TÜRK FEN EĞİTİMİ DERGİSİ
Yıl 14 Sayı 3, Eylül 2017

Journal of
TURKISH SCIENCE EDUCATION
Volume 14, Issue 3, September 2017

http://www.tused.org

Evaluation of Values, Beliefs and Norms of High School Students on the Conservation of Biodiversity

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Received: 26.03.2016 **Revised:** 14.10.2016 **Accepted:** 24.02.2017

The original language of article is English (v.14, n.3, September 2017, pp.26-39, doi: 10.12973/tused.10203a)

ABSTRACT

This research evaluates the values, beliefs and norms on conserving biodiversity amongst Turkish Cypriot high school students and the results are compared according to gender and class year individually. The data was collected from 506 students via a value-belief-norm questionnaire. According to the results of this questionnaire, it is observed that the Turkish Cypriot high school students pay more attention towards the "self-administration" value, believe that their responsibility towards protecting the local and global biodiversity is more than their perception of talent to manage it and their personal norms regarding the conservation of biodiversity is very similar to each other. Furthermore, it can be concluded that gender and grade does have an effect on the values, beliefs and norms on preserving biodiversity.

Keywords: Biodiversity, value-belief-norm, high school students.

INTRODUCTION

Due to the human activities, the biodiversity of Cyprus is under threat (CBD, 2010, 2014; Zachariadis, 2012). The human beings have violated the biodiversity for its economic value and the resources have been destroyed (Halkos and Tzeremes, 2015; Cardinale et. al. 2012; Charalambides and Nisiforou, 2012). Over exploitation of biodiversity services from the ecological, social and economic aspects in local, regional and global scales (Mass et. al 2016; Newcome et. al., 2005) have imposed a pressure on biodiversity diminishing the diversity. Yet, biodiversity means the variety of life (Colwell, 2009; Çepel, 2007). While biodiversity provides various benefits in terms of carbon storage, recreation, tourism, pharmaceuticals, food, fuel, aesthetics, it also has ecological, social and economic value (Laurila-Pant, 2015; Edwards and Abivardi, 1998). Therefore; for the conservation of biodiversity, people should have basic some knowledge on biodiversity and its value, behave accordingly (Charalambides and Nisiforou, 2012) and make decisions that are appropriate for their environment (Lopez and Cuervo-Arango, 2008). Since it is considered that environmental problems can not solely be prevented by technical solutions, the understanding and interpretation of behaviour and decisions causing environmental problems as well as pro-environmental behaviour are deemed to be significant (Liebe, 2010). One of the theories

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explaining pro-environmental behaviour and decisions is "Value Belief and Norm Theory" (Stern, 2000).

Value-Belief-Norm (VBN) theory was developed by Stern et.al. According to Stern, the environment is directly or indirectly affected by the behaviour of individuals due to their desired comfort, mobility, power and status. Stern (2000) noted that the types of behaviour indirectly affecting the environmental change are much bigger and effective than direct behaviour. Since indirect behaviour may impose a pressure for social change (Stern et al., 1999), for instance, deforestation has a direct impact on environment; national environmental tax policy has an indirect impact. Caluri and Luzatti (2016) emphasize that VBN postulates a special focus onto mechanisms that involve the value-system and judgemental rationality of individuals. Value-Belief-Norm Theory is based on the Norm-Activation Model (NAM) and New Ecological Paradigm Theory (Stern et al., 1999). In particular VBN theory is influenced by the Altruistic Behaviour Theory (ABT). Altruistic behaviour has a positive or negative impact among other individuals of society. Thus, altruistic behaviour is accepted provided that it meets the personal norms, has positive outcomes on the others and individuals take responsibilities resulting from their behaviour (Ibtissem, 2010). In the VBN theory of Stern et al., the three variables as values, beliefs and personal norms are successively related and affect the behaviour (Figure 1) (Klöckner, 2013; Grot and Steg, 2009; Stern, 2000).Values facilitate in filtering the environmental decisions to avoid the perceived outcomes in environmental decisions and reflecting the filtered decisions as behaviour (Lopez and Cuervo-Arango, 2008). Values are affected through pro-environmental norms on pro-environmental behaviour (Grager, 2012: Abrahamsa and Steg, 2011). Beliefs are values that help us evaluate the good-bad and the right-wrong (Prager, 2012). According to NAM, the beliefs are crucial on the pro-environmental behaviour via personal norms (Onwezen et al., 2013: Zhang et al, 2013). Beliefs comprise of awareness of consequences and ascribed responsibility (Ibtissem, 2010). The awareness of consequences promotes the development of the ascribed responsibility (Borsch et al., 2014). Echological beliefs present beliefs about the relationship between human and environment (Lopez and Cuervo-Arango, 2008). Awareness of consequences and ascribed responsibility impact personal norms (Han, 2014; Zhang et al., 2013): Personal norm are individual moral conviction about concerning whether personal behavior is right or wrong (Onwezen et al., 2013).

