

Evaluation of hikers' pro-environmental behaviour in Triglav National Park, Slovenia

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Abstract

To evaluate the pro-environmental behaviour of visitors in the Alps, we surveyed 100 hikers on two hiking trails in Triglav National Park (NP) in Slovenia during the 2010 and 2012 summer seasons. We collected demographic data on hikers and examined 1) pro-environmental behaviour at home, 2) willingness to pay for environmentally friendly goods and services, and 3) enrolment in environmental education and involvement in conservation projects. We identified 13 significant correlations between pro-environmental behaviour questions and demographically based hikers' groups. Level of education and enrolment in environmental educational activities predicted pro-environmental behaviour and attitudes toward conservation. Our results show that visitors who hike in Triglav NP come in pairs or with friends, value nature, and are prepared to pay more for goods with eco-labels and services from environmentally responsible suppliers. Only 36,7% have enrolled in an educational programme, training, workshop or activity. The majority of respondents choose the location for their vacation based on an area's nature preservation characteristics. We discuss the factors that influence hikers' pro-environmental behaviour and investigate the relationship between level of education and hikers' pro-environmental behaviour at home. We also examine the importance of nature preservation characteristics in hikers' choice of vacation destination. Finally, this research provides valuable data for understanding hikers' behaviour and suggestions for managers of protected areas to create tourism offers that are more educational and environmentally friendly.

Profile

Protected area

Triglav National Park

Mountain range

Alps

Country

Slovenia

Introduction

Managing protected areas in the Alps is a challenging and complex task that involves eight European countries and various international bodies, non-governmental organizations (NGOs), scientists, activists and other stakeholders united in the commitment to preserve the natural and cultural heritage within the Alpine mountain ecosystems. According to ALPARC (2013), *environmental education and awareness-raising targeting the general public (visitors, local residents, schoolchildren, etc.) are two key components in the Alpine protected areas' role.*

Environmental education and awareness-raising activities lead to environmental knowledge, a subcategory of environmental awareness and a precondition for pro-environmental behaviour (Kollmuss & Agyeman 2002). Pro-environmental behaviour refers to behaviour that harms the environment as little as possible (Kollmuss & Agyeman 2002), or even benefits it (Steg & Vlek 2009).

Environmental education and environmental knowledge indirectly influence pro-environmental behaviour by shaping environmental values and attitudes (Fietkau & Kessel 1981), which are also shaped by social norms, cultural traditions and family customs. Changes in values lead to changes in decisions, thus leading to changes in behaviour. However, behaviour decisions are also influenced by other external and situational factors.

Regarding formal education as obtained through high school, college, university and graduate studies, it has been shown that the higher a person's education, the more extensive his or her knowledge about environmental issues. According to Smrekar (2011) and Kollmuss & Agyeman (2002), individuals' level of education plays an important role in their pro-environmental behaviour and attitudes regarding environmental issues. Individuals should be aware of the influence of their lifestyle on the living space and environment (Urbanc & Fridl 2012), and consequently act in an appropriately responsible manner. According to Hassan et al. (2009), outdoor activities that include environmental education increase public environmental awareness of environmental protection. In the study conducted by Arnberger et al. (2012), 59% of the people surveyed identified environmental education as the main function of national parks, which emphasizes the importance of national parks in rising environmental awareness.

This article presents a study of pro-environmental behaviour assessment, which aims at enhancing knowledge of hikers' attitudes and behaviours in the Alps, and thus contributes to managing the Alpine region in particular (Slovenia) and in general.

Smrekar (2011), Malnar (2002), and Rajcecki (1982) emphasize the difference between people who truly act environmentally friendly and those who only *talk the environmentally friendly talk*. We used a survey to meas-

