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## Sustainability and Mountain Tourism: The Millennial's Perspective

by Alessandro Bonadonna, Chiara Giachino and Elisa Truant

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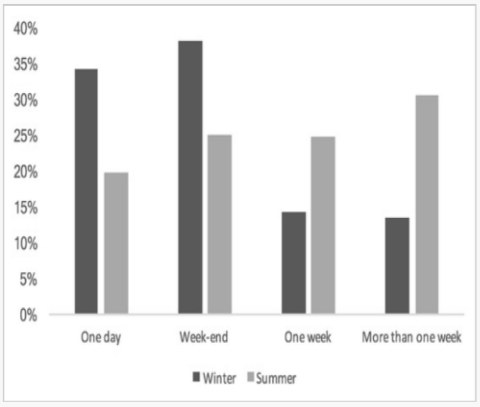


Figure 1

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# Sustainability and Mountain Tourism: The Millennial's Perspective

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**Abstract:** Evidence from several studies illustrates the different points of view through which sustainability and mountains have been studied over the years. Nowadays, interest in Millennials is increasing but no research has compared Millennials and sustainability in the mountain context. This study aims at defining sustainability with reference to Millennial perception of both winter and summer mountain sports. By analysing data gathered from a sample of 2292 Millennials (Piedmont area), the authors confirm their high degree of sensitivity towards sustainable issues and, above all, discover that there are differences in the sustainable perception Millennials have of both mountain winter and summer sports. More specifically, Millennial perception is deeply influenced by the place where they are used to living—mountains or cities—and by their gender. From a managerial point of view, results have direct implications on the administrators of mountain institutions who can implement appropriate initiatives in order to correctly sensitise Millennials towards mountain sports. Moreover, from a theoretical perspective, the study opens a new scenario on two important topics linked to sustainability, namely Millennials and mountain sports.

**Keywords:** millennials; sustainability; mountain tourism; mountain sports

## 1. Introduction

As other productive sectors, tourism is experiencing a phase of deep metamorphosis, mainly related to recent needs of the demand to integrate different meanings of the concept of sustainability, i.e., economic, environmental, social and institutional [1–4]. Indeed, the modern tourist is oriented to focus on themes geared towards more sustainable urban behaviour [5], management of natural and environmental resources [6–8], rediscovery of rural areas [9–12] and, generally, environmental protection. This attitude is also evident when mountain areas are taken into account. In this context, relevant elements differ in terms of landscape [13–15], climate change [16], the importance of ecotourism [17,18] or, overall, natural [19] and architectural heritage [20].

This changing demand is motivated by the increasingly pressing need to find solutions to the presence of man on Earth that, over time, has led to the change of landscape [21], to non-rational management of resources [22], to the production of waste without removal [23], to the phenomenon of climate change [24,25], and, to say it briefly, has led the environment to seek a new balance [26,27].

Hence, administrators of mountain facilities should follow up and monitor market changes and, where appropriate, be prepared to respond to new needs by implementing competitiveness tools. These tools adequately integrate the concept of innovation based on different means, such as socio-cultural sustainability, stakeholder participation, environmental sustainability and reactiveness [28–30].

Based on such evidence, the study describes sustainability issues from a mountain tourism point of view, with particular focus on a sample of Italian Millennials.

The decision to focus on Millennials stemmed from the fact that, since the publication of Howe and Strauss's (2000) *Millennials Rising*, interest in the Millennial generation has increased, particularly among policy makers, organisations, marketers and employers [31–33]. According to demographer David Foot, Millennials are people born between 1980 and 1995 [34]. He also refers to them as "Baby Boom Echo", since Millennials are the children of the Baby Boomers (1946–1965).

Despite growing interest in the generation of Millennials, no study has compared Millennials and mountain tourism. Consequently, this study attempts to fill the gap by focusing on Millennial perceptions of sustainability and behaviours related to mountain tourism and sports.

This study is organised with Section 2 providing a review of literature published on Millennials, especially underscoring the perception of sustainability applied to mountain activities, while Section 3 highlights the research gap on Millennials as an incentive to investigate the meaning of sustainability in mountain sports activities. Section 4 illustrates the methodological approach, and Section 5 describes the main results achieved. Finally, the last paragraph provides a discussion and conclusions, together with implications, limitations of the study and future research directions.

## 2. State-Of-The-Art

### *2.1. Millennials and Sustainability*

The study is developed around Millennial perceptions of sustainability and mountain tourism and sports. Several studies analyse Millennials, covering a wide range of issues, such as use of social media [35], learning styles and teaching methods [36–39] or presence/lack of social responsibility [40]. However, on the basis of a literature search conducted on SCOPUS database**s** (Keywords—TITLE-ABS-KEY "*Millennials*" AND TITLE-ABS-KEY "*sustainability*" AND "PUBYEAR > *2007*"), topics related to Millennials and the different meanings of sustainability were also investigated. The literature search provided 37 papers, 14 of which discussed their attitude towards environmental and social sustainability. Literature has also focused on education oriented to sustainability, underscoring the fact that students possess extensive knowledge of basic principles of ecology and sustainability, and adopt environmentally responsible consumption practices [41–43]. However, a recent study argues that higher education institutes have not as yet realised their full potential to prepare Millennials to be environmentally responsible citizens [44]. Some studies covered topics related to urban choices, i.e., mobility behaviour [45], the preference shown by college graduates for any particular urban service [44], analysis of urban and suburban policies to meet the demand for walkable and car-free neighbourhoods [46]. Others explore attitudes towards diet, i.e., Millennial interactions with dietary supplements, functional food and the beverage marketplace [47], and their attitude to sustainable wine [48]. Social aspects were also investigated, i.e., interaction amongst multiple generations of workers [49–51], behavioural assessment of various types of Millennials on the basis of the Great Recession, 9/11 and the election of the first African American US president [52], and Millennial behaviour regarding the decision to turn nursing activities into a working career [53]. Millennial perceptions of sustainability and the material effects of information technologies [54] were also verified with the ICT, i.e., assessment of the triple bottom line at computer games [55,56]. Last but not least, their opinions and purchase behaviour towards apparel products was also analysed [57].

Concluding, all studies on Millennials and sustainability agree that Millennials are more likely to behave consistently with sustainability principles [44–46,57], and also in decisions concerning purchases [58].

### *2.2. Mountain Tourism and Sports*

Several winter and summer mountain sports were investigated by researchers based worldwide [59–61], and their papers focus on a wide range of subjects, i.e., sport tourism events and their economic impact [62,63], climate change and winter sports [64,65] or health aspects of sports activities in mountain regions, such as high altitude illness [66–71], thrombosis and pulmonary embolism [72],

hand injuries [73,74] or facial traumas [75,76]. Moreover, some studies list many sports activities that can be practiced in mountain areas in winter and summer, such as mountaineering, climbing, downhill skiing, alpine skiing, ski mountaineering, hiking, cross-country biking, mountain racing, paragliding, canyoning and snowboarding [75,77–85].

Furthermore, some studies have been carried out on the perception of mountain sports activities covering a wide range of subjects. A literature research on SCOPUS databases (Keywords—TITLE-ABS-KEY "*perception*" AND TITLE-ABS-KEY "*sport*" AND TITLE-ABS-KEY "*mountain*", accessed on 21 January 2017) found 32 papers, 14 of which were centred on the various kinds of perception of mountain sports activities. Some covered topics related to the role played by the characteristics of the destination in the travel decisions of active sport tourists [86,87], health aspects [88,89], management of the natural heritage in various sports activities [90–92], collective efficacy in racing teams [93], the perception of causes of accidents [80], the perception of risk in mountain sports activities [94–96] and the management of mountain biking [97,98].

