

## Investigating environmentally friendly behavior among users and visitors of a Greek ski resort

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**Introduction.** Due to its climatic dependence ski industry is one of industries most visibly affected by the threat of environmental degradation and climate change. The present study aimed to investigate environmentally friendly behavior at a Greek ski resort. Specifically, the study aimed to investigate: a) attitudes towards environmental issues, b) verbal commitment to environmental actions, c) preferences for environmentally friendly services, d) willingness to pay more for environmentally friendly services, and e) demographic differences in terms of attitudes towards environmental services among users of a ski resort. **Material and Methods.** Two-hundred and fifty-five individuals (recreational skiers – 64.6%, snowboarders – 17.9%, resort visitors – 17.5%) completed a questionnaire consisting of four scales: Attitudes, Verbal commitment, Preference for environmentally friendly services and Willingness to pay more. **Results.** Results indicated strong positive correlations between variables ( $p < 0.01$ ). As regards demographic characteristics statistically significant differences were found only between males and females on the ‘Attitudes towards environmental issues’ ( $p < 0.05$ ) scale, with female users scoring higher ( $M = 5.53, SD = 0.59$ ) than male users ( $M = 5.34, SD = 0.70$ ). An analysis of variance between the three types of users revealed statistically significant differences on the ‘Verbal commitment to environmental actions’ ( $p < 0.01$ ), and ‘Willingness to pay more’ ( $p < 0.01$ ) scales. The subgroup of skiers scored significantly higher on both scales than the other two subgroups of ski resort users. **Conclusions.** The managerial and marketing implications of the study results are discussed. It is notable that differences in environmental issues are mainly between different types of ski resort users and not due to their demographic characteristics.

**KEYWORDS:** environment, attitudes, verbal commitment, eco-friendly preference, willingness to pay more, recreational skiing.

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### What is already known on this topic?

Environmental attitudes and green consumer behaviors have received growing interest within the field of tourism, leisure and recreation research. Few studies been carried out to understand skiers’ perception of environmentally friendly behavior, and little has been known about skiers’ attitudes towards environmental issues, or their “willingness to pay more for environmentally friendly ski services”.

### Introduction

The rapid economic growth has increased consumers’ consumption worldwide causing environmental deterioration of the natural resources [1]. The existence of serious environmental problems such as climate change, pollution and depletion of non-renewable natural resources has given rise to environmental awareness [2]. Public concern for environmental issues has gradually increased throughout the years appealing for preservation of nature and biodiversity [3].

As a consequence consumers are becoming more sensitive in their environmental attitudes, preferences and purchases [4]. Consumers' desire to purchase eco-friendly products and services has resulted in the emergence of "ecological or green consumer behaviour" composed of consumer commitments, responsibility, attitudes, and willingness to pay more for green products [5].

The ski industry and climate change have a complex two-way relationship. According to one view the ski industry is threatened by global warming which, according to research, leads to reduced snowfall, melting glaciers, warmer and rainy winters, and shorter ski seasons. In contrast, ski tourism largely contributes to climate change [6, 7]. Yet, the development of ski tourism is a threat to the natural environment and it contributes to global warming. From a global perspective, the preparation of ski slopes, construction of ski lifts, artificial snow technology and modern ski equipment all have negative effects on the environment [3].

Both the ski industry and skiers having realized the caused environmental threat are no indifferent in the face of this serious development. In particular, the ski industry, in order to minimize the negative effects of global warming, tried to adopt environmentally friendly practices and provide environmental friendly services to its users [8]. As for skiers, they have included environmental issues in their skiing decision processes, for instance, in choosing ski destinations [9].

Generally the investigation of 'environmentally friendly behavior' is a relatively new concept in the Greek leisure, sports and active tourism market. This study is a challenging opportunity for academics, researchers and resort managers to identify attitudes towards the environment, intentions to use eco-services and willingness to pay more for environmentally friendly services in the context of recreational skiing among Greek consumers. Because of the limited existing data on eco friendly services in the Greek recreation context, this research has a promising value.

The present study was conducted in a Greek ski resort. It aimed to investigate the level of positive eco attitudes of the ski resort users and to report the level of environmentally friendly services they desire to consume.

## **Theoretical background**

### *Environmental attitudes*

Environmental attitude is a complex mental state involving beliefs and values of individuals to behave

environmentally. In other words, it taps the consumer's cognitive and affective judgment with respect to environmental protection and green living [10].

