**Padua 2017 Abstract Submission**

**I want to submit an abstract for:**
Conference Presentation

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<th>E-Mail</th>
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<tr>
<td>Ulrich Hamm</td>
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**Keywords**
organic wine, local wine, sustainability, environmentally friendly, consumer panel, segmentation, attitude-behaviour gap

**Research Question**
Are there homogeneous consumer segments with regard to values and beliefs towards sustainability characteristics? Do these consumer segments differ in their wine purchase behaviour?

**Methods**
Data obtained from a panel of 30,000 households was used to analyse German wine consumers´ buying behaviour. Household attitudes regarding sustainable consumption were used for factor analysis and segmentation.

**Results**
Six consumer segments with different attitudes for organic, sustainable and local food were identified. Consumer with more positive attitudes towards different sustainability characteristics showed higher organic budget shares.

**Abstract**

**Introduction**
Consumer surveys in different countries revealed that consumers preferred organic over conventional wine (Bernabéu et al., 2008; Chiodo et al., 2011; Janssen et al., 2012) and elicited a higher willingness to pay for organic (Ay et al., 2014; Brugarolas et al., 2010; Pagliarini et al., 2013; Wiedmann et al., 2014), sustainable (Forbes et al., 2009; Sellers, 2016; Vecchio, 2013) and local wine (Ay et al., 2014; Bernabéu et al., 2008; Grebitus et al., 2013). However, none of the articles examined real purchase situations. How do consumers behave when it comes to real wine purchase decisions and on which attitudes are the wine choices grounded? The aim of this research paper was to segment consumers based on different attitudes towards sustainable consumption and to analyse each segment´s wine purchase behaviour with a special focus on organic wine purchases.

**Material and methods**
The study is based on a household panel dataset collected by the GfK Group (Nuremberg, Germany). The GfK panel covers grocery purchases of 30,000 households in Germany, which is quite unique in size. We focused on households who bought wine at least once in the period between 12/2014 and 11/2015. One particular fact of the dataset is, that the purchase information is linked to socio-demographic data and statements on attitudes of each household leader. The analysis focused on statements with regard to sustainable, environmentally friendly, organic...
and local food. On basis of factor analysis (principle components analysis) the variables were reduced to a lower number of unobserved variables (factors). Afterwards, k-means clustering was conducted on the factors to identify homogeneous consumer groups; the number of clusters was determined by the ward method. Because the cluster analysis is sensitive to outliers, outliers were eliminated via hierarchical cluster analysis (method: single linkage) beforehand. In order to describe the clusters, they were tested for significant differences in various variables (socio-demographics, wine consumption behaviour) using single factor variance analyses (ANOVA) and chi square test.

Results

Factor analysis yielded in three factors which explained 60.6 % of the total variance. The factor “preference for organic products” summarises statements regarding organic production, e.g. organic products are healthier/taste better. The second factor “preference for environmentally friendly and sustainable products” combines statements with regard to environmental protection and sustainability, e.g. importance of environmental friendly packaging and sustainability labels. The third factor “preference for domestic products” unites statements on local and national production, e.g. high trust in local products and high quality of domestic food products. Based on the factor scores of 16,474 households six clusters were identified.

Attitudes towards the consumption of food with sustainability characteristics were in line with wine purchase behaviour. Consumers “Interested in sustainable food” exhibited positive attitudes towards environmentally friendly, sustainable and organic products. At the same time, they showed by far the highest expenditure share for organic wine (7 %). The cluster “Disinterested in sustainable food” was characterized by the lowest expenditure share for organic wine (1 %). Furthermore, consumers “Interested in local food” showed high expenditure shares for domestic wine (50 %) and low expenditure shares for organic wine (2 %); for consumers “Interested in organic food” the opposite was found. However, the cluster “Interested in organic and local food” (“Disinterested in organic and local food”) revealed high (low) preference for organic and domestic wine.

Cluster 1 “Interested in sustainable food” had a high preference for organic, environmentally friendly and sustainable products. With regard to organic red wine the origin Germany had the highest expenditure share. Interestingly, they paid the highest price for conventional wine. Compared to the other clusters wine purchases at the wine specialty store were of high importance. However, for organic wine, direct wine purchases were preferred. Consumers “Interested in sustainable food” were more often older and of higher formal education with high incomes. Cluster 2 “Interested in organic and local food” favored to buy organic and conventional wine directly from the producer, a cooperative or a wine cellar. Furthermore, organic wine was often bought at organic stores. They exhibited a high preference for organic white wine and paid the highest price for organic wine.

