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Segmenting tourists based on satisfaction and satisfaction patterns

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Abstract

Market segmentation has a long history in empirical tourism research. So does satisfaction research. Yet, little work has been done at the cross-roads of these two areas. This chapter makes a step towards filling this gap by (1) reviewing prior work in data-driven market segmentation with a specific focus on satisfaction, (2) analysing managerial recommendations resulting from these studies, and (3) providing empirical examples of how commonsense and data-driven segmentation studies could be conducted using satisfaction as discriminating criterion between tourists.

1 Introduction

While consumer satisfaction is one of the most heavily researched constructs in tourism research, market segmentation is one of the most widely used methods to gain understanding of the market structure in tourist markets. This is not surprising given that each of these two streams of research is based on assumptions which are fundamental to the successful operation of the tourism industry: (1) different people have different tourism needs and (2) if tourists are satisfied with their experience they will return. The latter assumption has been investigated many times in tourism research, most recently by Jang and Feng (2007) who find a significant association between stated overall satisfaction and the intention to revisit a destination within the next 12 months.

The fact that tourists are heterogeneous makes it possible for tourism destinations and service providers at destinations to select a particularly suitable market segment and provide the best possible service for this target segment. Such a segmentation approach provides some protection as destinations / tourism providers no longer compete with the entire global tourism market but compete only with destinations / providers who cater for the same target segment. Consequently, market segmentation has been used in tourism research for a very long time. In its simplest form market segmentation (*a priori or commonsense market segmentation*, Dolnicar, 2004; Mazanec, 2000) refers to the profiling of certain groups of tourists where the groups are defined in advance. For instance, the most typical commonsense

segmentation approach used by national tourism organisations around the world is to group tourists or potential tourists into groups on the basis of their country of origin.

The concept of *a posteriori or data-driven market segmentation* (Dolnicar, 2004; Mazanec, 2000) has been adopted by tourism researchers (Calantone, Schewe & Allen, 1980; Crask, 1981; Goodrich, 1980; Mazanec, 1984) from the marketing literature (Haley, 1968). In data-driven segmentation – as opposed to commonsense segmentation – it is not clear in advance which respondent will become a member of which market segment. For instance, one may want to identify segments based on tourists' statements whether or not each of 20 travel motivations applies to them. In this case, these 20 motivation variables become the basis of the grouping. Only in the second stage of the process are the resulting groups (segments) described. A comparison of the two basic approaches to segmentation is provided in Figure 1.

Note that data-driven segmentation is an exploratory technique which leads to a different result each time a segmentation solution is computed. Consequently data-structure has to be thoroughly examined before naturally existing segments can be claimed. Whether or not the data is structured can best be determined by assessing the stability with which segments occur if a number of independent segmentation studies is conducted. Naturally existing segments can be assumed to exist if segments can be identified with a high level of stability, meaning that a large number of replications with different algorithms and even different number of clusters leads to the identification of one or more segments repeatedly. This is, however, not typically the case in empirical data sets from surveys. If stable segments cannot be identified, segments are artificially constructed (*constructive clustering*, Dolnicar and Leisch, 2001). Constructive clustering still has all advantages of market segmentation, but it is important to know that the resulting segments represent managerially useful groupings rather than obvious natural segments in the marketplace.

Figure 1: A comparison of commonsense and data-driven segmentation

Commonsense segmentation (a priori segmentation)	Data-driven segmentation (a posteriori, post-hoc seg.)
Relevant tourist characteristics known in advance	Relevant tourist characteristics NOT known in advance
Selection of segmentation criterion (e.g. age, country of residence)	Selection of segmentation base (e.g. travel motivations, vacation activities)
	Development of managerially useful segments based on one the segmentation base
Profiling of segments	Profiling of segments
Validation and assessment of managerial usefulness	Validation and assessment of managerial usefulness

Although tourism researchers sometimes still refer to data-driven segmentation studies as the “more sophisticated” approach to market segmentation, it is the segmentation approach that is of most managerial benefit that represents the most suitable solution. For instance, a data-driven segmentation based on tourism motives may lead to very interesting segments, yet destination management may choose that segmenting by country of origin is the more suitable approach given the practicalities of such an a priori technique (each country of origin has a different language and a unique media landscape). The quality of a segmentation solution can ultimately only be judged by its value to destination management. Any segmentation approach that produces a valuable grouping of tourists is a legitimate segmentation approach.