The winter and ski industries are highly dependent on good snow conditions and enjoyable natural surroundings. As a consequence skiers are particularly sensitive to the outdoor environment as well as to the phenomenon of climate change [9]. Researchers [11, 12] agree that skiers are more sensitive to environmental issues since they influence the quality of their personal recreational experience.

Conflicting results have been published regarding the relationship between attitudes towards the environment and the resultant behavior. Iravani et al. [13] investigated significant factors affecting the green purchasing behavior of young Malaysian consumers. Participants of the study were three-hundred university students. A significant correlation was found between environmental attitude and green purchasing intention of young Malaysian consumers. The results indicated that the environmental attitude influenced, significantly and positively, the green purchasing intention.

Laroche et al. [4] investigated the relationships between attitudes towards environmental issues and consumers' willingness to pay more for green products. Nine hundred and seven individuals from a large North American city participated in the study. The results indicated a strong relationship between attitudes towards environmental issues and consumers' willingness to pay more for green products. In contrast, Ali, Khan, and Ahmed [14] reported that although many people are aware of and concerned about environmental issues, this is not always reflected in their environmentally friendly behaviors.

In one of the few works in the field of recreational skiing in Greece, Christopoulou and Papadopoulos [15] aimed to investigate skiers and winter resort visitors' attitudes towards environmental protection. The sample consisted of 370 skiers and visitors of a ski center in central Greece. Both groups were interested in the environmental protection of the area and were willing to contribute to the landscape conservation even by financing or/and by their personal active participation.

Although, there have been several studies examining the relationship between environmental attitudes and upcoming behaviors, no definite answers have been given yet regarding this relationship.

### *Verbal commitment to environmental actions*

Verbal commitment assesses what individuals are willing to do in reference to environmental care [16]. Different studies have investigated the relationship between verbal commitment and environmental friendly behavior, and conflicting results have been published [5, 17].

In a recent study by Fraj and Martinez [5] in Spain, individuals reported high scores in their positive verbal commitment to the environment since they were willing either to use ecological transport systems, or to reduce the consumption of products made by polluting companies. In another study, Fraj and Martinez [18] investigated the relationship between verbal and stated behavioural commitment towards the environment. The sample of the study consisted of 573 Spanish citizens aged from 15 to 55 years. The results indicated a strong, significant and positive, relationship between verbal commitment and stated behavioural commitment towards the environment. This finding shows that individuals with a favorable verbal commitment to the environment can positively transform their intention into real ecological commitment.

Opposite results were obtained by Aytülkasapoglu and Ecevit [17], who aimed to identify variables, including verbal commitment, that appeared to be most influential in motivating individuals to participate in environmentally responsible behaviors regarding Lake Burdur, in Turkey. One hundred and thirty six individuals took part in the study. The findings of their study indicated no significant relationship between verbal commitment and responsible environmental behavior. Additionally, McBeth and Volk's [19] findings suggested that individuals' actual behaviors fell short of their verbal commitment and views of environmental conservation.

Despite a number of studies have been conducted, no clear answers have been given regarding the relationship between verbal commitment to environmental issues and respective intention to eco behavioral commitments.

### *Intentions to engage in environmentally friendly behaviors*

Intentions to engage in eco-friendly behaviors have been expressed in literature with a number of different types of variables. The most popular ones include: 'Willingness to pay more for environmentally friendly products or services', 'Intentions to visit/choose environmental friendly services', 'Word of mouth of

eco-friendly communications', and 'Commitment to environmental friendly services'. The present study focused on the first two variables.

In the last decades researchers have focused on consumers' willingness to pay more for environmentally friendly products and services [20]. The results of a relative study conducted in Florida on a sample of 565 undergraduate and graduate students showed that responders were willing to pay more for green products [21].

In the context of alpine ski areas, Little and Needham [8] investigated the skiers' and snowboarders' future intention to re-visit ski resorts providing environmental programs. The study was conducted in the Mt. Bachelor ski area in Oregon, USA. The sample consisted of 429 individuals involved in skiing ( $n = 303$ ) and snowboarding ( $n = 126$ ) at the average age of 39.8 years. The results showed that 25% to 39% of skiers and 23% to 38% of snowboarders intended to visit a ski area more often, if it adopted and promoted more environmental programs.