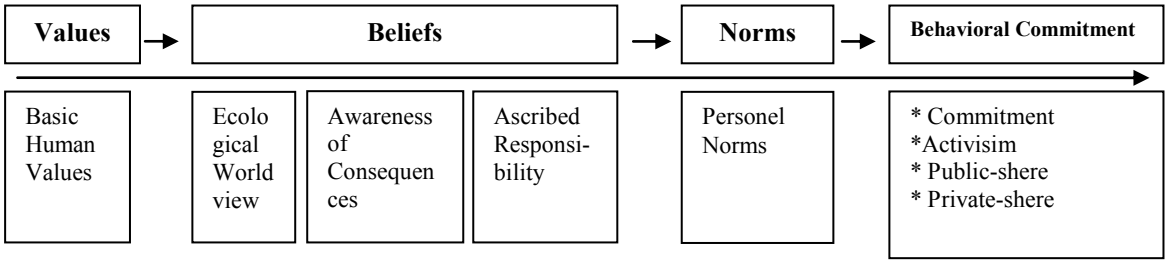


Figure 1. Model based on VBN Theory in terms of adolescents' commitment to protect Biodiversity (Menzel, 2007).

Pursuant to literature, the value-belief-norm model had been used in the series of research in order to explain its impact on pro-environmental and ecological behaviour. For example, Lopez and Cuervo-Arango (2008) working on ecological behaviour theory introduced in a study conducted with 403 individuals that live in a small town in Spain that personal norms, altruistic values and ecological beliefs have positive impact on ecological behaviour while denial of obligation has negative impact. In another study, it was found out that behaviour of energy conservation is affected by value beliefs and personal norms (Ibtissem, 2010). In a part of their study, Abrahamsa and Steg (2011) studied energy use and

intentions to reduce energy consumption, value-belief-norms theory. In the study, value-belief-norm variables were important indicators of energy use and intentions to reduce it.
Studies have shown that in order to encourage individuals to form pre-environmental behaviour, it is of great importance to understand psychological factors that affect their willingness to shift environmental manners into action (e.g. Steg et al., 2011; Steg and Groot, 2010). Also individual characteristics are known to have an impact on the pro-environmental behaviours, and psychological factors (Tarrant, 2010). The behaviour of individuals are affected by the personal elements (physiological, psychological, intelligence, perception, thought, belief, need etc.), environmental factors (culture, religion, traditions, customs, social norms, family etc.) and their settings (education, work/occupation, income, status etc.) (İbicioğlu et al., 2009). The education programs proposed for the solution of global environment problems shall be developed by taking the personal elements of individuals, environmental factors and their settings into consideration.

Because it is a complex construct with ecological, economical and social dimensions, biodiversity has become a challenging topic (Randler, 2008). Therefore, the opinions of students as the future decision makers are important to talk about a general disposition to act to protect biodiversity. Individuals' decisions are associated with psychological factors such as beliefs, norms (Routhe et al., 2005). Furthermore constructivism in challenging educational topics comes about through change in thinking (Tarrant, 2010). In this process, psychological factors play a big role. In previous studies it was emphasized that psychological factors with all the ecological, economic and social dimensions had crucial roles in environmental education and in more effective teaching (e.g. Sarıbaş et al., 2016; Menzel & Bögeholz, 2009; Dervişoğlu, 2007; Randler et al., 2005). It is a fact that, this issue related to changing biodiversity with all its dimensions and the psychological factors in learning and teaching this subject has not yet been studied in TRNC.