Satisfaction is one possible base for market segmentation. One way to use commonsense segmentation with satisfaction as the segmentation criterion is to profile highly satisfied

tourists and compare them with dissatisfied tourists. Such a simple segmentation approach could provide valuable insight into the differences between these groups and inform destination managers or managers of service providers whether any of the discriminating factors are under their control. If this is the case, improvements could be made. If this is not the case, the segment of satisfied tourists may simply be the more suitable segment to target in future. Similarly, identifying market segments based on patterns of satisfaction (data-driven segmentation) could be very insightful. For this purpose a number of satisfaction questions could be used where respondents indicate their satisfaction with different aspects of their tourism experience. Resulting segments would then represent groups of tourists who require specific improvements or who may not be suitable segments given the strengths and weaknesses of the destination or service provides. Yuksel and Yuksel (2002a and b) propose this approach in the context of tourism. They also confirm that “Surprisingly [...] examination of segment-based satisfaction has attracted only limited attention from researchers.”

It should be noted that satisfaction ratings are generally skewed towards the higher end and that not all dissatisfied customers voice their dissatisfaction. Such potential distortion effects on findings have to be taken into consideration when resulting segments are interpreted.

Despite the potential to gain additional useful insight about the tourism market from both commonsense and data-driven segmentation studies based on satisfaction data, very few such studies have been conducted in the past. Most satisfaction research in tourism, travel and hospitality conducted in the recent past focused on empirically determining tourist satisfaction with different aspects of the vacation, such as the destination itself, shopping, service quality, attractions and accommodation. The most popular topic of investigation appears to be the study of satisfaction with destinations with more than 30 percent of all studies published between 2000 and 2007¹ focusing on this particular aspect. A typical example is provided by Kozak and Rimmington (2000) who assess British tourists’ satisfaction with off-season holiday in Mallorca, Spain. Other studies focus on investigating the interrelationship between satisfaction and its antecedents (such as perceived service quality) or consequences (such as behavioural intentions to revisitation, loyalty and word of mouth). A typical example is provided by Gallarza and Gil Saura (2006) who investigate the relationship between quality, perceived value, satisfaction, and loyalty in a study of Spanish

¹ See details on methodology on the precise selection of reviewers articles.

university students' travel behaviours. They conclude that quality is an antecedent of perceived value and satisfaction is the behavioural consequence of perceived value, and in turn, loyalty attitude is the final outcome of this chain. Evaluations of effectiveness or limitations of satisfaction models and recommendations for improvements have also been presented by a number of authors. Deng (in press), for instance, proposes a revised importance-performance analysis and illustrates the usefulness for the context of Taiwanese hot spring tourism. Market segmentation studies based on satisfaction are very rare; those few studies that have combined market segmentation and satisfaction research have typically not used satisfaction as the segmentation criterion / base, as will be discussed below. Outside of the field of tourism, Hahn, Johnson, Herrmann, & Huber (2002) conducted a study in which they use different aspects of satisfaction with convenience stores to identify segments of consumers which differ in the way in which each of these aspect influences their overall satisfaction with the store. This study demonstrates the potential of segmentation studies based on satisfaction statements in tourism industry.

The aim of this chapter is (1) to review prior studies that have used tourist satisfaction as a segmentation basis, (2) to analyse which managerial insights were derived from these studies in order to assess the value of segmentation studies based on satisfaction, and (3) to provide empirical examples of a commonsense and a data-driven satisfaction-based segmentation.

2 Bibliographic study

2.1 Data and methodology

To gain insight into prior studies that combined satisfaction and segmentation research and to evaluate the managerial recommendations that were derived by the authors of these studies, a descriptive bibliography study² was conducted.

