



## COMPARATIVE ANALYSIS OF ATTITUDE TO NATURE CONSERVATION BETWEEN STUDENTS FROM THE UNIVERSITY OF FORESTRY AND UNIVERSITY OF NATIONAL AND WORLD ECONOMY

Zh. Georgiev<sup>1\*</sup>, V. Jordanov<sup>2</sup>

<sup>1</sup>Department of Physical Education and Sport, University of Forestry, Sofia, Bulgaria

<sup>2</sup>Department of Physical Education and Sport, University of National and World Economy,  
Sofia, Bulgaria

### ABSTRACT

The negative changes occurring in nature and the environment have been the subject of attention for more than a century. Awareness of the problems and their successful solution are among the main tasks of future generations. This is especially true for university students preparing staff for positions that are directly related to nature conservation. The present study aims to compare the attitude of students from University of Forestry (UF) and University of National and World Economy (UNWE) to nature conservation. 311 students took part in the study - 219 from UNWE and 92 from UF. For the methodology we used a Questionnaire for attitude towards nature protection created in 2019. The results show higher values for UF students for the scale related to the actions taken for nature protection. The data are supported by statistical reliability. On the scale "knowledge" there are no significant differences between students from UF and UNWE.

**Key words:** environmental issues, students, universities, nature conservation

### INTRODUCTION

The negative changes occurring in nature and the environment have been the subject of attention for more than a century. Perceptions of the problem are contradictory among different groups of people. However, no one can deny the need for serious measures to deal with future environmental disasters. The need to develop and implement effective and efficient environmental policies is a high priority issue. This is due to the ever-increasing cities and their accompanying infrastructures, which disrupt the integrity of our environment, and therefore ecosystems (1).

Awareness of these problems and their successful solution are among the main tasks of young

people. Although the degrees of awareness and the action taken varies, a large proportion of today's population in developed countries is trying to comply with environmental standards (2). Habits such as separate garbage collection, participation in nature cleaning campaigns or even avoiding environmental pollution have become part of our normal daily lives. Taxes on emissions, the expansion of protected areas and the use of alternative energy sources are a small part of the measures taken, which only 50 years ago few countries would have paid attention to (3).

However, alarming environmental signals indicate that these measures are not enough. It is necessary to constantly develop the available knowledge and the actions taken among the society. Only in this way will future generations be able to live normally and enjoy the Earth as we know it today. One of the important means for the

\*Correspondence to: Zh. Georgiev, Department of Physical Education and Sport, University of Forestry, Sofia, 10 Kliment Ohridsky Blvd., Sofia, Bulgaria, e-mail: jakuzzi@abv.bg, phone: (+359) 885716114

introduction of standards for social and environmental responsibility in our country as a condition for achieving environmental tolerance, social responsibility and economic viability, are environmental management systems (4).

The above is especially true for students who are preparing for future management positions in universities closely related to nature conservation. Unique in this aspect is the University of Forestry. There is hardly another higher education institution in Bulgaria whose specialties are more environmentally focused - forestry, veterinary medicine, ecology, and others. The various disciplines and the many practices in nature keep students in constant contact with it throughout their studies. The graduates of UF have been working in this field all their lives, and some of them also hold leading positions in the respective ministries.

The education at the University of National and World Economy is different. There is no practical exercise in the middle of the forest, and most disciplines are not directly related to the laws of nature. Nevertheless, many senior staff members come from the ranks of UNWE, including leading ministerial positions. The decisions they make on environmental issues are often of significant importance. This makes their personal attitude towards nature conservation extremely important.

According to V. Yordanov, J. Georgiev, E. Yordanov (2020) mountain hikes in sports significantly increase the actions of students for nature conservation. If we extend this logic, we could assume that UF students should have a stronger attitude towards environmental issues. According to the same authors, however, those wishing to attend hikes in the mountains when choosing an outdoor sport, do not differ significantly in their attitude towards nature, compared to their fellow students who prefer indoor sports. Although indirectly, this result may make us wonder whether the choice of the type of university is related to a person's personal worldview on environmental issues. In the present study, we have focused on resolving this very issue.

