

Article

Long-Term Sustainable Development of Tourism in South Tyrol: An Analysis of Tourists' Perception

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Abstract: Although sustainable tourism concepts are gaining in importance everywhere, related research is quite fragmented with many studies concentrating on environmental sustainability. Seeking to contribute to the general discussion, we first examine the perceptions of sustainability among tourists using a best–worst scaling method applied to important aspects of sustainable tourism. Our results show that experiencing nature in an intense and profound way is considered the most important aspect of sustainable tourism whereas grappling with the culture of the host region is perceived as the least important aspect of sustainable tourism in our sample. Second, we analyze if socio-demographic and/or other factors have significant implications for the propensity to increase expenditures for sustainable holiday offers. Applying a simple regression model, we can show that age has a significant and positive impact on the propensity to spend more on a sustainable holiday offer such as overnight stays in an accommodation that is carbon-neutral. Other socio-demographic variables such as gender, education, and income are not significant. Moreover, hotel stars and average expenditures per person per night are significant and have a positive effect on the propensity to spend more on carbon-neutral housing. Two simple policy implications can be drawn: (1) sustainable tourism experiences should prioritize landscape and natural beauty; and (2) sustainable tourism offers are best suited for higher-priced and/or higher starred hotels.

Keywords: food tourism; sustainable tourism; perceptions of sustainability; best–worst scaling; regression

1. Introduction

Tourism in mountain areas can assume multiple forms including eco-, ski-, trekking-, hiking- and ethno-cultural tourism. However, as mountain areas are often considered economically disadvantaged and ecologically vulnerable, there is a growing consensus among industry professionals and scholars on the importance of establishing long-term sustainable tourism activities.

A long-term vision on sustainability may help to turn the delicate relationship between tourism activities and a mountain environment into being mutually beneficial. On the one hand, a mountain environment is a crucial asset for many forms of tourism and related activities. Against contrary belief, the tourist appreciation of mountains is fairly a recent phenomenon in Europe dating back to the 19th century [1]. During the Romantic Movement, individuals started valorizing the beauty of a nature that had previously appeared hostile and scary [1]. On the other hand, tourism activities can also be beneficial for a mountain environment. Tourist operators have created many innovative products in particular due to the growing ‘green’ or outdoor tourist segment [2]. For instance, the alpine network “Dolomiti Superski” is a platform to share information regarding slopes and lifts, local and regional

events, gastronomy, and weather [3]. Beneficial tourism activities in mountain areas also contribute significantly to maintain regions that would otherwise depopulate. Furthermore, the contribution of mountain tourism in maintaining biodiversity [4] and in promoting growth has led many scholars to consider it as a promoter of sustainable rural development in mountain areas [5,6].

European policy makers have recognized these developments. Regional development policies have been changed, moving away from the 1970s paradigm, which was devoted towards intensive productive processes and a highly mechanized agriculture. The new approach is based on a multi-functional agriculture focusing on the preservation of the countryside (EEC Reg. No. 1760/87), the conversion towards less intensive production processes (EEC Reg. No. 1094/88) and the improvement of the quality of life for individuals (EEC, 1988). In this context, mountain settings acquired new functions and EU policy now considers mountain environments as a favorable place for physical and mental regeneration. In this context, mountain tourism is explicitly favored.

This article focuses on rural tourists in a mountainous alpine setting (South Tyrol) and surveys their perception of sustainability in two main aspects namely the importance of experiencing unspoiled nature and the choice of carbon-neutral holiday accommodation.

Within this focus, the main aim of this paper is to answer two main questions as follows:

- (1) What is the perception of sustainability among tourists of South Tyrol?
- (2) Which socio-demographic and/or other factors may affect the propensity to increase expenditures connected with a sustainable holiday offer?

We answer the aforementioned questions by means of a case study from the South Tyrol and we provide some recommendations for both policy makers and practitioners.