The following sources were used: Journal of Travel Research, Annals of Tourism Research, Tourism Management, International Journal of Hospitality Management, Cornell Hotel and Restaurant Administration Quarterly, and the Journal of Tourism Studies. The criterion for including those sources was that the Journals had to be listed as being among the top ten journal in the field of tourism and that they had to be readily available online to the

² Bibliographic study (also called bibliographical study) is a systematic description and history of printed material (Center for Bibliographical Studies and Research, 2006).

researchers. All empirical articles published since 2000 were included. Although there is a large number of publications in these journals on the topic of satisfaction, pure review articles and articles measuring other forms of satisfaction (e.g. job satisfaction) were excluded. Forty five articles (see Appendix) were used for the review. Each article was coded as one case into an SPSS file; each variable represented an aspect of interest for the present review.

2.2 Results

We report on two dimensions of prior satisfaction studies. First we review the theoretical foundation that they are based on. Second we investigate some of the methodological characteristics of past empirical studies.

While 12 of the reviewed studies did not explicitly mention which theoretical model they based their satisfaction measurement on, the majority of studies did explicitly declare the theoretical model upon which the measurement was based. As can be seen from Table 2, the most common approach taken was to build on the expectation disconfirmation model as proposed by Oliver (1980). More than fifteen percent of all empirical studies choose the expectation disconfirmation model as the basis of their study. The expectation-perception / performance gap model (SERVQUAL) as proposed by Parasuraman, Zeithaml and Berry (1985) was used by nearly nine percent of all studies, followed by the importance-performance model. Performance only models in which respondents are asked directly and only about their satisfaction without requesting them to define a reference point are rarely used.

Table 2 – Theoretical approached to measuring satisfaction

Underlying theory / model	Frequency	Percent
Expectancy disconfirmation theory	7	15.6
Importance-performance	4	8.9
Expectation-perception/performance gap model (SERVQUAL)	4	8.9
Performance-only model (SERVPERF)	2	4.4
Congruity model	1	2.2
HOLSAT model	1	2.2
Other or combined models	12	26.7
Not stated	12	26.7
Not applicable (qualitative studies)	2	4.4
<i>Total</i>	45	100.0

Table 3 reports on some of the methodological characteristics of the reviewed satisfaction studies. As can be seen no single best way to measure tourist satisfaction appears to have developed. Eleven percent of the studies measure overall satisfaction rather than satisfaction with various aspects of the vacation, 15 percent measure satisfaction at attribute level, meaning that various aspects of the vacation are studied separately and 17 percent include both overall and attribute-based measures. It should be noted, however, that many of the studies that measure only overall satisfaction choose to use more than one item to do so.

All satisfaction studies, without exception, use multi-category (ordinal) scales as answer formats. Five and seven-point scales are most popular. The dominance of multi-category answer formats is surprising given that they are most susceptible to response styles and given that data analytic technique that require metric data (factor analysis, correlation analysis, regression analysis) are used in a high proportion of satisfaction studies (Dolnicar, 2006).

Table 3: Analysis of recent satisfaction studies

Level of satisfaction measurement		
	Frequency	Percent
based on attributes	15	33.3
overall evaluation	11	24.4
Both	17	37.8
Not applicable (qualitative studies)	2	4.4
Total	45	100.0
Segmentation component		
No	30	66.7
Yes	15	33.3
<i>Total</i>	<i>45</i>	<i>100.0</i>
Data format		
Ordinal	42	93.3
not stated	1	2.2
Total	43	95.6
Not applicable (qualitative studies)	2	4.4
<i>Total</i>	<i>45</i>	<i>100.0</i>
Number of answer options		

not specified	2	4.4
4 point scale	1	2.2
5 point scale	19	42.2
6 point scale	1	2.2
7 point scale	13	28.9
9 point scale	1	2.2
10 point scale	4	8.9
Others	2	4.4
Total	43	95.6
Not applicable (qualitative studies)	2	4.4
<i>Total</i>	<i>45</i>	<i>100.0</i>
Which type of analysis / test was conducted?		
factor analysis	13	28.9
correlation analysis	4	8.9
regression analysis	2	4.4
Mix	11	24.4
chi square	1	2.2
Others	14	31.1
<i>Total</i>	<i>45</i>	<i>100.0</i>

