Marketing Characteristics of Tokaj Wine Specialities Based on Factor and Cluster Analyses

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Summary: The marketing kind of analysis in the domestic and international markets of Tokaj's wine speciality has not happend yet. The present research scientific method supportedly defines the consumers of Tokaj's wine speciality and it determinates the overlay receipt. The basis of the questionnaire research at the wine consumers cirlce is a representative sample of 1179 people. It confirms the truthfulness with factos and cluster dissection. On the hungarian market 5 sections can be devided, which has been determined by the earning category, the wine savvy and the referene price interval.

Tokaj Wine Specialities named "late vintage" are also available. This name can be confusing for the consumer, some do not understand in what they differ from other Tokaj Wine Specialities, as actually all Tokaj Wine Specialities are late vintage wines; particularly, wine is harvested later than usual, occasionally in October or November.

The findings obtained during the research can be utilised in practice, too. In accordance with the results and conclusions, we have several practical suggestions.

Our methodological suggestion is that the result of the cluster analysis based upon a large number of representative sample should be cross-checked with focus group tests; what is more, upon justification and verification, a detailed analysis of the given segments can also be performed better with this method. It would be worth studying the exact reasons for the popularity of wines with the name "late vintage". Such types of Tokaj Wine Specialities should be given higher priority in marketing terms. My suggestion is that the type of wine accepted and liked by consumers should be kept count of as Tokaj Wine Specialities officially, too.

The future marketing strategy has to be developed by knowing the sections and by it's further research which has to integrate to the strategy of Tokaj's wine region.

1. Introduction, objective

Some of the world's wine-growing regions have a special microclimate and other individual endowments that allow the making of wines of a special quality and offer dessert wines a unique taste and flavour. The **origin-protected name of "Tokaj"** (the area is located in the North-Eastern corner of Hungary) obliges the Hungarian wineries to produce a really excellent quality, a unique product, **Hungarica.** The product is specific and outstanding in the national mythology and Hungarian wine-growing. The national anthem also refers to the national treasure that can be produced only in the historic wine district of Tokaj-Hegyalja thanks to the microclimate and the special technology. Tokaj Wine Specialities are: Tokaj Aszú, Tokaj Szamorodni, „Máslás"[1], „Fordítás"[2], Late Harvest Tokaj Wine Speciality. The value of Tokaj wine is granted by the harmony emerging from the specific quality, the limited quantity and the age-long work. Carrying the reputation of Hungary, these products should be popularised not only in Hungary, but abroad, too. There is no marketable strategy to think in the long run in one single product any

longer, so the purpose in the future is to develop and sell several products or services with maximal customer satisfaction. Besides the foreign companies, the Hungarian producers and investors will have to find their account and have become able to compete on the world market.

The **purpose of this study** is to provide an overall picture of **the Hungarian wine specialities' market position**. The direct purpose is to outline the market of Tokaj Wine Specialities, and study (verify or refute) the statements of the hypotheses. The indirect purpose is that the efficiency of the scientific methods is to be proven again in connection with their theoretical and practical application.

Our hypotheses (H1-H5) are, as below:

H1 **Method relevance**. The practical applicability of the cluster analysis should be verified by subsequent focus group tests. The qualitative procedures preceding the research and the latter-mentioned procedure strengthen the results.

H2 **Integrability of regional researches.** The wine consumption and wine purchasing habits of Budapest and

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1 This Tokaj Wine Speciality is produced from must poured onto the lees of szamorodni or aszú, or from wine of the same year through alcoholic fermentation, has a characteristic aging scent and taste, and is aged for minimum two years prior to the distribution, one year of which in wooden barrels.

2 This Tokaj Wine Speciality is made from must poured onto mashed aszú grapes and originating from a certain habitat, or from wine of the same year through alcoholic fermentation, is aged for minimum two years prior to the distribution, one year of which in wooden barrels, and has a characteristic of aging scent and taste.

North-Alföld Region are different concerning Tokaj Wine Specialities, so the data recorded in the two spots cannot be contracted.

H3 **Studies of interrelations.** The purchasing and consumption of Tokaj Wine Specialities is in relation to the age, sex, income, educational background, and the knowledge of special, wine-related material.

H4 **Inclination to determine the price.** During purchasing, the price is the most important aspect, where there is no difference between the admitted and the actual reference prices.

H5 **Market segmentation**. The sample (n=1.179) is fit for segmenting. Therefore, there exist criteria that make the creation of target groups possible.