The aim of this study is to evaluate the values, beliefs and norms of students in TRNC on the conservation of biodiversity and compare the results with gender and class years. For this purpose, the following questions were asked:

- What are the value-belief-norms of students towards the conservation of biodiversity?
- Do the value-belief-norms of students towards the conservation of biodiversity vary on the basis of gender and class year?

It is hoped that this study contributes to better programming, provides learning environments, and guides the teaching staff

METHODS

a) Research Method

This research is designed in accordance with the screening model. The screening model defines the conditions, processes, structures and practices. Therefore the model collects, analyses, explains and interprets the existing data (Howett & Cramer, 2011). In this study, the value-belief-norm scales were taken as dependent variables while gender and class years as independent variables. When examining sixth grade students' nature of science concepts Khishfe ve Abd-El-Khalick (2002) indicated the reason that they chose to use interpretive research as "the present study is interpretive in nature and focused on the meanings and participants ascribed to the emphasized aspects of nature of science" (p. 557). The purpose of this research approach is to produce many explanations and interpretations about human experience.

b) Population and Sample

The population of this research is the high school students in TRNC during the first semester of 2014-2015 academic year. Due to the limitation in reaching the whole population,

sampling was used through random sampling method. Three types of high schools were chosen (college, general high school, and Anatolian high school) before the application, the curricula of selected school were reviewed through random sampling method. Then, the students from 8 high schools as 4 colleges, 3 general high schools and 1 Anatolian high school participated to the research for the random sampling. Therefore, the sample of this research is 506 volunteer students from tenth, eleventh and twelfth grades. Among the students, 57,5% were female (291) and 42,5% (215) male students. 16,0% (81) were 10^{th} grade, 35,8% (181) 11^{th} grade and 48,2% (244) were 12^{th} grade students.

c) Data Collection Tool

The questionnaire prepared on the subject of Endangering and Conserving of Biodiversity was used. It included Value-Belief-Norm scales and personal information are included in the questionnaire. The personal information section of the questionnaire covers the problems related with gender, age and grade of participants. The scales were developed by Menzel (2007) and adapted by Dervişoğlu (2007) into Turkish. Menzel (2007) adapted the value, belief and norm scales into the biodiversity context either by shaping original scales or restructuring the agreed scales. Menzel adapted Schwartz's Portrait Values Questionnaire (2005; PVQ) into the biodiversity context. The questionnaire assesses the value types as "Self-direction", "Power", "Universalism", "Achievement", "Security", "Stimulation" and "Benevolence". The Cronbach's alpha values of these 7 value types vary between ,521 and ,760. The belief scale, structured by Menzel, is comprised of ascribed responsibility and perception of talent and is graded in 4-point Likert scale with 8 items. It is evaluated from global and local contexts. The Cronbach's alpha values of ascribed responsibility and perceived abilities to reduce threats were calculated as ,797and ,846 respectively. In the norm scale, Menzel inspired the studies of Stern (1999) and Widegren (1998) in the context of biodiversity. The personal norms scale has 4 items and was graded in 4-point Likert scale. The personal scale has also been organized in the way to be evaluated from global and local contexts. The scale reliability in TRNC sample was calculated as ,81.

