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Abstract

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ACTIVITY-BASED MARKET SUB-SEGMENTATION OF CULTURAL TOURISTS

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ABSTRACT

The group of cultural tourists has received a lot of attention in the past decades. Nevertheless only few attempts have been made to study the characteristics of the "culture tourism market segment". Besides, it is often implicitly assumed that this segment is a homogeneous group of tourists. The contribution of this article is twofold: First, the assumption of one homogeneous market segment is questioned by searching for sub-segment among cultural tourist in a data-driven manner. Second, this data partitioning task is achieved by using a topology representing network (TRN), methodology that allows additional insight into the similarity structure of the sub-segments identified.

INTRODUCTION

As Dewar (2000, p. 125) puts it in his entry in the encyclopedia of tourism "Defining what cultural tourism constitutes is a continuing debate. [...] culture is one of the two or three most complicated words in the English language [...] As a result, there is no shortage of attempts to define this phenomena [...] The majority of definitions suggests learning about others and their way of life as a major element." The confusion about what cultural tourism precisely means is well mirrored in the two definitions provided by the WTO (1985, in Richards, 1996, p. 23). On the one hand cultural tourism means "movement of persons for essentially cultural motivations such as study tours, performing arts and cultural tours, travel to festivals and other cultural events, visits to sites and monuments, travel to study nature, folklore or art, and pilgrimages", whereas from a broader perspective "all movements of persons [...] because they satisfy the human need for diversity, tending to raise the cultural level of the individual and giving rise to new knowledge, experience and encounters" are seen as cultural tourism.

The multitude of different definitions of cultural tourism clearly is not the best starting point for an empirical investigation. Nevertheless it is necessary to learn about the market segment of cultural tourists, as these visitors represent a highly attractive market segment (Dolnicar & Ender 2000). Not

only are cultural tourists known to spend more money per day at the destination, they are also less dependent on the main seasons in winter and summer. So, from the point of view of the consumers, the segment is worth empirical investigation in order to learn as much as possible about this group of tourists and offer them the perfectly suited product. From the supply side, cultural tourism does not suffer from a lack of attractiveness as cultural heritage usually represents a "natural" unique selling proposition that can hardly be imitated by the vast amount of competitors in the global tourism industry.

Keeping in mind the extremely high variability of definitions of culture tourism itself, the main assumption of this article is that there is a high probability that THE culture tourist does not exist as such. Instead it could be expected that the entire group of cultural tourist might be heterogeneous. This heterogeneity can be used to investigate, if sub-segments of cultural tourists can be identified. The first contribution of this work thus consists of investigating empirically if the group of cultural tourists in Austria can be further split in sub-groups. Secondly, methodology is used that not only splits the respondents in groups but also orders the resulting segment to best represent similarities between groups. The empirical basis is provided by the Austrian National Guest Survey database. The results therefore should not be generalized beyond the borders of Austria without caution. The result of this study represents a solid foundation of marketing action targeted at different kinds of cultural tourists by both the Austrian national tourism organization as well as the regional marketing organizations, a fact that is especially interesting for Austria with its rich cultural background and the attractive characteristic of the culture segment which amounted to 7 percent during the summer and 4 percent during the winter season in Austria, spends more money per day at the destination and is less concentrated at the peak season times.

CULTURAL TOURISM

As mentioned before, the definitions suggested in literature to pin down the concept of cultural tourism are extremely diverse. But probably this best mirrors the phenomenon itself. Bonink (1992, cited in Richards, 1996, p 22) roughly groups all definitions in two broad categories: the 'sites and monuments approach' and the 'conceptual approach'. The first point of view concentrates on the cultural attractions visited by tourists and thus makes measurement very easy. Sites include theatres, museums, historical sites, music and dance and similar points of attraction. The latter approach is more general and less directly measurable, with the main emphasis of the cultural tourist being to learn about the country they are visiting, especially the history, heritage and way of life.

As the definitions of cultural tourism can roughly be grouped, so can the research approaches of the past decades. Here, the contributions are split up in (1) case studies, (2) context studies, (3) managerial studies, (4) market studies and finally (5) general contributions.

