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APPROACHES, CONCEPTS AND
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RECOGNITION AND PERCEPTION OF RISKS AND ENVIRONMENTAL HAZARDS ON THE PART OF THE STUDENT POPULATION IN THE REPUBLIC OF MACEDONIA

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Abstract

The subject of quantitative research in this paper is analysis of the knowledge and the perceptions of students from seven different faculties in different years of study. The authors used a quantitative survey method to identify and describe the knowledge and the perceptions about the possible risk and disasters. 382 students from all years of study were examined. The results show that the respondents have a high level of knowledge on natural disasters and that there is a significant difference among students depending mostly on the year of study. There is also a difference in some perceptions between the students from "non-security" and from "security" studies. The limitation of the research refers to the fact that the investigation is based only on students willing to participate in the answering of the questionnaire. Considering the evident lack of risks and hazards related to the Environment in Macedonia, the survey results can be used when creating the strategy of educational programs, which would contribute to improving the safety of youth culture. The research results can also be used for the improvement of the existing knowledge and preparedness for responding to risks and hazards related to the Environment.

Keywords: risks and hazards, students, knowledge, perception, environment

INTRODUCTION

Some sociologists, political theorists and anthropologists argue that social and political changes contribute to the way of how the risks and dangers are perceived and how they are administered in modern societies. The German theoretician Beck claims that we are in a state of great transition from conventional into a "risk" society. In his book, about a risk society, Beck claims that fundamental appraisers of the acceptable level of risk in the future are going to be the insurance companies. (Borodzicz, 2005, p. 10) In the discussion, Beck establishes a theory that the modern concepts of risks starting from the industrialization, are controlled by the market. On the question about how we can determine the boundary between risk and the threat, Beck says that "the economy reveals the boundaries between what is tolerable with economic precision, through the elimination of the insurance policy". In this paper we are considering the risks and threats as synonyms.

People in everyday life are trying to predict most of the things that happen. However, in each basis of this prediction exists a set of activities with which practically we get our result of what we have imagined. The concept of risk is a closely related category with: prediction, probability, sense of certainty, and by it, it is closely linked to the notion of danger. The risk has different connotations and interpretations depending on the historical moment and the explanations given by science. Today, it is recognized that the risk represents a measure or a function of two variables, such as: 1) the extent of the probability of failure; and 2) the consequences of the failure. Usually, the events that can most sparsely occur (this is unlikely) cause serious consequences (as of 12/26/2004, the tsunami in Indonesia). And vice versa, events that are more likely to happen can usually cause minor consequences. (Ganoulis & Simpson, 2006, p. 245 – 246) By consulting a number of authors (Wilkinson, Georgieva, Kun, Holton, Durodié and others) Gerasimovski says that the risk is actually a term for an expected future, supervisor event which is likely to occur, but not necessarily. So the risk is a probable event and its occurrence depends on a complex web of factors that make up its content. (Gerasimovski, 2010, p. 117) The risk unlike the uncertainty is stated that possesses a great difference, especially in terms of the possibility of prediction (calculation). Hence, the risk can be graded on the basis of it to make different decisions in different contexts and needs. In the discussion Gerasimovski concludes that "the risk is a possible, assumed, expected occurrence, probably happening with the possible positive or negative outcome, but mostly negative (possible danger - negative risk)"

(Gerasimovski, 2010, p. 124). When it comes to the risks, the efforts of the people and societies are more to learn about the nature, the type, and the structure of the risk or the risks to be managed or controlled, or at least as best possible extent with them to handle. (Gerasimovski, 2010, pp. 128 – 129)

The usual explanation associates the risk with the possibility / probability of injury, damage or loss. Most often, the probability and consequences of a violent act or event are associated with physical (technology) and natural processes according to how and whether it can be objectively defined with risk assessment. We can conclude that the danger or the threat could be real, but the risk, however, is a social construction. The process of assessing the risks is essentially subjective and complicated resulting from the combination of the scientific approaches and assess of psychological, social, cultural and political factors that are important for determination. Within this process, which Slovic describes as a game in which social rules apply with respect to a problem, the key problem is how to define risk. (Georgieva, 2006, p. 83 – 84) Under the term threat in this paper we understand a broad definition that includes natural phenomena and human activities, and technological failures that could cause damage or loss of what is considered a subject of protection in the contemporary society, such as: life, health, property, environment, physical integrity. Activities associated with the degree of probability of endangering human health include the entire infrastructure that implies a modern society, as well as the environment.