2. Literature Review and Methodology

2.1. Literature Review and Theoretical Framework

Although sustainable tourism is gaining importance around the world, research on the subject is still quite fragmented. Most studies analyze single aspects of sustainable tourism and often concentrate on environmental sustainability [7]. In this paper, we aim to detect whether it is possible to infer socio-demographic characteristics of sustainable tourists in order to enhance knowledge on global segments for sustainability. Based on findings in the related literature on farm and rural tourism, we postulate that alpine, sustainability-conscious tourists not only are environmentally aware, but they are predominantly middle aged women with high education and income levels [8,9]. Thus, we empirically test a number of propositions using the propensity to increase expenditures for a carbon-neutral low energy accommodation, as a simple proxy for an individual's attitude towards sustainable tourism. We employ a basic regression model in order to test the following five hypotheses:

H1: Female respondents have a positive impact on the propensity to increase expenditures for a carbon-neutral low energy accommodation

H2: Age of the respondents has a positive effect on the propensity to increase expenditures for a carbon-neutral low energy accommodation

H3: The level of education of respondents has a positive impact on the propensity to increase expenditures for a carbon-neutral low energy accommodation

H4: The higher the accommodation's star rating, the higher is the propensity to increase expenditures for a carbon-neutral low energy accommodation

H5: Family income has a positive effect on the propensity to increase expenditures for a carbon-neutral low energy accommodation

2.2. Case Study Area: South Tyrol

The study focuses on the South Tyrol area of the Italian region of Trentino Alto-Adige (see Figure 1). The region is a hallmark for alpine tourism (hiking in summer and ski tourism in winter)

as well as for food and wine tourism [10,11]. Besides, since three minorities co-exist—the German, the Ladin, and the Italian ones—one of the regional assets relies also on the different cultural legacies and eno-gastronomical terroirs. Among tourists, Germans and Italians are the most important groups. This is particularly relevant for the current study as the cultural identity conveyed through the iconic products of the different host communities has a decisive influence on the type of perception of sustainability among tourists. Previous studies, for instance, have shown that German and Italian rural and farm tourists have different modes of consumption of the “Alpine space”. For instance, Germans are much fonder of rambling and trekking than Italians [12].

Because of the German and Italian legacies, South Tyrol is an ideal and neutral setting to measure tourists’ perception of sustainability of the Alpine tourism industry. Furthermore, the region is recording since years a constant tourism growth. In 2016, the number of total overnight stays was 11,679,698, or +6% with respect to the previous year (www.provincia.bz.it/astat/it/mobilita-turismo/turismo.asp).



Figure 1. Italy and South-Tyrol.

2.3. Methods of Data Collection and of Data Analysis

In order to explore the perceived importance of sustainability aspects for tourists in South Tyrol, we conducted a survey in German, Italian, and English using the online site “deinsuedtirol.com”. Participation in the survey was promoted by a graphical advertisement overlay appearing to every website visitor in an emphasized manner. In total, 335 respondents took part in the survey. The usable sample size was reduced to 269, due to missing observations that are essential for the subsequent best–worst scaling analysis.

Concerning the latter, the items of the questionnaire were mandatory and aimed to identify the most and the least important aspects of sustainable tourism as perceived by the respondents. Therefore, both the questions and the pre-defined answer options were designed such that the answers could be evaluated according to the best–worst scaling approach, a methodology developed by Jordan Louviere in 1987 [13]. The approach, which is also referred to as ‘maximum difference scaling’ assumes that there is some underlying subjective dimension, such as ‘degree of importance’ or ‘degree of interest’, and the researcher wishes to measure the location of some sets of objects along this dimension. There

is no tendency in the rating scale, since there is only one option to choose, something that is ‘most’ or ‘least’ important [14]. Technically, the best–worst approach represents a process of picking the two items that are the farthest apart, producing an ordinal ranking of the items for each candidate. Several studies [14–16] show that consumers find the task straightforward and quick to complete. The major advantage to the researcher is the simplicity of the analysis, which yields a coefficient for each choice. The coefficients are standardized ratios, the so-called standard scores, which can be compared directly, a property absent in standard ratings or ranking methods. The standard score is computed with help of the formula

$$\text{Standard Score} = \frac{\text{Count}_{\text{best}} - \text{Count}_{\text{worst}}}{m \cdot n}$$

where

$\text{Count}_{\text{best}}$ total number of times an attribute was most important