Publications on cultural tourism are very often found in the form of case studies. An excellent example is provided by Richards (1996), representing the most comprehensive collection of case studies for Europe including reports from the United Kingdom, Spain, Portugal, the Netherlands, Italy, Ireland, Greece, France, Germany, Denmark and Belgium. Other recent case study contributions are provided by Kandelaars, Briassoulis & Straaten (2000) for Mexico, Lebe (1999) for Slovenia, Karpodini-Dimitriadi, Robinson & Boniface (1999) for Greece and Bleasdale, Tapsell, Robinson & Boniface (1999) for Tunesia, just to state a few.

Another line of research is the investigation of contexts, influences and interactions of cultural tourism in and with local society. Mostly it is the social interaction and influence on the local society that represents the main focus of interest. The perspectives are manifold and – besides general work on the topic - include a wide variety of special issues as e.g. gender oriented studies (Nuryanti, Soebadio, Sadli, Jamieson, 1993) or contributions focusing on religious aspects (Nuryanti, 1993, Shackley, Robinson & Boniface, 1999).

Among the publications dealing with management issues, the main emphasis is laid on managerial tasks to be customized to the cultural tourism segment (e.g. Richards, Gartner & Lime, 2000) and strategic marketing issues. (e.g. Walle, 1998). In general, this line of research is very weak in terms of quantity of publications as compared to the case studies and interdisciplinary contextual approaches.

Finally, only few studies aim at gaining insight into the market segment of cultural tourists (McIntosh, 1999; McHone & Rungeling, 1999; Oppitz, 1998; Kerstetter, Confer & Bricker, 1998; Hitrec, 1996; Kneafsey, Kockel & Kockel, 1994; Christie, 1994) and still the main focus differs strongly among the contributions.

An analysis of 155 publications dealing with cultural studies supports the rough grouping of research directions. Among the 155 book and journal publications, 29 (19 percent) deal with cultural tourism or special kinds of cultural tourism (urban tourism, heritage tourism etc.) in a very general manner, 59 (38 percent) are case studies describing and analyzing cultural tourism at one specific destination or attraction, 50 (32 percent) lay the main emphasis on contextual issues such as interaction with local culture and the social, economic and political effects of cultural tourism , 10 (6 percent) focus on managerial issues, both from the destination management and from the corporate perspective and finally the remaining 7 publications (5 percent) center around understanding and describing the group of cultural tourists. Not a single article could be found sub-samples of cultural tourists. This gap is filled by the study at hand in an empirical manner.

MARKET SEGMENTATION IN TOURISM

Data-driven segmentation is a very common practice in tourism research, as a study by Baumann (2000) demonstrates. She studied 47 applications of cluster analysis in the field of tourism published in 12 different journals during the last two decades. The results indicate that in average empirical sample sizes of 460 respondents are used for this purpose and typically between 10 and 22 variables are included, ordinal data format being most popular. Half of all studies make use of some kind of psychographic variables (including benefits) to group tourists. The grouping is based on behavioral variables in 26 percent of the cases and 21 percent combine different segmentation bases. Among the psychographic variables used, motives enjoy the highest popularity, followed by the involvement and the familiarity constructs. Finally, values are investigated in one study. Thirteen studies state to use benefits as segmentation criterion, although the variables used in these studies are very heterogeneous including conjoint results on product attribute importance, direct importance values of product features and motive statements.

Topology representing networks (TRNs, Martinetz and Schulten, 1994) are a further development of the self organizing feature map, a partitioning method similar to the traditional k-means algorithm. The TRN as well as the self-organizing feature map (SOM or SOFM, Kohonen, 1982, 1984, 1990, 1997) have not been applied in tourism were often yet (Mazanec 1994, 1995a, 1995b and Dolnicar,

1997) but will be applied here, as they offer one additional feature that enables more insight into the market structure, as will be described later.

THE EMPIRICAL SEGMENTATION STUDY

Data

The data sample used is part of the Austrian National Guest Survey conducted in the summer and winter season of 1997/1998 by the Institute of Tourism and Leisure Studies at the University of Economics and Business Administration in Vienna. In total, 10203 personal interviews were conducted. The sample representativity was assured by dividing Austria into 49 regions and picking a quota sample of tourists according to country of origin and type of accommodation. For the segmentation study of cultural tourists, only a sub-sample is included: those respondents that state the main reason for the trip to be culture or city tourism. Thus, 2492 respondents are included in the final data set used. Table 1 gives the exact number of culture and city tourists included. Also, it illustrates that only one sixth of the total sample feels as belonging to both categories.

