

Tourist's understanding of sustainable tourism

An analysis in eight countries

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Abstract—The goal of this study is to learn more about tourists' understanding of sustainable tourism. The empirical survey with over 6,000 respondents in eight countries identifies the most relevant aspects of sustainable tourism from a tourists' perspective. Overall the perception is balanced over the different dimensions. Furthermore, five different types regarding tourists' understanding of sustainable tourism are identified in a cluster analysis and a potential market size of sustainable tourism of 22% of all tourists can be identified.

Keywords-component: Sustainable tourism, understanding, perception, demand, cluster analysis

I. INTRODUCTION

Nowadays, more and more sustainable tourism products are developed. But the market knowledge is still limited. Despite existing products, it is not really clear who belongs to the target group, how large the target group is and what the typical characteristics of customers of sustainable tourism products are. Furthermore, it is not well known what the potential customers' understanding of sustainable tourism is, i.e. what characteristics are important for them and should be considered when designing a new sustainable

product in order to meet the needs of potential customers. Budeanu [1] states that the knowledge about tourists' preferences is incomplete and hinders sustainable progress in the sector.

The goal of this study is to learn more about tourists' understanding of sustainable tourism, because everybody talks about sustainability – including in the tourism sector. Sustainable tourism is also well defined in the literature. But what exactly is sustainable development from a tourist's perspective, how do tourists interpret the term sustainability and how do tourists assess the importance of sustainable development in tourism? These questions are hardly ever addressed in the scientific literature on sustainable tourism and therefore this study adds important new insights to the literature. To clarify these unanswered questions, an empirical survey confronts tourists from eight countries with different statements which describe variable attributes of sustainable tourism. In a second step, and based on the results of the above mentioned empirical survey, different types of tourists relative to their understanding of sustainable tourism are identified. This typology puts tourists with a similar understanding of sustainable tourism together into one cluster. This

helps to address the needs of the customer in an efficient and more goal-oriented way, and to identify the most interesting group of potential customers for a specific new product.

II. LITERATURE REVIEW

There are some empirical studies investigating the understanding of sustainability in general. Swisustainability [2] is one good example where the sensitivity and the behaviour of French-speaking Swiss nationals with regard to sustainability are surveyed and where different sustainability types could be identified. Manget, Roche, Münnich [3] propose another typology focusing on the ecological dimension and Gilg, Barr, Ford [4] identify four sustainability types related to their attitude towards sustainability. Looking more specifically at the understanding of sustainable tourism, the definition and understanding of sustainable tourism from a tourist's perspectives is seldom discussed in the literature. Miller, Rathouse, Scarles, Holmes and Tribe [5] present the results of a qualitative research conducted amongst members of the public in England on their understanding of sustainable tourism. Guyer and Pollard [6] look at environmental quality and find that it is perceived differently by each tourist. However, there are no studies defining economic and social sustainability from a tourist's perspective.

III. DATA AND METHODOLOGY

An online survey was designed and carried out among travellers in eight countries.* Since only tourists who are over 15 years old and who travel are allowed to answer the questionnaire, the sample of people finishing the survey is representative regarding the travelling population of a respective country and not regarding the whole population. Overall, 6,113 tourists in total and at least 750 per country answered the questionnaire completely. The respondents were asked to assess 23 statements describing sustainable tourism on a scale of 1 to 5, where the value 1 means "I strongly disagree" and the value 5 means "I strongly agree". The attributes have been derived in an interdisciplinary way including most departments of the Lucerne University of Applied Sciences and Arts. The attributes are based on an extensive interdisciplinary literature research and on existing

* The countries are: Brazil, Germany, India, Russia, Sweden, Switzerland, UK and USA:

indicator systems for sustainable tourism (e.g. Baumgartner [7], WTO [8], Clark [9], Hunter [10], Miller [11] amongst others), as is shown in more detail in Wehrli et al. [12].

IV. RESULTS

A. Descriptive results

In the following we will identify the most important aspects by looking at the share of people who rate an attribute with either the value 5 ("I strongly agree") or 4 ("I agree") as shown in Fig. 1 – Fig. 3 below. The overall perception is balanced over the different dimensions. The share of people agreeing is only below 50% for some economic attributes and for the attributes "prolonged stay" and "CO₂ - compensation". The highest share of agreement is recorded for the attribute "scenic view / cultural heritage". This is not surprising because landscape and cultural heritage are often a very important motivation to travel to a certain place and it is in the tourists own interest that they are

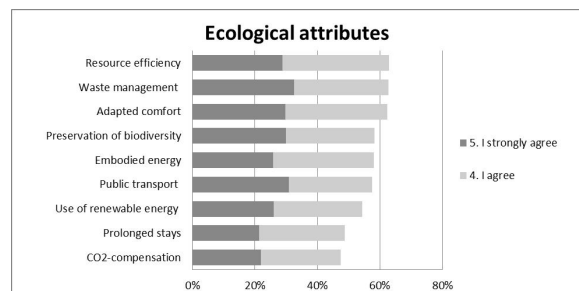


Fig. 1 Ecological attributes of sustainable tourism products

well maintained.