LITERARY REVIEW

The risks and the dangers are subject of intense scientific discussion in the economics, politics, culture, security, etc. We are looking for links between risk, crises, security (Borodzicz, 2005), (Boin, Hart, Stern, & Sundelius, 2005), (Gunter Brauch, et al., 2011), (Belluck A., Hull, Benjamin, Alcorn, & Linkov, 2006), (Ganoulis & Simpson, 2006), the *Environment and the security* (Malis - Sazdovska, 2010), (Mileski, Ecologic Security, 2006), (Mileski, Ecologic Security – sustainable development – sustainable security, 2011), (Barnett, 2001), (Deudney, 1990), (Floyd, 2010), (Hulme, 2009), (Aipas, Berskowicz, & Ermakova, 2011), (Matthew, Barnett, Macdonald, & O'Brien, 2010), (Simmons, 1999) (Dodds & Pippard, 2005), (Todorović, 2009) and others, the *Environment and the Sustainable development* (Roger (Atkinson, Dietz, & Neumayer, 2007), (Baker, Sustainable Development, 2006), (Baker, Kousis, Richardson, & Young, 1997), (Danilov – Danil'yan, Losev, & Reyf, 2009) (Elliott, 2006), (Lafferty & Meadowcroft, 2000) (Marten, 2001) and as a result of these discussions and academic research

works it is quite sure that interdependence is determined. The link between environment and all sciences exists because the term environment signifies the entity of everything that is surrounding us, the totality of the dead and the living nature into its total functioning and exchange. Security, I would say, is a very "stretchable" concept. The individual elements of the perception of security only further contribute to the possibly increasing differences into its understanding.

Theoreticians in a global sense recognize the changing societies which are closely related to access to information and the process of globalization. This process could be compared with the recognition of transition from the feudal towards a capitalist society by Marx. Today, according to Beck (Besk), in contemporary terms, we are talking about postindustrial, modern society in which people are becoming concerned with the risks associated with the food we eat, lacking the risk of food shortages. Comparing modern with the consumer society Fromm concluded that the orientation towards consumption is resulting with suffocating the man and does not allow the spiritual, physical and intellectual development. It is interesting to look at Borodzic's example who says that the fears about the techniques of the modern food production are prevailing regarding the salmonella poisoning from eggs, infected animals, due to which, he says, there appears a mass phenomenon of vegetarianism in Europe.

In terms of what a subject of knowledge in this paper presents, we could say that, a constant variable in this paper is as follows: There are natural hazards and risks of different nature (technical - technological and human-caused) that are associated with the environment. We would define the variable as: the awareness and the knowledge of the dangers and the threats facing the society have relevance in dealing with the challenges of the contemporary societies that are caused by natural disasters and other causes of disasters. From these assumptions, the purpose of this quantitative research is conducted within the frames of the preparation of the doctoral thesis¹ which is to determine the conditions of the knowledge, recognition, created attitude of the student's population in the country from several faculties. As to the question why the student population is chosen, we can say it is due to the relatively simple access of respondents, their focus on studying (learning, education), higher level of readiness to participate in a research, as well as their importance for the time to come i.e. for the future. We also believe that the student population is extremely important in the building of the society because of their mobility, dynamism, energy,

¹The PhD dissertation has been reported and defended at the Faculty of Security - Skopje on 17.10.2013 under the title Environment protection in providing security in the country (theoretical, normative and institutional aspects).

commitment, etc. In short, it is of an exceptional importance for the development of the society.

METHODOLOGY

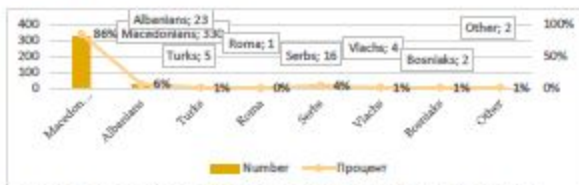
The study involved 382 volunteer students of several faculties: the Faculty of Security in Skopje, the Faculty of Law "Iustinianus Primus", the Institute for Defense of the Philosophy Faculty of UKIM, the Forestry and Mechanical Engineering Faculties at UKIM, the Law and Graduate School on safety and detectives in the first private university "FON" from Skopje, the Faculty of Theology and the Military Academy of the University "Goce Delchev" in Skopje. The sample weaknesses are visible in the small participation of the Albanians in answering the questionnaire which can be explained by the fact that there are private and State University in Albanian language that were not included. As to the sample it can be said that this is a "random sample", i.e. a sample of n-items of the population in such a way that each member of the population is selected only by coincidence, and every member of the population has an equal chance to be selected, and every possible statistical sample with a certain size, n, has the same chance of selection. It is still called a statistical sample.