Table 1: Cross-tabulation of city - and culture tourists

		city trip		**total**
		no	yes	
culture trip	no		993	993
	yes	1086	413	1499
total		1086	1406	2492

Among numerous pieces of information about personal characteristics of the tourists, their travel behavior and their motivations, vacation activities were questioned in the survey. Eight activity variables that are typically encountered in cultural tourism, were used as segmentation base for this study (the percentage in brackets give the proportion of all respondents / the culture tourists answering with either 'often' or 'sometimes'): organized excursions (7% / 31%), excursions (30% / 68%), shopping (53% / 79%), sightseeing (23% / 97%), museums, exhibitions (9%/ 82%), theatre, musical, opera (2% / 26%), visiting festivals, concerts (2% / 26%) and finally visiting other local and regional events (16% / 23%). For the segmentation exercise, the categories 'sometimes' and 'often' were joined, resulting in a binary data set with 1 denoting that an activity was engaged in and 0 that is has not even been tried one single time. This transformation is necessary as ordinal data does not fit the requirements when partitioning algorithms based on Euclidean distance measurements are used.

The rationale behind merging ordinal categories is twofold: (1) the main emphasis is to determine, whether the tourists engage in a certain past-times (and pay for it) or not. Thus, both the “often” and the “sometimes” category are joined in the same group, as opposed to the respondents stating never spending time on these activities, (2) using Euclidean distances when clustering is an excellent measure if either metric or binary data format is used, whereas ordinal data causes difficulties due to the fact that the distances between categories need not be equal.

Thus, the data set used includes 2492 tourists visiting Austria during either the summer season of 1997 or the winter season of 1997/1998. Eight variables that indicate the cultural activities undertaken

by these respondents are used for segmentation purposes. Some additional pieces of information are used to describe the market segments resulting from analysis.

Methodology

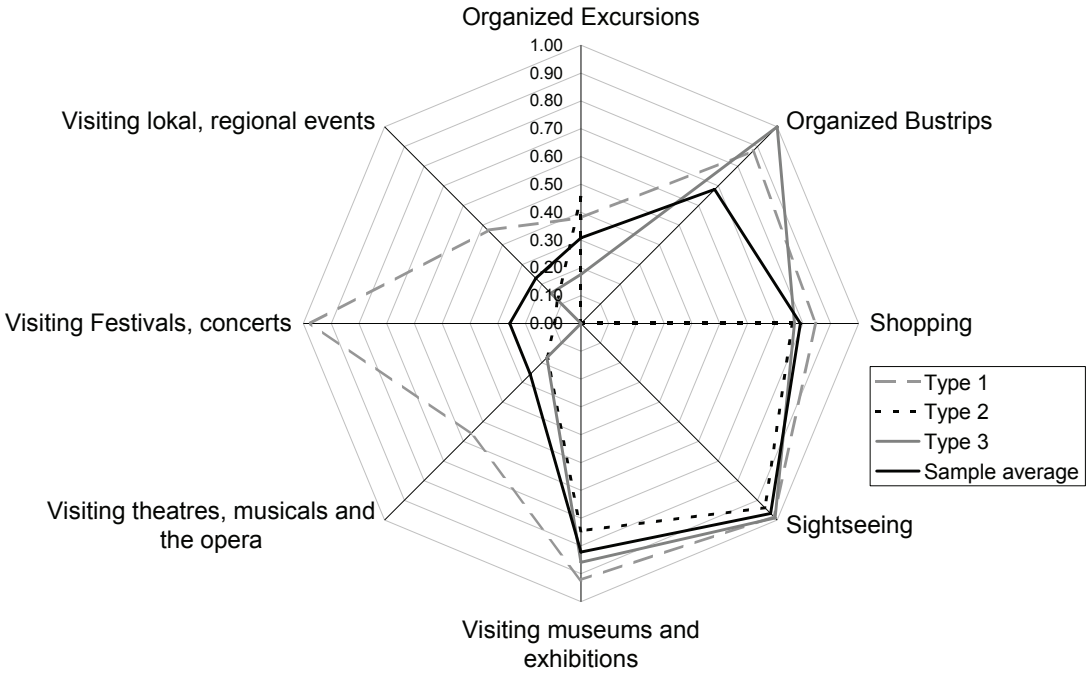
The toolkit for partitioning empirical data sets is huge (Aldenderfer & Blashfield 1984, Wedel & Kamakura 1998). Traditionally, either agglomerative hierarchical or iterative partitioning clustering algorithms are applied in tourism research in order to identify homogeneous subsets of customers. Here, the topology representing network (TRN) is used because it offers one main advantage as compared to traditional iterative partitioning approaches: it allows the interpretation of similarity ranks between different segments identified. That means that not only sub-segments of cultural travelers can be constructed, but it is also possible to tell, how similar these sub-segments are to each other. This is the reason that they are chosen for this study.