$\text{Count}_{\text{worst}}$ total number of times an attribute was most important

n number of valid questionnaires

m frequency of the appearance of each attribute in the design

For our survey, we used a simplified version of the best–worst method. In order to obtain well-grounded data, the best–worst method suggests designing a series of choice sets where the items are compared to various objects. For this paper, the number of sets was reduced into a single set. This was done in order to keep the time effort for respondents at a user-friendly level. It implies that the frequency of the appearance of each attribute in the design is equal to one ($m = 1$), leaving only n as a single variable in the denominator. The simplified standard score formula is

$$\text{Standard Score} = \frac{\text{Count}_{\text{best}} - \text{Count}_{\text{worst}}}{n}$$

3. Results

3.1. Sample Description

As mentioned, the final sample consists of 269 respondents, 153 women and 116 men. Regarding provenance, 63.3% are German tourists, 24.7% are Italians (not from South Tyrol), and 12% are from remaining nationalities. As far as the age of respondents is concerned, respondents aged 18–30 are overrepresented (65.8%), while respondents aged 31–40 account for 11.5%, those aged 41–50 account for 10.8%, and respondents aged 50+ account for 11.8%. Regarding education, most respondents display a high level of education, in fact high school and university graduates compose almost 70% cases. While 48.7% of respondents have never visited South Tyrol, 51.3% indicated that they visited the region at least once. Concerning the type of accommodation, 46.1% declared having chosen a hotel for their holiday. A three-star hotel is the most common accommodation type category among respondents. Both results represent the most probable outcome taking into account that three-star hotels are the most widespread accommodation type. Most respondents prefer a low to medium hotel price segment. Given the age distribution, one-quarter of respondents have a family or household income up to 10,000 €/year, 21% have incomes from 10,000–20,000 €/year, and 18% have incomes from 20,000–30,000 €/year.

3.2. Data Analysis

In the following, we analyze respondents’ perception of sustainable tourism. Specifically, we first show how respondents allocate their best–worst vote over five listed aspects of sustainable tourism. Furthermore, we show the descriptive analysis of the questions concerning holiday expenditure of carbon-neutral holiday accommodation. Finally, we display the results of a regression analysis in order to show which factors affect the propensity to pay higher prices for a carbon-neutral holiday accommodation.

Perception of Sustainable Tourism

Using best–worst scaling, respondents were invited to score five important aspects of sustainable tourism, which were formulated in reference to sustainable tourism concepts and in a way such that individuals could easily relate them to typical behavioral decisions during a holiday visit.

These aspects are numbered 1 through 5 in the subsequent Figures and are as follows:

- (1) To experience nature in an intense and profound way.
- (2) To care about the origin and sustainability of food and other products bought during the holiday.
- (3) To grapple with the culture of the host country and to adapt oneself to new environments.
- (4) To choose a sustainable and eco-friendly accommodation.
- (5) To use public transportation or other means that do not harm the environment.

Figure 2 depicts the results of the best–worst scaling analysis listing aspects in descending order. Experiencing nature scored the highest standard score whereas grappling with the culture of the host country was perceived as the least important aspect of sustainable tourism. Hence, nature beats culture in terms of important aspects related to sustainable tourism.