## GOALS, TASKS AND METHODS OF RESEARCH

The **goal** of the present study is to compare the attitude of students from UF and UNWE towards issues related to nature conservation.

To achieve our goal, we set the following **tasks**:

1. To study the attitude towards nature protection among students from UF and UNWE.
2. To compare the obtained results and to trace the possible differences in terms of education in different universities.
3. To reveal the influence of the educational course on the possible differences in the attitude towards nature protection among the students from UF and UNWE.

**The methodology** used included:

1. Questionnaire for research of the attitude to nature according to V. Yordanov, J. Georgiev, L. Krumova (2020). It contains two scales related to nature conservation:

The "**Knowledge**" scale is related to the general awareness of the researched person regarding the problems with nature protection. It includes questions such as "Human activity negatively affects ecosystems" and "Alternative energy sources would significantly reduce pollution".

The second scale - "**Actions**", refers to the specific actions of men to limit the harmful effects on nature. It includes questions such as "I collect my garbage separately" and "I regularly participate in campaigns related to environmental protection - cleaning, planting trees, etc.".

A 5-point Likert-type scale is used.

2. Statistical data processing. We used the software package SPSS 19.0.

Statistical methods included:

- Variance analysis.
- Comparative analysis - Student's T-test for independent samples.

The distribution of the values was established by the Kolmogorov - Smirnov test. Normal or close to normal distribution is judged by significance limits above 0.05 ( $p(Z) > 0.05$ ).

The survey was **organized** and conducted in November and December 2019. Overall, 304 students took part in it, 92 of them are students at UF and 212 study at UNWE. The subjects from both universities attended different disciplines in physical education and sports. The questionnaire survey was conducted during these training classes.

**ANALYSIS OF THE RESULTS**

**Table 1** presents the comparative analysis of the attitude towards nature protection between the students from UF and UNWE. From the data we

can see that there are no significant differences between the students in the two universities in terms of knowledge about nature conservation ( $t = -1.626; \alpha = 0.105$ ).

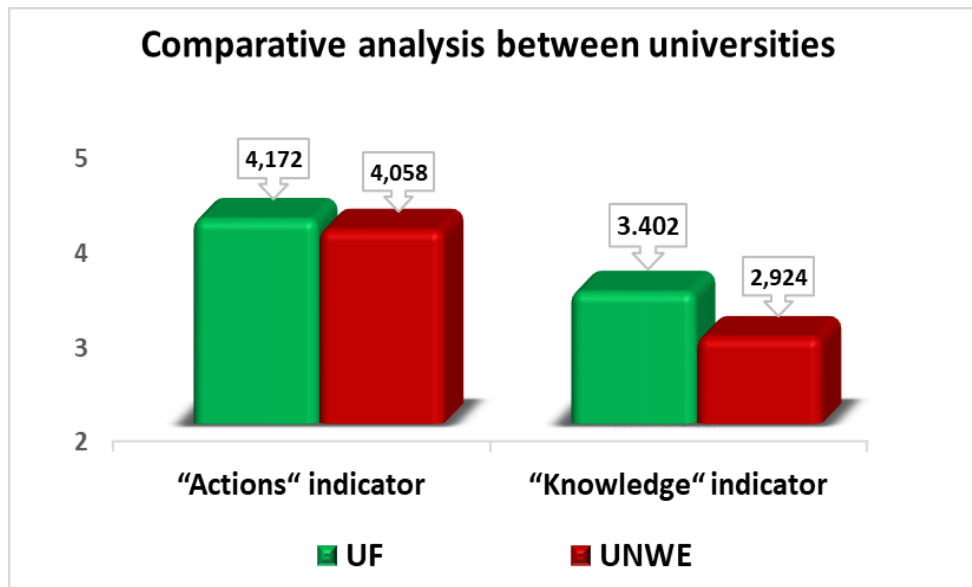
**Table 1.** Comparative analysis of attitude to nature conservation between students from the UF and UNWE.