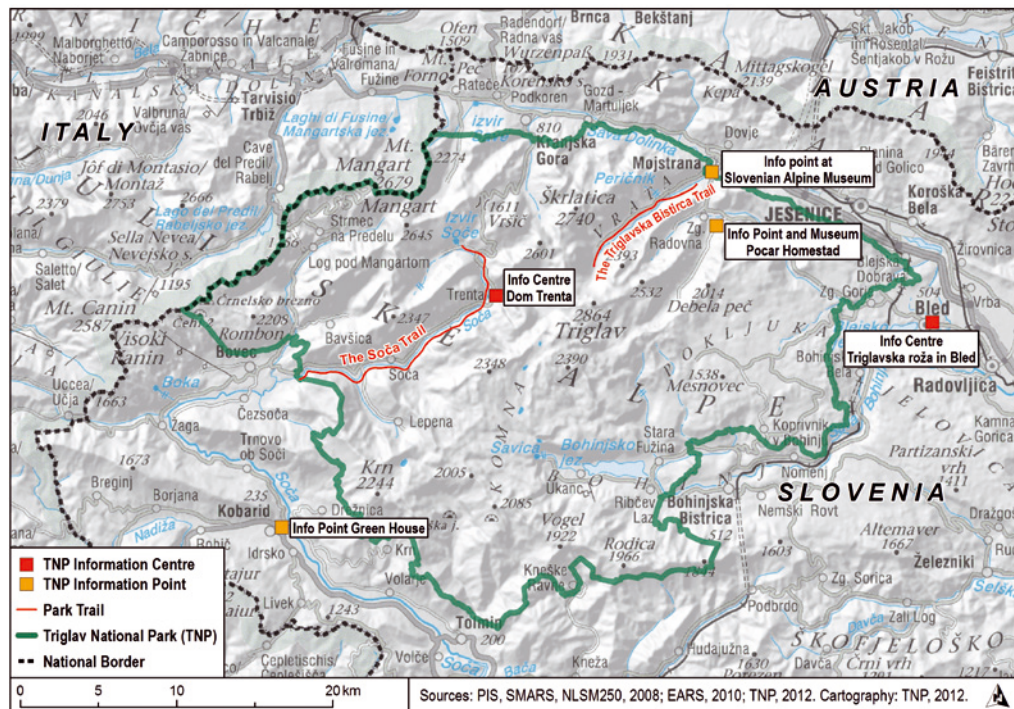


Figure 1 – Triglav NP with the Soča and Triglavsko Bistrica trails and the survey locations

ure hikers' behaviours, not intentions or attitudes and examined the following topics: hikers' pro-environmental behaviour at home, willingness to pay (WTP) for environmentally friendly goods and services, prior environmental education experience and involvement in nature conservation. Using the respondents' demographic information and understanding their behaviours at home regarding waste and energy, willingness to pay, environmental education experience and background, as well as affinity for conservation support, we propose recommendations for implementing sustainable and educational activities in tourism offers, to make activities more sustainable, educational, attractive and satisfying for park visitors and local inhabitants. The study took place on two popular greenways, non-motorized trails predominantly used for recreation and to enjoy nature, in Triglav NP. Educational viewing stations worldwide have become an integrated part of greenway infrastructure, offering users various information. Following Feinsinger et al. (1997), Davis (2002), Jensen (2002), and Ribeiro & Barao (2006), who find the role of greenways decisive for public environmental education, we focus on assessing hikers' pro-environmental behaviour in Triglav NP and the educational role of greenways.

The article is structured as follows. The survey aim, design and process are explained in the methodology section. In the results section we present the respondents' demographic information, pro-environmental behaviour assessment and the significant correlations. In the discussion section we answer four research questions and compare our results with relevant studies from the literature. We sum up with conclusions, suggestions for managers of protected Alpine areas, and future work initiatives.

Methodology

For the surveying process we chose two popular greenways in Triglav NP that closely follow Alpine rivers and present the natural and cultural heritage of the park on information boards and posts: Pot Triglavsko Bistrice (the Triglavsko Bistrica Trail) at 46.41° N / 13.84° E and Soča pot (the Soča Trail) at 46.41° N / 13.74° E.

The Triglavsko Bistrica Trail starts at the entrance of the Vrata valley and runs up the valley to the Triglav North Face. Most of the trail follows the river Triglavsko Bistrica and meets the road that runs through the valley only in several short sections. The trail is 10 km long. The Soča Trail is a 20 km nature trail that takes visitors through the Trenta valley along the Soča river from its source toward the town of Bovec. The Soča Trail connects the old Trenta paths and peaceful sections of the valley. On the Triglavsko Bistrica Trail and the Soča Trail, hikers can tailor their visits to specific times and purposes. Visitors can just look at the parts of the trail they find the most interesting. Both trails are marked with Triglav NP information posts and boards set up at several points along the trails. The locations of the two study sites in the Julian Alps in Triglav NP are shown in Figure 1.