Consumers of this cluster were more likely to be younger with higher incomes. Cluster 3 “Interested in organic food” had relative high expenditure shares for organic wine (4 %); domestic wines were however not strongly preferred. With regard to organic red wine the origin France exhibited relatively high expenditure shares (34 %); for organic white wine Italy was the favored country. Wine expenditures were relatively high for wine specialty stores. Consumers of the cluster “Interested in organic food” were younger and had relatively often a university degree. Cluster 4 “Interested in local food” showed the highest expenditure share for German red wines (41 %) and exhibited a high preference for direct wine purchases (producer/cooperative/cellar) compared to other clusters. Consumers of this segment were more likely to be older than 70 years and with lower formal education. Cluster 5 “Disinterested in organic and local food” and Cluster 6 “Disinterested in sustainable food” preferred to purchase wine at discount supermarkets. Compared to the other clusters, Cluster 5 and 6 had low expenditure shares for German white wine. Cluster 5 had a relatively low monthly net income and a low formal education while consumers of Cluster 6 were more likely to be younger (below 40).

Discussion and conclusions

Cluster analysis confirmed that consumers´ attitudes towards different sustainability cues were in line with purchase behaviour: Consumer with positive attitudes towards different sustainability characteristics paid higher prices for organic wine and showed higher organic budget shares. The so called “attitude-behaviour gap” appears to be rather low. However, expenditure shares for organic wine were on a low level. One major reason was the low supply level of organic wine. In 2014 only 4.5 % of the world´s grape growing area was grown according to organic standards (Lernoud and Willer, 2016).

Four out of six clusters (74 % of the wine consumers) exhibited relatively strong attitudes towards one or more
sustainability cues (organic, local, sustainable and environmentally friendly) and these attitudes were reflected in their organic and local wine purchases. Therefore, communication strategies with a focus on sustainability cues could lead to higher market shares for organic, environmentally friendly and sustainable wine. Furthermore, wine businesses may achieve price premiums through the adoption of sustainability oriented marketing strategies. Different target groups for the application of such strategies were identified. Consumers who had the highest expenditure share for organic wine (Cluster 1) showed strong pro-environmental attitudes and a preference for sustainable products. Therefore a comprehensive communication of sustainability issues, which also includes social aspects, is recommended for organic producers.

Consumers “Interested in organic food” (Cluster 3) had a relatively high preference for organic wine and a relatively low preference for local wine. This could be due to the importance of terroir and country of origin for wine quality and in turn for wine purchase decisions. In the study of Mann et al. (2012) Swiss wine consumers preferred wines from France over wines from Switzerland. They ascribed this to the longer tradition from France for high quality wine and concluded that wine purchasing decisions are made with a clear focus on quality. Thus, consumers of Cluster 2 have the greatest sales potential for traditional organic wine producers like France, Italy and Spain. The most promising consumer segment for organic wine producers from Germany is the cluster of consumers “Interested in organic and local food” (Cluster 2). This consumer segment offers high market potential for direct selling wineries.

Like Long and Murray (2013), we detected two different groups of consumers with a preference for local products. Those, who are at the same time strongly committed to organic production (Cluster 2) and those who are exclusively supporting local production (Cluster 4). The consumer group, who is interested in organic and local food (Cluster 4), does not have pro-environmental attitudes but is convinced of higher qualities of organic food in terms of taste and health. We assume that these consumers purchase local, organic wine for the perceived higher quality. The consumer group interested in local food (Cluster 4) is less interested in organic products. Communication for this consumer segment should therefore focus on the local/domestic origin.

Acknowledgements

We are grateful for the financial support of the Federal Ministry of Food and Agriculture in the framework of the Federal Program on Organic Farming [grant number 28140E014].

References


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Wine consumers’ attitudes towards sustainability cues and their real purchase behaviour—data from a household panel

Isabel Schäufele¹, Ulrich Hamm²

Introduction

Consumer surveys in different countries revealed that consumers preferred organic over conventional wine (Bernabéu et al., 2008; Chiodo et al., 2011; Janssen et al., 2012) and elicited a higher willingness to pay for organic (Ay et al., 2014; Brugarolas et al., 2010; Pagliarini et al., 2013; Wiedmann et al., 2014), sustainable (Forbes et al., 2009; Sellers, 2016; Vecchio, 2013) and local wine (Ay et al., 2014; Bernabéu et al., 2008; Grebitus et al., 2013). However, none of the articles examined real purchase situations. How do consumers behave when it comes to real wine purchase decisions and on which attributes are the wine choices grounded? The aim of this research paper was to segment consumers based on different attitudes towards sustainable consumption and to analyse each segment’s wine purchase behaviour with a special focus on organic wine purchases.