Concluding, studies on sports and mountain tourism focus on aspects that do not directly link the sustainability of sports with the perception different stakeholders have about that issue.

## 3. Research Gap

As previously stated, literature presents empirical studies on Millennials and sustainability. The main evidence of Millennial interest in environmental and social sustainability issues is provided below:

- "*Millennials are said to make sustainability-based decisions and to have a strong social and environmental consciousness*" [57];
- "*The emergent mobilities of young adults who appear to be aspiring for different types of mobility*" [45];
- "*Popular writing on the urban migration of Millennials (…) has frequently celebrated the presumed environmental benefits of cities not designed around the automobile*" [44];
- *Millennials are* "*moving away from car dependence and demanding walkable, transit-oriented neighbourhoods*" [46];
- "*Consumers now factor environmental effect into their buying decisions, a trend that looks to continue and intensify with the Millennial generation*" [58];
- "*The concepts of sustainability and energy awareness are part of their vocabulary and most of the jobs will be related to these terms*" [99].

Finally, Pomarici and Vecchio [48] argue that, by applying a probit model, Millennials with specific characteristics, i.e., living in an urban area, being female and older (age cohort 27–35), are more likely to choose and buy sustainable products, especially referring to the wine sector.

Referring to the second topic of the study, several articles focus on mountain tourism and sports, especially considering injuries and medical topics; however, to date no research has been carried out on mountain tourism and sports-related behaviour of Millennials, or even on their perception of sustainability related to mountain sports. Indeed, the lack of studies dedicated to Millennials and sustainable tourism may be filled up on the basis of the aforementioned data. Consequently, the topic of this paper lies at the intersection of these three developments, precisely Millennials, sustainability and mountain tourism and sports. Starting from this purpose, three research questions (RQs) have been formulated:

1. *What perception of sustainability does a sample of Italian Millennials have?*
2. *How do Millennials experience mountain tourism?*
3. *What is the sustainability perception of Millennials about mountain sports?*

The last research question has been analysed trying to underscore any statistically significant differences between those who have lived in mountain territories and those who have not.

## 4. Methodology

The perception of sustainability has been analysed under different points of view, precisely the meaning given to the term sustainability, sustainability-oriented purchasing behaviours and the sustainability of different mountain sports practiced by respondents.

A questionnaire-based survey was used with the following sections forming its core constructs:

- General data of respondents;
- Sustainability perception and behaviour;
- Vacations in mountain municipalities;
- Impact on sustainability of various sports practiced in the mountains.

For this study, the selection of winter and summer mountain sports was based on mountain sports identified within scientific papers. Furthermore, in order to complete the offer, information and documents available on the websites of the main tourist sites of the North-West Alps was analysed.

### *4.1. Data Collection and Analysis*

The questionnaire was created between December 2016 and January 2017, and consisted of 34 questions, mainly closed-ended or based on a seven-point Likert scale. However, in order to increase the appropriateness and completeness of the answers, for the majority of questions respondents had the possibility of specifying a different response or idea. The first fourteen questions related directly to respondents' characteristics in order to understand gender, age, university faculty, place of residence, whether they spent part of their life in mountain municipalities and whether they received a school/family education on sustainability, and on which issues. Questions from 15 to 19 were addressed to understand the meaning assigned to the term sustainability and whether the decisional processes (e.g., purchasing decisions) of respondents were guided by particular focus on sustainability. Questions from 20 to 32 were designed to understand how many times a year respondents visit mountain locations, both in winter and in summer, the length of stay and the kind of accommodation (e.g., hotels, apartments, camping sites, etc.), and the reasons for choosing whether or not to visit mountain villages.

Finally, questions 33 and 34 aimed at investigating the score assigned to sustainability of mountain sports practiced by respondents.

Data collection comprised two parts and was performed during the months of February and March 2017. Pilot tests were conducted with groups of student Millennials in February to refine the design and perfect the contents. In March, the questionnaire was online and sent to available e-mail addresses of students at the University of Turin. The answers received were carefully studied to rule out questionnaires presenting incomplete sections that were important. Following this selection, a total of 2292 questionnaires was validated and used, with a response rate of 12% compared to the initial sample.

This study used the statistical software IBM SPSS Statistics for Windows 24 (IBM Corp., Armonk, NY, USA) for Windows to analyse the data. Descriptive statistics were compiled to summarise responses and make inferences about survey data. Post-hoc tests of item reliability were then conducted to ensure that constructs were internally consistent. Chi-squared test and non-parametric tests (Wilcoxon, Friedman, Mann-Whitney) were conducted to detect statistically significant results. The results are expressed as mean, median and inter-quartile range (Q1–Q3). Differences and associations were considered significant at $p < 0.05$.

### *4.2. The Sample*

The study focused on the Piedmont Region since it features a long-standing mountain tradition, as its geography is 43.3% mountainous, and it boasts many mountain destinations that attract tourists from all over the world. Within this Italian region, the University of Turin is the leading university that has a consolidated national and international reputation.

The sample comprises students from various faculties of the University of Turin with a mean age of 23 years and a prevalence of female students. Table 1 shows the composition of the sample grouped by gender.

**Table 1.** Composition of the sample by gender.

| Gender | Response Count | % |
|---|---|---|
| Female | 1498 | 65.4 |
| Male | 794 | 34.6 |
| Total | 2292 | 100.0 |

We also investigated, within the sample, whether students habitually lived in a mountain municipality. Table 2 summarises the results.

**Table 2.** Living experience in a mountain municipality.

| Living Experience in a Mountain Municipality | Response Count | % |
|---|---|---|
| YES | 397 | 17.3 |
| NO | 1895 | 82.7 |
| Total | 2292 | 100.0 |

Analysing the sample, about one fifth of respondents lived in a mountain municipality, with an average residence time of 17 years.

## 5. Findings

Considering the three RQs formulated, findings were divided into three sections; precisely, the first shows the sustainability-oriented features of the Millennials sample, the second focuses on mountain tourism, while the third section provides the results referred to mountain sports and the related sustainability perception.

### *5.1. Millennials and Sustainability*

Analysing the findings from a general point of view, it appears that the majority of the sample (78.1%) received a sustainable education during the school period and almost all respondents (92.4%) have become aware of sustainable topics through their family's contribution. The main issue on which families have sensitised students is waste disposal.

This finding is interesting as it could demonstrate that Millennials are generally aware of sustainability and, above all, they consider it necessary to be informed about this issue. Indeed, the importance of sustainability ranked between 5 and 7 on a Likert scale from 1 to 7, 98.4%.

Taking into account the habits of respondents related to sustainability, it surfaced that Millennials are keener to purchase sustainable products and/or services, as shown in Table 3.