From an ecological point of view, the attribute "resource efficiency", i.e. the efficient use of resources, especially water and energy, avoiding the unnecessary waste of resources, is the highest rated attribute, with 63 per cent of the respondents in agreement, together with "minimisation of waste / waste management" (63%) and "adapted comfort" (62%), i.e. products with a level of comfort (food, heating, etc.) which is adapted to the local conditions (climate, sea level, etc.). These attributes can be regarded as equally important, because the Sidak T-test shows that there is no significant difference in the observed mean values on the 95% significance level.† However, the mean values of these three attributes are significantly different compared to all other ecological variables, which qualifies them as the most important topics in the ecological dimension. Comparing the characteristic of these top topics with the other

† The detailed statistical results of the Sidak T-test and all other statistical tests which are mentioned in this text are available upon request from the authors.

attributes, we conclude that travellers mostly rate what they can see, and/or experiences directly at the destination as more sustainable in the ecological dimension.

The most relevant attribute in the social dimension is “scenic view and cultural heritage” with 68% of the respondents agreeing or strongly agreeing, ‡ followed by “involvement of local community” (65%) and “considering impacts of tourists on locals” (64%) and “no discrimination” (62%) (see Fig. 2).

Regarding the economic dimension, the use of

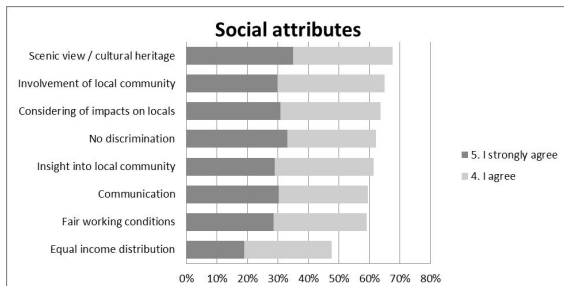


Fig. 2 Social attributes of sustainable tourism products

local products and services, regional employment and long-term regional economic well-being are seen as relevant attributes for sustainable tourism by 66%, 64% and 62% of the respondents respectively.

In general, it seems that local aspects are the

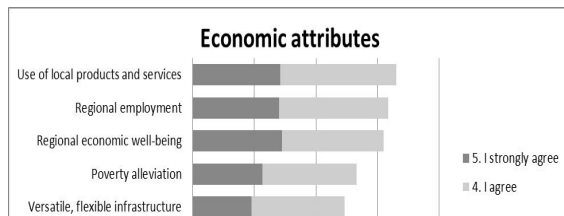


Table I RESULTS OF THE FACTOR ANALYSIS

Factors	Item-loadings	Mean ^a	SD	Eigenvalue	% of variance	Cum Pct
Factor 1: Socio-economic factor		3.01		5.43	23.6	23.6
Regional economic well-being	0.56	3.10	0.96			
Poverty alleviation	0.64	2.88	0.91			
Use of local products and services	0.62	3.18	0.88			
Regional employment	0.68	3.10	0.86			
Equal income distribution	0.65	2.83	0.85			
Variety of products	0.58	2.88	0.85			
Flexible infrastructure	0.58	2.89	0.81			
No discrimination	0.63	3.05	0.97			
Fair working conditions	0.71	2.98	0.87			
Involvement of the local community	0.66	3.14	0.86			
Transparent and credible communication	0.65	3.03	0.88			
Factor 2: Ecological factor		3.15		4.5	19.5	43.1
Compensate CO2 emissions	0.65	2.99	1.02			
Use of renewable energy sources	0.80	3.13	1.03			
Preservation of biodiversity	0.75	3.18	1.02			
Minimise waste output	0.76	3.24	1.03			
Resource efficiency in operation	0.72	3.25	1.00			
Resource efficiency in construction	0.68	3.11	0.96			
Factor 3: Local factor		3.13		3.5	15.2	58.3
Adapted comfort	0.60	3.17	0.97			
Scenic view / cultural heritage	0.61	3.29	1.01			
Insight into the local community	0.72	3.12	0.94			
Properly managed	0.61	2.93	0.98			
Considering the impact on the local population	0.55	3.20	0.95			
Public transportation	0.50	3.16	1.07			

KMO = 0.96, Bartlett 9*5183.25, p<001.

most relevant attributes of sustainable tourism, since attributes referring to local products, local community and local culture are judged as most sustainable. The attributes referring to local aspects often address more than one dimension. For example, the use of local products ensures that income remains within the region (economic dimension), and lessens negative ecological externalities because they do not have to be transported from far away. Sims [13] finds similar results focusing on the role local food can play within the sustainable tourism experiences.