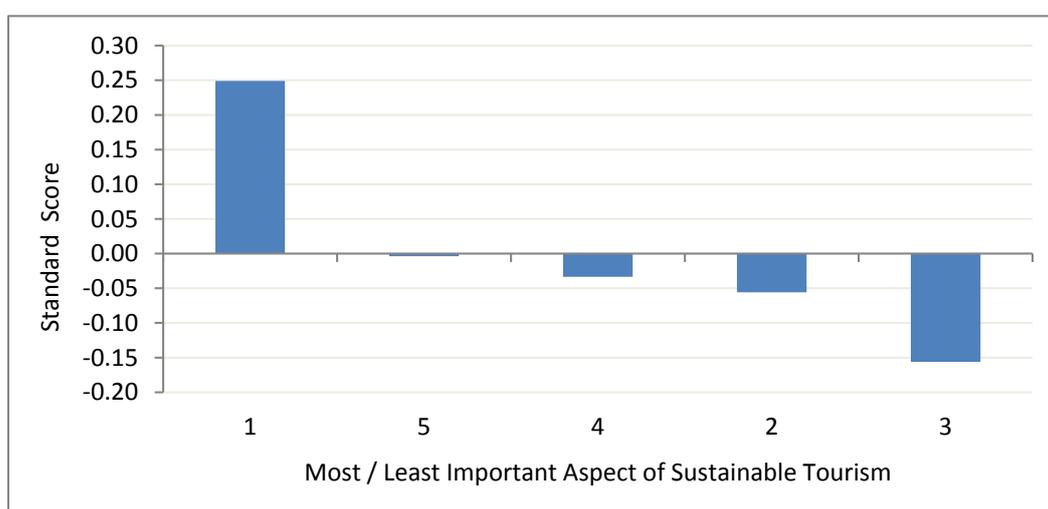


Figure 2. Best–worst scaling; standard score graph for aspects of sustainable tourism. Graph based on own research. Considering the whole dataset ($n = 269$), ordered from the most important to the least important aspect of sustainable tourism. The five sustainability aspects are as follows: (1) to experience nature in an intense and profound way; (2) to care about the origin and sustainability of food and other products bought during the holiday; (3) to grapple with the culture of the host country and to adapt oneself to new environments; (4) to choose a sustainable and eco-friendly accommodation; (5) to use public transportation or other means that do not harm the environment.

Figure 3 compares the standard scores grouped by region of origin of the respondent (Germany, South Tyrol and Italy without South Tyrol). Thereby, a correlation in preferences between Germany and South Tyrol can be observed. South Tyrolean respondents tend to have the same understanding of spending a holiday in a sustainable way as Germans do, whereas Italians show differing preferences. Aspect number 5 is the only one not conforming this trend.