**Table 3.** Sustainability and purchasing decisions.

| Sustainability & Purchasing Decisions | Response Count | % | Female | | Male | |
|---|---|---|---|---|---|---|
| | | | Response Count | % | Response Count | % |
| YES | 1708 | 74.5 | 1134 | 75.7 | 574 | 72.2 |
| NO | 584 | 25.5 | 364 | 24.3 | 220 | 27.8 |
| Total | 2292 | 100.0 | 1498 | 100.0 | 794 | 100.0 |

The fact that a company pursues a sustainable attitude can affect the purchasing decision of 75% of respondents, without significant differences between female and male Millennials. Furthermore, 77% of Millennials are willing to spend more to buy sustainable products and/or services. But how do Millennials seek information on both companies and products/services? They usually look for general information on the Web (44%) and on product labels (50%). Based on this result, it is surprising to note that Millennials are not using only the Web and technology to look for more

detailed information but they are also inclined to read product labels and descriptions of what they intend to purchase.

### *5.2. Mountain Tourism and Sports*

The second research question about mountain tourism investigated how many times a year Millennials visit a mountain municipality on vacation. The Table 4 shows the results collected.

**Table 4.** Visits to a mountain municipality in a year.

| Visits to a Mountain Municipality (Times per Year) | Response Count | % |
|---|---|---|
| Never | 167 | 7.3 |
| One | 302 | 13.2 |
| Two | 289 | 12.6 |
| Three | 199 | 8.7 |
| More than three | 1335 | 58.2 |
| Total | 2292 | 100.0 |

As we can notice in the above table, almost the whole sample shows a strong interest in mountain vacations. Indeed, the great majority of respondents (58.3%) visit a mountain municipality more than three times a year, while only 7% declared that they do not spend time in the mountains.

It appears that 49.5% of the sample usually spend summer vacations in the mountains. Conversely, winter vacations are usually spent in the mountains by 54.7% of the sample. The period of stay varies from a single day to more than two weeks (as shown in Figure 1) with a reverse proportion between the two seasons.

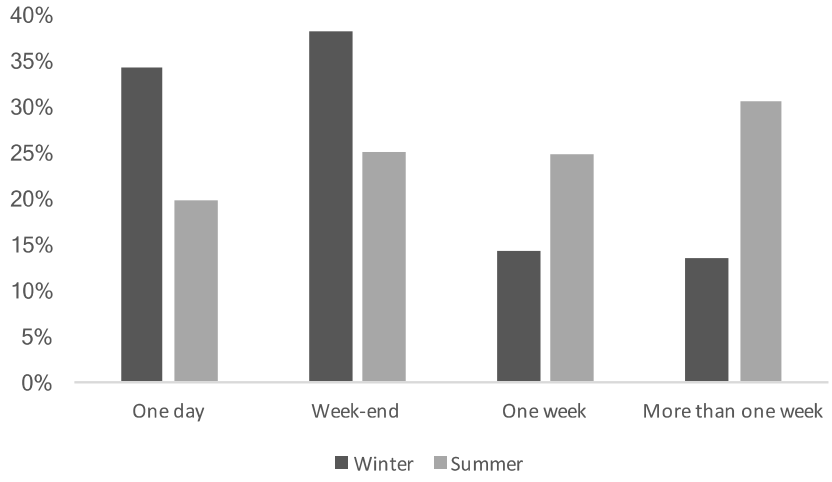


**Figure 1.** Period of stay in the mountains, summer vs. winter.

Figure 1 clearly shows that Millennials normally spend more than a weekend in the mountains in summer (31.4% more than one week, and 19.8% just one day), while the situation is quite the reverse in winter, when the majority of respondents spends a day (33.8%) or a weekend (37.3%) in the mountains, while only 14% spends more than one week there.

This result is extremely interesting because it describes Millennial habits. In summer, the mountains are chosen above all by "mountain lovers" and by "economizers" (the seaside is more expensive as they have declared). Respondents seek relaxation and a healthy lifestyle, not expensive vacations. In winter the mountains are chosen above all by "sportspeople" who also wish to save money. This could be explained by the fact that the majority of respondents choose to spend just one day in the mountains (more than once during the season) or a weekend. Millennials who spend more than two nights in the mountains usually have a property home. The summer and winter periods show a common factor that is considered particularly important by respondents, namely the opportunity to practice sports.

### *5.3. Sustainability and Mountain Sports*

At this stage of analysis, the sample was divided into two groups:

- Millennials who live or have lived a significant part of their life in a mountain municipality;
- Millennials who have not lived in a mountain municipality.

Within the group of Millennials who have not lived in a mountain municipality, in order to investigate whether respondents were aware of the concept of sustainability in the mountains, attention focused on Millennials who usually visit the mountains more than three times a year; precisely 58.5% of the sample, 1341 Millennials.

As mentioned above, respondents were asked to indicate on a Likert scale from 1 to 7 how sustainable they consider summer and winter sports—listed in the questionnaire—they have practiced at least once in their life. Findings reveal that living in the mountains significantly increases the sustainability perception referred to some of the most common and well known sports activities.

Starting from the analysis of results related to summer sports, respondents living in mountain municipalities show a wider perception of sustainable activities (score from 5 to 7 on the Likert scale). Indeed, they classify 11 out of 21 sports as sustainable versus 6 out of 21 sports ranked by people living in cities. Taking into consideration only sports classified with a score from 5 to 7 by both classes of respondents, the following were identified, namely trekking, mountain excursion, bike trip, climbing, walking and mushroom hunting (Table 5).

More in detail, considering only sports in common between the two groups identified, we can say that Millennials living in the mountains show a higher perception of sustainability than Millennials living in cities, with the only exception of mountain excursions. Data analysis shows significant differences in the sustainability index (Table 5).

Furthermore, an additional variable has been added to the analysis, namely the gender of respondents. In this case, we analysed whether a significantly higher sustainability index could be identified for some summer sports between females—living or not living in the mountains—and males—living or not living in the mountains. Findings reveal that being female and living in the mountains significantly increases the perception of sustainability associated with specific sports activities. No significant differences were observed in males.

In particular, females living in the mountains considered 13 out of 21 summer sports sustainable (from 5 to 7 on the Likert scale), while females living in cities identified only 6 out of 21 sports as sustainable. The common sports between the two groups of females are, once again, trekking, mountain excursion, bike trip, climbing, walking and mushroom hunting. Among these activities, the sustainability index is significantly higher for trekking, bike trip, climbing, walking and mushroom hunting.

Shifting the analysis to results concerning winter sports, it appeared that, as with summer activities, respondents living in the mountains show a wider sustainability perception of mountain sports. In fact, they classify 9 out of 20 activities as sustainable (from 5 to 7 in the Likert scale) versus the 6 out of 20 activities mentioned by Millennials living in cities. Some common activities were identified by taking into account the only sports classified with a score from 5 to 7 by both classes of respondents, namely skiing, cross-country skiing, alpine skiing, excursions, sleigh and bob (Table 6).

More in detail, considering only the sports in common, we can say that the perception of sustainability of Millennials living in the mountains is higher or equal to that of Millennials living in cities. Data analysis shows significant differences for the sustainability index (Table 6).

Finally, by adding the "gender" variable to the analysis, we were able to establish whether a significantly higher sustainability index appeared for some activities between females—living or not living in the mountains—and males—living or not living in the mountains. Findings reveal that being female and living in the mountains significantly increases the perception of sustainability linked to certain activities, while we do not register such a difference in males.