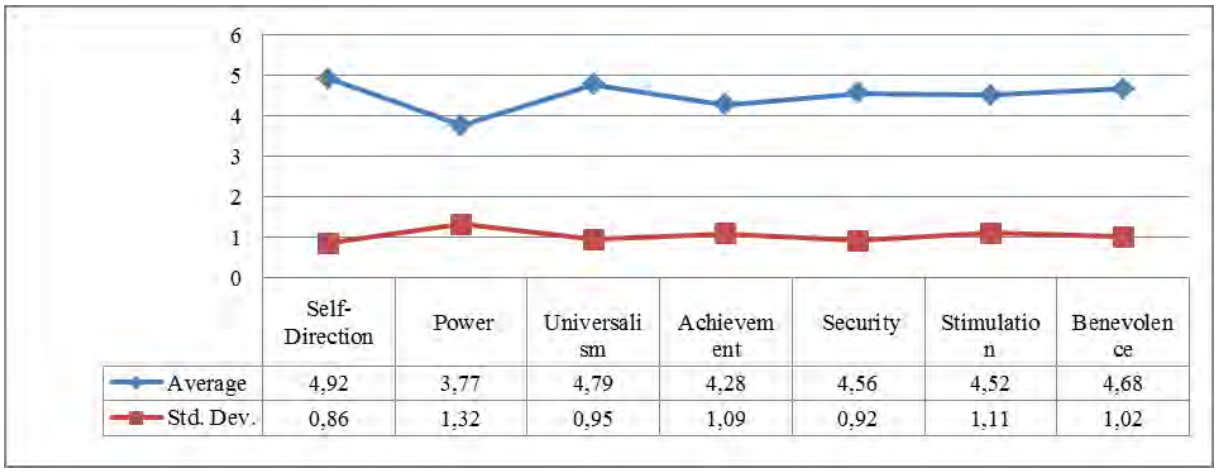
d) Data Analysis

The frequency, percentage, average, standard deviation, Mann-Whitney U and Kruskal H Wallis techniques were used for the data generated from questionnaire filled out by selected high school students. Before the analyses, the data was subjected to the Kolmogorov-Smirnov test for normality and the distribution was found as not normal.

FINDINGS

a) Findings on Human Values

The results from the answers of high school students participated in the research are shown in Figure 2.



	Self-Direction	Power	Universalism	Achievement	Security	Stimulation	Benevolence
Average	4,92	3,77	4,79	4,28	4,56	4,52	4,68
Std. Dev.	0,86	1,32	0,95	1,09	0,92	1,11	1,02

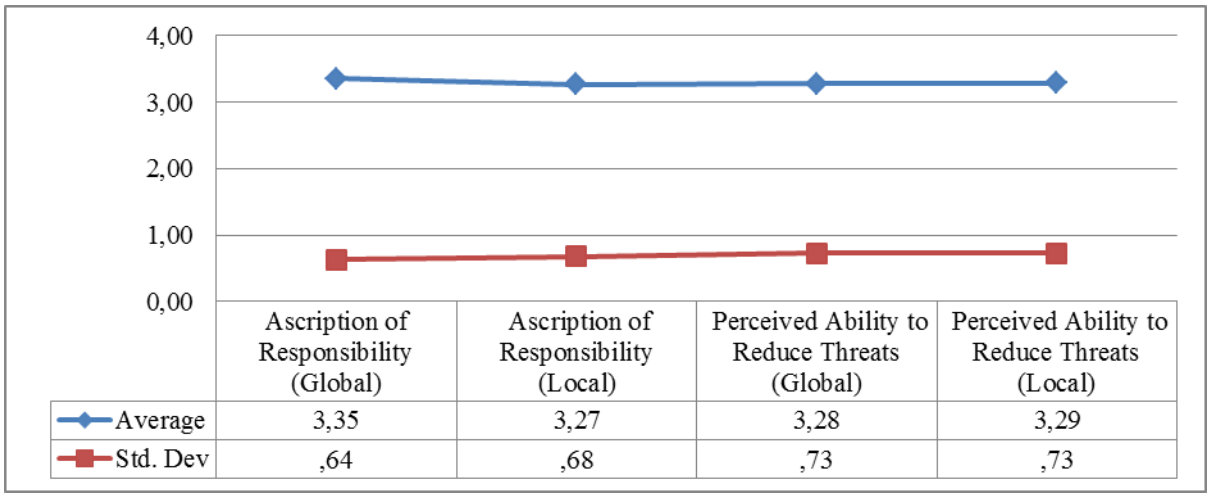
Figure 2. The Averages on Basic Human Values

In consideration with the Figure 2, the averages for the answers given by the students towards the basic human values vary between 3,77±1,32 and 4,92±0,86. The highest value type is the self-direction that is under being open to change (Average=4,92±0,86). The lowest value type is the power value under the self-enhancement (Average=3,77±1,32).

As seen from the Figure, another type of value under openness to change is the stimulation value and high school students have considered it as "like me". Another value under the self- enhancement value is the value of achievement and high school students have considered the achievement value (average=4,28±1,09) as "like me". The high school students considered the universalism (average=4,79±0,95) and benevolence (average=4,68±1,02) that are under the value of getting beyond oneself as "like me". Similarly, the high school students considered the security value that is under the value of conservation approach as "like me" (average=4,56±092).

b) Findings on Beliefs

The results for the answers given by the high school students who participated to the research upon the beliefs as one of the variables of VBN theory are shown in Figure 3 within the global and local context.