“Knowledge“ indicator	n	$\bar{X}$	SD	K-S	t	$\alpha$	d	d%	Pt
UF	92	4,172	0,570	0,109	-1,626	0,105	0,114	2,81	89,50
UNWE	219	4,058	0,558	0,105					
“Actions“ indicator	n	$\bar{X}$	SD	K-S	t	$\alpha$	d	d%	Pt
UF	92	3,402	0,780	0,074	-5,123	0,000	0,478	16,36	100,00
UNWE	219	2,924	0,733	0,068					

Statistically significant differences are observed in the "Actions" indicator. UF students have significantly higher results than their colleagues at UNWE ( $t = - 5.123; \alpha = 0.000$ ).

in their program. The choice of such university can also have an impact on the attitude towards the environment. Apparently, these are some of the factors that are responsible for the higher values of UF on the scale "Actions" compared to the UNWE students, where the main subjects have no direct connection with nature (**Figure 1**).

From the obtained results we can make some judgments. The students from UF have many subjects and practical activities related to nature



**Figure 1.** Comparative analysis of attitude to nature conservation between students from the UF and UNWE.

On the other hand, the lack of significant differences on the Knowledge scale can be explained by our previous research (5). It shows that the respondents show similar results in terms of awareness of environmental issues, no matter how much contact with nature they have. On the

contrary, more frequent visits to nature increase people's habits for its protection.

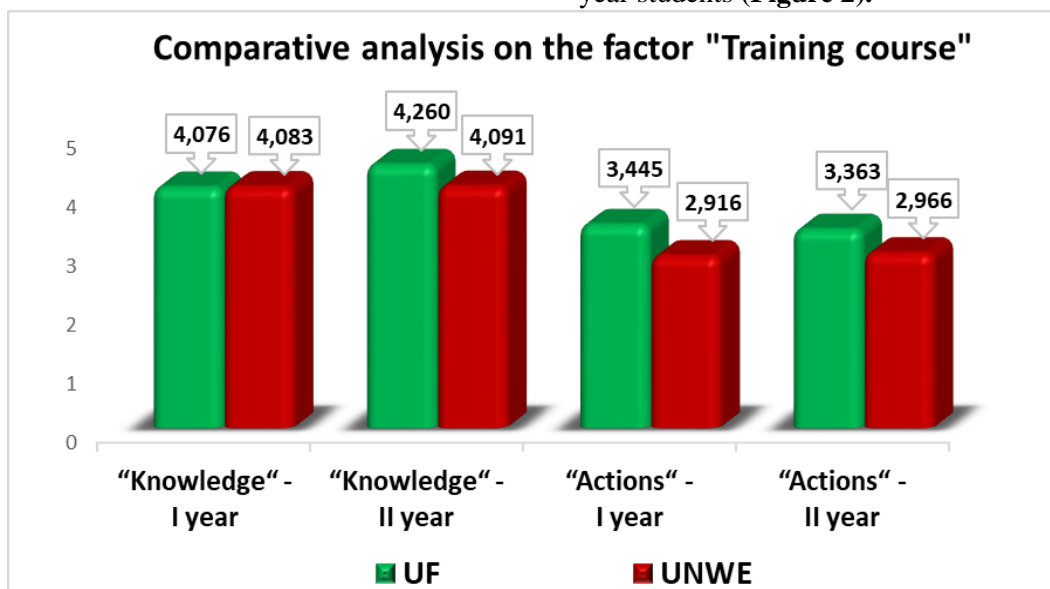
**Table 2** traces the comparative analysis of the attitude to nature protection between the first- and second-year students of UF and UNWE.

**Table 2.** Comparative analysis of attitude to nature protection on the factor "Training course" between students from both universities.