**Table 5.** Sustainability perception related to summer mountain sports.

| | Lived in Mountain Municipality | | | | Gender | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Female | | | | | Male | | | | |
| | | | | | Millennials Who Live or Have Lived a Significant Part of Their Life in a Mountain Municipality | | | | | Millennials Who Have Not Lived in a Mountain Municipality | | | | |
| | YES | | NO | | YES | | NO | | *p*-Level | YES | | NO | | *p*-Level |
| | Average | Median | Average | Median | Median | IQR | Median | IQR | | Median | IQR | Median | IQR | |
| 1. Trekking | 6.1 | 7 | 5.8 | 7 | 7 | 1 | 7 | 2 | 0.015 | 7 | 1 | 7 | 2 | n.s. |
| 2. Mountain excursion | 6.3 | 7 | 6.1 | 7 | 7 | 1 | 7 | 1 | n.s. | 7 | 1 | 7 | 1 | n.s. |
| 3. Mountain biking | 4.3 | 5 | 3.6 | 4 | 5 | 4 | 3 | 5 | <0.001 | 5 | 4 | 4 | 5 | n.s. |
| 4. Bikeline trip | 4.6 | 5 | 4.2 | 5 | 5 | 4 | 5 | 4 | 0.021 | 5 | 4 | 4 | 5 | n.s. |
| 5. Horse excursion | 4.1 | 5 | 3.8 | 4 | 5 | 4 | 4 | 5 | n.s. | 3 | 5 | 4 | 5 | n.s. |
| 6. Golf | 2.5 | 2 | 2.2 | 1 | 2 | 3 | 1 | 2 | 0.040 | 1 | 3 | 1 | 2 | n.s. |
| 7. Paraglider | 3.3 | 3 | 2.9 | 2 | 4 | 4 | 2 | 4 | 0.003 | 2 | 4 | 2 | 4 | n.s. |
| 8. Climbing | 4.8 | 6 | 4.4 | 5 | 6 | 4 | 5 | 5 | 0.003 | 5 | 5 | 5 | 4 | n.s. |
| 9. Fishing | 3.4 | 3 | 3.0 | 3 | 3 | 4 | 2 | 3 | n.s. | 4 | 5 | 4 | 4 | n.s. |
| 10. Walking | 5.8 | 7 | 5.6 | 6 | 7 | 1 | 7 | 2 | 0.005 | 6 | 3 | 6 | 3 | n.s. |
| 11. Rafting | 4.1 | 5 | 3.7 | 4 | 5 | 4 | 4 | 5 | 0.014 | 4 | 5 | 4 | 5 | n.s. |
| 12. Kayak | 3.8 | 4 | 3.5 | 4 | 4 | 5 | 3 | 5 | n.s. | 4 | 5 | 4 | 5 | n.s. |
| 13. Mushroom hunting | 4.8 | 5 | 4.3 | 5 | 5 | 4 | 5 | 3 | n.s. | 5 | 4 | 5 | 4 | 0.037 |
| 14. Rock-climbing | 4.5 | 5 | 4.0 | 4 | 5 | 3 | 4 | 5 | 0.002 | 5 | 4 | 5 | 4 | n.s. |
| 15. Husky trekking | 3.2 | 3 | 2.9 | 2 | 3 | 4 | 1 | 4 | n.s. | 2 | 4 | 3 | 4 | n.s. |
| 16. Canoe | 3.7 | 4 | 3.5 | 3 | 4 | 5 | 3 | 5 | n.s. | 4 | 5 | 4 | 5 | n.s. |
| 17. Balloon | 2.9 | 2 | 2.6 | 1 | 2 | 4 | 1 | 3 | 0.006 | 1 | 4 | 2 | 4 | n.s. |
| 18. Boat trip | 2.9 | 2 | 2.7 | 2 | 3 | 4 | 1 | 3 | 0.003 | 1 | 3 | 2 | 4 | n.s. |
| 19. Swimming | 4.2 | 5 | 3.9 | 4 | 5 | 5 | 4 | 6 | n.s. | 4 | 5 | 4 | 6 | n.s. |
| 20. Adventure park | 4.2 | 4 | 3.7 | 4 | 5 | 3 | 4 | 5 | 0.001 | 4 | 4 | 4 | 5 | n.s. |
| 21. Birdwatching | 3.8 | 4 | 3.8 | 4 | 5 | 6 | 3 | 6 | n.s. | 2 | 5 | 4 | 5 | n.s. |

**Table 6.** Sustainability perception related to winter mountain sports.

| | Gender | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Female | | | | | | | | | Male | | | | |
| | Lived in Mountain Municipality | | | | Millennials Who Live Or Have Lived a Significant Part of Their Life in a Mountain Municipality | | | | | Millennials Who Have Not Lived in a Mountain Municipality | | | | |
| | YES | | NO | | YES | | NO | | *p*-Level | YES | | NO | | *p*-Level |
| | Average | Median | Average | Median | Median | IQR | Median | IQR | | Median | IQR | Median | IQR | |
| 1. Cross country skying | 4.9 | 6 | 4.4 | 5 | 6 | 0 | 5 | 0 | 0.004 | 5 | 0 | 5 | 0 | n.s. |
| 2. Ski | 4.9 | 5 | 4.5 | 5 | 5 | 0 | 5 | 0 | n.s. | 5 | 0 | 5 | 0 | 0.006 |
| 3. Alpine ski | 4.9 | 6 | 4.3 | 5 | 6 | 0 | 4 | 0 | 0.004 | 6 | 0 | 5 | 0 | n.s. |
| 4. Off-piste skying | 4.4 | 5 | 3.9 | 4 | 4 | 0 | 4 | 0 | 0.021 | 5 | 0 | 5 | 0 | n.s. |
| 5. Snowboard | 3.9 | 4 | 3.7 | 4 | 4 | 0 | 4 | 0 | n.s. | 4 | 0 | 4 | 0 | n.s. |
| 6. Ice-skating | 4.3 | 5 | 3.9 | 4 | 5 | 0 | 4 | 0 | 0.036 | 4 | 0 | 4 | 0 | n.s. |
| 7. Sleddog | 2.8 | 1 | 2.7 | 2 | 2 | 0 | 2 | 0 | n.s. | 1 | 0 | 2 | 0 | n.s. |
| 8. Horse drawn-sledge | 2.8 | 2 | 2.8 | 2 | 2 | 0 | 2 | 0 | n.s. | 1 | 0 | 2 | 0 | n.s. |
| 9. Nordic walking | 4.2 | 5 | 3.9 | 4 | 5 | 0 | 4 | 0 | n.s. | 4 | 0 | 4 | 0 | n.s. |
| 10. Snow driving | 2.6 | 1 | 2.2 | 1 | 2 | 0 | 1 | 0 | n.s. | 1 | 0 | 1 | 0 | n.s. |
| 11. Ice-kart | 2.5 | 1 | 2.2 | 1 | 1 | 0 | 1 | 0 | n.s. | 1 | 0 | 1 | 0 | n.s. |
| 12. Excursion with snow shoes | 5.4 | 6 | 5.2 | 6 | 7 | 0 | 6 | 0 | n.s. | 6 | 0 | 6 | 0 | n.s. |
| 13. Ice climbing | 3.5 | 3 | 3.4 | 3 | 4 | 0 | 3 | 0 | n.s. | 2 | 0 | 3 | 0 | n.s. |
| 14. Sleight | 4.0 | 5 | 4.1 | 5 | 5 | 0 | 5 | 0 | n.s. | 3 | 0 | 4 | 0 | n.s. |
| 15. Balloon | 2.7 | 1 | 2.6 | 1 | 2 | 0 | 1 | 0 | n.s. | 1 | 0 | 2 | 0 | n.s. |
| 16. Wellness, Thermae | 4.1 | 4 | 3.7 | 4 | 5 | 0 | 4 | 0 | 0.009 | 4 | 0 | 4 | 0 | n.s. |
| 17. Mountain biking | 3.5 | 3 | 3.1 | 2 | 4 | 0 | 2 | 0 | n.s. | 2 | 0 | 2 | 0 | n.s. |
| 18. Speedriding | 2.9 | 2 | 2.6 | 1 | 2 | 0 | 2 | 0 | 0.036 | 1 | 0 | 1 | 0 | n.s. |
| 19. Airboard | 2.8 | 2 | 2.5 | 1 | 2 | 0 | 1 | 0 | 0.044 | 1 | 0 | 1 | 0 | n.s. |
| 20. Bob | 4.7 | 5 | 4.3 | 5 | 6 | 0 | 5 | 0 | 0.031 | 4 | 0 | 5 | 0 | n.s. |