	Ascription of Responsibility (Global)	Ascription of Responsibility (Local)	Perceived Ability to Reduce Threats (Global)	Perceived Ability to Reduce Threats (Local)
Average	3,35	3,27	3,28	3,29
Std. Dev	,64	,68	,73	,73

Figure 3. The Averages on Beliefs

In consideration with the Figure 3, the averages of high school students for the ascribed responsibilities regarding the conservation of local and global biodiversity and perceived abilities to reduce global and local threats vary between 3,35±0,64 and 3,27±0,68. The averages of ascribed responsibility and perceived ability to reduce threats are close. High school students assessed the global ascribed responsibility (average=3,35±0,64) and local ascribed responsibility to reduce threats (average=3,27±0,68) as "Agree". Similarly, they assess the globally perceived ability to reduce threats (average=3,28±0,73) and locally perceived ability to reduce threats (average=3,29±0,73) as "agree".

c) Findings on Personal Norms

The results for the answers provided the high school students that participated to the research upon the norms within the VBN theory are shown in Figure 4.

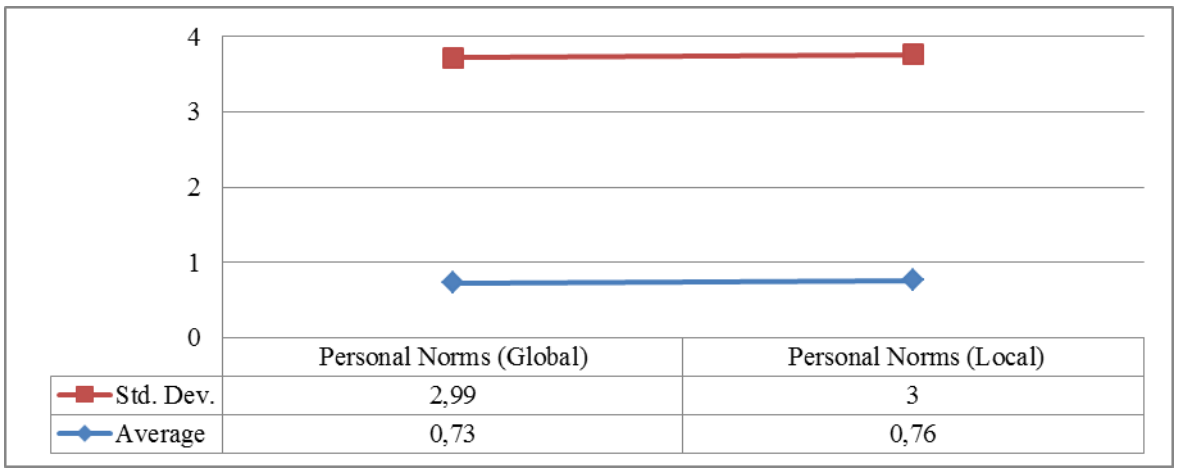


Figure 4. The Averages on Personal Norms

When we examine the Figure 4, we can observe that the averages of personal norms regarding the conservation of global and local biodiversity are close as shown above. High school students evaluated the personal norms concerning the conservation of global (average=2,99±0,73) and local (average=3,00±0,76) biodiversity as "neither agree nor disagree".

d) The Effects of Gender on Human Values

The effects of gender on universal human values of high school students were evaluated and the results were given in Table 1.