Hudson and Ritchie [22] aimed to investigate: a) whether skiers would choose a green ski destination over another, and b) whether skiers would pay more for environmentally friendly ski resorts, and if so, how much. 332 skiers (men – 60%, women – 40%) from Canada, the United States and the United Kingdom, all visitors to a ski resort in the USA, took part in the study. Most skiers in the study reported that they would be more likely to visit a ski area in the future, if it was environmentally responsible, instead of an area not focusing on environmental performance. The majority of skiers (65%) also intended to pay more, ranging from \$16 to \$20.17, to visit a ski area that would attempt to reduce its environmental impacts.

Christopoulou and Papadopoulos [15] in their study in a ski resort in central Greece found that skiers and resort visitors were interested in the area's environmental protection by reporting their willingness to pay more for the area environmental protection and conservation. The majority of the interviewed individuals (86%) were willing to contribute to the environmental protection and conservation by financing (27%), active participation (43%) or both (30%). It is noticeable that 71 percent of the interviewed skiers and visitors gave positive answers to the question "Would you like to pay for the conservation of the landscape?", and 64 percent of them were willing to pay up to 10,000 drachmas (approximately up to 30 €) per year, 27 percent were willing to pay about 10,000-100,000 drachmas (30 to

300 €) per year, and 9 percent were willing to pay more than 100,000 drachmas (up to 300 €) per year.

Nevertheless, there is a considerable lack of research on skiers' intention to visit environmentally friendly resorts and their willingness to pay more for that type of ski resorts [23].

#### *Demographic characteristics and environmental friendly behavior*

Generally, findings concerning demographic characteristics and environmentally friendly variables are controversial, with some researchers arriving at significant differences concerning demographic characteristics and environmentally friendly behavior [20, 24], and others supporting the opposite [25].

Previous studies highlighted differences between males and females regarding their environmental attitudes and actions. According to Gronhoj and Olander [24] women are more concerned with environmental issues and more likely to participate in environmental activities than men. Han et al. [20] aimed to investigate sex differences in environmentally conscious behaviors in a green hotel. The study sample was composed of 371 hotel customers from the USA (men – 46.6%, women – 53.4). The findings indicated that women are more willing than men to pay extra money for “green” hotels.

Studies on differences in environmentally friendly behaviors among different age groups have not always produced similar findings. Finisterra do Paco, Raposo, and Leal Filho [26] investigated the demographic profile of the green consumer in a sample of 887 Spanish individuals, 18 year-old and above, and found significant differences regarding different age groups and environmentally friendly behaviors. Different findings were revealed by La Roche et al. [4] who found no statistically significant differences between consumers at different ages in their willingness to pay more for green products. Han et al. [20] supported that older individuals were more willing to pay more for ‘green’ hotels than younger ones. In contrast, Lee [10] investigated green purchasing behaviour in a sample of 6.010 Hong Kong adolescents and argued that younger individuals were more likely to buy ‘green products’.

The findings regarding different educational levels and environmentally friendly behaviors have been equivocal. Musa, Seng, Thirumoorthi, and Abessi [27] explored the influence of the demographic profile of divers on underwater behavior. Data were collected using a sample of 302 divers from Malaysia. The

results showed that divers were generally responsible underwater, with the ones with a higher education being more concerned about the environment, and behaving in a more environmentally friendly manner. However, La Roche et al. [4] who investigated the demographic profile of consumers willing to pay more for environmentally friendly products found no significant differences in their willingness to pay more among individuals with different levels of education.

Although, many studies have examined the impact of demographic characteristics on environmentally friendly behaviour, no definitive and conclusive findings have been established regarding the relationship between the two variables.

#### *Ski industry and environmentally friendly services*

The ski industry has not remained unaffected by the environmental damage and deterioration. Global warming has made its presence in the ski industry, with warmer temperatures leading to shorter ski seasons justified by the inability to make artificial snow when the temperature rises too high [8]. The managers of ski resorts do not stay apathetic/indifferent in the face of negative consequences of climate change on the ski industry, but rather ‘adopt’ environmentally friendly initiatives and services instead. Peattie [28: 185] states that “a service can be green, because the actions of the service company have become more environmentally friendly, or the company is more environmentally friendly than its competitors”.