In particular, females living in the mountains indicated 9 out of 21 activities as sustainable (from 5 to 7 on the Likert scale), while females living in cities considered just 5 out of 21 activities sustainable. The common activities between the two groups of females (living or not in the mountains) are, again, cross-country skiing, alpine skiing, excursion, sleigh and bob, among which, the sustainability index is significantly higher for cross-country skiing and bob.

## 6. Discussion and Conclusions

Based on the increasing relevance of studies on Millennials, this research aims at investigating the sustainability perception and behaviour within a sample of Italian Millennials, characterised by a high educational level. This peculiarity might influence respondents' attitudes towards sustainability. The study also focuses on the mountain tourism of Millennials and their sustainability perceptions about mountain sports.

Referring to the first research question, *what perception of sustainability does a sample of Italian Millennials have*? the results show a high level of preparation and awareness about the meaning of sustainability, as argued by several authors [41–43]. Furthermore, findings confirm that the behaviour of Millennials is driven by sustainability principles [44–46,57,58]. Compared to evidence reported by literature [48], there are no significant differences in female and male purchasing behaviours, since both are particularly sensitive to sustainable products.

Referring to the second research question, *how do Millennials experience mountain tourism*?, surprisingly a significant interest in mountain vacations surfaced, especially in winter. However, during the summer holidays, Millennials tend to spend more time in the mountains, while winter holidays are characterised by a shorter stay (usually a day or a weekend).

Both in summer and winter, the mountain choice is driven by the sports offer. Consequently, to the third research question, *what is the sustainability perception of Millennials about mountain sports*?, the evaluation of respondents as to the sustainability of various mountain sports activities was investigated. The analysis was conducted both for summer and winter activities. Findings show that Millennials living in the mountains, compared to those living in cities, have a stronger perception of the sustainability of different mountain sports. This result is particularly evident for summer activities, while it is weaker for winter activities.

Finally, it also emerged, both for summer and winter mountain sports, that female Millennials show a higher sustainability perception linked to specific sports activities.

## 7. Contributions, Limitations and Future Research

No previous study on Millennials has taken into consideration the association between sustainability and mountain tourism and sports; consequently, this research attempts to bridge the existing gap by providing evidence on mountain tourism and sustainability perceptions related to mountain sports. The choice of mountain trip has been investigated, as well as the perception about the sustainability of different mountain sports.

The study reveals some theoretical implications, contributing to enrich the literature on Millennials, sustainability and mountain tourism, and practical implications, contributing to build awareness about Millennial perceptions and behaviours.

The main limitation of the research is the sample chosen, namely student Millennials from the University of Turin, Italy. This sample has a high educational level, which might influence its attitude towards sustainability.

Future studies might enrich the sample in two different ways, by including Millennials from other Italian and European Universities, and by deepening specific aspects related to sustainable behaviours and mountain habits, also by involving different groups of stakeholders, and by covering the question of whether there are any important differences between various fields of study, e.g., law, mechanics, etc., and/or levels of study. Lastly, it could be interesting to analyse more in depth the gender differences in sustainability attitudes among Millennials, using appropriate statistical methods.

**Author Contributions:** These authors contributed equally to this paper.

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## References


1. Zdravkovic, D.; Radukic, S. Institutional Framework for Sustainable Development in Serbia. *Monten. J. Econ.* **2012**, *8*, 27–36.
2. Allione, C.; Migliorini, P.; Vesce, E. Obiettivo dell'Indice di Sostenibilità e metodologia comune per la costruzione dell'indice. In *Pollenzo Index Environmental and Economics Design. Indice Poliedro*; Università degli Studi di Scienze Gastronomiche: Pollenzo, Italia, 2013; pp. 12–29.
3. Altomonte, S.; Rutherford, P.; Wilson, R. Human factors in the design of sustainable built environments. *Intell. Build. Int.* **2015**, *7*, 224–241, doi:10.1080/17508975.2014.970121.
4. Addinsall, C.; Scherrer, P.; Weiler, B.; Glencross, K. An ecologically and socially inclusive model of agritourism to support smallholder livelihoods in the South Pacific. *Asia Pac. J. Tour. Res.* **2017**, *22*, 301–315, doi:10.1080/10941665.2016.1250793.
5. Miller, D.; Merrilees, B.; Coghlan, A. Sustainable urban tourism: Understanding and developing visitor pro-environmental behaviours. *J. Sustain. Tour.* **2015**, *23*, 26–46, doi:10.1080/09669582.2014.912219.
6. Nejati, M.; Mohamed, B.; Omar, S.I. The influence of perceived environmental impacts of tourism on the perceived importance of sustainable tourism. *E-Rev. Tour. Res.* **2015**, *12*, 99–114.
7. Hvenegaard, G.T. Visitors' perceived impacts of interpretation on knowledge, attitudes, and behavioral intentions at Miquelon Lake Provincial Park, Alberta, Canada. *Tour. Hosp. Res.* **2017**, *17*, 79–90, doi:10.1177/1467358416634157.
8. Groulx, M.; Lemieux, C.J.; Lewis, J.L.; Brown, S. Understanding consumer behaviour and adaptation planning responses to climate-driven environmental change in Canada's parks and protected areas: A climate futurescapes approach. *J. Environ. Plan. Manag.* **2017**, *60*, 1016–1035, doi:10.1080/09640568.2016.1192024.
9. Butnaru, G.I.; Haller, A.P. Perspective of sustainable rural tourism in the United Kingdom of Great Britain and Northern Ireland (UK): Comparative study of β and σ convergence in the economic development regions. *Sustainability* **2017**, *9*, 525, doi:10.3390/su9040525.
10. Duarte Alonso, A.; Nyanjom, J. Local stakeholders, role and tourism development. *Curr. Issues Tour.* **2017**, *20*, 480–496, doi:10.1080/13683500.2015.1078782.
11. Strzelecka, M.; Boley, B.B.; Strzelecka, C. Empowerment and resident support for tourism in rural Central and Eastern Europe (CEE): The case of Pomerania, Poland. *J. Sustain. Tour.* **2017**, *25*, 554–572, doi:10.1080/09669582.2016.1224891.
12. Huang, W.-T.; Ting, C.-T.; Huang, Y.-S.; Chuang, C.-H. The visitors' attitudes and perceived value towards rural regeneration community development of Taiwan. *Stud. Comp. Intell.* **2017**, *692*, 637–647, doi:10.1007/978-3-319-50742-2_39.
13. Zhang, Y.-L.; Zhang, J.; Zhang, H.-L.; Cheng, S.-W.; Guo, Y.-R.; Ma, J.-H.; Sun, J.-R. The impact of the cognition of landscape experience on tourist environmental conservation behaviors. *J. Mt. Sci.* **2015**, *12*, 501–517, doi:10.1007/s11629-014-3150-x.
14. Chen, B.; Qiu, Z.; Nakamura, K. Tourist preferences for agricultural landscapes: A case study of terraced paddy fields in Noto Peninsula, Japan. *J. Mt. Sci.* **2016**, *13*, 1880–1892, doi:10.1007/s11629-015-3564-0.
15. Cebrián, F.; Sánchez, I. The landscape as a tourist resource and its impact in mountain areas in the south of Castilla-la Mancha (Spain). *Int. J. Sustain. Dev. Plan.* **2016**, *11*, 345–354, doi:10.2495/SDP-V11-N3-345-354.
16. Garavaglia, V.; Diolaiuti, G.; Smiraglia, C.; Pasquale, V.; Pelfini, M. Evaluating tourist perception of environmental changes as a contribution to managing natural resources in glacierized areas: A case study of the Forni Glacier (Stelvio National Park, Italian Alps). *Environ. Manag.* **2012**, *50*, 1125–1138, doi:10.1007/s00267-012-9948-9.
17. Strobl, A.; Teichmann, K.; Peters, M. Do mountain tourists demand ecotourism? Examining mode rating influences in an Alpine tourism context. *Tourism* **2015**, *63*, 383–398.
18. Tai, Y.-N. A study on the ecotourism cognition and its factors. *Appl. Ecol. Env. Res.* **2017**, *15*, 123–132, doi:10.15666/aeer/1502_123132.
19. Nössing, L.; Forti, S. Important geosites and parks in the UNESCO world heritage site of the Dolomites [Importantes geositios y geoparques en los Dolomitas (Patrimonio Mundial UNESCO)]. *Bol. Geol. y Min.* **2016**, *127*, 693–702.