Finally, the review also indicates that a third of all studies contain a segmentation component. Not that any kind of profiling was coded as containing a segmentation component. Detailed review of these articles reveals, however, that satisfaction is never used as the segmentation criterion or segmentation base. Most of the studies combining satisfaction research with market segmentation use a commonsense approach and use the country of origin of tourists as the segmentation criterion: Kozak (2001) compares the satisfaction statements of British and German tourists. Hui, Wan and Ho (in press) compare satisfaction levels (at factor level) for respondents from different regions of the world. Nield, Kozak and LeGrys (2000) study satisfaction with food in particular and use data that contains respondents from 17 nationalities which are grouped in 2 segments (Western European, Eastern European and Romanian) for comparison. Yu and Goulden (2006) test differences in satisfaction of European, US, Japanese and other Asia Pacific Countries. Joppe, Martin and Waalen (2001) measure 14 attribute level and one global level satisfaction items and compare Canadian, US and overseas tourist satisfaction levels. Chaudhary (2000) compares satisfaction ratings on 5

point scales for British, German and Dutch tourists. Finally, Wong and Law (2003) compare expectations and satisfaction levels across countries of origin (US, Australia, Asia). The only segmentation study that does not use country of origin as the segmentation criterion was conducted by Pizam, Uriely and Reichel (2000) who compared differences between 3 segments of working tourists in Israel, finding that those working in a Kibbutz have the highest satisfaction levels. It can be consequently concluded that segmentation studies using satisfaction as the basis are rare in tourism research. It can also be concluded that the vast majority of satisfaction studies that use a commonsense segmentation approach are based on cross-cultural comparisons. The results of such analyses have to be interpreted with great care given the high probability of cross-cultural response style contamination of data. For more details see Chapter XXX in this book.

The main conclusions drawn from satisfaction studies which authors state are of practical value to destination management are (1) that customers should be kept satisfied by improving areas in which tourists express dissatisfaction (Ekinci, Prokopaki & Cobanoglu, 2003; Kozak & Remington 2000), (2) that areas of satisfaction and dissatisfaction can be used as a benchmarking tool in competition analyses with other destinations (Kozak & Remington, 2000; Kozak, 2002), (3) that resources for improvement are invested into service improvements which have the strongest effect on intentions to repurchase (Petrick, 2004), and, representing the recommendation most in line with the dominant expectation disconfirmation paradigm, to provide accurate information to tourists in advance of their vacation to ensure that realistic expectations are developed (Petrick & Backman, 2002; Rodriguez del Bosque, San Martin & Collado, 2006) and negative disconfirmation can be avoided. All these recommendations, are, however, based on the assumption of homogeneity of consumers. It is therefore implicitly assumed that all destinations should aim to be perfect in all respects. This may not be necessary. Only areas which are of relevance to the target segment for which the destination is catering may be critical in terms of avoiding dissatisfaction and achieving positive disconfirmation. The exceptions mainly include authors of studies that use countries of origin as segments. They conclude that segment-specific satisfaction needs to be optimized (Nield et al, 2000). This recommendation, however, is questionable given that cross-cultural differences detected are likely to be – at least partially - due to cross-cultural response styles rather than actual differences. Rodriguez del Bosque et al. (2006) explicitly point to the need to manage the expectations of different target groups differently, although no segmentation was performed in the empirical study.

3 Illustration of segmentation studies

3.1 Data and Methodology

Data from the Austrian National Guest Survey³ collected during the winter season of 1997 was used. The sample contains 3599 respondents. Quota sampling was used to ensure representativity of the data set. However, it should be noted that representativity is not essential for segmentation studies if the aim is to profile segments. If, however, it is important to know which proportion of the total tourist population a segment represents, it is essential that the data set is representative of the respective tourist population.

The Austrian National Guest Survey contains a set of questions where respondents are asked to state whether their expectations have been exceeded, met or not met with respect to various aspects of their trip, such as the landscape, the entertainment opportunities, shopping opportunities, cultural offers etc. The question formulation assumes an expectation-disconfirmation model of satisfaction. As opposed to typically used satisfaction scales it does not request respondents to directly state the extent of satisfaction or directly state both the expected level and the perceived performance level. Instead it integrates both the expectation and performance dimension into the same question and asks the respondents to assess the difference. It should be noted at this point that response styles, especially cross-cultural response styles pose a serious danger to empirical tourism studies (see Chapter XXX for details). Consequently, satisfaction studies asking respondents from a large variety of countries of origin for an absolute evaluation of their satisfaction on a multi-category scale are in danger of response style contamination. The data set we have chosen for this illustration is less prone to such biases because no absolute assessment was requested and only three answer options were provided. Prior studies on response styles have concluded that answer formats with fewer response options are less susceptible to bias (Clarke III, 2000, 2001; Cronbach, 1950).