The survey was conducted during the summer season, in August 2010 and 2012, by Triglav NP staff. They were instructed to approach park visitors, briefly explain the aim of the survey and ask for participation in the study. Visitors were asked to fill in the survey after they had finished their hike, while taking a break or waiting for the rest of their group. Participants were chosen randomly on sunny Saturdays. Participants filled in the survey and gave it back to the staff on the

spot. The survey had two sections and took about five minutes to complete. The first part addressed visitors' demographic data, whether they came with another visitor or in a group or alone, time spent in the park, reason for visiting the park, and reason for choosing the specific greenway. The second part consisted of 10 questions asking about self-reported behaviour. On each hiking trail, 50 correctly completed surveys were collected, making an overall sample of 100 participants.

The responses were statistically analysed with R, free software for statistical computing. Pearson's correlation coefficient represents the strength of linear association between two variables (Burnham 2012) and was used to identify the correlations between pro-environmental questions and visitor groups. For the sample size of 100, at the significance level 0.05 for the two-tailed test, the critical value for Pearson correlation coefficient is ± 0.1946 (Critical Values for Pearson's Correlation Coefficient). As of that we tested the significance of the correlations with $r \leq -0.2$ or $r \geq 0.2$ by applying Pearson's chi-square test for two-way contingency tables, as done in the case of Canadian hikers by Légaré and Haider (2008). In the article we discuss only correlations that had $r \leq -0.2$ or $r \geq 0.2$. at p-value < 0.1 . Originally the authors aimed to conduct a paperless survey by using internet-based software, which proved unfeasible due to the lack of internet connections on the hiking trails. The sample size is small, but for a pilot study provides useful information. In the near future we plan to augment the number of surveys and extend the study to all Alpine countries.

Results

Who hikes the Alps?

The respondents' demographic characteristics are shown in Table 1. Out of 100 respondents, 59 were from Slovenia and 41 from other European countries. The majority of non-Slovenian hikers were from the Czech Republic, followed by hikers from Italy, Austria, Germany, the United Kingdom, Poland, Belgium, Spain, the Netherlands, Hungary and France.

The survey also examined how many days the visitors were spending in the park. Overall, 92 respondents answered this question. One respondent noted he would spend 20 days and one 90 days in the park. The remaining 90 answers ranged from 1 to 11 days. We grouped all answers as follows: 31% of respondents spent 1 day; 25.5% spent 2–3 days, which can be correlated with weekend trips; 14.5% spent 4–6 days, which is more than an extended weekend and less than a week; and 29% spent 7 days or more in the park.

Pro-environmental behaviour assessment

One of our goals was to investigate hikers who use Triglav NP in terms of their environmental awareness. To evaluate the respondents' pro-environmental behaviour and awareness, we asked eight questions grouped as follows (see Table 2): a) pro-environmental behav-

Table 1 – Demographics of hikers in Triglav NP, reasons for visiting the park and biking on a greenway, and hiker's company on the greenway. Since some hikers did not answer all questions we calculated the number of overall responses to each question and used this number as a total sample for the statistical analysis for each particular question

Hikers' demographics	n	%
Origin	99	100
Visitor	91	91.9
Park resident	8	8.1
Country of origin	100	100
Slovenia	59	59.0
Europe (other than Slovenia)	41	41.0
Gender	96	100
Male	44	45.8
Female	52	54.2
Age range	99	100
under 18	6	6.1
18–24	10	10.1
25–30	17	17.2
31–40	21	21.2
41–50	18	18.2
51–60	19	19.2
61–70	8	8.0
71 or more	0	0
Level of education	100	100
High school	6	6.0
College	34	34.0
Undergraduate degree	29	29.0
Graduate school	18	18.0
Graduate or professional degree	8	8.0
Doctorate	5	5.0
Visiting the park for	96	100
Vacation	48	50.0
Weekend trip	14	14.6
A day in nature	31	32.3
Organized activity	3	3.1
Reason for visiting the greenway	99	multiple answer question
Educational opportunity	4	4.0
Recreation	39	39.4
Enjoy nature	64	64.6
School trip or excursion	2	2.0
Leisure and pleasure	21	21.2
Curiosity	6	6.1
Came to the greenway with	98	100
Organized group	2	2.0
Alone	18	18.4
As a couple	42	42.9
With parents	7	7.1
As family with children	13	13.3
With grandchildren	2	2.0
Friends	14	14.3

our at home (questions 1–3), b) willingness to pay for environmentally friendly goods and services (questions 4 and 5), c) environmental education experience and involvement in nature conservation (questions 6–8), and d) choice of vacation destination and greenways as educational tools (questions 9 and 10). Some questions had only Yes/No choices for an answer while others had a three-item scale (No/Partly/Yes).