20. Giannakopoulou, S.; Kaliampakos, D. Protection of architectural heritage: Attitudes of local residents and visitors in Sirako, Greece. *J. Mt. Sci.* **2016**, *13*, 424–439, doi:10.1007/s11629-015-3482-1.
21. Denning, A. From sublime landscapes to white gold: How skiing transformed the alps after 1930. *Environ. Hist.* **2014**, *19*, 78–108, doi:10.1093/envhis/emt105.
22. Thøgersen, J. Unsustainable consumption: Basic causes and implications for policy. *Eur. Psychol.* **2014**, *19*, 84–95, doi:10.1027/1016-9040/a000176.
23. Kasidoni, M.; Moustakas, K.; Malamis, D. The existing situation and challenges regarding the use of plastic carrier bags in Europe. *Waste Manag. Res.* **2015**, 33, 419–428, doi:10.1177/0734242X15577858.
24. Morrison, C.; Pickering, C.M. Perceptions of climate change impacts, adaptation and limits to adaption in the Australian Alps: The ski-tourism industry and key stakeholders. *J. Sustain. Tour.* **2013**, *21*, 173–191, doi:10.1080/09669582.2012.681789.
25. Bonzanigo, L.; Giupponi, C.; Balbi, S. Sustainable tourism planning and climate change adaptation in the Alps: A case study of winter tourism in mountain communities in the Dolomites. *J. Sustain. Tour.* **2016**, *24*, 637–652, doi:10.1080/09669582.2015.1122013.
26. Swim, J.K.; Clayton, S.; Howard, G.S. Human Behavioral Contributions to Climate Change: Psychological and Contextual Drivers. *Am. Psychol.* **2011**, *66*, 251–264, doi:10.1037/a0023472.
27. Smith, B.D.; Zeder, M.A. The onset of the Anthropocene. *Anthropocene* **2013**, *4*, 8–13, doi:10.1016/j.ancene.2013.05.001.
28. Kuščer, K. Determining factors of mountain destination innovativeness. *J. Vac. Mark.* **2013**, *19*, 41–54, doi:10.1177/1356766712461404.
29. Yang, Z.; Shi, H.; Yang, D.; Cai, Y.; Ren, X. Analysis of core stakeholder behaviour in the tourism community using economic game theory. *Tour. Econ.* **2015**, *21*, 1169–1187, doi:10.5367/te.2015.0521.
30. Duglio, S.; Beltramo, R. Environmental management and sustainable labels in the ski industry: A critical review. *Sustainability* **2016**, *8*, 851–863, doi:10.3390/su8090851.
31. Foot, D.K. Canadian education: Demographic change and future challenges. *Educ. Can.* **2001**, *41*, 24–27.
32. Hoover, E. The millennial muddle: How stereotyping students became a thriving industry and a bundle of contradictions. *Chron. High. Educ.* **2009**.
33. Nowak, L.; Thach, L.; Olsen, J.E. Wowing the millennials: Creating brand equity in the wine industry. *J. Prod. Brand Manag.* **2006**, *15*, 316–323, doi:10.1108/10610420610685712.
34. Foot, D.K.; Stoffman, D. *Boom, Bust and Echo 2000: Profiting from the Demographic Shift in the New Millennium*; Macfarlane, Walter & Ross: Toronto, ON, Canada, 1998.
35. Akkucuk, U.; Turan, C. Mobile use and online preferences of the millenials: A study in Yalova. *J. Internet Bank. Commer.* **2016**, *21*, 142.
36. Mondragon-Torres, A.F.; Becker-Gomez, A. Ultra-low power and the millennium generation. In Proceedings of the Frontiers in Education Conference (FIE), Rapid City, SD, USA, 12–15 October 2011.
37. Thomas, Y.; Srinivasan, R. Emerging shifts in learning paradigms-from Millennials to the Digital Natives, *Int. J. Appl. Eng. Res.* **2016**, *11*, 3616–3618.
38. Karakas, F.; Manisaligil, A.; Sarigollu, E. Management learning at the speed of life: Designing reflective, creative, and collaborative spaces for millennials. *Int. J. Manag. Educ.* **2015**, *13*, 237–248, doi:10.1016/j.ijme.2015.07.001.
39. Shelton, C.C.; Warren, A.E.; Archambault, L.M. Exploring the Use of Interactive Digital Storytelling Video: Promoting Student Engagement and Learning in a University Hybrid Course. *TechTrends* **2016**, *60*, 465–474, doi:10.1007/s11528-016-0082-z.
40. Ferris, S.P. Millenials, social networking and social responsibility. In *Adolescent Online Social Communication and Behavior: Relationship Formation on the Internet*; Zheng, R., Burrow-Sanchez, J., Clifford, J., Eds.; IGI Publishing: Hershey, PA, USA, 2009; pp. 167–182.
41. Earl, C.; Lawrence, A. The campus community and the concept of sustainability: An assessment of college of Charleston student perceptions. *Chrestomathy Annu. Rev. Undergrad. Res. Coll. Charlest.* **2003**, *2*, 85–102.
42. Emanuel, R.; Adams, J.N. College students' perceptions of campus sustainability. *Int. J. Sustain. High. Educ.* **2011**, *12*, 79–92, doi:10.1108/14676371111098320.
43. Kagawa, F. Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *Int. J. Sustain. High. Educ.* **2007**, *8*, 317–338, doi:10.1108/14676370710817174.