Table 1. The Effects of Gender on Human Values

Dependent Variables	Gender	N	Mean rank	U	Z	P	Impact
Self-direction	Female	291	269,61	26593,5	-2,90	,00	Significant
	Male	215	231,69				
Power	Female	291	231,20	24792,0	-4,00	,00	Significant
	Male	215	283,69				
Universalism	Female	291	281,95	23004,0	-5,10	,00	Significant
	Male	215	215,00				
Success	Female	291	256,15	30510,0	-,48	,63	Non-significant
	Male	215	249,91				
Safety	Female	291	260,43	29266,0	-1,24	,21	Non-

	Male	215	244,12				significant
Stimulation	Female	291	273,99	25321,0	-3,68	,00	Significant
	Male	215	225,77				
Benevolence	Female	291	280,89	23312,5	-4,92	,00	Significant
	Male	215	216,43				

Pursuant to the Table 1, the impact of gender on the self-direction, power, universalism, stimulation and benevolence values were found as (p<,05). This impact is considered as significant in favour of females. In other words, the values of self-direction, power, universalism, stimulation and benevolence are significant and higher compared with males. However, there is no impact of gender on the success and safety values. (p > ,05).

e) The Effects of Gender on Belief

The effects of gender on the ascribed responsibilities of high school students regarding the conservation of global and local biodiversity and the perceived abilities to reduce global and local threats were evaluated and given under Table 2.

Table 2. Impact of Gender on Belief

Dependant Variables	Gender	N	Mean rank	U	Z	P	Impact
Global Ascribed Responsibility	Female	291	268,57	26896,0	-2,74	,01	Significant
	Male	215	233,10				
Local Ascribed Responsibility	Female	291	275,19	24970,5	-3,93	,00	Significant
	Male	215	224,14				
Global Perceived Ability to Reduce Threats	Female	291	270,78	26253,0	-3,15	,00	Significant
	Male	215	230,11				
Local Perceived Ability to Reduce Threats	Female	291	271,92	25922,0	-3,37	,00	Significant
	Male	215	228,57				

In accordance with the Table 2, the effects of gender on the ascribed responsibilities of students for the conservation of global and local biodiversity and perceived abilities to reduce global and local threats are significant (p<,05). Pursuant to mean ranks, the ascribed responsibility of female students towards the conservation of global and local biodiversity and perceived ability to reduce global and local threats is higher than male students.

f) The Effects of Gender on Personal Norms

The effects of gender on the personal norms of high school students regarding the conservation of global and local biodiversity was evaluated and the results are given in Table 3.

Table 3. The Effects of Gender on Personal Norms

Dependent Variables	Gender	N	Mean rank	U	Z	P	Impact
Global	Female	291	265,58	27767,50	-2,18	,03	Significant
	Male	215	237,15				
Local	Female	291	266,82	27406,50	-2,40	,02	Significant
	Male	215	235,47				

In consideration with Table 3, the effects of gender on the personal norms regarding conservation of global and local biodiversity is significant (p<,05). According to the mean

ranks, the personal norms of female students regarding the conservation of global and local biodiversity are higher than male students.

g) The Effects of Grade on Values

The effects of grades on the universal human values of high school students was evaluated and the results are given in Table 4.

Table 4. The Effects of Grade on Universal Human Values

Dependent Variables	Grade	N	Mean rank	sd	X^2	P	Impact
Self -direction	10. grade	81	231,89	2	2,44	,30	Non-Significant
	11. grade	181	253,06				
	12. grade	240	261,00				
Power	10. grade	81	269,36	2	10,12	,01	Significant (11.grade-12.grade)
	11. grade	181	275,09				
	12. grade	240	232,22				
Universalism	10. grade	81	244,64	2	11,71	,00	Significant (11.grade-12.grade)
	11. grade	181	227,51				
	12. grade	240	275,72				
Achievement	10. grade	81	259,35	2	,44	,80	Non-Significant
	11. grade	181	256,76				
	12. grade	240	249,14				
Security	10. grade	81	244,25	2	,68	,71	Non-Significant
	11. grade	181	259,74				
	12. grade	240	251,94				
Stimulation	10. grade	81	258,49	2	,20	,90	Non-Significant
	11. grade	181	250,10				
	12. grade	240	254,37				
Benevolence	10. grade	81	263,08	2	1,07	,59	Non-Significant
	11. grade	181	245,04				
	12. grade	240	256,60				

When considering Table 4, it can be concluded that the effect of grade on the universalism and power values of high school students is significant (p<,05); whereas it is not significant on self-direction, achievement, stimulation, benevolence and security values (p>,05). This effect is between the 11th and 12th grade students with regards to power and universalism. The mean ranks of 12th grade are lower than 11th grade students for power value type (mean rank12th grade=232,22, mean rank11th grade=275,09); while the mean ranks of 12th grade are higher than 11th grade students in universalism (mean rank12th grade=275,72; mean rank11th grade=227,51).

h) The Effects of Grade on Beliefs

The effects of grade on the ascribed responsibilities of high school students regarding the conservation of global and local biodiversity and the perceived abilities to reduce global and local threats were evaluated and given under Table 5.