The results indicate that the majority of respondents separate waste and use energy-saving light bulbs

Table 2 – Pro-environmental behaviour questions and assessment

Pro-environmental behaviour questions	No (%)	Partly (%)	Yes (%)	Answers
1. Do you separate waste at home?	6.1	24.2	69.7	99
2. Do you buy energy saving lightning bulbs?	6.0	20.0	74.0	100
3. Do you use alternative energy sources?	58.6	21.2	20.2	99
4. Do you buy environmentally friendly products?	16.1	40.9	43.0	93
5. Are you willing to pay more for services/products from environmentally friendly suppliers?	25.5	–	74.5	94
6. Have you ever been enrolled in environmental education program/training/workshop/activity?	63.3	–	36.7	98
7. Have you participated in nature conservation projects?	49.5	–	50.5	99
8. Have you ever made a donation for nature conservation project?	55.3	–	44.7	94
9. Do you choose location of your vacation based on nature preservation characteristics in the area?	15.2	51.5	33.3	99
10. Do you find greenways as interactive tools for environmental education?	9.0	23.0	68.0	100

at home. Yet only 20.2% of them use only alternative energy sources, 21.2% use some and 58.6% depend on conventional energy sources. The 2011 Eurobarometer study on *Attitudes of European citizens towards the environment* showed that 66% of Europeans separated most of their waste for recycling: 79% of Slovenians also did, sharing third place with Ireland and the United Kingdom after Luxemburg (87%) and France (82%). Our study indicates that 69.7% of respondents separate waste, which compares well with the Eurobarometer study and with a study on residents' relationship to waste, which showed that 59.5% of surveyed Slovenians were willing to pay modest monthly contributions to clean up illegal dumps (Smrekar 2012).

Almost 84% of respondents buy environmentally friendly products, and 74.5% are willing to pay more for services and products from environmentally responsible suppliers. Eurobarometer (2011) stated that 72% of Europeans (73% in Slovenia) buy products labelled as environmentally friendly for environmental reasons, showing a generally high level of commitment to protecting the environment. Our results suggest that the majority of visiting consumers in Triglav NP value products made in protected areas, support environmentally friendly suppliers and are willing to spend money on environmentally friendly and eco-labelled products.

Only 36.7% of respondents had enrolled in environmental education programmes, trainings or workshops. This issue was examined since in Europe there are many environmentally oriented activities and events (Konrád, 2012), which reflect the urge to educate people about important environmental issues, to reconnect with nature and to live more healthily and responsibly. Half of the respondents participated in conservation projects and 44.7% donated money for conservation. Bednar-Friedl et al. (2009) found that 35% of tourists in Hohe Tauern NP were willing to pay for species conservation programmes. Therefore public environmental education stresses the importance of conservation and creates opportunities for people to become directly involved in conservation projects.

One third of respondents chose the location of their vacation based on nature preservation charac-

teristics in the area, and 51.5% chose a vacation destination location only partly based on those criteria. This suggests that 84.8% of the respondents evaluate to some extent the protection status of an area when planning and choosing a vacation destination.

In assessing the greenways and environmental education, 68% of respondents agreed greenways were interactive tools for environmental education, and 23% partly agreed. The fact that more than two thirds of respondents thought the greenways were interactive educational tools indicates that greenways in Triglav NP have an educational effect on hikers and consequently contribute to their environmental education, which indirectly influences their pro-environmental behaviour.

Correlations between pro-environmental behaviour questions and visitor groups

To identify correlations between pro-environmental behaviour and visitor groups, we calculated the Pearson correlation coefficient for 10 pro-environmental behaviour questions and the following visitor characteristics: country of origin, origin, gender, age (three groups: up to 30 years, between 31 and 49 years of age, and age 50+), education (two groups: low [up to undergraduate degree] and high [bachelor, master, and doctoral degree]), reason for visiting Triglav NP, and days spent in the park. By applying the chi square test for correlations identified by the Pearson correlation coefficient as $r \leq -0.2$ or $r \geq 0.2$, we identified 13 significant correlations (Figure 2). Different significance levels calculated with Pearson's chi-square test are pointed out by using various dash styles for arrows indicating significant correlations. Solid arrows indicate correlations with p -value < 0.001 , dashed arrows indicate correlations with p -value < 0.05 and dotted arrows indicate correlations with p -value < 0.1 . Thus the most significant are values indicated with solid line arrows, followed by dashed arrows, the least significant being dotted arrows' correlations.