44. Schoolman, E.D.; Shriberg, M.; Schwimmer, S.; Tysman, M. Green cities and ivory towers: How do higher education sustainability initiatives shape millennials' consumption practices? *J. Environ. Stud. Sci.* **2016**, *6*, 490–502, doi:10.1007/s13412-014-0190-z.
45. Hopkins, D. Destabilising automobility? The emergent mobilities of generation Y. *Ambio* **2017**, *46*, 371, doi:10.1007/s13280-016-0841-2.
46. Tomalty, R.; Mallach, A. *America's Urban Future: Lessons from North of the Border*; Island Press: Washington, DC, USA, 2016; pp. 1–312.
47. Hilton, J. Growth patterns and emerging opportunities in nutraceutical and functional food categories: Market overview. In *Developing New Functional Food and Nutraceutical Products*, 1st ed.; Bagchi, D., Nair, S., Eds.; Academic Press: London, UK, 2016; pp. 1–28, doi:10.1016/B978-0-12-802780-6.00001-8.
48. Pomarici, E.; Vecchio, R. Millennial generation attitudes to sustainable wine: An exploratory study on Italian consumers. *J. Clean. Prod.* **2014**, *66*, 537–545, doi:10.1016/j.jclepro.2013.10.058.
49. Ng, E.S.; Parry, E. Multigenerational research in human resource management. In *Research in Personnel and Human Resources Management*; Buckley, M.R., Halbesleben, J.R.B., Wheeler, A.R., Eds.; Emerald Group Publishing: Bingley, UK, 2016; Volume 34, pp. 1–41.
50. Cong, Y.; Neshkova, M.I.; Frank, H. The end of the defined pension paradigm in government: More than fiscal sustainability. In *Pensions: Policies, New Reforms and Current Challenges*; Reilly, T., Ed.; Nova Science Publisher: Hauppauge, NY, USA, 2014; pp. 199–226.
51. Ahn, M.J.; Ettner, L.W. Are leadership values different across generations?: A comparative leadership analysis of CEOs v. MBAs. *J. Manag. Dev.* **2014**, *33*, 977–990, doi:10.1108/JMD-10-2012-0131.
52. Debevec, K.; Schewe, C.D.; Madden, T.J.; Diamond, W.D. Are today's Millennials splintering into a new generational cohort? Maybe! *J. Consum. Behav.* **2013**, *12*, 20–31, doi:10.1002/cb.1400.
53. Price, S.L.; Mcgillis Hall, L.; Angus, J.E.; Peter, E. Choosing nursing as a career: A narrative analysis of millennial nurses' career choice of virtue. *Nurs. Inq.* **2013**, *20*, 305–316, doi:10.1111/nin.12027.
54. Hanks, K.; Odom, W.; Roedl, D.; Blevis, E. Sustainable millennials: Attitudes towards sustainability and the material effects of interactive technologies. In Conference on Human Factors in Computing Systems, Florence, Italy, 5–10 April 2008; pp. 333–342.
55. Isaacs, J.A.; Qualters, D.M.; Dolinsky, B.; Laird, J.T. Assessment of engineering student learning from structured computer game play. In Proceedings of the 2011 IEEE International Symposium on Sustainable Systems and Technology, Chicago, IL, USA, 15–18 May 2011.
56. Gennett, Z.A.; Isaacs, J.A.; Seager, T.P. Developing a social capital metric for use in an educational computer game. In Proceedings of the 2010 IEEE International Symposium on Sustainable Systems and Technology, Arlington, VA, USA, 15–17 May 2010; Art. No. 5507720.
57. Miller, N.J.; Yan, R.-N.T.; Jankovska, D.; Hensely, C. Exploring US Millennial consumers' consumption values in relation to traditional and social cause apparel product attributes and purchase intentions. *J. Glob. Fash. Mark.* **2017**, *8*, 54–68, doi:10.1080/20932685.2016.1261040.
58. Yoka, R. The greening of the parking industry—Best practices, and a new certification program for parking structures. *J. Green Build.* **2015**, *9*, 61–77, doi:10.3992/1943-4618-9.4.61.
59. Newsome, D.; Stender, K.; Annear, R.; Smith, A. Park management response to mountain bike trail demand in South Western Australia. *J. Outdoor Recreat. Tour.* **2016**, *15*, 26–34, doi:10.1016/j.jort.2016.07.001.
60. Koemle, D.B.; Morawetz, U. Improving mountain bike trails in Austria: An assessment of trail preferences and benefits from trail features using choice experiments. *J. Outdoor Recreat. Tour.* **2016**, *15*, 55–65, doi:10.1016/j.jort.2016.04.003.
61. Pastore, C.L. Skiing Turns through the Timber: Cutting a Trail toward Multi-Use, Ecological Forestry. *Northeast. Nat.* **2017**, *24*, 22–44, doi:10.1656/045.024.s711.
62. Du Preez, M.; Lee, D.E. The economic value of the Trans Baviaans mountain biking event in the Baviaanskloof Mega-Reserve, Eastern Cape, South Africa: A travel cost analysis using count data models. *J. Outdoor Recreat. Tour.* **2016**, *15*, 47–54, doi:10.1016/j.jort.2016.07.003.
63. Duglio, S.; Beltramo, R. Estimating the economic impacts of a small-scale sport tourism event: The case of the Italo-Swiss mountain trail CollonTrek. *Sustainability* **2017**, *9*, 343–35, doi:10.3390/su9030343.
64. Dar, R.A.; Rashid, I.; Romshoo, S.A.; Marazi, A. Sustainability of winter tourism in a changing climate over Kashmir Himalaya. *Environ. Monit. Assess.* **2014**, *186*, 2549–2562, doi:10.1007/s10661-013-3559-7.
65. Gilaberte-Búrdalo, M.; López-Martín, F.; Pino-Otín, M.R.; López-Moreno, J.I. Impacts of climate change on ski industry. *Environ. Sci. Policy* **2014**, *44*, 51–61, doi:10.1016/j.envsci.2014.07.003.