For the commonsense segmentation (Case 1 segmentation according to the classification by Dolnicar, 2004) one of these items is selected: stated satisfaction with entertainment opportunities at the destination. This variable is chosen because it represents part of the

³ This data has been kindly provided to us for scientific use by the Austrian National Tourism Organisation, the *Oesterreich Werbung*.

tourism experience that destination management or the service providers at the destination could improve should the segmentation analysis demonstrate that improvement is required in order to secure satisfaction of a market segment that is essential to the destination. In a first step commonsense segments were constructed by assigning all respondents who stated that their expectations have been exceeded to one and all respondents who stated that their expectations have not been met to another group. The sample sizes for these commonsense satisfaction segments were 374 and 355, respectively. Next, the characteristics of these two segments were compared using the following additional information about the respondents: age, gender, number of children, country of origin, occupation, travel motivations, travel party, type of vacation and vacation activities. These additional variables were analysed using descriptive statistics (chi-square tests for nominal and ordinal variables and analyses of variance for metric variables) to explore the profiles of the resulting segments. A binary logistic regression was computed to assess the predictive ability of these additional variables on segment membership.

For the data-driven segmentation, a set of 10 satisfaction variables was used in its binary form (a 1 indicated exceeded or met expectations, a 0 indicated unmet expectations). This binarization was undertaken because the primary aim of the data-driven segmentation based on respondents' statements of satisfaction is to gain insight into patterns of unmet expectations putting the emphasis on dissatisfaction rather than satisfaction, as negative deviation from expected outcomes is known to have a stronger impact on behaviour than positive deviations (prospect theory, Kahneman & Tversky, 1979). As a consequence, it can be expected that one large segment will result which will contain all the respondents whose expectations have been met. Any additional segments resulting from the data-driven segmentation will be used to learn about dissatisfaction patterns and the individuals expressing these patterns of dissatisfaction.

Only respondents who visited one of two provinces in Austria (Tirol and Vorarlberg) were included this subset was chosen as Tirol and Vorarlberg are similar winter tourism destinations offering tourist an extensive range of skiing opportunities. Consequently this analysis represents a Case 5 segmentation according to the classification by Dolnicar (2004). Including all destinations would have created a too heterogeneous sample. For instance, tourists visiting Vienna would be expected to evaluate their satisfaction along different dimensions than tourist visiting ski resorts. The final sample size amounted to 949 respondents for the data-driven segmentation analysis.

A topology representing network analysis (Martinetz & Schulten, 1994) was conducted to explore segments. This analysis is very similar to the commonly used k-means algorithm, but has performed better in Monte Carlo simulations on artificial data sets (Buchta et al., 1997). In order to determine how many segments best describe the data set, 50 repetitions of segmentation analyses were computed for segment number from 2 to 7 and the stability of pair-wise assignments of individuals to the same segment was assessed comparatively. The 3 and 7 segment solutions emerged as the most stable. The 7 segment solution was chosen because it provided more detailed profiles of dissatisfaction segments. A brief profile of the results segments is provided based on descriptive statistics.

3.2 Illustration of a commonsense segmentation study based on expressed tourist satisfaction (Case 1 segmentation)

A number of characteristics of satisfied and dissatisfied respondents were found to be significantly associated with the level to which they stated that their expectation of entertainment opportunities were met.