Environmental initiatives such as the “Keep Winter Cool” campaign – a joint initiative of the National Ski Areas Association and the Natural Resources Defense Council – has encouraged ski areas to buy their power from alternative sources such as wind, solar and agricultural resources, in addition to educating their guests on global warming [29].

Numerous environmental protection practices have been pursued by ski resorts. For example, energy can be bought from renewable sources, or it can be produced on site using wind and solar technologies. Practicing energy conservation wherever possible in the main resort lodge and other buildings by using compact fluorescent light bulbs is another environmental approach. In addition, water saving and water quality protocols are followed; hybrid or four stroke vehicles for on-mountain skier transportation are used as well as energy efficient heating/cooling systems and provision of carbon offset tickets [8, 30].

*Recreation skiing in Greece*

In Greece, the ski market has developed rapidly in the last ten years. According to Kouthouris, Alexandris, Giovani, and Chatzianni [31] the number of Greek leisure skiers is about 250,000 annually. In the recent years the weather conditions in Greece have changed (higher temperatures, reduced rainfall and snowfall) resulting in shorter skiing seasons. It should be mentioned that only one out of the nineteen ski resorts in Greece has artificial snowmaking capabilities, although artificial snowmaking is not considered to be an easy procedure as the temperature rises too high very often. In Greece, in the years of 2013-2014, the highest temperatures in the last 50 years were recorded. Although there are nineteen ski resorts in Greece, none of them has expressed the desire to provide environmentally friendly ski services nor has tried to attract the market segment considered to be more environmentally conscious.

**Aim of Study**

The aim of the present study was to investigate environmentally friendly behaviors of Greek individuals in the context of recreational skiing. More specifically, the study aimed at: i) finding relationships between the study variables: ‘Attitudes towards environmental protection’, ‘Preference for environmentally friendly services’, and ‘Willingness to pay more for environmentally friendly services’; ii) investigating demographic differences (gender, age, and educational level) in terms of the study variables; and iii) comparing three types of users of ski resorts (skiers, snowboarders, and resort visitors) in terms of their scores on the study variables.

**Method**

*Participants and Procedures*

Two hundred and fifty seven ( $N = 257$ ) individuals participated in the study. The sample consisted of recreational skiers ( $N = 166$ ), snowboarders ( $N = 46$ ) and ski resort visitors ( $N = 45$ ). Data was collected in a major ski resort in Greece. Prior to the data collection permission was granted by the management of the ski resorts. Data was collected in the ski resort’s cafeteria by two researchers familiar with skiing activities. Three hundred questionnaires were distributed and two hundred and fifty seven were returned, achieving a response rate of 85.6%. As for the demographic characteristics of the sample, 65.8% were males and 34.2% were females, aged from 15 and 56 years old. The majority of respondents (42.4%) were between 22 and 31 years old and had a college degree (53.3%). The demographic characteristics of the sample are presented in Table 1.

*Research Instruments*

‘Attitudes towards environmental issues’ were evaluated on a scale developed by Kouthouris and Kontogianni [32], which was adjusted to the recreational skiing context. The attitudes were assessed by responses to the statement: “I believe that taking part in environmental protection actions is...” given using eleven bipolar adjectives (e.g., easy-difficult, interesting-boring, useful-useless, pleasant-unpleasant) on a 7-point Likert scale. The alpha value for the ‘Attitudes towards environmental issues’ scale was high ( $\alpha = 0.84$ ).

**Table 1.** Demographic data of the sample

Resort’s users	Gender	Age groups	Educational level
Skiers: 166 (64.6%)	Males: 169 (65.8%)	1 <sup>st</sup> group (15-21): 60 (23.3%)	Primary education: 4 (1.6%)
Snowboarders: 46 (17.9%)	Females: 88 (34.2%)	2 <sup>nd</sup> group (22-31): 109 (42.4%)	Secondary education: 34 (13.2%)
Visitors: 45 (17.5%)		3 <sup>rd</sup> group (32-41): 47 (18.3%)	University graduates: 137 (53.3%)
		4 <sup>th</sup> group (42-56): 41 (16%)	Students: 82 (31.9%)

‘Verbal commitment to environmental actions’ was assessed by the scale of Kouthouris and Kontogianni [32] with five items: “I am willing to participate in environmental protection events”, “I am willing to contribute to actions to protect the environment”, “I am willing to restrict personal comforts in my life to help environmental protection”, “I am willing to change my daily habits to protect the environment”, “I am willing to inform my friends about environmental protection”. A seven-point Likert-type scale was used (from 1 = Impossible to 7 = Possible). The alpha value for the ‘Verbal commitment to environmental actions’ scale was considered high ( $\alpha = 0.81$ ).