B. Cluster Analysis: Typology of tourists with respect to their understanding of sustainable tourism

It is one of the main aims of the study to identify different types of tourists who can be described by their different understanding of sustainable tourism. In order to find the correct clusters, the ratings of the different statements are factor analysed in a first step to assess their impact on different types of attributes. Principal component factors with an eigenvalue of one or greater are rotated by the Varimax analysis. Variables with loadings equal or greater than 0.50 are included in a given set of attributes to decrease the probability of misclassification. Bertlett’s test of sphericity and the calculation of Kaiser-Meyer-Olkin (KMO) statistics indicate if the data appears to be suitable for the identification of orthogonal factor dimensions. A total of 23 statements from the factor analysis results in three factor groupings and explained 58% of the total variance. The results are

presented in Table 1. The table shows which attributes belong to which of the three identified

The eleven statements loading on the first factor relate to the economic as well as the social dimension of sustainability. Thus, this factor is referred to as “socio-economic factor” (Cronbach’s $\alpha = 0.93$). The second factor is referred to as “ecological factor” (Cronbach’s $\alpha = 0.90$) because the six statements loading highly on it, refer to holidays with a small impact on the environment. Further, six statements loaded on the third factor (Cronbach’s $\alpha = 0.87$). As these statements relate to the motivation of knowing local aspects and aspects related to cultural attributes the third factor is called “local factor”.

In a second step, a cluster analysis is used in order to identify different types of tourist according to their understanding of sustainable tourism. The respondents are classified into different types based

factors.

on their assessments of the three factor groups. To form the types, assessment scores on the three factors were used in a non-hierarchical K-Means clustering analysis.

The “proportional reduction of error” coefficient (PRE) and the F-Max test statistic are calculated for the cases of two to eight clusters in order to identify the optimal number of cluster [14]. Whereas the PRE point to a five- or seven-cluster solution, the F-Max test statistic indicates the five-cluster solution (see Table 2). An examination of the agglomeration coefficient for hierarchical cluster analysis using Ward’s method indicates a five-cluster solution as well. The similarity of the results from the two methods confirms the existence of five clusters.

Table II TEST STATISTICS FOR TWO TO EIGHT- CLUSTER SOLUTIONS

Number of clusters	2	3	4	5	6	7	8
PRE	0.25	0.18	0.18	0.16	0.07	0.13	0.08
F-Max	924.68	884.11	934.05	972.38	878.68	913.03	886.97

C. Typology

Looking at the final cluster centres, five types who differ in their understanding of sustainable tourism are identified (see Table 3). An overview of these different types shows two major groups (57.6% in total): the balanced type (32.6%) and its opposite, the sceptic (25%).

The balanced type (cluster 1 in Table 3) has an above average share of agreement (values of 4 and 5) in all dimensions and has therefore a broader

understanding of the different dimensions of sustainable tourism. Tourists from the balanced type more often know sustainable tourism products and book them more often than tourists from other groups.

The sceptic type (cluster 2) has a critical attitude, and rates all attributes clearly lower, i.e. agrees much less with the statements about sustainable tourism in all dimensions.

Table III RESULTS OF THE NONHIERACHICAL CLUSTER ANALYSIS^a

Factor	Cluster means				
	Cluster 1:	Cluster 2:	Cluster 3:	Cluster 4:	Cluster 5
Socio-economic	0.65	-0.70	0.60	0.19	-0.93
Ecological	0.54	-0.64	0.14	-1.10	0.85
Localised	0.44	-0.61	-1.07	0.85	0.09
Cluster size	1994	1530	751	916	922
Percentage of respondents	32.6%	25.0%	12.3%	15.0%	15.1%

a. The cluster descriptions are based on normalized factor scores with a mean of zero and a standard derivation of one.

Furthermore, there are three strong minorities: the socio-economic (cluster 3), localised (cluster 4) and ecological type (cluster 5) which incorporate a share of totally 42.4% of the respondents. These three types have higher agreement rates with respect to specific aspects of sustainable tourism.

The ecological type (15.1%) considers ecological aspects to be particularly relevant for sustainable tourism based on the above average share of agreement in the ecological attributes. This type has a remarkably high share of agreement with CO₂-compensation (67%).