Graphic n. 1, 2, 3, 4 and 5, Structure of the sample of the survey conducted among students in relation to the gender, year of study, status and ethnicity



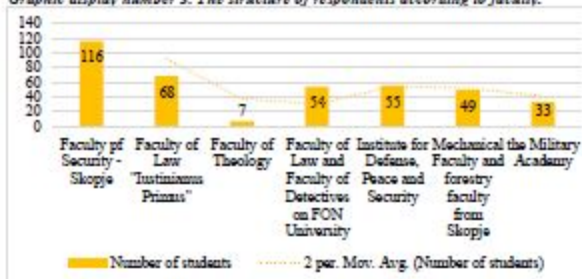
As it can be observed it is a relatively balanced participation of students from all academic years of teaching. The structure of the respondents is illustrated from the graphics display below no. 2 with a 56% respondents male and 44% of females. Most of the respondents (336 students representing 88%) are full-time students, while the rest are part-time students. Such a number as researchers had surprised us because we did not expect the part time students to get involved in the research at all. This speaks in favor of interest on the topic.

Graphic No. 2 represents the ethnic structure of the respondents indicating that the majority are Macedonians, which corresponds to the organizational structure in which the survey is conducted.



Bellow we can see the structure of respondents according to the Faculty where they are studying.

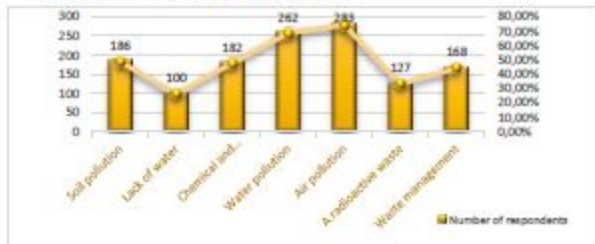
Graphic display number 3. The structure of respondents according to faculty.



RESULTS AND DISCUSSION

To the question what is the biggest threat students see for the environment in the Republic of Macedonia, graphics displayed bellow show that the perception of threats related to the environment among the student population is the following: for the majority air pollution is the major problem with 74.08 % of respondents; then water pollution comes next with 68.58%, chemical and bacteriological contamination, and then other types of pollution.

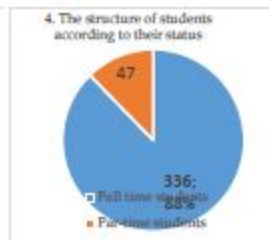
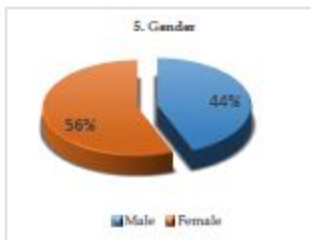
Graphic display no. 6. What do the students see as the biggest threat for the environment in the Republic of Macedonia?



A very important methodological issue is the fact that in answering this question the respondents could select all listed answers. Seen in inversely proportional sense it is interesting to note that the % of the respondents do not consider that the country has problems with water deficiency, which means they think we have it in abundance, while almost % consider that the water pollution, as we mentioned is a threat for the environment. This inconsistency is indicative. Perhaps in the future we should introduce programs about the fact that water in Macedonia is not really a resource we have in abundance. Namely, we are not Iceland. Such an attitude with certainty creates wasteful habits. The highest value of the air pollution problem as perceived after the environment according to the author is the result of the fact that these respondents live in Skopje. In Skopje, without doubt, especially during winter there is a very high value of air pollution and this has been the subject of intense discussions, especially in the last five years. The establishment of publicly available information is valuable because 24/7 of the website of the MEPP, are placed on boards at several places in the city. The media attention towards this issue had achieved a high level of awareness towards the question from the danger of this issue and resulted in perception of the respondents that it represents the biggest danger. Such information also shows a certain nativity and a lack of knowledge among the students about what "The SYSTEM of Environment" means in terms of its full connectivity with other environmental media such as soil and water ones. This indicates a need for additional coverage of many other issues, especially regarding the water and the dangers for it.

Table N. 1. Perception of values of the students to the question: Please assess the importance according to you for each of listed values they have.