‘Preference for environmentally friendly services’ was evaluated by users’ choice of an environmentally friendly product/service [32]. The scale was adjusted to the context of recreational skiing. Three items were used: “I would prefer to select an environmentally friendly ski resort”, “I do not care to select an environmentally friendly ski resort”, “I always choose the most environmentally friendly ski resort”. Five-point Likert type scales were used ranging from “Totally Agree” (5) to “Totally Disagree” (1). The alpha value for the ‘environmentally friendly preference’ scale was considered high ( $\alpha = 0.82$ ).

‘Willingness to pay more for environmentally friendly services’ (WPM) was evaluated on the basis of a scale was adjusted to the context of recreational skiing [33]. It was measured with three items: “It is acceptable to pay 10 percent more for environmentally friendly ski services”, “I would accept to pay 10 percent more taxes to pay for ski environmental programs”, and “I would be willing to spend an extra € 10 for environmentally friendly ski services”. Five-point Likert type scales were used ranging from “Strongly Agree” (9) to “Strongly Disagree” (1). The alpha value for the ‘Willingness to pay more’ scale was considered high ( $\alpha = 0.83$ ).

Finally, in the last part respondents were asked to provide demographic information on their sex, age, and level of education.

## Results

### *Descriptive statistics of study variables*

In terms of descriptive statistics, the ski resort users reported relative high scores for the ‘Attitudes towards environmental issues’ variable ( $M = 5.41, SD = 0.67$ ), ‘Verbal commitment to environmental actions’ ( $M = 5.42, SD = 0.89$ ), ‘Preference for environmentally friendly ski services’ ( $M = 4.23, SD = 0.83$ ); and lower scores for the ‘WPM for environmentally friendly services variable’ ( $M = 3.72, SD = 1.13$ ).

### *Relationships between study variables*

The ‘Attitudes towards environmental issues’ variable showed the highest correlation with ‘Verbal commitment to environmental actions’ ( $r = 0.557, p < 0.01$ ). Also, ‘Preference for environmentally friendly ski services’ showed a high correlation with ‘WPM for environmentally friendly services’ ( $r = 0.513, p < 0.01$ ). The remaining correlations were significant but not strong, ranging from 0.307 to 0.321.

### *Demographic differences Gender*

An independent sample *t* test was conducted aiming to seek differences between female and male participants. Statistically significant differences were found between the two groups only in ‘Attitudes towards environmental issues’ ( $t_{(255)} = -2.139, p < 0.05$ ). The female participants scored significantly higher than their male counterparts. No statistically significant differences were found between the two groups in ‘Verbal commitment to environmental actions’ ( $t_{(255)} = -1.205, p > 0.05$ ), ‘Preference for environmentally

**Table 2.** Results of t-Tests for study’s variables by gender

	Attitudes	Verbal commitment	Env. friendly preference	WPM
	$M (\pm SD)$	$M (\pm SD)$	$M (\pm SD)$	$M (\pm SD)$
Male	5.34 ( $\pm 0.70$ )*	5.37 ( $\pm 0.90$ )	4.17 ( $\pm 0.83$ )	3.66 ( $\pm 1.15$ )
Female	5.53 ( $\pm 0.59$ )*	5.51 ( $\pm 0.85$ )	4.35 ( $\pm 0.83$ )	3.84 ( $\pm 1.09$ )
<i>t</i>	-2.139	-1.205	-1.654	-1.239
<i>p</i>	$p < 0.05$	n.s	n.s	n.s

Note \* $p < 0.05$

friendly ski services' ( $t_{(255)} = -1.654, p > 0.05$ ) and 'WPM for environmentally friendly services' ( $t_{(255)} = -1.239, p > 0.05$ ) (Table 2).

*Age*

An analysis of variance was conducted aiming to test for differences between the four subgroups. The analysis revealed no significant effects for 'Attitudes towards environmental issues' ( $F_{(3,253)} = 2.02, p > 0.05$ ), 'Verbal commitment to environmental actions' ( $F_{(3,253)} = 2.77, p > 0.05$ ), 'Preference for environmentally friendly ski services' ( $F_{(3,253)} = 1.33, p > 0.05$ ), and 'WPM for environmentally friendly services' ( $F_{(3,253)} = 1.57, p > 0.05$ ).