A number of differences emerged in psychographic variables such as travel motives. Respondents who sought excitement, adventures and a challenge (Pearson Chi-square 33.0 , 1 df, $p < 0.001$), opportunities to be creative (Pearson Chi-square 5.8 , 1 df, $p < 0.05$), cultural offers (Pearson Chi-square 27.2 , 1 df, $p < 0.001$), nature (Pearson Chi-square 11.3 , 1 df, $p < 0.01$) and a sufficient amount of entertainment facilities (Pearson Chi-square 28.8, 1 df, $p < 0.001$) were better represented in the segments the expectations of which were met. These findings are supported by the fact that tourist on a culture trip (Pearson Chi-square 21.0 , 1 df, $p < 0.001$) or city trip (Pearson Chi-square 39.1, 1 df, $p < 0.010$) had a higher likelihood to be members of the satisfied segment, whereas tourists on a spa holiday (Pearson Chi-square 3.8 , 1 df, $p < 0.05$) or on holiday for relaxation (Pearson Chi-square 5.3 , 1 df, $p < 0.05$) were less likely to belong to the dissatisfied group. All the above results indicate that the tourists whose expectations were not met are more passive tourist and do not actively seek out entertainment opportunities. This interpretation is supported by the differences in the vacation activities the two segments have engaged in. Respondents to participated in organised excursions, went out in the evening, went shopping, visited concerts, museums, the theatre, musicals, operas or the traditional Austrian Heurigen (all p-values < 0.05) expressed

that their expectations were exceeded, whereas respondents who stated that they were mainly relaxing criticized the entertainment opportunities.

With respect to socio-demographic characteristics segment members differed with respect to their occupation (Pearson Chi-square 20.3, 8 df, $p < 0.01$). The most noteworthy difference was the high proportion of pensioners in the dissatisfied segment (12 percent as opposed to only 7 percent in the satisfied segment). German tourist hold the highest proportion of members in both segments with Austrians being the second strongest country of origin within the dissatisfied groups and tourist from the US representing the second strongest group in the satisfied segment (Pearson Chi-square 71, 13 df, $p < 0.001$). Note that the two segments compared to not include respondents who stated that their expectations were met. This measure was taken to avoid misinterpretations of satisfaction ratings due to the fact that respondents who are familiar with the destination because they have visited it repeatedly typically state that their expectations were met. The reasons, however, is not excellent performance but calibrated expectations. Tourists on a family vacation were more frequently assigned to the dissatisfied group. The average number of children is significantly higher (2.5, $F = 4.4$, $p < 0.05$) among tourists in this segment than in the satisfied segment (1.7).

In terms of travel behaviour members of the dissatisfied segment undertake a higher number of vacation trips per year (2.3 as opposed to 2.0, $F = 26.2$, $p < 0.001$) and spent fewer night in Austria during the trip on which they were interviewed (7.5 nights as opposed to 6 nights, $F = 26.2$, $p < 0.001$).

Finally, and possibly most importantly, respondents were also asked about their intentions to return to this particular destination for a vacation. A Chi-square test assessing the association between the stated intention to visit this destination again and segment membership indicates that members of the dissatisfied segment indeed express more frequently that they will “probably not” or “certainly not” return to the destination (Pearson Chi-square 10.4, 3 df, $p < 0.05$). It should be noted, however, that this is an association test only. It cannot necessarily be concluded that dissatisfaction with entertainment facilities causes lower intentions to revisit.

The logistic regression (Cox & Snell R square = 0.283, Nagelkerke R square = 0.380) using the above variables leads to 73 percent of all segment memberships being predicted correctly. This is a good result given that the segments are approximately of equal size. 78 percent of

the tourists whose expectations have not been met could be identified correctly using only the additional variables.

This illustration shows that destination managers and managers of tourism service providers can gain interesting insight from simple commonsense segmentation studies. The main conclusions from the above analysis are that unmet expectations with respect to entertainment facilities should to be taken seriously by management as there could be an effect on intentions to revisit. It appears, however, that two underlying patterns have been identified: inactive tourists express that their expectations have not been met, whereas tourists actively seeking out opportunities do not. This may indicate that there is in fact no need to increase the offers, but possibly strategies could be developed to better inform such inactive tourists of entertainment opportunities and make them easier to access for them. More concerning is the fact that families appear to suffer from a lack of entertainment opportunities. This finding may indicate that family-specific entertainment infrastructure may have to be improved. Additional qualitative fieldwork focusing on families should be conducted to assess the precise nature of the problem and possibilities of addressing it at the destination / service provide level.