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Table 1: Purchase behaviour of consumer segments

<table>
<thead>
<tr>
<th>Expenditure share in %</th>
<th>Cluster 1 Interested in sustainable food (21 %)</th>
<th>Cluster 2 Interested in organic and local food (19 %)</th>
<th>Cluster 3 Interested in organic food (19 %)</th>
<th>Cluster 4 Interested in local food (15 %)</th>
<th>Cluster 5 Disinterested in organic and local food (14 %)</th>
<th>Cluster 6 Disinterested in sustainable food (12 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>organic wine</td>
<td>7.06a</td>
<td>3.96b</td>
<td>3.92b</td>
<td>2.05c</td>
<td>2.04c</td>
<td>1.06d</td>
</tr>
<tr>
<td>domestic wine</td>
<td>44.28a</td>
<td>50.54b</td>
<td>41.92a</td>
<td>50.36b</td>
<td>41.79a</td>
<td>45.10a</td>
</tr>
<tr>
<td>Price in €/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>organic wine</td>
<td>4.38a</td>
<td>4.80b</td>
<td>4.30a</td>
<td>4.45d</td>
<td>3.93c</td>
<td>3.53c</td>
</tr>
<tr>
<td>conventional wine</td>
<td>3.75a</td>
<td>3.71a</td>
<td>3.51b</td>
<td>3.38c</td>
<td>3.08d</td>
<td>3.10d</td>
</tr>
</tbody>
</table>

Shares and mean values of clusters with different letters differ significantly (p<0.05).

Attitudes towards the consumption of food with sustainability characteristics were in line with wine purchase behaviour (see Table 1). Consumers “Interested in sustainable food” exhibited positive

¹ Department of Agricultural and Food Marketing, University Kassel, Germany, www.uni-kassel.de/agrar/alm, i.schaeufele@uni-kassel.de
² Department of Agricultural and Food Marketing, University Kassel, Germany, www.uni-kassel.de/agrar/alm, hamm@uni-kassel.de
attitudes towards environmentally friendly, sustainable and organic products. At the same time, they showed by far the highest expenditure share for organic wine (7%). The cluster “Disinterested in sustainable food” was characterized by the lowest expenditure share for organic wine (1%). Furthermore, consumers “Interested in local food” showed high expenditure shares for domestic wine (50%) and low expenditure shares for organic wine (2%); for consumers “Interested in organic food” the opposite was found. However, the cluster “Interested in organic and local food” (“Disinterested in organic and local food”) revealed high (low) preference for organic and domestic wine.

Table 2: Expenditure share by country of origin and consumer segment differentiated in organic red and white wine

<table>
<thead>
<tr>
<th>Color</th>
<th>Cluster 1 Interested in sustainable food (21%)</th>
<th>Cluster 2 Interested in organic and local food (19%)</th>
<th>Cluster 3 Interested in organic food (19%)</th>
<th>Cluster 4 Interested in local food (15%)</th>
<th>Cluster 5 Disinterested in organic and local food (14%)</th>
<th>Cluster 6 Disinterested in sustainable food (12%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Germany 38,9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>37,4&lt;sup&gt;b&lt;/sup&gt;</td>
<td>17,3&lt;sup&gt;c&lt;/sup&gt;</td>
<td>41,7&lt;sup&gt;d&lt;/sup&gt;</td>
<td>5,7&lt;sup&gt;e&lt;/sup&gt;</td>
<td>9,4&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>France 9,5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14,1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>34,1&lt;sup&gt;c&lt;/sup&gt;</td>
<td>11,3&lt;sup&gt;d&lt;/sup&gt;</td>
<td>2,6&lt;sup&gt;e&lt;/sup&gt;</td>
<td>11,7&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Italy 24,3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11,1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>31,5&lt;sup&gt;c&lt;/sup&gt;</td>
<td>22,9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>62,9&lt;sup&gt;d&lt;/sup&gt;</td>
<td>51,0&lt;sup&gt;e&lt;/sup&gt;</td>
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<td></td>
<td>Spain 25,5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>29,5&lt;sup&gt;b&lt;/sup&gt;</td>
<td>10,4&lt;sup&gt;c&lt;/sup&gt;</td>
<td>18,6&lt;sup&gt;d&lt;/sup&gt;</td>
<td>28,5&lt;sup&gt;b&lt;/sup&gt;</td>
<td>26,7&lt;sup&gt;a,b&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>Others 1,8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7,9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>6,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>5,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0,2&lt;sup&gt;d&lt;/sup&gt;</td>
<td>1,3&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>White</td>
<td>Germany 69,8&lt;sup&gt;a&lt;/sup&gt;</td>
<td>85,0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>44,1&lt;sup&gt;c&lt;/sup&gt;</td>
<td>60,3&lt;sup&gt;d&lt;/sup&gt;</td>
<td>76,0&lt;sup&gt;e&lt;/sup&gt;</td>
<td>70,6&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>France 2,1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0,6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>4,2&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>2,3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1,6&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Italy 17,2&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Spain 10,3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3,7&lt;sup&gt;b&lt;/sup&gt;</td>
<td>7,4&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3,7&lt;sup&gt;d&lt;/sup&gt;</td>
<td>2,8&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0,9&lt;sup&gt;d&lt;/sup&gt;</td>
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<td></td>
<td>Others 0,6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0,6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1,6&lt;sup&gt;c&lt;/sup&gt;</td>
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Shares of clusters with different letters differ significantly (p<0.05).