TRNs are unsupervised neural networks that search for homogeneous groups within a given data set. As it is the case for iterative partitioning algorithms, the number of groups has to be predefined as well as the start vectors for these groups, either by drawing them at random or choosing start vectors resulting from previous calculations (e.g. a clustering procedure). After these two decisions have been made, the TRN-network enters into the training run, where the entire data set is presented to the net numerous times case-wise. For each single case processed, the best representant among the starting vectors is identified, who is declared the winner and is therefore allowed to adapt vector values towards the input vector values. In addition to the winner, all other representants are allowed to 'learn' in this particular way, with nearly located representants learning at a higher rate. So the network does not only learn to represent cluster information but also to give some indication on the similarity of certain groups. After the training is completed, each case is presented to the network one more time, without vector adaptation taking place. At this final stage only winners are defined and cases are declared members of certain prototypes.

In the example described here, the starting points for the TRN training run resulted from 100 random drawings. Each training lasted for 50 epochs, which means that each data point (respondents opinion concerning the eight activities) was presented to the network 50 times. The TRN was trained using the TRN32 vector quantization program (available at http://charly.wu-wien.ac.at/software/).

In order to define the number of prototypes (groups) to be trained, 50 replications of TRN calculations with prototype numbers from 2 to 10 were calculated. Comparing the similarity of these 50 replications gives a good indication of the stability of every single number of clusters. Two solutions turned out to be superior in terms of stability: the three cluster solution and the nine cluster solution with robustness measures above 0,95. Therefore these two solutions were investigated in detail. The three cluster solution was inferior from the market segmentation point of view, as it grouped all individuals with below-average cultural activity levels (Type 2, 29 % of respondents) together and those with above-average activity (Type 1, 23 %), as illustrated in Figure 1. Only one single segment (Type 3, 48 %) had profiled characteristics. Therefore, the nine-cluster solution was preferred.

Figure 1: Three cluster solution profiles



Results

The nine cluster solution allows some interesting insights into different groups of cultural tourists. The sizes of the clusters identified are provided in Table 2.

Table 2: Sizes of the clusters identified in the nine-cluster TRN solution

Type	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	460	18.5	18.5	18.5
2.00	186	7.5	7.5	25.9
3.00	304	12.2	12.2	38.1
4.00	348	14.0	14.0	52.1
5.00	228	9.1	9.1	61.2
6.00	221	8.9	8.9	70.1
7.00	247	9.9	9.9	80.0
8.00	260	10.4	10.4	90.4
9.00	238	9.6	9.6	100.0
Total	2492	100.0	100.0	

The culture tourist types can be named and briefly described as follows (The basis for this interpretation is a profile chart as given for type 6 in Figure 2. The profile chart gives the agreement of the respective segment (bars) and the agreement of the entire group of culture tourists (line) in percent):

- **Type 1 (Standard culture tour participant)**: These tourists basically spend their entire stay in the bus, shopping, sightseeing an visiting museums. Therefore all of them state to engage in these

activities, whereas all remaining cultural activities are either not taken into consideration at all or far below average.

- **Type 2 (Super active culture freak)**: These tourists want to see and do it all. Of course, there is a danger that there are some answer tendencies included into this group as well, so if this segment is chosen for marketing action, further investigation of this particular issue would be necessary.

