusion

Ranking the perception of global social and environmental problems may not be the fundamental question about sustainability. Still, the complexity of the topic and the high

number of factors considered make navigation difficult. Since the challenges are common, education and training programs can greatly benefit from learning the individual value systems. The crisis events in recent years raise the question of whether those have an impact on these values. The study presented in this paper has serious limitations. The data collection was performed among students, and the representativeness of the data could not be assured. At the same time, the methodology can serve as an example, and the results of the large sample highlight the critical problems. The main conclusions of the study can be summarized as follows:

- There are spatial differences in the perception of global problems in the sense that students' preferences are fundamentally different for their closer environment and worldwide.
- Issues of social and natural environment are mixed in the top rankings. That is in line with the concept of the SDG's tailored approach [8]. Managing household waste as an integrative topic can be an initial point for developing management actions.
- There are changes in the preference orders, and in some cases, the 'COVID-19 year' represents a breaking point. At the same time, the statistical analysis does not show fundamental differences.

The question of how to change the value system on an international or national level goes beyond the limits of the study and the author. On the corporate level and in education, understanding preferences can help shape the mind.

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