Cluster 1 “Interested in sustainable food” had a high preference for organic, environmentally friendly and sustainable products. With regard to organic red wine the origin Germany had the highest expenditure share. Interestingly, they paid the highest price for conventional wine (see Table 1). Compared to the other clusters wine purchases at the wine specialty store were of high importance. However, for organic wine, direct wine purchases were preferred (see Table 3). Consumers “Interested in sustainable food” were more often older and of higher formal education with high incomes. Cluster 2 “Interested in organic and local food” favored to buy organic and conventional wine directly from the producer, a cooperative or a wine cellar. Furthermore, organic wine was often bought at organic stores. They exhibited a high preference for organic white wine and paid the highest price for organic wine. Consumers of this cluster were more likely to be younger with higher incomes. Cluster 3 “Interested in organic food” had relative high expenditure shares for organic wine (4%); domestic wines were however not strongly preferred. With regard to organic red wine the origin France exhibited relatively high expenditure shares (34%); for organic white wine Italy was the favored country (see Table 2). Wine expenditures were relatively high for wine specialty stores. Consumers of the cluster “Interested in organic food” were younger and had relatively often a university degree. Cluster 4 “Interested in local food” showed the highest expenditure share for German red wines (41%) and exhibited a high preference for direct wine purchases (producer/cooperative/cellar) compared to other clusters. Consumers of this segment were more likely to be older than 70 years and with lower formal education.

Table 3: Expenditure share by shopping venue and consumer segment for organic wine

<table>
<thead>
<tr>
<th>Shopping Venue</th>
<th>Cluster 1 Interested in sustainable food (21%)</th>
<th>Cluster 2 Interested in organic and local food (19%)</th>
<th>Cluster 3 Interested in organic food (19%)</th>
<th>Cluster 4 Interested in local food (15%)</th>
<th>Cluster 5 Disinterested in organic and local food (14%)</th>
<th>Cluster 6 Disinterested in sustainable food (12%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount</td>
<td>24,6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>21,9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>42,6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>24,6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24,1&lt;sup&gt;d&lt;/sup&gt;</td>
<td>53,1&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Supermarket</td>
<td>9,0&lt;sup&gt;a&lt;/sup&gt;</td>
<td>12,0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>8,4&lt;sup&gt;c&lt;/sup&gt;</td>
<td>8,8&lt;sup&gt;a,c&lt;/sup&gt;</td>
<td>8,5&lt;sup&gt;a,c&lt;/sup&gt;</td>
<td>9,9&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wine specialty store</td>
<td>11,3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14,1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>26,9&lt;sup&gt;c&lt;/sup&gt;</td>
<td>31,4&lt;sup&gt;d&lt;/sup&gt;</td>
<td>6,3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>12,2&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Direct wine seller</td>
<td>40,5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>39,6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>16,3&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>59,5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>15,7&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>Organic store</td>
<td>6,0&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10,7&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2,9&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0,7&lt;sup&gt;d&lt;/sup&gt;</td>
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<td>8,6&lt;sup&gt;a&lt;/sup&gt;</td>
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