

Segmentation of visitors in a German wine-growing region: The Rheingau and its tourists

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Abstract:

Purpose - The purpose of this consumer study was to examine demographic and behavioural characteristics, as well as the motivation, of tourists in the German wine growing region Rheingau using a segmentation approach. Also the purchasing power of wine tourists was modelled and calculated.

Design/methodology/approach - A face-to-face survey was conducted between April and May 2015, a total of 1,555 tourists were interviewed at 18 different locations in the Rheingau.

Findings - Four wine tourist types were identified by using cluster analysis: 1) Wine and Rheingau lovers, who have a high interest in wine and visit the region several times a year; 2) wine-oriented tourists, who use the culinary offerings of the Rheingau with pleasure but do not come to the region very often; 3) new visitors, who come to the region mainly because of the nature and history; and 4) foreign tourists, who have less knowledge about the Rheingau and buy less wine in the region.

Practical implications - Using the purchasing power calculation, winemakers in the Rheingau can gain a clear picture about the importance of tourists. Although the region has not had serious problems with tourism recently, a new communication strategy should be prepared for new customer acquisition and to strengthen customer loyalty.

Keywords: Wine tourism, Germany, Segmentation, Survey research

1. INTRODUCTION

As one of Germany's smallest wine-growing regions, the Rheingau valley has nevertheless become one of the best-known regions by uniting history, tradition and modernity in a high-quality way. Many of today's upcoming or already well-known German wine estates are located in this area of around 3,000 hectares. It is thus not surprising that thousands of people and oenophiles visit the Rheingau, making its wines and landscape popular and representing the basis for a developing event and tourism industry. In volume terms, about 660,000 day tourists and 340,000 overnight tourists are attracted by Rheingau's landscape and wine culture every year (Hessisches Statistisches Bundesamt, 2015).

Although the Rheingau is an important and highly frequented tourist destination, there has not been an extensive survey on the different characteristics of the nearly 1 million tourists, their needs, the reasons for visiting this region or even their involvement in wine. Therefore, the purpose of this consumer study was to examine the demographic and behavioural characteristics, as well as the motivation, of tourists in the Rheingau using the segmentation approach. In addition, based on the results of the survey, the importance of tourism for the local wine industry in form of purchasing power was calculated.

2. LITERATURE REVIEW

There is a substantive body of wine tourism research (Grybovych et al. 2013; Molina et al. 2015) that can be traced back to the study by Hall and Macionis (1998) who segmented wine tourists in Australia and New Zealand by psychographic characteristics. It is beyond the scope of this conference paper to conduct a complete review of the existing wine tourism literature.

All studies agree that there is no stereotypical tourist and that wine tourists should not be treated as a homogeneous group. Various criteria have been used in the wine tourism literature in order to segment the respective markets. The studies used different variables to identify consumer segments. Demographic variables such as age, gender, income and education (e.g. Tassiopoulos et al., 2004), nationality (Alonso et al. 2007), along with psychographic characteristics like interest, involvement, motivation, attitude and behaviour, cultural values and lifestyle (e.g. Chen and Sasias, 2014) were used for segmentation.

This is the first study to identify consumer segments in a German wine growing wine-growing region and well-known tourist destination and will base the method on previous wine tourism research.

3. MATERIAL AND METHODS

Data for this survey were collected using a questionnaire based on previous surveys (Tassiopoulos et al., 2004; Alonso et al., 2007; Marzo-Navarro and Pedraja-Iglesias, 2010; Grybovych et al., 2013; Szolnoki et al., 2014) and on expert interviews with members of the Rheingau Wine Growing Association and the Rheingau Touristic Association. The questionnaire contained items related to length of stay, mode of travelling, accommodation, traveling motivation and satisfaction with the cultural programmes in the region. In addition, information on the demographic, socioeconomic and behavioural characteristics of tourists was also gathered. In the framework of a face-to-face survey, a total of 1,555 tourists were

interviewed in the Rheingau during the period of April and May 2015. In order to ensure that the study was as representative as possible, 18 well-frequented places located in the middle Rheingau were selected in advance with the help of the Rheingau Touristic Association. Since the aim of the survey was to interview ordinary tourists rather than special wine tourists, we focussed on more general locations.