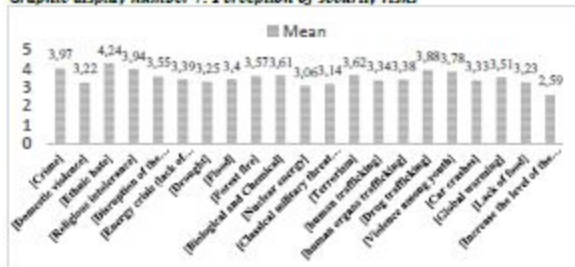
	People (life and health)	Plants and animals	Water and water resources	Air quality	Environment (life, health and safety)	Value of the money	The future success	My country	The environment and life	Religious buildings	The past and present	The present and future	The value of time	The future for society	The language	The tradition	The religion
N	540	578	578	540	578	578	540	577	577	577	578	578	540	578	578	578	578
Mean	4.77	4.46	5.03	4.79	4.20	3.72	4.49	4.50	4.21	3.20	3.34	3.4	3.03	3.78	3.8	3.8	3.37
Std. Deviation	.665	.620	.648	.652	.677	1.080	.611	.775	1.056	1.247	1.28	1.1	1.140	1.14	1.1	1.1	1.320
Skewness	-.320	-.147	-.137	-.147	-.043	-.090	-.141	-.118	-.020	-.164	-.	-.002	-.026	-.140	-.	-.002	-.007
Kurtosis	11.550	2.600	4.11	10.581	5.60	10.4	2.11	4.802	20.3	1.225	7.33	.68	10.1	11.8	2.4	.68	10.1
Maximum	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



The table above presents the responses of the respondents in terms of their perception of the value that listed values have. Namely, separately listing the property, health, political system and others (see table) indicates some basic descriptive indicators of the scale of their views. Top-rated is the health of the people with an average grade of 4.77 in the range of 1 - 5 And there are dilemmas. In the interest of this paper are the values of the results that refer to the environment and that are rated with expressed positive opinions as follows: (1. people - 4.77 2. plants and animals - 4.46 3. water - 4.78: the environment - 4.49; air quality - 4.59). Regarding this question we have reservation taking into account the knowledge of the participants. Namely, according to the definition of the Environment, and having

questioned the students for parts of the system of Environment, and having them evaluated very high, represents a foundation for strong expectations for creating awareness, knowledge, and further practice the protecting them.

Graphic display number 7. Perception of security risks



The following graph indicates the perception of students for the degree of risks and hazards, including: increasing of the sea levels, food shortages, global warming, violence among youth, drug trafficking, crime, domestic violence, forest fires, floods, terrorism, classic military threat, land, energy crisis, religious intolerance, ethnic hatred, violation of the constitutional order, biological and chemical pollution, drug trafficking, traffic accidents and able to bend other risks and dangers, and to assess the threat level of 1 to 5 and the results of the average values are: ethnic hatred (4.24), crime (3.97), religious intolerance (3.94), drug trafficking (3.88) which are the top four ranked risks and hazards. From the noted 21 risk and hazards 8 of them represent security risks related to the environment and they are subject of interest of the environmental security. Also, it is worth mentioning that in the only assessment of the risks and dangers of natural disasters, the Republic of Macedonia recognizes much of the listed risks.

These results are most interesting for discussion. Namely, despite the fact that forest fires are a serious problem in the country, the floods and the drought as well, the students evaluation is on lower levels of risk and probability of occurrence of, for example, deep political and sociological categories related to ethnic hatred and religious intolerance. These data show a strong degree of the personal conviction of the respondents that ethnic hatred and religious intolerance are the most serious security challenges. The question is whether they build this perception based on personal experiences, experiences or transferred based on presented "media truth"?

In order to compare the perception of risks and hazards in this section we will enumerate some of the elements of the official assessment of the risks and dangers of natural disasters in the country. The official assessment of the Republic of Macedonia shows that: *The floods are most common condition related to natural disasters in Macedonia. Major floods occurred in 1916, 1935, 1937, 1962 and 1979. For example, the assessment of the effects of the 1979 flood is defined as 10% of the national income of the country. Because of the configuration of the terrain, the rapid flow of water and their spill, these floods cause very serious consequences such as large erosion, sediment and deposit them in the lower parts, collapsing on the shores of rivers and rivers behavior of fruit and other surfaces. From the rivers overflow their banks are threatened more than 100 000 hectares of arable land. Water management facilities in the country are insufficient and inadequately maintained, which is a major obstacle to its efficiency in undertaking the activities and measures to protect and rescue flood.*

Table N. 2 Questions about the perception and attitudes related to environmental protection

Statistic		In what extent do you agree with the idea that the environment is a subject of national security?	In what extent do you consider that the environment in the country is protected?	In what extent do you consider you as an individual to contribute to the environmental protection?	In what extent you contribute for endangering of the environment?
N	Valid	382	382	382	369
	Missing	0	0	0	13
Mean		3.63	2.32	3.65	2.16
Mode		4	2	4	2
Std. Deviation		1.054	.786	.932	1.000
Skewness		-.509	.066	-.325	.881
Kurtosis		-.098	-.274	-.004	.720
Minimum		1	1	1	1
Maximum		5	5	5	5

From a methodological perspective encourages the consistency and coherence of the responses to the four tightly interrelated issues regarding the table above.