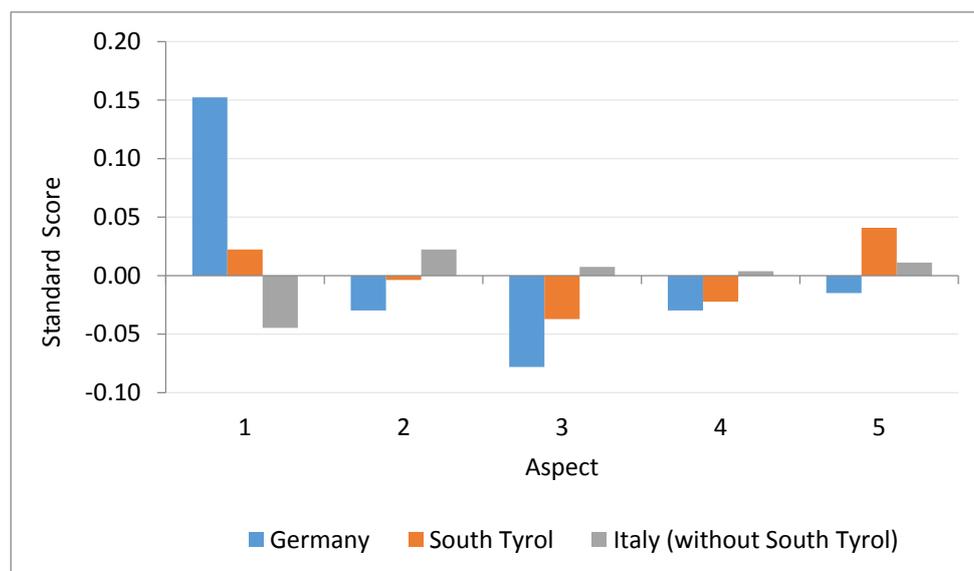


Figure 3. Best–worst scaling; standard score for aspects of sustainable tourism. Country of origin of respondents graph based on own research. Considering the three most important regions of origin ($n = 245$) and the five sustainability dimensions, namely: (1) to experience nature in an intense and profound way; (2) to care about the origin and sustainability of food and other products bought during the holiday; (3) to grapple with the culture of the host country and to adapt oneself to new environments; (4) to choose a sustainable and eco-friendly accommodation; (5) to use public transport or other means that do not harm the environment.

3.3. Results of the Regression Analysis

Next, we estimate a simple regression model with four socio-economic variables (gender, age, education, family income) and two control variables (hotel stars and average expenditures per night/room) as independent variables and the propensity to increase expenditures for a carbon-neutral accommodation as the dependent variable. This propensity to spend more for a carbon-neutral housing is measured on a scale of 1 to 6, where 1 means up to 5% more, 2 up to 10% more, 3 up to 20% more, 4 up to 30% more, 5 up to 50% more, and 6 more than 50%. We want to identify if the stated propensity to increase expenditures knowing that the accommodation is a carbon-neutral low energy house depends on specific socio-demographic variables related to the respondents. Note that due to missing observations, the usable sample size for regression analysis was reduced to 115.

As indicated, female respondents are expected to have a positive impact on the propensity to increase expenditures for a carbon-neutral accommodation. Gross annual family income presumably has a direct and positive impact on the dependent variable. Age should also be positively related with the dependent variable, as incomes and holiday expenditures tend to increase with age (or up to a certain age). In addition, higher education levels should increase the propensity to raise holiday expenditures for carbon-neutrality, as they tend to imply higher paid jobs, an increased awareness, or concern about sustainability issues. The variable ‘average expenditure’ (per person per night) may also contribute positively to the dependent variable because it may be linked to income and concern about sustainability. We can also expect a positive relation of the hotel star rating and the propensity to increase expenditures for a carbon-neutral accommodation. From the regression analysis, we obtain a table estimated coefficients reported in Table 1.

Table 1. Regression analysis: dependent variable is the propensity to increase expenditures knowing that the accommodation is a carbon-neutral.

	Coefficient	Std. Error	t-Statistic	Sig. Level
Constant	1.78	5.12	0.35	0.73
Gender (Female = 1)	−0.99	1.48	−0.67	0.50
Age	0.16 *	0.07	2.38	0.02
Education	−0.68	0.78	−0.88	0.38
Hotel Stars	1.55 *	0.80	1.95	0.05
Average expenditure	0.031 *	0.02	1.96	0.05
Family income (in 1000 Euro)	0.01	0.03	0.38	0.71

Source: Own estimation ($n = 115$, $R^2 = 0.252$). Dependent variable is the propensity to increase expenditures knowing that the accommodation is carbon-neutral. Note: * = coefficient is significant at the 5% level (two-tailed).

Breaking down the regression coefficients of the six independent variables from Table 2 in detail, three of them are significant. Age is the only socio-demographic variable with a coefficient that is significantly different from zero. It has a positive effect on the propensity to spend more on carbon-neutral housing. In addition, the control variables hotel stars (measured from one to six including the 4S category) and average expenditures per person per night are significant. Staying at a higher-rated hotel and having higher average expenditures for accommodation would both increase the propensity to increase expenditures for carbon-neutral housing. The other dependent variables of the regression model—including gender, education, and income—are not significant. The results obtained by the regression analysis indicate that the underlying data only partially confirm the proposed hypotheses. H2 and H4 can be confirmed, but H1, H3, and H5 cannot.