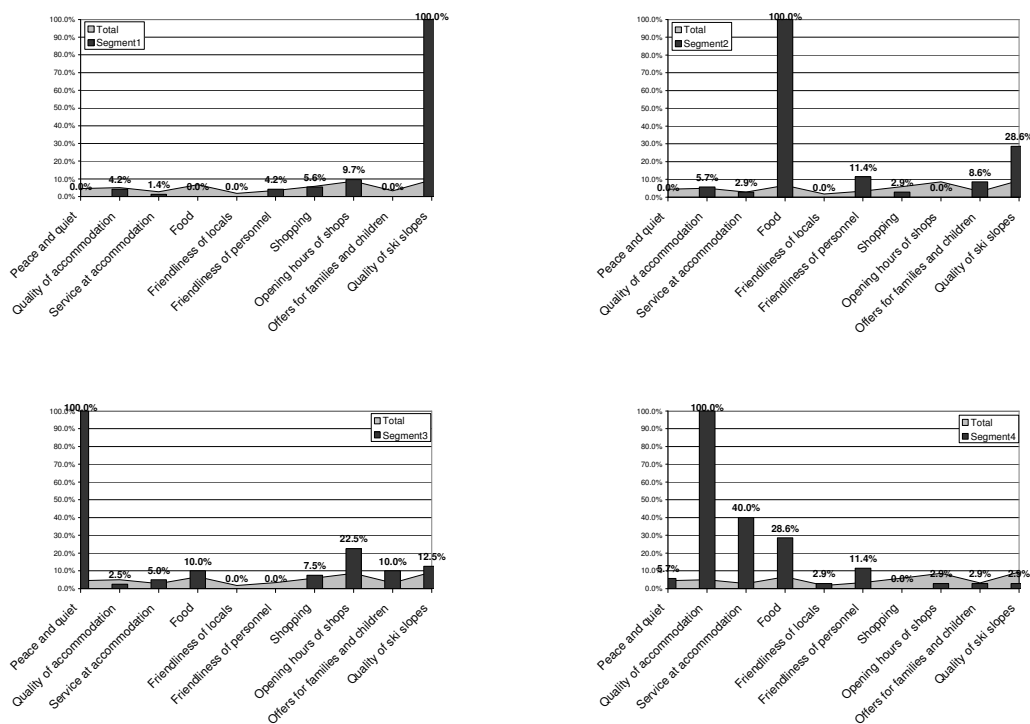
3.3 Illustration of a data-driven segmentation study based on expressed tourist satisfaction (Case 5 segmentation)

The seven segments that emerged as suitable data-driven segmentation solution based on stability comparisons is provided in Figure 2. All charts in Figure 2 depict the percentage of segment members expressing that their expectations have not been met in each of the listed areas using a black column. The sample average of unmet expectations is plotted as a grey shaded area in the background to enable quick comparisons between the sample and the segment.

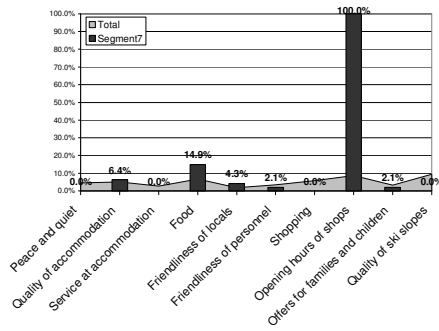
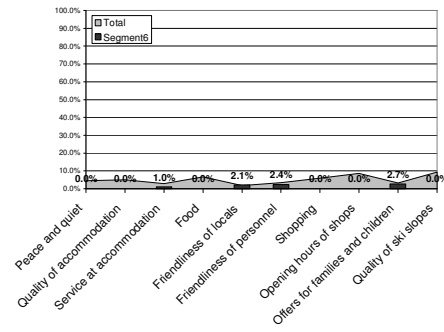
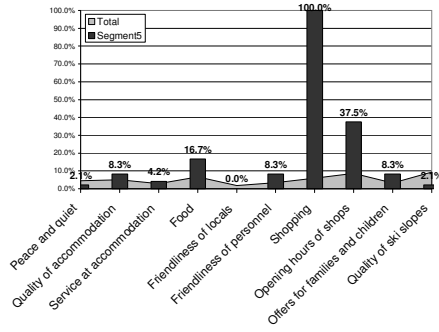
As can be seen from inspecting the charts for all segments, one segment emerges that has no complaints (Segment 6). However, no segment of “complainers” (tourists who seem to complain about a large number of aspects of their vacation) can be identified despite the large number of segments extracted. This is encouraging as it indicates that respondents who have experienced areas in which their expectations have not been met answered the questions in a very differentiated manner rather than adopting a response style in responding to the satisfaction items.