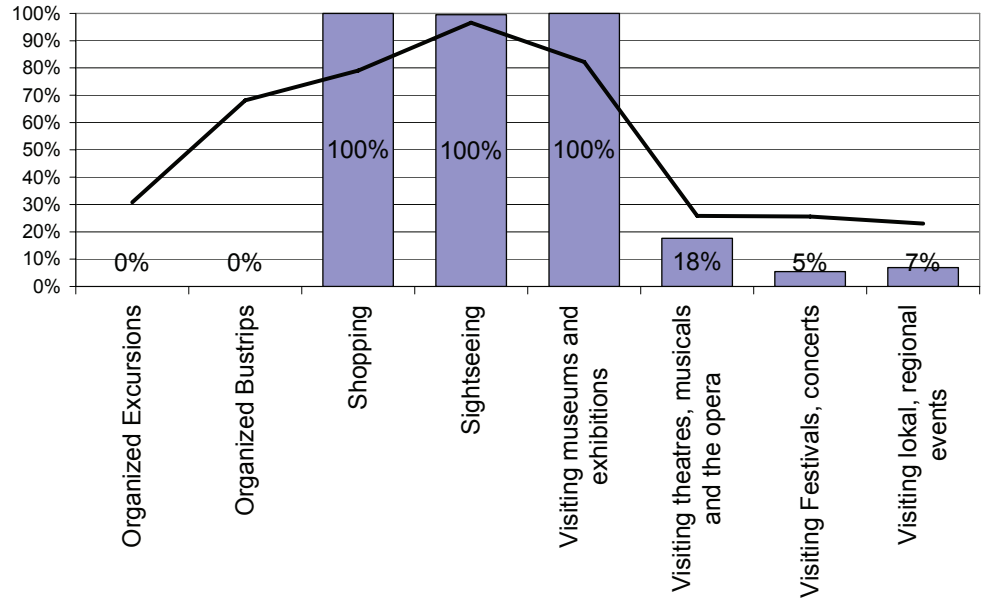
- **Type 3 (Inactive culture tourist)**: This group is the contrary case of type 2. Every single activity is rated below average and again their is a danger of hidden answer tendencies, which do not particularly worry the marketer here, as the group does not seem to be very attractive for tourism industry (at least from the point of view of segmentation variables).

- **Type 4 (Organized excursion lover**): Except for the participation in bus trips this group makes use of all cultural offers available proportionally to the sample total, but slightly below average.

- **Type 5 (Event-focused)**: This group is very active and enriches the standard culture tour program by visiting local or regional events.

- **Type 6 (Individual culture explorers**): Shopping, sightseeing and visiting museums, these activities are engaged in by every single member of this segment. Interestingly, anything including the term "organized" seems to be rejected by these travelers. This segment is very similar to type one, a fact that is supported by the neighborhood information provided by the TRN.

Figure 2: Type 6 activity profile



- **Type 7 (Theatre, musical and opera lovers)** : This segment is best described by the fact that every one of these tourists has been to the theatre, a musical or the opera at least once during the stay. But the typical cultural activities have not been sacrificed. Events on the other hand are not of interest to this group at all.

- **Type 8 (Super lean culture tour participant)**: Another group that is similar to type 1, although less than type 6: these tourists seem to fly through Austria, judging by the activity profile only. 73% participate in an organized bus trip and the only activities really undertaken are sightseeing and visiting exhibitions. Even for shopping there seems to be no time - unfortunately.

- **Type 9 (Organized culture tourists)**: The main characteristic of this segment is that every single member participates in organized excursions and organized bus trips. With shopping, sightseeing and visiting of museums being of average interest, cultural offers in the evening (opera, theatre) are not very attractive to his segment.

Ranking similarities according to the TRN result indicates – as mentioned before – that types 1 and 6 are most similar, followed by 1 and 7, 2 and 5, 4 and 6, 2 and 7 and 1 and 8. The remaining pairs (all pairs are listed according to similarity) are omitted here.

After having described the resulting segments, these groups of culture tourists need to be both validated and described according to additional pieces of information, called background variables because they were not included in the segmentation process. If the nine segments turn out not to be significantly different from each other in these variables, the usefulness of the segmentation result has to be questioned. The percent value for a number of selected variables is given in Table 3, including the p-value of the Pearson Chi2 test.