*Level of education*

An analysis of variance was conducted aiming to test for differences between the four subgroups. The analysis revealed no significant effects for 'Attitudes towards environmental issues' ( $F_{(3,253)} = 1.04, p > 0.05$ ), 'Verbal commitment to environmental actions' ( $F_{(3,253)} = 1.06, p > 0.05$ ), 'Preference for environmentally friendly ski services' ( $F_{(3,253)} = 0.64, p > 0.05$ ), and 'WPM for environmentally friendly services' ( $F_{(3,253)} = 0.51, p > 0.05$ ).

*Differences between ski resort users*

Four analyses of variance were conducted to seek differences in study variables between the three subgroups of users (skiers, snowboarders, and resort visitors). The analysis revealed significant effects for 'Verbal commitment to environmental actions' ( $F_{(2,254)} = 4.84, p < 0.01$ ). Post-hoc tests (Sheffe's) showed that the skiers scored significantly higher than the snowboarders in 'Verbal commitment to environmental actions'. The

analysis revealed also significant effects for 'WPM for environmentally friendly services' ( $F_{(2,254)} = 10.85, p < 0.001$ ). Post-hoc tests (Sheffe's) revealed that the subgroup of skiers scored significantly higher than the snowboarders and the resort visitors in 'WPM for environmentally friendly services'. The mean scores for the three subgroups are presented in Table 3.

**Discussion**

As the concern for the natural environment is becoming more and more significant, individuals are moving towards more environmentally friendly attitudes and behaviors [3]. Limited research has been undertaken to understand skiers' perception of environmental friendly behavior, and little is known about skiers' attitudes towards environmental issues or their "Willingness to pay more for environmentally friendly ski services" [23]. Considering the lack of research, the present study aimed to investigate environmentally friendly behaviors of Greek individuals in the context of recreational skiing. In terms of descriptive statistics, the examined ski resort users reported relatively high scores on the 'Attitudes towards environmental issues', 'Verbal commitment to environmental actions' and 'Preference for environmentally friendly ski services' scales, and lower scores on the 'WPM for environmentally friendly services' scale.

Regarding the first objective of the study, the highest correlations between the variables were found between a) 'Attitudes towards environmental issues' and 'Verbal commitment to environmental actions'; and b) 'Preference for environmentally friendly ski services' and 'WPM for environmental friendly services'. The remaining correlations were significant but not strong. As for the second objective of the study regarding demographic differences, statistically significant

**Table 3.** ANOVA for the study's variables by users' subgroups

Users' subgroups	Attitudes	Verbal commitment	Env. friendly preference	WPM
1 <sup>st</sup> group (skiers)	5.47 (±0.72)	5.53 (±0.85)	4.29 (±0.86)	3.95 (±1.02)
2 <sup>nd</sup> group anowboarders	5.22 (±0.60)	5.08 (±1.01)	4.00 (±0.89)	3.22 (±1.26)
3 <sup>rd</sup> group (visitors)	5.36 (±0.50)	5.35 (±0.78)	4.27 (±0.61)	3.38 (±1.15)
<i>F</i>	2.62	4.84	2.23	10.85
<i>p</i>	n.s	$p < 0.01$	n.s	$p < 0.001$
		1 <sup>st</sup> – 2 <sup>nd</sup> *		1 <sup>st</sup> – 2 <sup>nd</sup> , 3 <sup>rd</sup> *

Note \* $p < 0.05$

differences were found only in 'Attitudes towards environmental issues' with the female ski resort users scoring significantly higher than male ski resort users. These results are in line with previous studies which showed that women displayed more positive attitudes towards environmental issues [24]. No statistically significant differences were found in the other variables regarding demographic variables. These results correspond with findings from other studies which found no demographic differences in environmental variables [25]. Also, previous studies supported that demographic variables were not useful variables for environmental profiling [25], while other studies supported the opposite [20]. Considering present results regarding demographic differences, we can conclude that the findings on demographic characteristics should be treated with caution, and more research is needed to validate their usefulness.