Dessert wine specialities made naturally can be sold with proper marketing work anywhere in the world, and a higher price can be generally achieved. Tokaj Wine Specialities also belong to these wines. There are hardly any market researches on Tokaj Wine Specialities in the technical literature. Our own researches and publications prepared five years ago were about Tokaj Aszú, the market properties of this wine speciality were studied. This research shows that the lovers of Tokaj Aszú and other wines is divided half and half. In the latter case, Egri Bikavér is among the first ones. It can be established that the majority (85%) only occasionally purchases the aszú. Regular customers are in minority, their proportion totals nearly 15% (*Szakál,* 2002).

61% of the sample buys aszú primarily as a gift, while 39% for own consumption. Tokaj Aszú is particularly purchased for Christmas holidays, but it is also a popular drink on family gatherings (23%). These family festivals include birthdays, namedays and other family gatherings. Only 12% of the consumers purchase wine at Easter and on New Year's Eve. Only 4% of the sample population drink Tokaj Aszú on Whitsun (*Szakál,* 2003).

The majority (47%) does the shopping at shopping centres, supermarkets; 22% at wine shops and 16% in discount stores. Fewer customers go to mini supermarkets, convenience stores and wineries.

Most people spend an average amount of HUF 1,500 – 4,000 annually (exchange rates of HUF/EUR were between 250–270 during the investigation) on Tokaj Aszú (44%). 17% of the sample population devotes less than HUF 1,500 to this purpose. Customers spending between HUF 4,000 and 8,000, and above HUF 8,000 represent nearly the same proportion, some 20-20%. Most people allocate less than HUF 4,000 annually on Tokaj Aszú wines (*Szakál,* 2002, 2003).

According to *Piskóti* (2002) we could summarise the consumption of sweet wines, especially regarding Tokaj wines in Hungary in the following points.

- Consumers purchase these wines for special occasions, on the festive boards, generally as an accompaniment to desserts. .
- The Tokaj Aszús made by the new, leading Tokaj wineries.
- Tokaj Aszú means a rich cultural and historical tradition to most Hungarian consumers.

- The great majority of Tokaj Aszú has always been consumed abroad.

Hajdu (2004) establishes that wine marketing is the combination of marketing and wine sciences, where the marketing methods, attitudes and concepts should be known, and basic oenology is also essential. According to *Lehota – Fehér* (2007) it means the purpose and means system of the adaptation of enterprises dealing with oenology and distribution to the market environment. Technical literature divides this material into two parts: marketing as a descriptive discipline and marketing management focusing on planning and execution.

The field of wine marketing covers the following main issues:

- needs and demand,
- products, services and ideas,
- the exchange, transactions, market actors, and the relations between them (power, confidence, conflict, common value, commitment, etc.),
- performance indices (cost, profit, value, satisfaction, etc.),
- marketing means, the elements of the marketing-mix (*Lehota – Fehér,* 2007; *Gosch,* 2003).

According to *Szakály* (2007), the domestic food economy can have no such problems that could not be solved with creative marketing. This can apply to even a sector, including the wine sector. The research carried out by *Fowler* (2000) and *Lockshin* (2003) shows that income is the key factor in the wine purchaser's behaviour. *Reisezenstein* et al. (1980) point out that the consumer primarily decides upon the price and oral advertising. *Cox – Rich* (1967), *Dodds – Monroe* (1985), *Monroe – Krishnan* (1985) used the price when analysing the Australian wine consumers as a segmentation criterion. According to *Rekettye* (1999), it is the proportion of the perceived value, which is especially important concerning Tokaj Wine Specialities, the perceived utility of the product and the perceived consumer expenditures. The accurate specification of perception and sensation would largely promote the consumer's value perception. Consumers generally assess the actual price by comparing it to other prices directly available and their price memories stored in their mind and related to the given product.

Lakner-Sass (1997) state that on the export markets it is not sufficient only to advertise certain products but we should make sure that that pleasant, positive impressions appeared in the consumer's mind about Hungary and the Hungarian agriculture, and we can start building the image of the products only after this. The token of the sector's competitiveness is quick and efficient communication, it is strengthened by *Kárpáti* et al (2006), as well.

Szabó (2007) supposes that during the wine marketing research a detailed study of the elements of the marketing-mix is essential. The distribution channel is an important criterion for decision when selecting the correct marketing activities. According to the data of *Heijbroek* (2001), in most EU Members States the proportion of chains represents 40–70% in the wine trade, and this figure is expected to

increase. *Löffer-Scherfke* (2000) and *Holland* (2004) state that the significance of direct marketing will grow.

On the basis of the bibliographical survey, it can be established that the technical literature on wine marketing concordantly discusses, proves and supports certain marketing –mix elements, but practically companies cannot fully take advantage of the possibilities. The study fulfils a long-term demand, as no such a comprehensive research material specifically focusing on the Tokaj Wine Specialities has been published and especially the special consumer segments have not been defined up to the present.