Table 5. The Effect of Grade on Belief

Dependent Variables	Grade	N	Mean Rank	sd	X^2	P	Impact
Global Ascribed Responsibility	10. grade	81	212,20	2	26,72	,00	Significant (12.grade-11.grade) (12.grade-10.grade)
	11. grade	181	226,15				
	12. grade	240	287,50				
Local Ascribed Responsibility	10. grade	81	218,32	2	27,66	,00	Significant (12.grade-11.grade) (12.grade-10.grade)
	11. grade	181	222,07				
	12. grade	240	288,50				
Global Perceived Ability to Reduce Threats	10. grade	81	244,57	2	29,66	,00	Significant (12.grade-11.grade)
	11. grade	181	211,48				
	12. grade	240	287,64				
Local Perceived Ability to Reduce Threats	10. grade	81	207,27	2	44,10	,00	Significant (12.grade-11.grade) (12.grade-10.grade)
	11. grade	181	215,26				
	12. grade	240	297,21				

In consideration with Table5, the effects of grade on the ascribed responsibility regarding the conservation of global and local biodiversity and perceived ability to reduce the global and local threats is not significant ($p < ,05$). The correlation for the effect among the groups was evaluated. According to the mean rank, the ascribed responsibilities of 12^{th} grade students for the conservation of global and local biodiversity are higher than any other grades (Global: mean rank12^{th}grade=287,50, mean rank11^{th}grade=226,15; mean rank10^{th}grade=212,20; Local: mean rank12^{th}grade=288,50, mean rank11^{th}grade=222,07; mean rank10^{th}grade=218,32). Additionally, the perceived ability to reduce threats of 12^{th} grade students regarding the global biodiversity loss are higher than 11^{th} grade students; for the local biodiversity loss, the perceived ability to reduce threats of 12^{th} grade students are both higher than 11^{th}grade and 10^{th}grade students. (Global: mean rank12^{th} grade=287,64, mean rank11^{th} grade=211,48; Local: mean rank12^{th} grade=297,21, mean rank11^{th} grade=215,26; mean rank10^{th} grade=207,27).

i) The Effect of Grade on Personal Norms

The effect of class year on the global and local personal norms of high school students was evaluated and the results are given in Table 6.

Table 6. The Effect of Grade on Personal Norms

Dependent Variables	Grade	f	Mean Rank	sd	X^2	P	Effect
Global	10. grade	81	220,98	2	11,22	,00	Significant (12.grade-11.grade) (12.grade-10.grade)
	11. grade	181	239,04				
	12. grade	240	275,02				
Local	10. grade	81	220,06	2	6,49	,04	Significant (12.grade-10.grade)
	11. grade	181	250,22				
	12. grade	240	267,03				

DISCUSSION and CONCLUSION

The island of Cyprus is quite rich in biodiversity and it is the common interest of the people to protect biodiversity. In this respect, the Turkish Cypriots' values, beliefs, and norms related to the protection of biodiversity were studied. The research was carried out through value-belief-norm theory in order to explore and understand pro-environmental behaviour. The first result generated from the study within the framework of VBN is concerned with the universal human value types of students towards the conservation of biodiversity. The high school students in TRNC attach much more importance to the value type of "self-direction". Namely, "self-direction" value of students is more effective than "universalism", "benevolence", "power", "achievement", "security" and "stimulation". When other environmental behaviour studies were examined, some found out the effect of enhancement values (e.g. power) on environmental behaviour were discovered, as in research carried out by Abrahamsa and Steg, 2011). Some others, on the other hand, introduced that the impact of self-transcendence values (e.g. universalism) which are stronger on environmental behaviour (e.g. Dervişoğlu, 2007; Menzel, 2007; Şenel and Hazer, 2007). According to the structure in the value theory of Schwartz, the participants of this study find the value under being open to change more significant; the participants of other related studies give the value under going beyond oneself importance. Openness to change and self-development is related with the individual interests and characteristics of individual; whereas in the going beyond oneself and conservation approach, there is an impact of an individual through his/her relations with other. In other words, the values of individuals that the interests cannot be estimated beforehand are under the openness to change values, and contradict with the protective approach value axis (Schwartz, 2012). As a result this implies that the own interests of high school students in TRNC who participated to this study are more important from the perspective of their priorities. It is also possible that students' self-values affect behaviour related to the protection of biodiversity.