All significant correlations were small, except for a medium correlation between using alternative energy sources and buying environmentally friendly products ($r = 0.32$, p -value = 0.011) and a strong correlation between willingness to pay more for environmentally friendly goods and services and previous enrolment

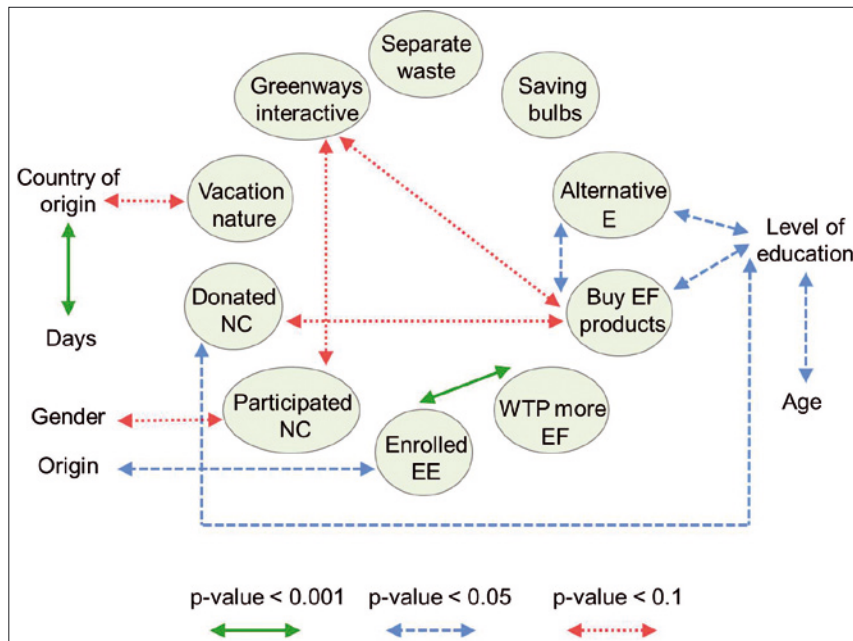


Figure 2 – Results of the cross-reference test on correlations between pro-environmental behavior questions and visitors' groups. Abbreviations: NC – nature conservation, EE – environmental education, EF – environmentally friendly, E – energy

in environmental education activities ($r = 0.61$, $p\text{-value} < 0.001$). Education level was significantly correlated to using alternative energy sources, buying environmentally friendly products, donating to conservation projects and age. Respondents' origin (visitor, park resident) was significantly correlated with enrolment in environmental education, and gender was significantly correlated with participation in conservation projects. The involvement of hikers who are park residents in environmental education activities was twice as high as park visitors' involvement. Men participated in conservation projects at a higher frequency than women. Respondent's country of origin was significantly correlated with choosing a vacation location based on nature preservation characteristics and days spent in the park. Respondents from other European countries evaluated the nature preservation characteristics of the area when choosing vacation locations more often than Slovenians.

Based on the correlations shown on Figure 2, we conclude that a) vacation location may indirectly influence days spent in the park and b) age may indirectly influence using alternative energy sources, buying environmentally friendly products, donating to conservation projects, finding greenways' interactive educational tools and participating in conservation projects. Our results partly corroborate Poljanar (2008), who studied 100 inhabitants living near three protected wetland areas in Slovenia. The results show that public awareness of wetlands and attitudes toward wetland conservation in Slovenia are affected by socio-demographic characteristics. The same study revealed that 66% of the respondents see living in protected areas as an advantage; this attitude was influenced by the respondent's level of education.

Discussion

Is pro-environmental behaviour at home related to age and level of education?