2. The research methodology and data

The sampling techniques can be divided into two fundamental groups: the non-random and the random sampling techniques. The former covers the arbitrary, the judgement, the quota and the snowball sampling. The latter includes the simple random, the systematic, the stratified, the nested and other sampling techniques (*Malhotra,* 2001; *Lancaster* et al. 2002; *Csapó-Kárpáti,* 2003).

During the research, we applied the random sampling techniques; anyone could get into the sample. In the questionnaire, taking all question combinations into consideration, the types of survey levels were the following: 62 nominal, 23 ordinal, and 20 scale-type questions. We used open and yes-no questions, combination tables and multiple choice questions, too. In several cases, an order of ranking had to be established.

We have tested the reliability of the data set with the reliability analysis. The analysis constitutes a Chronbach alpha index, which decides the reliability. The value of this index should be higher than value 0.6 (*Barrett,* I22, 2007).

Calculation of the reliability coefficient:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} s_i^2}{s_T^2}\right),$$

where k= number of questions s_i^2= the variance of question i. s_T^2= the variance of the test value – α can take values between negative infinity and 1 (although only positive values make sense). Some professionals, as a rule of thumb, require a reliability of 0.70 or higher before they will use an instrument.

In the case of paired samples, each observation sequence refers to the same respondents. The differences are studied with the paired sample t-test. For the calculation, we establish a variance expressing the differences for each pair (indicated with D) and calculate its average and variance, and then the t statistics. The degrees of freedom are "n-1", where "n" is the number of observation pairs (*Szűcs,* 2002).

The chief component analysis (factor analysis) aims to transform the set of variables (questions) with linear transformation into a new variable set having a lower number variables than in the original one, which enables us to determine the majority of the variables (questions) more easily. The chief component analysis allows us to establish theoretical variables that are in close correlation with the real variables, nearly independent of each other, and their number is minimal as compared to the sample under study.

The index tests the extent of the partial correlations between the variables studied in the factor analysis. No latent structures can be found in a variable set having distinguished pairs. Calculation of the KMO index:

$$KMO = \frac{\sum_i \sum_j r_{ij}^2}{\sum_i \sum_j r_{ij}^2 + \sum_i \sum_j a_{ij}^2} \quad i \neq j$$

There is a KMO statistic for each individual variable, and their sum is the KMO overall statistic. KMO varies from 0 to 1.0. Overall KMO should be 0.50 or higher to proceed with factor analysis. If it is not, remove the variable with the lowest individual KMO statistic value one at a time until KMO overall rises above 0.50, and each individual variable KMO is above 0.50.

The communalities of each variable are values that show the extent the chief components jointly explain the given variable. The value of the communality may be equal to maximum 1. The higher its value is, the more the chief components characterise, explain the given variable (*Wagner,* 2000; *Malhotra,* 2001).

The method groups the entities of the population by several variables. When creating groups, we aim to establish clusters whose elements are as closely related to each other as possible and relatively more deviate from the elements of the other clusters. Agglomerative procedures include several procedures; I have selected Ward's method because its concept rests on bases similar to the variance analysis, so it minimises the information loss caused by the group contraction. Information loss means the sum of square numbers of deviation of elements from their group average (*Malhotra,* 2001; *Bauer-Berács,* 1999; *Strecker* et al., 1996).

The consumer research primarily aims to outline the consumption habits concerning the Tokaj Wine Specialities in the region under survey. This research was conducted in the North-Alföld Region and Budapest. The surveys were made in early 2006, basically on the following venues: hypermarkets in Debrecen, Nyíregyháza and Szolnok (Tesco, Interspar, Cora), busy public areas in the cities and other areas of the region, educational institutions, at West End City, Pólus Center and busy public areas, educational institutions in Budapest.

Representativity in the statistical sense means that by random sampling the rate of the basic criteria of the population must be close to the rates of the sample. The high number of elements (n=1,179) guarantees that each customer group purchasing Tokaj Wine Specialities took part in the survey with an appropriate rate of participation.

As for the sexes, the sample corresponded to the portion of statistical population, so it has been in accordance with the

expectations. There was no quota sampling; it is a simple coincidence that the sample corresponded to the desired rates concerning the area. Considering the ages, the age group of the young people (18–25 years) was overrepresented, while the group of 36–45 years was represented well.

Weighting was performed on the basis of qualifications and income, too, but the chance of getting into the sample can be considered quite high. This is shown by the fact that an assessable number of elements got into the sample for each category. During the sampling, we carried out a questionnaire survey in six different places for 6 months. It had to be established whether the **samples** coming from various areas **can be integrated or not.** First we studied the integrability of the sample areas. One of my hypotheses was that the responses collected in Budapest would largely differ from the country data. We applied the **paired t-test** as a method of proving.