Table N.3 Perception for the environment as a national security issue according to the Faculty

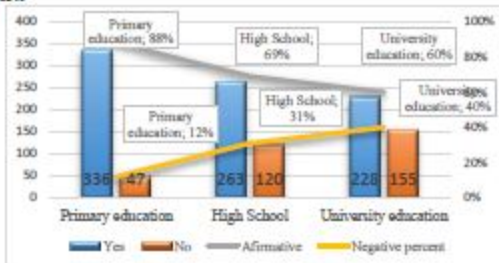
* In what extent do you agree with the idea that the environment represents a subject of national security?/Cross tabulation						
Count		In what extent do you agree with the idea that the environment represents a subject of national security? (From 1 to 5)				
		1	2	3	4	5
	Faculty of Security - Skopje	6	11	30	47	22
	Faculty "Justiniana Prima" Skopje	3	9	19	22	15
	Faculty of Theology	0	0	1	2	4
	"TON" Law and Faculty of Detectives	2	2	17	25	8
	Institute for Defense and Peace	2	2	20	20	11
	Mechanical Engineering and Forestry	0	5	13	17	14
	Military Academy "General Mihailo Apostolski" Skopje	0	4	14	9	5
Total		13	33	114	142	79
						382

In the previous table we can see the assesment for the security relevance of the environment as a matter of national security for each faculty separately. The following table indicates the responses of the students by the year of study.

Table N.4 Perception for the environment as a national security issue according to the year of study

Year of Studies * In what extent do you agree with the idea that the environment represents a subject of national security?/Cross tabulation						
Count		Year of Studies * In what extent do you agree with the idea that the environment represents a subject of national security? (range 1 - 5)				
		1	2	3	4	5
Year of Study	First	2	10	35	27	12
	Second	5	6	28	35	24
	Third	3	9	24	31	22
	Fourth	1	3	7	23	10
	first on postgraduate	1	2	12	16	6
	Second on postgraduate	1	3	8	10	5
Total		13	33	114	142	79
						382

Graphic N.8 Presence of curricula for Environment at all levels of education



In support of the affirmative attitudes related to the environment of major importance is the fact of presence on environmental education in educational programs in the schools. Therefore the students were asked whether in their primary, secondary and higher education they have encountered with content related to the environment? As it can be clearly recognized from the graph above in the primary education, this percentage represents 88%, 69% in the secondary and 60% in the higher education.

It is important to say that the respondents evaluated the ethnic hate as the biggest security risk in the country. Therefore it stands out as special. The question is why is this so? It confirms the conclusion that the Macedonian society is deeply differentiated by ethnic as well as on religious lines. The closeness of the social groups disables the existence of "channels of communication". It creates a state of mutual ignorance, which inevitably provokes fear. This is shown by the results of the responses of the students. Namely, 377 students responded that ethnic hatred is a security question and on a scale from 1 to 5 has an amount of of 4.24. This condition, despite fear, at the same time could mean a high level of latent danger. Especially given the fact that this issue is given as one of the ten possible answers. It can be expected that if in-depth qualitative research is being conducted, the conditions will indicate certain specifics. When between crime, organized crime, terrorism, floods, droughts, water shortages on the one hand and ethnic hatred on the other hand, the ethnic hatred is considered a higher security assess we can conclude that we have built a strong security perception. Also, this condition cannot be easily changed and indicates on a high level of fear and alienation among the ethnic social groups. How can this reflect on the real political terms is a question on which we can open

- endangerment from fires and explosions;
- endangerment from unexploded lethals and explosives;
- endangerment from landslides;
- endangerment from outbreaks of infectious diseases;
- endangered animals and products of animal origin;
- endangered plants and plant products;
- endangerment from radiological, chemical, and biological contamination and accidents with hazardous substances;
- endangerment from major accidents; and
- endangerment from technological accidents and protection of the environment.

The graphic bellow shows the mean on the value of the respondents. *The highest level of risk is assessed about the threat from chemical and biological contamination, followed by the global warming.* The respondents were asked to evaluate a relatively unquestionable risks and dangers that are associated directly or indirectly with the possible endangering of the environment. Therefore, it can be analyzed as a perception of risks and dangers to the environment, in the most part. In that way the answers of the students can also be interpreted.