For segmentation, we used both categorical and continuous variables, therefore – like in Chen and Sasias (2014) and Cho et al. (2014) – two-step clustering was applied to classify the participants of the survey into homogeneous groups according to their attitude to the region (Backhaus et al., 2011). We used the χ^2 test as an ordinal penetration measure to test the differences of the segments in terms of sociodemographic and behavioural profiles. For metric responses, factorial analysis of variance was used and post hoc effects (the Tukey-b test) were estimated, affording analysis of the significant differences between the segments.

4. RESULTS AND DISCUSSION

4.1 Segmentation of tourists in the Rheingau

As a first step, a two-step cluster analysis was conducted. Active segmentation variables were defined based on previous studies. In their study, Alonso et al. (2007) investigated the difference between domestic and international visitors; therefore, we selected nationality (German or foreign) for our clustering. In Molina et al.'s (2015) research, the visiting frequency of various Spanish wine regions was analysed, while Tassiopoulos et al. (2004) investigated the visitation rate to wineries. Based on these studies we added the visiting frequency to the Rheingau (for the first time, less than once a year, once a year or more) to the segmentation model. In order to calculate the purchasing power of the different segments later on, we also integrated the amount of purchased wine in the Rheingau (number of 0.75 l bottles bought during the stay in the region). In total, eight cluster solutions were tested. Finally, the four-cluster solution with the highest Silhouette measure of cohesion and separation value of 0.6 was selected.

Table I. General profile of the segments

Characteristics	Wine & Rheingau lovers	Wine- oriented tourists	New visitors	Foreign tourists	Test
	n=310	n=372	n=534	n=314	
<i>Nationality %</i>					1500.19*
German	98.0	100.0	100.0	0.0	χ^2
Foreign	2.0	0.0	0.0	100.0	
<i>Visiting frequency %</i>					2788.10*
For the first time	0.0	0.0	49.6	56.7	χ^2
Less than once a year	0.0	0.0	50.4	24.5	
Once a year	0.0	41.4	0.0	4.1	
2–3 times a year	0.6	58.6	0.0	9.9	
4–6 times a year	47.7	0.0	0.0	1.9	
More than 6 times a year	51.3	0.0	0.0	2.9	
<i>Amount of purchased wine</i>					48.48**
Wine purchased in Rheingau	16.5 ^a	10.0 ^b	5.8 ^c	3.9 ^c	F

Note: * $\chi^2 = p < 0.05$; ** Sign. Tukey-B test

Table 1 shows the profile of the segments in terms of the active segmentation variables. According to this table, a clear structure of tourists in the Rheingau emerges, as follows: 1) Wine and Rheingau lovers, who visit the region very often and purchase a lot of wines there; 2) Wine-oriented tourists, who visit the region frequently, but not as often as the previous category, and purchase 10 bottles in total; 3) New visitors, who have come for the first time or rarely visit the Rheingau and their purchasing power is at an average level (5.8 bottle); and 4) Foreign tourists, who do not visit the Rheingau very frequently and purchase the least wine in the region.

4.2 Sociodemographic profile of the segments

To describe the segments' sociodemographic structures, cross-tabulation was employed to determine the significant differences that exist among the segments. Table 2 illustrates the analysis of sociodemographic factors and the χ^2 test. Generally, the proportion of male participants in the study was higher than average, but there was no significant difference between the segments in terms of gender.