We highlighted three fundamental properties typical of the purchasing power: net income per capita, expenditure on wines and Tokaj Wine Specialities in HUF. Only the results obtained between Budapest and Szolnok region suggested that they are not integrable; however, the difference could be observed only for one aspect (expenditure on wines) and to just a small extent, the separate handling of the samples would be unreasonable. **During the survey, it has been established that the samples obtained in various places can be integrated**. The paired two-sample t-statistics showed no difference in the purchasing power at 5% significance level in the given regions. We tested the reliability of the data set with the "reliability" analysis. The analysis forms a Chronbach alpha index[3] , which is determinant regarding reliability. The value of this index is higher than the necessary minimum value of 0.6. Consequently, we considered the data suitable for further tests.

The methods applied to study the consumer's side during our own research were as follows: Partition ratios, Mean calculations, averages, standard deviation, Analysis of reliability, Paired t-test statistics, Pearson-type Chi-square statistics, Mann-Whitney-Wilcoxon statistics, principal component analysis, factor analysis, cluster analysis, focus group tests. During the research, we carried out the statistical analyses with three key programs and software. The applied programs were: MS Excel, SPSS and Surveyz.

Generally, the focus group tests precede the questionnaire survey. During our research I did right the opposite so that I can verify whether the invited focus group members fulfilling certain main criteria really belong to one segment. Another aim was that if the above-mentioned target is reached, then we find out such things about the segments that would be more difficult to know by other methods. The main purpose of the focus group test is that the researcher gains insight into an issue of interest to him or her based upon the conversation of the members of the appropriate market segment.

According to *Veres* et al. (2006) audio and video recording must also be made during the focus group tests. During our research, the members of the focus group did not approve the making of such recording, without providing reasons. Nevertheless, they permitted the presence of a psychologist. However, the refusing, uncooperative attitude could not be felt on the discussions, which was also supported by the psychologist.

During our research two focus group interviews were carried out. The main features are summarised by *Table 1*, as follows.

Table 1. General characteristics of the focus group test

	Group analysis of cluster 3	Group analysis of cluster 5
Time	19 July 2007 10.00–12.00 am	20 July 2007 10.00–12.00 am
Venue	A winery in Tokaj	
Number of participants	7 persons	
Moderator	1 person	
Clinical Psychologist	1 person	
Total participants	9 persons	
Main purpose	Verification of the cluster results of the quantitative test for two target groups.	

According to the psychologist, overall the participants were open and honest. The specialist analysed the participants' behaviour during and after the study. It was established that both focus groups supplied information whose reality content cannot be questioned on the basis of psychological analyses.

3. The factoring method and analysis

The factoring method is used for measuring the effect of several independent variables. The questionnaire covers relatively lots of questions that may include criteria belonging to one factor, so in this way we can simplify the characterisation of each target group. The Kaiser-Mayer-Olkin (KMO) criterion amounted to 0.696 for the own sample, which can be deemed as appropriate.

I applied several methods to study how many factors can be set up. The Scree-test (elbow-rule; takes into consideration the full variance), the maximum likelihood method (it examines the adjustment of the model with the observed data, and calculates an adjustment index for the factor number determined by us) and the variance proportion method (it specifies the factor number based upon the aggregate percentage of variance) also verified that the 8-factor application was the most reliable choice.

45 of the 70 variances were suitable for the factor analysis based upon the measuring level, of which the 25 variances were involved in the factor analysis as the others abated the factor analysis. I could establish assessable factors

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3 The Chronbach alpha index equals the arithmetic average of the coefficients obtained from all possible split-halves. It shows the appropriate inner consistency of the questions.

Table 2. Explained variance – with principal component analysis

Factor	Calculated extraction			Rotated calculated value		
	Total	Variance %	Cumu-lated %	Total	Variance %	Cumu-%
1	6.4	23.8	23.8	5.2	19.1	19.1
2	3.0	11.1	34.9	2.4	8.9	28.0
3	2.5	9.4	44.3	2.3	8.5	36.5
4	1.7	6.3	50.6	2.1	7.8	44.3
5	1.5	5.5	56.1	2.0	7.4	51.7
6	1.3	4.6	60.7	1.7	6.4	58.1
7	1.2	4.3	65.0	1.5	5.7	63.8
8	1.1	4.0	69.0	1.4	5.1	68.9