Another result generated from the research relates to the beliefs of students on the subject of the conservation of biodiversity. According to this study, the ascribed responsibilities of students regarding the conservation of global and local biodiversity are higher than their perceived abilities towards the minimization of global and local biodiversity. Beliefs are associated with the general condition of the biophysical environment. Therefore, the ecological beliefs are crucial on the pro-environmental behaviours in terms of awareness of consequences and awareness of responsibility (e.g. Han, 2014; Lopez and Cuervo-Arango, 2008). Meanwhile, previous studies support the idea that beliefs and values affect behaviour taken with pro-environmental intent (e.g. Caluri and Luzzati, 2016; Eide, 2013; Tarrant, 2010). In this respect, it is expected that ecological belief can affect the intent to protect biodiversity.

The other result from this research is about the personal norms, which are the last elements of the VBN theory. The personal norms of students regarding the conservation of global and local biodiversity are close. This result related to personal norms are very vital among high school students in the protection of biodiversity (e.g. Griskevicius, 2008; Harland et al.., 2007). Studies show that personal norms determined by awareness of the consequences and ascribed responsibility have an impact on pro-environmental behavior (Brosch et al..., 2014; Pradeep, 2012; Lopez & Cuervo-Arango, 2008; Thogersen, 2006).

This study reflects that gender, and grade have impact on the value-belief-norms related to conservation behaviour of biodiversity. Considering the results concerning the correlation between value types and demographic characteristics of students for the conservation of biodiversity, gender has an impact on all values except achievement and security values. While female students were found to give more importance to self-direction, universalism, stimulation and benevolence values in the conservation of biodiversity; male students

attached more importance to the value of power. Another outcome is about the significant impact of class year on universal human values. 11th grade students care more about power value than 12th grade students; while giving universalism value type less importance. When we compare demographic features and ascribed responsibilities and perceived abilities to reduce, we can see that the gender and grade level have impact on the ascribed responsibilities of students for the conservation of global and local biodiversity and their perceived abilities for the minimization of global and local biodiversity loss. Female students have higher ascribed responsibilities for the conservation of global and local biodiversity and their perception of talent for the minimization of biodiversity loss than male students. It is possible to conclude from the data that female students have more extensive ecological belief than male students. Similarly, pro-environmental beliefs of students vary depending on their class years. The ascribed responsibilities and perceived abilities of 12th grades are higher than 11th grade students. The personal norms of female students concerning the conservation of biodiversity are higher than the male students. Similarly, the personal norms of college students are higher than of students from Anatolian high school and general high school; they are higher compared with the general high school students in the local context. When compared in terms of class years, the personal norms of 12th grades students are higher than that of 10th and 11th grade students in global context; whereas they are higher than 10th grade students only in the local context. These results are in line with other studies (e.g. Yıldız & Selvi, 2015; Gök & Afyon, 2015; Abrahamse and Steg, 2011; Tarant, 2010; Alnıaçık, 2010; Vaske et al., 2001) which indicate the moderate effect of demographic features on value-belief-norms, environmental knowledge and pro-environmental behavior.

The educators may take these independent variables into consideration and include the activities that would have positive impact on the environmental behaviour, values and environmental perception. Different teaching methods may be recommended to be used by the teachers in order to teach the conservation of biodiversity and importance of sustainability. Personal norms of students towards the conservation of biodiversity have been analysed. The correlation between the norms of biodiversity conservation and social norms of students may be studied in a future research which can examine how individuals incline towards protecting biodiversity and the theory of planned behaviour (TPB) (Ajzen, 1991) which explains how the psychological mechanism functions.

Acknowledgement: We would like to thank Prof. Dr. Haluk Soran for his contribution to this research.

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