Ninety-eight respondents answered the first three pro-environmental behaviour questions on the survey, which evaluated people's behaviour at home. The respondents who behaved pro-environmentally were older than 50 years, with a higher level of education compared with the total sample and the group who behaved somewhat pro-environmentally. At the same time, statistical analysis revealed a significant small correlation between level of education and use of alternative energy sources ($r = 0.21$, $p\text{-value} = 0.037$), as well as for age and level of education ($r = 0.21$, $p\text{-value} = 0.038$) (Figure 2). Thus we conclude that age and the level of education influenced a respondent's level of pro-environmental behaviour at home.

Is willingness to pay for environmentally friendly goods and services related to education level?

Question 5 (Table 2) was answered positively by 74.5% of the respondents. In the sample of respondents who are willing to pay more for environmentally friendly goods and services, compared with those who are not, 10.2% more respondents had a higher level of education. We conclude that respondents with higher levels of education are more likely to be willing to pay more for environmentally friendly goods and services. Our results corroborate studies in which educational level was recognized as a predictor of tourists' willingness to pay (Bowker et al. 1999; Lindberg 1991; Reynisdottir et al. 2008; Wang & Jia 2012). In the study conducted by Kontogianni et al. (2001), higher educational level and interest in environmental conservation predicted a positive response to the payment principle question and higher willingness to pay.

Do level of education and enrolment in environmental education activities affect support for nature conservation?

To answer this research question, we combined the answers on questions 7 and 8. Table 3 shows that 21 respondents support conservation projects by participating and donating, and 27 respondents do not support nature conservation. The remaining 45 respondents support conservation through only one activity; 25 only participate, and 20 respondents only donate. We clustered the respondents in three groups: *support* (participated in and donated to conservation projects), *partly support* (participated in or donated to conservation projects), and *do not support* (had never participated in or donated to conservation projects). For all three groups, we evaluated the respondents' enrolment in environmental education activities and level of education, as presented in Table 3. Previous enrolment in environmental education has a significant correlation with support for conservation (p -value = 0.069).

More respondents in the *support* group had enrolled in environmental education activities than the other two groups. Furthermore, more respondents in the *partly support* group had enrolled in environmental education activities than respondents in the *do not support* group. Regarding the level of education, more than half of the respondents in the *support group* had higher education. Our results suggest that education level is a significant predictor of respondents' support for nature conservation (p -value = 0.028). We also observed a significant correlation between level of education and donations for conservation projects ($r=0.28$, p -value = 0.012), see Figure 2. Thus our findings support the view that respondents who are better informed about nature and species conservation are willing to pay more for these benefits (Bandara & Tisdell 2004; White et al. 2001).

Do the nature preservation characteristics of a specific area influence the choice of vacation destination?

According to Ewald (2001), beautiful scenery is a prerequisite for tourism, while Della Dora (2012) states that tourists are mainly after an encounter with cultural otherness or pristine nature. To examine this issue, we asked respondents whether nature preservation characteristics influenced the respondent's choice of vacation destination (Table 2, question 9). Only 15.2% of respondents said that they did not choose

their destination based on nature preservation characteristics. The majority of respondents, i.e., 84.8%, chose their holiday location at least partly based on nature preservation characteristics such as nature abundance and conservation. We conclude that the respondents value natural scenic beauty, which is being preserved under Triglav NP management. Our results corroborate findings from Lindemann-Matthies et al.'s (2010) study conducted on visitors' aesthetic preference for a Swiss Alpine landscape. A study of tourists in Triglav NP (Cigale et al. 2010) revealed that 85.6% saw a *peaceful and clean environment* as the park's biggest value, followed by *beautiful scenery* (84.3%) and *recreation* (73%). Our study findings are in agreement with Cigale et al.'s (2010) results on the importance of natural beauty in Triglav NP. Figure 2 shows the significant correlation between days spent in the park and respondents' country of origin ($r=0.2$, p -value = 0.001); the latter is correlated to the question on the choice of vacation location ($r=-0.22$, p -value = 0.087).

Conclusion

This study offers valuable insights into Alpine hikers' profiles, behaviours and decision making. The most common hiker found in Triglav NP is thus an adult visitor couple with a high school or college degree who visited the park for a vacation to enjoy nature, followed by recreation and a combination of leisure and pleasure activities. We found that a higher level of education has a positive impact on respondents' pro-environmental behaviour at home, mainly the use of alternative energy sources, preference for environmentally friendly products, willingness to pay for environmentally friendly goods and services, and support for conservation, in particular, donating to conservation projects.