Table 3: Rotated factor matrix and explained variance

	f1	f2	f3	f4	f5	f6	f7	f8	Explained variance * 68.9%=100%
How often do you buy aszú essence/essence?	0.91								
How often do you buy fordítás?	0.84								27.72%
How often do you buy szamorodni?			0.87						
How often do you buy aszú?			0.65						12.92%
How many bottles of aszú essence, Tokaj essence do you buy a year?				0.93					
How many bottles of fordítás, máslás do you buy a year?				0.90					
How many bottles of aszú essence, essence do you buy as a gift a year?				0.85					12.34%
How many bottles of fordítás, máslás do you buy as a gift a year?				0.66					
How many bottles of szamorodni do you buy a year?					0.76				
How many bottles of Tokaj aszú do you buy a year?					0.71				
How many bottles of szamorodni do you buy as a gift a year?					0.58				11.32%
How many bottles of Tokaj aszú do you buy as a gift a year?					0.56				
Journalists' opinion, influence						0.84			
Opinion, influence of Internet information						0.77			
Strangers' opinion, influence						0.72			10.74%
Salespersons' opinion, influence						0.57			
Friends' opinion, influence							0.77		
Spouse's opinion, influence							0.68		
Parents' opinion, influence							0.47		9.29%
Earlier experience, taste							-0.60		
How much would you spend on Máslás fordítás?								0.97	
How much would you spend on Tokaj essence?								0.97	8.27%
How much would you spend on Aszú?								0.94	
Spending on Tokaj Wine Specialities in percentage of spending on wine								-0.82	7.40%
How much do you spend on wine yearly?								0.80	
Explained variance (68.9%=100%)									100%

* The 8 factors accepted explain 68.9% of the variance.

of these based upon the communalities, which exceeded the value of 0.7 for most of the variables. The primary purpose was to maximise the variance of the principle components, which resulted in the rotated factor matrix. The factor weights demonstrate the correlation between the original variable and the given factor – hose value varies from -1 to 1. *Table 2* shows the explained variance, which I calculated with the principal component analysis, applying the SPSS programme.

The accepted 8 factors explain 68.9% of the variance. We left out factor 9, as in this case the eigenvalue fell below 1, which was not acceptable.

Factor 1 (f1) is related to the frequency of purchasing exclusive wine specialities (eseence, fordítás, máslás) while factor 2 (f2) is connected to the two most widely known Tokaj Wine Specialities (aszú and szamorodni). Factor 3 (f3) shows the number of bottles of exclusive wine specialities purchased – whether for own consumption or as a gift. Factor 4 (f4) is similar to the previous one, but here the focus is on more widely known Tokaj Wine Specialities. Factor 5 (f5) covers the external influencing factors, while factor 6 (f6) includes the influencing elements in the consumer's direct environment. The former refers to the journalists, the strangers, the Internet, the salespersons, while the friends, parents, partner and earlier experience belong to the latter category. As for (f6), the earlier experience as a factor is indicated with an opposite sign. Factor 7 (f7) is the internal

reference price, and factor 8 (f8) refers to spending on wine specialities. The interesting point of (f8) is that the more one spends on wine, the less they spend on Tokaj Wine Specialities, so the proportion is inversed.

Table 3 demonstrates the rotated factor matrix, based upon which eight well-dividable factors could be specified.

4. Findings based on cluster analysis

The **cluster analysis** fundamentally aims to reveal, with respect to the regions under survey, what consumer groups can de identified among the purchasers of Tokaj Wine Specialities. In this case the basic task is to find the variables that cause the differences among the groups. During the analysis I applied the Ward-process, which is based upon the variance. The centroid method led to a similar result. I performed a run-off with the K-means process, too, which created only two clusters, one of which with a low number of elements. *Table 4* demonstrates the impacts of the factors in each cluster.Clusters can be at the same time considered as consumer segments in marketing terms, so hereinafter they will be called segments.

Table 4. The impacts of factors in each cluster

Factor Clusters and rank numbers	f1	f2	f3	f4	f5	f6	f7	f8
Cluster 1	0.140	-0.054	-0.068	-0.192	0.070	0.378	-0.063	-0.207
rank number	*4*	*8*	*5*	*6*	*3*	*1*	*7*	*2*
Cluster 2	0.100	0.118	-0.095	-0.027	-0.028	-0.190	-0.143	-0.159
rank number	*5*	*4*	*6*	*8*	*7*	*1*	*3*	*2*
Cluster 3	-0.181	0.052	-0.094	0.028	0.083	-0.025	-0.095	0.313
rank number	*2*	*6*	*4*	*7*	*5*	*8*	*3*	*1*
Cluster 4	0.147	-0.079	0.035	-0.094	0.011	0.554	0.097	-0.197
rank number	*3*	*6*	*7*	*5*	*8*	*1*	*4*	*2*
Cluster 5	0.053	-0.199	0.041	0.197	-0.073	0.040	0.097	0.133
rank number	*6*	*1*	*7*	*2*	*5*	*8*	*4*	*3*

Clusters for the North-Alföld Region and Budapest, and their main characteristics for purchasers of Tokaj Wine Specialities in 2007 (n=1179).