Graphic N.10



For the differences among the results of the students from different faculties it is shown bellow; here we can easily see that the students from the Faculty of Security - Skopje evaluate the risks higher. This is due to the nature of the studies and it represents the expected result.

Table N.5 Test of differences in the perception of risks of students from Faculty of Security Skopje and the Faculty of Law "Justinianus Primus"

(Group Statistics, Please rate according to your level of risk on these phenomena related to the environment on a global level)						
	Faculty / University	N	Mean	Std. Deviation	Min	Max
[The spread of tropical diseases north and south of Ecuador]	Faculty of Security - Skopje	114	3.31	1.065	1	5
	The Faculty of Law "Justinianus Primus"	68	3.00	1.093	1	5
[Pollution of the oceans due to the release of carbon dioxide]	Faculty of Security - Skopje	115	3.24	1.065	1	5
	The Faculty of Law "Justinianus Primus"	67	2.97	1.141	1	5
[More frequent and larger river flooding due to global warming and the melting of glaciers]	Faculty of Security - Skopje	113	3.41	.970	1	5
	The Faculty of Law "Justinianus Primus"	68	3.35	1.255	1	5
[Landslides and mudslides]	Faculty of Security - Skopje	115	3.31	1.087	1	5
	The Faculty of Law "Justinianus Primus"	66	3.17	1.075	1	5
[Accidents in the mines]	Faculty of Security - Skopje	115	3.27	1.046	1	5
	The Faculty of Law "Justinianus Primus"	67	2.90	.971	1	5

Table N.6 T-test to differences in perception of risks of students on the Faculty of Security - Skopje and The Faculty of Law "Justinianus Primus"

t-test for Equality of Means								
		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower Upper
[The spread of tropical diseases north and south of Ecuador]	.000	.963	1.863	180	.064	.307	.165	-.018 .632
			1.851	138.178	.066	.307	.166	-.021 .635
[Pollution of the oceans due to the release of carbon dioxide]	.000	.955	1.627	180	.106	.273	.168	-.058 .605
			1.597	130.474	.113	.273	.171	-.065 .612
[More frequent and larger river flooding due to global warming and the melting of glaciers]	7.338	.007	.325	179	.746	.054	.167	-.275 .383
			.305	114.898	.761	.054	.177	-.297 .406
[Landslides and mudslides]	.000	.505	.875	179	.383	.146	.167	-.184 .476
			.878	136.781	.382	.146	.167	-.183 .476
[Accidents in the mines]	2.077	.151	2.388	180	.018	.374	.157	.065 .683
			2.435	146.536	.016	.374	.154	.071 .678

Red marked fields indicate on existence of statistical significance (which is determined within the scale from .000 - .050) with three of the five observed questions such as:

- the spread of tropical diseases;
- pollution on the oceans due to the release of carbon dioxide; and
- landslides and mudslides.

Table N.7 Test on differences in the perception on risk students from Faculty of Security - Skopje and the Institute for Defense and peace at the Faculty of Philosophy in Skopje

	Faculty	N	Mean	Std. Deviation	Min	Max
[The spread of tropical diseases north and south of Ecuador]	Faculty of Security - Skopje	114	3.31	1.065	1	5
	Institute for Defense	55	3.22	1.182	1	5
[Increased rate of diseases due to flooding]	Faculty of Security - Skopje	114	3.35	1.047		
	Institute for Defense	54	3.11	1.254	1	5
[More frequent and larger river flooding due to global warming and the melting of glaciers]	Faculty of Security - Skopje	113	3.41	.970	1	5
	Institute for Defense	55	3.42	1.134	1	5
[More frequent and stronger storms]	Faculty of Security - Skopje	115	3.52	.976	1	5
	Institute for Defense	55	3.47	1.069	1	5
[Pollution of the oceans due to the release of carbon dioxide]	Faculty of Security - Skopje	115	3.24	1.065		5
	Institute for Defense	54	3.33	1.197	1	5
[Technical and technological accidents]	Faculty of Security - Skopje	115	3.37	.986	1	5
	Institute for Defense	55	3.07	1.184	1	5
[Increased fires]	Faculty of Security - Skopje	116	3.78	.822	1	5