Our results indicate that formal education enhances environmental awareness and promotes pro-environmental behaviour. The study findings for level of education and respondents' pro-environmental behaviour corroborate a study conducted in Ljubljana (Smrekar 2011) on people's willingness to take part in solving environmental issues, which found that people with higher education (university degrees and higher) are more environmentally friendly than less educated groups.

Hikers in Triglav NP are largely aware of the importance of preserving and protecting the natural environment, and the rate of detecting problems in the environment is relatively high (Mrak 2011). According to Eurobarometer 2011, protecting nature is the third most important thing people perceive when talking about the environment (17%). Among all 27 European countries, Slovenians have the highest concern for the quality of life where they live (54%), and between one-tenth and one-fifth of Slovenians live and promote the idea of environmentally friendly behaviour (Smrekar 2012).

Table 3 – Level of education and involvement in environmental education in relation to support for nature conservation

Nature Conservation Hikers' groups	Level of education		Enrolment in EE		Answers
	Low (%)	High (%)	Yes (%)	No (%)	
	p-value = 0.028		p-value = 0.069		
Support	47.6	52.4	57.1	42.9	21
Partly support	80.0	20.0	34.1	65.9	45
Do not support	70.4	29.6	26.9	73.1	27

In this study, more than 90% of the respondents identified greenways as interactive tools for environmental education. This response indicates that greenways play an important educational role in national parks by attracting hikers' attention and providing educational material on local heritage and ecological phenomena. The assessment of greenways as interactive educational tools is correlated with participating in conservation projects and buying environmentally friendly products. Our results corroborate finding that interpretative service based on environmental education could help tourists develop more awareness in conserving and protecting resources (Tsaur et al. 2006).

We found a strong and significant correlation between involvement in environmental education activities and willingness to pay more for environmentally friendly goods and services. Poljanar (2008) states that the best method for improving public awareness of and attitude toward wetland conservation involves organizing educational activities in the form of workshops in protected areas, schools, and other institutions. Our study findings indicate this method is applicable in Triglav NP as well.

We conclude that nature's intrinsic value is recognized and valued, since almost 85% of the respondents evaluated nature preservation characteristics when choosing vacation destinations. This finding is important for tourism development and marketing in protected Alpine areas. Our findings agree with those of Cigale et al. (2010) that the majority of tourists visit Triglav NP to enjoy nature. Therefore we conclude that the pristine nature of the Slovenian part of the Julian Alps, the natural and cultural heritage as well as peace and biodiversity abundance attract tourists to the park and probably to other protected areas in the Alps.

Based on these findings and literature review, we provide the following suggestions for managers of protected areas in the Alps:

Develop sustainable waste management and promote green energy initiatives by providing bins to separate different types of waste, information on energy consumption and on the importance of using energy and resources in sustainable ways.

Promote environmentally friendly goods and services by supporting local businesses, local crafts, traditional cuisine and heritage. Eco-labels for local products should guarantee their source and quality. An example of good practice is the development of a label for local culinary foods in the Austrian Alps: *So schmecken die Berge*.

Enhance environmental education activities for locals and tourists through active participation (programmes, trainings, workshops). Tourists involved in active education while on vacation are likely to cherish and remember it for a long time, since direct experiences *in situ* have been found to have a stronger influence on people's behaviour (Rajecki 1982).

Promote support for conservation by offering one-day participation in projects. Advertise donations

for conservation and give yearly feedback on project progress. Adoption programmes are an alternative approach to nature conservation that is lacking in the Alps.

Organize free guided tours on greenways, which will offer additional insights into environmental problems, local values and the importance of conservation. These tours should be led by protected areas staff or adequately trained local volunteers, a common practice in American parks managed by the U.S. National Park Service. The tours always have large numbers of tourists and are unique and memorable educational opportunities.

Regarding future work, we hope to conduct surveys in various Alpine countries and call for research partners to conduct a comparative survey in national parks in Austria, Germany, France, Switzerland, Liechtenstein, Italy and Monaco. The idea is to survey 400 people per country, for a total of 3400, and perform an international comparative study on pro-environmental behaviour to explore cross-cultural differences between hikers in the Alps. A larger sample size would help identify stronger and more significant correlations between pro-environmental behaviour and visitor groups. These results would present a valuable decision support resource for managing Alpine protected areas as well as for shaping sustainable industry and policies in the Alps.

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