Next, we analyze the correlation matrix of the independent variables in order to identify any critical correlations between them. As can be seen from Table 2, none of the significant correlation coefficients exceeds a value of 0.5. However, given the statistically significant correlations above 0.4 between age and education (0.41) as well as between hotel stars and average expenditure per night and person (0.48), a moderate level multi-collinearity may be present in the estimated model.

Table 2. Correlation matrix of the independent variables in the regression analysis.

	Gender	Age	Education	Stars	Average Expenditure	Family Income (in €1000)
Gender	1	−0.12 *	0.01	−0.10	−0.08	−0.23 **
Age	−0.12 *	1	−0.41 **	0.14 *	0.12 *	−0.14 *
Education	0.01	−0.41 **	1	0.11 *	−0.02	0.14 *
Stars	−0.10	0.14 *	0.11 *	1	0.48 **	0.31 **
Average expenditure	−0.08	0.12 *	−0.02	0.48 **	1	0.23 **
Family income (in €1000)	−0.23 **	0.14 *	0.14 *	0.31 **	0.23 **	1

Graph based on own research ($n = 115$). Note: * = Correlation is significant at the 5% level (two-tailed), ** = Correlation is significant at the 1% level (two-tailed).

4. Discussion and Conclusions

In this paper, we studied the perception of sustainability among tourists and if socio-demographic and/or other factors have significant implications for the propensity to increase expenditures for sustainable holiday offers. Both objectives were addressed using a survey of tourists visiting the mountainous region of South Tyrol. The survey generated data on gender, age, educational levels, accommodation star ratings, average overnight-stay expenditures per person, annual family incomes, as well as the respondent's propensity to increase expenditures sustainable holiday offers. Tourist perceptions of sustainability were analyzed using a best–worst scaling method applied to important aspects of sustainable tourism in a mountain area. To experience nature in an intense and profound way was considered the most important aspect of sustainable tourism whereas to grapple with the culture of the host region was perceived as the least important aspect of sustainable tourism. Hence, it

seems that in the mind-sets of tourists, sustainable tourism-related aspects are biased by environmental sustainability [17].

To identify relevant socio-demographic or other factors that may influence the propensity to increase expenditures related to a sustainable holiday offer (e.g., carbon-neutral accommodation), we use a simple regression model. Age has a positive effect on the propensity to spend more on carbon-neutral housing and is the only socio-demographic variable that is significantly different from zero. Moreover, hotel stars and average expenditures per person per night are significant and have a positive effect on the propensity to spend more on carbon-neutral housing. Gender, education, and income do not have a significant on the propensity to spend more on carbon-neutral housing. Considering that higher overnight-stay prices go hand in hand with higher accommodation stars, it can also be stated that upper-class accommodation customers tend to have a higher willingness to pay higher prices for sustainable holiday offers such as carbon neutral housing.

A simple and straightforward policy implication from our study is that sustainable tourism offers are best suited for higher-priced and/or higher starred hotels. Moreover, as we observe that nature beats culture in terms of an important perception related to sustainable tourism, policy makers should prioritize experiences related to landscape and natural beauty.

Our paper confirms previous findings that examine environmental perceptions of tourists. Furthermore, our research confirms the fact that alpine tourism is a sector still in evolution. The ongoing debate on sustainable tourism, as well as the increasing number of tourists aged over 60, suggest that long-term sustainability is a sound repositioning forms also for alpine tourism operators. Of course, this study suffers from some limitations. First, we employ only a convenience sample. Second, the regression model may exclude factors, which could have an impact on the respondent's propensity to increase expenditures knowing that the accommodation is carbon-neutral. These factors may relate to other social stimuli and previous experience. Nevertheless, this work serves as a starting point for further research. Such studies could try to replicate these findings in other natural settings and/or for other sustainable hotel offers (e.g., local and or organic food consumption). Moreover, it would be interesting to survey whether tourists differ in their perceptions related to sustainability when evaluating sustainability features related to city destinations.