The localised type (15.0%) especially rates the attributes related to local aspects of sustainability and to culture as relevant for sustainable tourism. They especially agree with the statement concerning the insight into the local community, the involvement of the local community and the impact of tourism on the local population and their culture as well as respecting the needs and traditions of the local population. Furthermore, the localised type also wants to be sure that the local community benefits from tourism. Additionally, this type also agrees with the importance of a good provision of public transport to and from and at the destination, although this type has very low shares of agreement for the other ecological attributes, which for some attributes such as “use of renewable energy” are even below 10%.

The socio-economic type (12.3%) particularly considers the social (except the cultural attributes) and economic dimensions. The tourists of this type have a higher share of agreement with respect to poverty alleviation, long-term regional economic well-being, as well as a more equal income distribution within the local community. The socio-economic type also agrees with the statement, that sustainable tourism does not discriminate against either employees or guests on grounds of nationality, age, gender, disability etc., offers fair working conditions (working hours, health, safety) and offers the possibilities for continuing education. The involvement of the local community in the development of tourism is also seen as an integral part of sustainable tourism.

D. Identifying sustainability aware tourists: factors influencing the decision to book a holiday

In addition to the understanding of sustainable tourism, the people questioned were also asked how important sustainability is among other aspects when they book their vacations. Therefore, the respondent had to rank eight aspects that are relevant for booking decisions. Before sustainability is considered in the decision to book a holiday, other factors are of importance:

1. Weather/climate
2. Price
3. Accessibility to and from the destination
4. Local culture
5. Landscape

6. Food
7. Sustainability
8. Local activities

In general, the ranking above does not offer evidence for sustainability being important in booking decisions. The classical criteria such as “weather/climate”, “price”, and “accessibility to and from the destination” are clearly the most important ones. However, for 22% of the respondents, sustainability is among the top three factors. This 22% of respondents can therefore be considered as an important target group for sustainable tourism. We will call these tourists who represent the key target group for sustainable tourism the “sustainability aware tourists”. Their top three influencing factors for booking holidays are sustainability, weather / climate and accessibility, and price is only ranked fourth.

V. DISCUSSION AND CONCLUSION

This study concludes that sustainable tourism is an interesting market segment with a target group of 22% sustainability aware tourists, for whom sustainability is among the top three influencing factors while booking vacations.

Five different types regarding tourists’ understanding of sustainable tourism are identified in this study. If providers of touristic offers want to approach potential customers of sustainable products, the knowledge of the types of tourists is important because it helps to understand how to approach these potential customers. The different types could be approached as follows:

A product which should be advertised to the balanced type should be balanced over all dimensions of sustainability.

The sustainability of a product should be documented clearly and traceably in a product which has the sceptic type among its target groups, because they are sceptical and need information in order to be convinced.

A product for the ecological type should especially include ecological aspects.

A product for the localised type enables the enjoyment of an authentic holiday experience, focusing on local and cultural aspects of sustainable tourism. It especially considers local products and the involvement of the local population, and allows for insights into the local community. Finally, cultural aspects are emphasised.

A product for the socio-economic type should in particular include aspects of the social and economic dimension.

VI. LIMITATIONS

This study is based on a data set from eight different countries. It is a well understood phenomenon that people from different cultural backgrounds use answer scales in

surveys differently. The type of scale used in the study, a Likert scale, is prone to capturing response styles. Therefore it is possible that the different response styles in this data set have affected the results of the understanding of sustainable tourism as well as the clusters. In order to get more detailed insights concerning this problem, an additional analysis should be done, e.g. assessing the response patterns across all response options separately for each of the eight countries.

Another response style which is well known is referred to as social desirability. The social desirability might have affected the ranking question of the importance of different factors when booking a holiday. Some tourists who declared to take sustainability into consideration when booking may simply want to project that this is how they behave, because it is viewed as positive by society.

Furthermore, sustainability is a normative concept. Therefore, the different norms and values as well as the policies of the governments in the eight countries may have affected the results.

The concept of sustainability has a different tradition in the eight countries. E.g. in Switzerland, Germany or United Kingdom sustainability is well established and has probably a longer tradition compared with other countries as e.g. India, Russia or Brazil. This “lifecycle-effect” might explain some differences between the countries. In countries where sustainability has a long tradition tourists are more critical because they don’t believe in the concept of sustainability or are fed up with the sustainability discussions.

The results may also be affected by the different education levels in the eight countries. In the developing countries, only the well-educated and richer people travel whereas also the poorly educated people travel in the developed countries. Although demographics have not lead to clear results in the understanding of sustainable consumer behaviour in general, most studies tend to show the better the education, the more people know about sustainability affect’s their values, which enables clearer understanding and reflexions about sustainable tourism as a concept [15].

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