	Institute for Defense	55	3.96	.942	1	5
[Accidents in the mines]	Faculty of Security - Skopje	115	3.27	1.046	1	5
	Institute for Defense	55	2.95	1.113	1	5
[Global warming]	Faculty of Security - Skopje	115	3.97	.999	1	5
	Institute for Defense	53	3.91	1.114	1	5
[Landslides and mudslides]	Faculty of Security - Skopje	115	3.31	1.087	1	5
	Institute for Defense	54	3.22	1.144	1	5
[Road accidents]	Faculty of Security - Skopje	114	3.54	1.023	1	5
	Institute for Defense	55	3.40	1.180	1	5
[Inappropriate Waste Management]	Faculty of Security - Skopje	110	3.65	.962	1	5
	Institute for Defense	53	3.49	1.067	1	5
[Inadequate urban solutions]	Faculty of Security - Skopje	114	3.28	1.052	1	5
	Institute for Defense	55	3.18	1.188	1	5
[Nuclear power (major accidents and use of nuclear weapons)]	Faculty of Security - Skopje	115	3.96	1.003	1	5
	Institute for Defense	55	4.02	1.194	1	5
[Chemical and biological contamination]	Faculty of Security - Skopje	115	4.20	.871	1	5
	Institute for Defense	55	4.09	1.041	1	5

The conducted testing between these two groups (Faculty of Security – Skopje with 123 respondents and the Institute for Defense and Peace Studies, with 54 respondents) with results which can be seen in the table

above and the table below, indicates some differences in the perception of the degree of danger of the manifestation on certain risks. According to the results we found statistical significance in the differences to the following risks:

- probability of occurrence of more frequent and mightier storms;
- accidents in the mines and the landslides and mines; and
- landslides.

Among other risks we cannot notice a difference. The relative homogeneity of the remaining results in terms of perception from probability of manifestation of the listed risks we believe is due to the similarity between the curricula of the two study programs. Basically, this means that the answers of the students of Faculty of Security from Skopje and the Institute for Defense and Peace are characterized by two main features: first, they showed significant coherence on the evaluations; and second, in the majority of cases the risks are assessed with a higher value. It is a result of developed security culture and the gained knowledge which itself includes the existence of informed citizens who are reasoning on a basis of the available information. The involvement of the teaching content related to the environment is extremely important in this regard also.

Table N.8 T-test of students at the Faculty of Security - Skopje u Institute for Defense and peace at the Faculty of Philosophy in Skopje
Please rate the degree of risk on these phenomena related to the environment on a global level. Independent Samples Test

	t-test for Equality of Means		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
[The spread of tropical diseases north and south of Ecuador]	1.050	.307	.490	167	625	.681	.089	.181	-.269	.447
			.473	97.504	638		.089	.188	-.284	.462
[Increased diseases because of floods]	1.065	.304	1.299	166	196	.240	.185	.125	-.604	.631
			1.218	89.249	226		.240	.197	-.151	.631
[More frequent and larger river flooding due to global warming and the melting of glaciers]	1.492	.224	-.066	166	948	.011	.169	.344	-.322	.342
			-.062	93.582	950		.178	.365		
[More frequent and stronger storms]	.880	.343	.297	168	767	.049	.165	.277	-.375	.387
			.287	98.282	774		.049	.170	-.289	.387
[Pollution of the oceans due to the release of carbon dioxide]	1.775	.185	-.491	167	624	.000	.183	.451	-.271	.289
			-.471	93.637	639		.190	.469		

[Technical and technological crises]	.885	.348	1.743	168	.083	.301	.173	-.0481	.662
			1.635	91.044	.106	.301	.184	-.065	.667
[Increased number of fires]	.778	.379	-1.270	169	.206	-.179	.141	-.458	.099
			-1.209	94.207	.230	-.179	.148	-.473	.115
[Accidents in the mines]	.887	.811	1.852	168	.066	.324	.175	-.021	.670
			1.812	100.749	.073	.324	.179	-.031	.679
[Global warming]	1.467	.227	.346	166	.730	.060	.172	-.280	.399
			.332	91.961	.740	.060	.179	-.296	.415
[Landslides and mudslides]	.888	.853	.498	167	.619	.091	.182	-.269	.451
			.489	99.205	.626	.091	.186	-.278	.459
[Road accidents]	2.042	.155	.814	167	.417	.144	.177	-.205	.493
			.774	94.337	.441	.144	.186	-.225	.513
[Inappropriate Waste Management]	1.116	.292	.983	161	.327	.164	.167	-.165	.493
			.948	93.812	.345	.164	.173	-.179	.507
[Inadequate urban solutions]	1.417	.236	.549	167	.584	.099	.180	-.257	.455
			.526	96.023	.600	.099	.188	-.274	.472
[Nuclear power (major accidents and use of nuclear weapons)]	2.003	.159	-.352	168	.725	-.062	.175	-.407	.284
			-.331	91.687	.741	-.062	.186	-.432	.308
[Chemical and biological contamination]	.838	.361	.716	168	.475	.109	.152	-.192	.410
			.673	91.309	.503	.109	.162	-.213	.431