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References

1. Sidali, K.L. Farm Tourism: A Cross-Country Empirical Study in Germany and Italy. Ph.D. Thesis, University of Bologna, Bologna, Italy, 2009.
2. Hjalager, A.M. Agricultural Diversification into Tourism. *Tour. Manag.* **1996**, *17*, 103–111. [[CrossRef](#)]
3. Fuchs, M.; Höpken, W. E-Business Horizons in the Tourism Industry—Challenges for Research and Practice. In *Food, Agriculture and Tourism—Linking Local Gastronomy and Rural Tourism: Interdisciplinary Perspectives*; Sidali, K., Spiller, A., Schulze, B., Eds.; Springer: Berlin/Heidelberg, Germany, 2011; pp. 140–160.
4. Sonnino, R. For a “piece of bread”? Interpreting sustainable development through agritourism in Southern Tuscany. *Sociol. Ruralis* **2004**, *44*, 285–300. [[CrossRef](#)]
5. Embacher, H. Marketing for agritourism in Austria: Strategy and realization in a highly developed tourist destination. *J. Tour. Res.* **1994**, *2*, 61–76.
6. Knowd, I. Tourism as a mechanism for farm survival. *JOST* **2006**, *14*, 24–42. [[CrossRef](#)]

7. Sidali, K.L.; Spiller, A.; von Meyer-Höfer, M. Consumer Expectations Regarding Sustainable Food: Insights from Developed and Emerging Markets. *IFAMA* **2016**, *19*, 141–170.
8. Sidali, K.L.; Spiller, A.; Schulze, B. (Eds.) *Food, Agri-Culture and Tourism: Linking Local Gastronomy and Rural Tourism: Interdisciplinary Perspectives*; Springer: Berlin/Heidelberg, Germany, 2011.
9. Naspetti, S.; Segale, A.; Zanolli, R. La domanda nazionale di agriturismo: Risultati di un'indagine empirica. *Genio Rurale* **1999**, *11*, 40–47.
10. Schamel, G. Bedeutung und Potential des Weintourismus in Südtirol. In *Weintourismus und Marketing*; EUL Verlag: Lohmar, Germany, 2013; pp. 139–150.
11. Schamel, G.H. Wine and culinary tourism: Preferences of experiential consumers. *BIO Web Conf.* **2017**, *9*, 03021. [[CrossRef](#)]
12. Romeiß-Stracke, F. Vorwärts: Zurück zur Natur? Trends im Tourismus und ihre Konsequenzen für den Urlaub auf dem Lande. In *Der Deutsche Landtourismus—Wege zu Neuen Gästen (Vol. 3)*; Burger, H.-G., Diehl, G., Packeiser, M., Eds.; Deutsche Landwirtschafts-Gesellschaft (DLG): Frankfurt am Main, Germany, 1998.
13. Flynn, T.N.; Marley, A.A. Best–worst scaling: Theory and methods. In *Handbook of Choice Modelling*; Edward Elgar: Cheltenham, UK, 2014; Chapter 8.
14. Cohen, S.H.; Markowitz, P. Renewing Market Segmentation: Some New Tools to Correct Old Problems. Available online: https://2016.esomar.org/web/research_papers/Conjoint-Analysis_283_Renewing-market-segmentation-br-Some-new-tools-to-correct-old-problems.php (accessed on 3 October 2017).
15. Auger, P.; Devinney, T.M.; Louviere, J.J. *Consumer's Social Beliefs, an International Investigation Using Best–Worst Scaling Methodology*; Working Paper 2004; University of Melbourne, Melbourne Business School: Melbourne, Australia, 2004.
16. Finn, A.; Louviere, J.J. Determining the Appropriate Response to Evidence of Public Concerns: The Case of Food Safety. *J. Public Policy Mark.* **1992**, *11*, 12–25.
17. Saarinen, J. Traditions of sustainability in tourism studies. *Ann. Tour. Res.* **2006**, *33*, 1121–1140. [[CrossRef](#)]



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