Table 2. Sociodemographic profile of the segments

Characteristics	Wine & Rheingau lovers	Wine- oriented tourists	New visitors	Foreign tourists	χ^2
	n=310	n=372	n=534	n=314	
<i>Age %</i>					14.45*
Gen Y	36.7	33.2	37.0	26.1	
Gen X	21.0	27.1	23.2	26.1	
Gen BB	42.3	39.7	39.8	47.9	
<i>Education %</i>					63.92*
High school – level 1 ⁺	10.3	10.1	9.6	12.2	
High school – level 2 ⁺⁺	17.7	19.3	25.0	21.3	
High school – with baccalaureate	26.0	32.1	36.1	47.0	
University	46.0	38.5	29.3	19.6	

Note: * $\chi^2 = p < 0.05$; + Completed after 9 years without baccalaureate; ++ Completed after 10 years without baccalaureate

Concerning the other sociodemographic factors, age, educational level and income turned out to be significant. By analysing the age of visitors, an older tourist structure in the Rheingau appeared, especially amongst foreign tourists. The Rheingau has always profited from older/retired visitors who have the time and financial resources to travel around the world. Yet, in the first three segments, Generation Y is also well represented. Regarding the educational level, the first and the second groups had the highest proportion of people with a university degree (46.0%, 38.5%). Compared to these segments, consumers who travel less frequently to the Rheingau exhibited a lower proportion of university degrees. Education level correlates strongly with income; therefore, these two sociodemographic variables showed a similar picture – at least among the German tourists. Since it quite complicated to compare income structures between German and foreign groups, we focus here on domestic tourists. Similar to education, the highest income categories (above 3,000 €/month) appeared mainly in the first two segments, while new visitors earned significantly less money. In term of age and income, our results are similar to those of Dodd and Bigotte (1997), Hall and Macionis (1998) and Romano and Natilli (2009). In their studies, all of these authors identified at least one segment which can be characterised by higher age and higher income.

4.3 Wine consumption and tourist behaviour of the segments

Table 3 reports the results of statistical tests for significant differences related to the wine consumption of the four segments using the χ^2 test. The table shows that tourists in the Rheingau have a special wine consumption pattern. Compared to official statistics (VuMa, 2015), the first and second frequency categories were overrepresented in all segments. Since the survey was conducted at 18 different and mostly wine-independent locations, we can state that the core of tourists in the Rheingau is wine-oriented and this might be one of the main reasons they visit the region.

Table 3. Wine consumption profile of the segments

Characteristics	Wine & Rheingau lovers n=310	Wine- oriented tourists n=372	New visitors n=534	Foreign tourists n=314	χ^2
<i>Consumption frequency %</i>					121.65*
Twice a week or more	57.1	40.9	29.8	28.9	
Once a week	21.3	27.7	23.5	26.3	
2–3 times a month	9.3	14.8	19.9	17.2	
Once a month	6.3	7.8	8.2	13.6	
Less than once a month	1.7	5.6	15.1	8.8	
Never	4.3	3.1	3.4	5.2	

Note: * $\chi^2 = p < 0.05$

By analysing the length of stay, it can be established that wine-oriented tourists, new visitors and foreign tourists stay longer in the region. More than two-thirds of *Wine and Rheingau lovers* were in the Rheingau on a one-day trip; however – and this is the main significant difference from the other segments – they reported coming more than four times in a year (see Table 1).

In terms of motivations for tourists to come to the Rheingau, recreation and wine tours were most frequently reported. Members of the first two segments came for wine tours more frequently than the other segments, while foreign tourists, for example, most frequently came for a cultural journey (12.6%).

Many authors of previous studies (e.g. Charters and Ali-Knight, 2000; Bruwer, 2003; Brown et al., 2006; Cullen et al., 2006; Marzo-Navarro and Pedraja-Iglesias, 2009; Nella and Christoui, 2014) used interest, knowledge or involvement related to wine to segment wine tourists. Although we chose not to use these variables as active segmentation factors, we used factorial analysis of variance to analyse the relationship between the segments and the variable of interest. In accordance with our expectation, interest in wine helped to distinguish between the segments. *Wine and Rheingau lovers* exhibited the highest interest level, while

Wine-oriented tourists reached a significantly lower level. The last two segments – new visitors and foreign tourists – had the lowest level of interest.