As regards the third objective of the study, in terms of type of ski resort users statistically significant differences were found between the three different subgroups of users in 'Verbal commitment to environmental actions' and in 'WPM for environmentally friendly services'. The skiers scored significantly higher than the snowboarders on both variables. In addition, the snowboarders scored significantly higher than the resort visitors in 'WPM for environmentally friendly services'. As Reinhardt [34] stated the first step to success with environmental products and services is identifying customers who are 'willing to pay more' for that kind of products and services. These results showed that skiers and snowboarders are good market segments to promote environmentally friendly ski services for marketers and managers of ski resorts. No statistically significant differences were found between the three different subgroups of users in 'Attitudes towards environmental issues' and in 'Environmentally friendly preference'.

While no statistical differences were found between the different subgroups of users on 'Attitudes towards environmental issues', the users' environmental attitudes seemed to be positive and high. More specifically, the skiers reported higher scores than the resort visitors and the snowboarders. This can be interpreted as an important finding since attitudes might result in actual behaviors [13]. The findings of the present study are in line with those of Hudson and Ritchie [9] who also reported that skiers were particularly sensitive to the natural environment.

It should be noted that no significant differences were found in most of the study variables, and that the snowboarders reported lower scores than the resort visitors. This might be due to the fact that the snowboarders are more involved in and focused on snowboarding activities rather than on environmental protection activities, or it might be due to their lack of personal financial resources.

Since no differences were found between different subgroups of users in 'Preference for environmentally friendly ski services', but differences were noted in the 'WPM for environmentally friendly services' variable, we can conclude that for ski resort users the intention to choose environmentally friendly ski services is different from the intention to pay more for environmentally friendly services. A possible explanation for this might be the fact that ski resort users, as in the case of the snowboarders, are more involved in skiing activities rather than in environmental protection activities, or it might be due to their lack of personal financial resources.

### Conclusions

Researchers such as Hudson [12] point out that ski resorts should definitely be promoted as environmentally friendly venues under the condition that the market reacts to this positively. The findings of the present study indicate that managers of ski resorts should consider providing equivalent services and converting the present/traditional 'image' of Greek ski resorts into 'environmentally friendly' resorts since the majority of resort users are, in fact, 'willing to pay more for equivalent services'. Finally, it should be stressed that this study was based on a sample of recreational users of one ski resort in Greece. While these results are useful in the context of this specific facility, they should be further validated with larger samples of users of other skiing facilities before any generalizations can be made.

### Managerial implications

1. Understanding environmentally friendly behavior issues will certainly influence the way marketers segment the market of ski resort users. The results of the present study showed that marketers can promote their environmentally friendly services in the context of recreational skiing to three essential market segments: skiers, snowboarders, and resort visitors.
2. Despite the fact that ski resort users are concerned about the environment and are willing to pay more for environmentally friendly services, this might



not always be translated into actual behaviors [14]. Ski resort marketers should educate users about the importance of their role in environmental protection, and adjust their ‘environmentally friendly’ communications to functionally appeal to ski resort users.

3. Environmental education and more detailed information should be provided to ski resort users regarding ‘environmentally friendly context/construct’, its goals and benefits in order to increase their environmental awareness.

#### Future research

1. Since there is a growing interest in environmental protection in outdoor recreation [6], future research should focus on the investigation of factors that tend to influence environmentally friendly behaviors in a number of different recreational settings.
2. The present study relied on self-reported answers to measure ski resort users’ ‘environmentally friendly preference’ and ‘willingness to pay more for environmentally friendly services’. However, respondents who profess their ‘environmentally friendly preferences’ and their ‘willingness to pay more’ may not actually do so in reality. Therefore, it might be useful to conduct a similar study with respondents who exhibit real environmental behaviors (e.g., pay higher prices).
3. Future studies should aim to segment ski resort users based on different components of environmental variables or demographics, as there is still lack of research on environmentally friendly profiles of ski resort users.

#### What this study adds?

Unlike foreign ski resort users, Greek ski resort users are just starting to urge the need of being ‘environmentally friendly’. The results of the present study give a clearer view regarding the environmental sensitivity of ski resort users as relevant research has been sparse. It should be stressed that in the Greek recreational skiing context none of the existing ski resorts provides environmentally friendly services or has adopted similar practices. The present study findings illustrate the value of provision of environmentally friendly services and enable ski resort managers to focus on similar services to increase sales and profits as well as to help in the reduction of environmental problems and climate change.

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