From the seasonal point of view, two segments need to be pointed out: the event-focused group (5) is strongly summer-dominated, whereas type 6 (individual culture explorers) can be found more often in winter than in summer!

Another significant difference concerns the countries of origin. German tourist can basically be found in every segment identified, Swiss tourists prefer going to theatres, the opera and musicals (7), French culture tourist have the highest probability of being member of the standard culture tour group (1) as do Italians, although many of them even prefer to super lean culture tour through Austria. British tourists can mostly be found at local or regional events (5), half of all US American culture tourists are super active culture freaks (2) or organized culture tourists (9) and finally the visitors from Spain absolutely prefer the organized version of anything as it seems: 21 percent are members of the organized excursion lovers (4) and 21 percent belong to the organized culture tourist group (9).

Different segments also significantly deviate from one another in terms of prior experience with Austria. Among the members of segment 9 (organized culture tourists) almost 50 percent have never been to Austria before, segments 3 (inactive culture tourists) and 7 (theatre, musical and opera lovers) on the other hand have the most prior experience. The intention to revisit does not differ between segments.

The mode of transportation used validates the activity type names. Both segments denoted as "organized" (type 4 and type 9) use the bus far more often than the remaining groups do. The same is true for the trip organization. Both types had the tour organized as group tour. Another fact fits into this picture very well: many members of these groups – especially of type 4 – perceive it as very important that everything is organized. Also, these respondents state that they travel in a group significantly more often than the remaining segments do.

Interestingly enough the importance of cultural offers significantly differs among the segments, with types 6, 7 and 8 showing the maximum interest.

Table 3: Non-metric background variable analysis of the nine cluster solution

		percent of type									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**p-value**
Season	summer	70	80	69	78	**89**	**43**	68	67	76	0.00
	winter	30	20	31	22	**11**	**57**	32	33	24	
Country of origin											
	Germany	12	16	17	14	9	14	21	18	11	
	Switzerland	5	5	6	5	3	8	**9**	4	5	
	France	**12**	7	10	10	10	5	10	7	5	
	Italy	**17**	11	**16**	8	13	15	10	**16**	10	
	UK	5	9	5	10	**14**	7	5	2	8	
	USA	11	**25**	7	11	15	10	14	10	**24**	
	Spain	15	3	5	**21**	8	21	5	17	**21**	
How often in Austria before?	never	35	28	23	40	34	32	24	32	**48**	0.00
	once	19	23	14	23	20	19	17	14	20	
	twice or more	47	49	**62**	36	46	50	59	55	32	
Traveling by ..	private car	49	37	**58**	7	35	23	46	50	17	0.00
	rented car	5	6	4		5	2	5	3	4	
	train	15	21	13	6	11	20	14	20	16	
	bus	2	9	6	**60**	12	5	2	3	**27**	
	air	22	21	9	19	19	41	27	16	**28**	
	bike	1		1	0	0	0	0	1	0	
	camping bus	3	4	7	1	**11**	2		2	1	
Organization of the trip	individually	**95**	89	91	35	89	89	95	**96**	66	0.00
	group trip	3	8	5	**60**	10	8	4	3	**31**	
	group trip organized alone	2	2	3	4	0	3	2	2	3	
During the stay, do you ...	relax	65	**70**	65	62	69	65	67	49	59	0.00
	go out in the evenings	91	90	80	59	90	93	89	77	83	0.00
	do to the disco	12	**27**	18	16	**26**	13	19	14	**25**	0.00
How high is your intention to revisit Austria	very high	26	32	30	12	24	26	30	31	27	0.64
	very low	12	8	15	16	12	8	11	13	9	
How high is your intention to recommend Austria	very high	67	**76**	64	69	**72**	61	65	57	63	0.01