66. Burtscher, M.; Vonbank, K. Higher: High-altitude medicine and asthma [Höher: Höhenmedizin und Asthma]. *Atemweg. Lungenkrank.* **2016**, *42*, 580–584.
67. Hartman-Ksycińska, A.; Kluz-Zawadzka, J.; Lewandowski, B. High altitude illness. *Przegl. Epidemiol.* **2016**, *70*, 490–499.
68. Stadelmann, K.; Latshang, T.D.; Lo Cascio, C.M.; Clark, R.A.; Huber, R.; Kohler, M.; Achermann, P.; Bloch, K.E. Impaired postural control in healthy men at moderate altitude (1630 M and 2590 M): Data from a randomized trial. *PLoS ONE* **2015**, *10*, doi:10.1371/journal.pone.0116695.
69. Burtscher, M.; Mairer, K.; Wille, M.; Gatterer, H.; Ruedl, G.; Faulhaber, M.; Sumann, G. Short-term exposure to hypoxia for work and leisure activities in health and disease: Which level of hypoxia is safe? *Sleep Breath.* **2012**, *16*, 435–442, doi:10.1007/s11325-011-0521-1.
70. Woods, D.R.; Boos, C.; Roberts, P.R. Cardiac arrhythmias at high altitude. *J. R. Army Med. Corps* **2011**, *157*, 59–62, doi:10.1136/jramc-157-01-10.
71. Burtscher, M. Effects of acute altitude exposure: Which altitude can be tolerated? [Auswirkungen akuter Höhenexposition: Welche Höhe ist gesundheitlich verträglich?]. *Wien. Med. Wochenschr.* **2010**, *160*, 362–371, doi:10.1007/s10354-010-0742-0.
72. Hull, C.M.; Rajendran, D.; Fernandez Barnes, A. Deep vein thrombosis and pulmonary embolism in a mountain guide: Awareness, diagnostic challenges, and management considerations at altitude. *Wild. Environ. Med.* **2016**, *27*, 100–106, doi:10.1016/j.wem.2015.10.010.
73. Prommersberger, K.-J.; Mühldorfer-Fodor, M.; Kalb, K. Hand injuries in mountain sports [Handverletzungen beim Bergsport]. *Unfallchirurg* **2015**, *118*, 515–519, doi:10.1007/s00113-015-0018-7.
74. Ciopińska, K.; Brzek, A.; Gaździk, T.S. The frequency of occurrence injuries of fingers in sport climbers [Czestotliwość wystepowania urazów palców rak u wspinaczy sportowych]. *J. Orthop. Trauma Surg. Relat. Res.* **2012**, *29*, 41–49.
75. Dumas, G.; Lebeau, J.; Perottino, F. Secondary facial trauma linked to mountain sports [Traumatologie faciale liée à la pratique d'un sport de montagne]. *Inter Bloc* **2012**, *31*, 45–50, doi:10.1016/j.bloc.2012.01.004.
76. Perottino, F.; Lebeau, J.; Briccarello, G.; Hajdarevic, A.; Dumas, G. Winter and summer mountain sports and facial trauma [Traumatologia facciale legata a sport invernali ed estivi di montagna]. *Med. Sport* **2009**, *62*, 481–491.
77. Fedosov, A.; Knaving, K.; Mencarini, E.; Langheinrich, M.; Wózniak, P. Towards understanding digital sharing practices in outdoor sports. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Heidelberg, Germany, 12–16 September 2016; pp. 861–866.
78. Elsensohn, F. Treatment of casualties in hostile environments: Emergency medicine in mountain sports. *Extreme Sports Med.* **2016**, 77–96, doi:10.1007/978-3-319-28265-7_8.
79. Szary, A.-L.A. Towards experimental mountaineering? Perspective on two tours of Alpine borders (Lionel Daudet/John Harlin, 2011–2012) [Vers un alpinisme expérimental? Deux tours des frontières alpines en perspective, Lionel Daudet/John Harlin, 2011–2012]. *Rev. Geogr. Alp.* **2013**, *101*, 1–15, doi:10.4000/rga.2131.
80. Chamarro, A.; Fernández-Castro, J. The perception of causes of accidents in mountain sports: A study based on the experiences of victims. *Accid. Anal. Prev.* **2009**, *41*, 197–201, doi:10.1016/j.aap.2008.10.012.
81. Muhar, A.; Schauppenlehner, T.; Brandenburg, C.; Arnberger, A. Alpine summer tourism: The mountaineers' perspective and consequences for tourism strategies in Austria. *For. Snow Landsc. Res.* **2007**, *81*, 7–17.
82. Faulhaber, M.; Flatz, M.; Gatterer, H.; Schobersberger, W.; Burtscher, M. Prevalence of cardiovascular diseases among alpine skiers and hikers in the Austrian Alps. *High Alt. Med. Biol.* **2007**, *8*, 245–252, doi:10.1089/ham.2007.1005.
83. Lee, S.K.; Hausmann, M.R. Epidemiology and injury prevention in snowboarders and skiers. *Atlas Hand Clin.* **2006**, *11*, 79–86.
84. Lefèvre, B. Contribution to the study of the social structure of high-altitude mountain activities: Example of users in the Mont-Blanc massif [Contribution à l'étude de la structuration sociale des pratiques de haute montagne: L'exemple des usagers dans le massif du Mont-Blanc]. *Rev. Geogr. Alp.* **2004**, *92*, 67–84, doi:10.3406/rga.2004.4664.
85. Burtscher, M. Exercise capacity for mountaineering: How much is necessary? *Res. Sports Med.* **2004**, *12*, 241–250, doi:10.1080/15438620490497332.
86. Kulczycki, C.; Halpenny, E.A. Sport cycling tourists' setting preferences, appraisals and attachments. *J. Sport Tour.* **2014**, *19*, 169–197, doi:10.1080/14775085.2015.1070741.

87. Dolinting, E.E.; Yusof, A.; Soon, C.C. Understanding sport tourists' motives and perceptions of Sabah, Malaysia as a sport tourist destination. *J. Phys. Educ. Sport* **2013**, *13*, 547–556, doi:10.7752/jpes.2013.04086.
88. Laesser, C. Health travel motivation and activities: Insights from a mature market—Switzerland. *Tour. Rev.* **2011**, *66*, 83–89, doi:10.1108/16605371111127251.
89. Lusar, A.C.; Faixa, T.R.; Fernández-Castro, J. Risk judgements in sport: An experimental approach with hikers [Juicios de riesgo en el deporte: Una aproximación experimental en excursionistas]. *Rev. Psicol. Deporte* **2010**, *19*, 203–217.
90. Hardiman, N.; Burgin, S. Visit impacts and canyon management in the Blue Mountains, Australia: Canyoners' perspectives and wilderness management. *Manag. Leis.* **2010**, *15*, 264–278, doi:10.1080/13606719.2010.508667.
91. Mann, C.; Absher, J.D. A two stage analysis of recreation conflict as a basis for management strategies in the Black Forest: A methodological contribution. *For. Snow Landsc. Res.* **2007**, *81*, 123–138.
92. Mann, C.; Schraml, U. Application and test of an analysis model to explain impact perceptions in recreation areas [Anwendung und Test eines Analysemodells zur Erklärung von Störeffekten in Erholungsräumen]. *Allg. Forst Jagdztg.* **2006**, *177*, 224–234.
93. Edmonds, W.A.; Tenenbaum, G.; Kamata, A.; Johnson, M.B. The role of collective efficacy in adventure racing teams. *Small Group Res.* **2009**, *40*, 163–180, doi:10.1177/1046496408328489.
94. Demirhan, G. Mountaineers' risk perception in outdoor-adventure sports: A study of sex and sports experience. *Percept. Mot. Skills* **2005**, *100*, 1155–1160, doi:10.2466/pms.100.3c.1155-1160.
95. Creyer, E.H.; William, R.; Evers, D. Risky recreation: An exploration of factors influencing the likelihood of participation and the effects of experience. *Leis. Stud.* **2003**, *22*, 239–253, doi:10.1080/026143603200068000.
96. Agresti, B. Perception and reality of the mountain: The point of view of a first-aid worker [La montagne: un milieu à risques? Perceptions et réalités de l'univers montagnard par les pratiquants et les habitants, le regard du secouriste]. *Bull. d'Assoc. de Geogr. Fr.* **2003**, *1*, 6–12, doi:10.3406/bagf.2003.2305.
97. Chavez, D.J. Bunny hops or vegetable tunnels? Perceptions and preferences of mountain bike riders on the San Jacinto Ranger District. *West. J. App. For.* **1997**, *12*, 44–48.
98. Schuett, M.A. State park directors' perceptions of mountain biking. *Environ. Manag.* **1997**, *21*, 239–246, doi:10.1007/s002679900023.
99. Mondragon-Torres, A.F. Work in progress—Ultra-low power and the millennium generation. In Proceedings of the 2010 IEEE Frontiers in Education Conference, Arlington, VA, USA, 27–30 October 2010; Art. No. 5673433.