Consumer segments distinguished are, as below:

1. Survivors" having a low income

Price interval: < 800 forints
 – price-sensitive
 – place of purchasing: discount stores, hypermarkets
 – usually semi-sweet wines are preferred, do not take risks, conservative, over 18, wine culture is not typical, undemanding towards themselves, demanding for packaging, estimated share: 75%

2. "Wise middle-class" having a normal income

Price interval: 600–1,500 forints
– the family's monthly net income totals 150–300,000 forints
– born between 1940 and 1970, over 35 , hypermarkets, brand loyalty
– price-sensitive, but think in a closed price interval
– estimated share: 12%

3. "New generation" having a normal income

Price interval: 800–3,000 forints
– the family's monthly net income totals 150–300,000 forints
– fans of wine culture, born after 1970, age between 18 and 30
– purchase wines everywhere
– often go on trips in wine districts
– brand loyalty
– their closed price interval is broader
– estimated share: 6%

4. "The wine-conscious rich" having a high income

Price interval: 1,100 forints <
– the family's monthly net income is over 300,000 forints
– fans of wine culture
– age over 30
– more reasonable decision
– open to everything, innovative group
– often go on trips in wine districts, on wine festivals
– slight snobbery effect
– brand loyalty
– their closed price interval is broader
– estimated share: 3%

5. "The rich elite" having a high income

Price interval: 1,500 forints <
– the family's monthly net income is over 300,000 forints
– strong snobbery effect
– brand-orientedness
– high price and packaging are decisive
– the wine must comply with the social expectations
– sometimes go on trips in wine districts, but visit the top wineries
– brand loyalty
– their closed price interval is broader
– estimated share: 4%

The data in Table 4 demonstrate that the principal components show a heterogeneous picture. (f1) is represented with nearly the same weight in each cluster. In group 3 it shows a negative relation, and in group 5 it plays a role below the average. (f2), the standard Tokaj Wine Speciality frequency factor, has taken the largest positive value in cluster 2 and the largest negative value in cluster 5. Considering (f3) the correlation is negative in the first three groups, and positive in clusters 4 and 5. The largest positive value of (f4) can be observed in segment 5, while the largest negative-signed value is typical in cluster 1. Principal component (f5) has very low values in all of the clusters. The highest positive value of direct influence factor (f6) can be found in segments 1 and 4, while the lowest negative value is typical of group 2. Factor (f7) is negative in the first three clusters, and positive in groups 4 and 5 – these are very low values. The highest activity can be observed in case of the last (f8) principal component. It takes its largest value (0.313) in cluster 3. The largest negative correlation appears in cluster 1.

During the survey, 5 clusters could be identified clearly. When characterising each group, I involved not only the principal components but other invariables, too to obtain a more comprehensive picture.

5. The findings of the focus-group control testing

We have carried out the focus group test to strengthen the statistically-founded theoretical cluster, namely, to study whether these segments actually exist.

The test can be divided into 3 sections. Section 1 is the selection of the participants, section 2 covers the answering of specific questions and completion of tasks within the focus group, while section 3 includes answering the "segment-specific" questions of the focus group and completion of such tasks. The tests primarily aim to prove that the cluster analysis is actually relevant and whether the segment test achieves the desired results. Some questions are directed at a more thorough understanding of the segment, while the others rather study the relevance of the earlier cluster analysis.

We could interview and analyse over 10 respondents by cluster. I asked them to complete the questionnaire on their habits of consuming and purchasing Tokaj Wine Specialities, and then I verbally asked about the main criteria that should be fulfilled so that they can become members of the segment. These main criteria were the results of the earlier cluster analysis. The number of persons contacted was reduced, and finally 7–7 respondents were selected.

They were invited to the focus group study. The participants received a bottle of Tokaj wine at the end of the study as a motivation means.

The second phase consisted of 7+1 tasks for the group members. We placed 7 types of wine on the table for the group members and asked them to decide which they knew. In another task, they were requested to indicate the wines that they had already tasted.