The resulting segment profiles highlight clear problem areas: all members of Segment 1 are disappointed by the quality of ski slopes, all members of Segment 2 are disappointed by the food, but also express unmet expectations regarding ski slopes, friendliness of personnel and offers for families and children. All members of Segment 3 perceive the destination as not peaceful and quiet enough. They also express their disappointment with the opening hours of shops and shopping in general as well as offers for families and children. The problem areas expressed by Segment 4 members centre around the accommodation. All members are disappointed by the accommodation quality, 40 percent express that the service at the accommodation is bad, one third is disappointed by the food and 11 percent perceive the staff as not being as friendly as expected. Segments 5 and 7 are disappointed with the shopping at the destination with Segment 5 expressing unmet expectations with respect to shopping in general and Segment 7 members expressing their frustration about too restrictive opening hours of shops.

Figure 2: Data-driven segments based on expressed satisfaction patterns



Customer Satisfaction: Segmentation Issues



The resulting segments differed significantly in a number of the additional variables that were used to describe the commonsense segments in detail. A few of the central findings include that tourist who classify their vacation as a relaxation holiday form the largest proportion of Segment 5 and 7, those unhappy with the shopping situation at the destination. Interestingly members of Segment 5 do not actually engage in shopping very frequently while a quarter of the members of Segment 7 state that they shop frequently. Tourists most heavily engaging in skiing are most represented by Segments 3 and 4. While each of the segments contains at least 25 percent families, the highest proportion can be found in Segment 1. This is interesting given that Segment 1 is mainly dissatisfied with the ski slopes and has no complaints about offers for families and children. Another interesting observation is that three quarters of Segment 4 members stay in hotels or pensions. This suggests the interpretation that members of this group have deliberately chosen more expensive accommodation options to ensure a high quality of accommodation which increases the level of disappointment if expectations are not met.

Results indicate that very specific patterns of dissatisfaction exist among tourists. These patterns are not obvious as it is not always the area of primary importance to tourists that causes disappointments. Data-driven segmentation analyses can help managers explore such patterns and investigate in detail the profiles of dissatisfaction segments of particular concern to them.

4 Conclusions

Although both satisfaction and segmentation research are seen to contribute significantly to tourism knowledge (as indicated by the large number of studies that has been published in both these areas over the past decades), only a small number of studies have made use of both concepts to gain insight into the marketplace. Those that have combined segmentation and satisfaction research have typically conducted cross-cultural comparisons to determine whether tourists from different countries of origin have systematically different satisfaction levels. None of the studies published since 2000 have used market segmentation to group tourist based on their satisfaction level and learn more about those tourists who are satisfied / dissatisfied or tourists with specific patterns of dissatisfaction. Such analyses could contribute to the understanding of the market and could consequently prove to be a valuable source of market information for tourism managers.

A commonsense and a data-driven segmentation were computed that illustrated how satisfaction data could be segmented. The managerial benefit that results from such studies is similar to the recommendations that are typically made by authors of satisfaction studies: areas of dissatisfaction should be improved. The segmentation based approach helps managers to learn precisely for which group of tourists which improvements are needed, thus making the most efficient use of resources needed to achieve improvement. It also enables tourism managers to manage expectations of specific market segments before the vacation with a particular emphasis on those aspects that concern the target market. As it is the case in all segmentation studies such an approach allows to make targeted improvements rather than trying to achieve 0% dissatisfaction in all areas, which is not necessary if only one or a limited number of market segments are actually targeted by a destination or a tourism service provider.

For all market segmentation studies based on satisfaction it is very important to take into consideration the data format. Whenever multi-category formats are used there is a danger of response styles occurring which can contaminate the data. We recommend the use of binary data, three-point formats or best-worst data (if only the relative satisfaction of various vacation aspects is of interest) to avoid response style contamination. If multi-category scales are used it is important to first assess the extent of response style contamination before data is segmented.

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7 Appendix: Reviewed literature

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