Is it very important for you to ...	stay within the budget limit for the vacation	18	14	23	22		33		4	29	0.10
	that everything is organized	7	5	9	**36**	**13**	8	3	7	**13**	0.00
	that there are many cultural offers	41	34	20	40	26	**50**	**53**	**49**	41	0.00
	that there is entertainment for children	2	2		1	4	**9**				0.00
	to feel secure	35	42	33	**50**	35	**50**	32	40	43	0.09
Sources of information	don't need any	18	14	22	8	13	**26**	20	20	9	0.00
	destination brochures	30	27	27	27	28	24	32	27	32	0.49
	tour operator catalogue	15	12	13	**34**	15	19	21	9	**32**	0.00
	travel agent recommendations	17	14	10	**33**	11	20	16	11	24	0.00
	advertising	2	1	1	3	**6**	1		3	5	0.00
	friends and relatives	26	35	26	22	31	24	28	27	28	0.05
	hotel brochures	6	7	4	4	9	5	6	8	6	0.27
	trade fairs	6	2	4	1	5	4	3	6	2	0.02
	internet	4	**8**	3	2	1	3	3	4	4	0.01
Travelling ..	alone	10	16	18	**24**	11	17	13	15	**21**	0.00
	with partner	83	80	80	73	**82**	78	**84**	80	74	0.01
	with family	**26**	17	**25**	13	**24**	15	13	20	15	0.00
	with friends and relatives	15	13	18	**26**	21	20	12	18	21	0.00
	with a group	2	8	5	**57**	8	5	3	3	**29**	0.00

As far as possible advertising channels are concerned, the group tour types again can be characterized in the same manner: both make use of tour operator catalogues and travel agent recommendations. If traditional advertising is chosen, type 5 tourists will be reached with the highest probability.

Another highly relevant feature for the tourism industry is the number of overnight stays. Here, two segments are in the lead: type 2 (super active culture freak) and type 5 (event focused group). From the point of view of expenditures per person per day, type 4 (the organized excursion lover) is the most attractive target segment. In terms of expenditures for entrance fees, types 6 (individual culture explorer) and (theatre, musical and opera lover) beat the other segments significantly, mirroring their high interest in cultural offers at the destination.

Table 4: Metric background variable analysis of the nine cluster solution (including ANOVA p-values)

	mean value for type										
	1	2	3	4	5	6	7	8	9	Total	p
Number of short vacation trips	2.0	2.3	2.3	1.9	2.2	1.9	1.8	2.3	2.0	2.1	.051
Number of overnight stays in Austria	6.9	**9.1**	7.0	5.9	**9.1**	4.8	6.8	6.0	6.3	6.8	.000
Age	42.1	44.7	42.6	**49.2**	43.5	42.6	45.9	**41.2**	43.7	43.9	.000
monthly net disposable income (Euro)	3200	**3493**	2853	2703	2733	2907	3112	**2441**	2986	2932	.003
monthly net disposable	1418	1503	1251	1228	1210	1359	1398	1151	1354	1317	.099

income per person (Euro)											
entrance fees per day per person (Euro)	8	9	5	6	7	**11**	**12**	8	9	8	.000
vacation cost per day per person (Euro)	90	105	86	**120**	91	113	112	**80**	108	97	.000

CONCLUSIONS

A nine-cluster behavioral segmentation solution was constructed for the Austrian culture tourism market based on empirical data from the Austrian National Guest Survey. The activity segments can be interpreted in a plausible manner and external validity is high, as there are significant differences among the segments with regard to background variables.

For the Austrian culture tourism market multivariate segmentation research as extension of pure a priori grouping into cultural tourists renders very useful results. TRN methodology additionally enables plausible merger of sub-segments based on the neighborhood information. Thus, in dependence of the sector of tourism industry conducting such a segmentation study, a number of interesting segments from different perspectives emerge: The individual culture explorer (type 6) for example is perfectly suited for cultural offers during the winter season. Travel agents with focus on certain countries of origin can focus on cultural segments that are typical for these countries. Destinations or industry can meet specific segment needs or use segment-specific advertising arguments (as e.g. the safety argument for types 4 and 6). The sub-segmentation of the culture tourism market thus makes a lot of sense for the case of Austria as it enables the tourism industry to better supply the products and packages certain segments are looking for.

In the future it would be very interesting to investigate if the culture tourist segments in other regions are as heterogeneous as it is the case for Austria. If so, the next step of research would be a comparison of emerging sub-segments and the respective destination-specific distributions as well as growth estimation for each sub-segment.

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