The wines analysed during the survey were the following:
– Béres Wine Estate: Late Harvest, 2003   (1)
– Erdős Winery: Late Harvest, 2004   (2)
– István Szepsy Winery: Tokaj szamorodni sweet, 2003   (3)

– Disznókő Hattyús: Tokaj szamorodni sweet, 2003 (4)
– Oriens Pincészet: Tokaj aszú 3-butt, 2000 (5)
– István Kiss Winery: Tokaj aszú 3 puttonyos, 1999 (6)
– Tokaj Merchant's House: Tokaj aszú 4-butt, 2001 (7)

Exhibits 1 and 2 summarise the attitude of the group members regarding the wines under survey in terms of the relevant general aspect, the bottle form and the label. Evaluation was made on a scale ranging from 1 to 7, where "1" means "I do not like it at all", while "7" is "I expressly like it."
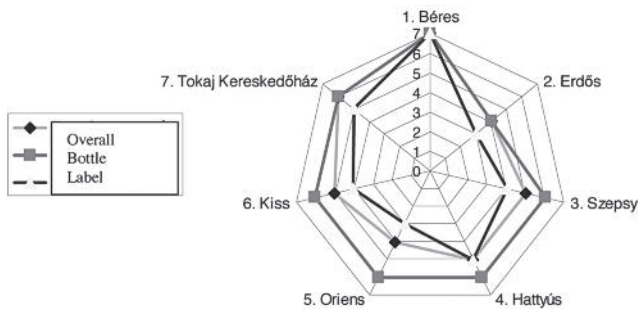

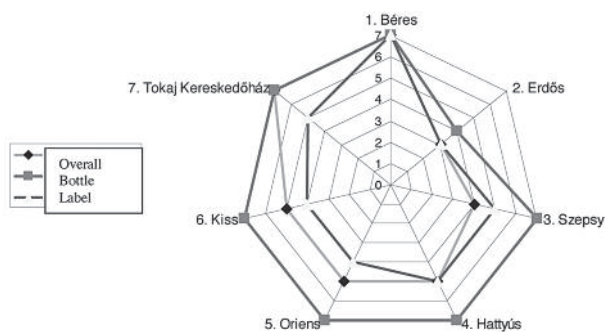**Exhibit 1.** Attitude studies in segment 3

Exhibit 2. Attitude studies in segment 5

Segment 5 results show that it is the wines of Béres Winery and Tokaj Merchant's House that had the most positive impact on the respondents. In the case of both segments, the wine of Erdős Winery had the worst results. Few know them and people do not particularly like their appearance. It can also be observed that segment 3 gave score 7 only to the wine of Béres Wine Estate and underestimated the other wines in all the three aspects. The order of rank for this segment (on the average, considering all the three aspects): Béres (1), Hattyús (4), Tokaj Merchant's House (7). The order of rank for cluster 5 (on the average, considering all the three aspects): Béres (1), Tokaj Merchant's House (7), Hattyús (4).

The first section of the session was finished with blind tasting and re-evaluation. During the tasting, the participants did not know which wine they were drinking. They were requested to set an order of rank for the most tasteful wines. Wines could be retasted. Taking the average of cluster 3 into consideration, the wine of Disznókő Hattyús took the first place. The wine of Béres Wine Estate was the second, while the wine of Szepsy ranked the third. This was followed by wines no. 6., 2., 7., and 5. Cluster 5 made a different order of

rank, except for the first place. The order of rank in this group: 1.: Disznókő Hattyús, 2.: Erdős Winery, 3: Szepsy, 4: Béres, 5.: Tokaj Merchant's House, 6.: Kiss Winery, 7.: Oriens. After the evaluation we showed the wines and let the group talk. We asked them to reconsider their responses and tell us whether they would modify the order after the result of the blind tasting. The responses were reliable: they were almost sure they would have made a different evaluation, except for the appearance.

During the study it could be established that the characteristic features of segments 3 and 5 studied in the focus group corresponded in all respects with the features of clusters 3 and 5 from the cluster analysis on a sample of 1,179 persons. In both cases, e.g. the attainment regarding the price interval did not exceed +/-200 forints. It can be stated that the members of segment 5 with a high income are also enthusiastic over wine culture, but in reality they were not so competent, at least in the focus group under survey. In segment 5, respondents rather consume Tokaj Wine Specialities because of the alcohol content and entertainment. Cluster 3 rather focuses on the enjoyment of the product group Segments 3 and 5 jointly think that quality is important and expected in the case of this product. These latter statements did not turn out during the large-sample cluster analysis.

6. The analysis and main statements of the study hypotheses

H1 Method relevance

The practical applicability of the cluster analysis may be verified by subsequent focus group tests. Providing a certain frame, the qualitative procedures preceding the research and the latter-mentioned procedure underlie the realistic results.