What is indicative and positive in the results, according to the purpose of this study is the fact that these risks are also present in the official assessment from all risks and hazards which were mentioned previously. Therefore, given the value on them all, we can reliably conclude that the majority of the respondents have a realistic perception of the degree of danger from these risks and hazards. It must be noted that the majority of students (as evidenced by the test results from the respondents from the Law Faculty in Skopje) do not have a realistic perception of the level of risk associated with risks and dangers from natural disasters. Such results are of course expected, and make the differences in the curriculum, as well as "the specific milieu" of reasoning.

CONCLUSIONS

The environment represents a field that comprises the interest of many scientific disciplines and as a result of such an interest, different scientific instruments are created. In general, it can be observed both as an interest of the natural and as an interest of the social sciences. In the social sciences of particular importance is the connection between the economics and the sociology on one hand and the technical and the natural laws on the other. This, of course, results in the creation of the concept of sustainable development. The relationship between the Security and the Risks is established and it is of visible or of latent nature. The space for scientific

research in this area is "unlimited". Risks today represent a part of the modern society, or as Beck calls it "a risk society". Within these general conditions, the environment and their media directly associated with it, and the closely related issues are increasingly gaining importance. As a result, more and more people will change their perception of security. In this sense, the subjective feeling of security among people, the variable "environment" will become increasingly important.

On behalf of the risks and the threats contrary to the doctrine of the Liberal Thinking, all the states will be strengthening their position and "maneuvering space" to restrict the rights and the freedoms of the people. Therefore, the risks despite having objective potential for endangering, are subject to additional "shaping" most often from the state authorities and the holders of information activities. The holders of information activities acquire a global dimension with incredible speed, and the state authorities cannot always follow this progress.

About the differences arising on individual level about the risk perception, the cultural context as well as the objective reality are of crucial importance. The students in the group of threats to the environment on the first place put the endangerment of the air and the water. Half of them believe that the soil is subject to threat. The perception that the air is the most endangered is due to the fact that all respondents live in Skopje. The students also consider that the threat to the water is strong, but at the same time do not think that the Republic of Macedonia would have a problem with a shortage of water. Among the students, the tradition, the religion, and the religious feelings are values which in most cases are evaluated differently, i.e. the answers are ranging with substantial variations in the value of the standard deviation. The ethnic hatred has the highest value in terms of the assessment of its security relevance. The perception among the students about the risks and dangers to the environment at the global level is based on speculation and incomplete informations. There are significant differences in these responses and large scattering of opinions.

The participants have built a perception that the environment in the country is not being protected. At the same time, they are not contributing towards its threat. The respondents as individuals are significantly contributing to its protection (defined by four control issues). There is no statistically significant difference in the perception of the risks and dangers of the students at the Faculty of Security in Skopje and the students of the Institute for Defense and Peace. That speaks for a relatively same perception towards the risks and the dangers. According to the authors, this is due to the development of a safety culture and the acquired knowledge during the studies and in general the attitude towards the risks and hazards associated with the security. There is a difference in the perception of the value of

security issues among the students from the first and the third years of study. The students in the third year of study have a higher developed sense for security culture. Secondly, among the students from the first year we can see incompleting attitudes towards some security matters that can be especially illustrated by the values of the deviations to the standard deviation in the assessment of the security challenge in the cases: "existence of classical military threat", "terrorism", "trafficking of people" and "human organ trafficking". In addition, the performed t - test showed statistical significance of the differences between these two groups among the questions: "human organ trafficking" and the "terrorism".

There is a statistically significant difference between the attitudes of the students from the Faculty of Security Skopje and the Faculty of Law "Justinianus Primus" in terms of the range of danger of risks associated with the spread of tropical diseases to the north and the south of the equator as well as pollution of the oceans due to the release of a carbon dioxide. This is due to a higher degree of the built security culture rather based on the familiarity with the real facts and data. Macedonia is vulnerable to risks and dangers from different nature and the overall processes are not in favor of existence of an optimal level of handling and management of these risks.

The existence of the consequences for the human health over the last decades of the 20th century have created social interest groups that enabled the creation of a system for environmental protection, which is not completely finished i.e. it is not utterly functional and operational, yet.

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