Indicator	Course	Universities	n	$\bar{X}$	SD	K-S	t	$\alpha$	d	Pt
"Knowledge"	I	UF	44	4.076	0.638	0.11	0.071	0.943	-0.007	5.67
		UNWE	127	4.083	0.578	0.10				
	II	UF	48	4.260	0.493	0.10	<b>-1.756</b>	<b>0.081</b>	0.169	91.88
		UNWE	92	4.091	0.564	0.12				
"Actions"	I	UF	44	3.445	0.745	0.08	<b>4.330</b>	<b>0.000</b>	0.529	100.00
		UNWE	127	2.916	0.682	0.08				
	II	UF	48	3.363	0.817	0.10	<b>-2.800</b>	<b>0.006</b>	0.397	99.42
		UNWE	92	2.966	0.786	0.07				

The results present some interesting dependencies. For freshmen the values on the scale "Knowledge" are approximately the same ( $\bar{X} = 4.076$ ;  $\bar{X} = 4.083$  at  $P(t) = 5.67\%$ ). This

shows that newly admitted students at both universities have the same level of awareness of environmental issues. Significant differences in this indicator are observed in the studied second-year students (**Figure 2**).



**Figure 2.** Comparative analysis of attitude to nature protection on the factor "Training course" between students from both universities.

Students from UF have higher values on the scale "Knowledge" compared to their colleagues from UNWE. The results are also supported by the necessary statistical reliability ( $t = -1.756$ ;  $\alpha = 0.081$ ). The presence of significantly higher values in the knowledge of second-year students from UF and equal results in first-year students from both universities can find their explanation. Probably one of the main reasons is the specifics of the teaching material in UF. After a year of study, the students from UF got acquainted with

many details related to various aspects of the functioning of the Earth. This has broadened their worldview in relation to the knowledge related to its protection (**Table 2, Figure 2**).

**Table 2** also presents the data from the comparative analysis of the scale "Actions" between freshmen and second-year students at both universities. The obtained values fully support the results so far. In terms of the actual actions taken by people to help nature conservation, UF students have a significant

advantage in the values of both courses (first year:  $t = 4,330$ ;  $\alpha = 0,000$ ; second year:  $t = -2,800$ ;  $\alpha = 0.006$ ). The presence of these differences suggests that even when choosing a university, the students who chose to study at UF had more developed habits for nature conservation. This seems logical, given the specifics of the field of study at the university and their direct connection with nature - forestry, forest industry, ecology and environmental protection, agronomy, plant protection, veterinary medicine, alternative tourism, etc. (7).

It should be noted that the above results differ from those obtained in our previous study. At that time, however, we did not reveal a connection between the choice of hiking as a sport at the University of National and World Economy, with the more developed attitude towards nature conservation among the students who preferred it. Here the situation is different, because it is not just about choosing a sport, but about a conscious decision, which to some extent determines the future of young people. In this sense, it is completely normal for new students in UF to already have a developed sense of responsibility for nature and their actions for its protection to be at a higher level. Future research involving other universities would support the current assumption.

## CONCLUSIONS

1. UF students have significantly higher values than their colleagues at UNWE in terms of the actual actions they take to protect nature ("Actions" scale). There are no significant differences in the "Knowledge" indicator.
2. Freshmen from both universities have the same values on the "Knowledge" scale. The second-year students' knowledge of UF is significantly higher than that of UNWE. In both courses, the students at UF have higher results on the "Actions" scale, compared to the students from UNWE.
3. The obtained results give us reason to assume that the choice and training in UF, as a university whose specialties are closely related to nature, are

associated to both a better understanding of environmental issues and more action taken by students for solving those issues.

4. There is a need to develop and implement effective and efficient environmental policies among young people. In this sense, the wider entry of the discipline "Hiking" in the classes of physical education and sports at the university will lead to awareness of these problems and their successful solution.

A future study involving more universities will be able to support the above conclusions.

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