4.4 Calculation of the purchasing power of tourists in the Rheingau

The data from the face-to-face survey were used also to calculate the purchasing power in the Rheingau and quantify the importance of tourists in the regional wine industry. The calculation was based on the method Szolnoki and Hoffmann (2013) used in their paper. The relation of income to wine tourism was also calculated by Bruwer (2003) at the level of a single winery; however, we conducted a calculation on an aggregated level for the whole region.

Concerning production, the Rheingau with its 3,000 ha produces approximately 30,000,000 bottles a year on average (Regierungspräsidium, 2015). According to recent statistics, the Rheingau has yearly 340,000 tourists who spend at least one night in the region and 660,000 day visitors (Hessisches Statistisches Bundesamt, 2015). If we consider the results of our survey as representative, we can state that 52% of day visitors and 72% of overnight guests purchase wine from the region during their stay. In addition, we calculated the average amount of purchased wine in 0.75 l bottles. Thus, day visitors purchase less wine, at 7.8 bottles, whereas overnight guests purchase 9.4 bottles while visiting the Rheingau. By summing the calculated amount of bottles, tourists in the Rheingau purchase 5.2 million bottles in a year. This theoretical calculation shows that approximately 18% of the total amount of wine produced in the Rheingau is purchased by tourists.

In order to evaluate the importance of the different segments, the calculation was extended to the four tourist groups (Table 4). According to these results it is obvious that the first two segments play a major role in the local wine industry. These two segments purchased two-thirds of the total amount of wine sold to tourists in the Rheingau.

Table 4. Purchasing power of the segments (100% = 5.2 million bottles)

<i>Purchasing power %</i>	Wine & Rheingau lovers	Wine- oriented tourists	New visitors	Foreign tourists
	n=310	n=372	n=534	n=314
Day visitors	23.3	9.7	9.5	3.0
Overnight guests	13.4	19.7	14.5	6.8

In particular, the day visitors in the first and the overnight guests in the second segment had the highest purchasing power. Nevertheless, new visitors to the region could not be neglected. The purchasing power of foreign tourists was particularly limited by transport difficulties.

5. CONCLUSIONS

This research study was conducted to analyse the differences of various wine tourist segments in the Rheingau, Germany. Previous wine tourism studies have provided important information about segmentation in wine tourism; therefore, we applied a mixed segmentation model using both demographic and psychographic variables. We found the following four types of wine tourists in the Rheingau which differed significantly in relation to several characteristics: 1) *Wine and Rheingau lovers*, who have a high interest in wine and visit the region several times a year; 2) *Wine-oriented tourists*, who consume the culinary offerings of the Rheingau with pleasure but do not come to the region very often; 3) *New visitors*, who come to the region mainly because of the nature and history; and 4) *Foreign tourists*, who know less about the Rheingau and buy less wine in the region. These results are at least partially consistent with the findings of other research by Hall and Macionis (1998), Charters and Ali-Knight (2002), Cullen et al. (2006), Alebaki and Iakovidou (2011) and Nella and Christou (2014). Thus, we can state that there is a certain similarity of segments in different studies, which means that these wine tourist types are to be found everywhere, independent of the location, region or country. Characteristics such as interest and knowledge related to wine, education and income particularly influence the segmentation of wine tourists.

The full profile description of the segments can help the region to engage in new positioning amongst the wine-growing regions and to develop an up-to-date communication strategy targeted towards regular guests and new visitors. Because of the advanced age of the first segment, the region has to focus on new customer acquisition and on customer loyalty in order to guarantee that tourists will continue to visit the region and exercise a high level of purchasing power.

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