The first methodological hypothesis refers to the applicability of an extra step of the research process. The technical literature suggests the focus group tests prior to the actual research; nevertheless, it is possible to apply it unreasonable after the statistical research. The practical relevance of the result of the cluster analysis can be controlled in this way. When compiling the focus group, we filtered the participants several times to find out whether they are actually members of the theoretical clusters produced with a scientific method. The filter questions before inviting the participants, as well as the topics and tasks arisen during the focus group test really verified the results of the cluster analysis, so **Hypothesis H1 can be defended**.

H2 Integrability of regional researches

The wine consumption and wine purchasing habits of Budapest and North-Alföld Region are different concerning Tokaj Wine Specialities.

During the market research, two methods were used to study H2: the paired t-statistics and the cluster analysis. In principle, both methods should have verified the assumption; still, just the opposite occurred– both procedures refuted the statement. During the t-statistics there was only one index in the case of which we can speak about difference, but its proportion and extent did not justify the separate examination of the data surveyed in Budapest and the North-Alföld Region. **Hypothesis H2 can be rejected.**

H3 Studies of interrelations.

The purchasing and consumption of Tokaj Wine Specialities is in relation to the age, sex, income, educational background, and the meeting of special, wine-related material of knowledge.

Raising hypothesis H3 includes various aspects. During the purchasing process numerous factors play an important part in the fact which product the consumer buys finally. This is especially true for wines, since the vintage and thus the wine supply changes from year to year. When purchasing Tokaj Wine Specialities, the price level higher than that of the average wines means further risk factors to the customer. It can be stated that, using the method of the Chi-square test and the cross-table analyses, in certain cases there is no difference. Summing up, it can be established that **Hypothesis H3 can be defended,** though only with comments**.** Cluster analysis is suitable to highlight the most important differences. As for the age, clarification is necessary, since this is a segment criterion that is related to the life cycle and also refers to the difference between the generations. The result of the cluster analysis is that there is such a "new generation" segment with completely different purchasing habits of Tokaj Wine Specialities. They will comprise the consumer group of the future.

H4 Inclination to determine the price.

During purchasing, the price is the most important aspect, where there is no difference between the admitted and the actual reference price.

Regarding market research, it is an interesting finding that "with no stakes" people would give more money for a Tokaj Wine Speciality than they actually do. When purchasing Tokaj Wine Specialities, the primary aspect is not the price, but the earlier experiences and the quality. These are followed by the price, particularly the price interval, which depends upon the monthly net income of the given consumer's family. The statement is true for purchasing for both own consumption and for gift-buying. **Therefore, Hypothesis H4 can be refuted.** If the consumer is wine-adept, he or she can make a decision more sensibly and pay attention to the price-value ratio, which in certain cases can mean cheaper wines, too. In the various clusters different price interval categories emerged, which is related to the

income. If the customer is not wine-adept, he or she will attach greater importance to the design, the appearance. In this case other people's recommendations hold far greater role in the purchasing decision process.

H5 Market segmentation.

The Hungarian consumer sample is fit for segmenting. Therefore, there are criteria that make the creating of a target group possible.

During the cluster analysis, groups can be distinguished clearly. We could demonstrate characteristics that enable us to create and define separate segments and target groups. Clusters can be characterised unambiguously and have individual features and style. The "weapons" of marketing can be applied well, and a marketing mix can be compiled and operated efficiently for each segment separately. **Therefore, hypothesis H5 can be defended**.

7. Conclusions

In Hungary the level of wine culture is low yet, but a favourable change has already started, and a new generation has emerged that respects, moderately consumes wine and is interested in oenology, viniculture. If the consumer has already met a knowledge material on wine, a rational consumer decision (considering the price-value-quality ratio) can be observed.

Tokaj Wine Specialities named "late vintage" are also available. This name can be confusing for the consumer, some do not understand in what they differ from other Tokaj Wine Specialities, as actually all Tokaj Wine Specialities are late vintage wines; particularly, wine is harvested later than usual, occasionally in October or November.

The findings obtained during the research can be utilised in practice, too. In accordance with the results and conclusions, we have several practical suggestions.

Our methodological suggestion is that the result of the cluster analysis based upon a large number of representative sample **should be cross-checked with focus group tests**; what is more, upon justification and verification, a detailed analysis of the given segments can also be performed better with this method. It would be worth studying the exact reasons for the popularity of wines with the name "**late vintage**". Such types of Tokaj Wine Specialities should be given higher priority in marketing terms. My suggestion is that the type of wine accepted and liked by consumers should be kept count of as **Tokaj Wine Specialities officially,** too.

The **wine district Community marketing** strategy should adapt itself to the national wine marketing strategy, at the same time; the higher level should also take into consideration the wine district ideas – "destination management". This requires discussions, so the **wine district ideas should be harmonised** (with a consensus) and **validated**.

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